

Economic and Fiscal Impacts of SOCHE Member Colleges and Universities

Prepared for



Southwestern Ohio Council for Higher Education

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EXECUTIVE SUMMARY

This report demonstrates the economic and fiscal impacts of the Southwestern Ohio Council for Higher Education (SOCHE) member colleges and universities on the economy of 20 counties in southwestern Ohio¹ in fiscal year 2016.² SOCHE member institutions produced a total economic impact of \$7.3 billion in southwestern Ohio. An estimated \$4.9 billion of the total economic impact is attributable to ongoing operations while local and non-local student spending increased economic output in the area by \$2.0 billion. Another \$364.1 million of economic impact came from one-time capital expenditures, including construction. The 20-plus colleges and universities that constitute SOCHE's membership³ generated \$3.8 billion in new money to southwestern Ohio as the institutions were able to attract tuition revenues from non-local students, scholarship money, donations, state and federal grants, and research funding from outside areas.

In southwestern Ohio, 72,039 total jobs were either directly or indirectly attributable to SOCHE and its member institutions.⁴ While SOCHE schools employed 30,610 people in full- and part-time positions, the spending of the colleges and universities for recurring operations and the take-home pay of employees indirectly supported another 16,869 jobs. Further, students who spent money in the local economy directly supported 17,219 jobs and indirectly supported another 4,783 jobs. The one-time capital expenditures made in fiscal year 2016 by member institutions supported 2,558 jobs, 1,256 directly and 1,302 indirectly.

In fiscal year 2016, SOCHE and its members caused \$2.6 billion in wages to be paid in southwestern Ohio. The members directly paid \$1.2 billion in wages to 30,610 college and university employees as a part of normal operations. The operations expenditures of member institutions and the increased impact from members' employees generated a further \$701.8 million in wages being paid. Student spending in the 20-county region contributed \$566.5 million in wages while capital expenditures made by member schools created \$121.9 million in wages.

SOCHE member institutions and employees, along with businesses from which member institutions purchased goods and services, paid taxes on sales, earnings, property, and corporate income. These taxes, in turn, benefitted local, state, and federal governments. The State of Ohio accrued approximately \$225.4 million in gross taxes, 78.5 percent of which resulted from the state sales tax. Local county and municipal governments received an estimated \$34.7 million from sales taxes, approximately \$35.9 million from earnings taxes, and nearly \$2.3 million in property tax revenues for a total county-level fiscal impact of \$37.0 million.

¹ The southwestern region of Ohio, which is the area under consideration for SOCHE members' economic and fiscal impact includes the counties of Adams, Brown, Butler, Champaign, Clark, Clermont, Clinton, Darke, Fayette, Greene, Hamilton, Highland, Logan, Madison, Miami, Montgomery, Preble, Shelby, Union, and Warren.

² The fiscal year 2016 began July 1, 2015 and ended June 30, 2016.

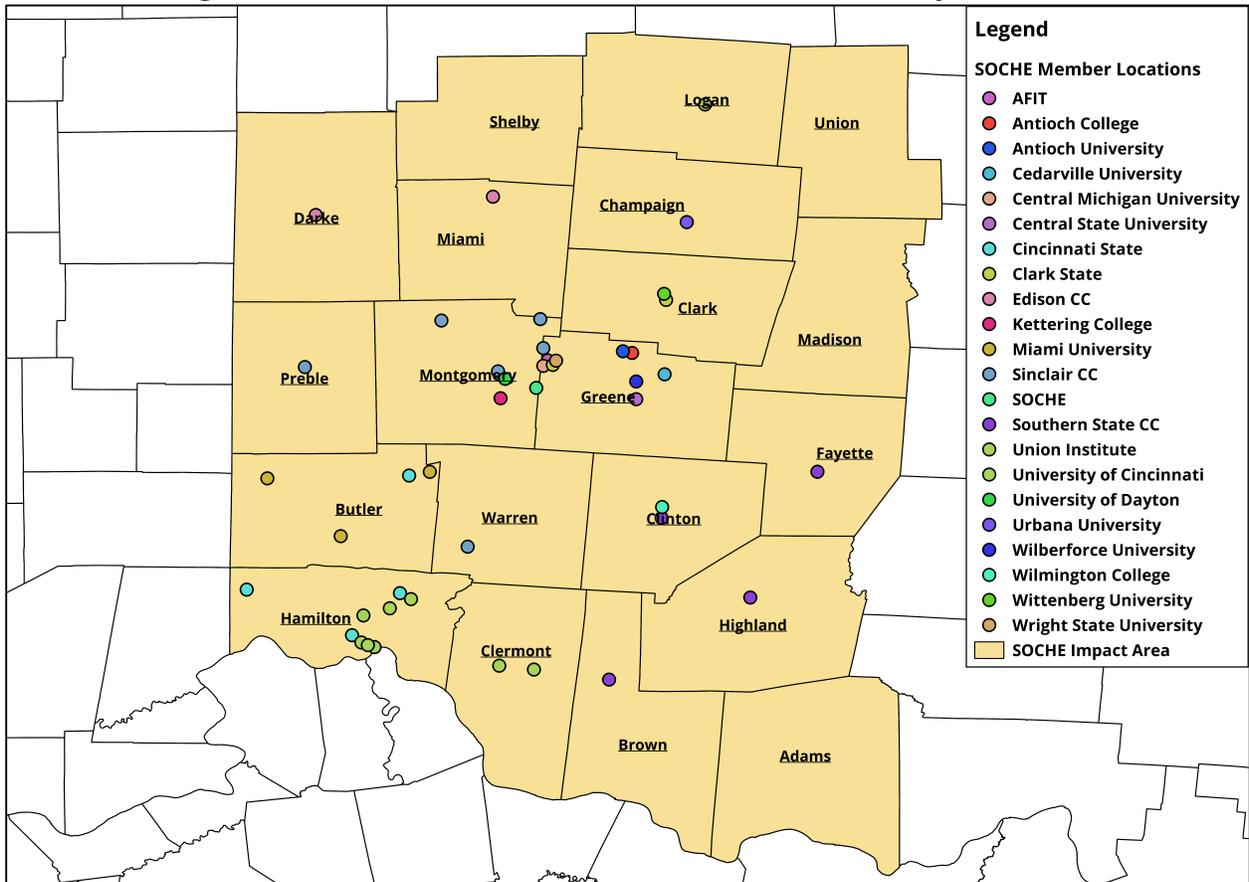
³ The impact of the Air Force Institute of Technology was not analyzed as part of this report.

⁴ The RIMS II model does not distinguish between full- and part-time jobs, but represents full-time equivalent (FTE) jobs; the model also does not reflect a time horizon longer than a year.

INTRODUCTION

The Southwestern Ohio Council for Higher Education (SOCHE) is an organizing body of 21 colleges and universities and one non-profit research foundation in southwestern Ohio. The members and the area under study in this report are shown in Figure 1.⁵ SOCHE’s mission is to create an “educated, employed, and engaged citizenry.”⁶ For 50 years, SOCHE and its member institutions have contributed to southwestern Ohio by increasing the education and training in the 20-county region and preparing individuals for careers. Southwestern Ohio has also benefitted from SOCHE through the operations and capital expenditures of its member institutions. The take-home pay of members’ employees and students’ spending further increased SOCHE’s impact on the southwestern Ohio regional economy in fiscal year 2016.

Figure 1: SOCHE Member Locations and Economic Impact Area



SOCHE represents a diversity of programs. In the 2015-2016 academic year, 10 member schools were private four-year programs and 11 were publicly funded, of which five were two-year programs and

⁵ The Kettering Foundation is a non-profit research foundation focused on the role of citizens in a democracy. (The Kettering Foundation 2017)

⁶ (Southwestern Ohio Council for Higher Education 2017)

six offered four-year undergraduate and graduate-degree programs. Two schools awarded medical degrees and two were historically black universities. All members were not-for-profit institutions. The size of SOCHE member institutions also varied greatly. While the majority—15 schools—had enrollments of less than 5,000, two enrolled between 5,000 and 9,999 students, three enrolled between 10,000 and 19,999 students, and one had an enrollment of more than 20,000 students.

The members of SOCHE include:

- Air Force Institute of Technology⁷
- Antioch College
- Antioch University Midwest
- Cedarville University
- Central Michigan University, Wright Patterson Air Force Base Center
- Central State University
- Cincinnati State Technical and Community College
- Clark State Community College
- Edison State Community College
- Kettering College
- The Kettering Foundation
- Miami University Regionals
- Sinclair Community College
- Southern State Community College
- Union Institute & University
- University of Cincinnati
- University of Dayton
- Urbana University
- Wilberforce University
- Wilmington College
- Wittenberg University
- Wright State University⁸

SOCHE and its member institutions most directly impact the local economy in three ways: through spending on operations, student spending, and capital expenditures. The direct spending by the colleges and universities affect the southwestern Ohio economy as the institutions, employees, and students purchase local goods and services from local businesses. In turn, those local businesses and associated employees increase spending and buy local goods and services themselves, which are specified as indirect impacts.⁹

The total economic impact from SOCHE members' operations falls into two categories. The first category is the net economic impact of "new money" from outside of the SOCHE region that is spent within the 20-county area resulting from the institutions. The second economic impact category—the retained economic impact—results from spending of local students that may have moved elsewhere for post-secondary education if it were not for SOCHE's members. These impacts are shown separately below.

While these economic impacts show how SOCHE and its members directly affect the 20-county area, southwestern Ohio's economy benefits from SOCHE and its colleges and universities in many other ways. Most importantly, these colleges and universities provide southwestern Ohio with the important talent and skills necessary for the economy to thrive. SOCHE and its members have

⁷ The impact of the Air Force Institute of Technology was not analyzed as part of this report; AFIT is an ex officio member of SOCHE.

⁸ The Lake Campus of Wright State University lies outside of the geographic scope of this project and, therefore, has been excluded in this report.

⁹ For the purposes of this paper, indirect impacts include both the impact from inter-industry purchases—generally referred to as indirect impacts—and the impacts of household expenditures—typically called induced impacts.

focused efforts to ensure students attain skills from coursework, internships, and co-ops. The research undertaken by SOCHE institutions also benefit southwestern Ohio and the globe as the technological advances created by member colleges and universities proliferate and improve the respective fields of research.

BACKGROUND

Enrollment

In the 2015-2016 academic year, 149,236 students were enrolled in SOCHE member colleges and universities, 45.5 percent as full-time students and 54.5 percent as part-time students. Figure 2 shows the changes in enrollment at member institutions over the five-year period between the 2010-2011 and 2015-2016 academic years.¹⁰

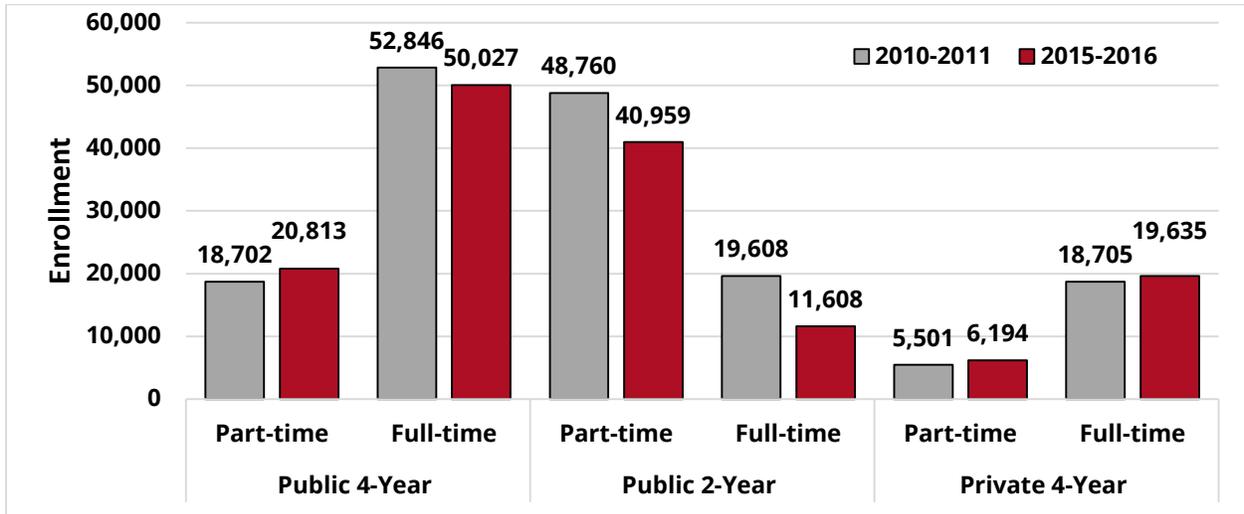
- Public four-year colleges and universities' enrollment has changed little over five years with overall enrollment decreasing by approximately one percent. However, full-time enrollment has decreased by 5.3 percent while part-time enrollment has increased by 11.3 percent.
- Public two-year colleges, which are primarily community and technical colleges, have experienced enrollment declines since 2010, consistent with community and technical colleges nationally.¹¹ Public, two-year schools have had decreases in part-time enrollment of 16.0 percent and decreases in full-time enrollment of 40.8 percent. However, these schools had large enrollment increases between 2009 and 2011, and despite declines since, enrollments have since remained above pre-recession levels.¹²
- Private four-year colleges and universities have had increases in part-time enrollment of 12.6 percent and full-time enrollment increases of 5.0 percent.

¹⁰ The 2012 enrollment data for universities who were not SOCHE members in 2012—Cincinnati State, the University of Cincinnati, and Union Institute and University—are based on IPEDS data. The enrollment data for the 18 other institutions are based on submissions from the 2012 SOCHE economic impact report.

¹¹ (American Association of Community Colleges: DataPoints 2017)

¹² (Integrated Postsecondary Data System 2017)

Figure 2: Student Enrollment by College/University Type, 2010-2011 and 2015-2016 Academic Years

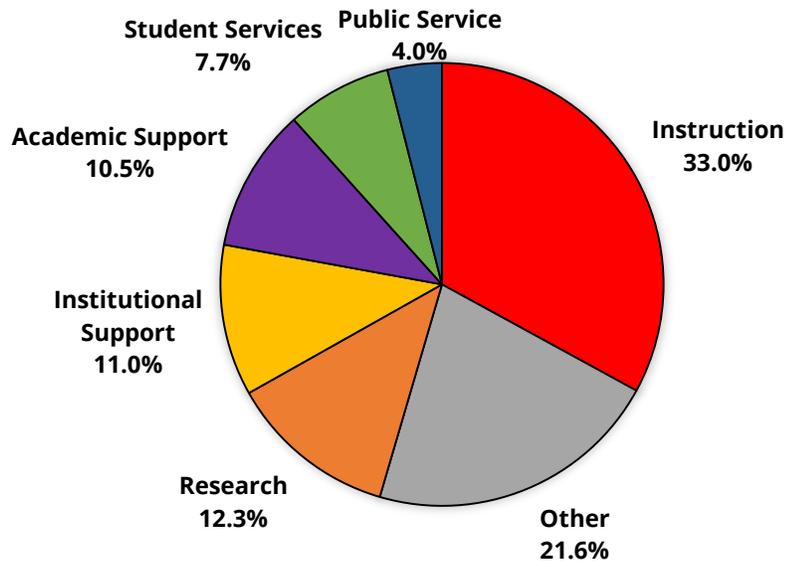


Source: Economics Center calculations using data provided by SOCHE member institutions and IPEDS.

Operations

In fiscal year 2016, SOCHE members dedicated approximately 33.0 percent of operations expenditures to instruction, 12.3 percent to research, 11.0 percent to institutional support, 10.5 percent to academic support, 7.7 percent to student services, 4.0 percent to public service, and the remaining 21.6 percent to other areas. Nearly half of all operations expenditures, or 46.6 percent, went to wages paid by the members.

Figure 3: Operations Expenditures by Area, FY 2016



Source: Economics Center calculations using data provided by SOCHE member institutions and IPEDS.

Employment

SOCHE and its members employed 30,610 people during the 2015-2016 academic year with approximately half (49.8%) employed as full-time workers, 31.5 percent as student workers, and approximately 18.6 percent as part-time employees.¹³ Full-time employment grew by 4.9 percent with an increase of 706 full-time employees since the 2010-2011 academic year. Part-time employment increased by 3,969 jobs. Total employment grew by 4,675 jobs, or 18.0 percent since the 2010-2011 academic year, with full-time jobs increasing 4.9 percent and part-time jobs increasing 34.9 percent.

ECONOMIC IMPACT OF OPERATIONS

During fiscal year 2016, SOCHE member schools are estimated to have spent approximately \$2.5 billion on continuing operations. Of this, \$1.6 billion is attributable directly to the “new money” coming into the area due to members’ presence and \$930.1 million is considered retained and is discussed below. Overall, the \$2.5 billion spent by SOCHE member institutions led to an additional \$2.4 billion to be spent in the southwestern Ohio economy for a total economic impact from operations of more than \$4.9 billion. Individuals employed at member colleges and universities earned \$1.2 billion while the indirect employees earned \$701.8 million in wages. In total, approximately \$1.9 billion in earnings resulted from SOCHE members’ operations. Fully 47,479 jobs were supported by the operations expenditures made by SOCHE members, of which 30,610 individuals were directly employed and 16,869 indirectly.

Table 1: Total Economic Impact from Operations, FY 2016

Impact Type	Output	Earnings	Employment
Direct	\$2,545,637,889	\$1,186,241,544	30,610
Indirect	\$2,392,899,616	\$701,780,498	16,869
Total	\$4,938,537,505	\$1,888,022,042	47,479

Source: Economics Center calculations using data provided by SOCHE member institutions, IPEDS, Emsi, and RIMS II multipliers; All monetary values are in 2016 dollars.

In fiscal year 2016, SOCHE member institutions were able to attract \$1.6 billion in new money to southwestern Ohio from the tuition of non-local students, through research funding, and from federal grants, among other revenues streams. The more than \$1.6 billion in direct spending by the member institutions from outside money generated an additional \$1.5 billion in economic activity in the SOCHE region, as is shown in Table 2. Overall, new money coming to the southwestern Ohio region due to SOCHE members’ presence increased economic activity in the 20-county region by more than \$3.1 billion. The colleges and universities’ ability to attract students and funding from outside of southwestern Ohio led to 19,426 full- and part-time direct jobs. These direct jobs further supported another 10,706 jobs for a total impact of 30,132 jobs in the 20-county region. Direct employees of SOCHE members earned \$752.8 million while indirect employees earned \$445.4 million.

¹³ SOCHE and the Kettering Foundation are included in these figures.

In all, nearly \$1.2 billion in wages were paid due to members’ ability to attract money into southwestern Ohio.

Table 2: New Money Economic Impact from Operations, FY 2016

Impact Type	Output	Earnings	Employment
Direct	\$1,615,527,113	\$752,819,317	19,426
Indirect	\$1,518,595,486	\$445,367,908	10,706
Total	\$3,134,122,599	\$1,198,187,225	30,132

Source: Economics Center calculations using data provided by SOCHE member institutions, IPEDS, Emsi, and RIMS II multipliers; All monetary values are in 2016 dollars.

As shown in Table 3, retaining students from the 20-county area who may have gone elsewhere for post-secondary education caused direct expenditures from the member schools by \$930.1 million. As a result, total economic activity in southwestern Ohio increased by 1.8 billion. The expenditures that resulted from retained students supported 11,184 full- and part-time jobs at member colleges and universities and indirectly supported 6,163 jobs in the 20-county region. Total earnings resulting from the operations expenditures associated with retained students were more than \$689.8 million.

Table 3: Retained Economic Impact from Operations, FY 2016

Impact Type	Output	Earnings	Employment
Direct	\$930,110,776	\$433,422,227	11,184
Indirect	\$874,304,130	\$256,412,590	6,163
Total	\$1,804,414,906	\$689,834,817	17,347

Source: Economics Center calculations using data provided by SOCHE member institutions, IPEDS, Emsi, and RIMS II multipliers; All monetary values are in 2016 dollars.

ECONOMIC IMPACT OF STUDENT SPENDING

Student spending results from purchases of goods and services while attending school. Estimated purchases of non-local students who have moved to the area to attend a SOCHE member institution are shown separately from the purchases of local students who may otherwise have left the area to attend another college or university. Students contribute economically to the area in which they study in a number of ways including patronizing local restaurants, grocery stores, and merchandise stores, renting apartments, and attending local arts events, among many other categories.¹⁴ Table 4 shows that student spending increased economic activity in southwestern Ohio by more than \$2.0 billion, increased total earnings by \$566.5 million, and supported 22,002 jobs.

¹⁴ The Economics Center used the Bureau of Labor Statistics 2015 Consumer Expenditure Survey to estimate expenditures made by students on housing, groceries, restaurants, apparel, vehicles, fuel, public transport, healthcare, entertainment, personal care products, and other miscellaneous purchases. (Bureau of Labor Statistics 2015); (Bureau of Economic Analysis 2016)

Table 4: Total Economic Impact of Student Spending, FY 2016

Impact Type	Output	Earnings	Employment
Direct	\$1,545,933,084	\$416,839,887	17,219
Indirect	\$471,208,226	\$149,697,314	4,783
Total	\$2,017,141,310	\$566,537,201	22,002

Source: Economics Center calculations using data provided by SOCHE member institutions, IPEDS, Emsi, and RIMS II multipliers; All monetary values are in 2016 dollars.

Non-local students generated approximately \$488.7 million in new money to the SOCHE region through attending a member college or university and are estimated to have caused a further \$154.0 million to be spent as a result of purchases for a total economic impact in the area of approximately \$642.8 million as shown in Table 5. Further, 5,549 full- and part-time jobs were supported in local businesses due to non-local student spending. These 5,549 direct jobs, in turn, supported another 1,536 jobs in the 20-county region.

Table 5: Economic Impact of Non-Local Student Spending, FY 2016

Impact Type	Output	Earnings	Employment
Direct	\$488,734,746	\$136,951,573	5,549
Indirect	\$154,045,518	\$48,149,958	1,536
Total	\$642,780,264	\$185,101,531	7,085

Source: Economics Center calculations using data provided by SOCHE member institutions, IPEDS, Emsi, and RIMS II multipliers; All monetary values are in 2016 dollars.

Students originating from the 20-county SOCHE region spent an estimated \$1.1 billion in southwestern Ohio, which led to further expenditures of \$317.2 million for a total impact of approximately \$1.4 billion, as shown in Table 6 due to local student spending. This spending supported an estimated 11,670 jobs in local businesses and indirectly supported another 3,247 full- and part-time jobs in southwestern Ohio. Overall, local student spending supported 14,917 full- and part-time jobs. Nearly \$381.4 million in total wages were paid due to local student spending.

Table 6: Economic Impact of Local Student Spending, FY 2016

Impact Type	Output	Earnings	Employment
Direct	\$1,057,198,338	\$279,888,314	11,670
Indirect	\$317,162,708	\$101,547,356	3,247
Total	\$1,374,361,046	\$381,435,670	14,917

Source: Economics Center calculations using data provided by SOCHE member institutions, IPEDS, Emsi, and RIMS II multipliers; All monetary values are in 2016 dollars.

ECONOMIC IMPACT OF CAPITAL EXPENDITURES

SOCHE members make capital expenditures in the form of equipment, construction and renovation, furniture, books, and software to fulfill educational missions, all of which are typically specific investments and outside of normal college and university operations expenditures. The economic impact of those local capital expenditures is shown in Table 7. SOCHE members made approximately \$304.0 million in capital expenditures in fiscal year 2016, with \$241.0 million dedicated to

construction and renovation and \$62.4 million going to other capital expenditures. Of this \$304.0 million, approximately \$181.9 million remained in the southwestern Ohio economy, as many of the goods and services necessary for the capital purchases existed outside of the regional economy. This spending led to further local sales of \$182.2 million, for a total impact on the 20-county economy of approximately \$364.1 million. These one-time capital expenditures made by SOCHE members led to the creation of 1,256 direct full- and part-time jobs, which then indirectly supported 1,302 jobs in southwestern Ohio.

Table 7: Economic Impact of Capital Expenditures, FY 2016

Impact Type	Output	Earnings	Employment
Direct	\$181,899,542	\$71,115,787	1,256
Indirect	\$182,185,666	\$50,753,826	1,302
Total	\$364,085,208	\$121,869,613	2,558

Source: Economics Center calculations using data provided by SOCHE member institutions, IPEDS, Emsi, and RIMS II multipliers; All monetary values are in 2016 dollars.

TOTAL ECONOMIC IMPACT

The total economic impact of SOCHE members on the 20-county region was approximately \$7.3 billion in fiscal year 2016, as shown in Table 8. This includes the impact of operations, student spending, and capital expenditures, as detailed above. The colleges and universities directly supported 49,085 jobs and indirectly supported another 22,954 full-and part-time jobs in southwestern Ohio. Approximately two-thirds of SOCHE members’ impact resulted from operations expenditures and the spending of employees, 28 percent came from student spending, and five percent came from capital expenditures. The members’ operations led to approximately \$2.6 billion in wages being paid in the 20-county region.

Table 8: Total Economic Impact of SOCHE Members, FY 2016

Impact Type	Output	Earnings	Employment
Direct	\$4,273,470,515	\$1,674,197,218	49,085
Indirect	\$3,046,293,508	\$902,231,638	22,954
Total	\$7,319,764,023	\$2,576,428,856	72,039

Source: Economics Center calculations using data provided by SOCHE member institutions, IPEDS, Emsi, and RIMS II multipliers; All monetary values are in 2016 dollars.

FISCAL IMPACTS

During fiscal year 2016, SOCHE member schools generated approximately \$654.7 million in fiscal benefits to municipal, county, state, and federal governments, as displayed in Table 9. Fully 11.2 percent went to municipal and county governments, 34.4 percent accrued to the State of Ohio, and 13.8 percent accumulated to the U.S. federal government. Local municipalities throughout southwestern Ohio received \$35.9 million in earnings tax revenues paid by direct and indirect employees of SOCHE member schools. County governments accrued nearly \$37.0 million in property and sales taxes. The sales taxes paid by the members’ employees and employees of businesses

supported by SOCHE members provided more than 93.9 percent of County revenues and property taxes paid by member schools accounted for 6.1 percent of County tax revenues. The State of Ohio accumulated approximately \$225.4 million in gross tax revenue due to the member institutions, most of which was paid through sales tax on the spending of university employees and students.

Table 9: Fiscal Impact, FY 2016

Entity	Sales Tax ¹⁵	Earnings Tax	Property Tax	Corporate Income	Total
Municipalities	-	\$35,915,791	-	-	\$35,915,791
Counties	\$34,729,184	-	\$2,251,255	-	\$36,980,439
State of Ohio	\$176,871,075	\$48,520,254	-	-	\$225,391,329
Federal	-	\$356,318,871	-	\$56,955	\$356,375,826
Total	\$211,600,259	\$440,754,916	\$2,251,255	\$56,955	\$654,663,385

Source: Economics Center calculations using data provided by SOCHE member institutions, IPEDS, and RIMS II multipliers; All monetary values are in 2016 dollars. Tax rates are derived from the Ohio Department of Taxation.¹⁶

CONCLUSION

SOCHE and its members are a cornerstone of southwestern Ohio, developing the talent necessary for the economy to thrive. While the schools’ main function is to educate students, the colleges and universities directly and indirectly supported the local economy in fiscal year 2016 through their purchases and their attraction of students and workers, who also purchased goods and services in the area. In fiscal year 2016, SOCHE members contributed an estimated \$7.3 billion to the economy of southwestern Ohio through direct expenditures and through the purchases made by employees and students. Overall, the member institutions supported employment in the 20-county region of 72,039 people and \$2.6 billion in earnings. The members brought local municipal and county governments approximately \$72.9 million in tax revenues and the State of Ohio accrued \$225.4 million in gross tax revenues. SOCHE and its member institutions have benefited the area in numerous ways and will continue to through members’ work, that of the employees, and the students.

METHODOLOGY

Economic impact figures represent the effects that a given entity and its associated economic activities have upon a surrounding community. Colleges and universities, including employees, affect local communities through purchases of local goods and services. In turn, local businesses and households purchase goods and services in the area. Applying the relevant multipliers for each

¹⁵ Sales taxes generally apply to final purchases of goods and services. The Economics Center applied the state and local sales tax rates to direct student expenditures as well as the household spending, or the induced impacts associated with the one-time construction expenditures and ongoing operations expenditures.

¹⁶ (Ohio Department of Taxation 2016); (Ohio Department of Taxation 2017)

industry allowed the Economics Center to give a realistic picture of the economic impact of SOCHE members' operations and capital expenditures as well as student spending.

The Economics Center calculated the impact of SOCHE members using data submissions made by the colleges and universities regarding student enrollment by origin location, operations expenditures, and employment figures, among others. When data were not available, the Integrated Postsecondary Education Data System (IPEDS), which is part of the U.S. Department of Education was utilized. These data were used in an input-output model, which measures goods and services produced in each industry and the use of those goods and services by other industries and households in a local area.

Student expenditures are estimated from the Bureau of Labor Statistics' Consumer Expenditure Survey Table 1300 for those under 25 years. The Economics Center categorized expenditure categories and classified them according to the respective North American Classification System (NAICS) industry code. All expenditures were weighted by the Bureau of Economic Analysis' Regional Price Parities to adjust for regional differences in the price of goods, rent, and other services. All categories were reduced by one-quarter to remove expenditures that occur during the summer semester when active enrollment typically decreases. For retail categories, such as groceries, apparel, fuel, and personal care products, retail margins were then applied.

To separate local and non-local expenditures, school submissions separated local and non-local revenues sources. However, in the case of state-based funds, the Economics Center utilized Ohio Department of Taxation data on sales and earnings taxes to remove the share of Ohio's overall revenues that originated in the Counties that comprise the SOCHE area.

For this project, multipliers were derived from an input-output model created by the Bureau of Economic Analysis (BEA), a part of the U.S. Department of Commerce. This model, constituent tables, and resulting multipliers are part of the BEA's Regional Industrial Multiplier System (RIMS II). To assess localized areas in southwest Ohio, Emsi regional impact multipliers were used to identify a ratio of impact multipliers in multi-county areas, which were then applied to the RIMS II multipliers.

For fiscal impacts, school submissions were utilized for their contributions to earnings, real estate, and corporate income tax on behalf of their direct employees. The Economics Center estimated the sales tax accruing to local entities by applying a weighted average of the local counties' sales tax rates based on total sales taxes that accrued to the State of Ohio and multiplying the derived local tax rate by final purchases made by households, students, and those employed as a result of capital expenditures made by SOCHE members. To estimate local earnings taxes, the Economics Center generated a weighted average of the municipalities' share of total employment in the 20-county area. That share of total employment was then multiplied by the municipalities' respective earnings tax rates and summed to generate the average earnings tax rate for the 20-county area. That derived rate was then applied to the earnings of all jobs supported by student spending, capital expenditures, and jobs indirectly supported by school operations expenditures.

ABOUT THE ECONOMICS CENTER

The work of the Economics Center provides tools that help clients make better financial, policy, economic and workforce development decisions. The critical data analyses empower business and civic leaders to respond to changing economic conditions, strengthen local economies, and improve the quality of life for their communities.

PROJECT STAFF

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