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2017 Economic Impact of Companies Funded and/or Assisted by the Northeast Ohio Entrepreneurial Service Provider Program

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May 2018

**2017 ECONOMIC
IMPACT OF COMPANIES
FUNDED AND/OR
ASSISTED BY THE
NORTHEAST OHIO
ENTREPRENEURIAL
SERVICE PROVIDER
PROGRAM**

**CENTER FOR
ECONOMIC
DEVELOPMENT**

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EXECUTIVE SUMMARY

The 2018 report on the economic impact of companies funded and/or assisted by the Northeast Ohio Entrepreneurial Services Provider Program (ESP) shows findings and evidence of the growth of the supported firms over time.¹ These companies not only have a significant workforce and expenditures, they also have a total of 2,313 issued patents and 6,777 patents pending. In 2017 alone, there were 891 issued patents and 920 patents pending.

The ESP is a collaborative entrepreneurial support network funded in part by Ohio Third Frontier that includes accelerators, incubators, angel funds, and other organizations dedicated to commercializing technologies and fostering promising entrepreneurial ventures in Northeast Ohio. The companies included in this report have received significant technical assistance and/or direct investment funding from entrepreneurial support organizations in the ESP.² The report measures the economic impact of early-stage companies that were supported in the past by JumpStart Inc. and its partners in the Northeast Ohio ESP in 2017.

OVERVIEW

This is the 12th year of reporting the economic impact of companies assisted by JumpStart Inc. and the ESP. The economic impact presented in this report is based upon an online survey designed and disseminated by JumpStart Inc. to all participants in the Northeast Ohio Entrepreneurial Services Provider Program. The goal of the survey is to ascertain each company's yearly economic activity in Northeast Ohio and the remainder of Ohio. In total, 562 ESP companies responded to the survey request, however 271 were excluded from the analysis because they reported no of employment, payroll, sales, or expenditures in 2017.

¹ As defined by its primary funder, Ohio Third Frontier, this ESP operates across the 21 counties of Northeast Ohio. The goal of the Ohio ESP is to increase tech-based entrepreneurial commercialization outcomes by focusing on sectors that offer exceptional economic development prospects for the region. Ohio ESPs represent a coordinated regional network of high-value service and assistance providers integrating sources of deal flow, entrepreneurial support, and capital. JumpStart, Inc. is the lead organization for the Northeast Ohio ESP.

² It is important to note that North Coast Angel Fund invests in companies throughout Ohio and the economic outcomes generated from these investments and firms are included in the statewide economic impact. However, all other members of the ESP are mostly located in the 21 counties of Northeast Ohio.

ECONOMIC IMPACT

Economic impact analysis measures the buy-sell relationships within an economy based on inter-industry relationships. This report uses the IMPLAN® Version 3.0 model and 2016 data to estimate how the impact of one dollar or one job ripples through the local economy, creating additional expenditures, jobs, and income.

The economic impact of companies funded and/or assisted by the Northeast Ohio Entrepreneurial Services Provider Program (ESP) who operate in Northeast Ohio was estimated through an IMPLAN model built for a 21-county area.³ The economic impact on Northeast Ohio is outlined in Table I. The first column shows the economic impact for the ESP companies and the second column outlines the impact on the three companies that exited or experienced a liquidity event and graduated from the ESP in 2017.⁴

Table I: Economic Impact of the ESP on Northeast Ohio, 2017

	ESP Northeast Ohio	Exited Companies Northeast Ohio
Number of Companies	272	3
Employment Impact	4,291 jobs	719 jobs
Labor Income Impact	\$248.0 million	\$36.3 million
Tax Impact	\$87.7 million	\$14.2 million
Output Impact	\$717.3 million	\$226.3 million

The IMPLAN model was also used to estimate the economic impact of companies on the entire state of Ohio. The economic impact for Ohio is the summation of the impact in the 21 counties in Northeast Ohio and the impact in the remaining 67 counties. Table II below shows the economic impact of the ESP on Ohio and the impact of the exits on the state.⁵

Table II: Economic Impact of the ESP on Ohio, 2017

	ESP Ohio	Exited Companies Ohio
Number of Companies	291	3
Employment Impact	4,986 jobs	1,463 jobs
Labor Income Impact	\$287.4 million	\$86.4 million
Tax Impact	\$101.7 million	\$27.4 million
Output Impact	\$853.7 million	\$299.9 million

³ The 21-county region includes: Ashland, Ashtabula, Carroll, Columbiana, Crawford, Cuyahoga, Erie, Geauga, Holmes, Huron, Lake, Lorain, Mahoning, Medina, Portage, Richland, Stark, Summit, Trumbull, Tuscarawas, and Wayne counties.

⁴ The impact of Exited Companies in Northeast Ohio is not included in the impact of ESP companies in Northeast Ohio.

⁵ The impact of Exited Companies in Ohio is not included in the impact of ESP companies in Ohio.

INTRODUCTION & METHODOLOGY

This report measures the calendar year 2017 economic impact of companies that have been supported by JumpStart Inc. and/or its partners in the Entrepreneurial Services Provider Program (ESP). Companies included in this report have received significant technical assistance and/or direct investment funding from one or more of these sources.

The Northeast Ohio ESP is a collaborative entrepreneurial support network funded in part by Ohio Third Frontier that includes accelerators, incubators, angel funds, and other organizations dedicated to commercializing technologies and accelerating entrepreneurial successes in Northeast Ohio. The ESP service providers whose clients are included in this report are: BioEnterprise, Inc., BioOhio Research Park, Bounce Innovation Hub, Braintree Business Development Center, Flashstarts, Great Lakes Innovation and Development Enterprise (GLIDE), JumpStart, Inc., The Incubator at MAGNET, North Coast Angel Fund (NCAF), Northeast Ohio Medical University (NEOMED), Ohio Aerospace Institute (OAI), Tech Belt Energy Innovation Center (TBEIC), University of Akron Research Foundation (UARF), and Youngstown Business Incubator (YBI). It is important to note that companies could have received funding and/or support from more than one organization; however, the impact of each company is only counted once.

Northeast Ohio is defined in this report as a 21-county region. This region is comprised of six metropolitan statistical areas (MSAs)—Akron, Canton-Massillon, Cleveland-Elyria-Mentor, Mansfield, Sandusky, and Youngstown-Warren-Boardman—and eight non-metro counties. The MSAs are defined as follows:

- Akron MSA: Portage and Summit counties
- Canton-Massillon MSA: Carroll and Stark counties
- Cleveland-Elyria-Mentor MSA: Cuyahoga, Geauga, Lake, Lorain, and Medina counties
- Mansfield MSA: Richland County
- Sandusky MSA: Erie County
- Youngstown-Warren-Boardman MSA: Mahoning and Trumbull counties

The eight non-metro counties are Ashland, Ashtabula, Columbiana, Crawford, Holmes, Huron, Tuscarawas, and Wayne.

INPUT-OUTPUT METHOD

Economic impact analysis is based on inter-industry relationships within an economy—that is, the buy-sell relationships that exist among industries, the household sector, and government. These relationships largely determine how an economy responds to changes in economic activity. Input-output (I-O) models estimate inter-industry relationships in a region by measuring the industrial distribution of inputs purchased and outputs sold by each industry. Thus, by using I-O models, it is possible to estimate how the impact of one dollar or one job ripples through the local economy, creating additional expenditures, jobs, and income. This is the concept of an economic multiplier, which measures the ripple effect that an initial expenditure has on the local economy.⁶

The economic impact estimates presented use the IMPLAN[®] Version 3.0 model and 2016 data, which is the most recent economic impact assessment software system and data package released by IMPLAN Group LLC.⁷ Sophisticated models of local economies can be developed to estimate a wide range of economic impacts. The IMPLAN[®] impact model is used by more than 1,000 public and private institutions and the number of users, as well as their reputations, points to the high regard for the IMPLAN[®] model among researchers and consultants. The economic impact for Northeast Ohio was estimated through an IMPLAN model built for the 21-county area. To estimate an economic impact for Ohio, a separate IMPLAN model was built for the remainder of Ohio (a 67-county region) and the impact estimates of the two regions were summed to estimate the impact on Ohio. The data provided by the client and portfolio companies assisted and/or funded by ESP partner organizations informed whether their employees and expenditures were located in Northeast Ohio; outside of Northeast Ohio, but within the state of Ohio; or outside Ohio. Company activities outside of Ohio are excluded from these impact estimates. The economic impact presented here is an annual impact which means that it represents the 2017 activity of the companies and their impact in 2017.⁸

Each of the portfolio and client companies was assigned to one of the 536 sectors included in the IMPLAN[®] model based on their NAICS designation. The IMPLAN[®] regional model and its data were edited to reflect each company's information. These changes to the model result in more accurate impact estimates because they are based on actual estimates of the specific startup companies, rather than on the average industry data provided by IMPLAN[®].

⁶ For example, suppose that Company A reports sales of \$10 million. From the revenues of the company, they pay suppliers and workers, cover production costs, and take a profit. Once the suppliers and employees receive their payments, they will spend a portion of their money in the local economy purchasing goods and services, while another portion of the money will be spent outside the local economy (leakage). By evaluating the chain of local purchases that result from the initial infusion of \$10 million, it is possible to estimate a regional economic multiplier.

⁷ IMPLAN was originally developed by two federal agencies, the Department of Agriculture and the Department of the Interior, to assist in land and resource management planning. The model was later commercialized by the Minnesota IMPLAN Group, Inc. and is now owned by the IMPLAN Group LLC.

⁸ The impact of the companies that have reported between 2011 and 2016 is a summation of their total impact over those five years.

ECONOMIC IMPACT DEFINED

Economic impact is an analytical approach used to estimate economic benefits produced in affected regions by projects, programs, or companies. Economic impact analysis estimates benefits for a specific region and time period. These economic benefits are estimated in terms of five different measures:

- *Employment impact* measures the number of jobs created in the economy.
- *Labor income* estimates the household earnings that are generated in the economy.
- *Taxes* include federal taxes as well as state and local taxes.
- *Output impact* measures the total value of goods and services produced in the economy.

Each economic impact is a summation of three components: *direct impact*, *indirect impact* and *induced impact*. *Direct impact* refers to the initial value of goods and services, including labor, purchased by the startup companies affected by the ESP. These purchases are sometimes referred to as the first-round effect. *Indirect impact* measures the value of labor, capital, and other inputs of production needed to produce the goods and services required by the startup companies (second-round and additional-round effects). *Induced impact* measures the change in spending by local households because of increased earnings of employees working in the companies.

IMPACT STUDY DATA

In total, 562 JumpStart and/or other ESP companies responded to the survey request from JumpStart. Of those, 271 were excluded from the impact analysis. To be included in the final analysis, a company either had to have sales or expenditures in the state and/or employment with payroll. If a company reported five employees, but no payroll, they are not yet creating any economic impact. The results described in this report are for calendar year 2017 and they report on the impact of 291 startup companies.

Of the 291 companies that reported were included in the final set (indicating that they had employment with payroll and/or sales or expenditures in Ohio), 11% had no employment, 74% had ten or fewer employees, and 15% had more than eleven employees. Six companies employ more than 50 people; two of which employ more than 100 people.

Twenty nine percent of the companies that responded to the survey indicated that the owner represented a minority group. White entrepreneurs comprised 49% of those served. Sixteen percent of companies were led, controlled, or owned by entrepreneurs identifying as Asian-Indian, Asian-Pacific, or Pacific Islander American. Nine percent were African American and only one company was led by an entrepreneur identifying as Native American.⁹ Thirty nine percent of the companies were owned, led, or controlled by female entrepreneurs.

⁹ Nine percent of company leaders did not answer this question.

The 291 companies included in the economic impact analysis that had economic activity in Ohio employed 2,011 full time employees in Northeast Ohio and 301 people in the remainder of the state. They also list 319 open positions.

The total company payrolls were \$137.3 million in Northeast Ohio and \$19.6 million in the other 67 counties. The companies incurred \$252.2 million in operating expenses in Northeast Ohio and \$41.9 million throughout the rest of Ohio.

ECONOMIC IMPACT ESTIMATES FOR ESP COMPANIES FOR NORTHEAST OHIO

The section examines economic impact estimates of 272 companies located in the 21-county Northeast Ohio region that were assisted by the ESP. Impact estimates account for employment, labor income, taxes, and output.

EMPLOYMENT IMPACT

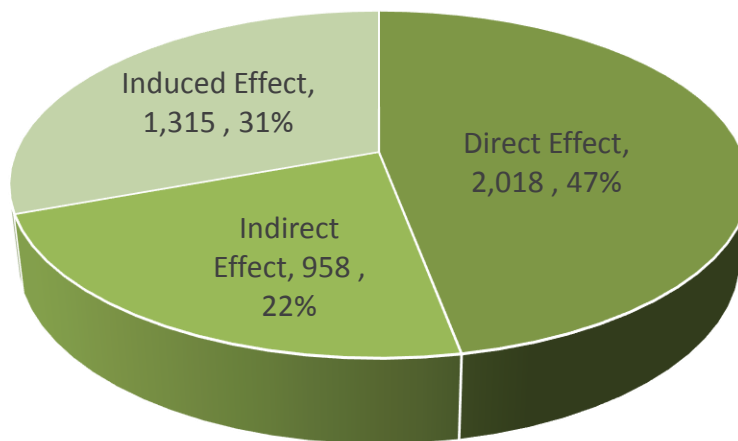
The 2017 employment impact for the ESP companies on Northeast Ohio was 4,291 jobs (Table 1 & Figure 1). Forty seven percent were the result of the direct effect (2,018), 22% were in the indirect effect (958), and 31% were in the induced effect through household spending (1,315).

Table 1: Economic Impact in Northeast Ohio, 2017

Impact Type	Employment	Labor Income	State & Local Tax	Federal Tax	Output
Direct Effect	2,018	\$139,154,888	\$15,074,053	\$30,176,747	\$382,673,480
Indirect Effect	958	\$53,074,157	\$6,676,002	\$11,853,321	\$156,202,458
Induced Effect	1,315	\$55,763,720	\$10,535,033	\$13,433,699	\$178,471,847
Total Effect	4,291	\$247,992,765	\$32,285,088	\$55,463,767	\$717,347,785

Notes: The economic impact is presented in 2018 dollars.
All numbers have been rounded to the nearest whole number.

Figure 1: Employment in Northeast Ohio by Impact Measure, 2017



LABOR INCOME IMPACT

The total household earnings from the ESP increased by \$248.0 million in Northeast Ohio in 2017. Fifty six percent was in the direct effect (\$139.2 million), 21% was in the indirect effect (\$53.1 million), and 22% was in the induced effect (\$55.8 million). Figure 2 shows the breakdown of the labor income, taxes, and output by type of effect.

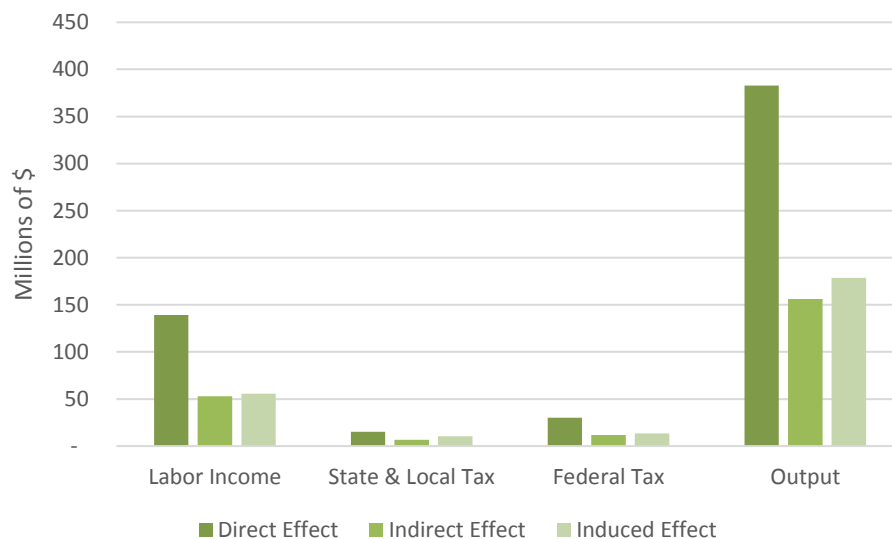
TAX IMPACT

Based on the IMPLAN® model, there was \$87.7 million in tax revenue associated with the 2017 activity of the ESP companies. Of the this, \$45.3 million (52%) was attributed to direct impact, \$18.5 million (21%) to indirect impact, and \$24.0 (27%) to induced impact. Thirty-seven percent of the total tax impact was in state and local taxes (\$32.3 million) and 63% was in federal taxes (\$55.5 million).

OUTPUT IMPACT

Output impact is an estimate of the total change in the value of goods and services produced in Northeast Ohio due to the activities of the ESP companies in 2017. Output impact amounted to \$717.3 million. Of that, \$382.7 million (53%) was accounted for by the direct production of goods and services by the companies. Additionally, \$156.2 million (22%) was indirect impact; goods and services produced in Northeast Ohio to support the activities of the companies. The induced impact of \$178.5 million (25%) measures the value of goods and services produced to support increased demand in the household sector.

Figure 2: Labor Income, Taxes, Output Impact Measures for Northeast Ohio, 2017



ECONOMIC IMPACT ESTIMATES FOR ESP COMPANIES FOR OHIO

The economic impact for Ohio is the summation of the impact in the 21 counties in Northeast Ohio and the impact in the remaining 67 counties in Ohio.¹⁰ Two hundred and ninety companies had an economic impact in the state.

EMPLOYMENT IMPACT

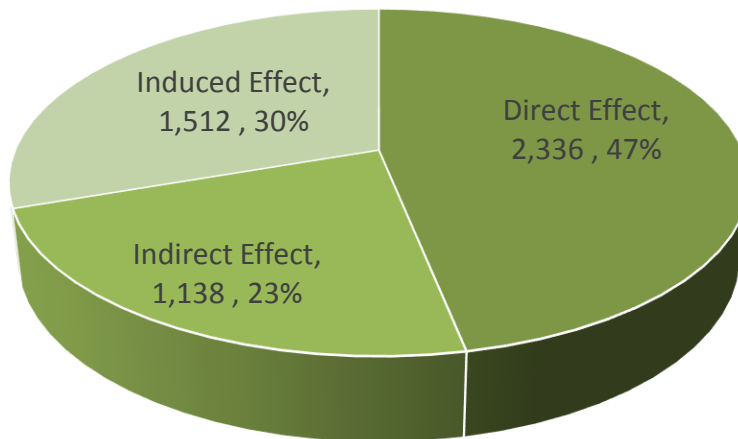
The total employment impact in 2017 in Ohio attributed to the companies amounted to 4,986 jobs (Table 3). Of these 2,336 (47%) were the result of direct impact. An additional 1,138 jobs (23%) were created in industries supporting the companies, and 1,512 (30%) more jobs were created throughout the economy due to increased employee earnings (Figure 3).

Table 3: Economic Impact in Ohio, 2017

Impact Type	Employment	Labor Income	State & Local Tax	Federal Tax	Output
Direct Effect	2,336	\$159,907,023	\$17,446,118	\$34,759,189	\$463,195,719
Indirect Effect	1,138	\$63,231,050	\$7,828,654	\$14,052,813	\$184,750,141
Induced Effect	1,512	\$64,261,733	\$12,114,198	\$15,450,839	\$205,759,643
Total Effect	4,986	\$287,399,806	\$37,388,970	\$64,262,841	\$853,705,503

Notes: The economic impact is presented in 2018 dollars.
All numbers have been rounded to the nearest whole number.

Figure 3: Employment in Ohio by Impact Measure, 2017



¹⁰ The 21-county region includes: Ashland, Ashtabula, Carroll, Columbiana, Crawford, Cuyahoga, Erie, Geauga, Holmes, Huron, Lake, Lorain, Mahoning, Medina, Portage, Richland, Stark, Summit, Trumbull, Tuscarawas, and Wayne counties.

LABOR INCOME IMPACT

The increase in household earnings created by the companies and their suppliers represents the labor income impact. The total household 2017 earnings in Ohio increased by \$287.4 million. Of this impact, \$159.9 million (56%) resulted from the direct effects of the companies' payroll, and \$63.23 million (22%) resulted from increased earnings in supplier industries in the state. The induced income impact of \$64.26 million (22%) was due to increased household earnings as employees of the companies and their suppliers spend their paychecks. Figure 4 shows the breakdown of the labor income, tax, and output impacts by type of effect.

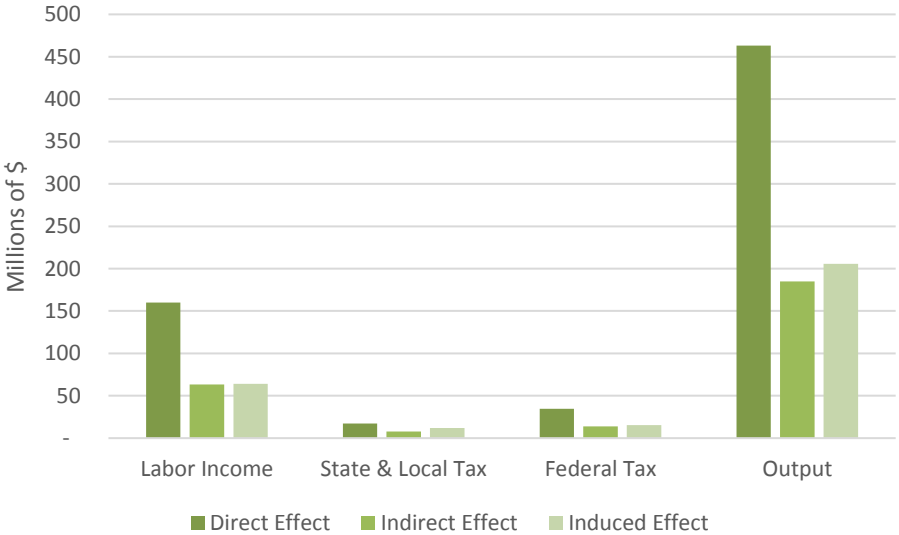
TAX IMPACT

There was \$101.7 million in tax revenue associated with the activity of the companies in 2017. Of this, \$52.2 million (51%) was in the direct impact, \$21.9 million (22%) was in the indirect impact, and \$27.6 million (27%) was in the induced impact. Thirty seven percent of the total tax impact was in state and local taxes (\$37.4 million) and 63% was in federal taxes (\$64.3 million).

OUTPUT IMPACT

Output impact is an estimate of the total change in the value of goods and services produced in Ohio due to the activities of the companies. The 2017 output impact amounted to \$853.7 million. Of that, the direct production of goods and services generated \$463.2 million (54%). An additional \$184.8 million (22%) was indirect impact—goods and services produced in the state to support the activities of the companies. The induced impact of \$205.8 million (24%) measures the value of goods and services produced in the state to satisfy the increased demand by households.

Figure 4: Labor Income, Taxes, and Output Impact Measures for Ohio, 2017



ECONOMIC IMPACT ESTIMATES FOR WOMEN OWNED BUSINESSES

NORTHEAST OHIO

This section of the report highlights the women owned companies that are supported with funding and/or technical assistance through the ESP. These companies include those that are led, controlled or owned by women. In Northeast Ohio, the women and minority owned and led companies had an employment impact of 2,089 jobs, \$122.4 million in labor income, \$16.1 million in state and local taxes, \$27.5 million in federal taxes, and \$358.4 million in output (Table 4).¹¹

Table 4: Economic Impact of Women Owned Businesses Supported by the ESP in Northeast Ohio, 2017

Impact Type	Employment	Labor Income	State & Local Tax	Federal Tax	Output
Direct Effect	986	\$68,826,789	\$7,504,533	\$15,035,773	\$193,139,976
Indirect Effect	454	\$26,085,471	\$3,349,477	\$5,823,427	\$77,095,001
Induced Effect	649	\$27,535,831	\$5,202,032	\$6,633,480	\$88,128,566
Total Effect	2,089	\$122,448,091	\$16,056,042	\$27,492,680	\$358,363,543

Notes: The economic impact is presented in 2018 dollars.

All numbers have been rounded to the nearest whole number.

OHIO

In the entire state, 112 women owned businesses accounted for 2,307 jobs, \$135.6 million in labor income, \$16.5 million in state and local taxes, \$28.4 million in federal taxes, and \$393.7 million in output (Table 5).

Table 5: Economic Impact of Women Owned Businesses Supported by the ESP in Ohio, 2017

Impact Type	Employment	Labor Income	State & Local Tax	Federal Tax	Output
Direct Effect	1,102	\$76,838,798	\$7,715,037	\$15,558,708	\$212,821,602
Indirect Effect	491	\$28,369,539	\$3,414,776	\$5,972,498	\$83,654,480
Induced Effect	714	\$30,367,126	\$5,368,157	\$6,845,700	\$97,220,113
Total Effect	2,307	\$135,575,463	\$16,497,970	\$28,376,906	\$393,696,195

Notes: The economic impact is presented in 2018 dollars.

All numbers have been rounded to the nearest whole number.

¹¹ The economic impact estimates of companies in located in the 21-county Northeast Ohio region. Impact estimates account for employment, labor income, taxes, and output.

ECONOMIC IMPACT ESTIMATES FOR MINORITY OWNED BUSINESSES

NORTHEAST OHIO

This section of the report highlights the 84 minority owned companies that are supported with funding and/or technical assistance through the ESP. These companies include those that are led, owned, and/or controlled by minorities including one Native American; 12 Latin-American/Hispanic; 24 African American; and 47 Asian-Indian, Asian-Pacific, Pacific Islander American. Companies can be counted as both women and minority owned and thus have an impact in the previous section as well as this one.

In Northeast Ohio, the minority owned and led companies had an employment impact of 1,134 jobs, \$63.7 million in labor income, \$7.6 million in state and local taxes, \$14.1 million in federal taxes, and \$198.1 million in output (Table 6).

Table 6: Economic Impact of Minority Owned Businesses Supported by the ESP in Northeast Ohio, 2017

Impact Type	Employment	Labor Income	State & Local Tax	Federal Tax	Output
Direct Effect	537	\$34,318,548	\$2,983,417	\$7,300,082	\$106,908,360
Indirect Effect	260	\$15,052,535	\$1,888,924	\$3,367,838	\$45,401,692
Induced Effect	337	\$14,322,012	\$2,705,758	\$3,450,230	\$45,837,608
Total Effect	1,134	\$63,693,095	\$7,578,099	\$14,118,150	\$198,147,660

Notes: The economic impact is presented in 2018 dollars.
All numbers have been rounded to the nearest whole number.

OHIO

Table 7 outlines the effect of minority owned businesses in Ohio for 2017. These businesses supported 1,432 jobs, \$80.6 million in labor income, \$9.3 million in state and local taxes, \$17.7 million in federal taxes, and \$243.6 million in output.

Table 7: Economic Impact of Minority Owned Businesses Supported by the ESP in Ohio, 2017

Impact Type	Employment	Labor Income	State & Local Tax	Federal Tax	Output
Direct Effect	696	\$44,439,943	\$3,671,111	\$9,322,860	\$132,110,641
Indirect Effect	315	\$18,152,611	\$2,239,413	\$4,036,881	\$53,939,003
Induced Effect	421	\$17,957,654	\$3,381,291	\$4,313,200	\$57,511,983
Total Effect	1,432	\$80,550,208	\$9,291,815	\$17,672,941	\$243,561,627

Notes: The economic impact is presented in 2018 dollars.
All numbers have been rounded to the nearest whole number.

ECONOMIC IMPACT ESTIMATES FOR EXITED COMPANIES

NORTHEAST OHIO

The companies in this section are not included in the total impacts presented in the first section because they have experienced an exit from the ESP or a liquidity event and have graduated from the program and its services. In total, there were three companies that exited in 2017 and does not include any companies that exited in prior years. These impacts are based on their 2016 reporting.

The exited companies had an overall employment impact in Northeast Ohio of 719 jobs (Table 8). The jobs with the exited companies (164 direct jobs) had an impact of 363 indirect jobs and 192 induced jobs. Additionally, the exited companies had a total labor income impact of \$36.3 million, a state and local tax impact of \$5.3 million, a federal tax impact of \$9.0 million, and an output impact of \$226.3 million.

Table 8: Economic Impact of Exited Companies in Northeast Ohio, 2017

Impact Type	Employment	Labor Income	State & Local Tax	Federal Tax	Output
Direct Effect	164	\$11,257,926	\$1,772,599	\$3,244,113	\$150,687,441
Indirect Effect	363	\$16,920,331	\$1,953,576	\$3,756,524	\$49,520,991
Induced Effect	192	\$8,159,998	\$1,542,234	\$1,965,834	\$26,115,460
Total Effect	719	\$36,338,255	\$5,268,409	\$8,966,471	\$226,323,892

Notes: The economic impact is presented in 2018 dollars.
All numbers have been rounded to the nearest whole number.

OHIO

The exited companies had an overall employment impact in Ohio of 1,463 jobs (Table 9). There are 588 jobs with the exited companies (direct jobs), which supported 432 indirect jobs and 443 induced jobs. The exited companies had a total labor income impact of \$86.4 million, a state and local tax impact of \$8.9 million, a federal tax impact of \$18.5 million, and an output impact of \$299.9 million.

Table 9: Economic Impact of Exited Companies in Ohio, 2017

Impact Type	Employment	Labor Income	State & Local Tax	Federal Tax	Output
Direct Effect	588	\$46,990,051	\$2,981,723	\$9,415,220	\$179,412,710
Indirect Effect	432	\$20,480,502	\$2,347,480	\$4,535,457	\$59,666,294
Induced Effect	443	\$18,965,792	\$3,549,855	\$4,530,719	\$60,813,948
Total Effect	1,463	\$86,436,345	\$8,879,058	\$18,481,396	\$299,892,952

Notes: The economic impact is presented in 2018 dollars.
All numbers have been rounded to the nearest whole number.

ECONOMIC IMPACT ESTIMATES FOR ESP COMPANIES RESPONDING YEARLY 2012 – 2017

The pool of companies answering to the survey each year changes in both size and makeup. Changes in employment were examined for 28 companies that responded in each of the last six years with activity in Northeast Ohio and Ohio. This cohort only examines those that responded and had economic activity in terms of sales or expenditures and/or employment with payroll. Throughout the state, this group of companies increased their direct employment by 210 jobs, their expenditures by \$66.2 million, and their payroll by \$22.6 million between 2012 and 2017.

In this section, we examine the impact of this cohort of firms over time on the economy of Northeast Ohio and Ohio.

SIX YEAR RESPONDENT ACTIVITY IN NORTHEAST OHIO

There were 27 companies that have responded yearly between 2012 and 2017 with activity in Northeast Ohio. Between 2012 and 2017, these companies increased their direct employment by 194 jobs, expenditures by \$52.4 million, and payroll by \$20.8 million.

In terms of their economic impact, these companies saw a 95% increase in employment impact, an 98% increase in labor income impact, an 156% increase in state and local tax impact, an 108% increase in federal tax impact, and a 201% increase in output impact between 2012 and 2017 (Table 10). Labor income and federal taxes were the highest in 2013; all other measures peaked in 2017. Between 2016 and 2017, this cohort saw a 10% increase in employment impact, an 13% increase in labor income impact, an 18% increase in state and local tax impact, an 13% increase in federal tax impact, and a 22% increase in output.

Table 10: Economic Impact Comparison for Northeast Ohio, 2012-2017

	Employment ¹²	Labor Income	State & Local Tax	Federal Tax	Output
2012	642	\$41,276,177	\$4,344,389	\$8,850,235	\$80,398,177
2013	1,085	\$106,214,288	\$10,311,004	\$22,207,376	\$172,841,265
2014	795	\$47,621,314	\$6,637,474	\$10,783,002	\$137,291,352
2015	1,038	\$65,477,182	\$9,173,580	\$14,929,681	\$200,414,445
2016	1,138	\$72,597,440	\$9,439,351	\$16,240,334	\$198,106,775
2017	1,250	\$81,829,273	\$11,133,274	\$18,415,093	\$242,247,714
Total		\$415,015,674	\$51,039,072	\$91,425,721	\$1,031,299,728

Notes: The economic impact is presented in 2018 dollars.

All numbers have been rounded to the nearest whole number.

¹² Employment cannot be summed across years as the same jobs exist over time.

SIX YEAR RESPONDENT ACTIVITY IN OHIO

There was a 28-company cohort that has responded yearly had a total economic impact in Ohio; one more than that of Northeast Ohio. The total economic impact of these companies was 1,370 jobs, \$89.4 million in labor income, \$27.0 million in taxes, and \$171.2 million in output.

The total economic impact of the 28 companies that had an economic impact in Ohio saw a 101% increase in employment impact, a 104% increase in labor income impact, and an 166% increase in state and local tax impact, a 114% increase in federal tax impact, and a 225% increase in output between 2012 and 2017 (Table 11). Mirroring the Northeast Ohio impact, labor income and federal taxes were the highest in 2013; all other measures peaked in 2017. Showing just slightly higher percentages than Northeast Ohio, this cohort saw a 12% increase in employment impact, an 14% increase in labor income impact, an 21% increase in state and local tax impact, an 15% increase in federal tax impact, and a 28% increase in output between 2016 and 2017.

Table 11: Economic Impact Comparison for Ohio, 2012-2017

	Employment ¹³	Labor Income	State & Local Tax	Federal Tax	Output
2012	683	\$43,860,127	\$4,619,131	\$9,396,476	\$86,681,731
2013	1,132	\$110,674,619	\$10,713,956	\$23,111,022	\$180,281,770
2014	826	\$49,466,321	\$6,845,516	\$11,174,064	\$142,180,619
2015	1,099	\$69,974,857	\$9,695,684	\$15,900,620	\$215,210,640
2016	1,228	\$78,445,437	\$10,145,643	\$17,506,814	\$219,281,315
2017	1,370	\$89,388,728	\$12,289,913	\$20,142,359	\$281,657,232
Total		\$441,810,089	\$54,309,843	\$97,231,355	\$1,125,293,307

Notes: The economic impact is presented in 2018 dollars.

All numbers have been rounded to the nearest whole number.

¹³ Employment cannot be summed across years as the same jobs exist over time.

ECONOMIC IMPACT ESTIMATES FOR JUMPSTART PORTFOLIO COMPANIES

This section of the report highlights those companies that received funding from JumpStart, the North Coast Angel Fund (NCAF), or one of the other ESP organizations.

PORTFOLIO ACTIVITY IN NORTHEAST OHIO

Table 12 shows the economic impact estimates for the 133 portfolio companies on Northeast Ohio. Over half of the impact was in the direct effect, between 16% and 20% was in the indirect effect, and between 22% and 32% was in the induced effect. The total economic impact of the portfolio companies in Northeast Ohio was 2,319 jobs, labor income of \$140.5 million, state and local taxes of \$17.3 million, federal taxes of \$31.1 million, and output of \$351.2 million.

Table 12: Economic Impact of JumpStart Portfolio Companies in Northeast Ohio, 2017

Impact Type	Employment	Labor Income	State & Local Tax	Federal Tax	Output
Direct Effect	1,150	\$85,134,360	\$8,284,864	\$18,210,080	\$180,037,134
Indirect Effect	423	\$23,785,462	\$3,023,720	\$5,307,401	\$70,036,224
Induced Effect	745	\$31,605,589	\$5,970,610	\$7,613,874	\$101,154,126
Total Effect	2,319	\$140,525,411	\$17,279,194	\$31,131,355	\$351,227,484

Notes: The economic impact is presented in 2018 dollars.
All numbers have been rounded to the nearest whole number.

PORTFOLIO ACTIVITY IN OHIO

The portfolio companies had an employment impact of 2,818 jobs in Ohio in 2017 (Table 13). Additionally, the portfolio companies had a total labor income impact of \$170.6 million, a state and local tax impact of \$21.2 million, a federal tax impact of \$37.9 million, and an output impact of \$450.4 million. The distribution across direct, indirect, and induced effects were similar in percentage to those in Northeast Ohio.

Table 13: Economic Impact of JumpStart Portfolio Companies in Ohio, 2017

Impact Type	Employment	Labor Income	State & Local Tax	Federal Tax	Output
Direct Effect	1,362	\$101,368,682	\$10,181,429	\$21,806,446	\$237,860,330
Indirect Effect	560	\$31,151,251	\$3,833,929	\$6,904,615	\$90,538,132
Induced Effect	896	\$38,094,126	\$7,176,347	\$9,154,028	\$121,989,342
Total Effect	2,818	\$170,614,059	\$21,191,705	\$37,865,089	\$450,387,804

Notes: The economic impact is presented in 2018 dollars.
All numbers have been rounded to the nearest whole number.