

# Economic and Fiscal Impacts of University of Cincinnati

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## INTRODUCTION

University of Cincinnati (UC) is a public, four-year University with campus locations in Batavia, Blue Ash, and Cincinnati, Ohio that enrolled 44,338 students and directly employed 7,656 full- and part-time workers during the 2015-2016 academic year. The University benefits the Ohio portion of the Cincinnati Metropolitan Statistical Area (MSA)<sup>1</sup> 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 UC on the Ohio portion of the Cincinnati 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, UC increased economic output in the five-county region by nearly \$3.3 billion in fiscal year 2016 and led to nearly \$274.8 million in total tax revenues, of which \$27.8 million accrued to local municipal and county governments.

The University of Cincinnati benefits the local economy in three ways: through its operations expenditures, student spending, and capital expenditures. The direct spending 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 the University of Cincinnati's operations falls into two categories. The first category is the net economic impact of new money from outside of the Ohio portion of the Cincinnati MSA that is spent within the local economy as a result of the University of Cincinnati. 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 University of Cincinnati. These impacts are shown separately below.

## OPERATIONS

During fiscal year 2016, UC spent \$1.1 billion on operations. Of this, \$695.5 million is attributable directly to the new money coming into the area due to UC's presence and \$420.9 million is considered retained and is discussed below. This direct spending by the University from outside money generated a further \$661.8 million in additional economic activity in Brown, Butler, Clermont, Hamilton, and Warren Counties, as is shown in Table 1. Overall, outside money coming to the region due to UC increased economic activity in the area by nearly \$1.4 billion. The University's ability to attract students and funding from outside of the Ohio portion of the Cincinnati MSA led to 4,770 full- and part-time jobs at the University. These direct jobs further supported another 2,656 jobs for a total net impact of 7,426 jobs in the region. Direct employees of the University earned \$295.4 million in total wages and indirect employees earned \$172.9 million.

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<sup>1</sup> The Ohio portion of the Cincinnati MSA includes Butler, Brown, Clermont, Hamilton, and Warren Counties.

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

Impact Type	Output	Earnings	Employment
<b>Direct</b>	\$695,531,351	\$295,424,723	4,770
<b>Indirect</b>	\$661,798,080	\$172,912,091	2,656
<b>Total</b>	<b>\$1,357,329,431</b>	<b>\$468,336,814</b>	<b>7,426</b>

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

As shown in Table 2, UC's ability to retain students from the Ohio portion of the Cincinnati MSA who may have gone elsewhere for postsecondary education increased direct expenditures from the University by approximately \$420.9 million. As a result, total economic activity attributed to retained students in the five-county region increased by \$821.3 million. The expenditures made by the University of Cincinnati as a result of retained students supported 2,886 full- and part-time direct jobs at the University and indirectly supported another 1,607 jobs in the region with approximately \$283.4 million in total earnings.

**Table 2: Retained Economic Impact from Operations, FY 2016**

Impact Type	Output	Earnings	Employment
<b>Direct</b>	\$420,872,649	\$178,764,316	2,886
<b>Indirect</b>	\$400,460,326	\$104,630,754	1,607
<b>Total</b>	<b>\$821,332,975</b>	<b>\$283,395,070</b>	<b>4,493</b>

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

## STUDENT SPENDING

Student spending results from the purchases of goods and services while attending school. Estimated purchases of non-local students who have moved to the area to attend UC are shown separately from the purchases of local students who may otherwise have left the area to attend another college or university. During the fiscal year 2016, non-local students brought approximately \$203.8 million in new money to the Ohio portion of the Cincinnati MSA because of the University and are estimated to have increased total economic output in the area by approximately \$357.5 million, as shown in Table 3. Further, 2,129 full- and part-time jobs were supported in local businesses due to non-local student spending. These 2,129 direct jobs, in turn, supported another 1,149 jobs in the area. Individuals directly employed because of non-local student spending earned approximately \$26,419, on average, while indirect employees earned average annual wages of \$36,302.

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

Impact Type	Output	Earnings	Employment
<b>Direct</b>	\$203,840,560	\$56,246,504	2,129
<b>Indirect</b>	\$153,706,386	\$41,711,466	1,149
<b>Total</b>	<b>\$357,546,946</b>	<b>\$97,957,970</b>	<b>3,278</b>

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

Students originating from the Ohio portion of the Cincinnati MSA spent nearly \$311.8 million in the five-county area, which led to further expenditures of \$235.1 million for a total impact of approximately \$547.0 million, as shown in Table 4. This spending supported an estimated 3,257 jobs in local businesses and indirectly supported another 1,757 full- and part-time jobs in the Ohio portion of the Cincinnati MSA. Direct employees supported by local student spending earned an average annual wage of \$26,416 while indirect employees earned \$36,314, on average. Overall, \$149.8 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
<b>Direct</b>	\$311,799,800	\$86,037,152	3,257
<b>Indirect</b>	\$235,114,347	\$63,803,248	1,757
<b>Total</b>	<b>\$546,914,147</b>	<b>\$149,840,400</b>	<b>5,014</b>

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

## CAPITAL EXPENDITURES

During the fiscal year 2016, The University of Cincinnati made capital expenditures<sup>2</sup> in the form of equipment, construction and renovation, furniture, books, and software to fulfill its mission, all of which are typically specific investments and outside of normal operations expenditures. The economic impact of those local capital purchases is shown in Table 5. The University of Cincinnati made approximately \$155.0 million in capital expenditures, of which more than \$101.2 million remained in the Ohio portion of the Cincinnati MSA, as some of the goods and services necessary for the capital purchases existed outside of the five-county region. This spending led to further local sales of approximately \$97.2 million, for a total impact on the five-county economy of nearly \$198.5 million.

**Table 5: Economic Impact of Capital Expenditures, FY 2016**

Impact Type	Output	Earnings	Employment
<b>Direct</b>	\$101,236,308	\$41,497,620	678
<b>Indirect</b>	\$97,236,127	\$20,284,292	624
<b>Total</b>	<b>\$198,472,435</b>	<b>\$61,781,912</b>	<b>1,302</b>

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

## TOTAL ECONOMIC IMPACT

The total economic impact of UC on Brown, Butler, Clermont, Hamilton, and Warren Counties was approximately \$3.3 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

<sup>2</sup> Capital expenditures are large infrequent investments, which include equipment, construction and renovation, furniture, books and software.

supported 13,720 jobs and indirectly supported another 7,793 full-and part-time jobs in the Ohio portion of the Cincinnati MSA. The majority of the economic output, earnings, and jobs supported by UC resulted from the operations expenditures of the University in fiscal year 2016. The University of Cincinnati’s operations, capital expenditures, and student spending led to nearly \$1.1 billion in wages being paid in the Ohio portion of the Cincinnati MSA.

**Table 6: Economic Impact of University of Cincinnati, FY 2016**

Impact Type	Output	Earnings	Employment
<b>Direct</b>	\$1,733,280,668	\$657,970,315	13,720
<b>Indirect</b>	\$1,548,315,266	\$403,341,851	7,793
<b>Total</b>	<b>\$3,281,595,934</b>	<b>\$1,061,312,166</b>	<b>21,513</b>

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

## FISCAL IMPACTS

During fiscal year 2016, the University of Cincinnati generated approximately \$274.8 million in fiscal benefits to local municipal and county, state, and federal governments, as displayed in Table 7. Fully 10.1 percent went to local governments, 33.6 percent accrued to the State of Ohio, and 56.3 percent accumulated to the U.S. federal government. The majority of local government revenues originated from earnings taxes paid by College employees, students, and the employees of businesses supported by the University. As a not-for-profit school, UC does not pay property tax.

**Table 7: Fiscal Impact, FY 2016**

Entity	Sales Tax <sup>3</sup>	Earnings Tax	Total
Local	\$13,316,173	\$14,518,464	\$27,834,637
State	\$68,991,893	\$23,233,959	\$92,225,852
Federal	-	\$154,724,867	\$154,724,867
<b>Total</b>	<b>\$82,308,066</b>	<b>\$192,477,290</b>	<b>\$274,785,356</b>

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

## CONCLUSION

The University of Cincinnati is embedded in the local community and economy of the five-county area it serves. 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 then expend money in Brown, Butler, Clermont, Hamilton, and Warren Counties. In fiscal year 2016, the University generated an estimated economic impact of \$3.3 billion in the local economy through direct expenditures and the purchases of employees and students. Overall, the

<sup>3</sup> 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.

University of Cincinnati led to increased employment in the five-county region of 21,513 people and \$1.1 billion in total wages. The University also generated \$27.8 million in tax revenues for local municipal and county governments and the State of Ohio received \$92.2 million in total fiscal impact. The University of Cincinnati 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 made by the facilities and its employees. In turn, those local businesses and households purchase goods and services at local businesses. Applying the relevant multipliers for each industry allowed the Economics Center to give a realistic picture of the economic impact of the University of Cincinnati's capital and ongoing operations expenditures as well as student spending.

The Economics Center calculated the impact of the University of Cincinnati using data submissions made by the University regarding student enrollment by origin location, operations expenditures, and employment figures, among others. When data were not available, the Integrated Postsecondary Education Data System, 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 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, its 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.

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 Butler, Brown, Clermont, Hamilton, and Warren Counties' contribution to Ohio's overall revenues.

For fiscal impacts, the Economics Center applied a weighted average of federal and state earnings taxes of 18 other southwestern Ohio colleges and universities to estimate the taxes the University of Cincinnati paid 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 the University of Cincinnati. To estimate local earnings taxes, the Economics Center generated a weighted average of the municipalities' share of total employment in the Cincinnati 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 Cincinnati 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. For direct employees, the Economics Center created a weighted average of employees at the Main Campus in Cincinnati, the Blue Ash Campus, and the Clermont Campus in Batavia and applied the respective earnings tax rates for those areas.

## 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.