

# The Role of Foreign-Born Residents in the Economy of Erie County PA

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## **Executive Summary**

This study uses data from the Census Bureau's American Community Survey (ACS) for the five-year period 2015-19. Based on a sample of approximately 5% of the population, the ACS provides estimates of the size and activities of the foreign-born (those not born a citizen of the U.S.) and native-born (who were born citizens of the U.S.) in Erie and the nation. The first two parts of the report present data from that source, and the third part uses the data to answer some questions. Here are some of the key findings.

### **A. Demographics**

- During the 2015-19 period, the foreign-born accounted for about 12,000 of Erie's 274,000 residents, or about 4.4%. Nationally, the foreign-born accounted for 13.6% of the population, or about three times Erie's share.
- Not quite half (47.4%) of Erie's foreign-born have been naturalized (become citizens). This is roughly in line with the national average of 49.7%.
- Females comprise slightly more than half of the foreign-born, both in Erie and the U.S. Foreign-born women are also more likely to become citizens than are foreign-born men. Females make up 54.7% of Erie's naturalized, similar to the U.S.'s 54.1%.
- Erie County is significantly less racially diverse than the nation as a whole; 86.5% of Erieites are White, compared to 72.5% nationally. Only 51.3% of Erie's immigrants are White, so immigration tends to increase Erie's racial diversity. Nationally, Whites comprise 45.9% of immigrants.
- Asians make up the largest minority group of Erie's immigrants, at 31.2%, followed by Other and Multi-race at 8.9% and Blacks at 8.1%. (Hispanics and Latinos are not broken out separately as a race category.)
- Naturalization rates vary by race among the foreign-born. 67.7% of White immigrants in Erie have become citizens, 38.0% of Blacks, and 28.2% of Asians.
- Erie's foreign-born tend to be younger than the native-born, with a median age of 36.9 years, three years younger than the native-born median of 39.9 in Erie, and eight years younger than the foreign-born average nationally. Since Erie's native-born population tends to be older than the national average, Erie's immigrants are helping make Erie a bit younger.
- The relatively younger age of Erie's immigrant community is not due to a large proportion of children. Whereas 21.7% of Erie's native-born population are under 18 years of age, only 14.5% of its foreign-born population is. To put that in perspective, in Erie the percentage of children for the native-born is 50% larger than the foreign-born.
- At the other end of the age spectrum, only 12.6% of Erie's foreign-born are 65 or older, compared to 17.5% of the native-born. Erie's percent of native-born seniors is 39% larger than the foreign-born's.
- This leads to the fact that a much larger share of Erie's foreign-born fall into the 18-to-64 category which might be considered prime working age: 73.0% of the foreign-born compared to 60.8% of the native-born.

- Erie's immigrants tend to have arrived in the country more recently than national averages.
- It appears that Erie's foreign-born are more likely to become citizens over time than the foreign-born nationally.
- Erie's foreign-born over the age of 14 are more likely to be married, less likely to be divorced or separated, and more likely to be married just once, compared to the native-born.
- As a result, foreign-born households in Erie are more likely to be married-couple families (61.6%), with an average of 3.2 people compared to the native-born's average of 2.3.
- Erie immigrants come from at least 87 countries of the world, with the largest concentrations from Asia (44.7%), Europe (27.5%), Latin America (14.7%) and Africa (9.4%). This varies dramatically from national patterns for the period, where 51% of immigrants were from Latin America.
- The top five countries of origin for Erie's immigrants in the 2015-19 period were Bhutan, China, Nepal, Ukraine, and Mexico.
- Erie's foreign-born are more likely to be at both ends of the educational spectrum than the native-born, with 16.1% having graduate degrees, compared to the native-born's 9.8%, and 23.5% having less than a high school diploma, compared with just 7.4% of the native-born.
- Immigrants in Erie hold doctorates and professional degrees (like medicine or dentistry), at a higher rate than natives as 3.7% of the foreign-born have them, compared with just 2.2% of the native-born. Perhaps this is due in large part to Erie's specialties in higher education and health care.
- Erie's foreign-born tend to have lower rates of disability than the native-born, 13.9% versus 16.6%.
- Only 4.7% of Erie's foreign-born residents are serving or have served in the military, compared with 10.4% of the native-born population.

## **B. Economics**

- The foreign-born added nearly 5,600 people to Erie's labor force in the 2015-19 period. The labor force includes all those who are officially "employed" or "unemployed".
- The unemployment rate was higher for the foreign-born (7.5%) than for the native-born (5.5%).
- Erie's naturalized citizens had an especially low unemployment rate at 3.9%.
- As with the native-born, the majority of Erie's foreign-born workers are employed by others. But about 308 of Erie's foreign-born are primarily self-employed, working in their own businesses.
- About 5.4% of Erie's foreign-born are primarily self-employed, a slightly higher rate than the 5.1% for Erie's native-born. But naturalized citizens are self-employed at a higher rate, 6.9%.
- While Erie's foreign-born self-employment rates are higher than for the native-born, national rates are even higher than they are in Erie. The foreign-born have a 7.9% rate nationally, compared to a 5.4% rate in Erie. That's a 46% higher rate of self-employment.
- Self-employment is positively related to time in country; those here longer are more likely to be self-employed.
- In terms of occupations, the largest number of Erie's foreign-born are employed in the broad category of Management, Business, Science and the Arts, the same as for the native-born. This is followed closely by employment in Services, and then the category of Production, Transportation, and Material Moving.
- Erie's two largest industry categories, Education, Health Care and Social Assistance, and Manufacturing, are also the largest employers of Erie's foreign-born, employing 45% of the foreign-born. The highest percentage of foreign-born workers are in Manufacturing.
- Median household incomes for Erie's foreign-born are significantly below those of the native-born, \$42,707 vs. \$52,187.

- About 78% of foreign-born households in the Erie area have income from earnings, which includes wages, salaries, commissions, bonuses, and tips. This is slightly larger than 73.1% for native-born households.
- The incidence of poverty is higher in Erie than in the U.S., across all categories. Poverty is a greater problem for the foreign-born than the native-born, with 23.4% of the foreign-born officially considered to be in poverty compared to 15.7% of the native-born.
- Among the foreign-born, poverty is a greater problem for non-citizens, with a rate of 30%, meaning three of every ten non-citizens in Erie is officially in poverty.
- Among family types, the incidence of poverty is especially high for female-headed households with children. More than 41% of Erie's female-headed noncitizen families are in poverty.
- Poverty tends to diminish for the foreign-born the longer they are in the country. Erie's foreign-born who arrived in 2010 or later had a 29.4% poverty rate while those who arrived before 2000 had a 17.1% rate.
- The foreign-born are equally likely to be renters or owners of their residences, 50.2% versus 49.8%. The naturalized have much higher rates of homeownership than non-citizens, with rates that approach those of the native-born.

### **C. Using the Data to Answer Some Questions**

The final portion of the report uses the ACS data to ask and answer some questions. Key conclusions are presented below.

- Erie County's population growth ceased about 1976, and in more recent years the population has begun to decline. Immigration of the foreign-born has helped keep Erie's population from falling as much as it would have. Just between 2000 and 2019, Erie's population loss would have been about 67% worse if immigrants had not come here during that period.
- In Erie 4,268 foreign-born residents first entered the U.S in 2010 or later, 3,177 entered from 2000 to 2009, and 4,474 entered before 2000.
- The foreign-born have increased as a share of Erie's population from about 2.7% in 2000 to about 4.4% in 2019.
- A rough estimate of the income of Erie's foreign-born may be about \$253 million annually. This is the amount that they bring into Erie's economy from working (\$222 million), Social Security payments (\$17 million), non-Social Security retirement income (\$6.5 million), and two government transfer payment programs (\$7.5 million).
- Many of Erie's foreign-born get significant assistance from government transfer-payment programs. For the three programs for which the ACS gives information (Supplemental Security Income or SSI, cash public assistance, and SNAP or food stamps), the foreign-born participate at higher rates than the native-born.
- Moreover, Erie's foreign-born participate in those programs at rates roughly double the rate of the foreign-born elsewhere in the nation.
- The ACS data show a general pattern of declining participation in these transfer-payment programs for Erie's foreign-born who have been here longer.
- The unemployment rate of Erie's foreign-born tends to be lower for those who report being able to speak English better.
- The ACS provides data about both the occupation and industry of workers. A key question is whether the foreign-born are supplanting native-born workers in already-overcrowded fields, or whether they help to fill gaps in the local labor market by taking jobs that would otherwise go unfilled.
- Using data at the aggregate level for occupations (22 categories), we compared the occupational employment patterns of Erie's foreign-born with projections of employment needs for Erie County by the Pennsylvania Department of Labor and Industry for 2018-28. The data show that 31.2% of Erie's foreign-born are in the five high-growth occupational

- categories, and 28.3% of Erie's native-born workers are in these occupations. For non-citizens only 26.9% are employed in the expected high-growth occupational categories.
- We also made a similar comparison for the five occupation categories with the largest expected decline in employment from 2018-2028. The data show that 27.8% of Erie's foreign-born are in the five declining occupational categories, and 33.2% of Erie's native-born workers are in these occupations.
  - These data suggest that the foreign-born are going into occupations where we need workers at higher rates compared to natives, and are entering declining occupations at lower rates than natives.
  - We applied the same logic to 13 broad industry categories. The results here are less clear. A similar percentage (50.9%) of the foreign-born work in the five high-growth industries, compared to 51.4% of the native-born. At the other end of the spectrum, 32.4% of the native-born workers are employed in the five industries that are expected to experience employment declines, and 35.6% of the foreign-born are. This implies that the foreign-born and native born are distributed similarly across growing and declining industries.
  - The bottom line from both the occupation and industry analysis is that the foreign-born tend to choose higher-growth occupations than the native-born, and a similar composition of industries. The occupational choices of the foreign-born help to ameliorate the effect of their competition for jobs.
  - We estimate the sum of the labor income earned directly by the foreign-born, and also the additional jobs that result from the foregin-born spending their earned income, to be at least \$273 million and as much as \$385 million in Erie County.
  - The jobs performed by the foreign-born and the additional economic activity they generate may raise as much as \$19.63 million in local tax revenue for Erie County.



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# ***The Role of Foreign-Born Residents in the Economy of Erie County PA***

## **I. Introduction**

It is clear that there are many people in this world who would love to come to the United States. We see them on the news often. Some are fleeing repression, war, or terrorism--literally running for their lives--while others are seeking economic opportunity. Of course, that's nothing new; our nation was founded by such people. But in recent years immigrants and refugees have been the focus of much contentious debate nationwide. Unfortunately, the popular rhetoric of this debate is not always grounded in real-world data. For good decisions to be made, it is necessary to start from a solid foundation of facts, basing policy choices on data about the role that the foreign-born play in our economy and communities.

The goal of this report is to help dispel misunderstandings about the role of the foreign-born in the economy of Erie Pennsylvania by presenting actual data from a well-respected source. Using data from the U.S. Census Bureau, this report quantifies the number of foreign-born in the county, and presents their demographic characteristics such as the breakdown of naturalized versus non-citizens, the number and size of households, sex, race, and age profile (especially those of working age), year of arrival in the U.S., region-of-the-world of origin, educational attainment, disability status, military service, and English language skills. Data for Erie County are compared with those for the nation as a whole whenever possible.

The demographic data are followed by data on important economic variables such as labor force participation rates of the foreign-born, employment and unemployment rates, employment by industry and occupation, self-employment, income level and types of income, use of public assistance of various types, poverty rates, and home ownership.

A key focus of debate is whether immigrants and refugees contribute to the economy or drain resources from it. It seems apparent that they do both, to some extent, as do we all. But the data can help us to better understand whether the foreign-born are net contributors to the economy or net beneficiaries of the taxes of others. As workers, they pay income and payroll taxes as well as create goods and services that their employers can sell to bring income into their communities. But in the labor market, do immigrants help fill jobs that would otherwise go begging, or do they merely add to those looking for jobs in already over-supplied occupations and industries, and supplant native-born citizens? As consumers, the foreign-born pay sales taxes and help keep local business profitable. As homeowners and renters, they pay property taxes. On the other side, their children need teachers which typically are paid with tax dollars, and the foreign-born may qualify for various types of public assistance also supported by taxes: SNAP (food stamps), welfare, some types of Social Security payments, and medical assistance.



On the important topic of entrepreneurship and business ownership, this study quantifies the role of the foreign-born as entrepreneurs, using data on self-employment income, and compares the data for foreign-born with native-born, as well as the foreign-born subcategories of naturalized citizens and non-citizens.

We hope this study provides important data about the role of the foreign-born in Erie County, to help inform policymakers and county residents generally. We want to provide facts to inform the immigration debate locally and help residents make better decisions.

We should mention that ERIE did not approach this project with predetermined results in mind. In all our work for nearly four decades, we have never promised to deliver a specific outcome, high or low, positive or negative, with regard to our estimates and findings. We strive for accuracy and sound theoretical and methodological foundations for all our work, and then present the results, letting the chips fall where they may. We often simply let the data speak for themselves, but when we add some interpretation to the numbers, we strive not to bring our own value judgements into the analysis and try not to impart any spin to the data. But we also must admit that as fallible human beings we do have our own opinions, which may have unintentionally worked their way into the interpretations.

## **A few important definitions**

Throughout this report, the term “**Erie**” always refers to Erie County, and not to the City of Erie. Any data or tables without a specific geographic identifier refer to Erie County.

Erie County is the focus because the federal government defines the Erie Metropolitan Statistical Area as consisting of Erie County.<sup>1</sup> Specifically they consider the local economy—the local labor market, more precisely—to be captured geographically by Erie County. There is relatively little commuting across the county borders for work. The great majority of the people who live in the county also work here, and the great majority of those who work here also live here.

This report makes use of the Census Bureau’s terminology about nativity.<sup>2</sup>

**Native-born:** anyone born in the United States, Puerto Rico, a U.S. Island Area (American Samoa, Guam, the Commonwealth of the Northern Mariana Islands, or the U.S. Virgin Islands), or abroad of a U.S. citizen parent or parents. Note that this term does not necessarily mean that the person was born in the United States, but rather was born as a citizen.

**Foreign-born:** anyone who is not a U.S. citizen at birth. This includes naturalized U.S. citizens, lawful permanent residents (immigrants), temporary migrants (such as foreign students), humanitarian migrants (such as refugees and asylees), and unauthorized migrants. Note that some foreign-born are now citizens, and some are not.

**Naturalization** is the process by which U.S. citizenship is granted to a foreign citizen or national after he or she fulfills the requirements established by Congress in the Immigration and

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<sup>1</sup>More information about the definitions and delineations of Metropolitan Areas is available at <https://www.census.gov/programs-surveys/metro-micro/about.html>.

<sup>2</sup>U.S. Census Bureau, “Foreign Born: About this Topic”. [https://www.census.gov/topics/population/foreign-born/about.html#par\\_textimage](https://www.census.gov/topics/population/foreign-born/about.html#par_textimage).

Nationality Act (INA).<sup>3</sup> The process typically involves residency requirements, the ability to read, write, and speak English, knowledge and an understanding of U.S. history and government, good moral character, and attachment to the principles of the Constitution. But there are many paths, and the laws and requirements have changed over the years.

Children are eligible for “derivative citizenship” when a parent is naturalized, or to those adopted by U.S. citizens, provided certain conditions are met.<sup>4</sup>

**Time period** of the data for this study: the five years 2015-2019 typically. The American Community Survey (ACS) data (explained below) were collected throughout each of those years, so the data refer to no one specific year or time point within a year, but rather to the whole five-year period.

**Dollar amounts** throughout this report are adjusted for inflation based on the year to which they refer. All dollar amounts are adjusted to reflect 2019 dollars.

## **II. Source of the Data:**

### **The U.S. Census Bureau’s American Community Survey**

This report is based on data collected by the U.S. Census Bureau in its annual American Community Survey (ACS) program. The ACS gathers data from surveys sent to a scientifically designed sample of approximately one percent of addresses nationally each year, including people living in group quarters such as college dorms and nursing homes<sup>5</sup>. No address is repeated within a five-year period. For Pennsylvania the ACS sample over the five-year 2015-19 period included 854,384 initial addresses selected, with 555,335 final housing unit interviews, and another 51,874 individuals from group quarters, resulting in a population file of 641,108.<sup>6</sup> For Erie County it was 15,929 addresses selected, with 10,811 final interviews resulting in 13,539 individuals in the sample.<sup>7</sup> The number of people in the sample consists of everyone living in households at the selected addresses plus those from the selected group quarters. The ACS estimates Erie County population over the period to be 273,835, so the 13,539 in the sample account for 4.94% of the county population.

The ACS survey data are collected throughout the year rather than on a single date. They are collected through a variety of methods including mailed paper questionnaires, phone interviews, personal visits, and internet responses. The ACS collects data on a wide variety of variables, including demographic, economic, social, and household data. The questionnaire for the 2019 ACS was 14 pages long and included 44 questions, many with sub-parts. Data for other variables of interest are deducible from these, resulting in data on scores of variables.

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<sup>3</sup>U.S. Department of Homeland Security, U.S. Citizenship and Immigration Services, “Citizenship Through Naturalization” and “Path to U.S. Citizenship”. Available at: <https://www.uscis.gov/us-citizenship/citizenship-through-naturalization>.

<sup>4</sup>U.S. Department of Homeland Security, “Derivative citizenship”, available at: <https://www.dhs.gov/immigration-statistics/data-standards-and-definitions/definition-terms#3>.

<sup>5</sup>Group quarters include institutional quarters (such as prisons, nursing homes and mental hospitals) and noninstitutional facilities (such as college dorms, military barracks, group homes, missions, and shelters.) College dorms are only sampled during the months of January to April, and September to December. U.S. Census Bureau, Definition of Group Quarters. <https://www.census.gov/topics/income-poverty/guidance/group-quarters.html>.

<sup>6</sup>U.S. Census Bureau, 2015-19 American Community Survey, Tables B98001 and B98002.

<sup>7</sup>The number from group quarters for Erie County is unavailable.

The ACS data for individual data items for a geographical area, such as a state or county, are estimated statistically for all people or households in the area based on the sample responses, using appropriate weights for each respondent based on age, sex, race, and Hispanic origin to adjust for a person’s probability of being selected for the sample. The Census Bureau adjusts the estimates to conform with data at the county level from other Census population and housing programs such as the decennial census and the annual population estimation program.



**Caution! Estimates Ahead!**

It is important to understand that the estimates in this report are just that—*estimates*. All of the ACS data are estimates based on samples, and not based upon actual counts of everyone in the country like the decennial censuses. That affects the accuracy of the data in this report.

Of course, statistical theory tells us that estimates are more accurate when based on a larger sample, so in addition to their annual data the ACS provides data for five year periods, based on a sample that is five times as large, including approximately 5% of the population in the target area. This study of Erie County uses ACS data over the five years from 2015 to 2019, the most recent year of ACS data at the time this study was conducted.

Americans are required by law to respond to the ACS survey. But there are sometimes problems that result in nonresponses. The Census follows up in many of these, resulting in quite high response rates. The response rates for Pennsylvania and the U.S. over the study period were<sup>8</sup>:

**Table 1: ACS Response Rates**

Year	Response Rate (%)	
	U.S.	PA
	Housing Units	
2019	96.0	85.5
2018	92.0	92.4
2017	93.7	93.6
2016	94.7	95.2
2015	95.8	96.0
	Group Quarters	
2019	90.9	94.1
2018	91.4	95.1
2017	94.7	97.3
2016	95.7	96.2
2015	95.3	93.7

Source: ACS; see footnote below.

While response rates for the ACS are high, there are still cases in which a respondent does not answer a particular question or provides an invalid answer. The Census Bureau then tries to ameliorate the problem in two ways: 1) assignment: sometimes missing data can be inferred from other data the respondent provided, for example first name may be used to assign a value

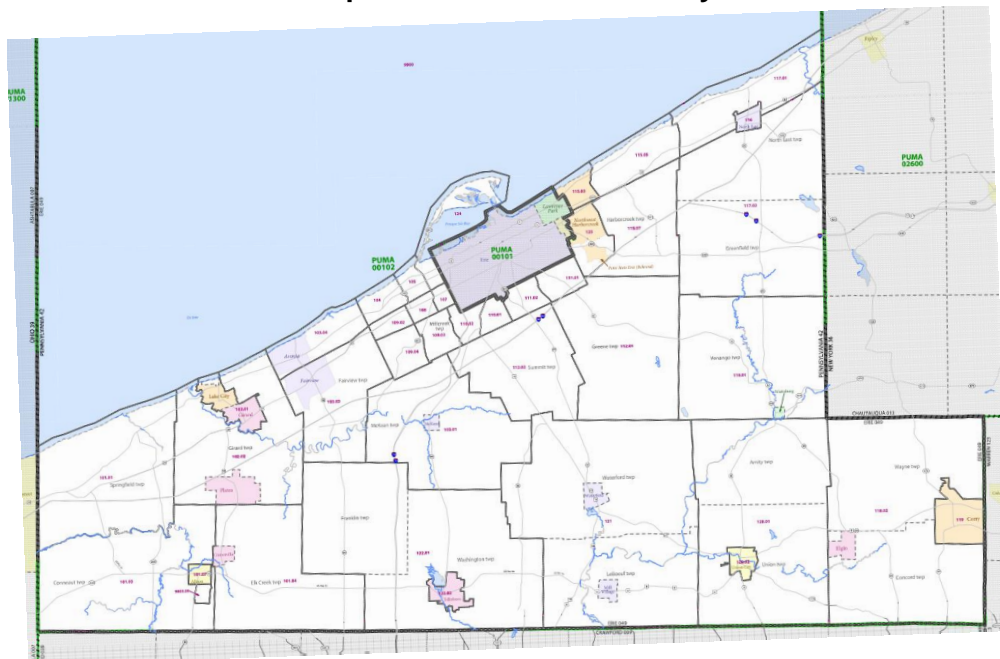
<sup>8</sup>U.S. Census Bureau, American Community Survey, “Response Rates.” <https://www.census.gov/acs/www/methodology/sample-size-and-data-quality/response-rates/index.php>.

for sex; and 2) allocation: in some cases the Census Bureau will impute data for a missing value using statistical techniques that rely on answers given by others in the household or nearby neighbors. These two techniques help fill in the blanks from nonresponses.<sup>9</sup>

The ACS provides data for various geographical areas, from the nation down to census tracts and even block groups and zip codes. As a general rule, the smaller the area in terms of population, the less often the data may be available, since it is necessary to aggregate more years to provide reliable estimates. Similarly, the smaller the area, the larger the margin of error around the estimates for the data. In other words, the less reliable are the estimates. The ACS data are typically provided for geographical aggregates like states and counties, but it is possible to access more detailed survey responses for individual people and households through the Public Use Microdata Sample (PUMS) program.

However, the Census Bureau is required by law (Title 13, U.S. Code) to maintain confidentiality of the ACS data, and they do this for the PUMS data by removing names, addresses, and other information that would allow identification of individuals. They also use other methods to preserve confidentiality such as swapping data for a small number of statistically similar respondents, and by aggregating data geographically. For the PUMS data they create geographic areas called Public Use Microdata Areas (PUMAs) that encompass roughly 100,000 residents each, and release data for them. Erie County comprises two PUMAs, 00101 (City of Erie, Lawrence Park Township and Wesleyville Borough) and 00102 (the rest of Erie County), which we can aggregate to get data for the county. Many other counties of Pennsylvania are not so fortunate, since PUMAs often cross county boundaries. For example, Crawford and Warren counties together comprise one PUMA.

**Map 1: PUMAs in Erie County**



<sup>9</sup>More information about nonresponse issues is available at:

Definitions: <https://www.census.gov/programs-surveys/acs/methodology/sample-size-and-data-quality/response-rates-definitions.html>

Response Rates: <https://www.census.gov/acs/www/methodology/sample-size-and-data-quality/response-rates/>

Since the PUMS files provide data for each survey respondent on hundreds of variables, the data files are very large and more cumbersome to work with than the geographically-aggregated data. However, they are also more flexible, allowing us to do cross-tabulations of variables with each other. That means that we can not only get information on how many foreign-born there are in Erie County, but we can see how they break down by age, gender, sex, region of origin, and citizenship. And we can then dive deeper to see how those who are naturalized differ from those who are not citizens, on various characteristics like employment patterns and sources of income.

The data in this report are nearly all from the ACS, but they are a combination of data “published” by the Census Bureau (i.e. posted directly on the Census’s data.census.gov website for Erie and the U.S.) and data from the detailed PUMS files for Erie. The Census website publishes some detailed tables derived from PUMS data and has online tools for gathering information from subcategories of interest. The Census has improved these tools substantially in recent years making it possible to create tables on most subsets of the data. In cases where the relevant table cannot be created on the web, the data can be downloaded from the broader Pennsylvania files for each year from 2015 through 2019. The PUMS files use a somewhat smaller and different sample than the files the Census Bureau uses for the “published” data in order to maintain confidentiality of the respondents.

This report typically uses the published data whenever possible, because the underlying data sample is larger and because it also allows comparison with national data. But the report also uses the PUMS data to take a deeper dive into some of the data for Erie, to get more detail than the published data provide, or to allow us to do cross-tabulations of the data to see how two variables are related. For example, is there a relationship between an immigrant’s ability to speak English fluently and their likelihood of being employed?

This means that data in some tables in this report may be a bit different from those in other tables dealing with the same topic. This can occur when the published ACS data are used for one table, but the PUMS data are used for another. There is a footnote immediately after each table identifying the source of the data, so the reader can know for sure which is which.

And while we have the PUMS data for Erie, the PUMS datafile for the entire country is extremely large and cumbersome to work with, meaning that we will not have nationwide data for comparisons in these cases.

There is also another issue related to the data of which the reader should be aware. As explained above, all the data are estimates based on samples. The Census Bureau typically creates these estimates based on the largest available sample for each individual variable being estimated. For example, they provide estimates for the number of people who are employed that are naturalized, and the number that are non-citizens, as well as the number for all foreign-born. The estimate for the “all foreign-born” category relies on a larger sample than for the two individual components. This sometimes results in the value for the total being a bit different than the sum of the two components; they don’t “add up” correctly.

Another situation can occur when a total is broken into several categories, such as race or age group. In these cases, the Census Bureau publishes each component’s percentage of the total. But they estimate each component’s percentage separately and round the percentage to one decimal place. If several components’ percentage happen to round up (or down) slightly, the sum may wind up being more (or less) than exactly 100.0%.

Please note that these are not errors in the calculation or the analysis, but inherent results of working with estimates created from samples, and the Census Bureau’s methodology. While this may cause some minor problems, we recognize that use of samples allows us to have estimates of a much broader range of variables, and with more frequency and timeliness, than if we had to wait for the next decennial census which attempts to count everyone. And, of course, even the decennial census can’t reach every single person in the country or get them all to participate—resulting in the need for some estimations in any case.

### **III. Data on Erie’s Foreign-Born**

#### **A. Demographics**

##### **1) Population, Nativity, and Citizenship**

**Table 2: Native and Foreign-Born Population**

Nativity	Erie County			United States		
	Number	Percent	% of Foreign-born	Number	Percent	% of Foreign-born
Native-born*	261,916	95.6		280,665,332	86.4	
Foreign-born	11,919	4.4		44,032,463	13.6	
Naturalized citizen	5,650	2.1	47.4	21,889,463	6.7	49.7
Not a citizen	6,269	2.3	52.6	22,143,000	6.8	50.3
Total	273,835	100.0	100.0	324,697,795	100	100.0

Source: ACS.

\*includes anyone born in the United States, Puerto Rico, a U.S. Island Area (American Samoa, Guam, the Commonwealth of the Northern Mariana Islands, or the U.S. Virgin Islands), or abroad of a U.S. citizen parent or parents.

- In the 2015 to 2019 period, there were approximately 11,919 residents of Erie County who were foreign-born, or about 4.4% of the county’s population.
- Of these, 47.4% (about 5,650) had become citizens through the naturalization process, and 52.6% (about 6,269) were not citizens.
- Compared to national patterns, Erie County had a significantly smaller proportion of foreign-born residents: Erie’s 4.4% was only about one third of the national average of 13.6%.
- At the national level, a slightly larger share had become citizens: 49.7% versus Erie’s 47.4%.

##### **2) Gender**

**Table 3: Gender Percentages by Native and Foreign-Born Population**

Gender	Erie County					United States				
	Percent of Column Total					Percent of Column Total				
	Total Population	Native-born	Foreign-born	Naturalized	Non-citizen	Total Population	Native-born	Foreign-born	Naturalized	Non-citizen
Male	49.4	49.4	48.0	45.3	50.4	49.2	49.4	48.5	45.9	51.0
Female	50.6	50.6	52.0	54.7	49.6	50.8	50.6	51.5	54.1	49.0
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Total Number	273,835	261,916	11,919	5,650	6,269	324,697,795	280,665,332	44,032,463	21,889,463	22,143,000

Source: ACS.

- For the population of Erie County as a whole, females outnumber males by 50.6% to 49.4%, similar to national patterns.
- The gender breakdown of the foreign-born is similar, leaning a bit more toward females, 52.0% to 48.0%. However, females comprise a larger share of the naturalized foreign-born: 54.7% versus 45.3% of males.
- A similar pattern occurs at the national level. Foreign-born women are more likely to become citizens than are foreign-born men.

**Table 4: Percentages of Total Population by Gender**

Nativity	Erie County			United States		
	Percent of Column Total			Percent of Column Total		
	Male	Female	Total	Male	Female	Total
Native-born	95.8	96.0	95.9	86.7	86.2	86.4
Foreign-born	4.2	4.0	4.1	13.3	13.8	13.6
Naturalized citizen	1.9	1.9	1.9	6.3	7.2	6.7
Not a citizen	2.3	2.0	2.2	7.1	6.6	6.8
Total	100.0	100.0	100.0	100.0	100.0	100.0
Total Number	135,247	138,913	274,160	159,890,729	164,807,066	324,697,795

Source: ACS and authors' calculations.

- The foreign-born comprise about 4.0% of all females in the county, and 4.1% of all males. Nationally the numbers are 13.8% and 13.3%.

**Table 5: Gender Percentages by Citizenship Status**

Foreign-born	Erie County			United States		
	Percent of Column Total			Percent of Column Total		
	Male	Female	Total	Male	Female	Total
Naturalized	44.5	48.9	46.7	47.1	52.2	49.7
Non-citizen	55.5	51.1	53.3	52.9	47.8	50.3
Total	100.0	100.0	100.0	100.0	100.0	100.0
Total Number	5,660	5,508	11,168	21,345,375	22,687,088	44,032,463

Source: ACS and authors' calculations.

- Of Erie's foreign-born, females tend to be naturalized at higher rates than males: 48.9% of Erie's foreign-born females have been naturalized, but only 44.5% of foreign-born males.
- A similar gender pattern occurs at the national level, although Erie's naturalization rates were slightly less for both sexes.

### 3) Race

**Table 6: Native and Foreign-Born Percentages by Race**

Race	Erie County					United States				
	Percent of Column Total					Percent of Column Total				
	Total Population	Native-born	Foreign-born	Naturalized	Non-citizen	Total Population	Native-born	Foreign-born	Naturalized	Non-citizen
White alone	86.5	88.1	51.3	61.3	42.2	72.5	76.7	45.9	44.2	47.6
Black or African American alone	7.2	7.1	8.1	8.1	8.2	12.7	13.2	9.3	11.0	7.6
American Indian or Alaska Native	0.3	0.3	0.5	0.7	0.4	0.8	0.9	0.4	0.3	0.5
Asian alone	1.7	0.3	31.2	24.6	37.1	5.5	2.2	26.9	31.8	22.0
Other or Multi-Race	4.3	4.2	8.9	5.3	12.1	8.4	7.0	17.5	12.6	22.3
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Total Number	273,835	261,916	11,919	5,650	6,269	324,697,795	280,665,332	44,032,463	21,889,463	22,143,000

Source: ACS

- Erie County as a whole is significantly less racially diverse than the nation as a whole. 86.5% of Erieites are White, compared to 72.5% nationally.
- Immigration increases Erie's racial diversity. Only 51.3% of the foreign-born are White, compared to 88.1% of the native-born.
- Asians comprise the largest minority group of Erie's immigrants, at 31.2%, followed by Other or Multi-race at 8.9% and Blacks at 8.1%.
- Immigrants to Erie tend to be White at higher rates than immigrants to the nation as a whole; Whites account for 51.3% of the foreign-born in Erie compared to 45.9% nationally.
- At the national level, Asians also comprise the largest minority group of foreign-born at 26.9%, a bit less than Erie's 31.2%.
- Blacks account for 8.1% of the foreign-born in Erie and 8.9% for the nation at large.

Note: Hispanics and Latinos are not broken out separately as a race category.

**Table 7: Race Percentages by Native and Foreign-Born**

Race	Erie County						United States					
	Percent of Column Total						Percent of Column Total					
	Total	White alone	Black or African American alone	American Indian or Alaska Native	Asian alone	Other or Multi-Race	Total	White alone	Black or African American alone	American Indian or Alaska Native	Asian alone	Other or Multi-Race
Native-born	95.9	97.9	93.5	91.7	14.9	90.6	86.4	91.4	90.0	93.6	33.9	71.9
Foreign-born	4.1	2.1	6.5	8.3	85.1	9.4	13.6	8.6	9.9	6.4	66.1	28.1
Naturalized citizen	1.9	1.4	2.5	8.3	24.0	2.3	6.7	4.1	5.8	2.6	38.9	10.1
Not a citizen	2.2	0.7	4.0	0.0	61.1	7.0	6.8	4.5	4.1	3.9	27.2	18.0
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Total Number	274,160	237,400	19,911	470	4,485	11,604	324,697,795	235,378,764	41,219,510	2,744,205	17,923,315	27,432,001

Source: ACS and authors' calculations.

Note: totals may differ slightly from those in previous table due to rounding in individual cells.

- Only 14.9% of Erie's Asian residents are native-born; 85.1% are foreign-born. Nationally 33.9% of Asians are native-born, and only 66.1% are foreign-born.
- Of Erie's Black residents, 6.5% are foreign-born, compared with 9.9% nationally.



**Table 8: Citizenship Status Percentages of Foreign-Born by Race**

Foreign-born	Erie County						United States					
	Percent of Column Total						Percent of Column Total					
	Total	White alone	Black or African American alone	American Indian or Alaska Native	Asian alone	Other or Multi-Race	Total	White alone	Black or African American alone	American Indian or Alaska Native	Asian alone	Other or Multi-Race
Naturalized	46.7	67.7	38.0	100.0	28.2	24.9	49.7	47.9	58.7	39.8	58.8	35.9
Non-citizen	53.3	32.3	62.0	0.0	71.8	75.1	50.3	52.1	41.3	60.2	41.2	64.1
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Total Number	11,168	4,936	1,292	39	3,815	1,083	44,032,463	20,213,528	40,931,019	176,926	11,847,646	7,701,344

Source: ACS and authors' calculations.

Note: totals may differ slightly from those in previous tables due to rounding in individual cells.

- Naturalization rates vary by race among the foreign-born. 67.7% of White immigrants in Erie have become citizens, 38.0% of Blacks, and 28.2% of Asians.
- In this, Erie's patterns differ from those nationally, where 47.9% of Whites have been naturalized, 58.7% of Blacks, and 58.8% of Asians.

**4) Age**

- Erie's foreign-born tend to be a bit younger than the native-born, with a median age of 36.9 years, three years younger than the native-born median of 39.9. Since Erie's native-born population tends to be a bit grayer than the national average, Erie's immigrants are helping keep Erie a bit younger.
- This is quite different from the national pattern where the foreign-born have an average age of 44.8 years versus the native-born's 36.2.

**Table 9: Age**

Nativity	Erie		United States
	Mean age (years)	Median age (years)	Median age (years)
Total Population	39.9	39.7	38.1
Native-born	40.0	39.9	36.2
Foreign-born	38.9	36.9	44.8
Naturalized citizen	47.3	45.2	51.7
Not a citizen	31.5	32.1	38.5

Source: Mean age: authors' calculations from ACS PUMS data.  
Median age: ACS.

- The foreign-born who have been naturalized are quite a bit older than those who are non-citizens. In Erie the median age of the naturalized is 45.2 years versus 32.1 for non-citizens. The national pattern is similar at 51.7 versus 38.5, although several years older for both categories than in Erie.

**Table 10: Percentage of Population by Age Ranges: Erie**

Age	Percent of People				
	Total Population	Native-born	Foreign-born	Naturalized	Non-citizen
0-17	21.4	21.7	14.5	7.6	20.5
18-20	4.4	4.3	7.0	3.8	9.8
21-29	12.5	12.4	14.5	9.6	18.7
30-39	12.0	11.6	20.1	18.9	21.1
40-49	11.6	11.5	14.1	15.8	12.7
50-59	13.9	13.9	13.1	15.8	10.8
60-64	7.0	7.1	4.2	6.9	1.7
65-69	5.7	5.8	3.8	6.8	1.1
70-79	7.0	7.2	2.7	5.0	0.7
80-89	3.7	3.7	5.0	7.8	2.4
90+	0.8	0.8	1.1	1.9	0.3
Total	100.0	100.0	100.0	100.0	100.0
Working age					
18-64	61.3	60.8	73.0	70.9	74.9
21-64	56.9	56.5	66.0	67.0	65.0
Total number	274,160	262,992	11,168	5,216	5,952

Source: Authors' calculations from ACS PUMS data.

**Table 11: Percentage of Population by Age Ranges: Erie and U.S.**

Age	Erie County					United States				
	Percent of People					Percent of People				
	Total Population	Native-born	Foreign-born	Naturalized	Non-citizen	Total Population	Native-born	Foreign-born	Naturalized	Non-citizen
Under 5	5.6	5.8	2.9	0.5	5	6.1	6.9	0.7	0.2	1.2
5 to 17	15.9	16.1	11.1	8.4	13.6	16.5	18.3	5	2.8	7.2
18 to 24	10	9.9	13.2	8.5	17.3	9.4	9.9	6.7	4	9.4
25 to 44	24.3	23.7	36.5	32.2	40.4	26.5	24.7	38	28.4	47.4
45 to 54	12.7	12.6	14.8	17	12.8	13	12	19.3	21.6	17.1
55 to 64	14.2	14.4	9.8	13.4	6.5	12.9	12.6	14.5	19.3	9.9
65 to 74	9.9	10.1	5.5	9.3	2.1	9.1	9.1	9.1	13.3	4.9
75 to 84	5	5	4.2	6.6	2.1	4.6	4.6	4.8	7.4	2.2
85 and over	2.5	2.5	2.1	4.1	0.3	1.9	1.9	1.8	3	0.7
Total	100.1	100.1	100.1	100	100.1	100	100	99.9	100	100
18 to 64	61.2	60.6	74.3	71.1	77.0	61.8	59.2	78.5	73.3	83.8

Source: ACS.

- The relatively younger age of Erie's immigrant community is not due to a large proportion of children. According to the PUMS data, 21.7% of Erie's native-born population are under 18 years of age, compared to only 14.5% for the foreign-born. To put that in perspective, Erie's percent of children who are native born is 50% larger than the foreign-born's.
- At the other end of the age spectrum, only 12.6% of Erie's foreign-born are 65 or older, compared to 17.5% of the native-born. Erie's percent of native-born seniors is 39% larger than the foreign-born's.
- This leads to the fact that a much larger share of Erie's foreign-born fall into the 18-to-64 category which might be considered prime working age: 74.3% of the foreign-born compared to 60.6% of the native-born.

- This difference is even larger among the non-citizens of Erie, where 77% are of prime working age, compared with 71.1% of the naturalized,
- Surprisingly, the national patterns on this topic are even more extreme, with 78.5% of the foreign-born of working age, compared to 59.2% of the native-born, and 83.8% of the non-citizens of prime working age and 73.3% of the naturalized according to the ACS data.

Comparisons with national patterns can be facilitated with the use of a tool called the location quotient. A location quotient, or LQ, is simply a ratio that compares Erie's percent of people in a category with the national percent. If Erie has more than the national share in a category, the LQ will be greater than one, showing a concentration or focus in that category. For example, the table above shows that Erie has 10.0% of its total population in the 18-24 age category, compared to just 9.4% nationally. That means that Erie's LQ for this age group is 10.0/9.4 or 1.06. The LQ greater than one indicates that we have more than our share of this age group, in a sense. That's unsurprising given the fact that we have five colleges in the county that attract students in this age group from outside the area.

Table 12 below shows location quotients for age for Erie.

**Table 12: Location Quotients by Age**

Age	Erie County				
	Location Quotients				
	Total Population	Native-born	Foreign-born	Naturalized	Non-citizen
Under 5	0.92	0.84	4.14	2.50	4.17
5 to 17	0.96	0.88	2.22	3.00	1.89
18 to 24	1.06	1.00	1.97	2.13	1.84
25 to 44	0.92	0.96	0.96	1.13	0.85
45 to 54	0.98	1.05	0.77	0.79	0.75
55 to 64	1.10	1.14	0.68	0.69	0.66
65 to 74	1.09	1.11	0.60	0.70	0.43
75 to 84	1.09	1.09	0.88	0.89	0.95
85 and over	1.32	1.32	1.17	1.37	0.43
18 to 64	0.99	1.02	0.95	0.97	0.92

Source: Authors' calculations from ACS data.

- Erie has more than its share in the 18 to 24 age group, and in the 55 and above categories, compared to the nation.
- For the foreign-born, high LQs occur especially in the under 5 and 5-17 categories, which may be surprising given the discussion above, until we realize that although Erie has small percentages of foreign-born in the "children" categories, the percentages at the national level are even smaller. For the under 5 category, Erie's 2.9% is four times as large as the 0.7% in that category nationally—hence the LQ of 4.14.
- Conversely, the foreign-born are over-represented in the 18-24 category where the LQ is 1.97. Presumably this reflects, at least in part, the success of the local colleges at attracting foreign students.

- The other foreign-born group with a high LQ is in the over 85 category. Again, although the percent of the foreign-born in this category is low relative to the Erie native-born, it is high compared the national percent in this age group.
- The LQs of the working-age foreign-born tend to be below one because, as mentioned above, the percentages of the foreign-born in these categories are even higher nationally than locally.

### **5) Decade of Arrival**

- In Erie County, there has been a steady increase in the number of immigrants entering by decade. Locally 4,268 or 35.8% of the foreign born entered in 2010 or later; 3,177 or 26.7% entered from 2000 to 2009, 2,524 or 21.2% entered from 1990 to 1999 and 1,950 or 16.4% entered before 1990.

**Table 13: Population by Decade of Entry**

Decade of Entry	Erie County			United States		
	Number of People			Number of People		
	Foreign-born	Naturalized	Non-citizen	Foreign-born	Naturalized	Non-citizen
Entered before 1990	1,950	1,655	295	13,647,420	10,590,398	3,057,022
Entered 1990 to 1999	2,524	1,764	760	9,857,600	5,648,405	4,209,195
Entered 2000 to 2009	3,177	1,770	1,407	11,437,921	4,575,168	6,862,753
Entered 2010 or later	4,268	461	3,807	9,068,929	1,033,858	8,035,071
Total	11,919	5,650	6,269	44,011,870	21,829,888	22,181,982

Source: ACS and authors' calculations.

**Table 14: Citizenship Percentages by Decade of Entry**

Decade of Entry	Erie County		United States	
	Percentage of Foreign-Born		Percentage of Foreign-Born	
	Naturalized	Non-citizen	Naturalized	Non-citizen
Entered before 1990	84.9	15.1	77.6	22.4
Entered 1990 to 1999	69.9	30.1	57.3	42.7
Entered 2000 to 2009	55.7	44.3	40.0	60.0
Entered 2010 or later	10.8	89.2	11.4	88.6
Total	47.4	52.6	49.6	50.4

Source: ACS.

- The naturalization rate is much higher for immigrants who have been in the U.S. longer in Erie and in the U.S.
- Erie's naturalization rate for the foreign born is 84.9% for those who entered before 1990, 69.9% for those who entered from 1990 to 1999, and 55.7% for those who entered from 2000 to 2009. These are substantially higher than the corresponding national rates of 77.6%, 57.3, and 40.0% respectively.
- It appears that Erie's foreign-born are more likely to become citizens over time than the foreign-born nationally.

**Table 15: Percentages of Foreign-Born Population by Decade of Entry**

Decade of Entry	Erie			United States		
	Percentage of Foreign-Born			Percentage of Foreign-Born		
	Foreign-born	Naturalized	Non-citizen	Foreign-born	Naturalized	Non-citizen
Entered before 1990	16.4	29.3	4.7	31.0	48.5	13.8
Entered 1990 to 1999	21.2	31.2	12.1	22.4	25.9	19.0
Entered 2000 to 2009	26.7	31.3	22.5	26.0	21.0	30.9
Entered 2010 or later	35.8	8.2	60.7	20.6	4.7	36.2
Total	100.1	100.0	100.0	100.0	100.1	99.9

Source: ACS.

- Of the non-citizens in Erie, 60.7% entered the U.S. in 2010 or later whereas nationally the rate is only 36.2%.
- 8.2% of the naturalized citizens in Erie entered in 2010 or later compared to 4.7% nationally.

**6) Marital Status**

**Table 16: Population by Marital Status**

Marital Status	Erie County				
	Number of People				
	Total Population	Native-born	Foreign-born	Naturalized	Non-citizen
Now married, except separated	102,123	96,226	5,813	2,897	2,917
Divorced or separated	29,983	28,782	1,171	764	406
Widowed	15,555	15,035	671	472	198
Never married	77,776	74,747	3,002	1,172	1,822
Total 15 and older	225,437	214,790	10,647	5,305	5,342

Source: ACS.

**Table 17: Percentages of Population by Marital Status**

Marital Status	Erie County					United States				
	Percent of People 15 and Older					Percent of People 15 and Older				
	Total Population	Native-born	Foreign-born	Naturalized	Non-citizen	Total Population	Native-born	Foreign-born	Naturalized	Non-citizen
Now married, except separated	45.3	44.8	54.6	54.6	54.6	48.1	45.8	59.8	63.0	56.5
Divorced or separated	13.3	13.4	11.0	14.4	7.6	12.8	13.1	11.0	12.9	9.1
Widowed	6.9	7.0	6.3	8.9	3.7	5.8	5.9	5.3	7.2	3.4
Never married	34.5	34.8	28.2	22.1	34.1	33.4	35.2	23.9	17.0	30.9
Total	100	100	100	100	100	100	100	100	100	100

Source: ACS.

- Erie's foreign-born aged 15 or older are more likely to be married: 54.6% vs. 44.8% for the native-born.
- Consonant with that, Erie's foreign-born are less likely to be divorced or separated, 11.0% vs. 13.4% for the native-born, or never married: 28.2% vs. 34.8% for the native-born.
- Within the foreign-born, non-citizens are more likely to be in the never-married category than are the naturalized, 34.1% vs. 22.1%. Conversely, the naturalized are more likely to be divorced or separated (14.4% vs. 7.6%) or widowed (8.9% vs. 3.7%).
- If we remember the age data presented earlier, these patterns may be at least partially explained by the fact that naturalized citizens tend to be quite a bit older on average than

non-citizens (median age of 45.2 years vs. 32.1), and thus have had more time to find—and lose—a mate than have the younger non-citizens.

**Table 18: Location Quotients by Marital Status**

Marital Status	Erie County				
	Location Quotients				
	Total Population	Native-born	Foreign-born	Naturalized	Non-citizen
Now married, except separated	0.94	0.98	0.91	0.87	0.97
Divorced or separated	1.04	1.02	1.00	1.12	0.84
Widowed	1.19	1.19	1.19	1.24	1.09
Never married	1.03	0.99	1.18	1.30	1.10

Source: Authors' calculations from ACS data.

- Comparing Erie's foreign-born with those nationally using location quotients, the table above shows that the patterns for Erie are consistent with national patterns. This is reflected in the LQs all being relatively close to 1.0.
- However, Erie's naturalized citizens tend to have "widowed" and "never-married" rates that are about a quarter to a third higher than naturalized citizens in the rest of the country.
- Erie's foreign-born also have divorce or separation rates that are equal to the rates of the foreign-born elsewhere in the country. Naturalized citizens in Erie are somewhat more likely (LQ of 1.12) and non-citizens are somewhat less likely (LQ of 0.84) to be to be divorced or separated relative to the rest of the U.S.

**Table 19: Number of Times Married**

Number of Times Married	Erie County				
	Percent of People				
	Total Population	Native-born	Foreign-born	Naturalized	Non-citizen
One time	41.7	41.1	55.9	58.6	53.4
Two times	10.4	10.5	7.8	13.2	3.0
Three or more times	2.1	2.1	1.4	2.8	0.1
Never married or under 15 years old	45.9	46.3	35.0	25.4	43.4
Total	100.0	100.0	100.0	100.0	100.0

Source: Authors' calculations from ACS PUMS data.

Note: data in this table may differ from those in previous tables due to being based on the PUMS data for Erie, which makes use of a smaller sample than the standard ACS data.

- More than half (55.9%) of Erie's foreign-born aged 15 and older have been married just once, compared to 41.1% of the native-born. The effect is even stronger for the naturalized, where the percentage is 58.6%.
- Interestingly, although 7.8% of the foreign-born have been married two times, that splits into a rate of 13.2% for the naturalized and 3.0% for the non-citizens. The 13.2% rate for the naturalized is higher than the 10.5% rate for the native-born.
- But both categories of the foreign-born have very low rates of being married more than twice.

## 7) Households

The Census Bureau defines a household as<sup>10</sup>:

A household includes all the people who occupy a housing unit (such as a house or apartment) as their usual place of residence.

A household includes the related family members and all the unrelated people, if any, such as lodgers, foster children, wards, or employees who share the housing unit. A person living alone in a housing unit, or a group of unrelated people sharing a housing unit such as partners or roomers, is also counted as a household. The count of households excludes group quarters. There are two major categories of households, "family" and "nonfamily."

**Table 20: Percentages by Household Type**

Household type	Erie County					United States				
	Total Population	Native-born	Foreign-born	Naturalized	Non-citizen	Total Population	Native-born	Foreign-born	Naturalized	Non-citizen
	Percent of Households					Percent of Households				
In married-couple family	53.7	53.3	61.6	61.3	61.9	58.6	57.8	63.5	66.4	60.7
In other households	41.6	42.0	31.9	36.6	27.6	38.9	39.5	35.0	32.6	37.3
	Number of People					Number of People				
Average household size	2.36	2.33	3.20	2.97	3.53	2.62	2.50	3.29	3.14	3.49
Average family size	2.96	2.91	3.87	3.63	4.20	3.23	3.11	3.76	3.64	3.93

Source: ACS.

- The foreign-born in Erie are more likely to be in married-family couples than are native-born households, 61.6% to 53.3%. There is little difference between the naturalized and non-citizen households in this.
- This is like the national pattern, except Erie's difference is a bit larger.
- Erie's foreign-born families tend to be about 1/3 larger than native-born families, 3.87 people versus 2.91. The difference is a bit larger in Erie than nationally, where it is only about 21%.
- Non-citizen families and households tend to be larger than those of the naturalized.

<sup>10</sup>Census Bureau, "Glossary: Household." Available at: [https://www.census.gov/glossary/#term\\_Household](https://www.census.gov/glossary/#term_Household).

## 8) Origin—Region of the World

Where were the foreign-born born? From where did they come to the United States?

**Table 21: Population by Birth Region**

World Area of Birth	Erie County				
	Number of People				
	Total Population	Native-born*	Foreign-born	Naturalized	Non-citizen
U.S. state, Puerto Rico or U.S. Island Areas*	261,916	261,916			
Latin America	1,756		1,756	643	1,113
Asia	5,327		5,327	1,980	3,347
Europe	3,273		3,273	2,315	958
Africa	1,123		1,123	469	654
Northern America	409		409	236	173
Oceania	31		31	7	24
Total	273,835	261,916	11,919	5,650	6,269

\*Includes born abroad of American parent(s).  
Source: calculated by author from ACS data.

Aside from the usual continental categories, the Census Bureau geographic taxonomy includes:

- Northern America: Canada, Greenland, Bermuda, and St. Pierre & Miquelon; it excludes the U.S., Puerto Rico and U.S. Island Areas.
- Latin America: Central America (including Mexico), the Caribbean, and South America.
- Oceania: Australia, New Zealand, and the Pacific islands.<sup>11</sup>

**Table 22: Percentages by Birth Region**

World Area of Birth	Erie County					United States				
	Percent of People					Percent of People				
	Total Population	Native-born*	Foreign-born	Naturalized	Non-citizen	Total Population	Native-born*	Foreign-born	Naturalized	Non-citizen
U.S. state, Puerto Rico or U.S. Island Areas	95.65	100.00				86.45	100.00			
Latin America	0.64		14.73	11.38	17.75	6.86		50.58	40.97	60.06
Asia	1.95		44.69	35.04	53.39	4.20		31.00	36.75	25.32
Europe	1.20		27.46	40.97	15.28	1.47		10.82	14.25	7.45
Africa	0.41		9.42	8.30	10.43	0.70		5.13	5.74	4.53
Northern America	0.15		3.43	4.18	2.76	0.25		1.85	1.80	1.91
Oceania and at Sea	0.01		0.26	0.12	0.38	0.08		0.62	0.50	0.73
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

\*Includes born abroad of American parent(s). Source: calculated by author from ACS data.

- The largest group of Erie's foreign-born are from Asia (44.7%), followed by Europe (27.5%), Latin America (14.7%), and Africa (9.4%).
- This distribution is quite different from national averages, where more than half of all the foreign-born are from Latin America (50.6%), 31.0% are from Asia, 10.8% from Europe, and just 5.1% from Africa. The location quotients in the table below make this point clearly, with LQs that are quite different from 1.0 in virtually all categories.

<sup>11</sup> Full details can be found in *American Community Survey and Puerto Rico Community Survey, 2019 Code List*. "Place of Birth, Migration, & Place of Work Code List", pp. 96 ff. [https://www2.census.gov/programs-surveys/acs/tech\\_docs/code\\_lists/2019\\_ACS\\_Code\\_Lists.pdf](https://www2.census.gov/programs-surveys/acs/tech_docs/code_lists/2019_ACS_Code_Lists.pdf)



**Table 23: Location Quotients by Birth Region**

World Area of Birth	Erie County				
	Location Quotients				
	Total Population	Native-born*	Foreign-born	Naturalized	Non-citizen
U.S. state, Puerto Rico or U.S. Island Areas	1.11	1.00			
Latin America	0.09		0.29	0.28	0.30
Asia	0.46		1.44	0.95	2.11
Europe	0.81		2.54	2.88	2.05
Africa	0.59		1.84	1.45	2.30
Northern America	0.59		1.85	2.32	1.44
Oceania and at Sea	0.14		0.42	0.25	0.52

\*Includes born abroad of American parent(s).  
Source: calculated by authors from ACS data.

**Table 24: Citizenship Status Percentage by Birth Region**

Status of Foreign-born	Erie County							United States						
	Percent of Total							Percent of Total						
	Total	Latin America	Asia	Europe	Africa	Northern America	Oceania	Total	Latin America	Asia	Europe	Africa	Northern America	Oceania
Naturalized citizen	47.4	36.6	37.2	70.7	41.8	57.7	22.6	49.6	40.2	58.9	65.3	55.5	48.1	40.3
Not a citizen	52.6	63.4	62.8	29.3	58.2	42.3	77.4	50.4	59.8	41.1	34.7	44.5	51.9	59.7
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Total Number	11,919	1,756	5,327	3,273	1,123	409	31	44,011,870	22,261,633	13,641,680	4,763,845	2,256,673	816,353	271,223

Source: calculated by authors from ACS data.

**Table 25: Location Quotients by Birth Region**

Status of Foreign-born	Erie County						
	Location Quotients						
	Total	Latin America	Asia	Europe	Africa	Northern America	Oceania
Naturalized citizen	0.95	0.91	0.63	1.08	0.75	1.20	0.56
Not a citizen	1.04	1.06	1.53	0.84	1.31	0.82	1.30

Source: calculated by authors from ACS data.

- Erie's immigrants from Oceania, Asia, Africa, and Latin America are naturalized at lower rates than immigrants from those regions nationally.
- Erie's immigrants from Northern America and Europe are naturalized at a higher rate than nationally.

**Table 26: Citizenship Status by Decade of Entry and Birth Region**

Decade of Entry	Erie County					United States				
	World Area of Birth					World Area of Birth				
	Total	Europe	Asia	Latin America	Other Areas	Total	Europe	Asia	Latin America	Other Areas
Entered 2010 or later	4,268	492	2,746	371	659	9,068,929	771,802	3,715,104	3,556,887	1,025,136
Naturalized %	10.8	27.8	9.5	3.2	7.6	11.4	10.7	11.0	11.0	14.8
Non-citizen %	89.2	72.2	90.5	96.8	92.4	88.6	89.3	89.0	89.0	85.2
Entered 2000 to 2009	3,177	694	1,440	647	396	11,437,921	898,992	3,268,589	6,312,093	958,247
Naturalized %	55.7	73.9	55.4	30.4	66.2	40.0	57.5	55.3	26.4	60.6
Non-citizen %	44.3	26.1	44.6	69.6	33.8	60.0	42.5	44.7	73.6	39.4
Entered 1990 to 1999:	2,524	1,100	716	391	317	9,857,600	1,064,304	2,710,391	5,475,452	607,453
Naturalized %	69.9	77.7	73.6	33.5	79.2	57.3	77.9	81.7	39.6	72.5
Non-citizen %	30.1	22.3	26.4	66.5	20.8	42.7	22.1	18.3	60.4	27.5
Entered before 1990:	1,950	987	425	347	191	13,647,420	2,028,747	3,947,596	6,917,201	753,876
Naturalized %	84.9	82.1	92.5	87.3	78.0	77.6	83.0	91.2	68.3	77.2
Non-citizen %	15.1	17.9	7.5	12.7	22.0	22.4	17.0	8.8	31.7	22.8
Total:	11,919	3,273	5,327	1,756	1,563	44,011,870	4,763,845	13,641,680	22,261,633	3,344,712

Source: calculated by authors from ACS data.

- Erie's immigrants have come from different areas of the world and the countries of origin have changed over time. Prior to 2000, Europe was the most common world area of birth for Erie's immigrants. Since 2000 more immigrants are from Asia than any other region.
- Nationally, more immigrants came from Latin America prior to 2010, and since 2010 more immigrants to the U.S. have come from Asia.
- Erie has had a lower percentage from Latin America and a higher percentage from Europe than the rest of the country.
- In Erie, as in the country as a whole, for every region the rate of naturalization increases as immigrants are in the U.S. longer.

The foreign-born in Erie who have responded to the ACS over the 2015-19 period have come from at least 87 countries, including:

Afghanistan	Ecuador	Japan	Portugal
Albania	Egypt	Jordan	Romania
Argentina	El Salvador	Kazakhstan	Russia
Australia	England	Kenya	Saudi Arabia
Barbados	Eritrea	Korea	Scotland
Belarus	Ethiopia	Kuwait	Sierra Leone
Belize	France	Latvia	Somalia
Bhutan	Germany	Lebanon	South Africa
Bosnia and Herzegovina	Ghana	Liberia	Sudan
Brazil	Greece	Lithuania	Sweden
Bulgaria	Grenada	Macedonia	Syria
Burma	Guatemala	Mexico	Taiwan
Cambodia	Guyana	Moldova	Thailand
Cameroon	Haiti	Morocco	Trinidad and Tobago
Canada	Honduras	Nepal	Turkey
China	Hungary	Netherlands	Uganda
Colombia	India	Nicaragua	Ukraine
Croatia	Indonesia	Nigeria	United Kingdom,
Democratic Republic of Congo (Zaire)	Iran	Norway	Not Specified
Dominica	Iraq	Pakistan	Venezuela
Dominican Republic	Israel	Panama	Vietnam
	Italy	Philippines	Zimbabwe
	Jamaica	Poland	

Table 27 below lists the top 15 origin countries for Erie’s foreign-born, and provides estimated numbers from each. Since these estimates are based on a smaller sample from the data, a 90% confidence interval is also provided for the estimates. While the best estimate of the number of foreign-born in Erie County from Bhutan is 886 during the 2015-19 period, we can’t be positive that this is the actual, true number. But we are 90% sure that the actual number is between 598 and 1,174.<sup>12</sup> Also, the margin of error is different for each country, so the rank order of the estimates is different than the rank order of the lower or upper bounds.

Due to sample weights, there are some differences in the top 15 from PUMS and ACS data calculated for Erie County. Furthermore, the ACS collapses more countries into “other” categories whereas PUMS does not. For example, Bhutan is the highest estimate in the PUMS data, but in the ACS Bhutan falls in the category of “Other South Central Asia” rather than being listed as a unique country. This table is derived primarily from ACS estimates, but it uses PUMS data to verify the countries of origin.

<sup>12</sup> The estimates here use the Generalized Variance Function or Design Factors Approach. Much more on this topic is available in: U.S. Census Bureau, *PUMS Accuracy of the Data 2015-19*. Available at: [https://www2.census.gov/programs-surveys/acs/tech\\_docs/pums/accuracy/2015\\_2019AccuracyPUMS.pdf?](https://www2.census.gov/programs-surveys/acs/tech_docs/pums/accuracy/2015_2019AccuracyPUMS.pdf?)

**Table 27: Top 15 Countries of Erie's Foreign-Born**

Rank	Country of Birth	Continent	Estimate	Margin of error	90% Confidence Interval	
					Lower	Upper
1	Bhutan	Asia	886	288	598	1,174
2	China	Asia	794	196	598	990
3	Nepal	Asia	641	199	442	840
4	Ukraine	Europe	632	263	369	895
5	Mexico	Americas	625	218	407	843
6	Iraq	Asia	624	233	391	857
7	India	Asia	593	250	343	843
8	Bosnia and Herzegovina	Europe	543	292	251	835
9	Canada	Americas	409	132	277	541
10	Germany	Europe	400	148	252	548
11	Russia	Europe	366	281	85	647
12	Saudi Arabia	Asia	304	292	12	596
13	Vietnam	Asia	249	136	113	385
14	Guatemala	Americas	240	133	107	373
15	El Salvador	Americas	225	165	60	390

Source: Authors' calculations from ACS PUMS data.

**Map 2: Top 15 Countries of Origin for Foreign-Born in Erie**



Source: Map is from Vector World Map (<https://www.vectorworldmap.com/vectormaps/vector-world-map-v2.2.jpg>)

## 9) Educational Attainment

Question 11 of the ACS survey<sup>13</sup> asks “What is the highest degree or level of school this person has COMPLETED?” and offers a broad range of choices as indicated in the table below. For college degrees, the choices include:

- Associates degree (for example: AA, AS)
- Bachelor’s degree (for example: BA, BS)
- Master’s degree (for example: MA, MS, MEng, MEd, MSW, MBA)
- Professional degree beyond bachelor’s degree (for example: MD, DDS, DVM, LLB, JD)
- Doctorate degree (for example, PhD, EdD).

**Table 28: Educational Attainment Percentages**

Educational attainment	Erie County					United States				
	Percent of People 25+					Percent of People 25+				
	Total	Native-born	Foreign-born	Naturalized	Non-citizen	Total	Native-born	Foreign-born	Naturalized	Non-citizen
No schooling completed	0.7	0.4	7.7	3.0	13.3	1.4	0.7	4.8	3.9	5.7
Some school, no high school diploma	7.4	7.0	15.8	14.6	17.2	10.6	8.0	22.9	15.5	31.1
High school diploma or GED	38.7	39.2	29.2	30.1	28.1	27.1	28.0	22.4	21.6	23.3
Some college, no degree	15.7	15.9	11.9	11.6	12.3	20.4	22.0	12.8	15.2	10.1
Associate's degree	9.6	9.8	5.6	8.1	2.7	8.5	9.0	6.0	7.7	4.1
Bachelor's degree	17.7	17.9	13.7	13.5	13.8	19.7	20.1	17.8	20.9	14.2
Graduate or professional degree	10.1	9.8	16.1	19.0	12.6	12.3	12.1	13.5	15.1	11.6
Master's degree	7.8	7.6	12.4	14.2	10.3	8.8	8.7	9.0	9.7	8.2
Professional degree	1.3	1.3	1.4	2.5	0.0	2.1	2.1	2.2	3.0	1.5
Doctorate degree	1.0	0.9	2.3	2.4	2.3	1.4	1.2	2.2	2.4	2.0
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Total Number	188,074	180,046	8,028	4,406	3,622	220,640,787	182,081,628	38,559,159	20,343,953	18,215,206

Source: Authors’ calculations from PUMS data.

Note that Table 28 above refers to those aged 25 years or older.

- Compared to the native-born, the foreign-born tend to be at both ends of the educational spectrum.
- 23.5% of the foreign-born have no schooling or less than the equivalent of a high-school diploma, compared with just 7.4% of the native born.
- At the other end, 16.1% of the foreign-born have graduate degrees, compared with just 9.8% of the native-born. The disparity is especially great for Master’s degrees: 12.4% of the foreign-born versus 7.6% of the native born, and for Doctorate degrees: 2.3% of the foreign-born versus 0.9% of the native-born.
- There are some differences between the naturalized and non-citizens locally at the upper end of the education spectrum. The naturalized have graduate degrees at higher rates than noncitizens in every category. Furthermore, 19.0% of the naturalized have graduate degrees versus 9.8% of native born.

The location quotient table below allows some comparisons between Erie’s patterns and the nation’s.

<sup>13</sup>U.S. Census Bureau, ACS Questionnaire Archive, <https://www.census.gov/programs-surveys/acs/methodology/questionnaire-archive.2019.html>. The 2019 questionnaire is at: <https://www2.census.gov/programs-surveys/acs/methodology/questionnaires/2019/quest19.pdf>

**Table 29: Location Quotients by Educational Attainment**

Educational attainment	Erie County				
	Location Quotients				
	Total	Native-born	Foreign-born	Naturalized	Non-citizen
No schooling completed	0.52	0.60	1.61	0.77	2.34
Some school, no high school diploma	0.70	0.88	0.69	0.94	0.55
High school diploma or GED	1.43	1.40	1.30	1.40	1.21
Some college, no degree	0.77	0.72	0.93	0.76	1.23
Associate's degree	1.13	1.09	0.94	1.04	0.65
Bachelor's degree	0.90	0.89	0.77	0.65	0.97
Graduate or professional degree	0.82	0.81	1.20	1.26	1.08
Master's degree	0.89	0.87	1.38	1.46	1.26
Professional degree	0.62	0.63	0.61	0.84	0.00
Doctorate degree	0.69	0.73	1.05	0.97	1.15

Source: Authors' calculations from PUMS data.

- Most basically, Erieites in general tend to have “just” high school credentials compared to national averages.
- Erie’s foreign born tend to have bachelor’s degrees at lower rates than the foreign-born elsewhere in the nation, shown by the 0.77 LQ for that category.
- Erie’s foreign-born tend to have advanced degrees at higher rates than Erie’s native-born, and higher rates than the foreign-born elsewhere in the country, as evidenced by the Erie foreign-born having an LQ of 1.2.

## **10) Disability Status**

The Census Bureau’s official definition of “disability” is:

A long-lasting physical, mental, or emotional condition. This condition can make it difficult for a person to do activities such as walking, climbing stairs, dressing, bathing, learning, or remembering. This condition can also impede a person from being able to go outside the home alone or to work at a job or business.<sup>14</sup>

To get at the data on disabilities, the American Community Survey questionnaire for 2019 asked questions about whether the respondent:

- is deaf or has serious difficulty hearing
- is blind or has serious difficulty seeing even when wearing glasses
- Because of a physical, mental, or emotional condition does the respondent have serious difficulty:
  - concentrating, remembering, or making decisions
  - walking or climbing stairs
  - dressing or bathing
  - doing errands alone such as visiting a doctor’s office or shopping.

<sup>14</sup>U.S. Census Bureau, Glossary, “Disability”. [https://www.census.gov/glossary/#term\\_Disability](https://www.census.gov/glossary/#term_Disability)

**Table 30: Disability Status Percentages**

Disability Status	Percent of People				
	Total Population	Native-born	Foreign-born	Naturalized	Non-citizen
With a disability	16.5	16.6	13.9	17.7	10.5
Without a disability	83.5	83.4	86.1	82.3	89.5
Total	100.0	100.0	100.0	100.0	100.0
Total Number	274,160	262,992	11,168	5,216	5,952

Source: Authors' calculations from ACS PUMS data.

- Erie's foreign-born tend to have slightly lower rates of disability than the native-born: 13.9% versus 16.6%.
- This is especially true for non-citizens whose disability rate is just 10.5%, but it is not true for the naturalized citizens, whose 17.7% rate is a bit above that of the native-born.

### **11) Military Service**

The Census defines "military service" as having ever served on active duty in the U.S. Armed Forces, Reserves, or National Guard.<sup>15</sup> The foreign-born are allowed to serve in the American armed forces even if they are not citizens, so long as they are legally admitted as resident aliens.

**Table 31: Military Service Percentages**

Military service	Percent of Total Population 17+				
	Total Population	Native-born	Foreign-born	Naturalized	Non-citizen
Are serving or have served	10.2	10.4	4.7	6.6	2.9
Never served	89.8	89.6	95.3	93.4	97.1
Total	100.0	100.0	100.0	100.0	100.0
Total Number of People 17+	218,551	208,950	9,601	4,822	4,779

Source: Authors' calculations from ACS PUMS data.

- The rate of service in the armed forces is significantly lower for the foreign-born in Erie (4.7%) than for the native-born (10.4%).
- The rate for non-citizens is lower than the rate for naturalized citizens, as might be expected.

<sup>15</sup> U.S. Census, American Community Survey Questionnaire for 2019, question #27.  
<https://www2.census.gov/programs-surveys/acs/methodology/questionnaires/2019/quest19.pdf>

## 12) English Language Skills

Question 14 of the ACS survey asks if the survey respondent speaks a language other than English at home.

**Table 32: Percentage of Households That Speak a Language Other than English at Home**

Nativity	Percent of Total Population	
	Erie	U.S.
Total	6.8	21.6
Native	3.4	11.2
Foreign Born	78.7	83.7
Naturalized citizen	72.8	78.9
Not a citizen	84.4	88.5

Source: ACS.

- Unsurprisingly, the foreign born are much more likely to speak a language other than English at home, although 3.4% of the native-born do also. Note that this percentage is 11.2% in the nation as a whole.
- Nearly 79% of Erie's foreign-born speak some other language at home. That rises to 84% for the non-citizens.
- For all categories, Erie's foreign-born have lower numbers of "other than English" than the average for the nation as a whole. This means Erie's foreign-born are more likely to speak English than the foreign-born nationally.

The ACS provides data on this issue classified by immigrants' date of entry to the U.S., as shown in the table below.

**Table 33: Percentage of Households That Speak a Language Other than English at Home by Decade of Entry**

Date of Entry to U.S.	Percent of Total Population	
	Erie	U.S.
Total foreign-born	78.7	83.7
Entered before 2000	71.9	80.6
Entered 2000 to 2009	75.7	87.2
Entered 2010 or later	88.9	87.4
Number	11,579	43,710,131

Source: ACS.

- It is clear that longer time spent in the U.S. tends to reduce the percentage of foreign-born who speak some other language at home—but the number remains relatively large at nearly 72% even for those who have been in the country since before 2000.
- Again, the Erie foreign-born have lower rates of "other language at home" than the national average for the foreign-born, except for the period since 2010.



Question 14 of the ACS survey goes on to ask those who speak a language other than English at home to rate their own mastery of English, and offers four levels of proficiency, as detailed in the table below. Using the PUMS data for Erie, it is possible to estimate the data for Erie's foreign-born.

**Table 34: English Speaking Ability**

Ability to Speak English	Percent of People <i>who answered the question</i>				
	Total Population	Native-born	Foreign-born	Naturalized	Non-citizen
Very well	60.7	76.7	44.2	51.4	38.5
Well	22.3	10.7	34.2	35.9	32.8
Not well	13.2	8.4	18.2	11.4	23.6
Not at all	3.8	4.1	3.4	1.3	5.2
Total who answered the question	100.0	100.0	100.0	100.0	100.0
Percent who DID answer the question	6.1	3.2	74.1	70.3	77.4
Percent who did NOT answer the question	93.9	96.8	25.9	29.7	22.6
Total Number	274,160	262,992	11,168	5,216	5,952

Source: Authors' calculations from ACS PUMS data.

- 44.2% of Erie's foreign-born who speak a different language at home answered that they speak English "very well". Another 34.2% say they speak it "well." Another 21.6% say they speak English "not well" or "not at all".
- The naturalized rate their English skills significantly better than do the non-citizens, with 51.4% of the naturalized selecting "very well" compared to only 38.5% of non-citizens. At the other end, 1.3% of naturalized citizens say they do not speak English at all versus 5.2% of non-citizens.

We might expect that longer time spent in the U.S. would affect ability to speak English. The ACS presents data on English skills (the "very well" category only) by date of entry.

**Table 35: Speak English Less than "Very Well" by Decade of Entry**

Date of Entry to U.S.	Speak English Less than "Very Well"	
	Erie	U.S.
Total foreign-born	45.4	47.7
Entered before 2000	36.6	44.6
Entered 2000 to 2009	43.7	49.8
Entered 2010 or later	56.9	53.3
Number	11,579	43,710,131

Source: ACS.

- The data show what we might expect—that for both the Erie foreign-born and those in the nation at large, those in the country longer are more likely to rate their ability to speak English as "very well."
- For those who entered before 2010, Erie's foreign-born consistently list their English skills as better than those at the national level.

## B. Economics

### 1) Employment Status of Those 16+ Years Old

**Table 36: Employment Status**

Employment Status	Erie County					United States				
	Total Population	Native-born	Foreign-born	Naturalized	Non-citizen	Total Population	Native-born	Foreign-born	Naturalized	Non-citizen
	Number of People 16+ Years of Age					Number of People 16+ Years of Age				
Civilian labor force	135,371	129,809	5,562	2,898	2,664	164,456,788	136,545,894	27,910,894	13,952,165	13,958,729
Employed	127,830	122,687	5,143	2,784	2,359	155,771,789	129,117,373	26,654,416	13,427,722	13,226,694
Unemployed	7,541	7,122	419	114	305	8,684,999	7,428,521	1,256,478	524,443	732,035
Not in labor force	86,529	82,380	4,149	2,001	2,148	95,216,865	81,086,402	14,130,463	7,447,217	6,683,246
Total	221,900	212,189	9,711	4,899	4,812	259,673,653	217,632,296	42,041,357	21,399,382	20,641,975
	Rates (percent)					Rates (percent)				
Labor Force Participation Rate	61.0	61.2	57.3	59.2	55.4	63.3	62.7	66.4	65.2	67.6
Unemployment Rate	5.6	5.5	7.5	3.9	11.4	5.3	5.4	4.5	3.8	5.2

Source: ACS.

- The foreign-born added more than 5,500 people to Erie's labor force in the 2015-19 period. The labor force includes all those who are officially "employed" or "unemployed".<sup>16</sup>
- The labor force participation rate (the labor force as a percent of the population 16 years of age or more) is lower for the foreign-born at 57.3% than for the native-born at 61.2%. This is different from the national pattern where the foreign-born have a 66.4% LFPR compared to the native-born 62.7%.
- The labor force participation rate is higher for Erie's naturalized (59.2%) than non-citizens (55.4%).
- The unemployment rate (the percent of the labor force that is officially unemployed) was higher for the foreign-born (7.5%) than for the native-born (5.5%). Nationally, the foreign-born had a lower unemployment rate, (4.5%) than native born (5.4%).
- Erie's naturalized citizens had an especially low unemployment rate at 3.9% for the area, which was similar to the national rate for that group (3.8%).
- Erie's non-citizens had a higher unemployment rate than the naturalized; their 11.4% rate was above that of Erie's native-born (5.5%) and also well above the 5.2% rate of non-citizens nationwide.

<sup>16</sup> "Employed" includes all civilians 16 years old and over who were either (1) "at work" -- those who did any work at all during the reference week as paid employees, worked in their own business or profession, worked on their own farm, or worked 15 hours or more as unpaid workers on a family farm or in a family business; or (2) were "with a job but not at work" -- those who did not work during the reference week but had jobs or businesses from which they were temporarily absent due to illness, bad weather, industrial dispute, vacation, or other personal reasons. Excluded from the employed are people whose only activity consisted of work around the house or unpaid volunteer work for religious, charitable, and similar organizations; also excluded are people on active duty in the United States Armed Forces. "Unemployed" are those who (1) were neither "at work" nor "with a job but not at work" during the reference week, and (2) were actively looking for work during the last 4 weeks, and (3) were available to accept a job. Also included as unemployed are civilians who did not work at all during the reference week, were waiting to be called back to a job from which they had been laid off, and were available for work except for temporary illness. U.S. Census Bureau, "Glossary" entries for "employed" and "unemployed", available at: <https://www.census.gov/glossary>.

## 2) Self-Employment

The ACS asks for data on occupation, industry, and class of worker for the respondent's current primary job, or the most recent job for those who are not employed but have worked in the last 5 years.<sup>17</sup> This provides information on self-employment, among other things.

For this section of the survey (questions 42-44), the ACS instructs the respondent to:  
 "Describe clearly this person's chief job activity or business last week. If this person had more than one job, describe the one at which this person worked the most hours. If this person had no job or business last week, give information for his/her last job or business."

Question 42 then instructs the respondent to pick the ONE category that describes this "chief job" in the past week. To the extent that a person was active in more than one job, the data below will underrepresent the total range of activity. For example, if a person had a business doing landscaping work as a part-time job but worked more hours as an employee of someone else, that self-employment will not be counted in the data below.

**Table 37: Employed by Others and Self-Employment Status**

Employment Status	Erie County					United States				
	Total Population	Native-born	Foreign-born	Naturalized	Non-citizen	Total Population	Native-born	Foreign-born	Naturalized	Non-citizen
	Number of People 16+ Years of Age					Number of People 16+ Years of Age				
<b>Employed by others</b>	120,114	114,706	5,391	2,870	2,522	145,396,812	120,956,716	24,474,832	12,374,655	12,100,922
Private wage and salary workers	107,077	102,135	4,975	2,577	2,399	124,183,432	101,973,054	22,189,451	10,759,408	11,426,444
Government (state, local, federal) workers	13,037	12,570	416	293	123	21,213,379	18,983,663	2,285,381	1,615,246	674,478
<b>Self-employed workers</b>	6,582	6,164	308	213	94	9,445,373	7,439,544	2,099,361	974,487	1,110,904
In own not incorporated business	6,328	6,044	285	197	86	9,135,689	7,183,008	2,046,213	947,789	1,084,454
Unpaid family workers	253	121	23	15	8	309,684	256,536	53,148	26,698	26,450
<b>Total employed civilians 16+</b>	126,569	120,870	5,699	3,083	2,616	154,842,185	128,267,992	26,574,193	13,349,142	13,225,051

Components may not sum to Total due to rounding by the Census Bureau in the original ACS tables.  
 Source: Authors' calculations from ACS data.

- As with the native-born, the majority of Erie's foreign-born workers are employed by others. Nearly 5,000 of the foreign-born work for private firms and 416 for governments.
- About 308 of Erie's foreign-born are primarily self-employed, working in their own businesses.

**Table 38: Employed by Others and Self-Employment Status Percentages**

Employment Status	Erie County					United States				
	Total Population	Native-born	Foreign-born	Naturalized	Non-citizen	Total Population	Native-born	Foreign-born	Naturalized	Non-citizen
	Percent of Employed Civilians 16+ Years of Age					Percent of Employed Civilians 16+ Years of Age				
<b>Employed by others</b>	94.9	94.9	94.6	93.1	96.4	93.9	94.3	92.1	92.7	91.5
Private wage and salary workers	84.6	84.5	87.3	83.6	91.7	80.2	79.5	83.5	80.6	86.4
Government (state, local, federal) workers	10.3	10.4	7.3	9.5	4.7	13.7	14.8	8.6	12.1	5.1
<b>Self-employed workers</b>	5.2	5.1	5.4	6.9	3.6	6.1	5.8	7.9	7.3	8.4
In own not incorporated business	5.0	5.0	5.0	6.4	3.3	5.9	5.6	7.7	7.1	8.2
Unpaid family workers	0.2	0.1	0.4	0.5	0.3	0.2	0.2	0.2	0.2	0.2
<b>Total employed civilians 16+</b>	100.1	100.0	100.0	100.0	100.0	100.0	100.1	100.0	100.0	99.9

Components may not sum to Total due to rounding by the Census Bureau in the original ACS tables.  
 Source: ACS.

- About 5.4% of Erie's foreign-born are primarily self-employed, a slightly higher rate than the 5.1% for Erie's native-born.

<sup>17</sup> U.S. Census Bureau, "Industry and Occupation" <https://www.census.gov/topics/employment/industry-occupation/about/occupation.html>.

- Naturalized citizens are primarily self-employed at a higher rate, 6.9%, than the Erie County average. Non-citizens exhibit a 3.6% rate.
- At the national level, the foreign-born also have a higher rate of self-employment than the native-born, but the differential is much larger: 7.9% for the foreign-born versus 5.8% for the native-born.
- Another difference from national patterns is that at the national level non-citizens have a higher rate of self-employment (8.4%) than the naturalized (7.3%).
- Most importantly, self-employment rates are quite a bit higher in all categories nationally than they are in Erie. The foreign-born have a 7.9% rate nationally, compared to a 5.4% rate in Erie.

**Table 39: Percent of Foreign-Born Civilian Workers, Self Employed in Own Not-Incorporated Businesses by Decade of Entry**

Date of Entry to U.S.	Percent of foreign-born civilian workers self employed	
	Erie	U.S.
Entered before 2000	8.6	8.6
Entered 2000 to 2009	2.4	7.3
Entered 2010 or later	2.3	5.2

Source: ACS.

- Table 39 above shows that self-employment is positively related to time in country; those here longer are more likely to be self-employed.
- Immigrants who arrived before 2000 have a self-employment rate of 8.6%, while those who arrived in the following decade have a 2.4% rate, and those who have arrived since 2010, only a 2.3% rate.
- National data show the same pattern, but immigrants who have entered the U.S. more recently are much more likely to be self-employed nationally than in Erie.

### **3) Employment by Occupation**

According to the Census Bureau, “occupation describes the kind of work the person does on the job.”<sup>18</sup> Examples of occupations would be teacher, accountant, machinist, nurse, bartender, retail salesperson, and construction laborer. Occupations are different from industries, which are discussed in the next section; an accountant or a nurse can work for any industry.

The ACS provides data for five broad occupational categories, as shown in Table 40 below. More information about which specific occupations are in each broad category is given in the Appendix. We examine the occupation data for those who are employed.<sup>19</sup>

<sup>18</sup>U.S. Census Bureau, *Glossary*, “Occupation”. Available at: [https://www.census.gov/glossary/#term\\_Occupation](https://www.census.gov/glossary/#term_Occupation)

<sup>19</sup> Survey respondents answer this question if they have worked at any point in the past 5 years even if they are not currently working. We consider only the subsample of employed workers for our occupation and industry analysis so that we are not counting workers who are out of the labor force.

**Table 40: Employment by Occupation**

Occupation	Erie County					United States				
	Total Population	Native-born	Foreign-born	Naturalized	Non-citizen	Total Population	Native-born	Foreign-born	Naturalized	Non-citizen
	Number of Employed Civilians 16+ Years of Age					Number of Employed Civilians 16+ Years of Age				
Management, business, science, and arts	45,208	43,436	1,772	1,017	755	59,451,649	50,742,538	8,709,111	5,397,194	3,311,917
Services	26,597	25,179	1,418	756	662	27,553,295	21,347,231	6,206,064	2,654,074	3,551,990
Sales and office	26,867	26,242	625	391	234	33,419,727	29,321,755	4,097,972	2,462,344	1,635,628
Natural resources, construction, and maintenance	8,625	8,372	253	99	154	13,735,777	10,333,837	3,401,940	974,068	2,427,872
Production, transportation, and material moving	20,368	19,293	1,075	521	554	20,546,699	16,369,105	4,177,594	1,888,060	2,289,534
Total	127,665	122,522	5,143	2,784	2,359	154,707,147	128,114,466	26,592,681	13,375,740	13,216,941

Components may not sum to Total due to rounding by the Census Bureau in the original ACS tables.  
Source: Authors' calculations from ACS PUMS data.

**Table 41: Percentages of Employment by Occupation**

Occupation	Erie County					United States				
	Total Population	Native-born	Foreign-born	Naturalized	Non-citizen	Total Population	Native-born	Foreign-born	Naturalized	Non-citizen
	Percent of Employed Civilians 16+ Years of Age					Percent of Employed Civilians 16+ Years of Age				
Management, business, science, and arts	35.4	35.5	34.5	36.5	32.0	38.4	39.6	32.8	40.4	25.1
Services	20.8	20.6	27.6	27.2	28.1	17.8	16.7	23.3	19.8	26.9
Sales and office	21.0	21.4	12.2	14.0	9.9	21.6	22.9	15.4	18.4	12.4
Natural resources, construction, and maintenance	6.8	6.8	4.9	3.6	6.5	8.9	8.1	12.8	7.3	18.4
Production, transportation, and material moving	16.0	15.7	20.9	18.7	23.5	13.3	12.8	15.7	14.1	17.3
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Components may not sum to Total due to rounding by the Census Bureau in the original ACS tables.  
Source: ACS and PUMS data.

- The largest number of Erie's foreign-born are employed in the broad category of Management, Business, Science and the Arts, the same as for the native-born.
- This is followed closely by employment in Services, and then the category of Production, Transportation, and Material Moving.
- The foreign-born are less likely to be employed in Sales and Office jobs in Erie. While 21.4% of the native-born are employed in that occupational category, only 12.2% of the foreign-born are. This is especially true for non-citizens, where the rate is just 9.9%. Similar patterns occur for this occupational category at the national level.
- Erie's foreign-born are employed in Services at higher rates than are the native-born: 27.6% versus 20.6%. The pattern is similar nationally, though the percentage difference is larger locally.
- Erie's foreign-born are employed in Production, Transportation, and Material Moving jobs at higher rates than are the native-born: 20.9% versus 15.7%. Nationally, a higher percentage of the foreign-born work in this sector than natives, but this difference is larger in Erie.

**Table 42: Location Quotients of Employment by Occupation**

Occupation	Erie County				
	Total Population	Native-born	Foreign-born	Naturalized	Non-citizen
	Location Quotients				
Management, business, science, and arts	0.92	0.90	1.05	0.91	1.28
Services	1.17	1.23	1.18	1.37	1.04
Sales and office	0.97	0.94	0.79	0.76	0.80
Natural resources, construction, and maintenance	0.76	0.85	0.38	0.49	0.36
Production, transportation, and material moving	1.20	1.23	1.33	1.33	1.36

Source: Authors' calculations from ACS data.

- The location quotients table shows that, compared to employment patterns at the national level, Erie's natives and foreign-born are over-represented in Services and Production, Transportation, and Material Moving occupations.

- Erie's foreign-born have significantly lower rates of employment in Natural Resources, Construction, and Maintenance occupations, compared to the foreign-born at the national level. There, 12.8% of the foreign-born are in this occupational category, compared to 4.9% in Erie, resulting in an LQ of .38. The difference for non-citizens is even more striking, with Erie's rate just over a third of the national level.
- Erie's non-citizens are also over-represented in the broad categories of Production, Transportation, and Material Moving, with an LQ of 1.36, in Management, Business, Science, and the Arts, with an LQ of 1.28, and Services, with an LQ of 1.04, compared to non-citizens nationally.
- Erie's naturalized are over-represented, compared to the naturalized nationally, in Services with an LQ of 1.37, and Production, Transportation, and Material Moving, with an LQ of 1.33.

#### 4) Employment by Industry

An industry refers to all the businesses that produce the same product or provide the same service. The Census Bureau's industry classifications are based on the widely-used North American Industry Classification System (NAICS).<sup>20</sup> The industry tables in this report use a 13-sector aggregation of the more than 1,000 NAICS industries. More detail about which industries are in which categories can be found in the Appendix.

An industry is different from an occupation or a business. Typically, many businesses make up one industry, for example General Motors, Ford, Toyota, Honda, etc. are all companies or business that make up the automobile industry. Each company hires a broad range of employees in different occupations such as assembly workers, welders, accountants, managers, truck drivers, etc. And a company can be in more than one industry; General Electric makes appliances, jet engines, turbines for power generation, and a wide range of health care products, among many other products. It competes in many industries. We examine the industry data for those who are employed.

**Table 43: Number of Employees by Industry Category**

Industry	Erie County					United States				
	Total Population	Native-born	Foreign-born	Naturalized	Non-citizen	Total Population	Native-born	Foreign-born	Naturalized	Non-citizen
	Number of Employed Civilians 16+ Years of Age					Number of Employed Civilians 16+ Years of Age				
Agriculture, forestry, fishing and hunting, and mining	1,499	1,339	160	0	160	2,750,736	2,102,922	647,814	143,030	504,784
Construction	6,513	6,413	100	70	30	10,257,809	7,717,663	2,540,146	715,659	1,824,487
Manufacturing	20,384	19,109	1,275	716	559	15,647,661	12,695,000	2,952,661	1,454,004	1,498,657
Wholesale trade	2,647	2,589	58	19	39	4,013,785	3,315,459	698,326	353,315	345,011
Retail trade	13,161	12,822	339	175	164	17,258,379	14,838,840	2,419,539	1,272,929	1,146,610
Transportation and warehousing, and utilities	5,101	4,918	183	183	0	8,314,096	6,805,602	1,508,494	893,687	614,807
Information	1,701	1,603	98	68	30	3,090,271	2,667,471	422,800	236,064	186,736
Finance and insurance, and real estate and rental and leasing	8,904	8,638	266	95	171	10,144,816	8,709,704	1,435,112	926,315	508,797
Professional, scientific, and management, and administrative and waste management services	8,731	8,141	590	304	286	17,882,552	14,334,600	3,547,952	1,615,708	1,932,244
Educational services, and health care and social assistance	34,894	33,836	1,058	644	414	35,721,661	30,556,390	5,165,271	3,326,590	1,838,681
Arts, entertainment, and recreation, and accommodation and food services	14,075	13,366	709	318	391	15,010,429	12,018,779	2,991,650	1,173,405	1,818,245
Other services (except public administration)	6,411	6,165	246	142	104	7,533,691	5,896,478	1,637,213	778,565	858,648
Public administration	3,644	3,583	61	50	11	7,081,261	6,455,558	625,703	486,469	139,234
<b>Total</b>	<b>127,665</b>	<b>122,522</b>	<b>5,143</b>	<b>2,784</b>	<b>2,359</b>	<b>154,707,147</b>	<b>128,114,466</b>	<b>26,592,681</b>	<b>13,375,740</b>	<b>13,216,941</b>

Source: PUMS.

- Nearly 35,000 of Erie's jobs are in the Education, Health Care and Social Assistance category, which is also the largest industry category nationally.
- The second largest category of employment locally is Erie's traditional focus: manufacturing. Nationally, manufacturing is only the fourth-largest industry.
- For Erie's foreign-born, these are also the two largest industries, employing 45.4% of all Erie's working immigrants.

<sup>20</sup>Census Bureau, *North American Industry Classification System*. Available at: <https://www.census.gov/eos/www/naics/>.

**Table 44: Percentage of Employees by Industry Category**

Industry	Erie County					United States				
	Total Population	Native-born	Foreign-born	Naturalized	Non-citizen	Total Population	Native-born	Foreign-born	Naturalized	Non-citizen
	Percent of Employed Civilians 16+ Years of Age					Percent of Employed Civilians 16+ Years of Age				
Agriculture, forestry, fishing and hunting, and mining	1.2	1.1	3.1	0.0	6.8	1.8	1.6	2.4	1.1	3.8
Construction	5.1	5.2	1.9	2.5	1.3	6.6	6.0	9.6	5.4	13.8
Manufacturing	16.0	15.6	24.8	25.7	23.7	10.1	9.9	11.1	10.9	11.3
Wholesale trade	2.1	2.1	1.1	0.7	1.7	2.6	2.6	2.6	2.6	2.6
Retail trade	10.3	10.5	6.6	6.3	7.0	11.2	11.6	9.1	9.5	8.7
Transportation and warehousing, and utilities	4.0	4.0	3.6	6.6	0.0	5.4	5.3	5.7	6.7	4.7
Information	1.3	1.3	1.9	2.4	1.3	2.0	2.1	1.6	1.8	1.4
Finance and insurance, and real estate and rental and leasing	7.0	7.1	5.2	3.4	7.2	6.6	6.8	5.4	6.9	3.8
Professional, scientific, and management, and administrative and waste management services	6.8	6.6	11.5	10.9	12.1	11.6	11.2	13.3	12.1	14.6
Educational services, and health care and social assistance	27.3	27.6	20.6	23.1	17.5	23.1	23.9	19.4	24.9	13.9
Arts, entertainment, and recreation, and accommodation and food services	11.0	10.9	13.8	11.4	16.6	9.7	9.4	11.2	8.8	13.6
Other services (except public administration)	5.0	5.0	4.8	5.1	4.4	4.9	4.6	6.2	5.8	6.5
Public administration	2.9	2.9	1.2	1.8	0.5	4.6	5.0	2.4	3.6	1.1
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: Authors' calculations from PUMS data.

- Table 44 above shows the percentage breakdown of employment by industry. It is useful for comparing the foreign-born distribution of employment with that of the native-born.
- In Erie, the largest industry concentration of the foreign-born is in manufacturing with 24.8% of the foreign born employed, compared with 15.6% of the native-born. This percentage is 25.7% for the naturalized and 23.7% for non-citizens.
- The second largest concentration is in educational services, and health care and social assistance, with 20.6% of the foreign-born employed, compared with 27.6% of the native-born.
- These kinds of comparisons are facilitated by calculating the ratio of Erie's foreign-born's percentage to that of Erie's native-born's. This ratio is shown in Table 45. Yellow highlights indicate cases in which the foreign-born's ratio is great than one, indicating a specialization of Erie's foreign-born compared to Erie's native-born.

**Table 45: Location Quotients of Foreign-Born by Industry Category**

Industry	Erie Foreign-Born % vs, Erie Native-Born %		
	Foreign-born	Naturalized	Non-citizen
Agriculture, forestry, fishing and hunting, and mining	2.85	0.00	6.21
Construction	0.37	0.48	0.24
Manufacturing	1.59	1.65	1.52
Wholesale trade	0.53	0.32	0.78
Retail trade	0.63	0.60	0.66
Transportation and warehousing, and utilities	0.89	1.64	0.00
Information	1.46	1.87	0.97
Finance and insurance, and real estate and rental and leasing	0.73	0.48	1.03
Professional, scientific, and management, and administrative and waste management services	1.73	1.64	1.82
Educational services, and health care and social assistance	0.74	0.84	0.64
Arts, entertainment, and recreation, and accommodation and food services	1.26	1.05	1.52
Other services (except public administration)	0.95	1.01	0.88
Public administration	0.41	0.61	0.16

Source: Authors' calculations from PUMS data.

- Erie's foreign-born specialize in five of the thirteen industry categories, compared to Erie's native-born.
- The strongest relative concentration is in the Agriculture, Forestry, Fishing and Hunting, and Mining industry. Approximately 3.1% of the foreign-born work in this industry compared to 1.1% of the native-born.
- Other notable industries locally for the foreign-born compared to the native-born are Professional, Scientific, Management, Administrative & Waste Management Services at 1.73; Manufacturing at 1.59; Information at 1.46; and the Arts, Entertainment, Recreation, Accommodation and Food Services industry at 1.26.

- Differential patterns occur between the naturalized and non-citizens in several industries. The most notable is the Agriculture etc. industry, where non-citizens have a 6.8% of their jobs, while the naturalized have a 0.0% share.
- Similar patterns occur with non-citizens having a significantly higher share than the naturalized in Finance and Insurance etc. and Arts, Entertainment etc.
- On the other hand, the naturalized have stronger concentrations than non-citizens in Transportation, Warehousing and Utilities; Education, Health Care and Social Assistance; Public Administration (government); Construction; and Other Services.

**Table 46: Location Quotients for Erie Employment by Industry**

Industry	Erie County				
	Total Population	Native-born	Foreign-born	Naturalized	Non-citizen
	Location Quotients				
Agriculture, forestry, fishing and hunting, and mining	0.66	0.67	1.28	0.00	1.78
Construction	0.77	0.87	0.20	0.47	0.09
Manufacturing	1.58	1.57	2.23	2.37	2.09
Wholesale trade	0.80	0.82	0.43	0.26	0.63
Retail trade	0.92	0.90	0.72	0.66	0.80
Transportation and warehousing, and utilities	0.74	0.76	0.63	0.98	0.00
Information	0.67	0.63	1.20	1.38	0.90
Finance and insurance, and real estate and rental and leasing	1.06	1.04	0.96	0.49	1.88
Professional, scientific, and management, and administrative and waste management services	0.59	0.59	0.86	0.90	0.83
Educational services, and health care and social assistance	1.18	1.16	1.06	0.93	1.26
Arts, entertainment, and recreation, and accommodation and food services	1.14	1.16	1.23	1.30	1.20
Other services (except public administration)	1.03	1.09	0.78	0.88	0.68
Public administration	0.62	0.58	0.50	0.49	0.44

Source: authors' calculations from ACS data.

- As a tool for identifying a region's specialties or focus industries, the location quotients in the table above say that although it is not the largest industry locally, manufacturing is still the one in which Erie specializes compared to the nation. The 1.58 LQ means that Erie has 1.58 times the national share of its employment in this industry: Erie's 16.0% is 1.58 times the U.S.'s 10.1%.
- Other specialties for the Erie economy are "Eds and Meds", and the Arts, Entertainment, Recreation, Accommodation and Food Services industry which includes many of the tourism industries.
- However, the foreign-born's concentrations in employment are a bit different in Erie than nationally. Whereas the previous table compared Erie's foreign-born employment patterns with those of Erie's native-born, this table compares the patterns of Erie's foreign-born with those of the foreign-born in the nation as a whole.
- 24.8% of Erie's foreign-born are employed in manufacturing, compared with just 11.1% of the foreign-born nationally, resulting in an LQ of 2.23.
- Erie's foreign-born are also employed heavily in the Agriculture etc. category (LQ of 1.28) Arts, Entertainment etc. category (LQ of 1.23), and Information (LQ of 1.20) compared to the foreign-born elsewhere around the country.

## **5) Income**

The ACS asks survey respondents if anyone in the household, aged 15 or older and whether related or not, received income of any of the following types in the 12 months before their survey response, and to report the amount for each. Of course, they may receive income from more than one source. Income from some categories, such as net self-employment income or net rental income, may be negative.



Types of income:

- Wages, salary, commissions, bonuses, or tips from all jobs. (Gross, before taxes.)
- Self-employment income from own farm or nonfarm businesses, including proprietorships and partnerships. Respondents are asked to report net income after business expenses.
- Interest, dividends, net rental income, royalty income, or income from estates and trusts.
- Social Security or Railroad Retirement.
- Supplemental Security Income (SSI). SSI is an income supplement program for low-income elderly and the disabled or blind at any age. Although administered by the Social Security Administration, SSI funds come from general tax dollars, not from Social Security funds.
- Any cash public assistance or welfare payments from the state or local welfare office. This does not include noncash benefits such as Supplemental Nutrition Assistance Program (SNAP—also known as “food stamps”) or public housing.
- Other retirement, survivor, or disability pensions, including corporate and union pensions and payments from private retirement funds such as Keoghs, IRAs, Roth IRAs, 401(k)s or 403(b)s. Does not include Social Security retirement payments.
- Any other sources of income received regularly such as Veterans’ (VA) payments, unemployment or worker’s compensation, child support or alimony.

Receipts from the following sources are NOT included as income: capital gains, money received from the sale of property (unless the recipient was engaged in the business of selling such property); the value of income “in kind” from food stamps, public housing subsidies, medical care, employer contributions for individuals, etc.; withdrawal of bank deposits; money borrowed; tax refunds; exchange of money between relatives living in the same household; gifts and lump-sum inheritances, insurance payments, and other types of lump-sum receipts.

It is worth noting that income is strongly correlated with age. On average, earnings increase with age and an individual typically reaches their peak near the end of their working life. The median age of the foreign born in Erie is 36.9 years, which is 3 years younger than Erie natives, and 8 years younger than the median of 44.8 for the foreign-born in the U.S. To the extent that immigrants in Erie are younger than natives we would expect their earnings to be lower due to age differences.

**Table 47: Income, Earnings, and Workers per Household**

Subject	Erie County					United States				
	Total Population	Native-born	Foreign-born	Naturalized	Non-citizen	Total Population	Native-born	Foreign-born	Naturalized	Non-citizen
Median Household income (dollars)	\$51,529	\$52,187	\$42,707	\$44,091	\$36,772	\$62,843	\$63,368	\$59,557	\$69,284	\$49,278
Erie as % of U.S.	82.0	82.4	71.7	63.6	74.6					
Mean earnings of household with earnings (2019 dollars)	\$70,787	\$71,224	\$61,437	\$68,855	\$51,650	\$90,514	\$90,529	\$90,439	\$103,272	\$74,688
Erie as % of U.S.	78.2	78.7	67.9	66.7	69.2					
Average number of workers per household	1.11	1.11	1.19	1.26	1.08	1.25	1.2	1.54	1.49	1.59

Source: ACS and authors’ calculations from the ACS data.

- Median household incomes in Erie for all its residents are less than the U.S. average—about 17.6% less for the native-born and 28.3% less for the foreign-born.
- Similar disparities occur for the earnings component of incomes, with the average (mean) earnings of Erie households being about 21% less than the national average, and about 32% less for foreign-born households.
- Earnings of non-citizens are closer to the national average for non-citizens, being “only” 25% off the national average for that group.

- Earnings for Erie’s naturalized citizens are 33% below those of naturalized citizens nationwide. This is partially due to the above-average earnings of the naturalized at the national level—which is about \$103,300 per household compared to the average of \$90,500 for the native-born.
- Erie households tend to have fewer workers than the national average, with about 1.1 workers per household across all categories of native-born and foreign born, compared with 1.2 for the native-born nationally and 1.5 for the foreign-born.

## 6) Sources of Income in the Past 12 Months

Table 48 presents data from the ACS on the percentage of households with several types of income. Note that these are not percentages of *income* in each category, but rather the percentage of *households* that have some of each type of income. Unfortunately, the ACS does not publish data on the category of Interest, Dividends and Rents by nativity and citizenship.

**Table 48: Sources of Income Percentage of Households**

Types of Income	Erie County					United States				
	Total Population	Native-born	Foreign-born	Naturalized	Non-citizen	Total Population	Native-born	Foreign-born	Naturalized	Non-citizen
Households with:	Percent of Households					Percent of Households				
Earnings	73.3	73.1	78.4	75.0	83.5	77.6	76.2	85.7	81.9	90.7
Interest, dividends, rents	21.3	NA	NA	NA	NA	20.9	NA	NA	NA	NA
Social Security income	35.7	36.4	20.5	28.2	9.2	31.2	33.0	21.1	29.9	9.0
Supplemental Security Income	8.3	8.1	12.5	14.0	10.3	5.3	5.4	5.1	6.7	3.0
Cash public assistance income	3.7	3.6	5.5	4.9	6.3	2.4	2.3	2.7	2.8	2.7
Non- Soc. Sec. retirement income	22.3	22.8	9.4	13.3	3.7	19.9	21.7	9.7	14.0	3.8
Food Stamp/SNAP benefits	18.2	17.5	34.7	32.8	37.5	11.7	11.3	14.4	12.5	17.0
Other income	12.3	NA	NA	NA	NA	10.3	NA	NA	NA	NA
Households	110,318	105,717	4,601	2,738	1,863	120,756,048	102,587,130	18,168,918	10,469,309	7,699,609

Source: ACS.

- About three-quarters of all households in the Erie area have income from earnings, which includes wages, salaries, commissions, bonuses, and tips. This is also true for the foreign-born, but within that category, nearly 84% of non-citizens have earnings, and only 75% of the naturalized.
- The national percentages with earnings are similar although a bit higher for the native-born. But nearly 86% of the foreign-born nationally have earnings, significantly more than Erie’s foreign-born community. At the national level, non-citizens also have a greater incidence of earnings income than the naturalized, 90.7% vs. 81.9%.
- Conversely, greater percentages of Erie’s foreign-born have transfer payment income, including Supplemental Security Income (SSI), cash public assistance, and food stamps.
- A smaller percentage of Erie’s foreign-born receive Social Security income, 20.5% versus 36.4% of the native-born. This is not surprising given that the foreign-born typically have a shorter history in the American workforce than do the native-born. A similar pattern applies for non-Social Security retirement income. In both cases, the naturalized have significantly higher percentages than the non-citizens, as we would expect. Furthermore, the fact that Erie’s immigrants are younger serves to widen this gap further.

**Table 49: Ratio of Erie’s Percentages to U.S. Percentages and Pennsylvania Percentages**

Types of Income	Erie County					Erie County				
	Total Population	Native-born	Foreign-born	Naturalized	Non-citizen	Total Population	Native-born	Foreign-born	Naturalized	Non-citizen
Households with:	Ratio: Erie % of Households to U.S. % of Households					Ratio: Erie % of Households to PA % of Households				
Earnings	0.94	0.96	0.91	0.92	0.92	0.97	0.98	0.93	0.92	0.94
Social Security income	1.14	1.10	0.97	0.94	1.02	1.01	1.01	0.95	0.95	1.06
Supplemental Security Income	1.57	1.50	2.45	2.09	3.43	1.43	1.40	2.23	2.03	2.94
Cash public assistance income	1.54	1.57	2.04	1.75	2.33	1.16	1.16	1.38	1.14	1.85
Non- Soc. Sec. retirement income	1.12	1.05	0.97	0.95	0.97	1.00	0.98	0.89	0.90	0.90
Food Stamp/SNAP benefits	1.56	1.55	2.41	2.62	2.21	1.37	1.35	2.07	1.94	2.26

Source: Authors' calculations from ACS data.

- Table 49 compares Erie’s percentages of households with each type of income to the national percentages and also to Pennsylvania’s percentages.<sup>21</sup> It shows that Erieites generally participate in government transfer payment programs more than people elsewhere, including SSI, cash public assistance, and food stamps.
- This pattern is even stronger for Erie’s foreign-born, who participate in these programs at more than double the national percentages.
- Pennsylvania ratios fall between those for Erie and the Nation as a whole.
- Transfer payment ratios for Erie compared to Pennsylvania are lower than those compared to the U.S. as a whole, suggesting that more Pennsylvanians participate in these programs, whether native-born or foreign-born. That may partially explain the higher ratios in Erie compared to the U.S.
- These patterns are consistent with the data on level of income in the previous section. Those data showed that Erie incomes are lower than the national average, especially for the foreign-born. If Erieites have lower incomes, they are more likely to qualify for government assistance. The data above show that smaller percentages of Erie’s foreign-born households have earnings, especially the naturalized. If they have a harder time finding jobs—getting earnings—then they can be expected to have lower incomes and need more help.

The issue of the foreign-born’s use of government transfer payments is an important one, and is discussed in more detail in a later section of this report.

Next, we turn to earnings which is the largest source of income for most of the population.

**Table 50: Earnings Distribution**

Earnings Ranges	Erie County					United States				
	Total Population	Native-born	Foreign-born	Naturalized	Non-citizen	Total Population	Native-born	Foreign-born	Naturalized	Non-citizen
Population 16 years and over with earnings	87,299	83,567	3,732	2,053	1,679	110,933,015	91,504,116	19,428,899	10,083,852	9,345,047
\$1 to \$9,999 or loss	1.9%	1.8%	3.8%	1.9%	6.1%	1.6%	1.6%	1.7%	1.3%	2.1%
\$10,000 to \$14,999	2.8%	2.7%	4.0%	0.9%	7.7%	2.8%	2.6%	3.8%	2.5%	5.2%
\$15,000 to \$24,999	13.7%	13.4%	22.0%	20.8%	23.4%	11.6%	10.5%	16.6%	11.0%	22.5%
\$25,000 to \$34,999	18.4%	18.5%	16.9%	22.7%	9.6%	15.6%	15.1%	18.3%	15.1%	21.8%
\$35,000 to \$49,999	22.2%	22.3%	19.6%	20.8%	18.2%	19.6%	19.9%	18.0%	18.7%	17.3%
\$50,000 to \$74,999	22.8%	23.1%	16.7%	16.2%	17.3%	21.8%	22.8%	16.9%	20.4%	13.2%
\$75,000 or more	18.2%	18.2%	17.0%	16.6%	17.6%	27.0%	27.5%	24.7%	30.9%	17.9%

Source: ACS.

<sup>21</sup> We include the comparison to Pennsylvania here because there are significant differences in size and scope of public assistance offered by states.

**Table 51: Location Quotients for Earnings Distribution**

Earnings Ranges	Location Quotients				
	Total Population	Native-born	Foreign-born	Naturalized	Non-citizen
\$1 to \$9,999 or less	1.19	1.13	2.24	1.46	2.90
\$10,000 to \$14,999	1.00	1.04	1.05	0.36	1.48
\$15,000 to \$24,999	1.18	1.28	1.33	1.89	1.04
\$25,000 to \$34,999	1.18	1.23	0.92	1.50	0.44
\$35,000 to \$49,999	1.13	1.12	1.09	1.11	1.05
\$50,000 to \$74,999	1.05	1.01	0.99	0.79	1.31
\$75,000 or more	0.67	0.66	0.69	0.54	0.98

Source: Authors' calculations from ACS data.

- Table 50 displays earnings ranges for those with earnings. In Erie County, and in the nation, the foreign-born are more likely than natives to have earnings in the ranges less than \$25,000. Conversely, higher percentages of natives than foreign-born have incomes greater than \$35,000.
- In Table 51 the location quotients show that both Erie's native and foreign-born workers are more likely to be in the lower earnings ranges than nationally.
- Erie's foreign-born are 2.24 times more likely than the U.S. foreign-born to be in the lowest earnings range.

## 7) Poverty Rates

The Census Bureau uses a set of money income thresholds that vary by family size and composition to determine who is in poverty. There are 48 different combinations of family size and age composition. If the total income for a family or unrelated individual falls below the relevant poverty threshold, then the family (and every individual in it) or unrelated individual is considered to be in poverty.<sup>22</sup> For 2019, the thresholds ranged from \$12,261 for a single person over the age of 64 to \$56,895 for a family of nine or more with one child.

**Table 52: Poverty Status**

Subject	Erie County				
	Total Population	Native-born	Foreign-born	Naturalized	Non-citizen
Total population	273,835	261,916	11,919	5,650	6,269
Population for whom poverty status is determined*	260,956	249,746	11,210	5,538	5,672
Percent included	95.3	95.4	94.1	98.0	90.5
Percent in poverty	16.0	15.7	23.4	16.6	30.0
<i>U.S. percent in poverty, for comparison</i>	<i>13.4</i>	<i>13.1</i>	<i>15.4</i>	<i>10.3</i>	<i>20.5</i>
Number in poverty	41,753	39,210	2,623	919	1,702

Source: Authors' calculations and ACS data.

<sup>22</sup> Details on the poverty measures can be found at: <https://www.census.gov/topics/income-poverty/guidance/poverty-measures.html>. The poverty thresholds themselves are available at: <https://www.census.gov/data/tables/time-series/demo/income-poverty/historical-poverty-thresholds.html>

- \*Poverty status cannot be determined for people in:
- institutional group quarters (such as prisons or nursing homes)
  - college dormitories
  - military barracks
  - living situations without conventional housing (and who are not in shelters)
  - unrelated individuals under age 15 (such as foster children) because income questions are asked of people age 15 and older and, if someone is under age 15 and not living with a family member, we do not know their income.

- The incidence of poverty is higher in Erie than in the U.S., across all categories of nativity.
- Poverty is a greater problem for the foreign-born than the native-born, with over 23.4% of the foreign-born officially considered to be in poverty.
- Among the foreign-born, poverty is a greater problem for non-citizens, with a rate of 30.0%, meaning three of every ten non-citizens in Erie is officially in poverty.
- While the general patterns of foreign-born poverty are similar to those nationwide, with the foreign-born having higher rates than the native-born and non-citizens having higher rates than the naturalized, the rates of poverty in Erie are significantly higher than the average for the foreign-born in the rest of the country, across all categories. Erie's foreign-born are struggling with poverty more than the foreign-born elsewhere in the country.

The next table allows us to look a bit deeper into different types of families, to see if the poverty problem is concentrated in certain types.

**Table 53: Percentage of Families in Poverty by Family Composition**

Family type	Erie County					United States				
	Total Population	Native-born	Foreign-born	Naturalized	Non-citizen	Total Population	Native-born	Foreign-born	Naturalized	Non-citizen
	<b>Poverty Rate: Percent of Families</b>									
<b>All families</b>	<b>10.8</b>	<b>10.2</b>	<b>22.6</b>	<b>16.6</b>	<b>31.0</b>	<b>9.5</b>	<b>8.6</b>	<b>14.0</b>	<b>8.8</b>	<b>21.1</b>
With related children of the householder under 18 years	18.9	18.0	29.2	23.9	34.1	15.1	14.1	18.8	11.4	26.0
With related children of the householder under 5 years only	20.1	19.9	21.2	6.9	33.7	14.4	14.3	14.5	9.4	18.6
<b>Married-couple family</b>	<b>4.2</b>	<b>3.4</b>	<b>18.5</b>	<b>13.6</b>	<b>25.5</b>	<b>4.8</b>	<b>3.6</b>	<b>10.0</b>	<b>6.5</b>	<b>15.2</b>
With related children of the householder under 18 years	6.3	4.8	21.8	16.4	27.0	6.6	4.8	12.6	7.5	18.0
With related children of the householder under 5 years only	4.1	3.4	9.2	8.7	9.8	5.1	4.0	9.3	6.1	11.9
<b>Female householder, no spouse present, family</b>	<b>31.7</b>	<b>31.8</b>	<b>30.2</b>	<b>24.0</b>	<b>41.2</b>	<b>26.5</b>	<b>25.9</b>	<b>29.3</b>	<b>18.1</b>	<b>43.2</b>
With related children of the householder under 18 years	40.8	40.5	46.1	46.6	45.6	36.1	35.3	39.9	26.0	51.7
With related children of the householder under 5 years only	44.1	46.0	1.6	0.0	12.5	40.5	41.0	37.1	23.6	48.5

Source: ACS.

- The bad news is that poverty rates are worse in Erie than in the U.S. in 34 of the 45 family combinations, both for the native-born and for the foreign-born.
- Married-family couples tend to have lower rates of poverty than other types of families.
- The one bright spot in this table is native-born married-couple families, for whom poverty only afflicts 3.4% of households, even lower than the national rate of 3.6%.
- Poverty among foreign-born married-couple families is lower than for other types of foreign-born households, but it is still a serious problem at 18.5%, dramatically higher than for similar native-born families.
- But poverty is significantly worse for the foreign-born than the native-born in virtually every case, and especially for non-citizens.
- Among family types, the incidence of poverty is especially high for female-headed households with children. More than 40% of Erie's female-headed noncitizen families are in poverty.

The final table in this section shows that the longer a foreign-born family is in the country, the less likely they will be below the poverty threshold. Poverty is especially a problem for newly-

arrived immigrants but diminishes as they establish themselves in this country. The Erie-U.S. differential continues across all these periods, but it declines to 5.0% for those who entered the country before 2000. The Erie foreign-born do appear to catch up a bit to their counterparts elsewhere over time, but not completely.

**Table 54: Percent of Foreign-Born Below the Poverty Threshold**

Entered the U.S.	Percent of foreign-born population in poverty		
	Erie	U.S.	Differential
Before 2000	17.1	12.1	5.0
2000 to 2009	24.8	16.8	8.0
2010 or later	29.4	22.5	6.9

Source: ACS.

## 8) Home Ownership and Vehicles

**Table 55: Home Ownership Characteristics and Vehicles**

Subject	Erie County					United States				
	Total Population	Native-born	Foreign-born	Naturalized	Non-citizen	Total Population	Native-born	Foreign-born	Naturalized	Non-citizen
<b>Housing Units</b>										
Occupied, total	110,318	105,717	4,601	2,738	1,863	120,756,048	102,587,130	18,168,918	10,469,309	7,699,609
Owner-occupied	66.1%	66.8%	49.8%	66.5%	25.3%	64.0%	66.0%	52.5%	65.9%	34.3%
Renter-occupied	33.9%	33.2%	50.2%	33.5%	74.7%	36.0%	34.0%	47.5%	34.1%	65.7%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Median number of rooms	6.0	6.0	5.6	6.0	5.0	5.6	5.8	4.9	5.3	4.4
<b>Vehicles Available</b>										
None	11.0%	10.9%	13.1%	8.1%	20.5%	8.6%	8.0%	12.1%	10.5%	14.2%
1 or more	89.0%	89.1%	86.9%	91.9%	79.5%	91.4%	92.0%	87.9%	89.5%	85.8%

Source: ACS.

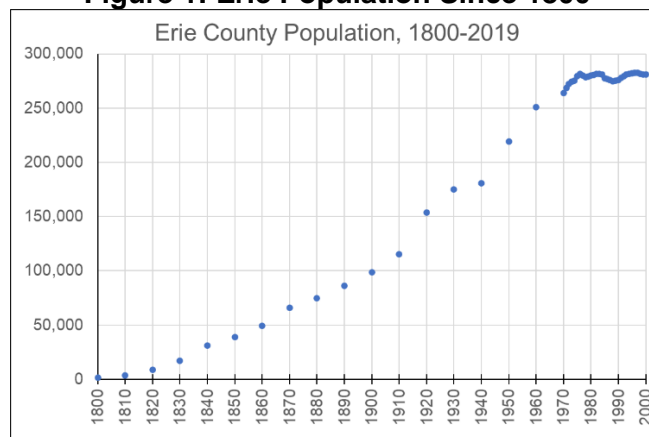
- The foreign-born are equally likely to be renters or owners, 50.2% vs 49.8%. This is similar to the national pattern where 52.5% of the foreign-born own their home.
- The naturalized have much higher rates of home-ownership than non-citizens, 66.5% versus 25.3%, with rates that approach those of the native-born.
- In Erie, almost three-fourths of all non-citizens rent, compared with less than two-thirds nationwide.
- Housing units in Erie tend to have more rooms than elsewhere in the nation, both for the foreign-born and the native-born, and for both categories of the foreign-born.
- The overwhelming majority of people, both in Erie and the nation, have at least one vehicle available to them.
- A larger percentage of Erie's foreign-born have no vehicle available than the native-born, 13.1% vs. 10.9%. This is due to the non-citizens, though, 20.5% of whom have no vehicle available. In fact, Erie's naturalized citizens have vehicle availability at even higher rates than the native-born.

## IV. Using the Data to Answer Some Questions

### A. Erie County Population and the Foreign-Born through Time

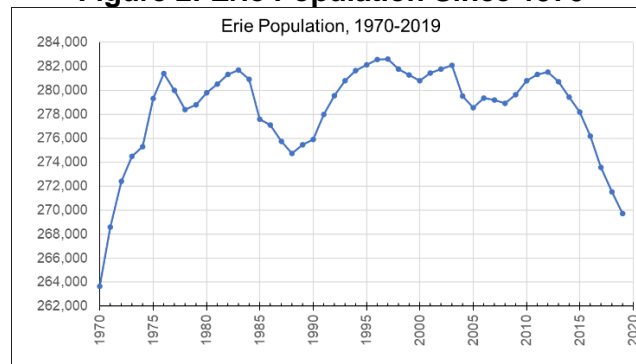
Figure 1 below shows the population of Erie County back to 1800, the earliest year for which the Census Bureau has data.<sup>23</sup> From its 1800 population of 1,468, Erie County saw a pattern of increasing population until about 1976, when it reached approximately 281,000 and plateaued. In the ensuing four decades, the county has struggled to maintain that number, and the second graph shows that in recent years the population has begun to decline in earnest.<sup>24</sup> The Census Bureau's Population Estimates program and the 1-year and 5-year ACS all show a population peak around 2011 or 2012, with decreases in every subsequent year. The last time the county had a population as low as 2018's estimated 272,061 was in 1972, when the population was still on the upward-side of its long-run trend.

**Figure 1: Erie Population Since 1800**



Source: Source: U.S. Census Bureau, decennial censuses and Annual Population Estimates.

**Figure 2: Erie Population Since 1970**



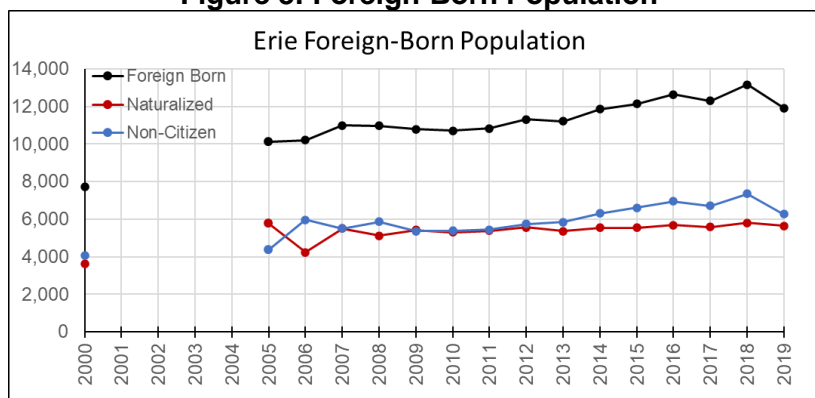
Source: Four U.S. Census Bureau programs.

<sup>23</sup>Erie County was part of Allegheny County until 1800. Cf. Bates, Samuel P. *History of Erie County, Pennsylvania*. Chicago: Warner, Beers & Co. 1884. P. 137. Available at: <https://archive.org/details/cu31924096783489/page/n164>. Note that this section necessarily relies on data other than ACS data in order to provide a look back in time past the start of the ACS program.

<sup>24</sup>The data in this graph are from the decennial censuses for 2000 and 2010, from the Census Bureau's Annual Population Estimates program, and the 1-year and 5-year American Community Survey estimates. Each of these programs generates estimates of Erie County data from slightly different techniques and underlying data. We first use the Census Bureau's figures for 2000 and 2010. We use 1-year ACS estimate for other years for which they are available, and complete the figure for missing 1-year ACS values using the 5-year estimates.

Given this pattern, it is logical to consider the impact of immigration of the foreign-born on Erie County's population totals. Detailed data on the foreign-born start with the ACS in 2005, although there are some data in the decennial census for 2000. The third figure shows an ascending trend for the foreign-born in the county, with estimates of their totals rising from about 7,700 to 12,000 between 2000 and 2019, or 4,300 people. The totals reported in Table 13 indicate that 7,400 of the current foreign-born arrived since 2000. Therefore, some of the immigrants who lived in Erie in 2000 must have moved elsewhere. The overall population of the county fell from about 280,800 to about 269,700 during that time, or about 11,100. Without the entry of the 7,400 foreign-born arriving since 2000, Erie's population loss would have been about 18,500 or 67% worse. Without the net increase of 4,300 immigrants in Erie, Erie's population loss would have been 39% worse.

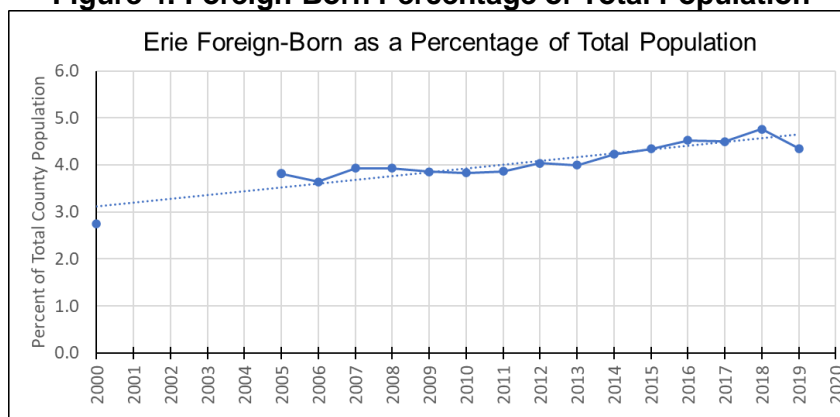
**Figure 3: Foreign-Born Population**



Source: Four U.S. Census Bureau programs.

The final graph shows the consequence of these patterns: the foreign-born have increased as a share of Erie's population from about 2.7% in 2000 to about 4.5% in 2019.

**Figure 4: Foreign-Born Percentage of Total Population**



Source: ACS 1-year and 5-year estimates and decennial census.



## **B. Aggregate Income of the Foreign-Born**

The ACS unfortunately doesn't tell us the aggregate income which Erie's foreign-born receive, but it does give us some parts of that picture. Specifically, the ACS tells us the percent of households that have five different types of income, and how much those households receive from each source on average. The table below shows the five income components and the relevant data and calculations.

**Table 56: Aggregate Sources of Income**

Subject	Erie County				
	Total	Native-born	Foreign-born	Naturalized	Non-citizen
<b>Number of Households</b>	110,318	105,717	4,601	2,738	1,863
% of households with earnings income	73.3%	73.1%	78.4%	75.0%	83.5%
Mean earnings (dollars)	\$70,787	\$71,224	\$61,437	\$68,855	\$51,650
<b>Aggregate earnings income</b>	<b>\$5,724,055,835</b>	<b>\$5,504,128,541</b>	<b>\$221,614,563</b>	<b>\$141,393,743</b>	<b>\$80,346,998</b>
% of households with Social Security income	35.7%	36.4%	20.5%	28.2%	9.2%
Mean Social Security income (dollars)	\$19,576	\$19,604	\$18,433	\$19,118	\$15,366
<b>Aggregate Social Security income</b>	<b>\$770,971,905</b>	<b>\$754,381,289</b>	<b>\$17,386,098</b>	<b>\$14,761,314</b>	<b>\$2,633,671</b>
% of households with Supplemental Security Income	8.3%	8.1%	12.5%	14.0%	10.3%
Mean Supplemental Security Income (dollars)	\$10,655	\$10,593	\$11,573	\$11,844	\$11,027
<b>Aggregate SSI income</b>	<b>\$97,561,378</b>	<b>\$90,708,675</b>	<b>\$6,655,922</b>	<b>\$4,540,042</b>	<b>\$2,115,960</b>
% of households with cash public assistance income	3.7%	3.6%	5.5%	4.9%	6.3%
Mean cash public assistance income (dollars)	\$2,401	\$2,349	\$3,191	\$2,447	\$4,050
<b>Aggregate public assistance income</b>	<b>\$9,800,320</b>	<b>\$8,939,852</b>	<b>\$807,499</b>	<b>\$328,294</b>	<b>\$475,344</b>
% of households with (non-SS) retirement income	22.3%	22.8%	9.4%	13.3%	3.7%
Mean (non-SS) retirement income (dollars)	\$21,847	\$21,971	\$14,931	\$15,493	\$11,912
<b>Aggregate retirement income</b>	<b>\$537,456,168</b>	<b>\$529,577,471</b>	<b>\$6,457,568</b>	<b>\$5,641,838</b>	<b>\$821,106</b>
<b>TOTAL AGGREGATE INCOME FROM ABOVE SOURCES</b>	<b>\$7,139,845,606</b>	<b>\$6,887,735,828</b>	<b>\$252,921,649</b>	<b>\$166,665,231</b>	<b>\$86,393,080</b>
Percent of total aggregate income	100.0%	96.5%	3.5%	2.3%	1.2%
<b>Adjustments</b>					
% of households with interest, dividends, or net rental income	21.3%				
Mean interest, dividends, or net rental income	13,760				
<b>Aggregate interest, dividends, or net rental income</b>	<b>\$323,194,880</b>				
% with other types of income	12.3%				
Mean other types of income	10,729				
<b>Aggregate other types of income</b>	<b>\$146,139,709</b>				
After 6.17% adjustment (see text)					
<b>ADJUSTED TOTAL AGGREGATE INCOME</b>	<b>\$7,609,180,195</b>	<b>\$7,312,709,129</b>	<b>\$268,526,915</b>	<b>\$176,948,475</b>	<b>\$91,723,533</b>

Source: ACS and authors' calculations from the ACS data.

This leads to the conclusion that the foreign-born added about \$253 million in income per year to the Erie economy during the 2015-19 period, or about 3.5% of the total Erie County income of approximately \$7.14 billion.

However, this is almost certainly an underestimate of the income of the foreign-born. We know this because:

1) The table above does not include two categories of income for the foreign born:

-interest, dividends, net rental income, royalty income, or income from estates and trusts, and

-“other types of income”.

In Erie, these two categories amount to about \$323 million and \$146 million respectively. Together these two categories amount to about \$469 million, or 6.2% of Erie household income, according to other ACS data, which unfortunately do not give data for the foreign-born separately.

2) The ACS provides data that allow us to calculate an estimate of total household income for Erie County (although not for the foreign-born separately) using the mean household income (\$68,976) and number of households (110,318) in the county. This results in an estimate of

aggregate income for county residents of \$7,609,294,368. This is about \$469 million more, or 6.2% higher, than the estimate in the table above, which fits with the previous paragraph.

3) The Census Bureau reports that: “for many different reasons there is a tendency in household surveys for respondents to underreport their income.” This is especially true for income other than earnings.<sup>25</sup>

The second item above implies that it might be reasonable to increase the estimate of foreign-born income from the table above by about 6.17%. This would increase the estimate of foreign-born income annually to \$268,526,915 or about \$269 million, with naturalized citizens accounting for \$177 million or 65.8% and non-citizens accounting for \$92 million, or 34.2%.

However, this approach implicitly assumes that the foreign-born have the same percentage of their incomes coming from the omitted sources mentioned above, and that need not be true. In fact, to the extent that interest, dividends and rental income tends to be received by higher income households, and that the foreign-born on average have lower incomes than native born Erieites, the 6.17% adjustment will tend to over-compensate.

Given all this, a reasonable estimate of the total incomes of the foreign-born in Erie County is in the range of \$253 to \$269 million annually for the 2015-19 period.

### **C. Use of Transfer Payments by the Foreign-Born**

When immigrants enter the county, some may not be prepared immediately to provide for themselves and their families, especially if they come as refugees or asylees, and need help. Others come with pre-arranged employment and can be net contributors to the Erie economy from their first days, such as doctors or professors.

What is the breakdown between these two categories? Unfortunately, the ACS does not collect information to identify whether a respondent is a refugee and does not ask for a reason why foreign-born respondents came to the US. However, the ACS data can shed some light on the extent to which the foreign-born qualify for and avail themselves of government aid to those in need, the so-called “transfer payments”, that are funded by American taxpayers.

The Sources of Income table presented above and reproduced below tells us that 20.5% of Erie’s foreign-born households received Social Security income, 12.5% received Supplemental Security Income (SSI), 5.5% received cash public assistance (welfare) payments, and 34.7% received SNAP (food stamps) benefits. Erie’s numbers for Social Security are similar to the national averages for the foreign-born. However, in each of the other categories, Erie’s numbers are higher than the national averages for the foreign-born, more than doubling the national rate.

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<sup>25</sup>Census Bureau, “Income-About”. <https://www.census.gov/topics/income-poverty/income/about.html>

**Table 57: Percentage of Households by Sources of Income**

Types of Income	Erie County					United States				
	Total Population	Native-born	Foreign-born	Naturalized	Non-citizen	Total Population	Native-born	Foreign-born	Naturalized	Non-citizen
Households with:	Percent of Households					Percent of Households				
Earnings	73.3	73.1	78.4	75.0	83.5	77.6	76.2	85.7	81.9	90.7
Interest, dividends, rents	21.3	NA	NA	NA	NA	20.9	NA	NA	NA	NA
Social Security income	35.7	36.4	20.5	28.2	9.2	31.2	33.0	21.1	29.9	9.0
Supplemental Security Income	8.3	8.1	12.5	14.0	10.3	5.3	5.4	5.1	6.7	3.0
Cash public assistance income	3.7	3.6	5.5	4.9	6.3	2.4	2.3	2.7	2.8	2.7
Non- Soc. Sec. retirement income	22.3	22.8	9.4	13.3	3.7	19.9	21.7	9.7	14.0	3.8
Food Stamp/SNAP benefits	18.2	17.5	34.7	32.8	37.5	11.7	11.3	14.4	12.5	17.0
Other income	12.3	NA	NA	NA	NA	10.3	NA	NA	NA	NA
Households	110,318	105,717	4,601	2,738	1,863	120,756,048	102,587,130	18,168,918	10,469,309	7,699,609

Source: ACS.

First of all, does Social Security belong in this category of transfer payments? The foreign-born who receive Social Security retirement benefits must, by law, be eligible to receive them, meaning that they must have been granted the legal right to work in the United States. Furthermore, like native-born Americans, they must have accumulated forty quarters of contributions to the Social Security fund at or above the legally-mandated minimum levels of earnings (\$5,550 in 2019).<sup>26</sup> They must also have reached minimum retirement age or qualify through another trigger, such as disability, or death or disability of a spouse or parent. And the amount of Social Security retirement benefit payments is tied to the amount that the recipient paid into the fund over their working life.

These factors help explain why Social Security income is received by a much lower percentage of non-citizen households than by naturalized citizen households, both in Erie (9.2% vs. 28.2%) and nationally (9.0% vs. 29.9%).

Given these facts, we conclude that Social Security retirement benefits should not be included as transfer payments in this analysis, since they are different in a key way from the typical government transfer payments that require virtually nothing from the recipients in advance, except experiencing needs that meet the requirements stipulated by law for each program.

The other programs listed above *are* transfer payments in the usual sense, though, and in each of those cases, Erie’s foreign-born households participate in those programs at higher rates than native-born Americans. For SSI, 12.5% of foreign-born households receive benefits versus 8.1% of native-born; for cash public assistance it is 5.5% vs. 3.6%, and for SNAP benefits, it is 34.7% vs. 17.5%. For SSI, naturalized households participate at a higher rate than non-citizen households (14.0% vs. 10.3%), reflecting perhaps the relatively high standards for non-citizens to qualify for this program, but for welfare and food stamps, non-citizen households participate at higher rates than either naturalized or native-born households. These data are not surprising, given the higher poverty rates and the younger age of foreign-born in those categories that were documented earlier.

The “Sources of Income” section above concluded that Erie’s foreign-born participate in these government transfer programs at more than double the national averages, including SSI, cash benefit programs, and the SNAP/food stamp program.

<sup>26</sup>Social Security Administration, *How You Earn Credits: 2019*. Available at: <https://www.ssa.gov/pubs/EN-05-10072.pdf>.

The following table provides estimates of the dollar amounts involved for the SSI and cash public assistance programs, the only ones for which the ACS provides estimates of the average payment.

**Table 58: Transfer Payment Income from Two Programs**

Subject	Erie County				
	Total	Native-born	Foreign-born	Naturalized	Non-citizen
Number of Households	110,318	105,717	4,601	2,738	1,863
% of all households	100.0%	95.8%	4.2%	2.5%	1.7%
% of households with <b>Supplemental Security Income</b>	8.3%	8.1%	12.5%	14.0%	10.3%
Number of Households with SSI income	9,156	8,563	575	383	192
Mean Supplemental Security Income (dollars)	\$10,655	\$10,593	\$11,573	\$11,844	\$11,027
Aggregate SSI income	\$97,561,378	\$90,708,675	\$6,655,922	\$4,540,042	\$2,115,960
% of households with <b>cash public assistance income</b>	3.7%	3.6%	5.5%	4.9%	6.3%
Number of households with public assistance income	4,082	3,806	253	134	117
Mean cash public assistance income (dollars)	\$2,401	\$2,349	\$3,191	\$2,447	\$4,050
Aggregate public assistance income	\$9,800,320	\$8,939,852	\$807,499	\$328,294	\$475,344
Total Transfer Payment Income from these two programs	\$107,361,698	\$99,648,527	\$7,463,420	\$4,868,336	\$2,591,304
Total aggregate income from all sources	\$7,139,845,606	\$6,887,735,828	\$252,921,649	\$166,665,231	\$86,393,080
Transfer payments as a percentage of aggregate income	1.50	1.45	2.95	2.92	3.00
Percentage of Total Transfer Payment income	100.0	92.82	6.95	4.53	2.41

Source: ACS data and authors' calculations.

SSI payments averaged \$11,573 per year for the 575 foreign-born households in Erie County who received them or about \$6.7 million. Cash public assistance was about \$3,191 a year for the 253 qualifying foreign-born Erie households or about \$0.8 million, for a total of \$7.5 million. This amounted to about 7% of the total \$107 million these programs paid to all Erie County residents; about 92.8% went to the native-born households in the county. Given that foreign-born households made up about 4.4% of all households in the county but received 7% of the payments from these two programs, it's clear that the foreign-born households are benefitting more than proportionately from these two programs.

The foreign-born in Erie who qualified for SSI received about \$11,573 per household, compared to about \$9,248 per household nationally, or about 25% more. For cash public assistance foreign-born Erie participants received about \$3,191 per household compared to \$3,509 nationally. However, nationally foreign-born households account for about 14.0% of all payments from these two programs, compared to just under 7% in Erie County. This is a result of the fact that the foreign-born make up only about 4.4% of all Erie County households but about 13.6% of all households nationally.

Another question that is appropriate for this inquiry is whether the foreign-born need and use transfer payments less over time as they adjust to life in America and find ways to improve their lot. Unfortunately, the data do not provide a simple answer to that question. The table below shows the data on use of these transfer payment programs with regard to when the foreign-born entered the country. The Census Bureau provides data by decade only, for three periods as shown in the table. The Census does not track people over time, so it is difficult to know the lifetime transfer payment profile of any one person.

For SSI income, the percent receiving payments is highest for more recent entrants compared to those from the last decade and those entering before 2000, for Erie County. This is what we might expect if immigrants are successful at becoming more self-sufficient over time, except that a larger percentage of the pre-2000 entrants receive benefits than for those entering 2000 to 2009. However, for the U.S. the highest rate is for those who entered before 2000, which is the

opposite of what we might expect if immigrants are successful at becoming more self-sufficient over time.

For cash public assistance, a larger percentage of recent foreign-born entrants receive payments than earlier entrants, as we might expect. And these patterns are very different from the national patterns which show lower participation for the most recent entrants, and a level 2.8% for both periods before them.

The pattern for SNAP benefits in Erie is different still, with the entrants from 2000 to 2009 having the highest percent of participation, then the most recent entrants, then the earliest. At the national level, the most recent entrants have the lowest participation, although the 2000-2009 entrants also have the highest.

To summarize, for each of these three government transfer payment programs the rates of participation in Erie are much lower for the foreign-born who entered the U.S. before 2000 than for those who have entered in 2010 or later. However, nationally the opposite is true; more recent immigrants participate at lower rates than do those who entered before 2000. Furthermore, these data for Erie show the highest rates for SNAP benefits and lowest rates of SSI benefits among those who entered from 2000 to 2009 rather than a smooth and consistent transition away from transfer programs over time. This is also true for the foreign-born at national levels.

**Table 59: Transfer Payment Income by Decade of Entry**

Subject	Erie County				United States			
	Total	Entered 2010 or later	Entered 2000 to 2009	Entered Before 2000	Total	Entered 2010 or later	Entered 2000 to 2009	Entered Before 2000
Number of foreign- born households	4,601	967	1,239	2,395	18,168,918	2,414,738	4,155,312	11,598,868
	Percent of foreign-born households				Percent of foreign-born households			
With Supplemental Security Income	12.5%	18.3%	9.0%	11.9%	5.1%	2.0%	3.0%	6.6%
With cash public assistance income	5.5%	10.7%	4.3%	4.0%	2.7%	2.2%	2.8%	2.8%
With Food Stamp/SNAP benefits	34.7%	41.9%	44.0%	27.0%	14.4%	12.0%	17.5%	13.8%
<b>Location Quotients</b>								
With Supplemental Security Income	2.45	9.15	3.00	1.80				
With cash public assistance income	2.04	4.86	1.54	1.43				
With Food Stamp/SNAP benefits	2.41	3.49	2.51	1.96				

Source: ACS

The location quotient data in the lower part of this table show that for all three of these programs and for all periods of entry, Erie foreign-born households are participating at higher rates than those elsewhere in the nation. This is evident in the LQs all being higher than 1.4. For the most recent entrants the LQs range from 3.49 to 9.15 indicating that the Erie foreign-born are participating at three and a half to nine times the rate of those elsewhere.

We should note that this discussion has covered only three government transfer payment programs. The foreign-born may also participate in other government programs such as public housing, and/or receive help from private charities and individuals. This report has no data on how their use of those programs and sources of assistance vary through time.

## **D. Unemployment and English Language Skills**

The data above document that unemployment rates tend to be lower for the foreign-born than for native citizens at the national level, but higher in Erie. Within the foreign-born, rates are especially low for naturalized citizens compared to non-citizens in Erie and nationally.

One variable that might impact an immigrant’s ability to find work is his/her ability to speak English well. Among Erie’s foreign-born, the table below shows that this seems to be the case. The table shows that in each category, the unemployment rate rises with weaker English skills, even among the naturalized. The unemployment rates for natives by English language ability are provided for comparison.

**Table 60: Unemployment Rate and English Speaking Ability**

Ability to speak English	Natives	Foreign-born	Naturalized	Non-citizen
	Unemployment rate (percent)			
Speaks only English	5.43	4.09	6.42	0.00
Very well	8.12	5.74	4.59	7.01
Well	3.13	6.97	2.00	13.55
Not well	13.08	18.81	0.00	24.37
Not at all	0.00	28.57	NA	28.57
Overall Unemployment rate*	5.49	7.53	3.93	11.45
Labor Force number*	129,644	5,562	2,898	2,664

\*of those who answered both the “Labor Force Status” and “Ability to Speak English” questions.

Source: ACS PUMS data and authors’ calculations.

## **E. Are the Foreign-Born Working in Fields That Need Workers?**

A key issue related to immigration is whether the foreign-born are supplanting native-born workers in already-overcrowded fields, or whether they help to fill gaps in the local labor market by taking jobs that would otherwise go unfilled.

One way to answer this question is to examine the kinds of jobs that the foreign-born have and compare them to the types of jobs that are expected to need workers.

Every two years the Pennsylvania Department of Labor and Industry prepares projections of employment data for ten-year periods for the state’s major labor markets, both by occupation and industry.<sup>27</sup> The most recent are for the period 2018-2028. Those projections can be used to help answer the question that is the focus of this section.

### **1) Occupations**

It would be preferable to have data from a larger sample on detailed occupations, but even with the relatively small ACS sample size for Erie County we can still allow for a large number of

<sup>27</sup>PA Department of Labor and Industry, Center for Workforce Information and Analysis. *Projections, Occupational/Industries*. Available at: <https://www.workstats.dli.pa.gov/Products/employment-projections/Pages/default.aspx>.

occupational categories projected by PA Department of Labor and Industry. These estimates from the ACS are rounded to prevent individuals from being identified, so they are somewhat less precise than other data reported.

The table below shows the state's 2018-28 occupational projections for Erie County. They predict net job growth of about 2.2% or about 2,900 more jobs over this ten-year period. These new job openings come from a combination of job growth, exits of existing workers from the occupation or the labor force, and transfers out of individual occupations into others.

The table shows that 17 of the 22 occupational categories are expected to grow in Erie, and five are expected to decline. The highest expected growth rates are in: Healthcare Support Occupations; Personal Care and Service Occupations; Farming, Fishing, and Forestry Occupations; and Computer and Mathematical Occupations. The occupations with the largest expected rates of decline are: Office and Administrative Support Occupations; Sales and Related Occupations; and Production Occupations.

**Table 61: Employment Estimates and Projections by Occupation**

Occupational Title	Erie Employment		
	Estimated 2018	Projected 2028	Percent Change
Management Occupations	6,080	6,330	4.1%
Business & Financial Operations Occupations	4,610	4,670	1.3%
Computer & Mathematical Occupations	1,600	1,730	8.1%
Architecture & Engineering Occupations	1,650	1,710	3.6%
Life, Physical & Social Science Occupations	400	420	5.0%
Community & Social Services Occupations	3,080	3,220	4.5%
Legal Occupations	450	470	4.4%
Education, Training & Library Occupations	7,850	8,170	4.1%
Arts, Design, Entertainment, Sports & Media Occupations	1,870	1,820	-2.7%
Healthcare Practitioners & Technical Occupations	9,020	9,700	7.5%
Healthcare Support Occupations	4,780	5,380	12.6%
Protective Service Occupations	2,440	2,410	-1.2%
Food Preparation & Serving Related Occupations	12,570	13,290	5.7%
Building & Grounds Cleaning & Maintenance Occupations	4,900	5,010	2.2%
Personal Care & Service Occupations	9,000	10,090	12.1%
Sales & Related Occupations	12,650	12,220	-3.4%
Office & Administrative Support Occupations	18,200	17,140	-5.8%
Farming, Fishing & Forestry Occupations	1,140	1,240	8.8%
Construction & Extraction Occupations	4,400	4,650	5.7%
Installation, Maintenance & Repair Occupations	4,770	4,910	2.9%
Production Occupations	13,550	13,120	-3.2%
Transportation & Material Moving Occupations	7,230	7,450	3.0%
Total	132,240	135,140	2.2%

Source: PA Department of Labor and Industry, Center for Workforce Information and Analysis.

The table below shows the distribution of Erie's foreign- and native-born workers across these 22 occupational categories. In this table the occupations are ranked from highest to lowest expected job gains. It shows that 28.5% of Erie's foreign-born workers are in the five high-growth occupations, while 27.6% of Erie's native-born workers are in these occupations. It also shows that 27.8% of the foreign-born workers are in the five occupation categories that are expected to contract and 33.2% of Erie's native-born are in these occupations.

However, 39.6% of the most recent immigrants are concentrated in these contracting occupations, which is a higher proportion than natives, and much higher than earlier immigrant cohorts. It is not clear why this pattern emerges, but it is consistent with immigrants starting in occupations like production, which have large numbers of employees, and then changing to high growth occupations as they adjust to life in Erie.

On the whole, these data suggest that the foreign-born are going into occupations where we need workers, rather than just into already overcrowded and declining occupations.

**Table 62: Estimated Job Gains by Occupation and Current Percentages of Workforce**

Occupational Title	Erie County							
	Estimated job gains 2028 minus 2018	Expected Percent Change	Total Population	Native-born	Foreign-born	Naturalized	Non-citizen	Foreign-born entry 2010 or later
			Percent of Employed Civilians 16+ Years of Age					
Personal Care & Service Occupations	1,090	12.1	2.7	2.7	4.5	4.2	4.9	6.3
Food Preparation & Serving Related Occupations	720	5.7	7.4	7.3	10.1	11.2	8.8	4.2
Healthcare Practitioners & Technical Occupations	680	7.5	7.3	7.4	3.8	6.2	1.0	0.0
Healthcare Support Occupations	600	12.6	4.5	4.4	5.6	5.0	6.3	5.2
Education, Training & Library Occupations	320	4.1	5.8	5.8	4.5	4.4	4.6	4.1
Construction & Extraction Occupations	250	5.7	3.9	4.0	2.5	0.6	4.6	5.0
Management Occupations	250	4.1	9.4	9.4	8.4	8.2	8.6	0.6
Transportation & Material Moving Occupations	220	3.0	7.4	7.5	6.5	6.3	6.8	9.7
Community & Social Services Occupations	140	4.5	2.3	2.3	2.7	4.6	0.5	0.0
Installation, Maintenance & Repair Occupations	140	2.9	2.6	2.6	2.2	3.1	1.1	0.0
Computer & Mathematical Occupations	130	8.1	1.6	1.4	6.3	1.7	11.5	7.3
Building & Grounds Cleaning & Maintenance Occupation	110	2.2	4.3	4.2	6.9	5.8	8.3	9.1
Farming, Fishing & Forestry Occupations	100	8.8	0.3	0.3	0.0	0.0	0.0	0.0
Architecture & Engineering Occupations	60	3.6	1.9	1.9	2.9	4.6	0.9	2.1
Business & Financial Operations Occupations	60	1.3	4.4	4.4	4.7	6.9	2.1	6.9
Life, Physical & Social Science Occupations	20	5.0	0.5	0.5	0.2	0.0	0.4	0.0
Legal Occupations	20	4.4	0.8	0.8	0.5	1.0	0.0	0.0
Protective Service Occupations	-30	-1.2	1.7	1.8	0.0	0.0	0.0	0.0
Arts, Design, Entertainment, Sports & Media Occupation	-50	-2.7	1.5	1.5	1.6	0.6	2.6	3.9
Production Occupations	-430	-3.2	8.6	8.4	13.7	10.9	16.8	23.9
Sales & Related Occupations	-430	-3.4	9.3	9.5	4.8	6.1	3.3	2.5
Office & Administrative Support Occupations	-1,060	-5.8	11.8	12.0	7.7	8.6	6.7	9.3
Total	2,900	2.2	100	100	100	100	100	100

Source: Authors' calculations from ACS and PA DOLI Projections.

These data suggest that a slightly larger percentage of immigrants than natives are working in the fields with greater expected labor demand and a slightly lower percentage of immigrants than natives are working in the fields which are expected to have lower labor demand. On the surface it appears that immigrants may be filling needed openings, but this is no guarantee that some existing workers are not losing jobs to the foreign-born. If the foreign-born tend to cluster into the slower- or negative-growth sub-occupations in a growth category, then their presence in the local labor market could have more of a negative effect on native-born American workers. It would require more detailed occupational data to determine this definitively.



## 2) Industries

The Pennsylvania Department of Labor and Industry also creates employment projections for Erie by industry, as well as by occupation. The table below shows the relevant data for the 13 broad industry categories.<sup>28</sup> Six industries have expected growth rates greater than the average of 2.06%, seven are expected to decline over the 2018-28 period.

**Table 63: Employment Estimates and Projections by Industry**

Industry Category	Erie Employment		
	Estimated 2018	Projected 2028	Percent Change
Agriculture, forestry, fishing and hunting, and mining	1,830	2,000	9.29
Construction	3,900	4,120	5.64
Manufacturing	19,620	19,090	-2.70
Wholesale trade	2,990	2,930	-2.01
Retail trade	14,530	13,940	-4.06
Transportation and warehousing, and utilities	3,280	3,400	3.66
Information	970	840	-13.40
Finance and insurance, and real estate and rental and leasing	6,090	6,030	-0.99
Professional, scientific, and management, and administrative and waste management services	9,250	9,640	4.22
Educational services, and health care and social assistance	34,360	36,970	7.60
Arts, entertainment, and recreation, and accommodation and food services	14,200	14,950	5.28
Other services (except public administration)	6,520	6,470	-0.77
Public administration	7,860	7,600	-3.31
Total	125,400	127,980	2.06

Source: PA Department of Labor and Industry, Center for Workforce Information and Analysis.

The table below shows the distribution of Erie's foreign- and native-born workers across the 13 industry categories. In this table the industries are ranked from highest to lowest expected employment growth (i.e., actual job change, not growth rate). It shows that 50.9% of the foreign-born workers and 51.4% of Erie's native-born are in the five highest-growth industries. The percentages are similar for the naturalized and the non-citizens. The greater the share of the foreign-born who work in the high-growth industries, the less would be the competition for jobs with the native-born, presumably. 35.6% of the foreign-born work in the five slowest-growth industries, compared with 32.4% of the native-born.

**Table 64: Estimated Job Gains by Industry and Current Percentages of Workforce**

Industry Category	Erie County							
	Expected job change	Expected percent change	Total Population	Native-born	Foreign-born	Naturalized	Non-citizen	Entry 2010 or later
			Percent of Employed Civilians 16+ Years of Age					
Educational services, and health care and social assistance	2,610	7.6	27.3	27.6	20.6	23.1	17.5	17.8
Arts, entertainment, and recreation, and accommodation and food services	750	5.3	11.0	10.9	13.8	11.4	16.6	9.6
Professional, scientific, and management, and administrative and waste management services	390	4.2	6.8	6.6	11.5	10.9	12.1	8.4
Construction	220	5.6	5.1	5.2	1.9	2.5	1.3	0.0
Agriculture, forestry, fishing and hunting, and mining	170	9.3	1.2	1.1	3.1	0.0	6.8	4.9
Transportation and warehousing, and utilities	120	3.7	4.0	4.0	3.6	6.6	0.0	3.0
Other services (except public administration)	-50	-0.8	5.0	5.0	4.8	5.1	4.4	2.9
Finance and insurance, and real estate and rental and leasing	-60	-1.0	7.0	7.1	5.2	3.4	7.2	5.6
Wholesale trade	-60	-2.0	2.1	2.1	1.1	0.7	1.7	1.3
Information	-130	-13.4	1.3	1.3	1.9	2.4	1.3	2.0
Public administration	-260	-3.3	2.9	2.9	1.2	1.8	0.5	0.0
Manufacturing	-530	-2.7	16.0	15.6	24.8	25.7	23.7	35.4
Retail trade	-590	-4.1	10.3	10.5	6.6	6.3	7.0	8.4
Total	2,580	2.1	100.0	100.0	100.0	100.0	100.0	100.0

<sup>28</sup>The PA Department of Labor and Industry projects employment for Self-Employed Workers as a separate category, as if it were an industry in itself. This category had 2018 employment of 6,840 and projected 2028 employment of 7,170 for a 4.8% change. This category is excluded from the table above, and that results in the total employment numbers and percent change being different from those in the occupation table above.

We can now address the main question of this section about whether the foreign-born are supplanting native-born workers in already-overcrowded fields, or whether they help to fill gaps in the local labor market by taking jobs that would otherwise go unfilled.

The bottom line from both the occupation and industry analysis is that overall, the foreign-born are more concentrated in higher-growth occupations and less concentrated in declining occupations than are the native-born. This holds even though the most recent immigrants are more concentrated in declining occupations, such as production, than are natives. With respect to projected employment growth across industries, the distribution of workers is very similar for foreign-born and native-born workers.

The immigrants who have responded to the ACS have already selected occupations and industries, so these decisions have already been reflected in local employment statistics. Foreign born workers seem to be entering occupations with a larger share of the total current jobs available rather than growth, but they are already counted as part of the local labor force. Perhaps the more relevant question relates to the occupations and industries that the foreign born who have not yet come to Erie will choose in the future.

## **F. Estimates of the Economic Contribution of the Foreign-Born**

There are different ways to quantify the impact of the foreign-born on the local economy. In this section we take another approach to estimating the economic impact of the foreign-born in Erie County. Such estimations represent hypothetical scenarios which can be difficult to accurately measure.

Regional Input-Output (I-O) models provide a systematic way to examine how a change in economic activity leads to additional changes in activity in other sectors of the economy. As dollars flow through the economy, the initial activity has a multiplier effect where \$1 generates more than \$1 of additional economic activity. For example, suppose a customer spends \$50 at a local restaurant. The \$50 of direct spending at the restaurant stimulates spending by the restaurant sector to purchase ingredients from a supplier for say \$20. The restaurant will also need to employ labor at the restaurant generating more income of say \$5. Taken together, the \$50 of direct spending generated \$75 of economic impact. These effects are separated into three types:

**Direct effects** are the initial changes measured in production or expenditure.

**Indirect effects** are the effects on business-to-business purchases as a result of the initial change.

**Induced effects** are the values arising from households spending their labor income.

In this example the \$50 spent at the restaurant is the direct effect, the \$20 spent on ingredients is the indirect effect, and the \$5 in labor income is the induced effect.

Furthermore, each level of spending also sets more subsequent purchases into motion. Flowing from the indirect effect—the restaurant buys meat which leads to the meat supplier buying more inputs and that sets off more purchases—and more economic impact—by her suppliers. Flowing from the induced effect—the restaurant worker uses his earnings to buy clothes that sets off more purchases by the retail store and its workers and suppliers, and so on. At each

round the effect gets a bit smaller as some of the money flows out of the region. It is an empirical question as to how much money recirculates in the local economy, how much is spent elsewhere, and how many downstream industries are affected. Fortunately, it is possible to estimate the sum of all these effects with the appropriate math (and a good computer.) There is computer software to estimate these effects for different types of spending and production. One widely used model is distributed by IMPLAN Group, LLC.<sup>29</sup> This model uses historical data to estimate the linkages and multipliers between industries within a region. We use regional data from Erie County.

### 1) Total Economic Activity (Upper Bound)

First, we begin with the information from the 2015-2019 ACS 5-year estimates for the number of foreign-born employed in each industry in Erie. Then we will estimate the total value of this employment to the local economy. From these starting values we will refine the estimates based on what we know from other data sources about the earnings associated with the foreign-born workers who perform them.

One way to do this is to consider a hypothetical situation whereby all of the jobs currently being performed by immigrants were eliminated entirely. According to the 2015-2019 ACS 5-year sample, there are 5,143 foreign-born workers employed across many industries in Erie County. For examples, there are 487 foreign-born workers in the “Food Services and Drinking Places” industry, and 341 in the “Educational Services” industry.<sup>30</sup> We construct an economic impact estimate where we subtract out the number of immigrants employed in each industry and examine the resulting decrease in economic activity. Table 65 summarizes the economic impact.

**Table 65: Upper Bound Estimates of Economic Losses Without Foreign-Born Workers**

Impact	Employment	Labor Income	Value Added
Direct	-5,143	-\$250,007,526	-\$358,370,752
Indirect	-1,270	-\$61,077,158	-\$108,689,627
Induced	-1,733	-\$73,769,863	-\$119,033,494
<b>Total</b>	<b>-8,146</b>	<b>-\$384,854,548</b>	<b>-\$586,093,873</b>

Source: Direct Employment is from ACS data. Other values are calculations from IMPLAN.

According to the IMPLAN model, the 5,143 jobs held by immigrants are estimated to generate \$250,007,526 in labor income directly to the foreign-born workers. Plus, the indirect effects generate \$61,077,158 and the induced effects generate \$73,769,863 in labor income for a total effect of \$384,854,548.

The initial 5,143 jobs held by foreign-born workers generate an additional 1,270 indirect jobs, and 1,733 induced jobs. Stated differently, if the jobs performed by 5,143 foreign-born workers were not part of the Erie economy, there would be 8,146 fewer people employed in total.

<sup>29</sup>A description of the software can be found at <https://implan.com/>.

<sup>30</sup>IMPLAN has 546 unique industry categories which are based on the NAICS codes. However, using the disaggregated PUMS data leads to small sample sizes in some industries, and encounters some issues with the way ACS recodes some observations so that individuals in the PUMS sample cannot be identified. Therefore, we utilize the 88 IMPLAN 3-digit classifications to estimate the value of the foreign-born in Erie County.

The value added that results directly from 5,143 foreign-born workers (based on their industry of employment) is estimated to be \$358,370,752. There are also additional indirect and induced effects totaling \$227,723,873 resulting from their employment. The total output from these jobs and subsequent downstream spending is a sizeable \$586,093,873.

Now that we have established a first estimate of the total value of jobs held by foreign-born workers, we need to consider these estimates in the context of foreign-born labor.

These estimates are likely to overstate the impact of foreign-born workers for several reasons. This hypothetical is of course unrealistic because jobs done by immigrants would not simply disappear, instead other workers would be likely to fill some of the openings. Given the current labor market (in summer 2021) it is likely that employers would have difficulty hiring workers and many jobs would remain unfilled.

Also, the estimate of \$586 million in value added would represent 4.65% of the total GDP of \$12.4 billion for Erie in 2019.<sup>31</sup>

It is also true that some of the indirect and induced effects jobs that would be eliminated are jobs that are currently held by other foreign-born workers, and thus have already been removed from the economy in this hypothetical. Table 66 shows the direct, indirect, and induced effects on employment for our hypothetical scenario where 5,143 jobs are removed for the industries that experience the greatest loss in employment. For the Food Services and Drinking Places category, 487 jobs are eliminated directly. In addition, the economy wide job losses would eliminate 106 more of these jobs through indirect impacts, and 227 more through induced effects for a total impact of 820 lost jobs. In the case of Administrative and Support Services, 346 jobs are lost through indirect and induced effects, an amount that is even greater than the direct loss of 293 jobs done by foreign born in the industry.

**Table 66: Industries with the Largest Employment Losses without Foreign-Born Workers**

Rank	Industry	Impact on Employment			
		Direct	Indirect	Induced	Total
1	Food Services and Drinking Places	-487	-106	-227	-820
2	Administrative and Support Services	-293	-266	-80	-639
3	Professional, Scientific, and Technical Services	-297	-187	-60	-543
4	Educational Services	-341	-9	-73	-423
5	Ambulatory Health Care Services	-176	-7	-158	-340
6	Nursing and Residential Care Facilities	-267	0	-67	-334
7	Hospitals	-176	0	-125	-301
8	Food Manufacturing	-239	-1	0	-241
9	Fabricated Metal Product Manufacturing	-213	-4	0	-217
10	Insurance Carriers and Related Activities	-129	-65	-22	-217
11	Religious, Grantmaking, Civic, Professional, and Sim	-120	-9	-80	-208
12	Social Assistance	-98	0	-109	-207
13	Wholesale Trade	-58	-100	-27	-184
14	Miscellaneous Manufacturing	-177	-1	0	-178
15	Food and Beverage Stores	-128	-1	-47	-177

Source: Direct Employment is from ACS data. Other values are calculations from IMPLAN.

<sup>31</sup>Source: U.S. Bureau of Economic Analysis at: <https://www.bea.gov/data/gdp/gdp-county-metro-and-other-areas>

The direct labor income loss estimated by IMPLAN (\$250,007,526) is 12.8% higher than the earnings estimate for the foreign-born in the ACS (Table 56) (\$221,614,563). There are reasons for the differences between ACS and IMPLAN income estimates and the inconsistencies are not necessarily errors. The ACS/PUMS data are generated from random sampling and have some margin of error when matching the sample to the entire population. The same holds for IMPLAN data, which is derived from the ACS and other data sources. More importantly, the value of labor income in IMPLAN is estimated from a sample of *all workers*, not just foreign-born workers. Therefore, the differences in earnings estimates may also reflect that the foreign-born are employed in lower paying occupations within an industry than natives. For example, if a higher proportion of the foreign-born in the restaurant industry are employed as prep cooks or dish washers, and natives are found in higher proportions as managers, the industry average wages used by IMPLAN would be above the immigrant average wages within an industry.

Fortunately, we have data from the ACS which allows us to quantify how much the average labor income differs between the foreign-born population and the overall population. In the ACS data summarized in Table 47, Erie average household earnings are \$70,787 for all households and \$61,437 for foreign born (86.79%). In addition, the household sizes in PUMS average 1.11 for all households, and 1.19 for foreign-born households. Dividing mean household earnings by number of workers give us a mean of \$63,772 per worker for all workers, and \$51,628 per worker for foreign born. This means that in the aggregate data the average foreign-born worker earns 80.96% of the average worker overall. Some of this earnings differential reflects differences between foreign-born industries of employment, which we have already accounted for with our impact estimates. However, earnings also depend on occupation choices, age, experience levels, education, English language proficiency and numerous other factors which might differ between the foreign-born and the overall population are not accounted for in the estimates.

Our estimate of labor income is consistent with estimates from other sources. A recent NAE brief for Erie<sup>32</sup> stated an estimate of \$261.4 million in earnings for immigrants, which is within 4.4% of our earnings estimate. Furthermore, our total income estimate (from all sources) is between \$253 million and \$268 million in Table 56, so our immigrant earnings estimate seems to be appropriate and is well within the margin of error of income from the ACS sample.

We suspect that estimates for value added from the jobs held by immigrants are also a little too high for the same reasons that incomes are likely overstated for the foreign born (think different occupations within an industry). However, the ACS does not collect data on production like it does for earnings, so there is not a clear benchmark from which to make adjustments to output estimates.

The NAE brief estimates that Erie immigrants constitute 3.7% of Erie County GDP, or \$463.5 million, based on immigrants' share of wage income and total county GDP. Our estimate is based on the industries in which foreign born workers are employed and finds the value added for direct effects of \$358 million (2.8% of GDP) and a total impact of \$586 million (4.65% of GDP) when we consider indirect, and induced effects from immigrant employment and how that influences other industries.

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<sup>32</sup>The NAE brief can be found at: [https://research.newamericaneconomy.org/wp-content/uploads/sites/2/2021/06/NAE\\_Brief\\_New\\_Americans\\_in\\_Erie\\_County.pdf](https://research.newamericaneconomy.org/wp-content/uploads/sites/2/2021/06/NAE_Brief_New_Americans_in_Erie_County.pdf).

However, our estimate assumes that foreign-born spending patterns are the same as the average of the entire population. Thus, it does not consider factors such as remittances, which are likely reduce downstream spending somewhat.

For the above reasons, we interpret the results presented in Table 65 as representative of the upper bound on the impact of the foreign born in the Erie economy. We estimate the total labor income from the foreign-born and the other jobs that result from their earnings to be \$385 million in Erie County.

IMPLAN also provides estimates for tax revenue at various levels.<sup>33</sup> Sub County General includes city and township governments, and Sub County Special includes fire and public school districts. There are also estimates for county, state, and Federal tax revenue. Table 67 displays the tax impacts from the jobs held by the foreign born in Erie.

**Table 67: Tax Revenue from Foreign-Born Employment and Related Spending**

Impact	Sub County General	Sub County Special Districts	County	State	Federal	Total
Direct	-\$2,521,984	-\$5,294,138	-\$1,845,440	-\$16,144,510	-\$53,850,422	-\$79,656,494
Indirect	-\$1,198,949	-\$2,749,992	-\$1,010,489	-\$7,400,122	-\$13,639,221	-\$25,998,772
Induced	-\$1,229,908	-\$2,772,312	-\$1,008,775	-\$7,590,130	-\$16,051,026	-\$28,652,152
Total	-\$4,950,841	-\$10,816,442	-\$3,864,704	-\$31,134,763	-\$83,540,669	-\$134,307,418

Source: Authors' calculations from IMPLAN.

According to these estimates when the total economic impact of the foreign born is considered, city and township governments in Erie County receive \$4.95 million, school districts receive \$10.82 million, and Erie County government raises \$3.86 million in tax revenue from the impact (direct, indirect and induced) of jobs held by the foreign-born. Within the county, tax revenue is generated primarily through property taxes. Together, this means that \$19.63 million in taxes are generated and stay within Erie County. In addition, the state of Pennsylvania gains \$31.13 million in tax revenue, and the Federal government raises \$83.54 million in tax revenue. The Federal total includes contributions to social insurance programs (i.e. Social Security and Medicare) totaling \$45 million of which \$29 million is directly paid by foreign-born workers.

## 2) Impact of Foreign-Born Earnings (Lower Bound)

We also generate a far more conservative estimate of the economic impact which does not suffer from limitations in data availability or require restrictive assumptions to estimate economic output from foreign-born.

In this specification we simply examine the effect on the Erie economy resulting from the labor income earned by the foreign-born. As a thought exercise, this is equivalent to removing all the earnings generated by the foreign-born from the economy. Unlike the earlier specification, this estimation does not consider the value of production to which the foreign-born workers contribute. Estimating the induced effects from foreign born labor income is an overly conservative estimate of the impact of the foreign-born and can be thought of as the lower

<sup>33</sup>For a description of IMPLAN taxes see <https://implanhelp.zendesk.com/hc/en-us/articles/360041584233-Taxes-Where-s-the-Tax->

bound on economic impact. However, it has the advantage that earnings income can be gathered from the ACS.

We estimate the impact that would result from a loss of \$221,614,563 (from Table 56) in labor earnings using IMPLAN. This is an underestimate of foreign-born income because it only includes earned income and does not include income from investments, transfer payments, or other sources. Because this is labor income, it generates induced effects. In this estimate, we implicitly assume that all labor income is paid to foreign-born from other sources within Erie County. Of course, not all labor income is paid from within the county, so this again this represents a lower bound in the value of immigrant income to the local economy.

**Table 68: Induced Effects of Lost Foreign-Born Labor Income**

Impact	Employment	Labor Income	Value Added
Induced Effect	-1,217	-\$51,847,886	-\$83,704,709

Source: Authors' calculations from IMPLAN.

The induced effects from this loss of foreign-born earnings income would be a loss of 1,217 other jobs. The estimated induced effects on labor income would be a loss of \$51,847,886, and the total value added in Erie County would be lower by \$83,704,709. Keep in mind these are only the *induced effects* which are above and beyond the loss of income itself.

The total impact on labor income would be at least \$273,462,449. This includes \$51,847,886 from induced income and \$221,614,563 from earnings. There would also be indirect effects, which we are ignoring to create a lower bound.

The induced effects on employment in the conservative estimates from only the lost labor income are much smaller than those using industry specific employment data. It is possible that the industries, such as manufacturing, which employ higher proportions of foreign-born labor are the types of industries that have larger local multipliers. If this is the case, then failing to account for industry specific multipliers will cause the induced effects from labor income to be understated.

Table 69 displays the top 15 industries that would be impacted by the hypothetical loss of foreign-born labor income.

**Table 69: Top 15 Industries Impacted by a Loss of Foreign-Born Labor Earnings**

Rank	Industry	Induced Impact on Employment
1	Food Services and Drinking Places	-160
2	Ambulatory Health Care Services	-111
3	Hospitals	-88
4	Social Assistance	-76
5	Administrative and Support Services	-56
6	Religious, Grantmaking, Civic, Professional, and Similar Organizations	-56
7	Real Estate	-52
8	Educational Services	-50
9	Nursing and Residential Care Facilities	-47
10	Professional, Scientific, and Technical Services	-42
11	General Merchandise Stores	-37
12	Repair and Maintenance	-34
13	Food and Beverage Stores	-33
14	Personal and Laundry Services	-29
15	Amusement, Gambling, and Recreation Industries	-29

Source: Authors' calculations from IMPLAN.

Table 70 shows the induced impact of this loss of labor income on tax revenue.

**Table 70: Tax Revenue from Induced Effects of Lost Foreign-Born Labor Income**

Impact	Sub County General	Sub County Special Districts	County	State	Federal	Total
Induced Effect	-\$865,430	-\$1,951,017	-\$709,982	-\$5,340,671	-\$11,282,808	-\$20,149,907

Source: Authors' calculations from IMPLAN.

Sub County General tax revenue would decrease by \$865,430; Sub County Special Districts tax revenue would decrease by \$1,951,017; County tax revenue would decrease by \$709,982; State tax revenue would decrease by \$5,340,671, and Federal tax revenue would decrease by \$11,282,808. Total lost tax revenue from induced effects would be \$20,149,907.

### 3) Summary of Economic Contributions

The foreign-born hold 5,143 jobs in Erie County, and their income and production support between 1,217 and 3,003 additional jobs. Without the foreign born, Erie would have 6,380 to 8,146 fewer jobs. The labor income from these jobs is valued at between \$273 million and \$385 million.

The direct effect on value added associated with the jobs held by immigrants may be as much as \$358 million, and the total effect on value added may be as high as \$586 million for the local economy after factoring in indirect and induced effects on output. We are very cautious about these estimates for output because their estimation requires assumptions which may not hold for the subsample of foreign-born. In particular, they assume that the jobs held by immigrants within an industry are at the industry average. Given the fact that immigrants are observed to have lower wages than natives, it is likely that their jobs receive lower than average wages within an industry. In addition, the foreign-born are likely to remit some of their earnings back to their native country so more of the earnings income might leave the area resulting in a lower actual multiplier than the model assumes. These figures are likely to be overstated as a result. However, these effects are still very large effects. The induced effects from foreign-born labor income alone generate value added worth \$83 million.

The foreign-born generate tax revenue. Considering taxes from all sources including income, sales, and property, the work performed by the foreign born generates as much as \$19.63 million in tax revenue for the local governments and schools in Erie County. The induced effects from labor income alone generate over \$3.5 million in local tax revenue.

The foreign-born make a large contribution in terms of production, earning, spending, and tax revenue for the Erie economy. In this section we quantified that impact. This is not to say that without immigrants this economic activity would disappear, but rather it speaks to the economic contribution that the foreign born are making at present.



## **V. Conclusions**

This report has presented a wide range of data about the foreign-born and their role in the economy of Erie County, and in the county's life more broadly. It certainly does not include everything about Erie immigrants, not even about all the important aspects of their lives here. But we can draw some useful conclusions based on the data we do have.

It is clear that while the foreign-born account for a relatively small proportion of the population—approximately 12,000 people in a county of nearly 270,000, or 4.4%—they nevertheless play an important role in several ways. On the demographic side, most importantly they are a group that helps offset the discouraging trend of population decline in the county. Without the net increase of immigrants choosing to live in Erie County, Erie's loss of population since 2000 would have been about 39% worse than it was. Immigrants to Erie also tend to be younger on average, and thus lower the average age and help offset the graying of Erie. Erie's immigrants come from at least 87 countries, bringing racial and ethnic diversity to a county which is significantly less diverse than the nation as a whole. Increasing diversity adds a broader range of cultural choices to life in Erie and thereby enhances quality of life. And ethnic and cultural diversity is cited by some researchers as an important factor for economic development.<sup>34</sup>

The foreign-born are more likely to be married than the native-born, less likely to be divorced or separated, and more likely to be married just once. Their households tend to be about one-third larger than those of the native-born, on average. And they have graduate degrees (above the bachelor's level) at higher rates than Erie's native-born, with more than double the rate for professional degrees like medicine and dentistry.

On the economic side, Erie's foreign-born tend to be concentrated in the prime working ages of 18 to 64, with fewer dependent children and seniors than the native-born. They add approximately 5,600 workers to the local labor force, with an unemployment rate that is similar to that for native-born workers. Some of the foreign-born, especially the naturalized, start their own companies and provide jobs for themselves and others. They do this at a slightly higher rate than Erie's native-born, and this rate is positively related to time in country. Increased rates of immigration may thus lead to additional new immigrant-owned businesses in the future. Erie's immigrants tend to choose broad occupational categories that the Pennsylvania Department of Labor and Industry project to be faster-growth than the average for Erie. Although we don't have complete data on the incomes of the foreign-born, from the data we do have we estimate that Erie's foreign-born add over \$255 million of income annually to the local economy, the great majority of which is from earnings. The economic impacts from these jobs and earnings also spread through the economy. The labor income generated directly and indirectly from the foreign-born is valued at between \$273 million and \$385 million and total tax revenue for Erie County governments and schools is as high as \$19.63 million.

This is not to say that all aspects of immigrant relocation to Erie County are positive. Nearly 57% of the foreign-born who have arrived in the past decade are not proficient at using the English language, and that presents a barrier in a number of ways. For example, unemployment rates tend to be higher for those with weaker English skills. While immigrants

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<sup>34</sup>See for example, Richard Florida, "The Economic Geography of Talent." *Annals of the Association of American Geographers*, v. 92(4), 2002, 743-755; and June Manning Thomas and Julia Darnton. "Social Diversity and Economic Development in the Metropolis." *Journal of Planning Literature*, v. 21(2), 2006, 153-168.

tend to have higher proportions of advanced education, they also have higher proportions of lower formal education, with less than the equivalent of a high-school diploma. This tends to limit the employment options of some immigrants. While the foreign-born tend to choose occupational categories that are expected to be fast-growth, they choose industries with expected growth rates in roughly the same proportions as natives.

These challenges lead to Erie's foreign-born tending to have lower income levels on average, with median household incomes of \$42,700 versus \$52,200 for native-born households. Immigrants tend to have higher poverty rates, almost double those of Erie's native-born, although their incidence of poverty tends to fall with longer time of residence in the country. Higher poverty rates mean that Erie's foreign-born tend to need—and qualify for—some types of government assistance. For three government transfer-payment programs for which the American Community Survey provides data (Supplemental Security Income or SSI, cash public assistance, and SNAP or food stamps), Erie's foreign-born participate at higher rates than the native-born, and also at rates that are about double those of the foreign-born elsewhere in the nation. However, in Erie their participation in these programs does tend to decline as their time in country increases, whereas participation tends to increase over time at the national level. Of course, these payments come out of the taxes of other Americans and represent dollars that could otherwise be spent on other needs. There is a bit of a silver lining here, though; these payments do represent an infusion of income into the local economy from taxpayers that are primarily located elsewhere, and so are a net addition to the local economy.

Like other residents, Erie's foreign-born use the public roads and parks, call on the emergency services of police and fire and ambulances, and their children need teachers, the great majority of which are paid for by taxes. On the other hand, like other residents, Erie's foreign-born pay income taxes to local, state, and federal governments, and pay payroll taxes on their earnings. They pay sales taxes on their purchases and pay property taxes as homeowners and renters.

In other words, like Erie's native-born, they use public services which cost tax money. And like Erie's native-born, they are contributors to the local economy through their work and production, and help to employ others as they pay taxes and spend their incomes—from whatever sources—with local firms.

One way in which they *are* different from the majority of Erie's native-born however, is that they chose to come to Erie from somewhere else to make a life, often sacrificing much if not all of their previous lives to start over here. And in that they are like many of our own forebears, both in the Erie area and in the United States as a whole. They represent the current version of America's melting pot with all its pros and cons. ■

## Appendix

### Industry and Occupational Categories

In the ACS, the occupation and industry data refer to the survey respondent's job in the past week. For those who worked two or more jobs, the data refer to the job where the person worked the greatest number of hours. For unemployed people and people who are not currently employed but report having a job within the last five years, the data refer to their last job.<sup>35</sup>

#### **Occupational Categories**

The Census Bureau developed their occupational classifications based on the widely-used Standard Occupational Classification (SOC) system<sup>36</sup>, creating 20 sectors and 570 occupation codes from the 840 Detailed Occupations in the 2018 SOC system. The table below presents just a small amount of disaggregation for the five broadest Census occupational sectors. Full details can be found in the ACS 2019 Code List<sup>37</sup>, pp. 81-95, which provides 6-digit 2018 SOC codes for all 570 ACS occupation titles.

2018 Census Code	2018 SOC Code	Occupational Title
<b>0010-3550</b>	<b>11-29</b>	<b>Management, Business, Science, and Arts Occupations</b>
	11	Management Occupations
	13	Business, and Financial Occupations
	15	Computer and mathematical occupations
	17	Architecture and Engineering Occupations
	19	Life, Physical, and Social Science Occupations
	21	Community and Social Service Occupations
	23	Legal Occupations
	25	Educational Instruction, and Library Occupations
	27	Arts, Design, Entertainment, Sports, and Media Occupations
	29	Healthcare Practitioners and Technical Occupations
<b>3601-4655</b>	<b>31-39</b>	<b>Service Occupations</b>
	31	Healthcare Support Occupations
	33	Protective Service Occupations
	35	Food Preparation and Serving Related Occupations:
	37	Building and Grounds Cleaning and Maintenance Occupations
	39	Personal Care and Service Occupations
<b>4700-5940</b>	<b>41-43</b>	<b>Sales and Office Occupations</b>
	41	Sales and Related Occupations
	43	Office and Administrative Support Occupations
<b>6005-7640</b>	<b>45-49</b>	<b>Natural Resources, Construction, and Maintenance Occupations</b>
	45	Farming, Fishing, and Forestry Occupations
	47	Construction and Extraction Occupations
	49	Installation, Maintenance, and Repair Occupations
<b>7700-9760</b>	<b>51-53</b>	<b>Production, Transportation, and Material Moving Occupations</b>
	51	Production Occupations
	53	Transportation and Material Moving Occupations
	55	Military Specific Occupations

<sup>35</sup> See the ACS Questionnaire, "Person" questions 41 to 46.

<sup>36</sup> Bureau of Labor Statistics, *Standard Occupational Classification*. Available at: <https://stats.bls.gov/soc/2010/home.htm>. Full details on occupation definitions are available in the *2010 SOC User Guide*, available at: [https://www.bls.gov/soc/soc\\_2010\\_user\\_guide.pdf](https://www.bls.gov/soc/soc_2010_user_guide.pdf)

<sup>37</sup> Bureau of the Census, *American Community Survey and Puerto Rico Community Survey, 2019 Code List*. Available at [https://www2.census.gov/programs-surveys/acs/tech\\_docs/code\\_lists/2019\\_ACS\\_Code\\_Lists.pdf?#](https://www2.census.gov/programs-surveys/acs/tech_docs/code_lists/2019_ACS_Code_Lists.pdf?#)

## Industry Categories

The Census Bureau developed their industry classifications based on the widely-used North American Industry Classification System (NAICS)<sup>38</sup>, creating 20 sectors and 269 industry categories from the broad ranges of 1,065 six-digit NAICS industries. The table below presents just a small amount of disaggregation for the 13 broadest Census industry sectors. Full details can be found in the *ACS 2019 Code List*, pp. 35-44, which provides 4-digit 2017 NAICS codes for all 269 Census industry categories.

2017 Census Code	2017 NAICS Code	Industry Categories
<b>0170-0490</b>	<b>11-21</b>	<b>Agriculture, Forestry, Fishing, and Hunting, and Mining</b>
	11	Agriculture, Forestry, Fishing, and Hunting
	21	Mining, Quarrying, and Oil and Gas Extraction
<b>770</b>	<b>23</b>	<b>Construction</b>
<b>1070-3990</b>	<b>31-33</b>	<b>Manufacturing</b>
<b>4070-4590</b>	<b>42</b>	<b>Wholesale Trade</b>
<b>4670-5790</b>	<b>44-45</b>	<b>Retail Trade</b>
<b>6070-6390, 0570-0690</b>	<b>48-49, 22</b>	<b>Transportation and Warehousing, and Utilities</b>
	48-49	Transportation and Warehousing
	22	Utilities
<b>6470-6780</b>	<b>51</b>	<b>Information</b>
<b>6870-7190</b>	<b>52-53</b>	<b>Finance and Insurance, and Real Estate and Rental and Leasing</b>
	52	Finance and Insurance
	53	Real Estate and Rental and Leasing
<b>7270-7790</b>	<b>54-56</b>	<b>Professional, Scientific, and Management, and Administrative and Waste Management Services</b>
	54	Professional, Scientific, and Technical Services
	55	Management of companies and enterprises
	56	Administrative and support and waste management services
<b>7860-8470</b>	<b>61-62</b>	<b>Educational Services, and Health Care and Social Assistance</b>
	61	Educational Services
	62	Health Care and Social Assistance
<b>8561-8690</b>	<b>71-72</b>	<b>Arts, Entertainment, and Recreation, and Accommodation and Food Services</b>
	71	Arts, Entertainment, and Recreation
	72	Accommodation and Food Services
<b>8770-9290</b>	<b>81</b>	<b>Other Services, Except Public Administration</b>
<b>9370-9590</b>	<b>92</b>	<b>Public Administration</b>

<sup>38</sup> Census Bureau, *North American Industry Classification System*. Available at: <https://www.census.gov/eos/www/naics/>.



ERIE is a research center of the  
Black School of Business at Penn State Behrend

## History and Background of ERIE

Established in late 1982, the Economic Research Institute of Erie (ERIE) is an applied research center of Penn State Behrend's Sam and Irene Black School of Business. The purpose of ERIE is to collect, analyze, interpret, and disseminate data and information on the Erie regional economy. Another important goal of ERIE is to provide our students with relevant experience with applied economic research and data analysis.

We do not wish to duplicate the activities of other Erie-area organizations. Rather, we seek to use our collective training and experience in the areas of data handling and technical analysis to provide support to those whose expertise falls in different fields.

ERIE's continuing research program helps the local community better understand the regional economy and its linkages to the national and global economies. ERIE provides a source of information for local leaders and media who have questions about the local, national, and international economies. ERIE compiles data on the local economy from a wide range of sources and helps local users access and evaluate these data. Some of the studies that ERIE has undertaken include:

- Creation of a set of leading indicators for the Erie economy, the ERIE Leading Index (ELI).
- Estimation of the costs to the local economy of Erie residents having to travel out of the area to seek medical treatment from pediatric sub-specialists.
- Estimates of the impact of a split-rate property tax.
- Estimates of the amount that would be raised by a county-wide 1% additional sales tax.
- Estimates of productivity of Erie's workers through time and across industries, compared to the nation, and why productivity varies from place to place.
- Estimates of brain drain and brain gain from local colleges.
- Creation of a model to forecast total Erie employment, as well as employment in component industries.
- Three studies of philanthropic giving in the Erie area sponsored by leading non-profit agencies.
- A model to estimate the cost of living in all 67 counties of Pennsylvania for a state government agency.

ERIE staff have made over 135 presentations in the local community since 2000, speaking to audiences at the Manufacturer and Business Association of Northwest Pennsylvania, the Jefferson Educational Society, the Erie Ambassadors, the Erie Community Foundation, the Erie Chapter of the National Association of Purchasing Management, the Erie Conference on Community Development, and twelve Leadership Erie classes, among many others. ERIE regularly provides information for the print and electronic media in the community, with over 570 press mentions since 2000.

In addition, ERIE's work has resulted in an enhanced awareness of the Erie regional economy among national and international audiences. This stems from the over 90 technical paper presentations made by Institute staff members at national and international conferences. Among these are presentations in Amsterdam, Cambridge (England), Marseilles, Montreal, Paris, Quebec City, Reading (England), Toronto, Wellington (New Zealand), and Vancouver, as well as numerous major U.S. cities. Articles based on the Erie economy as well as analysis of other economic issues, written by members of the Institute staff, have appeared in the *International Journal of Finance and Economics*, *Economic Development Quarterly*, *Environment and Planning A*, the *International Journal of Forecasting*, the *Journal of Forecasting*, *Regional Studies*, *Systems Research, Managerial and Decision Economics*, the *Journal of Economic Behavior and Organization*, the *Pennsylvania Economic Review*, *Journal of Economic Geography*, *Journal of Urban Economics*, and other academic journals.

## **ERIE Research Assistants**

ERIE has employed over 80 students as Research Assistants (RAs) and Graduate Research Assistants (GRAs) over the years. In their position as Research Assistant, students learn to find economic data on the Web and in publications, to assess strengths and weaknesses of the data, to download the data, and efficiently enter them into standard spreadsheet and statistical software packages. They also learn how to graph, manipulate, and analyze the data, turning them from raw numbers into useful information. Along with financial support, the students get a very attractive item for their resume and a set of skills that subsequent employers have found very useful. Our former research assistants have later held jobs with the U.S. Bureau of Economic Analysis, the U.S. Bureau of Labor Statistics, the Department of Housing and Urban Development, the Federal Reserve Banks of Atlanta, Cleveland, and Philadelphia, the Governor's Action Team, and many private-sector firms both locally and around the country. Some of our Research Assistants have been co-authors with us on articles published in professional journals, and some have won awards for their presentations at research conferences.

## **Financial Support for ERIE**

The Institute's ongoing research program has been made possible through the support and cooperation of several groups both within and outside the University. The Black Family Endowment provides ongoing funds to keep ERIE up and running on an annual basis. Initial financial support for the establishment of the Institute was provided in part by a grant from the Manufacturer's Association of Northwest Pennsylvania. The Erie Regional Chamber and Growth Partnership provided major funding for the creation of our web site, ERIEdata.org. ERIE's quarterly *ERIE Leading Index* is sponsored by Marquette Savings Bank.

Additional support in the form of data contributions or funding for the annual conference or commissioned studies has been provided over the years by various firms, agencies and groups, including the Erie Community Foundation, United Way of Erie County, Marquette Savings Bank, the Erie Regional Chamber and Growth Partnership, the Economic Development Corporation of Erie County, the Workforce Investment Board of Northwest Pennsylvania, the Erie Conference on Community Development, the Center for Rural Pennsylvania, the Times Publishing Company, the Innovation Collaborative, Ben Franklin Technology Partners of Central and Northern PA, the Manufacturer and Business Association, Northwest Bank, Knox Law Firm, the Erie County Gaming Revenue Authority, and the Erie County and Corry Redevelopment Authorities. The University provides staff salaries, library and travel support, research facilities, partial support for student research assistants, and state of the art computer hardware and software.

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