ECONOMICS CENTER
RESEARCH AND CONSULTING

Economic and Fiscal Impacts of Wright State University

Prepared by the Economics Center

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WRIGHT STATE UNIVERSITY

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INTRODUCTION

Wright State University (Wright State) is a public, four-year university whose main campus is located in Fairborn, Ohio[1] that enrolled 19,602 students and directly employed 6,895 full- and part-time workers during the 2015-2016 academic year. The University benefits the Dayton Metropolitan Statistical Area (MSA)[2] in a number of ways, principally by increasing the training and knowledge base of the area, but also through the expenditures of the University, its employees, and its students.

This report displays the economic impact of Wright State on the Dayton MSA, which primarily benefits from the University. Further, this report quantifies the fiscal benefits the University provides to local, state, and federal governments. All told, Wright State increased economic output in the Dayton MSA by approximately $1.0 billion in fiscal year 2016 and led to nearly $63.3 million in total tax revenues, of which more than $7.0 million accrued to local municipal and county governments.

Wright State benefits the local economy in three ways: through its operations, student spending, and capital expenditures. The direct spending for the University's operations affects the local economy as the school and its employees purchase local goods and services. In turn, those local businesses and associated employees increase spending and buy local goods and services themselves, which are specified as indirect impacts.

The total economic impact from Wright State's operations falls into two categories. The first category is the net economic impact of new money from outside of the Dayton MSA that is spent within the local economy because of Wright State. The second economic impact category is the retained economic impact, which results from spending of local students that may have moved elsewhere for postsecondary education if it were not for Wright State. These impacts are shown below.

OPERATIONS

During fiscal year 2016, Wright State's Main Campus spent $397.0 million on operations. Of this, approximately $193.6 million is attributable directly to the new money coming into the Dayton MSA due to Wright State's presence and $203.5 million is considered retained and is discussed below. This direct spending by the University from outside money generated a further $125.2 million in additional economic activity in the Dayton MSA, as is shown in Table 1. Overall, outside money coming to the region as a result of Wright State increased economic activity in the area by more than $318.7 million. The University's ability to attract students and funding from outside of the Dayton

[1] The Lake Campus of Wright State University, which accounts for approximately 2.4 percent of total operating expenditures, is located in Celina, Ohio and is not included in this report to centralize the economic impact of the University.
[2] The Dayton MSA includes Greene, Miami, Montgomery, and Preble Counties. To conform to previous reports, the Dayton MSA includes Preble County.

MSA led to 3,362 full- and part-time jobs at the University. These direct jobs further supported another 1,691 jobs for a total net impact of 5,053 jobs in the region. Direct employees of the University earned more than $101.5 million in total wages and indirect employees earned approximately $46.6 million.

Table 1: New Money Economic Impact from Operations, FY 2016

Impact Type	Output	Earnings	Employment
Direct	$193,568,774	$101,508,494	3,362
Indirect	$125,167,380	$46,555,084	1,691
Total	**$318,736,154**	**$148,063,578**	**5,053**

Source: Economics Center calculations using data provided by Wright State University, Emsi, and RIMS II multipliers; All monetary values are in 2016 dollars.

As shown in Table 2, retaining students from the Dayton MSA who may have gone elsewhere for postsecondary education increased direct expenditures from the University by approximately $203.5 million. As a result, total economic activity attributed to retained students in the Dayton MSA increased by approximately $335.0 million. The expenditures made by Wright State University that resulted from retained students supported 3,533 full- and part-time jobs at the University and indirectly supported another 1,777 jobs in the region with approximately $155.6 million in total earnings.

Table 2: Retained Economic Impact from Operations, FY 2016

Impact Type	Output	Earnings	Employment
Direct	$203,461,118	$106,696,092	3,533
Indirect	$131,564,067	$48,934,285	1,777
Total	**$335,025,185**	**$155,630,377**	**5,310**

Source: Economics Center calculations using data provided by Wright State University, Emsi, and RIMS II multipliers; All monetary values are in 2016 dollars.

STUDENT SPENDING

Student spending results from the purchase of goods and services while attending school. Estimated purchases of non-local students who have moved to the area to attend Wright State are shown separately from the purchases of local students who may otherwise have left the area to attend another college or university. In the fiscal year 2016, non-local students brought approximately $58.7 million in new money to the Dayton MSA because of the University and are estimated to have increased total economic output in the area by nearly $90.5 million, as shown in Table 3. Further, 667 full- and part-time jobs were supported in local businesses due to non-local student spending. These 667 direct jobs, in turn, supported another 269 jobs in the area. Individuals directly employed, because of non-local student spending, earned approximately $24,298, on average, while indirect employees earned average annual wages of $34,937.

Table 3: Economic Impact of Non-local Student Spending, FY 2016

Impact Type	Output	Earnings	Employment
Direct	$58,684,896	$16,206,573	667
Indirect	$31,829,908	$9,397,967	269
Total	**$90,514,804**	**$25,604,540**	**936**

Source: Economics Center calculations using data provided by Wright State University, Emsi, and RIMS II multipliers; All monetary values are in 2016 dollars.

Students originating from the Dayton MSA spent an estimated $165.8 million in the region, which led to further expenditures of $88.4 million for a total impact of more than $254.2 million, as shown in Table 4. This spending supported an estimated 1,858 jobs in local businesses and indirectly supported 750 full- and part-time jobs in Greene, Miami, Montgomery, and Preble Counties. Direct employees supported by local student spending earned an average annual wage of $23,845 while indirect employees earned $34,920, on average. Overall, $70.5 million in wages were paid as a result of local student spending.

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

Impact Type	Output	Earnings	Employment
Direct	$165,767,845	$44,304,290	1,858
Indirect	$88,384,067	$26,189,993	750
Total	**$254,151,912**	**$70,494,283**	**2,608**

Source: Economics Center calculations using data provided by Wright State University, Emsi, and RIMS II multipliers; All monetary values are in 2016 dollars.

CAPITAL EXPENDITURES

During fiscal year 2016, Wright State made capital expenditures[3] to fulfill its mission, all of which are typically specific investments and outside of normal University operations expenditures. The economic impact of those local capital purchases is shown in Table 5. Wright State made more than $32.3 million in capital expenditures in the fiscal year 2016, of which $15.7 million remained in the four-county 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 nearly $10.1 million, for a total impact on the Dayton MSA economy of approximately $25.8 million.

Table 5: Economic Impact of Capital Expenditures, FY 2016

Impact Type	Output	Earnings	Employment
Direct	$15,712,024	$5,415,567	88
Indirect	$10,053,311	$3,597,338	115
Total	**$25,765,335**	**$9,012,905**	**203**

Source: Economics Center calculations using data provided by Wright State University, Emsi, and RIMS II multipliers; All monetary values are in 2016 dollars.

[3] Capital expenditures are large infrequent investments, which include equipment, construction and renovation, furniture, books and software.

TOTAL ECONOMIC IMPACT

The total economic impact of Wright State on the Dayton MSA was more than $1.0 billion in fiscal year 2016, as shown in Table 6. This includes the impact of operations, student spending, and capital expenditures, as mentioned above. The University directly supported 9,508 jobs and indirectly supported another 4,602 full-and part-time jobs in the Dayton MSA. The majority of the output, earnings, and jobs supported by Wright State resulted from the operations expenditures of the school. Wright State's operations, capital expenditures, and student spending led to approximately $408.8 million in wages being paid in the Dayton MSA.

Table 6: Economic Impact of Wright State University, FY 2016

Impact Type	Output	Earnings	Employment
Direct	$637,194,657	$274,131,015	9,508
Indirect	$386,998,733	$134,674,668	4,602
Total	**$1,024,193,390**	**$408,805,683**	**14,110**

Source: Economics Center calculations using data provided by Wright State University, Emsi, and RIMS II multipliers; All monetary values are in 2016 dollars.

FISCAL IMPACTS

During fiscal year 2016, Wright State generated approximately 63.3 million in fiscal benefits, which accrued to local municipal and county, state, and federal governments, as displayed in Table 7. Fully 11.1 percent went to local governments, 40.5 percent accrued to the State of Ohio, and 48.4 percent accumulated to the U.S. federal government. The majority of local and state government revenues originated from sales taxes paid as a result of University employee and student spending. Despite being a not-for-profit school, Wright State paid $3,081 in property tax in fiscal year 2016.

Table 7: Fiscal Impact, FY 2016

Entity	Sales Tax[4]	Earnings Tax	Property Tax	Total
Local	$4,386,300	$2,640,793	$3,081	$7,027,093
State	$24,179,259	$1,457,680	-	$25,636,939
Federal	-	$30,598,815	-	$30,598,815
Total	**$28,565,559**	**$34,697,288**	**$3,081**	**$63,262,847**

Source: Economics Center calculations using data provided by Wright State University, Emsi, and RIMS II multipliers; All monetary values are in 2016 dollars.

[4] 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.

CONCLUSION

Wright State is embedded in the local community and economy of the Dayton MSA. While the University's main function is to educate its students, it directly and indirectly supports the local economy through purchases as well as its ability to attract students and workers, who expend money in the Dayton MSA. In fiscal year 2016, the University produced an estimated economic impact of more than $1.0 billion in the local economy through direct expenditures and the purchases of its employees and students. Overall, the school supported employment in the Dayton MSA of 14,110 people and $408.8 million in total wages. The University also generated approximately $7.0 million in gross tax revenues for local municipal and county governments and the State of Ohio received more than $25.6 million in total fiscal impact. Wright State has benefited the area in numerous ways and will continue to through its work, that of its employees, and its students.

METHODOLOGY

Economic impact figures represent the effects that a given entity and its associated economic activities have upon a surrounding community. Universities affect local communities through the purchases of local goods and services. In turn, those local businesses and households purchase goods and services. Applying the relevant multipliers for each industry allowed the Economics Center to give a realistic picture of the economic impact of Wright State's capital and ongoing operations expenditures as well as student spending.

The Economics Center calculated the impact of Wright State using data submissions made by the University regarding student enrollment by origin location, operations expenditures, and employment figures, among others. To separate Wright State's Main Campus and Lake Campus, the Integrated Postsecondary Education Data System (IPEDS), which is part of the U.S. Department of Education was utilized. Enrollment, expenditures, and employment figures were weighted by each campus' submissions in the previous academic and fiscal year and applied to Wright State's data submission. Employment figures were weighted by the campus' wages because employment data was not available through IPEDS for the Lake Campus. 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 organized 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.

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, the 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.

Wright State's data submission 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 Greene, Miami, Montgomery, and Preble Counties' contributions to Ohio's overall revenues.

For fiscal impacts, school submissions were utilized for their contributions to earnings, real estate, and corporate income tax for the institution and 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 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 Wright State University. Wright State's submission for local, state, and federal earnings taxes were weighted by the Main Campus' share of wages to remove the Lake Campus from the report. To estimate local earnings taxes, the Economics Center generated a weighted average of the municipalities' share of total employment in the Dayton MSA. 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 Dayton MSA. 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.

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