



# THE ECONOMIC AND COMMUNITY IMPACT OF ALLERGAN TO OHIO

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## EXECUTIVE SUMMARY

Allergan plc, a global pharmaceutical company, maintains a production and packaging facility in the City of Cincinnati that employs nearly 200 individuals and contributes significantly to the local and Ohio economies through its operating and capital expenditures. Allergan's economic impact in Ohio is much larger than its own direct employment and spending, however. Allergan's Cincinnati operations generate hundreds of more jobs and millions of dollars in additional spending within the State economy, as well as hundreds of thousands of dollars in income and sales tax revenues to local government entities and the State of Ohio.

Through daily operations spending and capital investments, Allergan's Cincinnati manufacturing facility's estimated annual economic impact to the State of Ohio includes:

- \$46.3 million in total economic output;
- \$28.8 million in total earnings; and
- 686 total jobs, both directly and indirectly supported by this spending.

Allergan's Cincinnati capital expenditures and operations generate significant tax revenues for local governments and the State of Ohio. Allergan's estimated total fiscal impact of nearly \$1.5 million in 2017 consisted of:

- Income tax revenue totaling approximately \$286,000 for the City of Cincinnati and approximately \$675,000 to the State of Ohio – for a total of nearly \$1 million; and
- Sales tax revenue of approximately \$30,000 for Hamilton County and approximately \$336,000 for the State of Ohio.

Allergan contributes substantially to charitable organizations in the State of Ohio through financial contributions by the Allergan Foundation and volunteer efforts of Allergan associates. From 2017 to 2018, the Allergan Foundation contributed \$145,000 to four organizations in Ohio, three of which are located in the City of Cincinnati. The Allergan Foundation's lifetime giving to the four organizations totals \$555,000, including \$485,000 to the Cincinnati Eye Institute Foundation. Allergan also promotes educational and financial outreach initiatives in Cincinnati through the significant volunteer efforts of its associates. Each year, Allergan associates volunteer hundreds of hours to causes such as fundraisers for a local STEM high school, the sorting of items for victims of natural disasters, as well as to organizations such as Habitat for Humanity and the Alzheimer's Society.



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## BACKGROUND

Allergan plc, a global pharmaceutical company headquartered in Dublin, Ireland, develops, manufactures, and commercializes branded pharmaceutical, device, biologic, surgical, and regenerative medicine products for patients around the world. Allergan's manufacturing operation in Cincinnati produces and packages a variety of pharmaceutical products used to treat diseases such as heart disease and Alzheimer's. The facility enjoys strong employee retention, with average employee tenure of eight years, as well as recognition within the company as Allergan Plant of the Year in 2017 and 2018.

Companies generate economic impacts that are greater than their own direct employment and spending, with additional job creation and spending rippling through the economy. Allergan requested that the Economics Center conduct an analysis to determine the Company's total economic and fiscal impact to the State of Ohio. This report provides results of this analysis and documents Allergan's charitable contributions within the State and, in particular, in the City of Cincinnati. The remainder of the report is divided into the following sections:

**The Methodology Section** documents the analytical approach taken by the Economics Center to calculate the direct, indirect, and total economic impacts of Allergan's Cincinnati plant to the State of Ohio, as well as the theory behind the input-output model used to calculate the various economic impacts. This section also discusses the approach taken to determine the fiscal impact to both local government entities and Ohio.

**The Economic Impact Section** details the direct and indirect economic impacts associated with operational spending and capital investment by Allergan's Cincinnati plant. Types of impacts include output (expenditures), jobs, and employee earnings.

**The Fiscal Impact Section** details the data and methodology behind the Economics Center's calculation of local and State earnings/income and sales tax revenues.

**The Community Outreach Initiatives Section** discusses how Allergan's contributions to the State of Ohio and, specifically, the City of Cincinnati extend well beyond economic and fiscal impacts. This section notes the Allergan Foundation's philanthropic activities in the State, as well as the many volunteer initiatives of Allergan associates in Cincinnati.

**The Conclusion** summarizes Allergan's varied and significant contributions to the Ohio economy and to the betterment of communities in Cincinnati.

## METHODOLOGY

The Economics Center calculated the economic impact to the economy of the State of Ohio of Allergan's Cincinnati manufacturing operations based on capital and operating expenditure data provided by Allergan. Operating expenditures included both employee wages and benefits and recurring, non-employee operating expenses on goods and services such as manufacturing materials, utilities, insurance, and professional services. Allergan provided anonymized salary and benefit data, as well as zip code of residence, for employees working at the Cincinnati facility.

The Economics Center calculated the total economic impact of Allergan's Cincinnati operations using the Regional Input-Output Modeling System (RIMS II), an input-output model maintained by the U.S. Bureau of Economic Analysis (BEA). Input-output models capture the interdependencies of an economy's various industries, quantifying how direct expenditures on goods or services by a particular industry (or to individuals in the form of wages and benefits) yield additional expenditures within that economy.





Businesses, organizations, and governments contribute more to an economy than just the direct employment supported by operations and capital expenditures. The direct wages and expenditures fuel the economy as portions of the direct wages and expenditures are spent on goods and services sourced from other businesses in the economy. The businesses within the economy (and their employees) that benefit from these direct expenditures repeat the process until all the original money has leaked from the economy into outside economies and savings. The sum of Allergan's direct jobs and expenditures in Ohio and the indirect and induced jobs and expenditures created by the money flowing through the Ohio economy constitute Allergan's total economic impacts to the Ohio economy. Indirect jobs and wages are created when a firm purchases goods and services from other firms in the economy and when those firms, in turn, purchase goods and services from other firms in the economy, and so on, until all the original firm's expenditures have leaked out of the economy. Induced jobs and wages are those generated by purchases within the economy by employees with earnings flowing from direct expenditures and their resulting indirect expenditures. Except where induced effects are noted separately, indirect effects refer to both indirect and induced effects in this report.

Multipliers are figures expressed in input-output models that represent economic relationships between industries and between households and industries. For every dollar spent by a given organization in a particular industry, multipliers reflect how many more dollars will be spent in a local economy by other businesses and households, thereby determining the total economic impact of a project or investment. Multipliers also measure how many jobs and the amount of earnings that will be generated in an economy for a given level of expenditure. The BEA's RIMS multipliers reflect two sets of economic impacts, direct effects and final effects. The latter represent the sum of the direct and indirect effects. In this analysis, direct effects are capital and operating expenditures by Allergan's Cincinnati operations, as well as the jobs directly supported by Allergan in Ohio through both its operations and capital expenditures. The indirect impacts are the expenditures and employment that are created in the Ohio economy to the extent that households and industries are supported by and respond to the new demands of the directly impacted industries.

Industries' multipliers vary by geography, reflecting regions' unique inter-industry economic relationships. In this report, multipliers reflect these relationships specifically within the Ohio economy. Applying the relevant Ohio and Hamilton County multipliers for each industry allowed the Economics Center to assemble a realistic picture of the total economic impact of the Allergan's Cincinnati operations to the state.

For the fiscal impact calculations, the Economics Center gathered earnings/income and sales tax rate data from the Ohio Department of Taxation, Hamilton County Government, the City of Cincinnati, and other local municipalities in which Allergan employees reside. Tax rates were applied to employee earnings and taxable purchases to calculate tax revenues accruing to local entities and the State of Ohio.

## ECONOMIC IMPACT

The Economics Center determined the economic impact of Allergan’s Cincinnati manufacturing facilities to the Ohio economy using capital and operating expenditure data provided by Allergan. Capital expenditure data included actual expenditures for calendar years 2016-2017, as well as budgeted expenditures for 2018-2021. Operating expenditures, including both employee wages and benefits and non-employee operating costs, reflected actual 2017 data. This report presents all monetary values in 2017 dollars, with 2016 capital expenditures adjusted for inflation using the national Consumer Price Index (CPI).

The Economics Center adjusted direct capital and non-wage operating expenditure data for leakage prior to applying output, earnings, and employment multipliers. Leakage refers to the portion of spending by a particular industry in an economy that is met by imports from companies and organizations outside the economy. Presented as percentages, leakage figures for the industries comprising capital and operating expenditures by Allergan’s Cincinnati manufacturing operations were obtained from Economic Modeling Specialists International (EMSI).<sup>1</sup> The post-leakage direct expenditure figures represent estimated expenditures by Allergan on goods and services sourced from firms located in the State of Ohio.

### Operations Impact

Direct operating expenditures of Allergan’s Cincinnati facility include spending on employees’ wages, as well as utilities, maintenance and repair, administrative services, and other recurring expenses associated with the upkeep and continued operations of the manufacturing facilities. These direct operating expenditures, in turn, support indirect output, employment, and earnings within associated industries. Indirect impacts include the hiring of additional workers by businesses benefitting from Allergan’s direct expenditures and the increases in output and earnings by these businesses.

Direct output attributable to ongoing operations of Allergan’s Cincinnati facilities totaled \$18.3 million in 2017 and led to an additional \$16.4 million in indirect economic output, as shown in Table 1. Meanwhile, Allergan’s operating expenditures supported 196 direct jobs and an additional 424 indirect jobs in 2017. Total earnings attributable to ongoing operations were \$25.4 million in 2017, including \$12.0 million in direct earnings<sup>2</sup> and \$13.4 million in indirect earnings.

**Table 1. Total Economic Impact of Operations of Allergan’s Cincinnati Manufacturing Facilities, 2017**

Type	Expenditures (\$M)	Employment	Earnings (\$M)
Direct	\$18.3	196	\$12.0
Indirect	\$16.4	424	\$13.4
<b>Total</b>	<b>\$34.7</b>	<b>620</b>	<b>\$25.4</b>

Source: Economics Center calculations using RIMS II multipliers from data provided by Allergan.

<sup>1</sup> EMSI utilizes labor market data and other publicly available sources in a proprietary methodology to allow for tailored economic analyses in a specified geographic area.

<sup>2</sup> Direct earnings include only wages and bonuses of direct employees and exclude benefits and all other non-wage employee expenditures.



### Capital Investment Impact

Allergan’s capital investment expenditures associated with its Cincinnati manufacturing facility vary somewhat year-to-year, ranging from \$6.6 million in 2018 (projected) to \$16.4 million in 2016. These figures include expenditures outside the Ohio economy and are substantially lower when accounting for leakage. Average capital expenditures over the six years 2016-2021 are \$10.6 million overall and \$5.5 million within the Ohio economy, as shown in Table 2.

The industries directly impacted by Allergan’s capital investments in its Cincinnati facility reflect their manufacturing operations. Among the industries that benefit most from these capital expenditures are packaging machinery manufacturing, industrial machinery manufacturing, and pharmaceutical preparation manufacturing. The Economics Center also apportioned 50 percent of manufacturing-related capital expenditures to the Wholesale trade sector based on the assumption that Allergan sources half of its manufacturing machinery and other equipment from wholesalers, as opposed to directly from manufacturers.

Average annual total output accruing to the Ohio economy from Allergan’s capital investments in its Cincinnati facility is \$14.9 million, including \$5.5 million in direct expenditures, \$6.1 million in indirect expenditures, and \$3.3 million in total earnings. Capital investments also supported 66 total jobs, of which just under two-thirds (43) are indirect jobs.

**Table 2. Total Economic Impact of Capital Investments of Allergan’s Cincinnati Manufacturing Facilities, 2017**

Type	Expenditures (\$M)	Employment	Earnings (\$M)
Direct	\$5.5	23	\$1.5
Indirect	\$6.1	43	\$1.8
<b>Total</b>	<b>\$11.6</b>	<b>66</b>	<b>\$3.3</b>

Source: Economics Center calculations using RIMS II multipliers from data provided by Allergan.



## Total Economic Impact

The overall annual economic impact to the State of Ohio of Allergan's Cincinnati operations includes \$46.3 million in total output, \$28.8 in total earnings, and 686 jobs, as shown in Table 3. The overall output and employment multipliers of Allergan's Cincinnati operations for the Ohio economy are 1.90 and 3.16. Put differently, each dollar of direct expenditure by Allergan's Cincinnati operations generates an additional \$0.90 in spending by other firms throughout the Ohio economy, and more than two jobs are created for every job directly supported by Allergan in Cincinnati. In addition, the total-to-direct earnings ratio of 1.89 indicates that every dollar in direct earnings generates an additional \$0.89 in indirect earnings throughout the State of Ohio economy.

**Table 3 – Total Economic Impact of Allergan's Cincinnati Manufacturing Facilities within the State of Ohio, 2017**

Type	Expenditures (\$M)	Employment	Earnings (\$M)
Direct	\$23.8	219	\$13.6
Indirect	\$22.5	467	\$15.2
<b>Total</b>	<b>\$46.3</b>	<b>686</b>	<b>\$28.8</b>

Source: Economics Center calculations using RIMS II multipliers and data provided by Allergan.

## FISCAL IMPACT

### Earnings Tax Revenue

Employee earnings and their subsequent spending of a portion of those earnings generates considerable earnings tax and sales tax revenue to both local jurisdictions and the State of Ohio. The Economics Center calculated City of Cincinnati and State of Ohio earnings tax revenues generated by Allergan's Cincinnati employees based on wage data provided by Allergan. Local earnings tax revenue from Allergan's employees accrues to the City of Cincinnati, which assesses a 2.1 percent earnings tax. The Economics Center also calculated local earnings tax revenues from earnings supported by direct capital expenditures by applying to them the City of Cincinnati's 2.1 percent earnings tax rate. In total, the City of Cincinnati collected more than \$286,000 in tax revenue in 2017 from direct earnings, as shown in Table 4. Importantly, Hamilton County multipliers were used to calculate local direct earnings from capital expenditures, as well as local indirect earnings, as the estimation of local earnings tax revenues was based on local earnings alone. Hamilton County multipliers were also used to calculate local indirect earnings and, in turn, tax revenues from these earnings.

Earnings tax revenues accruing to the State of Ohio from Allergan employees' wages and the wages of the indirect jobs supported by Allergan's Cincinnati facility were calculated by applying the appropriate State income tax rate to each employee's wages.<sup>3,4</sup> The State's 2017 income tax rates were also applied to average earnings of the direct and indirect jobs supported by Allergan's capital expenditures. Total estimated income tax revenues, from direct earnings, accruing to the State in 2017 were approximately \$371,000.

<sup>3</sup>The State of Ohio assesses income tax based on a taxpayer's earnings bracket. Taxpayers in higher-earning brackets pay a higher rate. Individual income tax rates are provided by the Ohio Department of Taxation: [https://www.tax.ohio.gov/ohio\\_individual/individual/annual\\_tax\\_rates.aspx](https://www.tax.ohio.gov/ohio_individual/individual/annual_tax_rates.aspx).

<sup>4</sup>This approach likely understates by a small margin total income tax paid by Allergan employees to Ohio because it does not account for scenarios in which employees have other taxable income that pushes them into higher tax brackets.



Finally, the appropriate Ohio income tax rate was applied to average earnings per indirect employee, indicating that these employees' indirect earnings contributed an estimated \$259,000 of income tax revenue to the State of Ohio in 2017. In total, Allergan's Cincinnati operations generated more than \$286,000 in local earnings tax revenue to the City of Cincinnati and approximately \$675,000 in income tax revenue for the State of Ohio in 2017.

**Table 4. Local and State Earnings Tax Revenue from Total Earnings Due to Allergan's Cincinnati Operations, 2017**

Jurisdiction	Income Tax Revenue (\$)
Local	286,395
State	674,737
<b>Total</b>	<b>961,132</b>

Source: Economics Center calculations using RIMS II multipliers and data provided by Allergan.

## Sales Tax Revenue

Portions of earnings, including both direct and induced,<sup>5</sup> contribute to Hamilton County and State of Ohio sales tax revenues as employees spend their earnings on taxable goods and services representing a range of industries. The Economics Center estimated sales tax revenues under the assumptions that employees applied 80 percent of their pre-tax income toward expenditures and that taxable items constituted 35 percent of these expenditures.<sup>6</sup> The Economics Center further adjusted County and State sales (and, by extension, sales tax) calculations downward to account for the portions of expenditures on taxable items that residents make outside the respective county of residence and the State of Ohio.<sup>7</sup> As with the earnings tax analysis, Hamilton County multipliers were used to estimate local direct earnings from capital expenditures and indirect and induced earnings, while State of Ohio multipliers were used to estimate statewide earnings from capital expenditures and statewide indirect and induced earnings.

As shown in Table 5, Allergan's Cincinnati operations generated an estimated \$30,000 in Hamilton County sales tax revenue and approximately \$336,000 in Ohio sales tax revenue in 2017. Direct sales tax revenues accounted for approximately 64 percent of the Hamilton County revenues generated by Allergan's Cincinnati manufacturing operation and approximately 58 percent of the Ohio revenues in 2017.

**Table 5. Sales Tax Revenues Accruing to Hamilton County and the State of Ohio Due to Allergan's Cincinnati Facility, 2017**

Jurisdiction	Sales Tax Revenue (\$)
Hamilton County	30,037
Ohio	336,244
<b>Total</b>	<b>366,281</b>

Source: Economics Center calculations using RIMS II multipliers and data provided by Allergan.

<sup>5</sup>The spending of induced earnings (rather than indirect) refers to the spending of households only. In this report, "indirect" refers to spending of both households and business-to-business transactions. For the purposes of sales tax estimation, the tax rates are only applied to household, or induced, spending.

<sup>6</sup>Midwest Consumer Expenditure Survey. U.S. Bureau of Labor Statistics. September 2017.

<sup>7</sup>From EMSI's Regional Requirements tables for Hamilton County and the State of Ohio.

## Total Fiscal Impact

Total tax revenue generated by Allergan’s Cincinnati operations to the State of Ohio and local tax-imposing municipalities were approximately \$863,000 and \$464,000, respectively, in 2017, as shown in Table 6. The total fiscal impact of Allergan’s Cincinnati operations was more than \$1.3 million in 2017.

**Table 6. State and Local Tax Revenues from Allergan’s Cincinnati Facility, 2017**

	State Tax Revenue (\$)	Local Tax Revenue (\$)	Total Tax Revenue(\$)
Direct	546,771	316,432	863,203
Indirect	464,210		464,210
<b>Total</b>	<b>1,010,981</b>	<b>316,432</b>	<b>1,327,413</b>

Source: Economics Center calculations using RIMS II multipliers and data provided by Allergan.

## COMMUNITY OUTREACH INITIATIVES

Allergan’s influence in Ohio extends well beyond its role as an employer and economic driver. Allergan makes charitable contributions to organizations in Cincinnati and throughout Ohio through the Allergan Foundation, and employees of the company’s Cincinnati manufacturing facility participate in numerous fundraisers for local and national organizations throughout the year.

Through the Allergan Foundation, the company contributed financially to four organizations in Ohio over the two years, 2017-2018. As shown in Table 7, the Allergan Foundation contributed \$75,000 to the Cincinnati Eye Institute Foundation from 2017 to 2018 and has given a total of \$485,000 to the Cincinnati Eye Institute Foundation. The Allergan Foundation’s contributions to three other organizations – the Cleveland Clinic, St. Vincent de Paul Community Pharmacy of Cincinnati, and the Cincinnati Association for the Blind – totaled \$145,000 from 2017 to 2018. The Allergan Foundation’s lifetime giving to the four organizations was \$555,000 through 2018.

**Table 7. Allergan Foundation Contributions to Organizations in Ohio (\$), 2017-2018**

Organization	2017	2018	2-Year Total	Lifetime Giving
Cincinnati Eye Institute Foundation (Roselawn Clinic)	50,000	25,000	75,000	485,000
Cleveland Clinic (Fellowship)	35,000		35,000	35,000
St. Vincent de Paul Community Pharmacy of Cincinnati		15,000	15,000	15,000
Cincinnati Association for the Blind	10,000	10,000	20,000	20,000
<b>Total</b>	<b>95,000</b>	<b>50,000</b>	<b>145,000</b>	<b>555,000</b>

Source: Charitable contribution data provided by Allergan.

In addition to charitable giving, employees of Allergan’s Cincinnati manufacturing facility donate hundreds of hours each year to various fundraising and outreach initiatives. In many cases, the organizations to which the employees donate their time and efforts support causes that align with conditions or diseases that Allergan products address. For example, Allergan sponsored a team for the Mini Heart Marathon, the Cincinnati area’s 10th-largest fundraiser, in March 2018. Allergan’s Cincinnati facilities package Bystolic, a drug that is used to treat hypertension.



Allergan employees also participated in two walking fundraisers for Alzheimer’s research in 2018, The Longest Day in June and the Alzheimer’s Walk in October. Allergan packages Namenda, which helps treat the symptoms of Alzheimer’s. Allergan assembled teams to walk in both events and hosted a visit from representatives of the Alzheimer’s Society during The Longest Day. Employees of Allergan’s Cincinnati facilities participated in several other local outreach initiatives and programs in 2018, as highlighted below:

**STEM Initiatives (Educational Outreach).** An annually recurring outreach initiative, Allergan hosted students from three schools – Shroder High School, Mt. Notre Dame High School, and Phoenix International High School – for career exploration days. Students toured the Allergan facility and learned about potential STEM careers within the pharmaceutical industry.

**Pi Day (Financial Outreach).** On Pi Day (March 14), Allergan organized a fundraiser for the Hughes High School STEM program. The event raised \$800 for the Hughes STEM School for the purchase of basic supply needs for the school’s students.

**Autism Speaks Walk.** In May 2018, more than 30 Allergan associates participated in the walk in support of colleagues personally impacted by autism.

**Habitat for Humanity.** Through this volunteer initiative in May, an Allergan team repaired and performed various tasks to several houses to prepare them for their new residents.

**Matthew 25 Ministries.** In July, a large team of Allergan associates spent time at Matthew 25 Ministries sorting items for the victims of hurricanes and other natural disasters.

**St. Vincent de Paul.** Allergan maintains an ongoing relationship with St. Vincent de Paul-Cincinnati, an organization offering social and health services in the community. At an October event, Allergan brought a team of associates to St. Vincent de Paul to present a check to the agency. Allergan associates also participated in a St. Vincent de Paul coat drive.

## CONCLUSION

Allergan’s Cincinnati manufacturing plant is a significant employer and driver of economic activity for the State of Ohio. In 2017, the plant was responsible for the direct employment in Ohio of 219 individuals, of whom 196 were Allergan employees and 23 were employees directly supported by the Facility’s capital expenditures, and an additional 467 indirect jobs. Direct expenditures of \$23.8 million by Allergan’s Cincinnati facility resulted in additional indirect output of \$22.5 million for total economic output of \$46.3 million in the State’s economy in 2017. The \$13.6 million of direct earnings resulted in additional earnings of \$15.2 million for total earnings of \$28.8 million throughout the State. Further, total tax revenues accruing to the State of Ohio and to local government entities were more than \$1.0 million and \$316,000.

Allergan also emphasizes workplace culture and community involvement. The average tenure of Allergan’s Cincinnati associates is eight years, and the plant won the award for Plant of the Year in 2017 and 2018.

In addition, Allergan contributes significantly to local and national organizations and initiatives through financial contributions to and involvement in local charitable and community outreach initiatives.

Lifetime giving by the Allergan Foundation to the Cincinnati Eye Institute Foundation and to three other organizations stood at \$485,000 and \$70,000 combined, respectively, through 2018. Moreover, Allergan’s Cincinnati associates donate hundreds of hours of their time each year to a range of charitable causes and organizations. Altogether, Allergan contributes significantly to the betterment of the Ohio economy and to the communities in which the company’s Cincinnati associates reside.

