

Economic Overview

Potter County, Pennsylvania



Demographic Profile	3
Employment Trends	5
Unemployment Rate	5
Wage Trends	6
Cost of Living Index	7
Industry Snapshot	8
Occupation Snapshot	10
Industry Clusters	12
Education Levels	13
Gross Domestic Product	14
Potter County, Pennsylvania Regional Map	16
FAQ	17



Demographic Profile

The population in Potter County, Pennsylvania was 16,390 per American Community Survey data for 2017-2021.

The region has a civilian labor force of 7,174 with a participation rate of 53.2%. Of individuals 25 to 64 in Potter County, Pennsylvania, 18.2% have a bachelor's degree or higher which compares with 35.8% in the nation.

The median household income in Potter County, Pennsylvania is \$56,491 and the median house value is \$135,200.

	Sum	imary-						
		Percent		Value				
	Potter County,	Demonstration	1164	Potter County,	Demonstration	115.4		
Demographics	Pennsylvania	Pennsylvania	USA	Pennsylvania	Pennsylvania	USA		
Population (ACS)	_	_	_	16,390	12,989,208	331,097,593		
Male	50.2%	49.4%	49.6%	8,220	6,410,766	164,200,298		
Female	49.8%	50.6%	50.4%	8,170	6,578,442	166,897,295		
Median Age ²				48.1	40.8	38.5		
Under 18 Years	20.3%	20.5%	22.1%	3,324	2,664,562	73,213,705		
18 to 24 Years	6.8%	9.2%	9.4%	1,119	1,196,563	31,282,896		
25 to 34 Years	9.8%	13.1%	13.7%	1,604	1,697,433	45,388,153		
35 to 44 Years	10.2%	12.1%	12.9%	1,668	1,573,905	42,810,359		
45 to 54 Years	11.9%	12.4%	12.4%	1,947	1,606,942	41,087,357		
55 to 64 Years	16.2%	14.0%	12.9%	2,651	1,815,398	42,577,475		
65 to 74 Years	14.4%	10.8%	9.7%	2,357	1,404,780	32,260,679		
75 Years and Over	10.5%	7.9%	6.8%	1,720	1,029,625	22,476,969		
Race: White	96.3%	77.1%	65.9%	15,784	10,010,379	218,123,424		
Race: Black or African American	0.5%	10.8%	12.5%	77	1,407,814	41,288,572		
Race: American Indian and Alaska Native	0.1%	0.2%	0.8%	21	20,570	2,786,431		
Race: Asian	0.5%	3.6%	5.8%	87	473,192	19,112,979		
Race: Native Hawaiian and Other Pacific Islander	0.0%	0.0%	0.2%	5	4,256	624,863		
Race: Some Other Race	0.3%	3.1%	6.0%	44	405,422	20,018,544		
Race: Two or More Races	2.3%	5.1%	8.8%	372	667,575	29,142,780		
Hispanic or Latino (of any race)	1.6%	8.1%	18.7%	255	1,055,108	61,755,866		
Population Growth								
Population (Pop Estimates) ⁴	_	-	_	16,220	12,972,008	333,287,557		
Population Annual Average Growth ⁴	-0.8%	0.2%	0.6%	-134	20,289	1,940,990		
People per Square Mile	_	_	_	15.0	289.9	94.3		
Economic								
Labor Force Participation Rate and Size (civilian population 16 years and over)	53.2%	62.8%	63.3%	7,174	6,680,740	167,857,207		
Prime-Age Labor Force Participation Rate and Size (civilian population 25-54)	78.0%	84.0%	82.8%	4,072	4,091,783	106,380,520		
Armed Forces Labor Force	0.0%	0.1%	0.5%	0	8,914	1,236,378		
Veterans, Age 18-64	6.3%	3.8%	4.3%	570	300,135	8,636,019		
Veterans Labor Force Participation Rate and Size, Age 18-64	68.4%	77.5%	77.1%	390	232,571	6,656,238		
Median Household Income ²	-	_	_	\$56,491	\$73,170	\$75,149		
Per Capita Income	_	_	_	\$29,629	\$41,234	\$41,261		
Mean Commute Time (minutes)	-	-	-	25.2	26.7	26.7		
Commute via Public Transportation	0.2%	4.3%	3.8%	14	266,593	5,945,723		
Educational Attainment, Age 25-64								
No High School Diploma	7.9%	7.3%	10.1%	622	487,694	17,373,867		
High School Graduate	46.8%	30.7%	25.1%	3,686	2,053,178	43,176,248		
Some College, No Degree	15.8%	15.9%	19.7%	1,240	1,062,434	33,916,989		

Summary¹



Summary¹

		Percent		Value				
	Potter County, Pennsylvania	Pennsylvania	USA	Potter County, Pennsylvania	Pennsylvania	USA		
Associate's Degree	11.3%	9.7%	9.2%	893	648,506	15,886,884		
Bachelor's Degree	12.3%	22.4%	22.4%	968	1,499,135	38,451,123		
Postgraduate Degree	5.9%	14.1%	13.4%	461	942,731	23,058,233		
Housing								
Total Housing Units	_	_	_	12,395	5,753,908	140,943,613		
Median House Value (of owner-occupied units) ^{2,5}	_	_	_	\$135,200	\$226,200	\$281,900		
Homeowner Vacancy	1.4%	1.0%	1.1%	80	38,375	931,393		
Rental Vacancy	1.1%	4.9%	5.5%	15	84,266	2,623,236		
Renter-Occupied Housing Units (% of Occupied Units)	20.0%	30.8%	35.2%	1,316	1,600,237	44,238,593		
Occupied Housing Units with No Vehicle Available (% of Occupied Units)	6.9%	10.6%	8.3%	452	548,519	10,474,870		
Social								
Poverty Level (of all people)	12.2%	11.8%	12.5%	1,975	1,482,439	40,521,584		
Households Receiving Food Stamps/SNAP	15.0%	13.6%	11.5%	989	708,782	14,486,880		
Enrolled in Grade 12 (% of total population)	1.0%	1.3%	1.4%	166	164,209	4,476,703		
Disconnected Youth ³	1.3%	2.4%	2.5%	9	16,293	430,795		
Children in Single Parent Families (% of all children)	24.2%	34.5%	34.0%	759	873,654	23,568,955		
Uninsured	6.8%	5.6%	8.7%	1,101	719,332	28,315,092		
With a Disability, Age 18-64	15.8%	11.4%	10.5%	1,406	889,606	20,879,820		
With a Disability, Age 18-64, Labor Force Participation Rate and Size	30.9%	45.0%	45.5%	435	400,584	9,492,098		
Foreign Born	1.3%	7.3%	13.7%	215	941,805	45,281,071		
Speak English Less Than Very Well (population 5 yrs and over)	1.3%	4.5%	8.2%	206	558,725	25,704,846		

Source: JobsEQ®

1. American Community Survey 2018-2022, unless noted otherwise

2. Median values for certain aggregate regions (such as MSAs) may be estimated as the weighted averages of the median values from the composing counties.

3. Disconnected Youth are 16-19 year olds who are (1) not in school, (2) not high school graduates, and (3) either unemployed or not in the labor force.

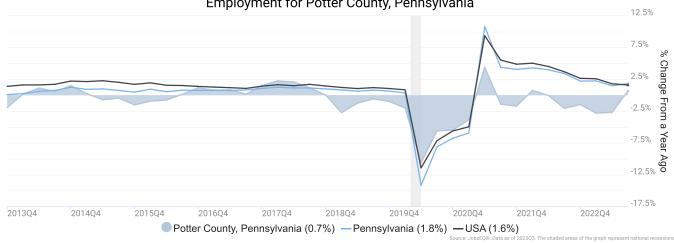
4. Census Population Estimate for 2022, annual average growth rate since 2012. Post-2019 data for Connecticut counties are imputed by Chmura.

5. The Census's method for calculating median house values changed with the 2022 data set, so pre-2022 values are not directly comparable with later data.



Employment Trends

As of 2023Q3, total employment for Potter County, Pennsylvania was 5,567 (based on a four-quarter moving average). Over the year ending 2023Q3, employment increased 0.7% in the region.

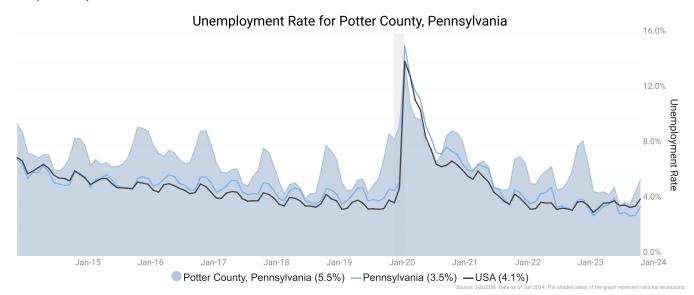


Employment for Potter County, Pennsylvania

Employment data are derived from the Quarterly Census of Employment and Wages, provided by the Bureau of Labor Statistics and imputed where necessary. Data are updated through 2023Q2 with preliminary estimates updated to 2023Q3

Unemployment Rate

The unemployment rate for Potter County, Pennsylvania was 5.5% as of January 2024. The regional unemployment rate was higher than the national rate of 4.1%. One year earlier, in January 2023, the unemployment rate in Potter County, Pennsylvania was 7.9%.

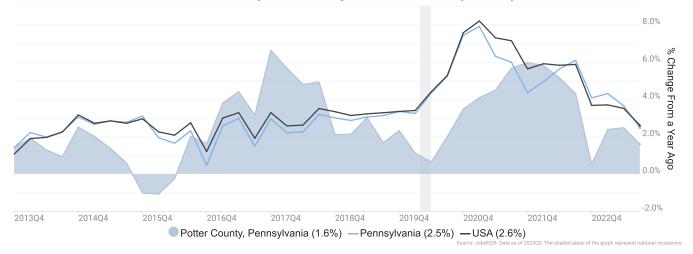


Unemployment rate data are from the Local Area Unemployment Statistics, provided by the Bureau of Labor Statistics and updated through January 2024.



Wage Trends

The average worker in Potter County, Pennsylvania earned annual wages of \$47,433 as of 2023Q3. Average annual wages per worker increased 1.6% in the region over the preceding four quarters. For comparison purposes, annual average wages were \$70,183 in the nation as of 2023Q3.



Average Annual Wages for Potter County, Pennsylvania

Annual average wages per worker data are derived from the Quarterly Census of Employment and Wages, provided by the Bureau of Labor Statistics and imputed where necessary. Data are updated through 2023Q2 with preliminary estimates updated to 2023Q3.



Cost of Living Index

The Cost of Living Index estimates the relative price levels for consumer goods and services. When applied to wages and salaries, the result is a measure of relative purchasing power. The cost of living is 10.4% lower in Potter County, Pennsylvania than the U.S. average.

Cost of Living Information

		Cost of Living Inde	x
	Annual Average Salary	(Base US)	US Purchasing Power
Potter County, Pennsylvania	\$47,433	89.6	\$52,932
Pennsylvania	\$67,715	101.2	\$66,922
USA	\$70,183	100.0	\$70,183

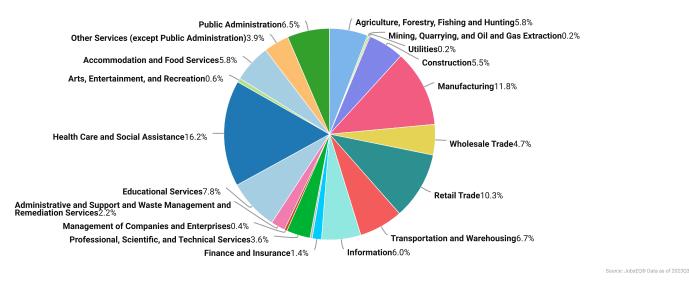
Source: JobsEQ[®] Data as of 2023Q3

Cost of Living per $\underline{\text{COLI}}$, data as of 2023Q3, imputed by Chmura where necessary.



Industry Snapshot

The largest sector in Potter County, Pennsylvania is Health Care and Social Assistance, employing 904 workers. The next-largest sectors in the region are Manufacturing (655 workers) and Retail Trade (574). High location quotients (LQs) indicate sectors in which a region has high concentrations of employment compared to the national average. The sectors with the largest LQs in the region are Agriculture, Forestry, Fishing and Hunting (LQ = 4.60), Information (3.01), and Manufacturing (1.46).



Total Workers for Potter County, Pennsylvania by Industry

Employment data are derived from the Quarterly Census of Employment and Wages, provided by the Bureau of Labor Statistics and imputed where necessary. Data are updated through 2023Q2 with preliminary estimates updated to 2023Q3.

Sectors in Potter County, Pennsylvania with the highest average wages per worker are Management of Companies and Enterprises (\$99,887), Transportation and Warehousing (\$73,745), and Professional, Scientific, and Technical Services (\$65,474). Regional sectors with the best job growth (or most moderate job losses) over the last 5 years are Agriculture, Forestry, Fishing and Hunting (+11 jobs), Wholesale Trade (+8), and Public Administration (+7).

Over the next 1 year, employment in Potter County, Pennsylvania is projected to contract by 85 jobs. The fastest growing sector in the region is expected to be Health Care and Social Assistance with a -0.7% year-over-year rate of growth. The strongest forecast by number of jobs over this period is expected for Arts, Entertainment, and Recreation (0 jobs), Management of Companies and Enterprises (0), and Real Estate and Rental and Leasing (0).



Potter County, Pennsylvania, 2023Q3¹

			Current		5-Year	History		1-Year Forecast				
NAICS	Industry	Empl	Avg Ann Wages	LQ	Empl Change	Ann %	Total Demand	Exits	Transfers	Empl Growth	Ann % Growth	
62	Health Care and Social Assistance	904	\$60,280	1.12	-158	-3.2%	81	42	46	-7	-0.7%	
31	Manufacturing	655	\$54,116	1.46	-49	-1.4%	60	26	39	-6	-0.9%	
44	Retail Trade	574	\$28,861	1.04	-31	-1.0%	65	35	43	-13	-2.3%	
61	Educational Services	433	\$37,692	0.98	-2	-0.1%	34	20	21	-7	-1.6%	
48	Transportation and Warehousing	374	\$73,745	1.36	-153	-6.6%	34	18	23	-6	-1.7%	
92	Public Administration	360	\$39,077	1.41	7	0.4%	26	15	18	-6	-1.8%	
51	Information	334	\$56,332	3.01	-1	-0.1%	23	12	18	-6	-1.9%	
11	Agriculture, Forestry, Fishing and Hunting	325	\$32,787	4.60	11	0.7%	31	19	20	-8	-2.4%	
72	Accommodation and Food Services	323	\$15,590	0.67	7	0.5%	51	26	31	-5	-1.7%	
23	Construction	306	\$53,931	0.92	-66	-3.8%	21	11	16	-5	-1.7%	
42	Wholesale Trade	260	\$42,548	1.24	8	0.6%	21	10	16	-5	-2.1%	
81	Other Services (except Public Administration)	216	\$19,829	0.91	-5	-0.5%	21	11	14	-4	-1.7%	
54	Professional, Scientific, and Technical Services	203	\$65,474	0.50	-4	-0.4%	14	7	10	-2	-1.0%	
56	Administrative and Support and Waste Management and Remediation Services	122	\$31,776	0.35	-88	-10.3%	12	6	8	-2	-1.7%	
52	Finance and Insurance	79	\$56,479	0.36	-1	-0.2%	5	3	4	-1	-1.6%	
71	Arts, Entertainment, and Recreation	34	\$16,862	0.32	0	-0.1%	5	2	3	0	-1.0%	
55	Management of Companies and Enterprises	23	\$99,887	0.26	-20	-11.7%	2	1	1	0	-0.8%	
53	Real Estate and Rental and Leasing	19	\$45,993	0.19	3	3.7%	2	1	1	0	-1.5%	
21	Mining, Quarrying, and Oil and Gas Extraction	14	\$41,090	0.69	-35	-22.4%	1	0	1	0	-1.9%	
22	Utilities	10	\$60,763	0.36	-14	-16.0%	1	0	1	0	-2.0%	
	Total - All Industries	5,567	\$47,433	1.00	-592	-2.0%	518	266	337	-85	-1.5%	

Source: JobsEQ®

Data as of 2023Q3

Note: Figures may not sum due to rounding.

1. All data based upon a four-quarter moving average

Exits and transfers are approximate estimates based upon occupation separation rates. Employment data are derived from the Quarterly Census of Employment and Wages, provided by the Bureau of Labor Statistics and imputed where necessary. Data are updated through 2023Q2 with preliminary estimates updated to 2023Q3. Forecast employment growth uses national projections adapted for regional growth patterns.



Occupation Snapshot

The largest major occupation group in Potter County, Pennsylvania is Office and Administrative Support Occupations, employing 611 workers. The next-largest occupation groups in the region are Sales and Related Occupations (500 workers) and Management Occupations (492). High location quotients (LQs) indicate occupation groups in which a region has high concentrations of employment compared to the national average. The major groups with the largest LQs in the region are Farming, Fishing, and Forestry Occupations (LQ = 3.39), Production Occupations (1.41), and Community and Social Service Occupations (1.41).

Occupation groups in Potter County, Pennsylvania with the highest average wages per worker are Management Occupations (\$94,700), Legal Occupations (\$86,800), and Architecture and Engineering Occupations (\$79,700). The unemployment rate in the region varied among the major groups from 1.7% among Legal Occupations to 8.6% among Food Preparation and Serving Related Occupations.

Over the next 1 year, the fastest growing occupation group in Potter County, Pennsylvania is expected to be Healthcare Support Occupations with a -0.3% year-over-year rate of growth. The strongest forecast by number of jobs over this period is expected for Architecture and Engineering Occupations (0 jobs) and Legal Occupations (0). Over the same period, the highest separation demand (occupation demand due to retirements and workers moving from one occupation to another) is expected in Office and Administrative Support Occupations (63 jobs) and Sales and Related Occupations (61).

			Current					5-Year History				1-Year Forecast			
SOC	Occupation	Empl	Mean Ann Wages ²	LQ	Unempl	Unempl Rate	Online Job Ads ³	Empl Change	Ann %	Total Demand	Exits	Transfers	Empl Growth	Ann % Growth	
43-0000	Office and Administrative Support	611	\$40,900	0.91	39	4.9%	42	-106	-3.1%	48	30	33	-15	-2.5%	
41-0000	Sales and Related	500	\$42,800	1.01	44	6.8%	29	-5	-0.2%	50	27	34	-11	-2.3%	
11-0000	Management	492	\$94,700	1.17	11	2.1%	11	-2	-0.1%	30	18	20	-8	-1.7%	
53-0000	Transportation and Material Moving	469	\$41,900	0.96	58	7.6%	8	-167	-5.9%	48	24	31	-7	-1.5%	
51-0000	Production	440	\$44,100	1.41	41	6.2%	11	-47	-2.0%	39	18	27	-5	-1.2%	
29-0000	Healthcare Practitioners and Technical	373	\$78,000	1.15	10	2.6%	138	-61	-3.0%	16	11	9	-4	-1.1%	
25-0000	Educational Instruction and Library	326	\$56,200	1.10	14	4.2%	10	3	0.2%	21	13	13	-5	-1.4%	
35-0000	Food Preparation and Serving Related	320	\$27,400	0.71	40	8.6%	21	-4	-0.2%	51	25	31	-5	-1.7%	
49-0000	Installation, Maintenance, and Repair	301	\$55,900	1.39	11	2.9%	11	-23	-1.5%	21	11	15	-4	-1.4%	
47-0000	Construction and Extraction	273	\$50,500	1.08	28	7.6%	7	-74	-4.7%	18	9	13	-4	-1.6%	
31-0000	Healthcare Support	249	\$31,600	1.00	20	5.8%	50	-18	-1.4%	32	16	17	-1	-0.3%	
13-0000	Business and Financial Operations	236	\$68,100	0.67	9	3.4%	12	1	0.1%	15	7	11	-3	-1.3%	
37-0000	Building and Grounds Cleaning and Maintenance	143	\$32,300	0.78	18	7.7%	7	-17	-2.3%	16	8	10	-2	-1.6%	
21-0000	Community and Social Service	142	\$48,000	1.41	4	3.2%	38	-16	-2.1%	11	5	6	-1	-0.4%	
15-0000	Computer and Mathematical	134	\$78,900	0.75	5	3.1%	17	-2	-0.3%	6	3	5	-1	-1.1%	
33-0000	Protective Service	121	\$54,100	1.02	8	5.4%	13	1	0.1%	11	6	6	-2	-1.7%	
45-0000	Farming, Fishing, and Forestry	113	\$37,100	3.39	8	7.2%	n/a	13	2.6%	12	6	9	-3	-2.3%	

Potter County, Pennsylvania, 2023Q31



Potter County, Pennsylvania, 2023Q31

			Current					5-Year History				1-Year Forecast			
SOC	Occupation	Empl	Mean Ann Wages ²	LQ	Unempl	Unempl Rate	Online Job Ads ³	Empl Change	Ann %	Total Demand	Exits	Transfers	Empl Growth	Ann % Growth	
39-0000	Personal Care and Service	97	\$30,700	0.70	7	6.5%	2	-6	-1.3%	14	6	9	-1	-1.1%	
17-0000	Architecture and Engineering	87	\$79,700	0.97	2	2.7%	4	-26	-5.1%	5	2	3	0	-0.3%	
27-0000	Arts, Design, Entertainment, Sports, and Media	66	\$50,200	0.64	4	6.4%	4	-1	-0.4%	5	3	3	-1	-1.5%	
23-0000	Legal	37	\$86,800	0.81	1	1.7%	n/a	0	-0.2%	2	1	1	0	-1.3%	
19-0000	Life, Physical, and Social Science	36	\$72,200	0.74	1	3.4%	11	-5	-2.4%	3	1	2	0	-0.9%	
	Total - All Occupations	5,567	\$52,900	1.00	384	5.5%	445	-562	-1.9%	474	251	308	-85	-1.5%	

Source: JobsEQ®

Data as of 2023Q3 unless noted otherwise

Note: Figures may not sum due to rounding.

1. Data based on a four-quarter moving average unless noted otherwise.

2. Wage data represent the average for all Covered Employment

3. Data represent found online ads active within the last thirty days in the selected region. Due to alternative county-assignment algorithms, ad counts in this analytic may not match that shown in RTI (nor in the popup window ad list). Ad counts for ZCTA-based regions are estimates.

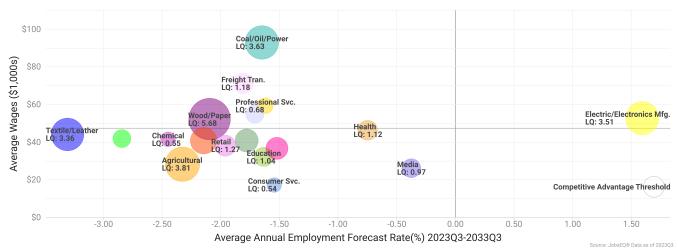
Occupation employment data are estimated via industry employment data and the estimated industry/occupation mix. Industry employment data are derived from the Quarterly Census of

Employment and Wages, provided by the Bureau of Labor Statistics and currently updated through 2023Q2, imputed where necessary with preliminary estimates updated to 2023Q3. Wages by occupation are as of 2023 provided by the BLS and imputed where necessary. Forecast employment growth uses national projections from the Bureau of Labor Statistics adapted for regional growth patterns.



Industry Clusters

A cluster is a geographic concentration of interrelated industries or occupations. The industry cluster in Potter County, Pennsylvania with the highest relative concentration is Wood/Paper with a location quotient of 5.68. This cluster employs 242 workers in the region with an average wage of \$52,120. Employment in the Wood/Paper cluster is projected to contract in the region about 2.1% per year over the next ten years.



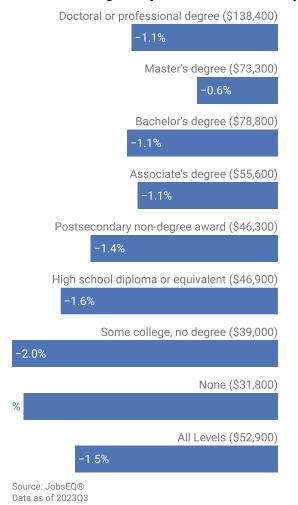
Industry Clusters for Potter County, Pennsylvania as of 2023Q3

Location quotient and average wage data are derived from the Quarterly Census of Employment and Wages, provided by the Bureau of Labor Statistics, imputed where necessary, and updated through 2023Q2 with preliminary estimates updated to 2023Q3. Forecast employment growth uses national projections from the Bureau of Labor Statistics adapted for regional growth patterns.



Education Levels

Expected growth rates for occupations vary by the education and training required. While all employment in Potter County, Pennsylvania is projected to contract 1.5% over the next ten years, occupations typically requiring a postgraduate degree are expected to contract 1.1% per year, those requiring a bachelor's degree are forecast to contract 1.1% per year, and occupations typically needing a 2-year degree or certificate are expected to contract 1.1% per year.



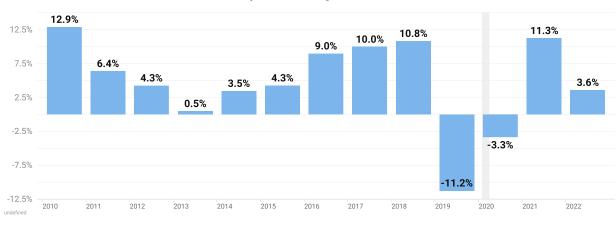
Annual Average Projected Job Growth by Education Levels

Employment by occupation data are estimates are as of 2023Q3. Education levels of occupations are based on BLS assignments. Forecast employment growth uses national projections from the Bureau of Labor Statistics adapted for regional growth patterns.



Gross Domestic Product

Gross Domestic Product (GDP) is the total value of goods and services produced by a region. In 2022, nominal GDP in Potter County, Pennsylvania expanded 3.6%. This follows growth of 11.3% in 2021. As of 2022, total GDP in Potter County, Pennsylvania was \$867,025,000.



1 year % Change in GDP

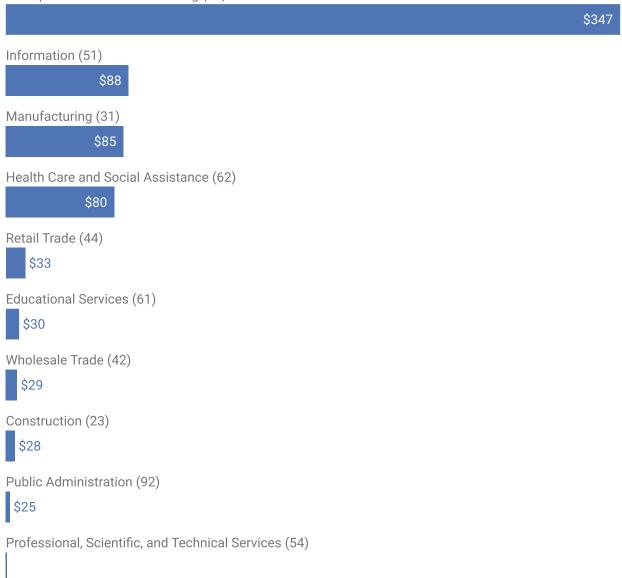
Gross Domestic Product data are provided by the Bureau of Economic Analysis, imputed by Chmura where necessary, updated through 2022.

Of the sectors in Potter County, Pennsylvania, Transportation and Warehousing contributed the largest portion of GDP in 2022, \$347,113,000 The next-largest contributions came from Information (\$88,016,000); Manufacturing (\$85,241,000); and Health Care and Social Assistance (\$80,133,000).



GDP (in \$ millions)

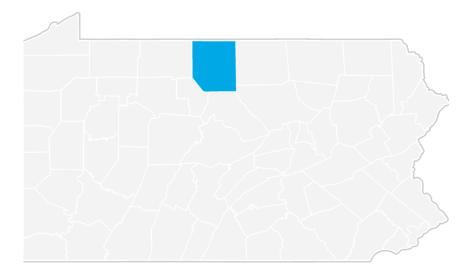
Transportation and Warehousing (48)



Gross Domestic Product data are provided by the Bureau of Economic Analysis, imputed by Chmura where necessary, updated through 2022.



Potter County, Pennsylvania Regional Map





FAQ

What is a location quotient?

A location quotient (LQ) is a measurement of concentration in comparison to the nation. An LQ of 1.00 indicates a region has the same concentration of an industry (or occupation) as the nation. An LQ of 2.00 would mean the region has twice the expected employment compared to the nation and an LQ of 0.50 would mean the region has half the expected employment in comparison to the nation.

What is separation demand?

Separation demand is the number of jobs required due to separations—labor force exits (including retirements) and turnover resulting from workers moving from one occupation into another. Note that separation demand does not include all turnover—it does not include when workers stay in the same occupation but switch employers. The total projected demand for an occupation is the sum of the separation demand and the growth demand (which is the increase or decrease of jobs in an occupation expected due to expansion or contraction of the overall number of jobs in that occupation).

What is a cluster?

A cluster is a geographic concentration of interrelated industries or occupations. If a regional cluster has a location quotient of 1.25 or greater, the region is considered to possess a competitive advantage in that cluster.

What is the difference between industry wages and occupation wages?

Industry wages and occupation wages are estimated via separate data sets, often the time periods being reported do not align, and wages are defined slightly differently in the two systems (for example, certain bonuses are included in the industry wages but not the occupation wages). It is therefore common that estimates of the average industry wages and average occupation wages in a region do not match exactly.

What is NAICS?

The North American Industry Classification System (NAICS) is used to classify business establishments according to the type of economic activity. The NAICS Code comprises six levels, from the "all industry" level to the 6-digit level. The first two digits define the top level category, known as the "sector," which is the level examined in this report.

What is SOC?

The Standard Occupational Classification system (SOC) is used to classify workers into occupational categories. All workers are classified into one of over 804 occupations according to their occupational definition. To facilitate classification, occupations are combined to form 22 major groups, 95 minor groups, and 452 occupation groups. Each occupation group includes detailed occupations requiring similar job duties, skills, education, or experience.

About This Report



This report and all data herein were produced by JobsEQ®, a product of Chmura Economics & Analytics. The information contained herein was obtained from sources we believe to be reliable. However, we cannot guarantee its accuracy and completeness.