



EDC Impact: Shaping the Pennsylvania Economy

The Economic Impact of Economic Development Corporations in Pennsylvania, 2015-2017

Prepared for the Pennsylvania Economic Development Association

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About PEDA

The Pennsylvania Economic Development Association (PEDA) is the statewide association of local, state, corporate, and non-profit economic development professionals.

PEDA's mission is to promote sound economic development policies, provide leading-edge economic development education, and nurture an effective statewide economic development network to foster the economic growth of the Commonwealth.

PEDA's membership is comprised of county and regional economic developers, state government economic development employees, utility and transportation executives, industrial development authority directors, operators of industrial and technology incubators, chamber of commerce executives, municipal directors of community and economic development, engineering and construction executives, economic development finance professionals, workforce development professionals, commercial and industrial developers, and local, county, and state elected officials, as well as others.

Acknowledgements

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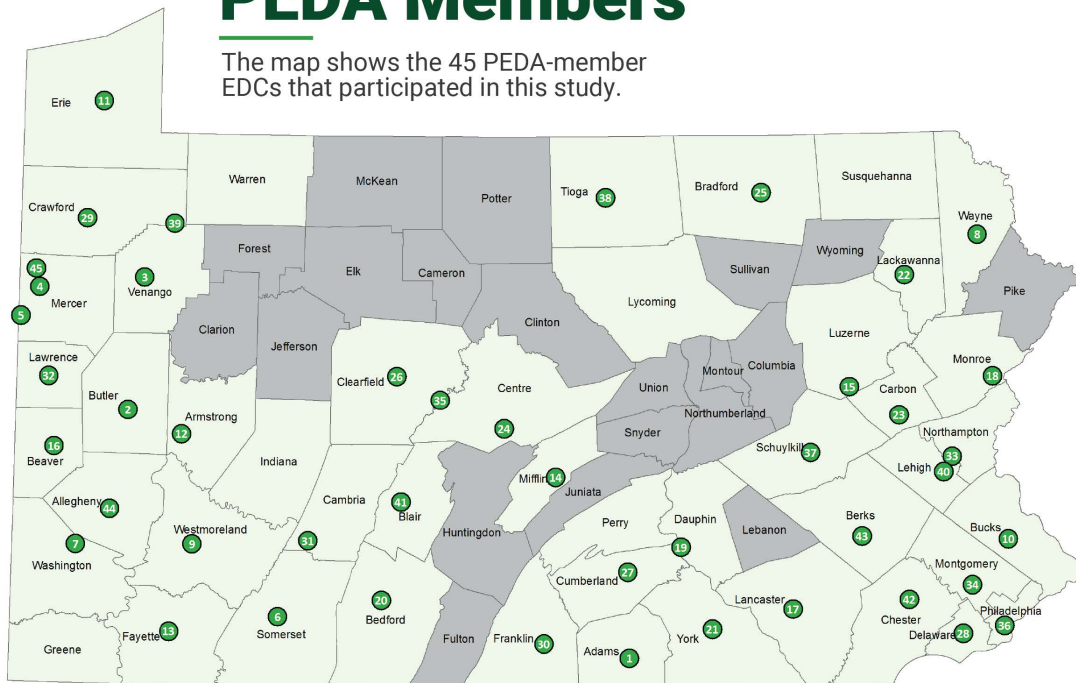
Fourth Economy

- Monica Hershberger
- Mickey McGlasson
- Jerry Paytas
- Sarah Steller

We also want to thank the 45 participating EDCs (listed below) that provided data on their activities and impacts. This report could not exist without their contribution.

Participating PEDA Members

The map shows the 45 PEDA-member EDCs that participated in this study.



1. Adams Economic Alliance
2. Community Development Corporation of Butler County
3. Franklin Industrial and Commercial Development Authority
4. Greenville-Reynolds Development Corporation
5. Penn-Northwest Development Corporation
6. Somerset County Economic Development Council
7. Washington County Chamber of Commerce and Washington County Industrial Development Authority
8. Wayne Economic Development Corporation
9. Westmoreland County Industrial Development Corporation
10. Bucks County Economic Development Corporation
11. The Redevelopment Authority of the County of Erie
12. Armstrong County Industrial Development Council
13. Fay-Penn Economic Development Council
14. Mifflin County Industrial Development Council
15. Greater Hazleton CAN DO, Inc
16. Beaver County Corporation for Economic Development
17. Economic Development Company of Lancaster County
18. Pocono Mountains Industries, and Pocono Mountains Economic Development Corporation
19. Capital Region Economic Development Corporation
20. Bedford County Development Association
21. York County Economic Alliance
22. Scranton Lackawanna Industrial Building Company
23. Carbon Chamber and Economic Development Corporation

24. Chamber of Business and Industry Centre County
25. Central Bradford Progress Authority
26. Clearly Ahead Development
27. Cumberland Area Economic Development Corporation
28. Delaware County Commerce Center
29. Economic Progress Alliance of Crawford County
30. Franklin County Area Development Corporation
31. Johnstown Area Regional Industries
32. Lawrence County Economic Development Corporation
33. Lehigh Valley Economic Development Corporation
34. Montgomery County Commerce Department
35. Moshannon Valley Economic Development Partnership
36. Philadelphia Industrial Development Corporation
37. Schuylkill Economic Development Corporation
38. Tioga County Development Corporation
39. Titusville Community Development Corporation
40. Allentown Economic Development Corporation
41. Altoona Blair County Development Corporation
42. Chester County Economic Development Council
43. Greater Reading Chamber Alliance
44. Regional Industrial Development Corporation of Southwestern Pennsylvania
45. Greenville Area Economic Development Center

Counties shown in green have a participating EDC.

About the Report

PEDA last conducted a statewide impact estimate in 2014. From Q4-2018 through Q1-2019, Fourth Economy and Econsult Solutions, Inc. surveyed the EDC members of PEDA to identify their economic impacts from 2015 to 2017.

Economic Development Corporations (EDCs) provide a wide range of services to grow their local economies, including:

- Business Retention and Expansion
- Source Investment Capital
- Property (Re)development and Management
- Business & Talent Attraction
- Navigating Regulatory Systems
- Administering Loan Programs
- Coordinating Partners and Projects

These services were grouped into four areas of economic activity that generate seven kinds of economic outcomes and impacts:

Areas of Economic Activity

1. Construction
2. Land & Buildings
3. Operations Finance
4. Economic Development Services

Outcomes and Impacts

1. New Jobs
2. Retained Jobs
3. Economic Output
4. Wages
5. Taxes
6. Financing Leveraged
7. Land and Buildings Managed

Findings

Pennsylvania EDCs have had a significant impact on the economy during the period from 2015 to 2017:

Total Economic Output: Pennsylvania EDCs generated an average of **\$15.6 billion** in economic output between 2015 and 2017 (Figure 1). Of that total, \$7.6 billion is attributed to the activities that retained jobs, \$5.1 billion is due to construction activities, and \$2.8 billion resulted from efforts to create new jobs.

Wages: These activities supported **\$5.2 billion** in earnings (Figure 2).¹ This includes earnings from new jobs (\$942 million), retained jobs (\$2.3 billion), and from construction activities (\$1.9 billion).

Jobs: Pennsylvania EDCs supported and created **86,000 total jobs** (Figure 3) on average annually between 2015 and 2017.² This includes new jobs (17,000), retained jobs (35,000), and jobs from construction activities (33,000).

Figure 1: Total Economic Output

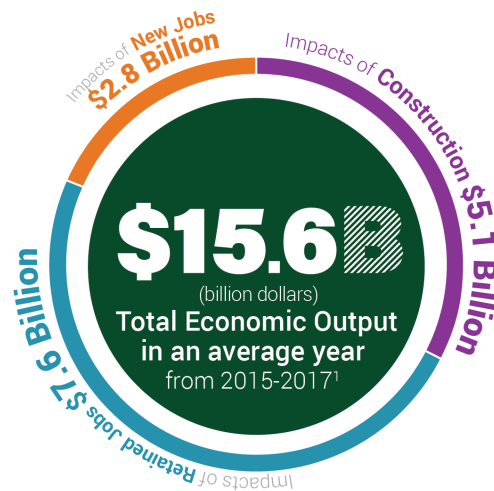


Figure 2: Wages



Figure 3: Jobs

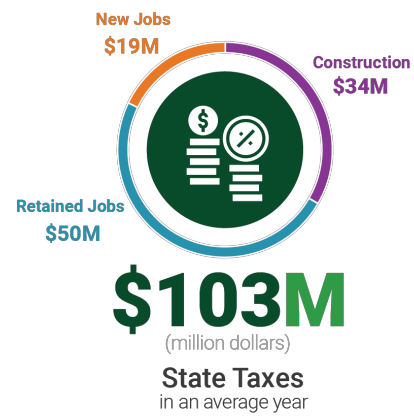


¹ This includes both new jobs and existing jobs that were supported through EDC activities. New jobs may include jobs that relocated. Total job creation should not be totaled across years, for a particular job may be supported in multiple consecutive years and data is not available on how long a job lasts. Totals across years may overcount the direct, indirect, and induced estimates.

² These numbers were estimated through IMPLAN, an industry-standard economic impact modeling platform. The estimates refer to average annual economic impacts (including direct, indirect, and induced impacts) generated by EDC activity in PA in 2015, 2016, and 2017.

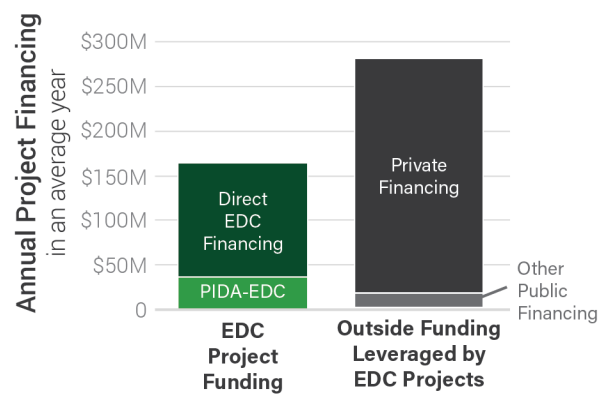
Taxes: In the average year between 2015-2017, the jobs and economic activity supported by EDCs resulted in **\$103 million** in annual state taxes (Figure 4).³ This includes taxes from retained jobs (\$50 million), construction (\$34 million) and new jobs (\$19 million).

Figure 4: Taxes



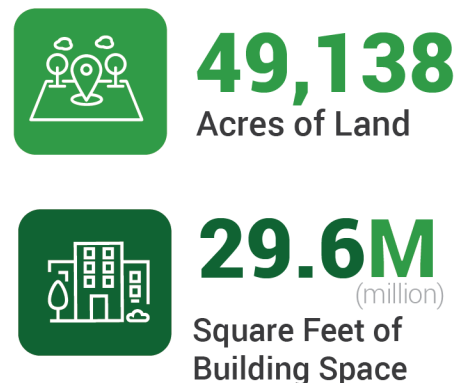
Financing: Between 2015 and 2017, EDCs supplied an average of **\$165 million** per year in project funding that leveraged another **\$262 million** per year in private financing (Figure 5). Local EDCs attract **\$1.58** in private investment capital for projects for every **\$1.00** contributed by EDCs.

Figure 5: EDC Operations and Project Financing



Real Estate: EDCs reported that they developed and managed more than **49,000 acres** of land and **29.6 million square feet** of building space for industrial, warehouse, commercial, and office uses between 2015 and 2017 (Figure 6).

Figure 6: EDC Real Estate



³ State tax impact estimates were calculated considering only indirect and induced impacts to be conservative and account for tax incentives provided in economic development projects.

State Economic Trends and Conditions

Pennsylvania's EDCs work to develop their local economies and, by extension, the state economy. This can be a challenging task in communities that are at the mercy of larger market forces. To understand the impact of the EDCs, it is necessary to look at the overall economic trends that are working for, or against, our economy.

Between 2015 and 2017, Pennsylvania's Gross Domestic Product (GDP) grew from \$678 billion in 2015 to \$701 billion in 2017.⁴ The state economy added \$8 billion in GDP from 2015 to 2016 and nearly \$15 billion from 2016 to 2017, an average of 1.7% per year. This ranks Pennsylvania 22nd among states for GDP growth during this period.

Pennsylvania's EDCs supported \$15.6 billion in average annual output from 2015 to 2017 and 86,000 jobs created and retained. This equates to about \$182,000 in output per employee, compared to \$177,000 per employee for the state economy as a whole.⁵ This indicates that the activity supported by the EDCs is focused on sectors that are more productive and generate higher levels of economic output. These gains have been made despite the significant economic challenges in our state related to changing demographics, global competition, an aging infrastructure, and funding cuts.

Even though this analysis represents activity over three years, it is essentially a snapshot in time. This is the first comprehensive statewide analysis of EDC impact across all areas of activity, so it is not possible to determine if these results represent typical or exceptional years. Given that the state economy is continuing to experience transitions, and the dynamics at the regional and local levels can be even more volatile, additional years of tracking will be needed to better understand the role that EDCs play in the growth and recovery of our economy.

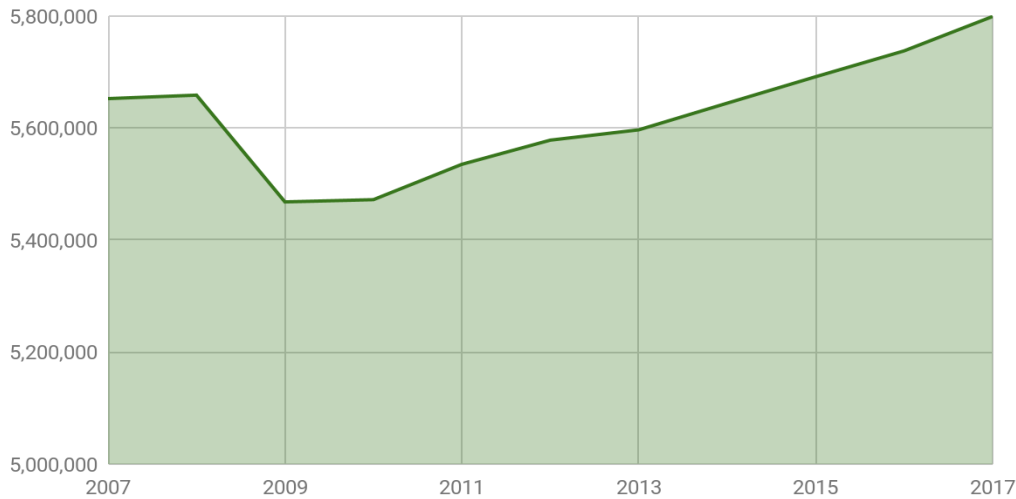
The Pennsylvania economy has been on a roller coaster ride over the decade from 2007 to 2017. Between 2008 and 2009 more than 190,000 jobs were lost in the recession. The state economy took five years to regain those lost jobs. Economic development cannot immunize the economy from recessions or global disruptions, but it can soften the blow. In 2015, the economy passed the 2007 pre-recession peak of 5.65 million jobs, adding 107,510 net new jobs from 2015 to 2017 to set a new ten-year peak of 5.79 million jobs. Employment

⁴ GDP in constant 2012 dollars, as reported by the Bureau of Economic Analysis.

⁵ Source: IMPLAN. Average gross output for the Pennsylvania economy for 2015-2017 divided by average employment. Gross output reported in current 2019 dollars. See Explaining Gross Output and Gross Domestic Product on page 28.

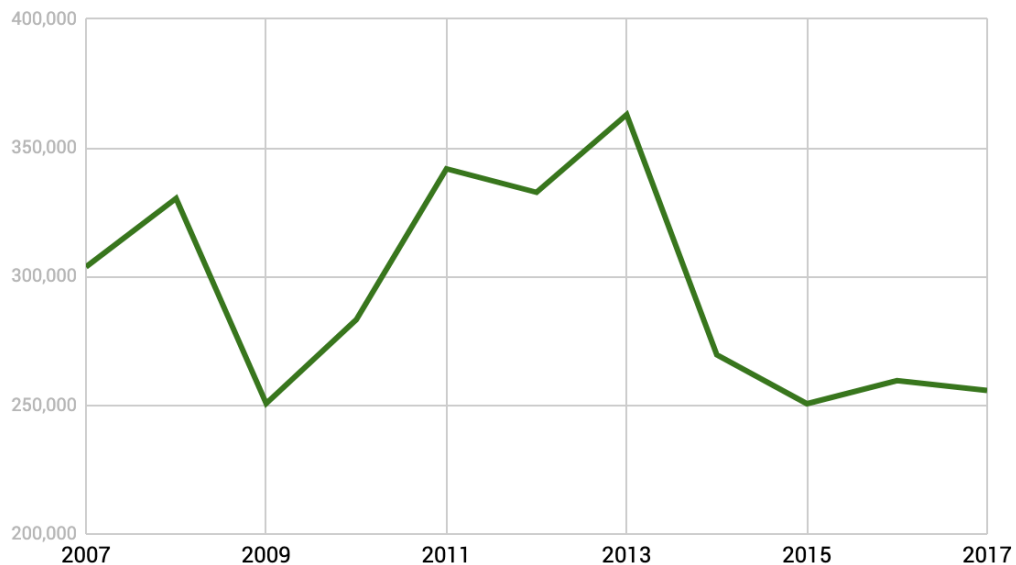
dynamics are complex as jobs are constantly being created, replaced, or destroyed. This job churn is hidden by the usual net gain or net loss numbers seen in Figure 7.

Figure 7: Annual Employment in Pennsylvania, 2007-2017



Source: BLS Quarterly Census of Employment and Wages.

Figure 8: Annual Job Creation in Pennsylvania, 2007 to 2017

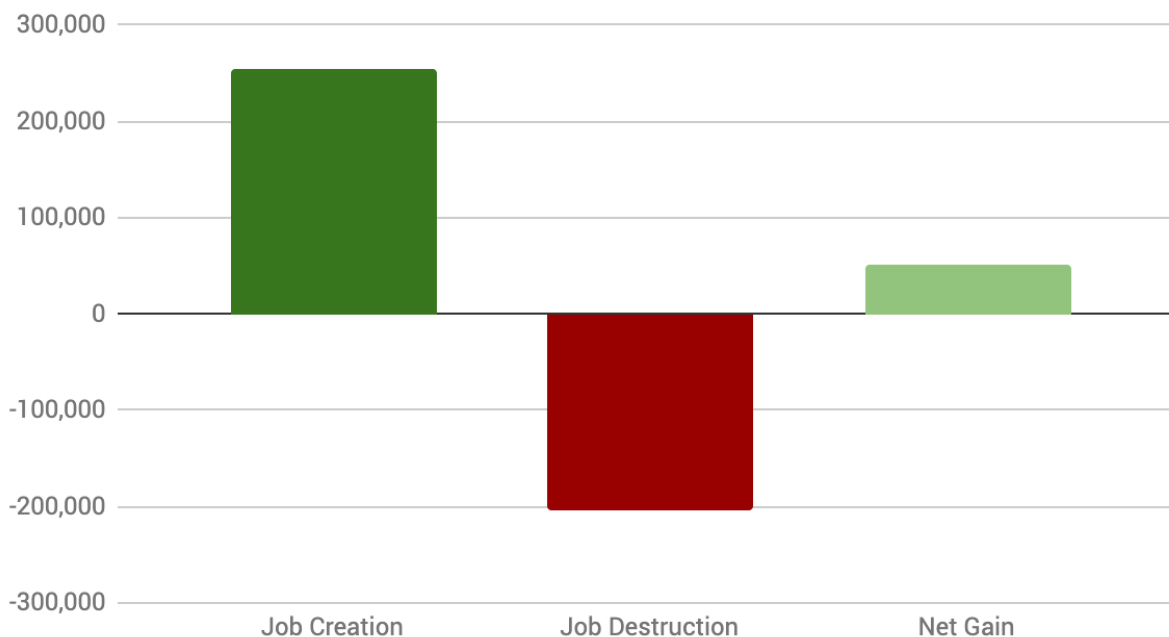


Source: Census Quarterly Workforce Indicators.

Job creation in the state has ranged from a low of 250,000 per year to a high of more than 350,000 (Figure 8). Jobs are also lost or destroyed each year as positions are eliminated or

companies close or move. During the period of this analysis, Pennsylvania experienced an average net gain of approximately 52,000 jobs per year – with 255,000 total jobs created, minus the 203,000 jobs lost or destroyed per year. (see Figure 9).

Figure 9: Components of Employment Change, 2015-2017



Source: Census Quarterly Workforce Indicators.

Employment

During the volatile period between 2015 and 2017, Pennsylvania EDCs supported and created **86,000 total jobs** on average annually. This includes new jobs, retained jobs, and jobs from construction activities.

EDCs work to attract new companies and expand existing companies to create new jobs. EDCs also provide financing services to help businesses get access to capital in order to start up or expand. An estimated average of **17,000 new jobs** were supported and created by EDCs between 2015 and 2017.

Figure 10: Jobs Supported and Created



Note: Numbers may not sum due to rounding.

EDCs serve a variety of roles in the development of land and buildings in their local economies. EDC-related construction activities supported nearly **33,000 jobs** per year between 2015 and 2017.

EDCs provide services to keep businesses located and operating in their communities, keeping jobs from leaving or being eliminated. An estimated **35,000 retained jobs** were supported by EDCs between 2015 and 2017.

The job activities of the EDCs help to boost new employment, and job retention activities minimize job losses. Both are necessary to maintain and increase economic growth in a dynamic and competitive global environment. Without the work of the EDCs, the state economy would be weaker and there would be less growth, even across regions of the state.

One way to gauge the scale of the impact of EDC activity is to compare EDC impacts to those of specific industries. For instance, the total EDC job creation of **86,000 jobs** represents more than all of the jobs in Pennsylvania from the Warehousing and Storage industry. The 35,000 retained jobs exceed the employment of Transportation Equipment Manufacturing. EDC-supported construction activity provided 33,000 jobs, which is more than all of the jobs in Computer and Electronic Product Manufacturing (but less than the next-largest industry). Finally, the 17,000 new jobs supported by EDCs exceed the employment of the Furniture and Related Product Manufacturing industry.

Table 1: Comparison of EDC Impacts

<u>EDC Impact</u> <u>(Average 2015-2017)</u>		<u>Comparable Industry by Employment</u>
Retained	35,000	Transportation Equipment Manufacturing
Construction	33,000	Computer and Electronic Product Manufacturing
New	17,000	Furniture and Related Product Manufacturing
Total EDC	86,000	Warehousing and Storage

Source: IMPLAN, Econsult Solutions Inc., input data from PEDAs EDC Survey. Comparable employment from Quarterly Workforce Indicators. Numbers may not sum due to rounding.

New Jobs

For reporting purposes, we have rounded these numbers up or down to the nearest thousand. Pennsylvania EDCs reported direct employment support of 10,000 jobs in the average year between 2015 and 2017, which generated 7,000 indirect and induced jobs for a total employment of 17,000 new jobs.

Table 2: Detail on New Jobs

Employment Detail	Annual Average: 2015-2017
Direct Employment	10,000
Indirect & Induced Employment	7,000
Total Employment	17,000

Source: IMPLAN, Econsult Solutions Inc., input data from PEDAs EDC Survey.

Table 3: Output and Earnings from New Jobs

Impacts	Annual Average: 2015-2017
Direct Output	\$1.5 billion
Indirect & Induced Output	\$1.2 billion
Total Output	\$2.8 billion
Total Earnings	\$942 million

Source: IMPLAN, Econsult Solutions Inc., input data from PEDAs EDC Survey. Amounts are current 2019 dollars. Numbers may not sum due to rounding.

Retained Jobs

For many communities, retaining jobs can be as important as creating new jobs. It is often harder for a community to replace jobs through new job creation than it is to retain existing employment. EDCs reported retention efforts that helped to save 16,000 jobs per year across Pennsylvania. Saving those jobs helped to support another 19,000 jobs in supplier industries and the industries that support those workers and households. This total retention of more than 35,000 jobs per year also retained \$7.6 billion in total output and \$2.3 billion in earnings for Pennsylvania workers.

Table 4: Detail on Retained Jobs

Employment Detail	Annual Average: 2015-2017
Direct Employment	16,000
Indirect & Induced Employment	19,000
Total Employment	35,000

Source: IMPLAN, Econsult Solutions Inc., input data from PEDA EDC Survey.

Table 5: Output and Earnings from Retained Jobs

Impacts	Annual Average: 2015-2017
Direct Output	\$4.2 billion
Indirect & Induced Output	\$3.4 billion
Total Output	\$7.6 billion
Total Earnings	\$2.3 billion

Source: IMPLAN, Econsult Solutions Inc., input data from PEDA EDC Survey. Amounts are current 2019 dollars.

These activities help to balance out the annual and regional cycles of economic activity. We often think about the overall condition of the state economy, but Pennsylvania is a large state comprised of many local economies. The work of economic growth is largely local, and that local work is done in large part by Pennsylvania’s EDCs. The EDCs help businesses navigate resources for growth and survive in times of recession; they also ensure that Pennsylvania businesses and workers can compete in times of growth.

Construction - Building our Future

EDCs often serve as the lead developer of business parks, offices, and industrial buildings. They may be engaged in every aspect of development, including building and land acquisition, the provision of basic infrastructure, and building construction and renovations. Local economic development organizations have assisted with construction projects that supported more than 19,000 direct jobs and more than 13,700 indirect supplier jobs per year. The total average annual impact of EDC-related construction activities is nearly 33,000 jobs per year. Construction is highly cyclical and new projects are needed to sustain employment. Across the commonwealth, there is a significant need to upgrade buildings and infrastructure, as well as to create new sites and build for growth and expansion.

Table 6: Detail on Construction Jobs

Employment Detail	Annual Average: 2015-2017
Direct Employment	19,000
Indirect & Induced Employment	14,000
Total Employment	33,000

Source: IMPLAN, Econsult Solutions Inc., input data from PED A EDC Survey.

These jobs resulted from an average annual investment of \$2.7 billion in construction activity between 2015 and 2017. Construction projects can be very cyclical and large projects can be spread out over multiple years. We have used the annual averages to smooth out the fluctuations between the reported years of investment and when these activities impacted the economy. While most of the reported investment occurred in 2015, it is likely that the full impact of this investment occurred in later years.

Table 7: Direct Investment in Construction Development Projects

	2015	2016	2017	Average
Construction (\$B)	\$5.7	\$1.7	\$0.6	\$2.7

Source: IMPLAN, Econsult Solutions Inc., input data from PED A EDC Survey. Amounts are current 2019 dollars.

The average annual investment of \$2.7 billion results in direct output of \$2.8 billion with \$2.3 billion in indirect and induced output.⁶ In total, the EDC construction activity increased the total output in Pennsylvania by \$5.1 billion per year between 2015 and 2017. These construction projects added an annual average of \$1.9 billion in total earnings for Pennsylvania workers during these years.

Table 8: Output and Earnings from Construction

Annual Average Impacts (2015-2017)	Construction
Direct Output	\$2.8 billion
Indirect & Induced Output	\$2.3 billion
Total Output	\$5.1 billion
Total Earnings	\$1.9 billion

Source: IMPLAN, Econsult Solutions Inc., input data from PED A EDC Survey. Amounts are current 2019 dollars.

⁶ Here the direct economic impact exceeds the spending because wholesale margins do not apply, and the multiplier effect of the spending generates a slightly higher impact.

Every dollar that EDCs invest in their community through construction activity leverages \$44 into the community from federal and private sources. EDC funding serves a critical role in attracting capital that might otherwise be invested out of state. Throughout the commonwealth, there is a need to update our infrastructure and building stock. The ability of EDCs to bring in \$44 of external investment for every dollar they invest is critical to making use of our scarce resources. In fact, every dollar of investment from EDCs and local and state sources brings in \$2.50 in external funding from federal and private investors.

Figure 11: Construction Investment by Source (Annual Average for 2015-2017 = \$2.7B)

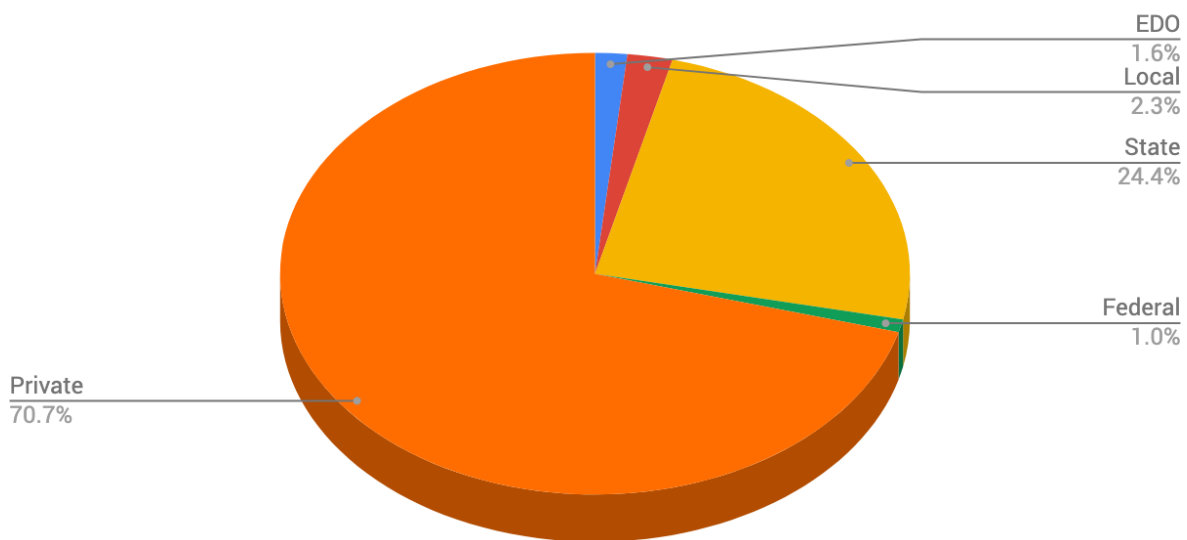


Table 9: Construction Investment by Source (Average Annual 2015-2017)

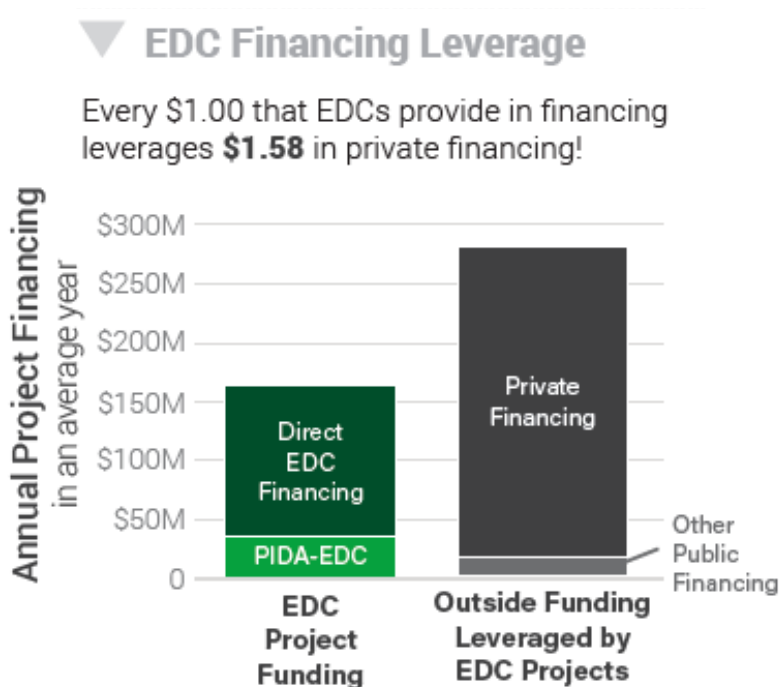
EDC	Local	State	Federal	Private	Total
\$44M	\$62M	\$655M	\$26M	\$1.9B	\$2.7B

Source: IMPLAN, Econsult Solutions Inc., input data from PEDA EDC Survey. Amounts in millions of dollars.

Financing: Funding for Growth

Between 2015 and 2017, EDCs invested an average of \$127 million into projects in Pennsylvania, with another \$38 million in Pennsylvania Industrial Development Authority (PIDA) financing originated by EDCs, for a total investment of \$165 million per year. This funding brought in an average of \$262 million per year in private financing. Local EDCs attract \$1.58 in private investment capital for projects for every \$1.00 invested by EDCs. The total project leverage is much higher, but because public funding from local, state, and federal sources is typically provided as matching dollars to private investment, we did not include those numbers in our leverage estimate.

Figure 12: EDC Financing Leverage



Between 2015 and 2017, local EDCs helped to source nearly \$446 million in financing for Pennsylvania businesses and local economies. The EDCs' financing services sourced an average of \$165 million per year from 2015 to 2017. EDCs sourced \$127 million of the project funds directly and \$38 million through PIDA. The EDCs have become an increasingly important partner in helping businesses to access PIDA funding. While EDCs are the primary mechanism for local funding, other local funds of about \$3 million per year supplemented these projects. State funds outside of PIDA added another \$6 million per year. These dollars also leverage \$10 million annually in federal investment.

Figure 13: Non-Construction Investment Capital by Source (Annual Average for 2015-2017 = \$446M)

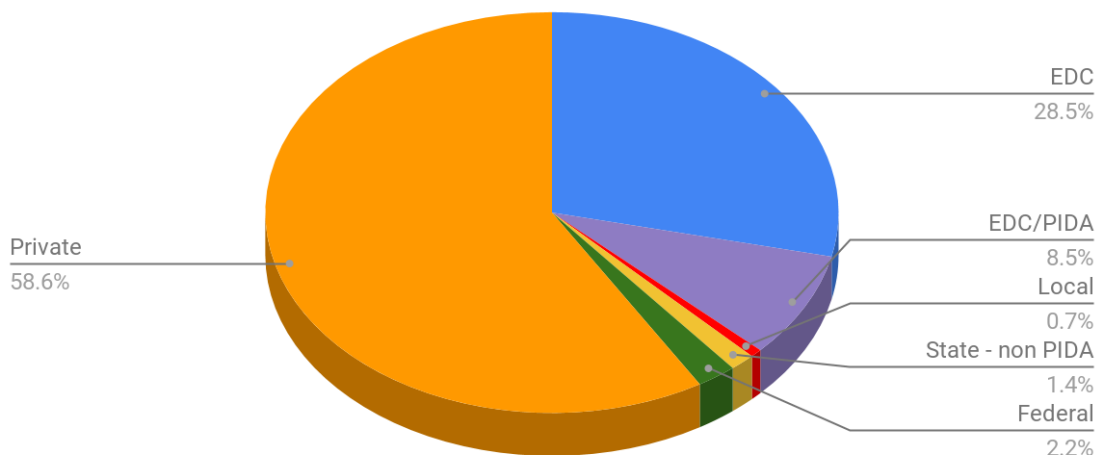


Table 10: Non-Construction Investment Capital by Source (Average Annual \$446M 2015-2017)

EDC	EDC/PIDA	EDC Total	Local	State - non PIDA	Federal	Private	Total
\$127	\$38	\$165	\$3	\$6	\$10	\$262	\$446

Source: Input data from PEDA EDC Survey. Amounts in millions of dollars.

These investments funded capital improvements, new equipment, facility expansion, and new infrastructure, just to name a few examples.⁷ EDC investments reached nearly every sector of the state economy. After accounting for various purchasing margins and leakages, the annual impact of this investment was nearly \$400 million per year. Most of the spending impact (\$145 million) was in real estate, followed by \$62 million in construction. These two sectors accounted for 52 percent of the impact (Table 11).

⁷ Financing for equipment purchases was treated as spending for wholesale equipment, which includes markups for transportation and wholesaling. The direct impact in these cases is based on producer prices, therefore the direct impact is less than the direct spending. These margins and other leakages amount to approximately \$49 million, or 11% of the total spending.

Table 11: Distribution of Non-Construction EDC Investment by Sector

Industry Description	Average 2015-2017
Real Estate Rental and Leasing	\$145 million
Construction	\$62 million
Health Care and Social Assistance	\$43 million
Manufacturing	\$43 million
Educational Services	\$38 million
Transportation	\$34 million
Wholesale Trade	\$25 million
Professional, Scientific, and Technical Services	\$4 million
Retail Trade	\$3 million
Warehousing	\$500,000
Total Financing	\$400 million

Note: Totals may not sum due to rounding. Source: IMPLAN, Econsult Solutions Inc., input data from PEDAs EDC Survey. Amounts are current 2019 dollars.

Real Estate: Developing Assets for Growth

One of the unique attributes of EDCs is their ability to develop and own property. Not every EDC is engaged in property development, redevelopment, and management, but for many EDCs real estate is an important activity for attracting and retaining businesses. In total, the EDCs reported that from 2015 to 2017 they developed and managed more than 49,000 acres of land and 29.6 million square feet of building space for industrial, warehouse, commercial, and office uses.

Figure 14: EDC Land and Buildings

▼ EDCs Developed and Managed:

49,138
Acres of Land

29.6M
(million)
Square Feet of Building Space

Earnings and Wages

The earnings estimated for this report represent gross employee compensation. This includes wage and salary, all benefits (e.g., health, retirement), and payroll taxes (including the employer payments for social security, unemployment taxes, etc.). As a result, the earnings estimates are higher than wages alone.

Table 12: Comparison of EDC Impacts on Earnings, Annual Average 2015-2017

<u>Pennsylvania</u>	<u>Total Earnings (\$B)</u>	<u>Comparable Industry</u>
Retained Jobs	\$2.3	Home Health Care Services
Construction	\$1.9	Pharmaceutical Manufacturing
New Jobs	\$1.0	Other Plastic Products
Total	\$5.2	

Source: IMPLAN, Econsult Solutions Inc., input data from PEDA EDC Survey. Amounts are current 2019 dollars.

EDC activities that retained jobs helped to retain \$2.3 billion per year in earnings for Pennsylvania workers. An additional \$1.9 billion in annual earnings resulted from the construction projects supported by EDCs. The EDC activities that created new jobs supported \$900 million in average annual earnings for Pennsylvania workers. The total impact on earnings is estimated at \$5.2 billion per year between 2015 and 2017. For each of these impacts, we provided a comparable industry for context. For example, the EDC impact on earnings for the jobs they retained was comparable to the annual wages generated by the home health care industry.

Tax and Fiscal Impacts

The fiscal impact estimates were produced by Econsult Solutions, Inc., using a tax revenue impact model they created to estimate the tax revenues for the state from economic impacts. The tax revenue impacts are calculated at the state level for only the taxes that generally apply to most economic activity, such as the Personal Income Tax, Sales Tax, and Business Income Tax. Various fees and specialized taxes are not included in these estimates. Tax exempt institutions or activities are excluded from the direct estimate, but the taxes from suppliers and related spending would still be subject to taxation; therefore, revenue generation from indirect and induced industries is included even when the primary activity is tax exempt.

Table 13: Comparison of EDC Impacts on Taxes, Annual Average 2015-2017

Pennsylvania	Fiscal Impact (\$M)
Retained Jobs	\$50
Construction	\$34
New Jobs	\$19
Total	\$103

Source: IMPLAN, Econsult Solutions Inc., input data from PEDA EDC Survey. Amounts are current 2019 dollars.

EDC activities that retained jobs helped to retain \$50 million per year in state tax revenues. \$34 million in average revenues resulted from the construction projects supported by EDCs. The EDC activities that created new jobs supported \$19 million in average annual tax revenues for Pennsylvania. The total state fiscal impact is estimated at \$103 million per year between 2015-2017. Due to the variability of taxation between different sectors, it is not possible to provide comparable industries for tax generation.

Appendix: Methodology

How the Data Was Collected

Economic activity from Pennsylvania EDCs was estimated with a combination of direct survey information and industry-standard economic impact models. Surveys were distributed to EDCs throughout Pennsylvania, asking for data covering:

- Economic development services
- Construction and development projects
- Business financing
- Real estate developed, owned, or managed

Economic Development Services

For economic development services, each EDC was asked to list services they provided to their clients/affiliates that helped to either generate new jobs or supported the retention of existing jobs. For each service, the EDC listed the industry sector of the supported business, the number of jobs generated or retained, and the average wage of those jobs.

The annual job data included jobs created and retained over the three-year period. There is a potential overlap or double-count between the direct job creation reported in one year and the job retention in following years. Furthermore, there is no way to determine whether the indirect and induced jobs estimated by the IMPLAN model overlap with any of the reported job creation and retention numbers. For example, an EDC may have provided direct services to a supplier that created or retained jobs that might be included in the indirect jobs estimated by the IMPLAN model. There is no data to more accurately track and account for these overlaps. In order to prevent the potential for an overestimate, the project team averaged the annual numbers rather than summing them.

Table 14: Annual Jobs Created and Retained Through Economic Development Services

Direct Job Creation				
NAICS	NAICS Description	2015	2016	2017
11	Agriculture, Forestry, Fishing and Hunting	0	2	0
21	Mining, Quarrying, and Oil and Gas Extraction	0	0	0
22	Utilities	0	0	27
23	Construction	1,201	611	36
31-33	Manufacturing	1,884	1,550	3,544
42	Wholesale Trade	0	6	66
44-45	Retail Trade	110	1,297	661
48-49	Transportation and Warehousing	628	52	492
51	Information	57	87	287
52	Finance and Insurance	10	0	0
53	Real Estate and Rental and Leasing	0	998	884
54	Professional, Scientific, and Technical Services	573	884	383
56	Administrative and Support and Waste Management and Remediation Services	403	374	323
61	Educational Services	3	4	21
62	Health Care and Social Assistance	515	57	214
71	Arts, Entertainment, and Recreation	100	0	19
72	Accommodation and Food Services	1,824	91	125
92	Public Administration	0	1	1
Jobs Created		7,308	6,016	7,084
% Year-over-Year Growth			-18%	18%

Note: Numbers may not sum due to rounding.

Direct Job Retention

NAICS	NAICS Description	2015	2016	2017
11	Agriculture, Forestry, Fishing and Hunting	26	22	32
21	Mining, Quarrying, and Oil and Gas Extraction	0	0	937
22	Utilities	0	60	772
23	Construction	55	151	110
31-33	Manufacturing	4,416	9,330	8,251
42	Wholesale Trade	129	12	162
44-45	Retail Trade	202	1,285	619
48-49	Transportation and Warehousing	91	25	530
51	Information	334	395	3,434
52	Finance and Insurance	0	0	0
53	Real Estate and Rental and Leasing	0	4	115
54	Professional, Scientific, and Technical Services	1,036	2,597	1,223
56	Administrative and Support and Waste Management and Remediation Services	611	840	1,468
61	Educational Services	36	112	1,405
62	Health Care and Social Assistance	1,650	169	1,722
71	Arts, Entertainment, and Recreation	88	0	3
72	Accommodation and Food Services	1,112	694	586
92	Public Administration	73	1,518	697
Jobs Created		9,859	17,215	22,066
% Year-over-Year Growth			75%	28%

Note: Numbers may not sum due to rounding.

Construction

For construction and development projects, each EDC was asked to list the developments they helped to organize, fund, or enable in some way. For each project, EDCs provided information on the development time period, type of development, project costs, and funding sources (federal, state, local, public, private, and direct EDC investment).

Table 15: Annual Spending from Development Projects

NAICS Industry	Industry Description	2015	2016	2017
23	Construction	\$5.7 billion	\$1.7 billion	\$630 million

Note: Amounts are current 2019 dollars.

Business Financing

Each EDC was asked to list the financing they helped to secure, arrange, leverage, or directly provide. EDCs were also asked to list the industry sector of the entity receiving the funding, the intended purpose of the funds, and the distribution of funding sources (public, private, or direct from the EDC). Financing spending includes some spending on things such as land acquisition, which do not directly generate additional economic activity. This table excludes those spending amounts, which is why the total here (\$1.2 Billion) is less than the total direct from the surveys (\$1.3 Billion).

Table 16: Annual Spending from Business Financing Projects

NAICS	Industry Description	2015	2016	2017
23	Construction	\$26.6 million	\$71.9 million	\$87.0 million
33	Manufacturing	\$26.2 million	\$76.9 million	\$24.8 million
42	Wholesale trade	\$25.6 million	\$24.9 million	\$25.1 million
45	Retail Trade	\$6.2 million	\$1.5 million	\$0.4 million
48	Transportation	\$101.9 million	\$0	\$0
49	Warehousing	\$1.4 million	\$0	\$0
53	Real Estate Rental and Leasing	\$146.7 million	\$181.5 million	\$106.6 million
54	Professional, Scientific, and Technical Services	\$6.3 million	\$1.1 million	\$3.9 million
61	Educational Services	\$4.1 million	\$24.7 million	\$84.3 million
62	Health Care and Social Assistance	\$96.8 million	\$0	\$33.4 million
Total Financing		\$441.8 million	\$382.6 million	\$365.3 million

Note: Numbers may not sum due to rounding.

Data provided for each category covered each of the years 2015, 2016, and 2017. Using the information provided by each EDC, the spending detailed above was allocated to the

appropriate year and industry and used to estimate direct, indirect, and induced economic impacts. For construction and financing projects, the direct spending of each project was used to estimate the direct employment and earnings that would be supported by that activity. For economic development services, the jobs generated or retained were used to estimate the direct economic output generated by those jobs and the wages associated with those jobs. For the summary infographic, the jobs created by economic development services and by EDC financing were combined as New Jobs. Retained jobs and construction jobs are reported separately.

After estimating these factors for direct impacts (Table 17), additional impacts were modeled using IMPLAN (an industry-standard economic modeling system for Input-Output models). Using the IMPLAN modeling system, total economic impacts were calculated for each year from 2015 to 2017 with the direct impacts. Total impacts include direct impacts (e.g., the jobs retained through economic development services or the construction project that the EDC helped fund or organize), indirect impacts (business activity within Pennsylvania supported by purchases of goods and services from the direct impacts), and induced impacts (spending in PA from the wages paid to jobs in the direct and indirect impacts).

Real Estate

Not every EDC develops, owns or operates real estate and buildings. In the survey, EDCs reported the employment by sector and year of the tenants in buildings that they own or operate. They also reported the occupied, vacant and total square footage of the buildings owned or operated by the EDC. For the land owned and operated by the EDCs, they reported the occupied, vacant and total square footage. EDCs also reported the types of incentives and the value of real estate taxes paid on the land and buildings they own or operate.

Table 17: Combined Annual Direct Jobs from Business Financing

NAICS	NAICS Description	2015	2016	2017
11	Agriculture, Forestry, Fishing and Hunting	0	2	0
21	Mining, Quarrying, and Oil and Gas Extraction	0	0	0
22	Utilities	0	0	27
23	Construction	1,302	1,096	207
31-33	Manufacturing	1,980	1,834	3,619
42	Wholesale Trade	18	23	83
44-45	Retail Trade	136	1,303	663
48-49	Transportation and Warehousing	1,286	52	492
51	Information	57	87	287
52	Finance and Insurance	10	0	0
53	Real Estate and Rental and Leasing	609	1,745	1,319
54	Professional, Scientific, and Technical Services	649	897	429
56	Administrative and Support and Waste Management and Remediation Services	403	374	323
61	Educational Services	108	633	2,138
62	Health Care and Social Assistance	1,870	57	693
71	Arts, Entertainment, and Recreation	100	0	19
72	Accommodation and Food Services	1,824	91	125
92	Public Administration	0	1	1
Jobs Created		10,352	8,197	10,426

Note: Numbers may not sum due to rounding.

How the Impacts Were Estimated

Economic impact estimates are generated by utilizing input-output models to translate an initial amount of direct economic activity into the total amount of economic activity that it supports, which includes multiple waves of spillover impacts generated by spending on goods and services and by spending of labor income by employees. This section summarizes the methodologies and tools used to construct, use, and interpret the input-output models needed to estimate the EDCs' economic impact.

Input-Output Model Theory

In an interconnected economy, every dollar spent generates two spillover impacts:

- First, some amount of the proportion of that expenditure that goes to the purchase of goods and services gets circulated back into an economy when those goods and services are purchased from local vendors. This represents what is called the “indirect effect,” and reflects the fact that local purchases of goods and services support local vendors, who in turn require additional purchasing with their own set of vendors.
- Second, some amount of the proportion of that expenditure that goes to labor income gets circulated back into an economy when those employees spend some of their earnings on various goods and services. This represents what is called the “induced effect,” and reflects the fact that some of those goods and services will be purchased from local vendors, further stimulating a local economy.

The role of input-output models is to determine the linkages across industries in order to model out the magnitude and composition of spillover impact to all industries of a dollar spent in any one industry. Thus, the total economic impact is the sum of its own direct economic footprint plus the indirect and induced effects generated by that direct footprint.

Input-Output Model Mechanics

To model the impacts resulting from the direct expenditures Econsult Solutions, Inc. developed a customized economic impact model using the IMPLAN input/output modeling system.⁸ IMPLAN represents an industry standard approach to assess the economic and job creation impacts of economic development projects, the creation of new businesses, and public policy changes within a county and its surrounding area.

IMPLAN has developed a social accounting matrix (SAM) that accounts for the flow of commodities through economics. From this matrix, IMPLAN also determines the regional purchase coefficient (RPC), the proportion of local supply that satisfies local demand. These values not only establish the types of goods and services supported by an industry or institution, but also the level in which they are acquired locally. This assessment determines

⁸ For more information see <https://implan.com/>.

the multiplier basis for the local and regional models created in the IMPLAN modeling system. IMPLAN takes the multipliers and divides them into 536 industry categories in accordance with the North American Industrial Classification System (NAICS) codes.

The IMPLAN modeling system also allows for customization of its inputs, which alters multiplier outputs. Where necessary, certain institutions may have different levels of demand for commodities. When this occurs, an “analysis-by-parts” (ABP) approach is taken. This allows the user to model the impacts of direct economic activity related to an institution or industry with greater accuracy. Where inputs are unknown, IMPLAN can estimate other inputs based on the level of employment, earnings, or output by an industry or institution.

Employment and Wages Supported

IMPLAN generates job estimates based on the term “job-years,” or how many jobs will be supported each year. For instance, if a construction project takes two years, and IMPLAN estimates there are 100 employees—or more correctly, “job-years”—supported, over two years, that represents 50 annual jobs. Additionally, these can be a mix of full and part-time employment. Consequently, job creation could feature more part-time jobs than full-time jobs. To account for this, IMPLAN has a multiplier to convert annual jobs to full-time equivalent jobs.

IMPLAN calculates the income from direct, indirect, and induced jobs as employee compensation. This includes wage and salary, all benefits (e.g., health, retirement), and payroll taxes (both sides of social security, unemployment taxes, etc.). Therefore, IMPLAN’s measure of income estimates gross pay as opposed to just strictly wages.

Explaining Gross Output and Gross Domestic Product

As many of our manufacturing industries are part of large supply chains producing goods for export, the Gross Output metric is a useful measure of this production activity. Gross Output (GO) is the total of all economic activity that includes the value of intermediate inputs and the value of the finished product. Because it includes intermediate inputs and the final value, GO “double-counts” business expenditures; however, it is useful as a measure of the total economic activity reflecting business expenditures and production (Supply Side).

Gross Domestic Product (GDP) is the sum of the industry value added. Value Added counts only the additional value of goods and services produced (gross output minus intermediate inputs). The components of GDP include personal consumption expenditures plus business investment plus government spending plus exports minus imports (Demand Side).

Tax Revenue Impact

The economic impacts in turn produce one-time or ongoing increases in various tax bases, which yield temporary or permanent increases in various tax revenues. To estimate these increases, Econsult Solutions, Inc. created a tax revenue impact model to translate total economic impacts into their commensurate tax revenue gains. All tax revenue impacts are calculated at the commonwealth level. There are several taxes collected by the Commonwealth of Pennsylvania, but many of them are only applicable to specific businesses or in specific situations. To be conservative, tax revenue impacts calculated here only include revenues from the Personal Income Tax, Sales Tax, and Business Income Tax.

Due to the nature of EDC operations, some of the direct activity likely benefits from a variety of tax incentives, credits, and other mechanisms. The value of these incentives and credits are difficult to calculate, therefore the direct economic impacts were conservatively estimated to have no fiscal impact. Indirect and induced impacts were used with the effective tax rates of the three taxes referenced above to estimate fiscal impacts within Pennsylvania. These tax revenue gains only account for a subset of the total tax revenue generation that an institution or industry may have on the economy. Furthermore, where institutions are tax exempt, only the tax revenue generation from supported indirect and induced industries is accounted for.