

A REPORT OF THE ECONOMIC IMPACT OF WESTERN MICHIGAN UNIVERSITY

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PURPOSE &
LIMITATIONS

This report presents the results of an analysis undertaken by Impact DataSource, an Austin, TX based economic consulting firm.

The analysis relies on operational data from Western Michigan University as well as estimates, assumptions, and other information developed by Impact DataSource from its independent research effort.

Our analysis quantified the economic and fiscal impact of the University during fiscal year 2017-18 as described throughout this report.



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Overview

This report presents the detailed results of an economic impact analysis performed by Impact DataSource, an Austin, Texas economic consulting firm that specializes in economic and fiscal impact analysis. The purpose of the analysis was to estimate the value of Western Michigan University to the three-county Kalamazoo region of: Kalamazoo, Van Buren, and Calhoun.

Western Michigan University is a public research university located in Kalamazoo, Michigan. Western Michigan University enrolls nearly 23,000 students and graduate students. These students choose from more than 140 majors, minors, and concentrations and 70 graduate degrees offered through 9 colleges and schools.

Students of Western Michigan University have been awarded nearly \$270M in financial aid via internal and external awards. The university raised \$70M in private fundraising for year 2016-17 and has continual plans for growth and renovation, including new residence halls in South Neighborhood, new student center, and BTR Park II. Additionally, \$25M was earned by students working part-time, off-campus in the community in 2016-17.

Western Michigan University's Mission Statement

Western Michigan University is a learner-centered, research university, building intellectual inquiry and discovery into undergraduate, graduate, and professional programs in a way that fosters knowledge and innovation, and transforms wisdom into action. As a public university, WMU provides leadership in teaching, research, learning, and service, and is committed to enhancing the future of our global citizenry.

Western Michigan University, through its spending, students, activities, and alumni, produces significant economic benefits in the Kalamazoo region and state of Michigan. This study seeks to describe and estimate the economic impacts resulting from the many ways Western Michigan University positively affects the local economy.

This report is co-sponsored by Western Michigan University and Southwest Michigan First.

Methodology

The economic impact of Western Michigan University, like all economic impacts, is derived from expenditures. Western Michigan University's impact can be considered as stemming from four main measurable activities:

- (1) University operations,
- (2) Capital/construction projects,
- (3) Student spending, and
- (4) Visitor spending.

Direct Economic Impacts

Operational data and estimates provided by Western Michigan University for Fiscal Year 2016 serve as the basis for the calculations in this impact analysis. The University's operating budget, employment, and payroll represent the direct economic impact of the operations. University expenditures for construction serve as the direct economic impact for capital project impact calculations. Estimated student and visitor spending serve as the direct economic impact for these respective categories of impact.

Spin-off Economic Impacts

The total economic impact supported by Western Michigan University includes the direct as well as spin-off activity. The University's direct economic activity as well as the spending by students and visitors ripples through the economy and supports spin-off economic activity in the form of indirect and induced impacts. Indirect impacts reflect economic activity resulting from the business-to-business expenditures initiated by the University, student, and visitor spending. Induced impacts refer to the consumer-to-business expenditures initiated by workers that spend a portion of their earnings on goods and services in the economy.

Economic Impacts Defined

The economic impact of Western Michigan University was measured in common measures of economic activity including employment, workers' earnings, economic output, and value added. Employment consists of a count of jobs that include both full-time and part-time workers. Workers' earnings consist of wages and salaries, employer-provided benefits, and proprietors' income. Economic output is gross output and is the sum of the intermediate inputs and final use. This is a duplicative total in that goods and services will be counted multiple times if they are used in the production of other goods and services. Economic output can be thought of as the value of goods and services sold in the economy or revenues for businesses in the economy. Value added is defined as the value of gross output less intermediate inputs and represents the contribution to gross regional product.

The economic impact estimates in this report are calculated using the Regional Input-Output Modeling System (RIMS II), a widely used regional input-output model developed by the U. S. Department of Commerce, Bureau of Economic Analysis.

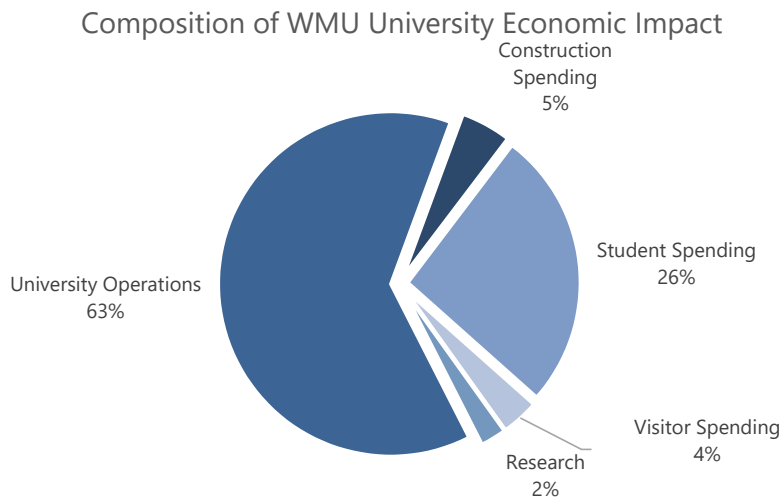
Economic Impact

The primary economic impact of Western Michigan University includes five main activities detailed this report, including the economic impact from (1) University operations, (2) capital/construction projects, (3) student spending, (4) visitor spending, and (5) campus research. In total, these University-related impacts support \$1.6 billion of economic output in the Kalamazoo 3-county region. Additionally, this economic activity will support 16,690 jobs and \$669.9 million in workers' earnings annually. All of this economic activity contributes \$977.9 million in gross area product or value added to the regional economy.

Table 1. Annual Economic Impact of Western Michigan University

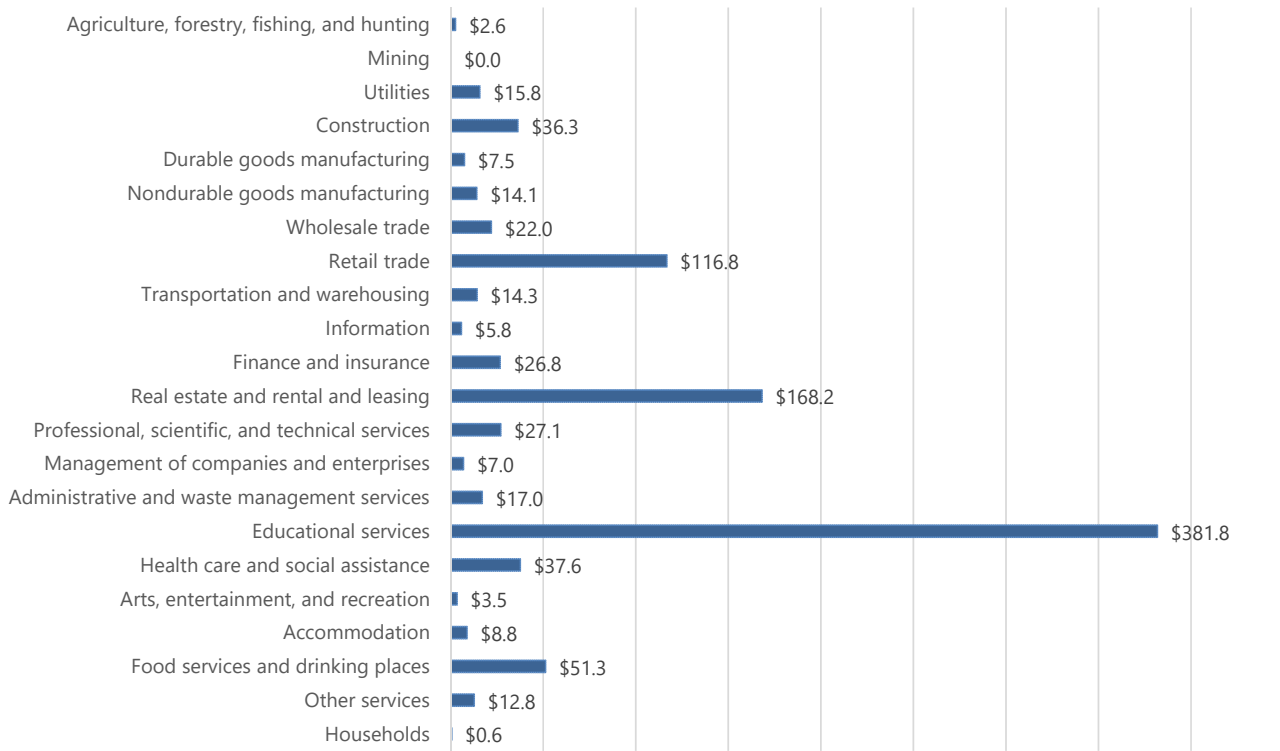
	Annual Impact
Economic Output:	
Direct	\$992,787,866
Indirect & Induced	\$616,606,007
<u>Total Economic Output</u>	<u>\$1,609,393,873</u>
Value Added:	
<u>Total Value Added</u>	<u>\$977,856,266</u>
Jobs:	
Direct	12,285.1
Indirect & Induced	4,405.0
<u>Total Jobs</u>	<u>16,690.2</u>
Workers' Earnings:	
Direct	\$464,736,891
Indirect & Induced	\$205,164,182
<u>Total Workers' Earnings</u>	<u>\$669,901,073</u>

The University's operations account for the largest portion of the overall impact at 63%. Student spending impact represents 26% of the total, visitor spending accounts for 4%, and the University's capital spending and research account for the final 2% and 5%, respectively.



The economic impact of Western Michigan University affects industries throughout the economy, not just the education sector. The following chart presents a graphical illustration of the total value added by industry. In total, the University supports \$977.9 million in value added or gross area product. As expected, the sector seeing the largest increase in gross state product is the educational services sector. Other stand-out sectors benefiting from Western Michigan include real estate, retail trade, and food services.

Annual Contribution to Gross Area Product by Industry Sector in Millions



The table below provides additional detail on the economic impacts by industry sector.

Table 2. Total Economic Impact by Industry Sector

	Employment	Household Earnings	Economic Output	Value Added
Agriculture, forestry, fishing, and hunting	75.7	\$1,676,281	\$5,572,257	\$2,638,304
Mining	0.4	\$4,839	\$127,208	\$34,259
Utilities	22.9	\$3,867,249	\$27,730,558	\$15,801,865
Construction	409.6	\$23,413,332	\$61,038,499	\$36,316,684
Durable goods manufacturing	59.6	\$4,202,246	\$21,296,786	\$7,455,133
Nondurable goods manufacturing	131.5	\$8,839,241	\$41,947,108	\$14,140,316
Wholesale trade	126.2	\$11,944,898	\$32,444,008	\$22,025,261
Retail trade	2,168.7	\$60,317,885	\$174,015,621	\$116,802,963
Transportation and warehousing	176.4	\$10,515,875	\$25,995,342	\$14,262,278
Information	33.2	\$2,414,150	\$9,876,399	\$5,789,211
Finance and insurance	245.7	\$14,803,758	\$50,961,395	\$26,767,232
Real estate and rental and leasing	1,342.8	\$41,149,126	\$240,411,832	\$168,237,419
Professional, scientific, and technical services	233.9	\$19,474,186	\$50,589,910	\$27,062,271
Management of companies and enterprises	43.8	\$5,786,205	\$11,672,891	\$6,986,099
Administrative and waste management services	338.8	\$12,459,749	\$25,480,020	\$17,034,990
Educational services	8,552.8	\$363,529,976	\$628,059,547	\$381,846,827
Health care and social assistance	536.1	\$32,823,023	\$63,142,795	\$37,624,265
Arts, entertainment, and recreation	85.8	\$2,524,717	\$5,689,637	\$3,488,933
Accommodation	112.5	\$4,355,388	\$13,974,447	\$8,840,207
Food services and drinking places	1,684.0	\$33,813,843	\$97,872,365	\$51,296,861
Other services	243.9	\$11,152,861	\$21,495,247	\$12,770,720
Households	65.9	\$832,242	\$0	\$634,167
Total	16,690.2	\$669,901,073	\$1,609,393,873	\$977,856,266

Average Impact Breakdown

Based on the information above, the average impact per staff/faculty positions, students, and visitors was calculated. For example, for each staff or faculty position employed directly at the University, 2.0 jobs are supported in the economy along with \$80,353 in total workers' earnings, and \$193,042 in economic output.

Table 3. Average Impact Breakdown

	Each Staff or Faculty Position	For every 1,000 Students	For every 1,000 Visitors
Employment	2.0	729.1	19.4
Workers' Earnings	\$80,353	\$29,262,267	\$780,069
Economic Output or Sales	\$193,042	\$70,300,698	\$1,874,064

Fiscal Impact

The economic impact of Western Michigan University generates sales, hotel, property, and individual income taxes. Sales taxes are collected on taxable spending by workers, students, visitors and sales at the University. Hotel taxes are supported by out-of-town visitors to Kalamazoo staying overnight. Property taxes are collected on residential property owned or occupied by workers supported by Western Michigan's economic activity. Income taxes are collected on taxable workers earnings.

In total, the state and local tax jurisdictions receive approximately \$102.0 million in tax revenue as a result of Western Michigan University's operations and activities.

Table 4. Annual Fiscal Impact of Western Michigan University

	Sales Taxes	Hotel Taxes	Property Taxes	Income Taxes	Total
State of Michigan	\$17,877,609	\$202,542	\$5,736,142	\$21,353,097	\$45,169,390
City of Kalamazoo	\$0	\$0	\$16,968,178	\$0	\$16,968,178
Kalamazoo County	\$0	\$168,785	\$7,176,392	\$0	\$7,345,177
Kalamazoo City School District	\$0	\$0	\$29,849,737	\$0	\$29,849,737
Kal Valley CC	\$0	\$0	\$2,685,375	\$0	\$2,685,375
Total	\$17,877,609	\$371,328	\$62,415,823	\$21,353,097	\$102,017,857

Economic Impact Summary

The primary economic impact of Western Michigan University includes five main activities detailed this section including the economic impact from (1) university operations, (2) capital/construction projects, (3) campus research, (4) student spending, and (5) visitor spending. In total, these University-related impacts support 16,690 jobs, \$669.9 million in workers' earnings, and \$1.6 billion in economic output or sales.

Table 5. Total Economic Impact of Western Michigan University's Operations

	University Operations	Construction Spending	Campus Research	Student Spending	Visitor Spending	Total
Employment	11,199.9	557.2	216.9	3,945.9	770.2	16,690.2
Workers' Earnings	\$504,853,865	\$27,079,304	\$13,280,368	\$105,712,674	\$18,974,863	\$669,901,073
Economic Output or Sales	\$1,019,689,979	\$79,226,306	\$45,670,735	\$403,775,149	\$61,031,704	\$1,609,393,873

Each of the above economic impacts are discussed and detailed below along with a summary of taxable spending and taxable property supported by the University.

University Operations

Western Michigan University reported an annual operating budget of \$665.0 million including payroll, most of which is spent within the region. The University also reported 8,337 faculty, staff, and student employees and an annual payroll of \$357.0 million during fiscal year 2016-17. These direct economic impacts support the following indirect and induced economic activity in the region during fiscal year 2016-17:

Table 6. Economic Impact of University Operations

	Direct	Indirect & Induced	Total
Employment	8,337.0	2,862.9	11,199.9
Workers' Earnings	\$356,989,015	\$147,864,850	\$504,853,865
Economic Output or Sales	\$616,685,805	\$403,004,174	\$1,019,689,979

The University's operations supported 11,200 jobs, \$504.9 million in workers' earnings and \$1.0 billion in economic output during fiscal year 2016-17.

The University employed 8,337 individuals, the University's spending supported another 2,863 spin-off jobs in the county. In total, the University supported 11,200 area jobs.

Similarly, while Western Michigan employees, staff and faculty earned salaries and benefits of \$357.0 million in fiscal year 2016-17, the University's spending supported another \$147.9 million in earnings for workers in related spin-off jobs in the area. Therefore, total workers' earnings supported by Western Michigan during the year totaled \$504.9 million.

The direct economic output supported by Western Michigan during fiscal year 2016-17 was \$616.7 million. This included payments that the University made for employee, faculty and staff salaries, purchases of goods and services and other expenditures. The direct spending generated \$403.0 million in indirect and induced sales or economic output in area businesses and other organizations.

Construction

Capital project spending by Western Michigan University provides an additional source of economic benefit for the region and state. According to the University, Western Michigan's capital project construction spending totals \$265.1 million in the last 5 years. The itemized breakout follows. WMU anticipates another \$168 million in construction over the next 3 years. WMU engages at least \$50 million in major construction per year, which is the amount assumed for this analysis.

Table 7. Capital Project Spending

	2013-2018
Heritage Hall Renovation	\$25,100,000
Valley Dining Center	\$36,000,000
Western Heights Residence Halls	\$48,000,000
Zhang Legacy Collections	\$8,300,000
Sangren Hall	\$60,000,000
Upjohn Campus for the WMY Stryker School of Medicine	\$68,000,000
Western View II & Clubhouse	\$9,700,000
Campus Wayfinding Project	\$5,000,000
Other Renovations and Enhancements	\$5,000,000
Total	\$265,100,000

The economic impact resulting from construction expenditures is calculated by using the construction expenditure as the direct impact value. These expenditures represent revenues for local construction companies, consultants and other contractors. In the same way that the University's operation's expenditures support indirect and induced economic impacts in the region, these construction-related expenditures also ripple through the economy to support additional impacts in the form of employment, workers' earnings and revenues for businesses or economic output.

The construction expenditures of \$50 million support 557.2 jobs in the region, \$27.1 million in additional workers' earnings and a total of \$79.2 million in total economic output or sales.

Table 8. Economic Impact of Capital Project Spending

	Direct	Indirect & Induced	Total
Employment	348.0	209.3	557.2
Workers' Earnings	\$19,176,619	\$7,902,685	\$27,079,304
Economic Output or Sales	\$48,355,899	\$30,870,406	\$79,226,306

Campus Research

Campus research, funded by external sources, provides an additional source of economic benefit for the region and state. According to the University, Western Michigan's external support for research totals \$27.3 million for 2016-17.

Table 9. Research Support

	2016-17
External Support	\$27,300,000
Total	\$27,300,000

The economic impact resulting from research is calculated by using the external support as the direct impact value. These expenditures represent revenues for campus based researchers. In the same way that the University's operation's expenditures support indirect and induced economic impacts in the region, these construction-related expenditures also ripple through the economy to support additional impacts in the form of employment, workers' earnings and revenues for businesses or economic output.

The research support of \$27 million support 216.9 jobs in the region, \$13.3 million in additional workers' earnings and a total of \$45.7 million in total economic output or sales.

Table 10. Economic Impact of Capital Project Spending

	Direct	Indirect & Induced	Total
Employment	72.2	144.6	216.9
Workers' Earnings	\$7,642,497	\$5,637,870	\$13,280,368
Economic Output or Sales	\$26,402,321	\$19,268,414	\$45,670,735

Student Spending

The economic impacts summarized above occur directly from the University's operation and employment. Those impacts result, in part, by student spending on tuition and books. Additional student spending contributes to secondary effects resulting from student expenditures for housing, food, transportation and other expenses.

According to data from the College Board, approximately 44.4% of a typical public four-year college undergraduate student's budget is dedicated to tuition, books and supplies. Approximately 55.6% of a student's spending is dedicated to housing, food, transportation and other expenses.

Table 11. Average Estimated Full-Time Undergraduate Budget: Public Four-Year In-State On-Campus

	Amount	Percent
Tuition and Fees	\$9,970	39.4%
Books and Supplies	\$1,250	4.9%
Room and Board	\$10,800	42.7%
Transportation	\$1,170	4.6%
Other Expenses	\$2,100	8.3%
Total	\$25,290	100.0%

Source: Trends in College Pricing, College Board 2017-18

<https://trends.collegeboard.org/college-pricing/figures-tables/average-estimated-undergraduate-budgets-2017-18>

Approximately 30.6% of Western Michigan students are from the immediate area, meaning approximately 69.4% of the students are drawn to the Kalamazoo area to attend school at Western Michigan. The University enables local students to remain in the area to further their education and attracts many students from outside of the area. As a result, the University affects spending patterns in the area that result in impacts deriving from student spending on housing, food, transportation and other expenses.

Impact DataSource estimates student spending in the community based on the number of students enrolled at Western Michigan and the national average spending on (1) Room and Board, (2) Transportation, and (3) Other Expenses. Impact DataSource adjusts the Room and Board spending to reflect the fact that a portion of students live on campus.

Table 12. Student Spending Supported by Western Michigan

	Amount Per Student	Students	Total
Room and Board*	\$10,800	17,473	\$188,708,400
Transportation	\$1,170	22,894	\$26,785,980
Other Expenses	\$2,100	22,894	\$48,077,400
Total Student Spending in the Region			\$263,571,780

* Room and Board spending is included for only those students living off campus.

The estimated student spending of \$263.6 million or \$11,513 per enrolled student supports 3,945.9 additional jobs in the region and \$105.7 million in additional workers' earnings and a total of \$403.8 million in total economic output or sales.

Table 13. Economic Impact of Student Spending

	Direct	Indirect & Induced	Total
Employment	2,923.2	1,022.7	3,945.9
Workers' Earnings	\$68,165,487	\$37,547,187	\$105,712,674
Economic Output or Sales	\$263,571,780	\$140,203,369	\$403,775,149

Visitor Spending

In addition to the impacts supported by the University's operations and its student's spending, the University supports additional economic impacts in the community as a result of visitor spending. Western Michigan provided visitor information for various types of visitors to the campus. A summary of the 23,400 non-spectator visitors during fiscal year 2013-14 is provided next.

Table 14. Western Michigan University Visitor Summary

	Visitors
First Year Orientation:	4,408
Athletics Events	251,292
Western Michigan Relays	2,842
Commencement	137,506
Alumni / Reunions	32,740
Visiting Athletes	121,000
Faculty / Staff candidates	288,986
Summer program visitors	2,814
Total	853,088

While in town visiting the University, the visitors spend money in the community at retail establishments and restaurants. Athletic events and Western Michigan Relays also involve ticket sales. Additionally, some visitors will stay overnight in Kalamazoo. The table below estimates the spending supported by out-of-town visitors to Western Michigan University. The detailed derivation of the visitor days and spending is provided in the Appendix.

Table 15. Visitor Spending Estimate in FY 2016-17

	Visitor Days	Food and Retail Spending	Lodging Spending	Ticket Sales/ Revenue	Total
First Year Orientation	4,408	\$178,524	\$178,164	\$0	\$356,688
Athletics Events	251,292	\$10,177,326	\$492,548	\$1,573,500	\$12,243,374
International Congress on Medieval Studies	8,526	\$345,303	\$83,594	\$363,944	\$792,841
Arts Performances	11,500	\$465,750	\$16,954	\$115,000	\$597,704
Miller Auditorium	137,506	\$5,568,993	\$673,750	\$0	\$6,242,743
Alumni / Reunions	32,740	\$1,325,970	\$802,130	\$0	\$2,128,100
Fetzer Center	121,000	\$4,900,500	\$296,450	\$0	\$5,196,950
Berhard Center	288,986	\$11,703,933	\$708,050	\$0	\$12,411,983
Athletic Summer Camps	2,814	\$113,967	\$124,068	\$0	\$238,035
Total	858,772	\$34,780,266	\$3,375,708	\$2,052,444	\$40,208,418

The estimated visitor spending of \$40.2 million or \$47 per visitor day supports 770.2 additional jobs in the region and \$19.0 million in additional workers' earnings and a total of \$61.0 million in total economic output or sales.

Table 16. Economic Impact of Visitor Spending

	Direct	Indirect & Induced	Total
Employment	604.7	165.5	770.2
Workers' Earnings	\$12,763,273	\$6,211,590	\$18,974,863
Economic Output or Sales	\$37,772,060	\$23,259,644	\$61,031,704

Fiscal Impact Summary

The economic impacts supported by Western Michigan University result in tax revenues for the state and local taxing jurisdictions. The fiscal impact analysis in this study focuses on the major revenue sources for local jurisdictions in which the University is located. Other nearby cities and counties benefit from the University as well; however, this analysis focuses on the City of Kalamazoo, Kalamazoo County, and the State of Michigan. The table below summarizes the annual tax revenues supported by WMU.

Table 17. Fiscal Impact of Western Michigan University

	Sales Taxes	Hotel Taxes	Property Taxes	Income Taxes	Total
State of Michigan	\$17,877,609	\$202,542	\$5,736,142	\$21,353,097	\$45,169,390
City of Kalamazoo	\$0	\$0	\$16,968,178	\$0	\$16,968,178
Kalamazoo County	\$0	\$168,785	\$7,176,392	\$0	\$7,345,177
Kalamazoo City School District	\$0	\$0	\$29,849,737	\$0	\$29,849,737
Kal Valley CC	\$0	\$0	\$2,685,375	\$0	\$2,685,375
Total	\$17,877,609	\$371,328	\$62,415,823	\$21,353,097	\$102,017,857

Sales Taxes

The taxable spending supported by the University results in sales tax revenue for the State of Michigan. The estimated annual sales taxes supported by the University are shown below.

Table 18. Sales Tax Collections

	Sales Amount	Tax Amount
Total Taxable Spending	\$297,960,145	
State of Michigan	<i>Sales Tax Rate: 6.000%</i>	\$17,877,609
City of Kalamazoo	<i>Sales Tax Rate: 0.000%</i>	\$0
Kalamazoo County	<i>Sales Tax Rate: 0.000%</i>	\$0
Total Sales Tax Collections		\$17,877,609

Hotel Taxes

The lodging spending supported by the University results in hotel tax revenue for the state of Michigan and the City of Kalamazoo in addition to the sales taxes shown above. The table below shows the hotel taxes based on the estimated lodging spending by out-of-town visitors to Western Michigan University.

Table 19. Hotel Tax Collections

	Sales Amount	Tax Amount
Total Lodging Spending	\$3,375,708	
State of Michigan	<i>Hotel Tax Rate: 6.000%</i>	\$202,542
City of Kalamazoo	<i>Hotel Tax Rate: 0.000%</i>	\$0
Kalamazoo County	<i>Hotel Tax Rate: 5.000%</i>	\$168,785
Total Hotel Tax Collections		\$371,328

Property Taxes

The University's property is not on local tax rolls but employees, staff, faculty at the University, and workers in spin-off jobs in the community own or occupy residential property on which they directly or indirectly pay property taxes as summarized below.

Table 20. Property Tax Collections

	Sales Amount	Tax Amount
Total residential market value supported	\$956,023,696	
State of Michigan	<i>Property Tax Rate per \$1,000: 6.0000</i>	\$5,736,142
City of Kalamazoo	<i>Property Tax Rate per \$1,000: 17.7487</i>	\$16,968,178
Kalamazoo County	<i>Property Tax Rate per \$1,000: 7.5065</i>	\$7,176,392
Kalamazoo City School District	<i>Property Tax Rate per \$1,000: 31.2228</i>	\$29,849,737
Kal Valley CC	<i>Property Tax Rate per \$1,000: 2.8089</i>	\$2,685,375
Total Property Tax Collections		\$62,415,823

Income Taxes

The workers' earnings supported by the University results in individual income tax revenue for the State of Michigan. Impact DataSource applies the income rate of 4.25% to workers' earnings less benefits to estimate the income tax supported for the state of Michigan. The tax rate is applied to 75% of the average earnings per worker to represent taxable income.

Table 21. Individual Income Tax Collections

	Sales Amount	Tax Amount
Total workers' earnings less benefits	\$502,425,805	
State of Michigan	<i>Effective individual income tax rate: 4.25%</i>	\$21,353,097
Total Individual Income Tax Collections		\$21,353,097

Overview of Methodology

This report presents the results of an analysis undertaken by Impact DataSource, an Austin, TX based economic consulting firm.

Economic impacts can be categorized into two main types of impacts. First, the direct economic impacts are the jobs and payroll directly created by the University. Second, this economic impact analysis calculates the indirect and induced impacts that result from the University. Indirect jobs and salaries are created in new or existing area firms, such as maintenance companies and service firms, that may supply goods and services for the University. In addition, induced jobs and salaries are created in new or existing local businesses, such as retail stores, gas stations, banks, restaurants, and service companies that may supply goods and services to new workers and their families. The impacts supported by students and visitors are categorized as indirect and induced impacts.

Regional Input-Output Modeling System (RIMS II)

The economic impact estimates in this report are based on the Regional Input-Output Modeling System (RIMS II), a widely used regional input-output model developed by the U. S. Department of Commerce, Bureau of Economic Analysis. The RIMS II model is a standard tool used to estimate regional economic impacts. The economic impacts estimated using the RIMS II model are generally recognized as reasonable and plausible assuming the data input into the model is accurate or based on reasonable assumptions. The RIMS II model is described in basic detail below.

Generally speaking, input-output modeling attempts to estimate the changes that occur in all industries based on a change in the demand for the output of an industry. An input-output model allows an analyst to identify the subsequent changes occurring in various industries within a regional economy in order to estimate the total impact on the economy. Total economic impact is the sum of three components: (1) direct, (2) indirect, and (3) induced impacts.

If the demand for the output of an industry, measured by industry sales or revenue, increases by \$1.0 million, total regional output increases by \$1.0 million. This initial change in output is called the change in direct economic output and also referred to as the direct expenditure effect. The change in total economic output in the region resulting from the initial change does not stop with the change in direct economic output. Businesses in a variety of industries within the region will be called upon to increase their production to meet the needs of the industry where the initial increase in demand occurs. Further, other suppliers must also increase production to meet the needs of the group of initial supplier firms to the industry. This increase in expenditures by regional suppliers is considered the indirect economic impact of the initial \$1.0 million in sales, and is classified as indirect expenditures of the total economic impact or the change in indirect economic output.

The total economic impact of the \$1.0 million in sales includes one more component, the induced impact. All economic activity, whether direct or indirect, that results from the initial increase in demand of \$1.0 million, requires workers, and these workers must be paid for their labor. This means that part of the direct and indirect expenditures is actually in the form of wages and salaries paid to workers in the various affected industries. These wages and salaries will in turn be spent in part on goods and services produced locally in the region. This spending is another part of the regional economic impacts referred to as induced impacts and is classified as induced expenditures or the change in induced economic output.

Based on the initial direct impact, the RIMS II model can be used to estimate the direct, indirect and induced impacts on economic output, value added, earnings and employment in a given region. Economic output is gross output and is the sum of the intermediate inputs and final use. This is a duplicative total in that goods and services will be counted multiple times if they are used in the production of other goods and services. Value added is defined as the value of gross output less intermediate inputs. Workers' earnings or earnings consist of wages and salaries, employer provided benefits and proprietors' income. Employment consists of a count of jobs that include both full-time and part-time workers.

The RIMS II model is based on regional multipliers, which are summary measures of economic impacts generated from changes in direct expenditures, earnings, or employment. Multipliers show the overall impact to a regional economy resulting from a change in demand in a particular industry. Multipliers can vary widely by region. Multipliers are higher for regions with a diverse industry mix. Industries that buy most of their materials from outside the state or region tend to have lower multipliers. Multipliers tend to be higher for industries located in larger areas because more of the spending by the industry stays within the area.

The RIMS II model generates six types of multipliers for approximately 400 industrial sectors for any region in the United States. The multipliers include four “final-demand” multipliers and two “direct-effect” multipliers. Final demand multipliers indicate the impact of changes in final demand for the output of a particular regional industry on total regional output, earnings, employment and value added. Direct-effect multipliers indicate the impact of changes in regional earnings or employment within a particular industry on total employment or earnings within a region.

Final-demand output multipliers indicate the total regional output (direct, indirect and induced expenditures) that results from an increase in direct expenditures for a good produced by a particular regional industry. For example, if an industry in a particular region is said to have a final demand output multiplier of 2, this tells us that a \$1 increase in final demand for the good produced by that industry results in a \$2 increase in total output or expenditures within the regional economy. Final-demand earnings multipliers indicate the impact of an increase in final demand for the good of a particular regional industry on the total earned income of households within the region. Final-demand employment multipliers indicate the increase in total regional employment that results from a \$1.0 million increase in final demand for the good produced by a particular regional industry. Final-demand value-added multipliers indicate the increase in total regional value added that results from a \$1.0 million increase in final demand for the good produced by a particular regional industry. Direct-effect earnings multipliers indicate the impact of a \$1 change in earnings within a particular regional industry on total earnings in all industries within a region. Direct-effect employment multipliers indicate the impact of a change in employment in a particular regional industry on total employment in all industries within a region.

Theoretically, changes in final demand drive the total change in economic output, earnings, and employment. However, these multipliers relationships can be used to estimate impacts in other ways if only limited information is known about a project. For example, the multiplier relationships can be used to estimate the increase in direct economic output based on a given level of employment in a specific industry.

Additional Notes on RIMS II

RIMS II multipliers are based on the average relationships between the inputs and outputs produced in a local economy. The multipliers are a useful tool for studying the potential impacts of changes in economic activity. However, the relative simplicity of input-output multipliers comes at the cost of several limiting assumptions.

- Firms have no supply constraints—Input-output based multipliers assume that industries can increase their demand for inputs and labor as needed to meet additional demand.
- Firms have fixed patterns of purchases—Input-output based multipliers assume that an industry must double its inputs to double its output.
- Firms use local inputs when they are available—The method used by RIMS II to develop regional multipliers assumes that firms will purchase inputs from firms in the region before using imports.

RIMS II, like all input-output models, is a “static equilibrium” model. This means that there is no specific time dimension associated with the results using the model. For the RIMS II model, it is customary to assume that the impacts occur in one year because the model is based on annual data.

The fiscal impacts calculated in this report are described in the text of the report.

About Impact DataSource

Impact DataSource is an Austin economic consulting, research, and analysis firm founded in 1993. The firm has conducted over 2,500 economic impact analyses of firms, projects, and activities in most industry groups in Texas and more than 30 other states.

In addition, Impact DataSource has prepared and customized more than 70 economic impact models for its clients to perform their own analyses of economic development projects. These clients include the New Mexico Economic Development Department and the Tennessee Department of Economic and Community Development.

The New Mexico Department of Economic Development uses Impact DataSource's computer model to project the economic impact of new or expanding firms in the state, including costs and benefits for the State of New Mexico, as well as each local taxing district. The model also analyzes the amount of eligible state and local incentives and calculates a rate of return and payback period for these incentives.

Appendix

University Operations - Impact Calculations

Operating Budget		
	Operating expenditures, excluding payroll	\$321,983,397
	Payroll	\$342,999,918
	<u>Total Operating Expenditures</u>	<u>\$664,983,315</u>
	Percent of expenditures occurring within 3-county region	85.0%
	Percent of expenditures occurring within State	95.0%
Payroll	Compensation	\$238,907,076
	Benefits	\$118,081,939
	<u>Payroll</u>	<u>\$356,989,015</u>
Employment	<u>Total</u>	<u>8,337</u>
	Faculty	1,451
	Staff	1,886
	Student Employees	5,000

University Operations Impact in Kalamazoo-West Kalamazoo, IA

	Direct	Indirect & Induced	Total
Employment	8,337.0	2,862.9	11,199.9
Workers' Earnings	\$356,989,015	\$147,864,850	\$504,853,865
Economic Output or Sales	\$616,685,805	\$403,004,174	\$1,019,689,979

	Employment	Workers' Earnings	Economic Output	Value Added
Agriculture, forestry, fishing, and hunting	49.8	\$1,259,190	\$3,760,632	\$1,788,389
Mining	0.1	\$0	\$61,650	\$0
Utilities	14.3	\$2,788,206	\$17,631,818	\$10,051,979
Construction	30.1	\$2,518,379	\$6,349,920	\$3,576,778
Durable goods manufacturing	25.0	\$2,248,553	\$9,617,355	\$3,330,103
Nondurable goods manufacturing	89.7	\$6,655,717	\$28,358,868	\$9,558,630
Wholesale trade	78.3	\$8,544,502	\$20,529,354	\$13,937,099
Retail trade	374.6	\$14,930,392	\$32,242,800	\$21,460,666
Transportation and warehousing	84.9	\$6,295,949	\$12,761,491	\$7,091,887
Information	20.1	\$1,708,900	\$6,411,570	\$3,761,783
Finance and insurance	155.3	\$10,613,170	\$32,427,749	\$16,958,860
Real estate and rental and leasing	592.0	\$22,845,299	\$109,859,789	\$76,592,377
Professional, scientific, and technical services	88.7	\$7,645,080	\$13,501,287	\$8,510,264
Management of companies and enterprises	16.6	\$2,788,206	\$4,562,079	\$2,713,418
Administrative and waste management services	176.8	\$7,824,965	\$14,117,784	\$9,250,287
Educational services	8,500.6	\$362,295,600	\$625,131,816	\$380,063,462
Health care and social assistance	356.9	\$24,734,084	\$42,723,251	\$25,469,124
Arts, entertainment, and recreation	41.3	\$1,079,305	\$2,527,638	\$1,295,040
Accommodation	60.7	\$2,788,206	\$7,706,214	\$4,871,818
Food services and drinking places	234.0	\$6,116,064	\$14,549,332	\$7,708,573
Other services	166.1	\$8,544,502	\$14,857,581	\$8,818,607
Households	43.9	\$629,595	\$0	\$431,680
Total	11,199.9	\$504,853,865	\$1,019,689,979	\$617,240,823

Construction - Impact Calculations

Construction Spending	
	Amount
2013-2018	265,100,000.0
2019-2021 Anticipated	\$168,000,000
<u>Average Per Year</u>	<u>\$50,000,000</u>

Construction Impact			
	Direct	Indirect & Induced	Total
Employment	348.0	209.3	557.2
Workers' Earnings	\$19,176,619	\$7,902,685	\$27,079,304
Economic Output or Sales	\$48,355,899	\$30,870,406	\$79,226,306

	Employment	Workers' Earnings	Economic Output	Value Added
Agriculture, forestry, fishing, and hunting	2.7	\$43,554	\$174,081	\$91,886
Mining	0.1	\$4,839	\$29,014	\$14,508
Utilities	0.6	\$77,430	\$701,161	\$401,396
Construction	349.0	\$19,234,691	\$48,573,501	\$29,292,246
Durable goods manufacturing	18.0	\$1,006,588	\$5,952,611	\$2,118,211
Nondurable goods manufacturing	5.9	\$329,077	\$2,108,317	\$696,398
Wholesale trade	11.2	\$798,495	\$2,794,971	\$1,895,750
Retail trade	35.4	\$919,480	\$2,901,354	\$1,919,931
Transportation and warehousing	9.1	\$411,346	\$1,426,499	\$706,070
Information	1.3	\$72,590	\$386,847	\$227,297
Finance and insurance	11.4	\$488,776	\$2,185,687	\$1,126,811
Real estate and rental and leasing	20.1	\$512,973	\$3,563,830	\$2,490,590
Professional, scientific, and technical services	6.9	\$416,185	\$1,083,172	\$657,709
Management of companies and enterprises	1.3	\$145,181	\$343,327	\$207,952
Administrative and waste management services	9.5	\$275,844	\$710,832	\$473,938
Educational services	8.0	\$188,735	\$444,874	\$270,821
Health care and social assistance	29.5	\$1,330,826	\$3,360,735	\$2,002,145
Arts, entertainment, and recreation	2.7	\$43,554	\$154,739	\$77,378
Accommodation	3.5	\$106,466	\$430,368	\$270,821
Food services and drinking places	16.1	\$275,844	\$957,447	\$502,954
Other services	11.2	\$362,952	\$942,940	\$546,479
Households	3.6	\$33,876	\$0	\$33,853
Total	557.2	\$27,079,304	\$79,226,306	\$46,025,145

Campus Research - Impact Calculations

Research Spending	
	Amount
2016-2017 External Support	\$27,300,000

Research Impact			
	Direct	Indirect & Induced	Total
Employment	72.2	144.6	216.9
Workers' Earnings	\$7,642,497	\$5,637,870	\$13,280,368
Economic Output or Sales	\$26,402,321	\$19,268,414	\$45,670,735

	Employment	Workers' Earnings	Economic Output	Value Added
Agriculture, forestry, fishing, and hunting	1.8	\$31,703	\$129,442	\$68,654
Mining	0.0	\$0	\$5,283	\$2,641
Utilities	0.5	\$60,764	\$560,036	\$319,504
Construction	0.9	\$50,197	\$184,918	\$105,621
Durable goods manufacturing	1.7	\$103,035	\$591,736	\$219,164
Nondurable goods manufacturing	3.1	\$177,009	\$1,027,614	\$409,282
Wholesale trade	3.0	\$213,996	\$747,595	\$506,982
Retail trade	14.8	\$388,363	\$1,217,814	\$810,643
Transportation and warehousing	5.1	\$232,489	\$739,670	\$393,439
Information	1.3	\$68,690	\$324,927	\$190,118
Finance and insurance	8.7	\$398,931	\$1,798,984	\$971,715
Real estate and rental and leasing	15.8	\$412,140	\$2,903,206	\$2,001,522
Professional, scientific, and technical services	97.2	\$9,124,618	\$30,282,949	\$14,198,129
Management of companies and enterprises	1.1	\$118,887	\$280,018	\$168,994
Administrative and waste management services	17.9	\$557,446	\$1,265,365	\$897,780
Educational services	5.8	\$142,664	\$348,702	\$213,883
Health care and social assistance	14.5	\$657,840	\$1,661,617	\$987,558
Arts, entertainment, and recreation	1.6	\$26,419	\$92,459	\$47,530
Accommodation	2.4	\$71,332	\$285,301	\$182,197
Food services and drinking places	10.0	\$171,725	\$594,378	\$311,583
Other services	7.9	\$256,267	\$628,720	\$388,158
Households	1.8	\$15,852	\$0	\$15,843
Total	216.9	\$13,280,368	\$45,670,735	\$23,410,938

Student Spending - Impact Calculations

Enrollment		22,893
Estimated students from:		
	Kalamazoo MSA	7,000
	Elsewhere in Michigan, outside of Kalamazoo MSA	12,064
	Outside of Michigan, in US	2,084
	International	1,746
	Total Students	22,894
	Kalamazoo MSA	7,000 30.6%
	Outside Kalamazoo MSA	15,894 69.4%
	Students living on campus	5421 23.7%
	Students living off campus	17,473 76.3%

Enrollment

	Total
Undergraduate	17,935
Graduate, Law, Pharm.D.	4,958
Total	22,893

Student Spending

	Amount Per Student	Students	Total
Room and Board*	\$10,800	17,473	\$188,708,400
Transportation	\$1,170	22,894	\$26,785,980
Other Expenses	\$2,100	22,894	\$48,077,400
Total Student Spending in the Region			\$263,571,780

* Room and Board spending is included for only those students living off campus.

RIMS II Industry	Amount	Margin	Final Demand
441000 Motor vehicle and parts dealers	\$20,089,485	41.9%	\$8,417,494
445000 Food and beverage stores	\$47,177,100	35.9%	\$16,936,579
452000 General merchandise stores	\$54,773,895	53.3%	\$29,194,486
531000 Real estate	\$94,354,200	100.0%	\$94,354,200
722110 Full-service restaurants	\$47,177,100	100.0%	\$47,177,100
Total	\$263,571,780		\$196,079,859

Student Impact in Kalamazoo-West Kalamazoo, IA

	Direct	Indirect & Induced	Total
Employment	2,923.2	1,022.7	3,945.9
Workers' Earnings	\$68,165,487	\$37,547,187	\$105,712,674
Economic Output or Sales	\$263,571,780	\$140,203,369	\$403,775,149

	Employment	Workers' Earnings	Economic Output	Value Added
Agriculture, forestry, fishing, and hunting	17.8	\$284,022	\$1,252,309	\$563,973
Mining	0.1	\$0	\$28,305	\$14,154
Utilities	6.8	\$845,078	\$7,931,917	\$4,513,207
Construction	28.0	\$1,530,437	\$5,631,740	\$3,175,274
Durable goods manufacturing	11.8	\$674,272	\$4,110,273	\$1,430,996
Nondurable goods manufacturing	25.7	\$1,328,132	\$8,237,446	\$2,755,790
Wholesale trade	27.4	\$1,944,696	\$6,818,440	\$4,630,972
Retail trade	1,684.3	\$42,613,067	\$132,914,893	\$89,541,754
Transportation and warehousing	69.3	\$3,169,714	\$9,900,716	\$5,401,474
Information	8.9	\$477,329	\$2,342,558	\$1,370,611
Finance and insurance	61.3	\$2,895,653	\$12,735,539	\$6,763,772
Real estate and rental and leasing	692.6	\$16,802,499	\$120,038,509	\$84,350,085
Professional, scientific, and technical services	35.1	\$1,963,468	\$4,918,043	\$3,163,865
Management of companies and enterprises	20.2	\$2,220,550	\$5,270,239	\$3,164,944
Administrative and waste management services	123.0	\$3,466,719	\$8,505,446	\$5,831,831
Educational services	32.6	\$766,633	\$1,811,148	\$1,100,399
Health care and social assistance	114.5	\$5,171,846	\$13,053,359	\$7,771,477
Arts, entertainment, and recreation	12.2	\$198,930	\$705,448	\$363,614
Accommodation	15.2	\$454,627	\$1,836,531	\$1,165,135
Food services and drinking places	895.5	\$17,098,476	\$51,456,722	\$26,925,421
Other services	49.4	\$1,676,556	\$4,275,569	\$2,545,300
Households	14.1	\$129,969	\$0	\$129,848
Total	3,945.9	\$105,712,674	\$403,775,149	\$256,673,895

Visitor Spending - Impact Calculations

Western Michigan University Visitor Count	
	Visitors
Prospective Students campus visits (incl. family)	0
First Year Orientation	4,408
Parent and Family Visitors	0
Athletics Events	251,292
International Congress on Medieval Studies	2,842
Arts Performances	11,500
Miller Auditorium	137,506
0	0
Alumni / Reunions	32,740
Fetzer Center	121,000
Berhard Center	288,986
Athletic Summer Camps	2,814
Total	853,088

Western Michigan University Visitor Assumptions & Spending Calculations - Part 1 of 3

	Prospective Students campus visits (incl. family)	First Year Orientation	Parent and Family Visitors	Athletics Events	Subtotal
Annual visitors	0	4,408	0	251,292	
Average length of visit in days	1.0	1.0	2.0	1.0	
Average spending per day, excluding lodging	\$40.50	\$40.50	\$40.50	\$40.50	
<u>Visitor spending, excl. lodging</u>	<u>\$0</u>	<u>\$178,524</u>	<u>\$0</u>	<u>\$10,177,326</u>	
Percent of visitors requiring a hotel stay	90.0%	82.5%	90.0%	4.0%	
Number of hotel nights	1.0	1.0	1.0	1.0	
Average hotel room occupancy	3.0	2.0	2.0	2.0	
Estimated hotel nights	0	1,818	0	5,026	
Average hotel rate in the area	\$98.00	\$98.00	\$98.00	\$98.00	
<u>Visitor spending on lodging</u>	<u>\$0</u>	<u>\$178,164</u>	<u>\$0</u>	<u>\$492,548</u>	
Visitor Days	0	4,408	0	251,292	255,700
Hotel Nights	0	1,818	0	5,026	6,844
Visitor spending, excl. lodging	\$0	\$178,524	\$0	\$10,177,326	\$10,355,850
Visitor spending on lodging	\$0	\$178,164	\$0	\$492,548	\$670,712
Ticket Sales*	\$0	\$0	\$0	\$1,573,500	\$1,573,500
Total Spending & Ticket Sales	\$0	\$356,688	\$0	\$12,243,374	\$12,600,062

Western Michigan University Visitor Assumptions & Spending Calculations - Part 2 of 3

	International Congress on	Arts Performances	Miller Auditorium	0	Subtotal
Annual visitors	2,842	11,500	137,506	0	
Average length of visit in days	3.0	1.0	1.0	1.0	
Average spending per day, excluding lodging	\$40.50	\$40.50	\$40.50	\$40.50	
<u>Visitor spending, excl. lodging</u>	<u>\$345,303</u>	<u>\$465,750</u>	<u>\$5,568,993</u>	<u>\$0</u>	
Percent of visitors requiring a hotel stay	90.0%	3.0%	10.0%	5.0%	
Number of hotel nights	1.0	1.0	1.0	1.0	
Average hotel room occupancy	3.0	2.0	2.0	1.0	
Estimated hotel nights	853	173	6,875	0	
Average hotel rate in the area	\$98.00	\$98.00	\$98.00	\$98.00	
<u>Visitor spending on lodging</u>	<u>\$83,594</u>	<u>\$16,954</u>	<u>\$673,750</u>	<u>\$0</u>	
Visitor Days	8,526	11,500	137,506	0	157,532
Hotel Nights	853	173	6,875	0	7,901
Visitor spending, excl. lodging	\$345,303	\$465,750	\$5,568,993	\$0	\$6,380,046
Visitor spending on lodging	\$83,594	\$16,954	\$673,750	\$0	\$774,298
Ticket Sales*	\$363,944	\$115,000	\$0	\$0	\$478,944
Total Spending & Ticket Sales	\$792,841	\$597,704	\$6,242,743	\$0	\$7,633,288

Western Michigan University Visitor Assumptions & Spending Calculations - Part 3 of 3

	Alumni / Reunions	Fetzer Center	Berhard Center	Athletic Summer Camps	Grand Total
Annual visitors	32,740	121,000	288,986	2,814	
Average length of visit in days	1.0	1.0	1.0	1.0	
Average spending per day, excluding lodging	\$40.50	\$40.50	\$40.50	\$40.50	
<u>Visitor spending, excl. lodging</u>	<u>\$1,325,970</u>	<u>\$4,900,500</u>	<u>\$11,703,933</u>	<u>\$113,967</u>	
Percent of visitors requiring a hotel stay	50.0%	5.0%	5.0%	90.0%	
Number of hotel nights	1.0	1.0	1.0	1.0	
Average hotel room occupancy	2.0	2.0	2.0	2.0	
Estimated hotel nights	8,185	3,025	7,225	1,266	
Average hotel rate in the area	\$98.00	\$98.00	\$98.00	\$98.00	
<u>Visitor spending on lodging</u>	<u>\$802,130</u>	<u>\$296,450</u>	<u>\$708,050</u>	<u>\$124,068</u>	
Visitor Days	32,740	121,000	288,986	2,814	858,772
Hotel Nights	8,185	3,025	7,225	1,266	34,446
Visitor spending, excl. lodging	\$1,325,970	\$4,900,500	\$11,703,933	\$113,967	\$34,780,266
Visitor spending on lodging	\$802,130	\$296,450	\$708,050	\$124,068	\$3,375,708
Ticket Sales*	\$0	\$0	\$0	\$0	\$2,052,444
Total Spending & Ticket Sales	\$2,128,100	\$5,196,950	\$12,411,983	\$238,035	\$40,208,418

RIMS II Industry	Amount	Margin	Final Demand
4A0000 Other retail	\$5,217,040	53.3%	\$2,780,682
722110 Full-service restaurants	\$29,563,226	100.0%	\$29,563,226
721000 Accommodation	\$3,375,708	100.0%	\$3,375,708
711200 Spectator sports	\$2,052,444	100.0%	\$2,052,444
Total	\$40,208,418		\$37,772,060

Visitor Impact

	Direct	Indirect & Induced	Total
Employment	604.7	165.5	770.2
Workers' Earnings	\$12,763,273	\$6,211,590	\$18,974,863
Economic Output or Sales	\$37,772,060	\$23,259,644	\$61,031,704

	Employment	Workers' Earnings	Economic Output	Value Added
Agriculture, forestry, fishing, and hunting	3.5	\$57,812	\$255,792	\$125,403
Mining	0.0	\$0	\$2,956	\$2,957
Utilities	0.8	\$95,771	\$905,626	\$515,779
Construction	1.5	\$79,628	\$298,420	\$166,765
Durable goods manufacturing	3.0	\$169,798	\$1,024,811	\$356,659
Nondurable goods manufacturing	7.1	\$349,306	\$2,214,864	\$720,216
Wholesale trade	6.2	\$443,209	\$1,553,647	\$1,054,458
Retail trade	59.6	\$1,466,583	\$4,738,760	\$3,069,969
Transportation and warehousing	8.0	\$406,377	\$1,166,965	\$669,407
Information	1.6	\$86,640	\$410,498	\$239,402
Finance and insurance	9.0	\$407,228	\$1,813,436	\$946,075
Real estate and rental and leasing	22.4	\$576,214	\$4,046,498	\$2,802,845
Professional, scientific, and technical services	5.9	\$324,835	\$804,459	\$532,304
Management of companies and enterprises	4.7	\$513,381	\$1,217,229	\$730,791
Administrative and waste management services	11.6	\$334,774	\$880,593	\$581,154
Educational services	5.8	\$136,344	\$323,007	\$198,262
Health care and social assistance	20.6	\$928,428	\$2,343,833	\$1,393,962
Arts, entertainment, and recreation	28.1	\$1,176,508	\$2,209,353	\$1,705,372
Accommodation	30.7	\$934,756	\$3,716,034	\$2,350,236
Food services and drinking places	528.4	\$10,151,734	\$30,314,486	\$15,848,331
Other services	9.2	\$312,585	\$790,437	\$472,177
Households	2.5	\$22,951	\$0	\$22,943
Total	770.2	\$18,974,863	\$61,031,704	\$34,505,465

Taxable Spending - Impact Calculations

The University's employees and other supported workers are responsible for significant taxable spending in the area. An estimate of total direct and spin-off worker spending is provided below. The calculations shown below rely on the assumption that workers spend 25.0% of gross earnings on taxable goods and services. This percentage is derived from sales tax deduction tables for Michigan produced by the Internal Revenue Service.

Table 22. Taxable Spending by Workers

	Amount
Total Workers' Earnings	\$669,901,073
<i>Wages as a % of Earnings</i>	75.0%
<i>Taxable Spending as % of Wages</i>	25.0%
<i>% of taxable spending that is local</i>	70.0%
Taxable Spending by Workers	\$87,924,516

Students attending the University make taxable purchases well. As much as 35% of total student spending is assumed to be for rent or other purchases not subject to sales tax. Therefore, taxable student spending is estimated to be 65% of total student spending.

Table 23. Taxable Spending by Students

	Amount
Local Student Spending	\$263,571,780
<i>Taxable Spending %</i>	65.0%
Taxable Spending by Students	\$171,321,657

In addition, the visitor's spending is assumed to be 100% taxable and Western Michigan reports annual taxable sales of \$1.0 million through its operations.

Table 24. Total Taxable Spending

	Amount
Taxable Spending by Workers	\$87,924,516
Taxable Spending by Students	\$171,321,657
Taxable Spending by Visitors, excluding Lodging	\$36,832,710
Taxable Spending at University	\$1,881,262
Total General Taxable Spending	\$297,960,145

Residential Property on Local Tax Rolls

Although the University's property is not on local tax rolls, employees, staff, faculty at the University, and workers in spin-off jobs in the community own or occupy residential property on which they directly or indirectly pay property taxes, as shown below.

Table 25. Total Residential Property Supported

	Amount
Number of direct and spin-off workers supported by Western Michigan	16,690.2
Percent of workers who live in Kalamazoo County*	59.3%
Median value of owner-occupied housing units**	\$96,600
Total residential market value supported	\$956,023,696

* Estimate based on data from the U.S. Census OnTheMap Program, *Commuting Patterns for the region*.

** U.S. Census Bureau, *American Community Survey (ACS), 2012-16*