

MEASURING BOWLING GREEN STATE UNIVERSITY'S IMPACT ON OHIO'S ECONOMY

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RESEARCH STATEMENT

The economic impacts contained in this report are based on the audited financial statements of Bowling Green State University. The financial information is taken as datum and no attempt was made to verify or audit the BGUS financial systems and procedures. This report does not include the economic value of intangible items such as the value of an undergraduate education or the potential valuation of technology transfers. Every attempt was made to accurately measure and spatially place the relevant, “real” economic impacts.

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EXECUTIVE SUMMARY

Institutions of higher education have a significant role in ensuring Ohio's future economic success. Higher education conducts the core research that becomes the origin of commercial achievement. Universities provide the classical education that shapes the intellect and character of future economic leaders. Universities also provide the practical education and training necessary to sharpen the skill sets of Ohio's current workforce. The economic significance of institutions of higher education will become more important as Ohio transforms itself into the "knowledge-based" system that will define the economy of the 21st century.

Universities have a very tangible impact on Ohio's current economy. Specifically, universities are significant economic engines in themselves. They are large employers of local labor and their spending supports a wide variety of local businesses. This is especially true of rural universities. Rural universities are not only the primary economic driver of the community they also provide the region's social and cultural inspiration.

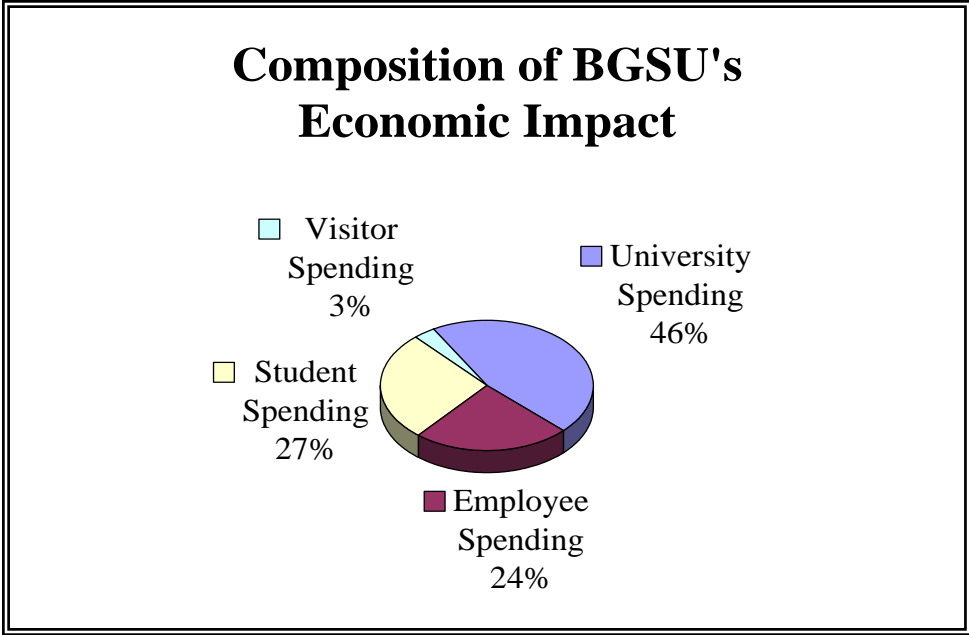
The purpose of this study is to identify and measure the significant economic impact that Bowling Green State University has on Ohio's economy. The University's audited financial statements are the foundation of this report. As a consequence, this study captures all financial activity conducted by Bowling Green State University and reported through its audited and compliant systems. This includes university expenditure items, such as purchases of tangible goods and related services, payroll for all staff, capital improvements, physical plant, and inventory purchases. Examples of university revenues include grants and state appropriations, tuition income, private gifts, and sales by university auxiliary enterprises.

This study also includes estimates of the economic impact of BGSU's student, employee, and visitor spending. No attempt was made to estimate the value of non-tangible expenditure streams. This study does not attempt to measure the added value of student earning capacity; the economic impact of faculty earnings from private consulting, patent and book royalties; or the economic impact of faculty and staff expertise used by businesses and public sector organizations.

Every attempt was made to precisely locate the impact the location of the true economic impact. To this end, the study utilizes a geographic information system (GIS) to spatially locate the institution's expenditure transactions. Once the geographic spending patterns were determined, the data were coupled with an economic Input/Output model to determine the appropriate spending multipliers for Bowling Green State University's service area.

Selected Highlights:

- BGSU generates more than \$700 million dollars annually for the Ohio economy.
- BGSU economic activity creates nearly 9,000 jobs for Ohioans.
- BGSU generates \$8 dollars in local economic activity for each dollar it receives in state appropriations.
- BGSU generates more tax revenues (federal, state, local) than it receives in state appropriations.
- BGSU capital improvements and operations spending generate \$322 million dollars annually for Ohio's economy.
- BGSU employee spending generates \$167.5 million dollars annually for Ohio's economy.
- BGSU student spending generates \$191 million dollars annually for Ohio's economy.
- BGSU visitors generate \$25.4 million dollars in economic activity annually. (The majority is retained by Wood County businesses.)
- BGSU generates \$28.5 million dollars in state and local tax revenues annually.



**Table 1:
Dollar Value of the Economic Impact of Bowling Green State University on Ohio's Economy**

	Direct	Indirect	Induced	Total
University Spending	179,357,100	52,708,701	89,868,118	321,933,819
Employee Spending	120,712,081	24,311,698	22,564,077	167,587,856
Student Spending	136,508,945	28,218,941	26,203,283	190,931,168
Visitor Spending	14,528,435	3,925,831	5,955,345	24,409,611
Total:	\$451,106,561	\$109,165,171	\$144,590,823	\$704,862,454

**Table 2:
Ohio Employment Generated From the economic impact of Bowling Green State University**

	Direct	Indirect	Induced	Total
University Spending	3,667	715	1,090	5,472
Employee Spending	907	258	274	1,439
Student Spending	1,014	304	318	1,636
Visitor Spending	335	42	72	450
Total:	5,923	1,320	1,753	8,996

Note:

- ***Direct*** impact measures the actual expenditure conducted by each constitute group.
Direct university spending includes capital spending, operation expenses. The amount of direct university spending is taken from the audited financial statements.
- ***Indirect*** impact measures the volume of industry-to-industry purchases that result from BGSU activity.
- ***Induced*** impact reflects the change in household spending that result from direct and indirect activity.
 - ***Total*** impact is the summation of direct, indirect, and induced.

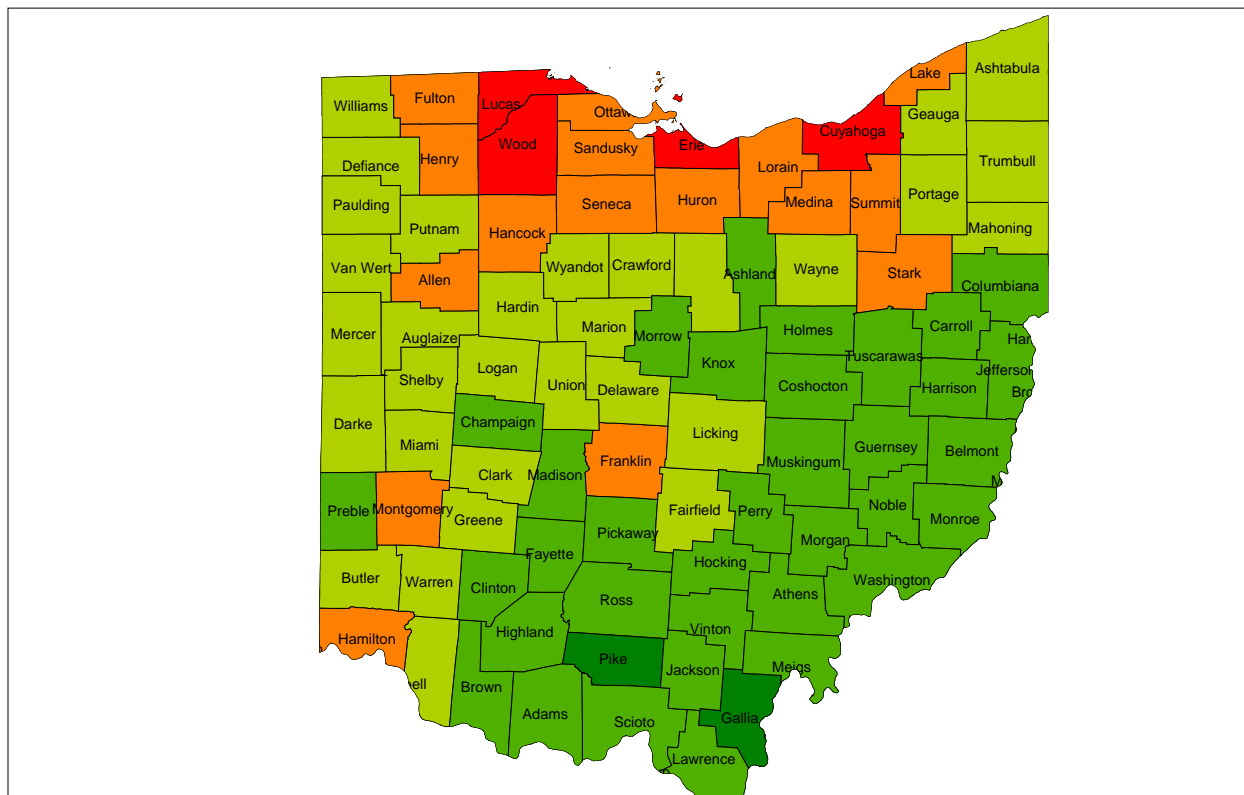
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INTRODUCTION

Bowling Green State University is located in Wood County Ohio. The main campus is in the rural community of Bowling Green, Ohio approximately 25 miles south of Toledo. The University has approximately 20,000 students and employees 839 faculty.

Enrollments by County



- 1,420-2,100 (red)
- 250-1420 (orange)
- 50-250 (Lt. Green)
- 1-50 (Green)
- 0 (Dk. Green)

The expenditures of BGSU affect the economy in three ways. The *direct* impact includes the purchases of resources (labor, goods, and services) that occur from normal university operations. Such purchases would include local utilities, supplies, and general salary and service expenses. The *indirect* impact measures the volume of industry-to-industry purchases. For example, if BGSU purchases goods or services from other Ohio firms, the value of these items must be included. Finally, the *induced* impact reflects the change in household demand as those employees of BGSU and its suppliers earn dollars for consumer spending. This analysis disaggregates the ultimate economic impact into these three categories

in order to investigate the process by which dollars and jobs are generated. The direct impacts are obtained from University financial records, whereas the indirect and induced impacts are estimated with an input-output model.

This study's goal is to measure the direct, indirect and induced economic impacts as accurately as possible. All the revenue and expenditure transactions were reconciled and any non-cash (e.g. depreciation, accruals, etc.) transactions were eliminated. Therefore, any "real" financial activity conducted by the University and reported through its GAAP audited system was captured. This includes University expenditure items such as purchases of tangible goods and related services, payroll for all staff, and purchases for physical plant and inventory. The revenue amounts include interest income, grants and appropriations, private gifts, and sales of auxiliary goods. Further, this study adds estimates of employee, student, and visitor spending.

It should be made clear at the outset that this report is purely an economic impact study. Its sole purpose is to determine the economic impact the University had on Ohio's economy. Although this study depends on the University's financial records, it is in no way intended to represent any audit of those financial procedures.

METHODOLOGY

This section explores the general methodology used to calculate the economic impacts. A brief discussion of the models employed is followed by a description of the pertinent data used in the economic calculations. The *primary* data are directly from Bowling Green State University's audited financial statements and represents the most accurate data available. The *secondary* data, items such as industry employment levels and local demographic characteristics, are taken from a number of state and national data sources.

General Economic Forecasting Model Specification

This study employed an Input\Output model to make the primary economic forecasts. Input\Output methodology allows the examination of forward and backward linkages that are present in any regional economy. The model measures the total annual economic activity that results from inter and intra-industry transactions. The model breaks the economy into approximately 500 separate sectors with each sector representing an individual industry. It then uses a sectoring scheme developed by the IMPLAN Group and is closely related to the Bureau of Economic Analysis (BEA) REIS model. The model is a 508 X 508 (row x col.) matrix that shows all the economic activity between the individual sectors. The entries in the matrix are based on the dollar amount that each industry sells to (and purchases from) other industries in the Ohio economy. It measures the amount of final consumption by the residents of the region as well as how much each industry exports from the area. The model uses data collected at the county level, which are obtained from the IMPLAN Group and the BEA. County data are in turn aggregated or "rolled-up" to form service areas such as local areas, states or larger geographic regions such as the Midwest.

Input\Output models estimate economic impacts by taking advantage of the relatively stable patterns in the flow of goods and services within the economy. Predictions can be made of an industry's total economic impact by examining the purchasing patterns of the individual sectors. The BEA collects extensive data on these regional trade flows and reports their findings annually.

Spatial patterns are then defined through a Geographical Information System (GIS) interface. This GIS interface affords the ability to spatially locate and describe the economic phenomena under consideration. It further allows the forecasting model to accurately describe (+/-30 ft from a centroid location) the physical location of any economic activity reported. Economic activity, once accurately defined, can be tracked through to its ultimate destination. Any degradation of the economic impact is assumed to be a function of distance decay or information/transportation infrastructure inadequacies.

Primary Data

All the primary data come directly from BGSU's audited financial statements and provides a solid foundation for the analysis. These data include all the University's accounts payable transactions, salaries and fringe benefits, number of employees, construction and capital improvements spending, and state appropriations.

Secondary Data Specifications

Once the primary (direct) impact is identified, it is necessary to estimate the ultimate impact on the economy. This study's forecasting model utilizes variables from a variety of national data sets. To reduce potential confusion, a specific definition of the major variables may be of use.

Industry Output

Industry output represents the value of the industry's total production. Industry output can be thought of as the value of industry sales plus or minus inventory changes. It should be stated that industry output is not a measure of an industry's income and, therefore, cannot be directly compared to the Gross State Product (GSP) numbers reported by the BEA. The value of industry output is typically higher than GSP. It is a more comprehensive measure and, therefore, is a better measure of true economic impacts. The IMPLAN model estimates the industry output data, which are derived from the Bureau of Census Economic Census, the Annual Survey of Manufacturers, and the Bureau of Labor Statistics growth model.

Employment

Employment is the total number of full-time wage and salary employees, plus the number of self-employed workers in a particular industry. Part-time workers' hours are aggregated into full-time equivalents (2,080 hours), and reported with the full-time workers. In our process, each year's activity is computed separately so that the employment effects are computed each year.

No single source of employment data is adequate for accurately estimating employment impacts. Due to nondisclosure rules, the employment figure reported by government agencies often underestimates true employment in a given county. In accordance with U.S. Code Title 13, Section 9, no datum is published that would disclose the operations of an individual employer or put an individual employer at an unfair disadvantage. In this study, as we narrow our focus to the county level, the number of firms representing an industry inevitably decreases. It is not uncommon for a single business establishment to be the sole operator in that industry in a particular county. If this is the case, the employment numbers are

not disclosed and the employment in that region is understated. Fortunately, it is possible to reconstruct a region's employment by combining data from a variety of sources. Non-disclosure rules require that the individual reporting agency not reveal confidential information. However, other government agencies may report the missing data in another form. For example, the U.S. Department of Labor collects labor data as part of the Unemployment Insurance ES-202 program. These data are for "covered employees" of the Unemployment Insurance Program. Workers not "covered," such as self-employed workers, would not be included in the data. However, "not covered" workers would be included in the employment figures captured by the Department of Census County Business Patterns. By carefully combining the employment figures reported in the ES-202 data set, the County Business Patterns, the REIS data and the Internal Revenue Service Quarterly Payroll File (FICA), a fairly comprehensive employment figure can be reconstructed. The raw data are then "sectored" into the appropriate SICs and, in turn, combined into the necessary industry vectors and IMPLAN matrices.

Employee Compensation

Employee compensation includes all salaries and wages paid to the industry's employees. The figure includes the proprietors' income of self-employed persons in the industry. The figures reported are gross amounts and taken from the IMPLAN data set.

Consumption

Employee consumption measures consumption spending of employees directly employed by the relevant industry. Employee spending is estimated using the BEA Benchmark I/O Study and the BLS Consumer Expenditure Survey. This provides estimates of employee spending based on regional preferences and household income levels. In this case, it measures the typical "basket" of goods purchased by an Ohio family.

Understanding Multipliers:

As mentioned in the introduction, the operation of BGSU impacts the economy in three ways. The direct impact includes the purchases of resources (labor, goods, and services) as the University completes its traditional academic mission. The indirect impact occurs through industry-to-industry purchases the university makes with its local suppliers. Finally, the induced impact reflects the change in household demand as those employees of the University and BGSU supplier's employees earn dollars for consumer spending. Therefore, the total impact to the

economy is the summation of the direct, indirect and induced components. The indirect and the induced portions are commonly known as the multiplier. It shows how the initial (direct) expenditures get multiplied through the economy. Calculating the multipliers based on the supplier relationships and employee consumptions patterns are much more accurate than simple multiplier tables.

FINDINGS

This section provides the major findings of the economic analysis of Bowling Green State University's impact on Ohio's economy. It shows the dollar and employment impacts for construction, operations, employee spending, student spending, and visitor spending components. It also includes a section on the fiscal impacts of the University.

Capital Improvements and Operating Expenditures

Capital improvements and operation spending was calculated using the data provided by the University's staff as well as the audited financial statements. To avoid double counting, payroll amounts were deleted and will be the source of employee spending described later in this report. Also non-cash transactions such as accruals, and depreciation were eliminated, as they have no tangible impact on the economic community. After making the necessary adjustments, BGSU spent \$179,357,100 (direct) on capital improvements and operations in 2002. This initial spending in turn generated an additional \$52,708,701 (indirect) through the University's purchase of labor and raw materials from local sources. An additional \$89,868,118 (induced) of economic activity was created as the employees of the construction firms and local suppliers spent the wages earned as a result of University contracts. The total economic impact is the summation of the direct, indirect and induced effects. In this case, the University's total impact from operations and capital improvements is \$321,933,819.

The University created 5,472 full time jobs as a result of their operations and capital improvement activities. Of the 5,472 jobs created, 3,667 were the result of direct university construction and operation activities, 715 resulted from the business-to-business (indirect) activity, and 1,090 resulted from employee spending (induced) activity of the construction and supplier industries.

Employee Spending

BGSU paid \$142,014,217 in gross salaries (excluding benefits) in 2002. This included all faculty, staff and student employment. To determine possible employee spending, it is first necessary to subtract the amount of taxes and other deductions from gross pay. Following the Bureau of Labor Statistics (BLS) guidelines for our region, it was assumed that on average, 85% of the gross pay was available for consumption. Therefore, it was assumed that the portion of University salaries available for consumption was \$120,712,084 (.85*142,014,217). This was then allocated into spending categories (food, housing, healthcare, etc.) based on the BLS Consumer Expenditure Survey. This survey estimates the typical household spending patterns for our region for middle-income (35K-50K) consumers. It was

assumed that the bulk of the employee consumption spending (food, clothing, transportation) was completed within¹ the Ohio economy. This is consistent with Bureau of Labor Statistics research on local consumption spending.

The direct spending of \$120,712,084 generated an additional indirect impact of \$24,311,698 and an inducted impact of \$22,564,077. The total economic impact of employee spending was therefore \$167,587,856 in Ohio's economy. This economic activity supports 1,439 jobs in Ohio's economy.

Student Spending

Student spending was estimated for three distinct categories. Undergraduate students who reside in on-campus facilities was the first group. This category has the lowest economic impact as the bulk of their spending occurs on campus from University run facilities. (This spending is captured in the university operations section of this report.) The second category of student spending is undergraduate student residing in off-campus housing. This impact is significantly higher as the living expenses are often conducted with local rental agencies and businesses. The last category of student spending is graduate student spending. Spending from graduate students tends to be higher than undergraduate spending. This is traditionally due to higher stipends for graduate students and from additional family income of a locally employed spouse.

Table 3 shows the number of students per category and the annual budget amounts for each group. BGSU has very few graduate students in on-campus facilities so all graduate students were considered to be off-campus.

Student spending	Students	Annual Spending Budget	Total Spending
On-campus (undergraduate)	6,835	\$2,550	\$17,429,250
Off-campus undergraduate	10,382	\$8,050	\$83,575,100
Off campus graduate	3,142	\$11,300	\$35,504,600
Total:	20,359		\$136,508,950

Similar to employee spending the direct amount was then allocated into spending categories based on the BLS Consumer Expenditure Survey. This survey estimates the typical household spending

¹ Slight adjustments were made for typical imported goods and goods that are not available in Ohio's economy. See

patterns for our region for low income (<15K) consumers. It was assumed that the bulk of the student consumption spending (food, clothing, etc.) was completed within the Ohio economy. The budget amounts were derived from averages of several other economic impact studies (see Carroll et al. 2004, Carroll 1997, Notre Dame 2002, Appleseed 2003). It was determined that BGSU student-spending patterns were consistent with the other regions and no additional surveys were necessary.

The direct spending amount of \$136,508,950 generated \$28,218,941 in indirect activity and \$26,203,283 in induced. This equals \$190,931,168 economic impact on Ohio's economy from BGSU students. This spending generated 1,636 Ohio jobs.

Visitor Spending

Estimating visitor spending in these studies is always a difficult task. One common method is to simply use some estimated percentages of the university impact. This method is not always accurate and certainly does not capture any unique student or university activities. Another method is to estimate the number of visitors that attend each of the university events. To accurately complete these task extensive surveys would need to be conducted at each of the university's events. This is prohibitively expensive and is outside the scope of this project. Furthermore, given the regional nature of BGSU and the fact that the state of Ohio is the service area for this study the number of out-of-state visitors for each event is relatively small even if accurately surveyed. Also, BGSU does not have a large number of events on campus that draws significant out of state visitors.

The best method for estimating visitor spending in a regional university is to base it on the number of visitors per student and faculty member (Appleseed 2003, Notre Dame 2002, Carroll et al. 2004). The number of students and faculty provides a good foundation and measuring personal visits from out of town friends and family is a good proxy for all visitor categories. The faculty number includes professional visitors who may attend conferences sponsored by faculty from BGSU.

Type of Expenditure	Expenditure Per Visitor	Percent
Transportation	\$10.00	8%
Lodging	\$35.00	28%
Entertainment	\$21.25	17%
Food/Beverage	\$30.00	24%
Shopping	\$28.75	23%
Total	\$125.00	100%

Using an average of the Boston and Notre Dame impact studies, it is estimated that undergraduate students have 5.95 overnight visitors annually; graduate students have 3.12, and faculty have 4.32. The graduate student and faculty numbers are lower than the undergraduates as these groups often stay as guests in faculty and graduate student residences. Based on the 2002 student enrollments and the numbers shown above, it is estimated that the direct visitor spending is reported in table 5.

Category	Spending
Undergraduate Students	\$12,872,825
Graduate Students	\$1,190,670
Faculty	\$464,940
Total	\$14,872,825

The \$14,528,435 of direct spending by visitors generated an additional \$3,925,831 in indirect impacts, \$5,955,345 in induced impacts for a total of \$24,409,611 in economic activity. This economic activity supports 1,636 Ohio jobs with the bulk of these in Wood County.

Fiscal Analysis

In 2002, BGSU received \$84.6 million in state appropriations. During that time period, the BGSU economic activity generated \$85.9 million in tax revenues. The total economic impact of the BGSU on the Ohio's economy was \$704 million. Thus, every dollar BGSU receives in state support it generates more than \$8 in economic activity. This is not to say that BGSU has a multiplier of eight. What it does mean is that BGSU takes the state appropriations, couples it with tuition and grant revenues,

and produces the \$704 million dollar impact. The actual multiplier generated from this study is a very conservative 1.56².

Table 6				
Fiscal Impact				
Federal Government				
	Corporate Profits Tax			3,915,470
	Indirect Bus Tax: Custom Duty			564,331
	Indirect Bus Tax: Excise Taxes			1,816,271
	Indirect Bus Tax: Fed NonTaxes			641,037
	Personal Tax: Estate and Gift Tax			0
	Personal Tax: Income Tax			23,158,509
	Personal Tax: NonTaxes (Fines- Fees			309,382
	Social Ins Tax- Employee Contribution			13,848,490
	Social Ins Tax- Employer Contribution			13,136,150
		Total		57,389,438
State/Local Government				
	Corporate Profits Tax			355,430
	Dividends			15,022
	Indirect Bus Tax: Motor Vehicle Lic			177,757
	Indirect Bus Tax: Other Taxes			897,687
	Indirect Bus Tax: Property Tax			8,356,535
	Indirect Bus Tax: S/L NonTaxes			829,446
	Indirect Bus Tax: Sales Tax			8,857,552
	Indirect Bus Tax: Severance Tax			6,333
	Personal Tax: Estate and Gift Tax			0
	Personal Tax: Income Tax			7,058,291
	Personal Tax: Motor Vehicle License			359,360
	Personal Tax: NonTaxes (Fines- Fees			582,001
	Personal Tax: Other Tax (Fish/Hunt)			52,968
	Personal Tax: Property Taxes			141,646
	Social Ins Tax- Employee Contribution			186,552
	Social Ins Tax- Employer Contribution			671,588
		Total		28,548,168
Total Fiscal Impact				\$85,937,606

² Each of the 500 industries has its own unique multiplier. 1.56 represents the average of these multipliers.

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APPENDIX

Ohio Industries Most Impacted by BGSU

Industry	Economic Impact (Dollars)	Employment
Colleges- universities- and junior colleges	\$146,406,429	3,275
Commercial and institutional buildings	34,483,772	427
Real estate	32,744,060	279
Hospitals	26,798,795	254
Owner-occupied dwellings mortgages	24,602,431	0
Food services and drinking places	21,912,399	607
Offices of physicians- dentists- and other health	20,365,713	225
Monetary authorities and depository credit intermediaries	12,435,635	59
Other educational services	10,932,290	246
Automotive repair and maintenance- except car wash	10,383,530	77
General merchandise stores	9,738,511	256
Motor vehicle and parts dealers	9,372,967	124
Telecommunications	8,495,353	41
Insurance carriers	7,525,073	44
Food and beverage stores	7,494,743	159
Other ambulatory health care services	7,153,913	51
Power generation and supply	6,456,143	20
Truck transportation	5,765,982	48
Other State and local government enterprises	5,735,535	39
Nursing and residential care facilities	5,643,141	141
Hotels and motels- including casino hotels	5,460,960	98
Legal services	5,286,547	63
Securities- commodity contracts- investments	4,497,742	64
Architectural and engineering services	4,251,041	52
Gasoline stations	4,005,671	78
Building material and garden supply stores	4,002,502	67
Miscellaneous store retailers	3,879,734	82
Non-store retailers	3,727,224	117
Management of companies and enterprises	3,611,193	32
Clothing and clothing accessories stores	3,562,485	77
Motor vehicle parts manufacturing	3,429,932	14
Nondepository credit intermediation and related a	3,409,219	30
Spectator sports	3,296,436	73

Industry	Economic Impact (Dollars)	Employment
Other amusement- gambling- and recreation industries	3,269,869	53
Automobile and light truck manufacturing	3,214,286	4
Petroleum refineries	3,020,757	1
Employment services	2,833,051	135
Wholesale trade	2,604,662	20
Health and personal care stores	2,576,919	56
Home health care services	2,425,704	59
Maintenance and repair of nonresidential buildings	2,375,392	28
Pharmaceutical and medicine manufacturing	2,372,026	6
Plastics plumbing fixtures and all other plastics	2,327,464	13
Furniture and home furnishings stores	2,200,387	35
Natural gas distribution	2,170,310	4
Automotive equipment rental and leasing	2,142,536	16
Civic- social- professional and similar organization	2,118,536	80
Business support services	2,030,315	35
Meat processed from carcasses	2,024,253	8
Accounting and bookkeeping services	1,994,673	31
Management consulting services	1,982,718	24
Bread and bakery product- except frozen-manufacturing	1,975,635	16
Sporting goods- hobby- book and music stores	1,961,446	47
Oil and gas extraction	1,960,693	8
Funds- trusts- and other financial vehicles	1,913,243	8
Postal service	1,908,146	25
Commercial printing	1,866,815	16
Religious organizations	1,863,416	15
Services to buildings and dwellings	1,819,580	60
Electronics and appliance stores	1,748,098	29
Personal care services	1,714,624	45
Lessors of nonfinancial intangible assets	1,700,577	0
Social assistance- except child day care services	1,575,681	64
Other personal services	1,571,265	17
Insurance agencies- brokerages- and related	1,537,172	17
Office administrative services	1,517,165	10
Child day care services	1,498,826	44
Advertising and related services	1,464,175	19

Industry	Economic Impact (Dollars)	Employment
Radio and television broadcasting	1,330,070	9
Couriers and messengers	1,329,705	18
Newspaper publishers	1,311,667	13
Waste management and remediation services	1,258,520	10
Toilet preparation manufacturing	1,228,755	3
Dry-cleaning and laundry services	1,213,734	27
Machinery and equipment rental and leasing	1,192,038	4
Other support services	1,172,381	9
Motion picture and video industries	1,140,635	13
Death care services	1,111,823	17
Fluid milk manufacturing	1,045,026	2
Air transportation	1,043,850	6
Computer systems design services	937,378	9
General and consumer goods rental except video tap	912,435	18
Animal- except poultry- slaughtering	911,486	2
Rail transportation	896,964	4
Dry- condensed- and evaporated dairy products	892,401	1
Scenic and sightseeing transportation and support	884,685	10
Household goods repair and maintenance	857,137	7
Cattle ranching and farming	856,859	15
Elementary and secondary schools	850,629	28
Warehousing and storage	842,809	15
Commercial machinery repair and maintenance	819,667	9
Electronic equipment repair and maintenance	801,215	7
Water transportation	757,917	1
Soap and other detergent manufacturing	757,865	2
Investigation and security services	748,542	27
Glass and glass products- except glass containers	728,051	4
All other miscellaneous professional and technical	709,998	6
Other basic organic chemical manufacturing	694,155	1
Database- directory- and other publishers	675,710	3
Cheese manufacturing	668,520	1
Veterinary services	649,859	13
Cookie and cracker manufacturing	639,042	3
Specialized design services	635,394	6
Plastics packaging materials- film and sheet	601,228	2

Industry	Economic Impact (Dollars)	Employment
Grant making and giving and social advocacy organization	597,505	22
Periodical publishers	596,169	4
Other snack food manufacturing	591,862	2
Surgical appliance and supplies manufacturing	557,512	3
Transit and ground passenger transportation	548,767	22
Other computer related services	536,286	7
Other maintenance and repair construction	521,832	7
Non-upholstered wood household furniture manufacture	510,722	5
Private households	498,379	68
Cable networks and program distribution	496,093	1
Maintenance and repair of farm and non-farm residents	481,014	4
Promoters of performing arts and sports and agents	480,649	13
Travel arrangement and reservation services	480,459	7
State and local government electric utilities	476,421	1
Fitness and recreational sports centers	469,870	24
Machine shops	463,375	4
Other accommodations	460,001	3
All other food manufacturing	446,318	2
Car washes	440,279	12
Environmental and other technical consulting services	436,056	4
Poultry processing	432,041	3
Foam product manufacturing	421,601	2
Video tape and disc rental	414,858	12
Scientific research and development services	413,612	7
Poultry and egg production	403,332	2
Cut and sew apparel manufacturing	390,969	3
Performing arts companies	387,274	24
State and local government passenger transit	383,446	9
Other Federal Government enterprises	372,862	4
Wood windows and door manufacturing	350,265	2
Animal production- except cattle and poultry and e	347,735	7
Pipeline transportation	347,221	1
Mayonnaise- dressing- and sauce manufacturing	345,048	1
Soft drink and ice manufacturing	333,535	1
Ice cream and frozen dessert manufacturing	324,030	1

Industry	Economic Impact (Dollars)	Employment
Greenhouse and nursery production	317,711	4
Photographic services	310,594	5
Paperboard container manufacturing	307,000	2
Book publishers	305,123	1
Vegetable and melon farming	293,017	3
Telephone apparatus manufacturing	292,936	1
Data processing services	289,570	3
Information services	289,555	2
Other miscellaneous chemical product manufacturing	284,668	1
Museums- historical sites- zoos- and parks	270,340	4
Plastics pipe- fittings- and profile shapes	263,376	2
Polish and other sanitation good manufacturing	260,138	1
Spice and extract manufacturing	258,864	1
Support activities for oil and gas operations	250,651	1
Wood kitchen cabinet and countertop manufacturing	239,737	3
Mixes and dough made from purchased flour	237,234	1
Custom computer programming services	234,506	4
Plastics bottle manufacturing	227,460	1
Petroleum lubricating oil and grease manufacturing	224,944	1
Asphalt shingle and coating materials manufacturing	223,548	1
Software publishers	221,301	1
Other millwork- including flooring	212,425	3
Independent artists- writers- and performers	211,493	3
Surgical and medical instrument manufacturing	205,862	1
All other crop farming	201,734	4
Mattress manufacturing	197,487	1
Other basic inorganic chemical manufacturing	192,093	0
Water- sewage and other systems	185,931	2
All other electronic component manufacturing	182,725	1
Sign manufacturing	175,880	2
Sawmills	175,008	1
Breakfast cereal manufacturing	169,885	0
Adhesive manufacturing	167,898	1
Frozen cakes and other pastries manufacturing	162,065	1

Industry	Economic Impact (Dollars)	Employment
Fruit and vegetable canning and drying	157,204	1
Veneer and plywood manufacturing	151,406	1
Breweries	150,435	0
Flavoring syrup and concentrate manufacturing	149,662	0
Upholstered household furniture manufacturing	148,196	2
Turned product and screw- nut- and bolt manufacturing	148,093	1
Dental laboratories	142,130	2
Frozen food manufacturing	136,230	1
Electro-medical apparatus manufacturing	135,404	1
Coated and laminated paper and packaging materials	134,888	1
Broadcast and wireless communications equipment	134,172	0
Engineered wood member and truss manufacturing	133,255	1
Sheet metal work manufacturing	130,983	1
Metal valve manufacturing	129,153	1
Manifold business forms printing	128,399	1
Coal mining	125,053	0
Sound recording industries	119,872	1
Custom compounding of purchased resins	119,484	0
Iron and steel mills	116,697	0
Metal household furniture manufacturing	109,356	1
Asphalt paving mixture and block manufacturing	108,049	0
Automatic environmental control manufacturing	104,110	1
Watch- clock- and other measuring and controlling	101,926	1
Petrochemical manufacturing	100,518	0
Elevator and moving stairway manufacturing	98,752	0
Storage battery manufacturing	98,508	1
Miscellaneous wood product manufacturing	98,331	1
Showcases- partitions- shelving- and lockers	96,983	1
Glass container manufacturing	96,873	0
Audio and video media reproduction	94,697	1
Other communication and energy wire manufacturing	91,931	0
Industrial gas manufacturing	91,223	1
Grain farming	88,558	2

Industry	Economic Impact (Dollars)	Employment
Wood container and pallet manufacturing	85,900	1
Other commercial and service industry machinery ma	83,022	0
Spring and wire product manufacturing	81,882	1
Facilities support services	81,716	1
Hand and edge tool manufacturing	79,725	1
Heavy duty truck manufacturing	78,908	0
Photographic film and chemical manufacturing	76,805	0
Logging	76,333	1
Cut stock- re-sawing lumber- and planing	75,825	0
Confectionery manufacturing from purchased chocolate	74,757	1
Lawn and garden equipment manufacturing	72,903	0
Non-chocolate confectionery manufacturing	72,314	0
Ophthalmic goods manufacturing	71,939	1
Printing ink manufacturing	71,580	0
Roasted nuts and peanut butter manufacturing	70,639	0
Other engine equipment manufacturing	65,920	0
Metal can- box- and other container manufacturing	65,565	0
Power-driven hand tool manufacturing	65,458	0
Plastics material and resin manufacturing	62,915	0
Coffee and tea manufacturing	62,479	0
Hardware manufacturing	61,833	0
Cutting tool and machine tool accessory manufacturing	59,264	0
Accessories and other apparel manufacturing	59,133	0
Synthetic dye and pigment manufacturing	58,464	0
Travel trailer and camper manufacturing	58,325	0
Motor vehicle body manufacturing	58,273	0
Other communications equipment manufacturing	57,577	0
Bowling centers	56,036	2
Other computer peripheral equipment manufacturing	55,422	0
Other leather product manufacturing	55,132	1
Electronic computer manufacturing	54,193	0
Fabricated structural metal manufacturing	53,732	0
Dog and cat food manufacturing	53,339	0
Resilient floor covering manufacturing	52,021	0
Ready-mix concrete manufacturing	51,991	0

Industry	Economic Impact (Dollars)	Employment
Household laundry equipment manufacturing	51,311	0
Miscellaneous electrical equipment manufacturing	50,721	0
Footwear manufacturing	50,313	0
Wood preservation	47,711	0
Metal coating and non- precious engraving	46,755	0
Metal window and door manufacturing	46,663	0
Steel wire drawing	46,593	0
All other industrial machinery manufacturing	46,588	0
Agriculture and forestry support activities	45,816	2
Electroplating- anodizing- and coloring metal	45,592	1
Laminated plastics plate- sheet- and shapes	45,158	1
Books printing	43,929	0
Dental equipment and supplies manufacturing	43,791	0
Surface active agent manufacturing	42,148	0
Motor and generator manufacturing	41,262	0
Relay and industrial control manufacturing	41,251	0
Fruit farming	39,102	1
Other rubber product manufacturing	38,762	0
Flour milling	36,991	0
Irradiation apparatus manufacturing	34,821	0
Primary battery manufacturing	34,201	0
Electron tube manufacturing	30,833	0
Distilleries	30,336	0
Audio and video equipment manufacturing	30,169	0
Welding and soldering equipment manufacturing	29,943	0
Analytical laboratory instrument manufacturing	29,715	0
Flexible packaging foil manufacturing	29,232	0
Sugar manufacturing	28,936	0
Industrial process variable instruments	28,876	0
Other animal food manufacturing	28,666	0
Switchgear and switchboard apparatus manufacturing	28,209	0
Totalizing fluid meters and counting devices	27,986	0
Fabricated pipe and pipe fitting manufacturing	27,621	0
Paint and coating manufacturing	26,364	0
Aircraft engine and engine parts manufacturing	25,897	0

Industry	Economic Impact (Dollars)	Employment
Metal heat treating	25,649	0
Computer storage device manufacturing	25,206	0
Special tool- die- jig- and fixture manufacturing	24,760	0
Speed changers and mechanical power transmission e	24,267	0
Software reproducing	23,524	0
Packaging machinery manufacturing	23,384	0
Ball and roller bearing manufacturing	22,862	0
Curtain and linen mills	21,547	0
Household vacuum cleaner manufacturing	21,379	0
Fats and oils refining and blending	21,363	0
Plastics and rubber industry machinery	20,119	0
Wineries	20,052	0
Prepress services	20,035	0
Reconstituted wood product manufacturing	19,889	0
Blind and shade manufacturing	19,814	0
Iron- steel pipe and tube from purchased steel	19,344	0
Fertilizer- mixing only- manufacturing	18,553	0
Photographic and photocopying equipment manufacturing	17,283	0
Nitrogenous fertilizer manufacturing	16,819	0
Paper and paperboard mills	16,665	0
Industrial truck- trailer- and stacker manufacturing	16,357	0
Buttons- pins- and all other miscellaneous manufacturing	16,297	0
All other forging and stamping	16,219	0
Broom- brush- and mop manufacturing	16,102	0
Rolled steel shape manufacturing	15,920	0
Oilseed farming	15,904	1
Farm machinery and equipment manufacturing	15,789	0
Semiconductors and related device manufacturing	14,965	0
Non-woven fabric mills	14,899	0
Ornamental and architectural metal work manufactures	14,636	0
Magnetic and optical recording media manufacturing	14,385	0
Other aircraft parts and equipment	13,954	0
Mineral wool manufacturing	13,339	0

Industry	Economic Impact (Dollars)	Employment
Printing machinery and equipment manufacturing	12,828	0
Other concrete product manufacturing	12,773	0
Aircraft manufacturing	12,443	0
Aluminum foundries	11,647	0
Blankbook and loose-leaf binder manufacturing	11,633	0
Other miscellaneous textile product mills	11,334	0
Rendering and meat byproduct processing	11,269	0
Hunting and trapping	10,809	0
Conveyor and conveying equipment manufacturing	10,614	0
Wet corn milling	10,550	0
Confectionery manufacturing from cacao beans	10,516	0
Textile and fabric finishing mills	10,445	0
Optical instrument and lens manufacturing	10,427	0
Nonferrous metal- except copper and aluminum- shaping	10,317	0
Dry pasta manufacturing	10,039	0
Boat building	9,761	0
Carbon and graphite product manufacturing	9,664	0
Jewelry and silverware manufacturing	9,196	0
Cutlery and flatware- except precious-manufacturing	9,078	0
Synthetic rubber manufacturing	9,066	0
Fabric coating mills	9,003	0
Electric power and specialty transformer manufacturing	8,922	0
Other nonmetallic mineral mining	8,897	0
Sawmill and woodworking machinery	8,812	0
Abrasive product manufacturing	8,271	0
Kitchen utensil- pot- and pan manufacturing	8,120	0
Electricity and signal testing instruments	8,100	0
Motor home manufacturing	8,072	0
Soybean processing	7,886	0
Household refrigerator and home freezer manufacturing	7,660	0
Construction machinery manufacturing	7,318	0
Nonferrous foundries- except aluminum	7,253	0
Food product machinery manufacturing	7,229	0
Automatic vending- commercial laundry and dry-cleaning	7,018	0

Industry	Economic Impact (Dollars)	Employment
Tortilla manufacturing	7,012	0
Office machinery manufacturing	6,906	0
Surface-coated paperboard manufacturing	6,880	0
Vitreous china plumbing fixture manufacturing	6,525	0
Textile bag and canvas mills	6,279	0
Rubber and plastics hose and belting manufacturing	6,219	0
Custom architectural woodwork and millwork	6,185	0
Trade-binding and related work	6,101	0
Laboratory apparatus and furniture manufacturing	6,032	0
Other major household appliance manufacturing	5,931	0
Stone mining and quarrying	5,822	0
Other apparel knitting mills	5,630	0
Rolling mill and other metalworking machinery	5,489	0
Aluminum sheet- plate- and foil manufacturing	5,469	0
Metal forming machine tool manufacturing	5,096	0
Metal cutting machine tool manufacturing	5,036	0
Motorcycle- bicycle- and parts manufacturing	4,944	0
Iron and steel forging	4,930	0
Prefabricated metal buildings and components	4,756	0
Industrial mold manufacturing	4,656	0
Miscellaneous fabricated metal product manufacturing	4,618	0
Pesticide and other agricultural chemical manufacturing	4,593	0
Household cooking appliance manufacturing	4,552	0
Institutional furniture manufacturing	4,448	0
Sand- gravel- clay- and refractory mining	4,391	0
Vitreous china and earthenware articles manufacturing	4,340	0
Turbine and turbine generator set units manufacturing	4,166	0
Wiring device manufacturing	4,089	0
Scales- balances- and miscellaneous general purpose	3,874	0

Industry	Economic Impact (Dollars)	Employment
Electric house wares and household fan manufacturing	3,831	0
Saw blade and handsaw manufacturing	3,800	0
Prefabricated wood building manufacturing	3,707	0
Broad-woven fabric mills	3,305	0
Aluminum extruded product manufacturing	3,270	0
Metal tank- heavy gauge- manufacturing	3,211	0
Computer terminal manufacturing	3,172	0
Coated and uncoated paper bag manufacturing	3,104	0
Drilling oil and gas wells	3,031	0
Sanitary paper product manufacturing	2,950	0
All other petroleum and coal products manufacturing	2,909	0
Fluid power cylinder and actuator manufacturing	2,825	0
Lighting fixture manufacturing	2,820	0
Copper rolling- drawing- and extruding	2,799	0
Air and gas compressor manufacturing	2,751	0
Plate work manufacturing	2,738	0
Office supplies- except paper- manufacturing	2,650	0
Fiber optic cable manufacturing	2,637	0
Leather and hide tanning and finishing	2,514	0
Custom roll forming	2,475	0
Overhead cranes- hoists- and monorail systems	2,410	0
Power boiler and heat exchanger manufacturing	2,241	0
Porcelain electrical supply manufacturing	2,239	0
Narrow fabric mills and embroidery	2,180	0
Explosives manufacturing	2,175	0
Envelope manufacturing	2,065	0
Semiconductor machinery manufacturing	2,056	0
Railroad rolling stock manufacturing	2,029	0
Truck trailer manufacturing	1,962	0
Other household and institutional furniture	1,862	0
Carpet and rug mills	1,809	0
Miscellaneous nonmetallic mineral products	1,804	0
Brick and structural clay tile manufacturing	1,801	0
Wood office furniture manufacturing	1,786	0
Creamery butter manufacturing	1,639	0

Industry	Economic Impact (Dollars)	Employment
Gasket- packing- and sealing device manufacturing	1,628	0
Pump and pumping equipment manufacturing	1,565	0
Ferrous metal foundries	1,511	0
Ceramic wall and floor tile manufacturing	1,459	0
Die-cut paper office supplies manufacturing	1,416	0
Military armored vehicles and tank parts manufacturing	1,352	0
Doll- toy- and game manufacturing	1,285	0
Search- detection- and navigation instruments	1,256	0
Paper industry machinery manufacturing	1,213	0
Cut stone and stone product manufacturing	1,126	0
Fishing	1,097	0
Primary aluminum production	1,097	0
All other transportation equipment manufacturing	1,097	0
Office furniture- except wood- manufacturing	1,079	0
All other converted paper product manufacturing	1,077	0
Industrial process furnace and oven manufacturing	1,030	0
Fluid power pump and motor manufacturing	902	0
AC- refrigeration- and forced air heating	886	0
Sporting and athletic goods manufacturing	819	0
Nonferrous forging	808	0
Seafood product preparation and packaging	806	0
Secondary processing of other nonferrous	754	0
Tire manufacturing	711	0
Mining machinery and equipment manufacturing	567	0
Primary nonferrous metal- except copper and aluminum	535	0
Enameled iron and metal sanitary ware manufacturing	521	0
Oil and gas field machinery and equipment	493	0
Ferroalloy and related product manufacturing	480	0
Concrete block and brick manufacturing	456	0
Industrial pattern manufacturing	451	0
Non-cellulosic organic fiber manufacturing	435	0

Industry	Economic Impact (Dollars)	Employment
Industrial and commercial fan and blower manufacturing	420	0
Concrete pipe manufacturing	405	0
Secondary smelting and alloying of aluminum	398	0
Measuring and dispensing pump manufacturing	385	0
Gypsum product manufacturing	336	0
Pulp mills	330	0
Textile machinery manufacturing	277	0
Copper wire- except mechanical- drawing	249	0
Ship building and repairing	201	0
Fiber- yarn- and thread mills	200	0
Air purification equipment manufacturing	198	0
Other hosiery and sock mills	192	0
Secondary processing of copper	173	0
Tobacco farming	169	0
Cement manufacturing	157	0
Phosphates fertilizer manufacturing	130	0
Lime manufacturing	122	0
Non-clay refractory manufacturing	120	0
Gold- silver- and other metal ore mining	102	0
Sheer hosiery mills	97	0
Stationery and related product manufacturing	96	0
Support activities for other mining	95	0
Tree nut farming	94	0
Forest nurseries- forest products- and timber tracts	89	0
Electric lamp bulb and part manufacturing	88	0
Musical instrument manufacturing	78	0
Heating equipment- except warm air furnaces	60	0
Burial casket manufacturing	53	0
Sugarcane and sugar beet farming	37	0
Ground or treated minerals and earths manufacturing	19	0
Other aluminum rolling and drawing	16	0
Ammunition manufacturing	10	0
Clay refractory and other structural clay products	5	0