Beaver County Data Analysis: 2026 Update

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Introduction

It has been over three years since Shell began operations at its massive petrochemical facility in Beaver County, Pennsylvania. The plant converts ethane into resin pellets used to make single-use plastics.[1]

This brief is the Ohio River Valley Institute's fourth installment of periodic reports that track Beaver County's economic performance relative to Pennsylvania and the rest of the United States. The latest data from a range of economic indicators demonstrate a continuation of the trends ORVI identified in previous reports. Analysis shows there is no evidence that the plant has boosted the county economically. **In fact, when compared to the rest of the state and the US, data show that Beaver County has underperformed on jobs, growth, and business creation.**

In 2012, Shell and its backers pitched the petrochemical facility to residents and officials as a tremendous opportunity for the local economy, promising tens of thousands of indirect and induced jobs in spinoff production and manufacturing industries.[2] Shell financed two methodologically flawed

economic impact studies by researchers at Robert Morris University (RMU), which were then used to justify the historic public subsidies for the plant. An ORVI analysis later revealed these studies were deeply flawed, projecting unrealistic job-creation estimates and inflated economic benefits.[3]

But Shell's plan worked. To entice Shell to locate in Pennsylvania, state lawmakers enacted the largest-ever subsidy in Pennsylvania history: a tax break valued at up to $1.65 billion.[4] Not only has the petrochemicals complex in Beaver County failed to boost the local economy, but an investigation by ORVI researchers also shows that Shell has sold off tens of millions of dollars of its PA tax credits originally intended to support local petrochemicals growth. These were sold largely to out-of-state insurance firms and other financial companies unrelated to petrochemicals manufacturing.[5]

For context, the economic performance data reported in this research brief are shown in comparison to the state of Pennsylvania and the United States. The economic trends are pegged to zero in 2012, when Shell first announced plans to build in Beaver County, with subsequent years shown as percentage change from that starting point.

All the data for figures in this report are publicly available online from US government agencies, such as the Census Bureau, the Bureau of Labor Statistics, and the Bureau of Economic Analysis.

GDP

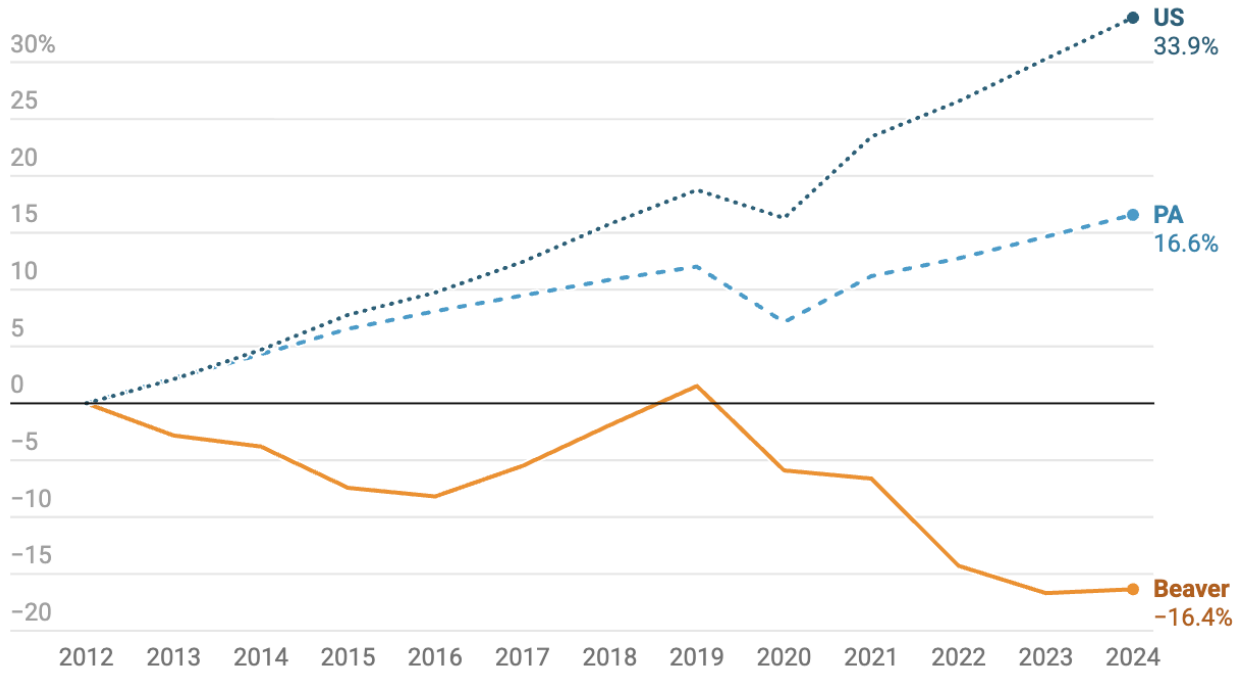
GDP Dashboard

Real GDP (2012-2024):
Beaver: -16.35%
Pennsylvania: +16.58%
US: +33.91%

Gross domestic product (GDP) is a measurement of total economic productivity, including consumption, investment, government spending, and net exports. It is, in short, an estimate of all the final goods and services produced in an area and is commonly used to compare size and growth across economies.[6] The metric is adjusted for inflation, called **real GDP**, and is calculated from thousands of data points and reported frequently by the US Bureau of Economic Analysis (BEA). It has been updated with revised estimates since the last report.[7] All references to GDP in this report, unless otherwise specified, refer to inflation-adjusted real GDP.

Since 2012, real GDP has grown both in Pennsylvania and nationally, apart from a brief decline during 2020 as a result of the COVID-19 pandemic, which was nearly universal. Over the same period, Beaver County's economy has contracted, with GDP falling by more than 16.3%. Beaver County's GDP, like Pennsylvania's and the rest of the US, suffered as a result of the pandemic. But whereas new data show Pennsylvania and the US economy quickly rebounding with strong and consistent GDP growth since 2021, Beaver County's GDP has continued to decline every year since 2019. Furthermore, revised data for the previous four years show Beaver County's GDP was lower than previously estimated, while Pennsylvania and US GDP were revised *higher*.

Figure 1: Beaver County GDP Declined as State and National GDP Grew Consistently
Percent change in real GDP, 2012-2024

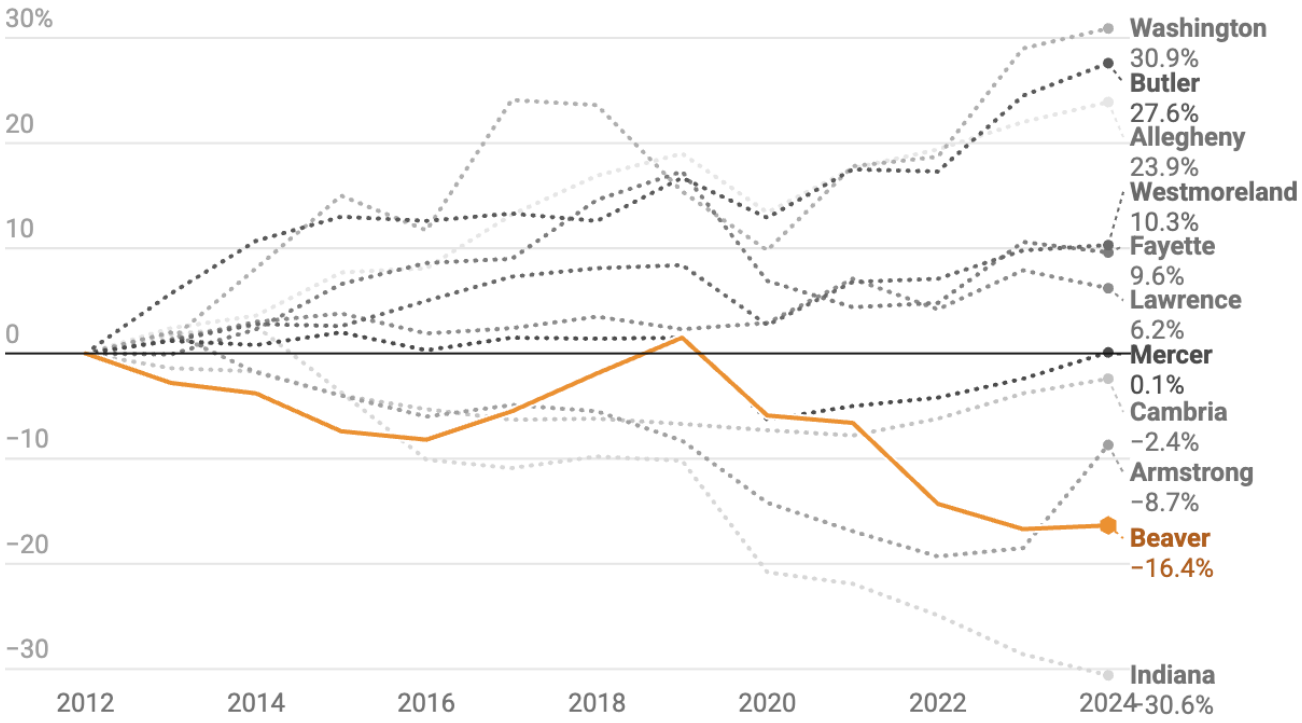


Source: US Bureau of Economic Analysis

When compared to neighboring counties in the region, there is no evidence that the Shell plant has boosted the county economically when compared to its surrounding communities. In fact, federal data show that Beaver County's GDP declined at a steeper rate than neighboring counties in the region. When compared to ten other counties in western Pennsylvania, Beaver County experienced the second biggest slump in GDP since 2012 (Figure 2).[8]

Figure 2: Beaver County GDP Underperforms Neighboring Counties in Western PA

Percent change in real GDP, 2012-2024



Source: US Bureau of Economic Analysis

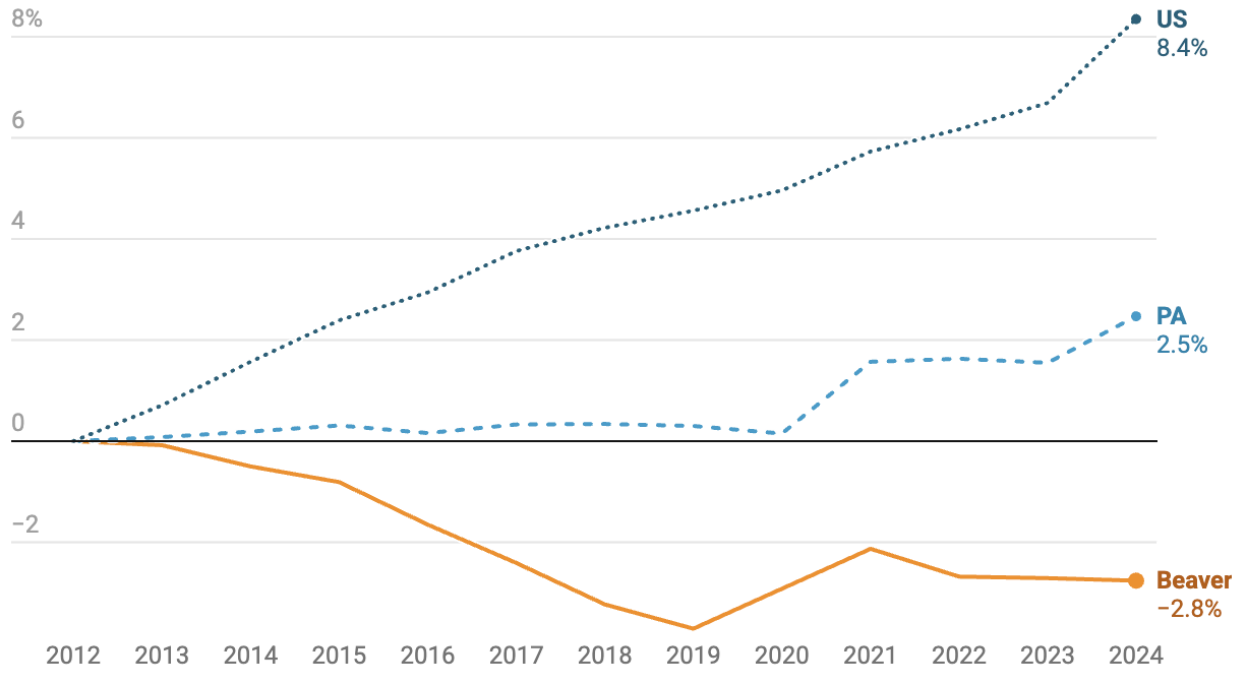
Population

Population Dashboard

Population (2012-2024):
Beaver: -2.76%
Pennsylvania: +2.47%
US: +8.35%

Population growth can indicate a healthy economy; long-term decline or stagnation can signal a community is struggling.[9] There are fewer people living in Beaver County today than in 2012, when Shell first publicly announced its plans for the petrochemical facility. While Beaver County's population declined by 2.7% between 2012 and 2024, the rest of Pennsylvania and the US have seen their populations increase by 2.5% and 8.3%, respectively.[10]

Figure 3: Beaver County Saw Population Decline While Pennsylvania, United States Saw Growth
Percent change in population, 2012-2024



Source: US Census Bureau, American Community Survey

Employment

Employment Dashboard

QCEW (2012-2025):
Beaver: -11.25%
Pennsylvania: +8.50%
US: +18.22%

LAUS (2012-2025):
Beaver: -1.85%
Pennsylvania: +4.81%
US: +14.75%

This analysis looks at two different measures of local employment published by the Bureau of Labor Statistics (BLS). The first is the "Quarterly Census of Employment and Wages" (QCEW), a business survey that tracks jobs covered by unemployment insurance.[11] The QCEW employment count is based on employer-reported data as part of state unemployment insurance programs. The other comes from the BLS's "Local Area Unemployment" statistics, which track monthly state model-based estimates built primarily on data from the Census Bureau's Current Population Survey, which is a survey of households rather than employers.[12]

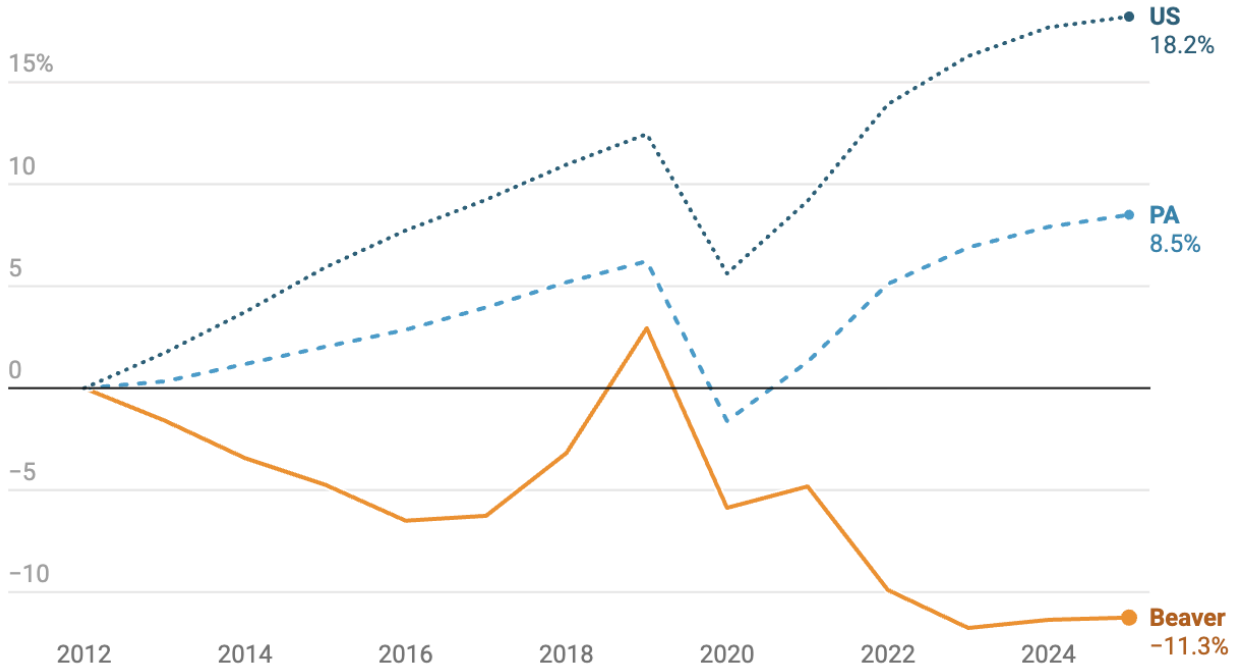
Job creation was one of the central "selling points" of Shell's pitch to local politicians and state lawmakers. According to the Shell-financed study, the facility was projected to either create or support between 5,300 and 6,700 new direct, indirect, and induced jobs in the region.

Beaver County saw a temporary boost in jobs between 2017 and 2019 relative to 2012, presumably thanks to an influx of out-of-county construction jobs during the facility's peak construction period. Despite this brief upswing, the long-term job creation promised by Shell and its boosters has not materialized. **By both BLS counts, there are fewer total jobs in Beaver County today than there were in 2012.**

Bureau of Labor Statistics Quarterly Census of Employment and Wages (QCEW)

According to the Quarterly Census of Employment and Wages, there were 6,310 fewer employed people in Beaver County in 2025 than in 2012, an 11.5% decline. Over the same time period, the rest of Pennsylvania and the US as a whole saw the number of employed people rise by 8.2% and 17.9%, respectively, apart from a brief pandemic-induced decline in 2020. Still, statewide and national employment gains have largely plateaued since 2024. Revised data for 2024 also show higher employment in Beaver County in 2024 than previously estimated.

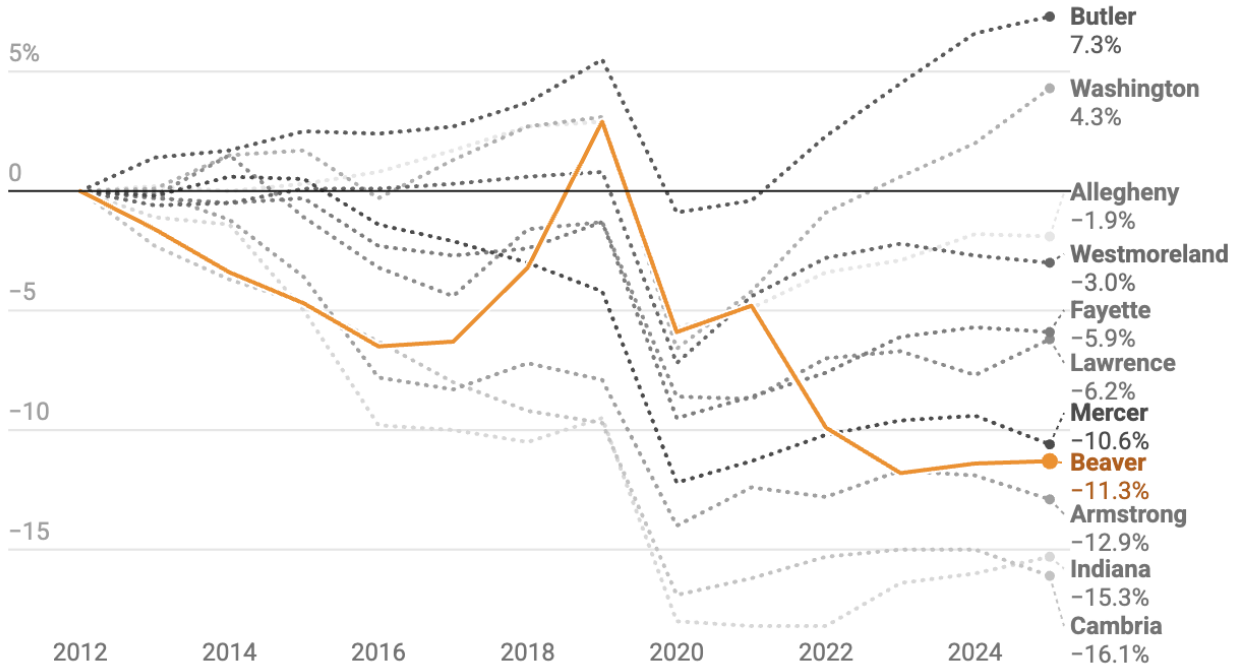
Figure 4: Beaver County Employment Fell While Pennsylvania, US Saw Significant Gains
Percent change in employment (QCEW), 2012-2025



Source: US Bureau of Labor Statistics, Quarterly Census of Employment and Wages

An analysis of federal employment data of ten surrounding counties in western Pennsylvania shows that Beaver County isn't any "better off" today thanks to the Shell Polymers Monaca plant. In fact, an analysis of Bureau of Labor Statistics Quarterly Census of Employment of Wages data shows that post-pandemic employment in Beaver County has failed to keep up with surrounding communities.

Figure 5: Federal Jobs Numbers Show Beaver County Trailed Neighboring PA Counties
Percent change in employment, 2012-2025



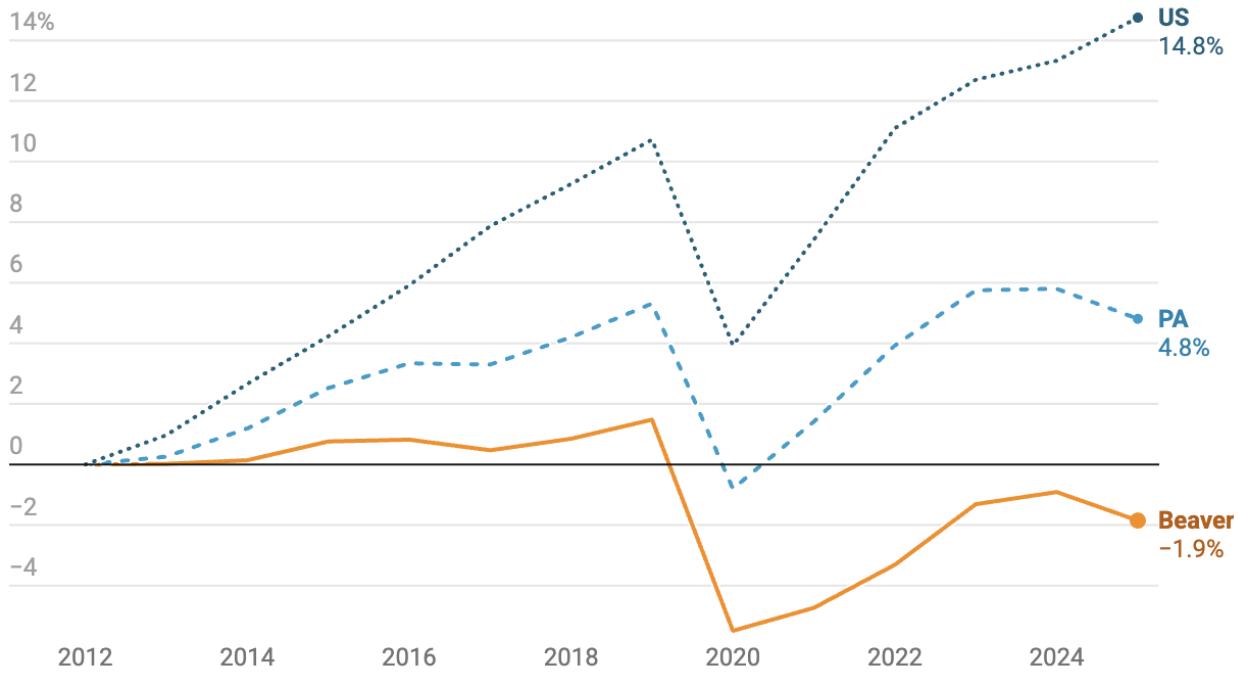
Source: US Bureau of Labor Statistics, Quarterly Census of Employment & Wages

US Bureau of Labor Statistics, Local Area Unemployment Statistics (LAUS)

Whereas the BLS QCEW program relies on employer-reported data as part of state unemployment insurance programs, the US Bureau of Labor Statistics' Local Area Unemployment Statistics program tracks monthly state model-based estimates built primarily on data from the Census Bureau's Current Population Survey, a survey of households.[13]

By this measure, the number of employed people in Beaver County saw negligible gains between 2012 until the pandemic-induced recession in 2020, compared to consistent growth at the state and national level. Since then, LAUS data show that employment in Beaver County has since rebounded, mirroring statewide and national trends. Preliminary data from 2025 show that job gains in Beaver County have plateaued. Similar to QCEW data, LAUS data also show there were fewer total employed people in Beaver County in 2025 than there were in 2012.

Figure 6: Beaver County Job Growth Did Not Keep Pace With Pennsylvania and the US
Percent change in employment, 2012-2025[14]



Source: US Bureau of Labor Statistics, Local Area Unemployment Statistics

Number of Businesses

Businesses Dashboard

SUSB Firms (2012-2022):
Beaver: -3.32%
Pennsylvania: +2.36%
US: +11.69%

SUSB Establishments (2012-2022):
Beaver: -1.94%
Pennsylvania: +3.64%
US: +11.66%

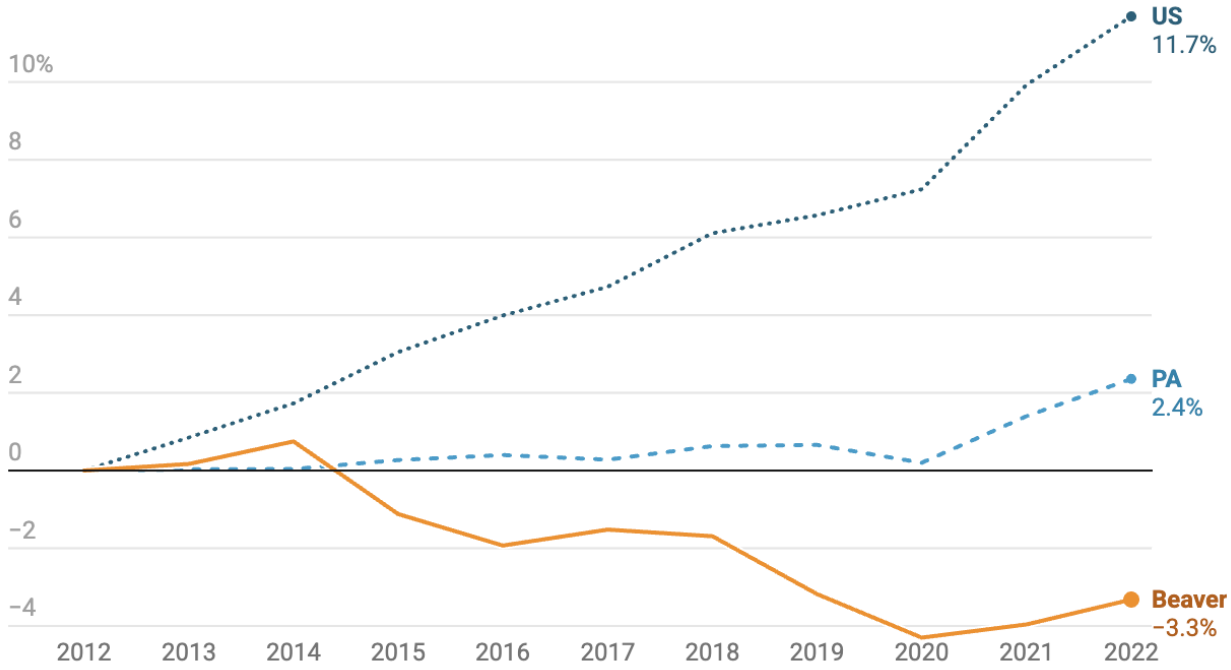
QCEW Establishments (2012-2025):
Beaver: -4.00%
Pennsylvania: +12.50%
US: +34.20%

The federal government tracks the number of businesses in American geographies in a number of ways. In this report, we examine the figures published by the Census Bureau and the Bureau of Labor Statistics. In its "Statistics of US Businesses" (SUSB), the Census Bureau tracks "firms," or businesses consisting of one or more domestic establishments in the same geographic area and industry, as well as "establishments," or single physical locations at which business is conducted.[15] The Bureau of Labor Statistics' Quarterly Census of Employment of Wages (QCEW) also tracks annual data on the number of businesses at the county, state, and national levels.

Contrary to the promises made by Shell and its investors, the petrochemical plant did not spur a windfall of economic opportunity marked by an influx of jobs and businesses generated as support industries.[16] Instead, since 2012 **Beaver County lost businesses, while the number of businesses grew across the rest of Pennsylvania and the United States.**

Between 2012 and 2022, the most recent year for which SUSB data is available, the number of business firms–businesses consisting of one or more domestic establishments in the same geographic area–fell by 3.3%. Over the same time period, the number of business firms grew statewide and nationally, by 2.4% and 11.7%, respectively.

Figure 7: Beaver County Lost Businesses Despite Statewide and National Growth
Percent change in number of firms, 2012-2022

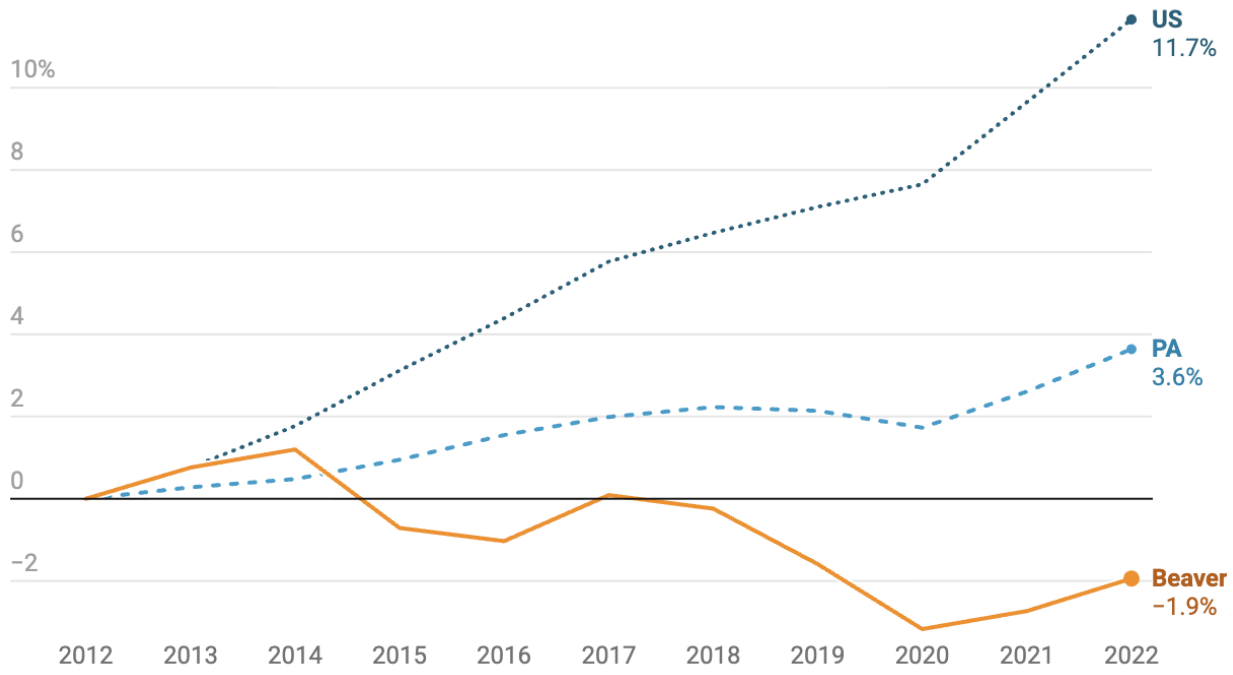


Source: US Census Bureau, Statistics of US Businesses

Federal data on the number of business establishments (a single physical location at which business is conducted) show similar findings. Between 2012 and 2022, the number of business establishments in Beaver County fell by 1.9%. Meanwhile, over the same period both Pennsylvania and the US saw gains in business establishments, by 3.6% and 11.6%, respectively.

Figure 8: Federal Business Data Shows Decade-Long Decline in Beaver County Business Numbers

Percent change in number of establishments, 2012-2022

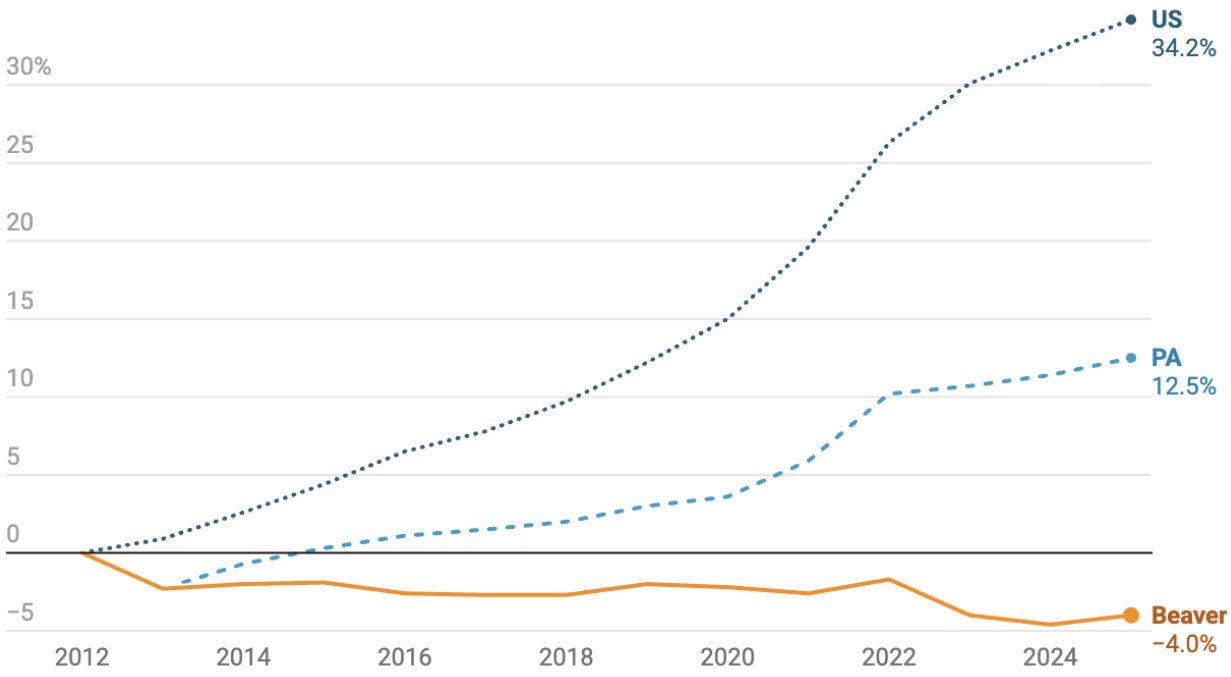


Source: US Census Bureau, Statistics of US Businesses

The Bureau of Labor Statistics' QCEW dataset incorporates newer data, with data available through 2025. This measure shows similar findings to the Census' SUSB. Pennsylvania and the rest of the US added business establishments, growing at a steep rate of 12.5% and 34.2%, respectively, between 2012 and 2025. Meanwhile, Beaver County had over 4% fewer establishments in 2025 than it did in 2012.

Figure 9: Beaver County Loses Businesses, Despite State and National Increases

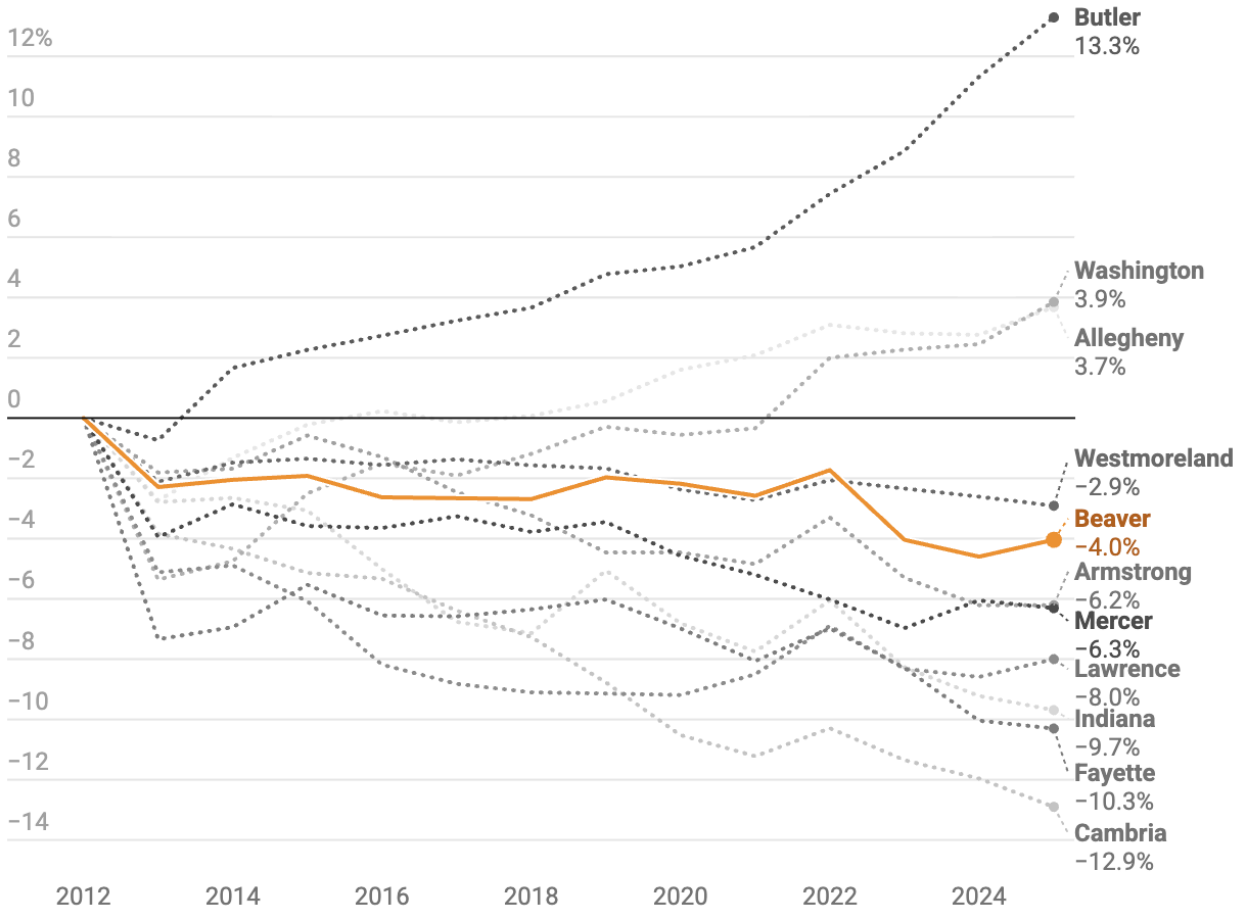
Percent change in number of establishments, 2012-2025



Source: US Bureau of Labor Statistics, Quarterly Census of Employment and Wages

Despite promises that Shell's facility would spur the creation of other businesses, there is little evidence that this has happened. In fact, the change in the number of business establishments tracks almost exactly in the middle of the performance of its nearest neighboring counties in western Pennsylvania, which had no comparable petrochemical project developed.

Figure 10: Comparing Number of Business Establishments (QCEW) Across Western PA
Percent change in number of establishments, 2012-2025



Source: US Bureau of Labor Statistics, Quarterly Census of Employment and Wages

Poverty

Economic trends often carry significant consequences for lower-income households. Fluctuations in employment and overall economic conditions can disproportionately impact lower-wage earners and their families.

The Census Bureau tracks poverty and child poverty rates in local areas in two principal ways: through the Small Area Income and Poverty Estimates (SAIPE) program and through the American Community Survey (ACS). The poverty rate is the percentage of people earning less than the federal poverty line, which is set at $15,060 annually for one person or $31,200 for a family of four in 2024 dollars (the most recent year for which SAIPE and ACS data are available) and is adjusted annually for inflation.[17] The child poverty rate is the share of children living in households below the federal poverty line.[18]

At the national and state levels, poverty rates have been slowly declining for more than a decade, and Beaver County is no exception to this positive trend. Unfortunately, the trend in Beaver County is less positive than it is across the state or the nation. While the county once enjoyed significantly lower rates of poverty and child poverty, the gap has now nearly closed.

Poverty Dashboard

SAIPE Poverty Rate (2024):
- Beaver: 11.2%
- Pennsylvania: 11.6%
- US: 12.1%

SAIPE Child Poverty Rate (2024):
- Beaver: 15.0%
- Pennsylvania: 15.3%
- US: 15.5%

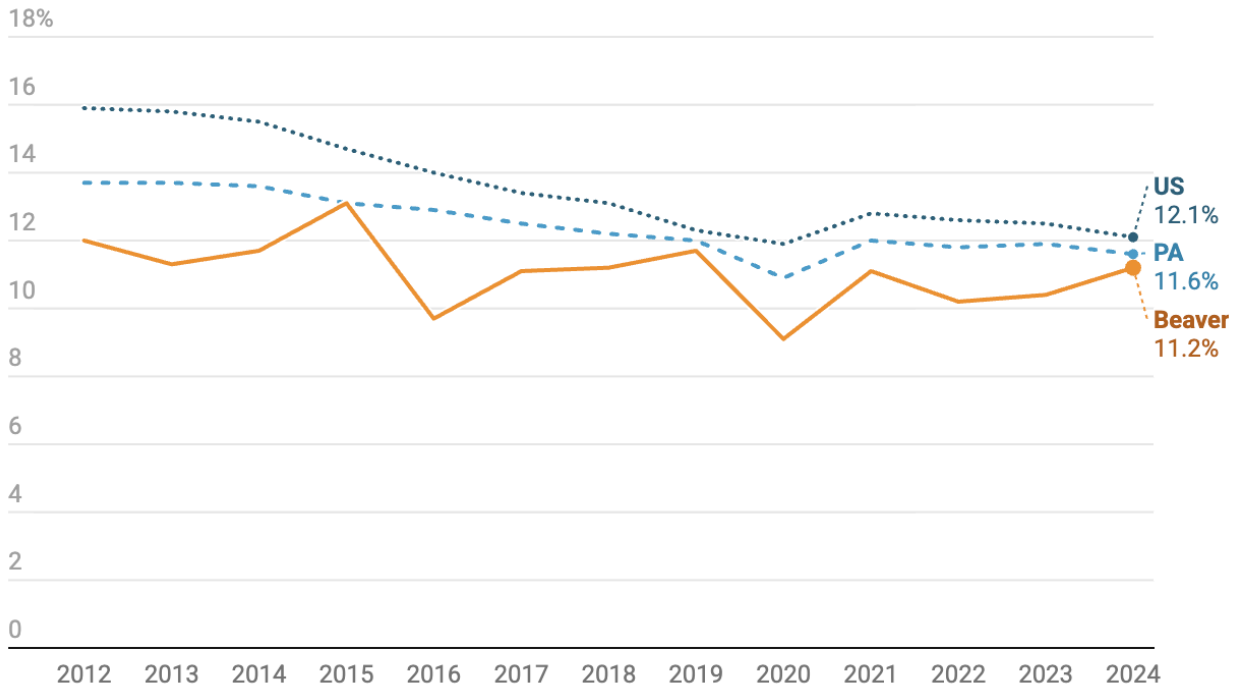
ACS Poverty Rate (2024):
- Beaver: 11.0%
- Pennsylvania: 12.0%
- US: 12.1%

ACS Child Poverty Rate (2024):
- Beaver: 16.0%
- Pennsylvania: 15.3%
- US: 15.5%

SAIPE (Census) Poverty & Child Poverty

While overall poverty rates have dropped in Beaver County from 2012 levels, analysis of SAIPE data shows that the overall poverty rate has begun to rise again since 2022. Likewise, the Beaver County child poverty rate also rose between 2023 and 2024. This reversing trend is in contrast to state and national trends, where both, poverty and child poverty rates have continued to drop, apart from a spike in 2021 following the discontinuation of several important pandemic-era benefit programs, including stimulus checks and child income tax credits.

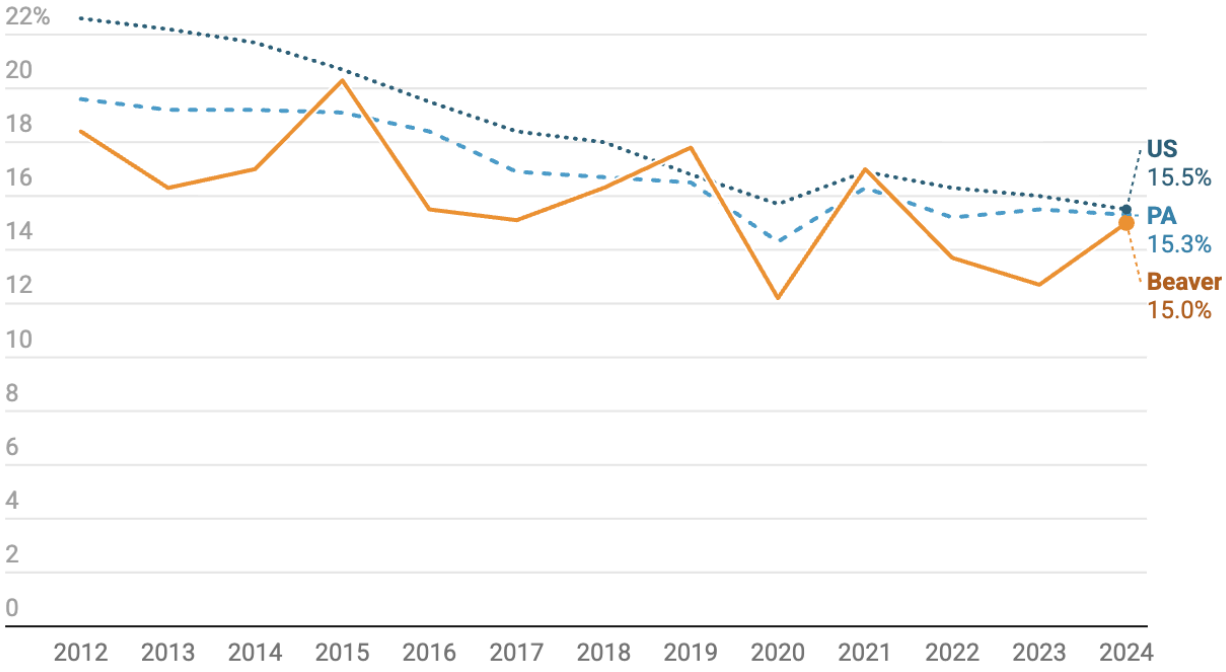
Figure 11: Poverty Fell at a Slower Rate in Beaver County than in Pennsylvania and US
Percent change in poverty rate, 2012-2024



Source: US Census Bureau, Small Area Income and Poverty Estimates Program (SAIPE)

Figure 12: Child Poverty Rate Falls Across Beaver County, Pennsylvania and US

Percent change in child poverty rate, 2012-2024



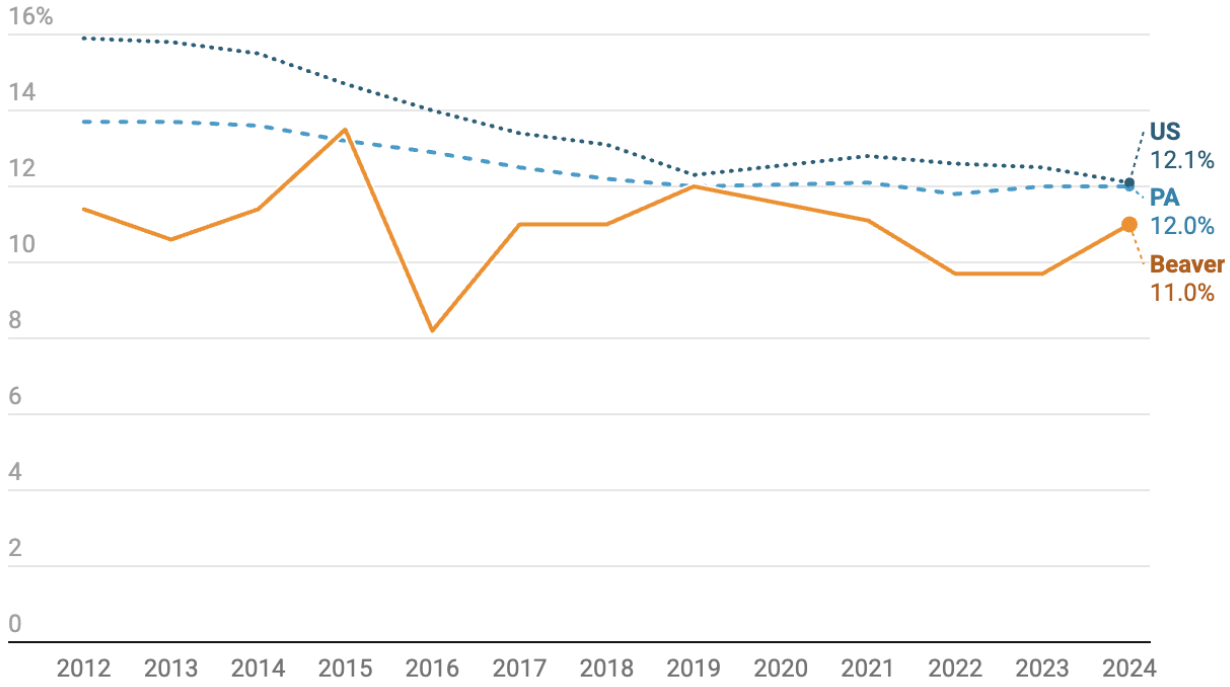
Source: US Census Bureau, Small Area Income and Poverty Estimates Program (SAIPE)

ACS (American Community Survey) Poverty & Child Poverty

ACS data paint a similar picture. By this measure, between 2012 and 2024, poverty and child poverty rates declined steadily at the state and national levels. Poverty and child poverty rates in Beaver County have been more inconsistent, though overall levels decreased by both counts between 2012 and 2024.

Figure 13: Poverty Rate in Beaver County Stagnates, While Pennsylvania and US See Steady Decline

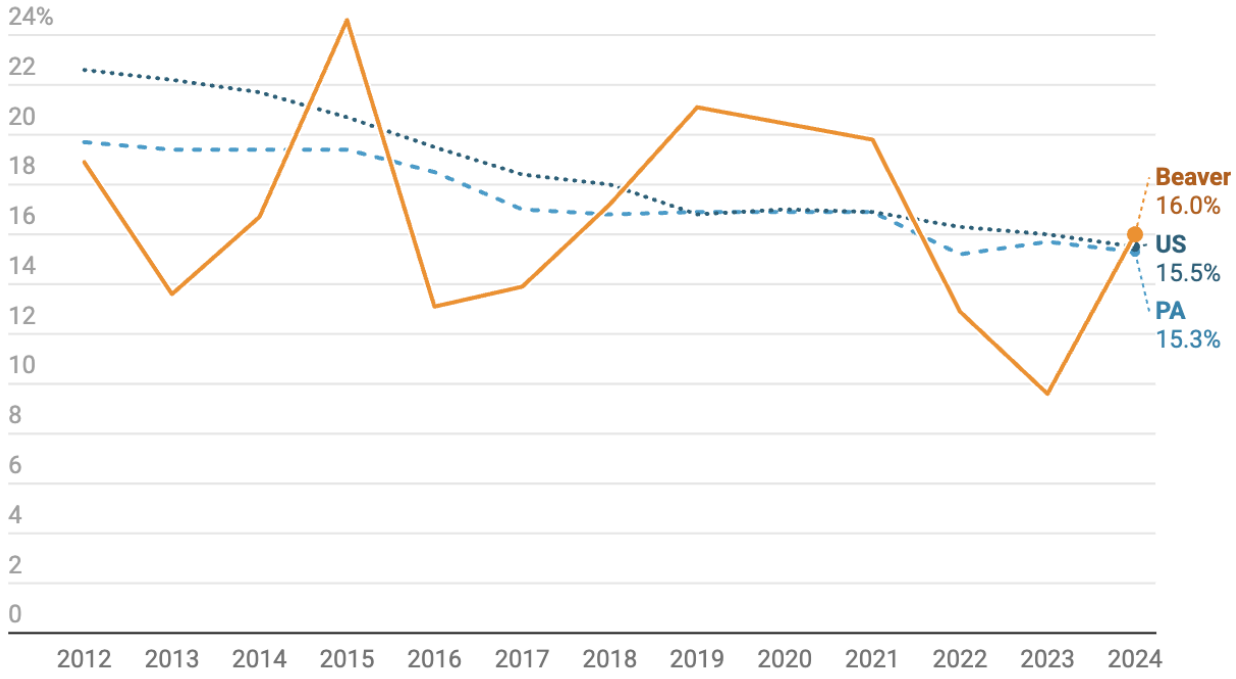
Percent change in poverty rate, 2012-2024



Source: US Census Bureau, American Community Survey

Figure 14: Child Poverty Rate Fell Across Beaver County, Pennsylvania and US

Percent change in child poverty rate, 2012-2024



Source: US Census Bureau, American Community Survey

Income

Another critical way to track economic performance is by looking at income and wages. In contrast to GDP, which measures economic output, income and wages look directly at the money that workers earn and re-spend locally. For example, industries with high degrees of automation, with relatively few workers but high production volume, would appear as a large increase in GDP data for a region but could have a negligible impact on residents' incomes. This raises important questions about how much some projects actually "pay off" for the locals, who bear the burden of tax incentives.

In this report, we look at income in several different ways. First, we look at median income, or the midpoint of all the income-earning households in a given geography.[19] The Census Bureau tracks median income through its SAIPE program.

Income Dashboard

SAIPE Median Income (2012-2024):
- Beaver: +55.70%
- Pennsylvania: +51.36%
- US: +58.85%

ACS Per Capita Income (2012-2024):
- Beaver: +60.65%
- Pennsylvania: +60.85%
- US: +65.66%

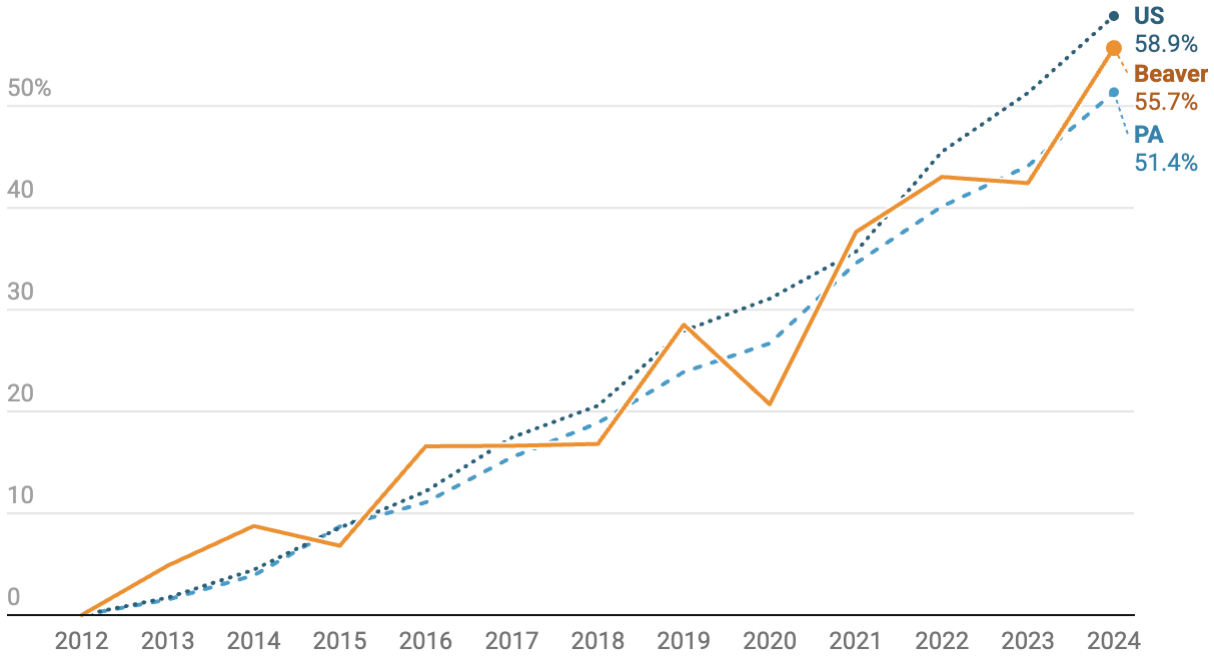
BEA Per Capita Income (2012-2024):
- Beaver: +51.06%
- Pennsylvania: +54.87%
- US: +65.48%

BEA Market Income Per Capita (2012-2024):
- Beaver: +44.82%
- Pennsylvania: +49.56%
- US: +77.47%

Between 2012 and 2024, the most recent year for which SAIPE data are available, Beaver County's median income grew by 55.7%, mirroring statewide (51.4%) and national (58.9%) growth.

Figure 15: Median Income Grows Across Beaver County, Pennsylvania and US

Percent Change in Median Income, 2012-2024

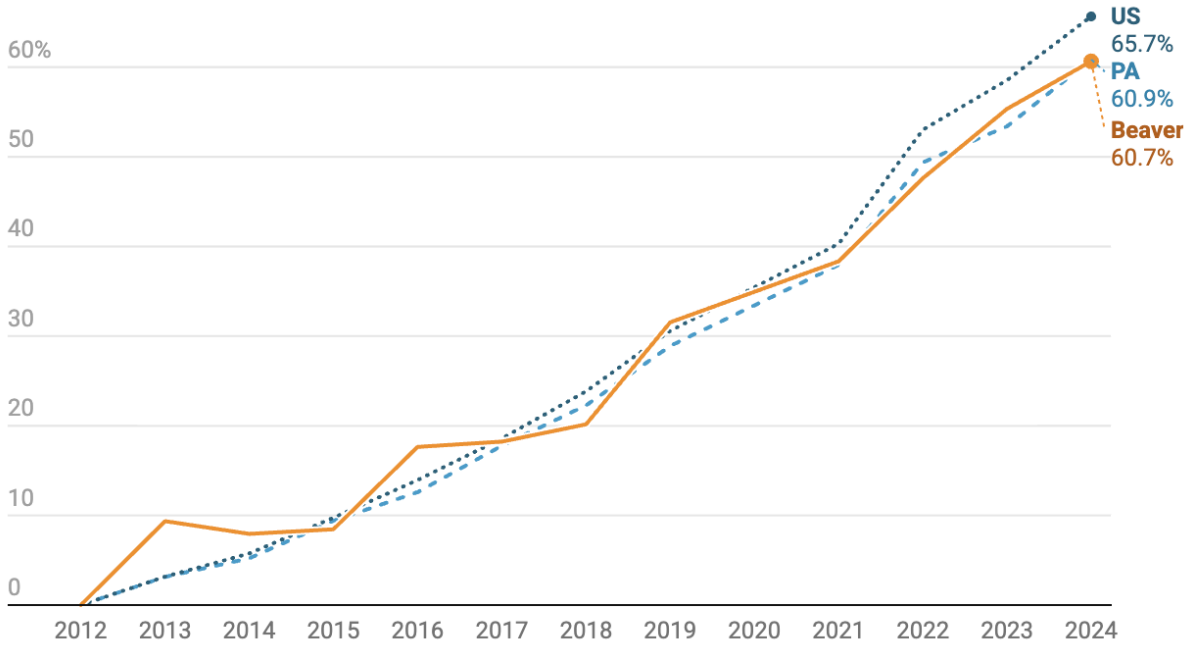


Source: US Census Bureau, Small Area Income and Poverty Estimates Program (SAIPE)

Per Capita Income, measured by the Bureau's American Community Survey, also continued to rise in Beaver County, Pennsylvania and the US.

Figure 16: Beaver County's Per Capita Income Kept Pace with Pennsylvania and US

Percent change in Per Capita Income, 2012-2024

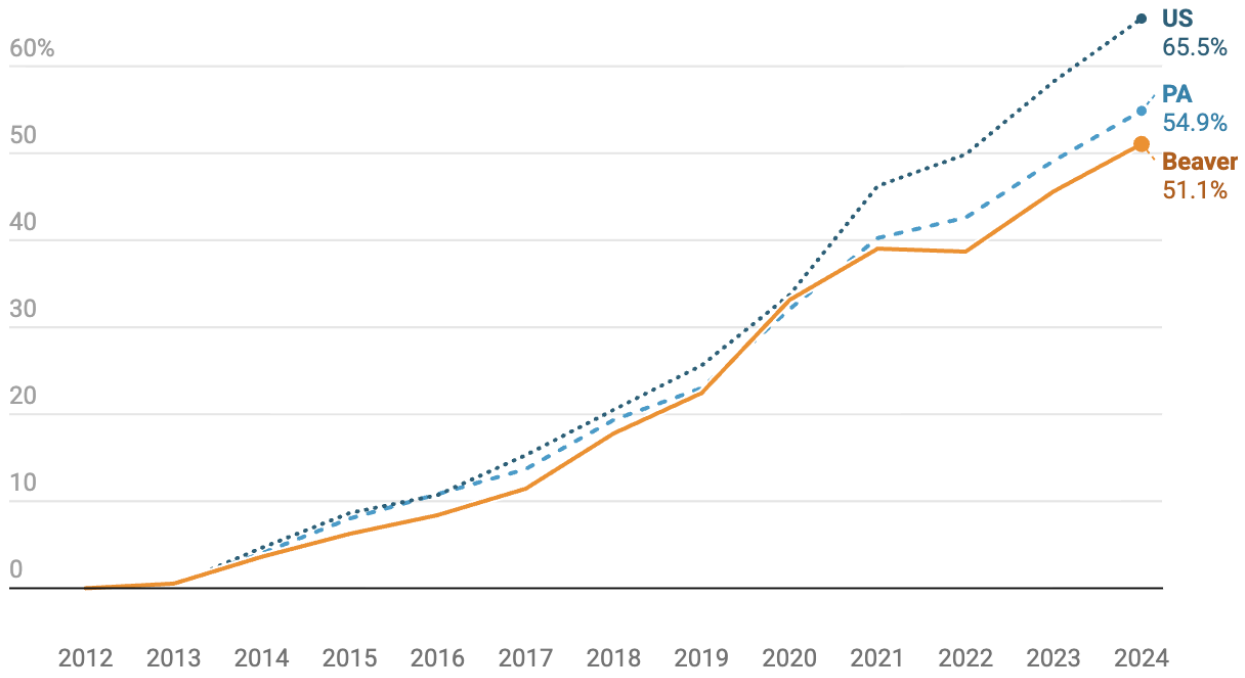


Source: US Census Bureau, American Community Survey

The Bureau of Economic Analysis also tracks per capita personal income by counting wages, salaries, government benefits, dividends, interest, business income, and other sources of income. This composite captures a more complete measure of how much income is being generated per person.[20]

By 2024, per capita income grew by 51.1% in Beaver County, a slightly slower rate of increase compared to the rest of Pennsylvania and the US, which grew by 54.9% and 65.5%, respectively.

Figure 17: Per Capita Income Rises at a Slower Rate than in Pennsylvania and US
Percent change in per capita personal income (not inflation-adjusted), 2012-2024



Source: US Bureau of Economic Analysis

Personal income statistics include wages and salaries along with other sources of income such as investment income (like stock dividends and capital gains), as well as government transfer payments. Government transfer payments to individuals include benefits related to retirement and disability (e.g. Social Security), unemployment benefits, social assistance programs like SNAP, Medicaid payments, and veterans benefits. Government transfers nearly doubled during the COVID-19 pandemic due to large-scale government stimulus programs and temporary increases to unemployment benefits during economic shutdowns.[21]

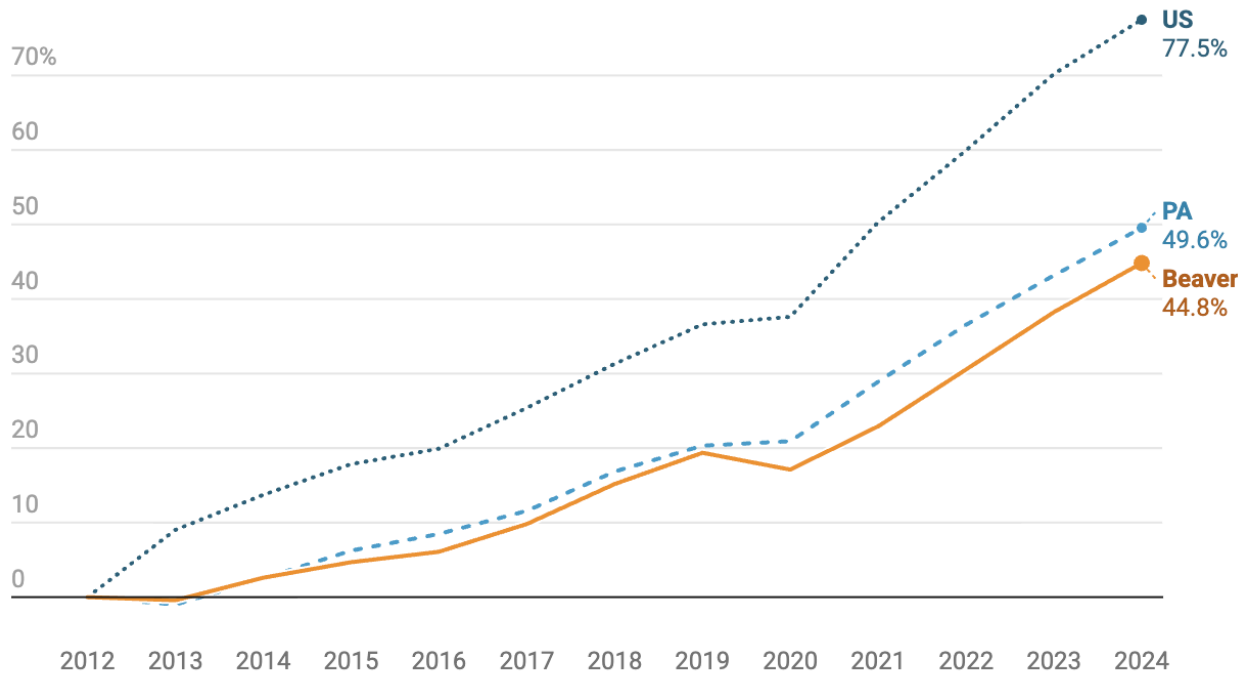
This creates a possible issue when assessing the impact of the Shell facility on Beaver County incomes. For instance, if incomes have declined and more Beaver County residents have received social assistance or unemployment benefits, the government benefits would "mask" the loss of income generated locally for workers. Similarly, if the Shell facility resulted in more locals moving away to avoid potential pollution, a larger share of Beaver County's income may be reliant on older,

retired employees and their Social Security benefits. **To better capture the trends in income earned locally by workers, possibly resulting from growth in the types of economic opportunities originally promised by Shell, we also examine market income.**

In this analysis, we define market income as the measure of personal income excluding government payments to individuals and households and subtracting contributions for social insurance made by employees or employers.[22] In this way, market income is a more accurate measure of what people actually **earn in the County** from paychecks and from their personal investments, without clouding the picture with taxes and government transfers.

Since 2012, Beaver County's market income has fallen further behind the rest of Pennsylvania and the US. By 2024, two years after the Shell plant began operations, Beaver County's per capita market income was just 78.9% of Pennsylvania's per capita market income and 66.7% of US per capita market income. In other words, the state of Pennsylvania and the US have **both** managed to increase market income per capita relative to Beaver County since 2012.

Figure 18: Beaver County's Market Income Growth Lags Behind Pennsylvania and US
Percent change in per capita market income, 2012-2024



Source: US Bureau of Economic Analysis
Note: Market income per capita is calculated by subtracting personal current transfers and contributions for government social insurance from total non-farm personal income and adjusting for population.

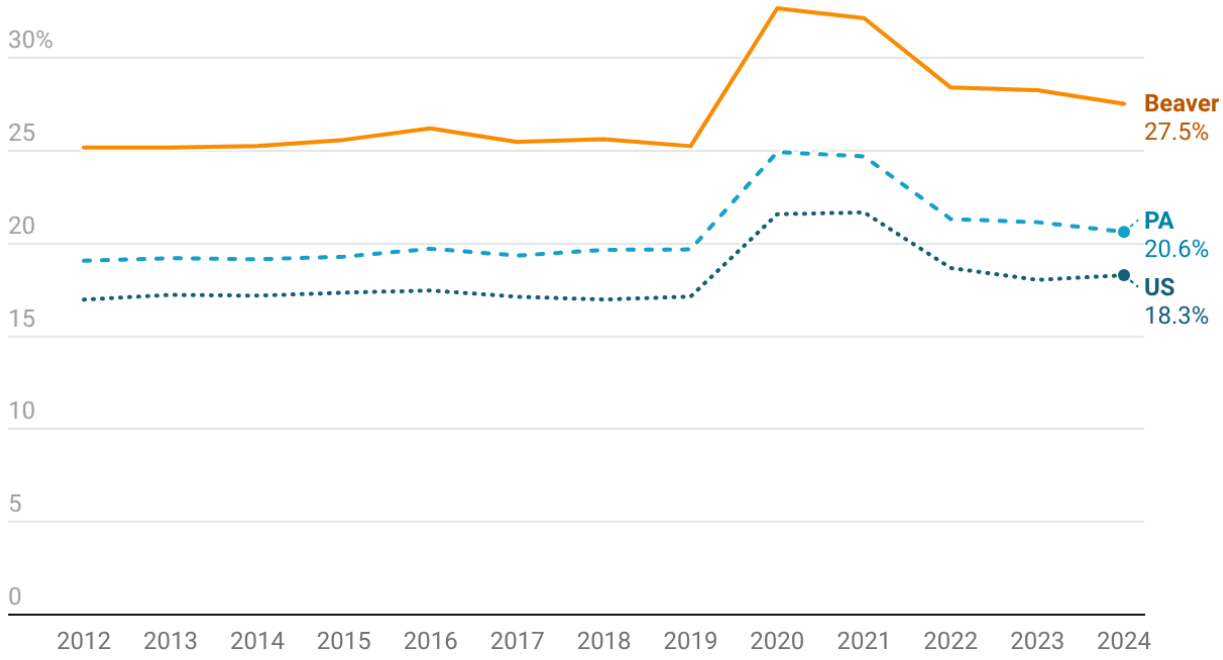
Personal current transfer data accounting for income not tied to work (social security benefits, social assistance programs, Medicaid payments, etc.) sheds light on the forces influencing the widening

market income gap between Beaver County and the rest of Pennsylvania and the US. This data shows that since 2012, Beaver County has remained more reliant on government transfers than the rest of Pennsylvania and the US, despite the state providing up to $1.6 billion in tax incentives for the Shell facility.

It is important to note that the expansion of pandemic-era government assistance increased the share of personal income derived from government transfers across the country. Despite many of those programs phasing out by 2024, personal current transfers made up 27.5% of total personal income in Beaver County that year, compared to 20.6% and 18.3% in Pennsylvania and the US, respectively. Put another way, between 2012 and 2024, the percentage of personal transfers as a share of personal income grew faster in Beaver County (2.4%) than it did in the rest of the state (1.6%) and the US (1.3%).

Figure 19: Beaver County's Income More Dependent on Government Transfers than Pennsylvania, US

Personal transfer receipts as a share of total personal income, 2012-2024



Source: US Bureau of Economic Analysis

The key takeaway is that Beaver County residents were more reliant on government transfers relative to the rest of the state and nation before and after the construction and operation of the Shell plant, as well as before and after the pandemic. This seriously calls into question the promises made to residents about the local economic benefits of the plant.

Conclusion

The petrochemical industry continues to spin tall tales of job creation and economic opportunity, but a close look at economic indicators shows that since Shell announced in 2012 its plans to build a petrochemical plant in Monaca, Beaver County has seen declining population, zero growth in GDP, and job and business loss. In fact, the county has fallen behind both the state and the nation in nearly every measure of economic activity and, in many cases, has not fared any better than neighboring counties in western Pennsylvania that did not build a plant.

Shell's plant has also accrued a poor track record on environmental compliance. The facility has consistently violated air pollution limits and has exceeded permitted emissions levels of nitrogen oxides (NOx) every month since it began operating.[23] State regulators have repeatedly fined Shell for discharging harmful chemicals into the Ohio River exceeding permitted limits.[24] Now, Shell is seeking an updated Title V air quality permit to allow greater allowances for emissions releases and increase in flaring of methane gas.[25]

What legacy will Shell leave behind when it leaves Beaver County? If the past fourteen years are any indication, local communities received little in the way of economic revitalization, contrary to the industry's projections and promises. As the oil and gas industry comes to Beaver County with new proposals for gas-fired power plants and AI data centers, Shell's legacy should loom large over state and local officials. Understanding the promises, assumptions, and probabilities should encourage lawmakers to pause before extending further tax subsidies and instead prioritize long-term development strategies that center on real local growth, health, and the well-being of our communities.

Endnotes

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