

Report Summary:

A Bigger Bang Approach to Economic Development: An Application to Rural Appalachian Ohio Energy Boomtowns

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A New Model for Economic Development

For decades, communities across the United States have pursued economic development strategies aimed at growing jobs and incomes for their residents. Often, these strategies have focused on offering generous tax incentives to large industries who promise to create new, high-paying jobs. Appalachian communities have particularly struggled with what economists call the [natural resource curse](#) – an economic over-reliance on naturally occurring fossil fuel resources such as gas and coal. The lack of diversification in local economic activity makes these communities particularly susceptible to volatile boom and bust cycles in these global commodities. Additionally, most fossil fuel extraction is done by large, multinational corporations who headquarter their operations in other states or countries. This means that the high economic productivity of gas regions such as Southeast Ohio [isn't reflected in local incomes or employment](#). Money literally “leaks out” of the region, as the highest-income employees live and spend their money elsewhere. While it’s easy to suggest that these communities should explore other strategies, it hasn’t always been clear what those strategies could be and local leaders are often doing the best they can within the bounds of traditional economic development thinking.

But what if there was a more prosperous approach? Few communities have successfully diversified and transitioned away from their overreliance on the fossil fuel economy. A new study by economic researchers at Ohio State University examines one such energy community in [Centralia, Washington](#) that shares some underlying similarities with energy communities in Ohio. Centralia was faced with the closure of a coal mine in 2006 and the pending closure of a coal-fired power plant that once employed a combined 1,000 workers in a region that was already economically struggling. After a period of intense political debate, the community and TransAlta, the utility that operated the mine and plant, created a transition plan. TransAlta agreed to create a \$55 million [coal transition fund](#), established over a fifteen-year period to help the region’s economy as the coal facilities closed. The transition fund is administered through three grant boards and awarded to local individuals, organizations and businesses in three categories:

1. Weatherization
2. Economic and Community Development
3. Energy Technology

So far, the transition grants have funded millions of dollars of investment in projects that require “shovel ready” jobs. Some prominent examples include:

- Weatherization and energy efficient HVAC installation
- Learning centers and job training for residents of all ages and abilities
- Hydrogen electrolysis pilot operations
- Solar generation projects
- Electric vehicle charging station installation
- Electric bus deployment
- Energy upgrades to local businesses and schools.

In some cases, funds from the transition grants have allowed communities to solicit additional outside funding for projects from other corporations such as Toyota and from the State of Washington.¹

What Happened in Centralia After the Grants Began?

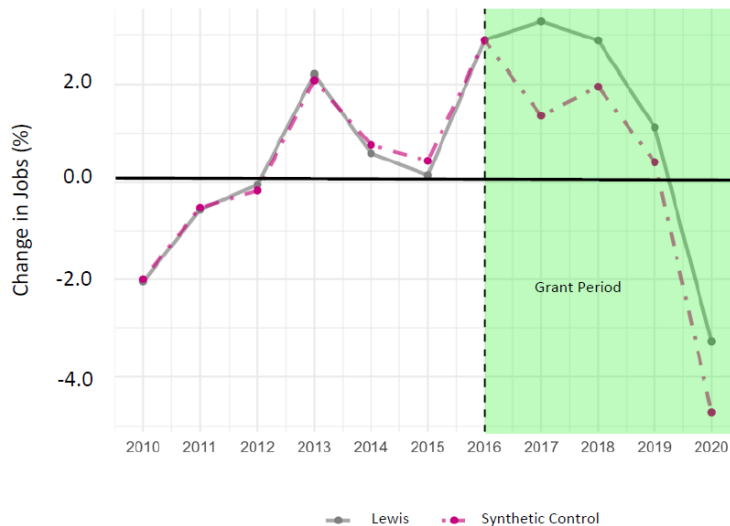
[An earlier study by the Ohio River Valley Institute](#) examined raw economic data and found that after 20 years of near zero job growth, Centralia grew its employment by twice the national average and incomes grew 50% faster than the national average. This study aims to evaluate if this remarkable growth can at least be partly attributed to the grant program by controlling for other economic and demographic factors that could impact the region’s growth. Using a machine-learning statistical method known as [synthetic control](#) and data collected before and after the grant program began, the report is able to measure if and how Centralia’s economic performance deviated from the expected trends established before the grants began. This is compared to a [counterfactual control](#) constructed from weighted observed data from Washington counties similar to Lewis County, WA, where Centralia is located.

Following the rollout of the transition grants, Lewis County [outperformed](#) expected counterfactual trends in terms of jobs, personal income, and small business income. Figure 1a, 1b, and 1c show the output from the synthetic control models. The results along with the mean-square prediction error (a measure of statistical fit) strongly suggest that the grant program played a role in Centralia’s economic stabilization and recovery in the latter half of the last decade.

¹ For a full list and details of grant funded projects, see <https://cctgrants.com/category/grant-recipients/>

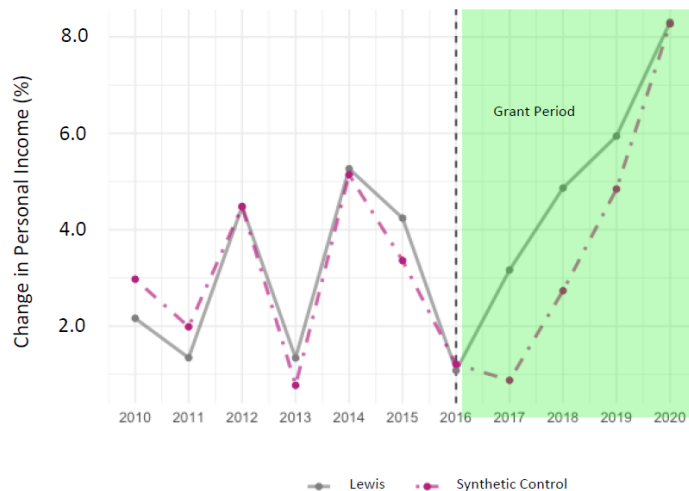
Lewis County outperformed the expected counterfactual in job growth by nearly 1.5% at the peak divergence in 2017. Although both Lewis County and the expected control lose jobs in 2020 due to the COVID-19 pandemic, the results also suggest that Centralia was better able to weather the economic shock of the pandemic, losing nearly 1% fewer jobs than expected. Lewis County also saw personal income grow by nearly 2% more than the expected control at the peak divergence in 2018. In 2020, the expected counterfactual and Lewis County income growth rates converge, although this is likely due to the large government stimulus packages distributed during the COVID-19 pandemic. Finally, in terms of small business income, by 2020 Lewis County outperformed expected trends by nearly \$5 million.

Figure 1a: Change in Wage & Salary Jobs, Lewis County vs. Synthetic Control Counterfactual 2010-2020



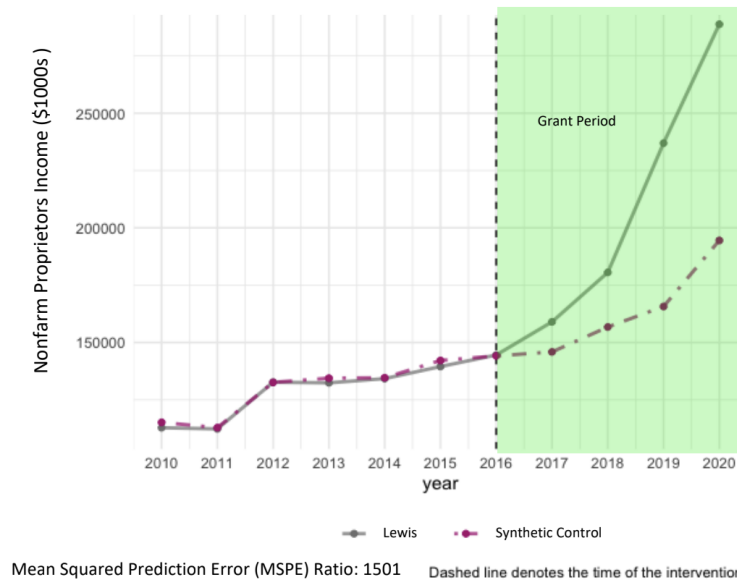
Mean Squared Prediction Error (MSPE) Ratio: 82.6 Dashed line denotes the time of the intervention.

Figure 1b: Change in Personal Income, Lewis County vs. Synthetic Control Counterfactual 2010-2020



Mean Squared Prediction Error (MSPE) Ratio: 11.3 Dashed line denotes the time of the intervention.

Figure 1c: Non-farm Proprietors (Self-Employment) Income, Lewis County vs. Synthetic Control Counterfactual, 2010-2020



Data Sources: US Bureau of Economic Analysis, US Bureau of Labor Statistics, Quarterly Census of Employment and Wages (QCEW), and US Census.

A Bigger Bang for the Buck: More Money Circulates Locally

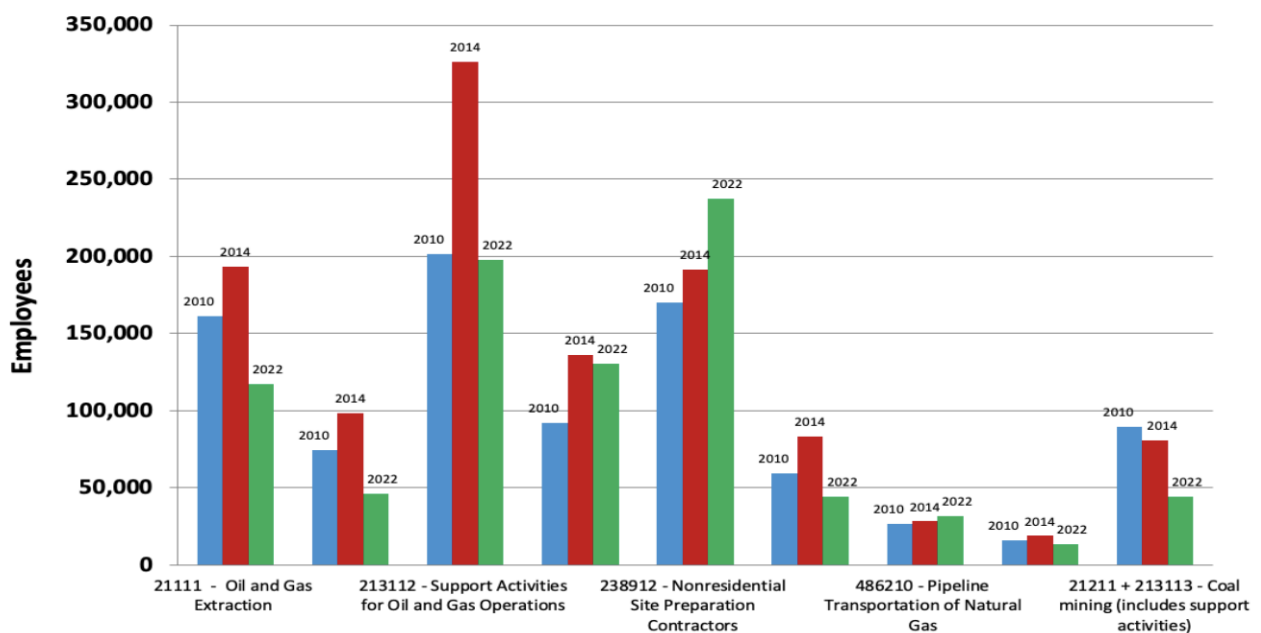
When considering the scale of the global fossil fuel industry, \$55 million in grant funds may not seem like much. How, then, could the grant program contribute to Centralia's outperformance of expectations and national growth trends?

The answer is by taking advantage of what are known as [local economic multipliers](#). The idea is that when one person is employed and earns an income, they spend the majority of that income on goods and services, including housing, food, and entertainment in the place where they live. These industries, in turn, support additional jobs and income. Essentially, one person's spending is another person's income. If more of the income stays local, more money circulates in the local economy and supports more jobs. This is reflected as a higher multiplier – every locally earned and spent dollar has a higher multiplied effect on growing the local economy. The report notes that small businesses and start-ups in particular have large economic multipliers, since they often spend on other local business support services, tend to hire local labor (creating more local income), and use more local suppliers.

In the case of Centralia, many of the activities supported by the coal transition grants are labor intensive, such as the weatherization program facilitated by the local utility. HVAC and insulation work conducted by local contractors generates local jobs and income and, in many cases, small business income for contractors. These weatherization projects also triggered matching investments by property owners, further raising the multiplier effect. Further, the positive economic impact of energy efficiency and distributed electricity generation is felt almost immediately due to the “shovel ready” nature of the jobs involved and multipliers are elevated further by the annuity-benefits of reduced future electricity bills. Similarly, economic development projects and energy projects which include construction create local jobs and the grant funding that has been awarded to workforce development programs in the community helps to retrain workers for new (often higher-paying) jobs in the region.

This model [stands in stark contrast](#) to job performance over the decade in the fossil-fuel industry, which have generally declined since the peak of the shale boom in 2014 as shown in Figure 2. Additionally, even when jobs are created during the peak of booms, [the oil and gas industry has notoriously low economic multipliers](#).

**Figure 2: Employment in Various Fossil-Fuel Industries Throughout the Shale Boom
2010, 2014, and 2022**



Source: Bureau of Labor Statistics Quarterly Census of Employment and Wages (<http://www.bls.gov/data/>), NAICS codes listed for each sector.

Although job creation can occur during the early phase of fossil-fuel buildouts when construction is occurring, [the multipliers triggered by temporary jobs are also temporary](#). The report highlights that a pathway to sustainable local economic development cannot rely solely on resource extraction or energy generation for this reason. The Centralia Model of Economic Development provides a [road map](#) for local leaders and policy makers to think about making locally focused economic investments that grow and revitalize communities with substantially smaller overall costs than billions of dollars in revenue lost to traditional tax incentive-based strategies.

For more, read the full report at:

<https://ohiorivervalleyinstitute.org/a-bigger-bang-approach-to-economic-development/>

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