

Maximizing the Gains of Old and New Energy Development for America's Rural Communities

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INTRODUCTION

The recent technological advancement in horizontal hydraulic fracturing has unlocked oil and gas resources from shale formations once thought to be uneconomical to recover. In 2015 Ohio natural gas production reached 1,014,848 Million Cubic Feet, which was more than 12 times greater than in 2011 production and marked the first time Ohio's natural gas production equaled state demand¹. Energy based economies often experience a boom-bust cycle that follows the rise and fall of energy prices. A high performing energy sector often crowds out other sectors from additional growth, promoting a highly specialized regional economy that is dependent on the performance of the energy sector. This contributes to the volatility of the local economy, by limiting economic diversification thereby affecting long-term economic growth. There is an urgent need for high-quality research to identify these impacts, especially research that considers the entire nation and produces comparable estimates across the three main fossil-fuel groupings that are most affected by the energy revolution.

PROJECT OVERVIEW

To address these challenges a multidisciplinary team of OSU CFAES faculty from AEDE, SENR, and the Department of Extension received funding from the USDA Agriculture and Food Research Initiative. This project fills this void by identifying how new shale based economic development impacts affected communities across the nation and explores ways to avoid the resource curse. The Extension component of the project used research findings to develop materials to inform local community stakeholders.

APPLICATION TO EXTENSION EDUCATORS

This poster summarizes new research that assesses the likelihood of a natural resource curse and helps identify ways to avoid the curse while maximizing prosperity and sustainable growth from the new energy development. Extension outreach materials are available and have broad application in County Extension offices throughout the state to support policymakers and local stakeholders understanding of the tradeoffs from new energy development.

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SHALE ENERGY DEVELOPMENT ECONOMIC IMPACT ANALYSIS FACT SHEET SERIES

This fact sheet series summarizes the research into six chronological fact sheets to inform the reader of economic impacts related to energy development. The materials are available for download at: go.osu.edu/energyecon

Shale Energy Development Economic Impact Analysis Fact Sheet Series

1) Ohio Energy Trends

2) Characteristics of a Boomtown

3) Contributing Factors to a Boomtown Bust

4) Developing a Model to Measure Economic Change

5) Economic Development Strategies for Energy Boomtowns

6) Community Planning Strategies for Energy Boomtowns



1: Ohio Energy Trends, Comparing Old and New Energy Development

This fact sheet provides a summary of Ohio energy production and consumption trends for the coal and oil and gas industries and the impact of energy employment in rural communities.

2: Characteristics of a Boomtown

This fact sheet describes the economic impacts related to energy development. A boomtown can be simply defined as a community undergoing rapid growth due to sudden economic shock.

3: Contributing Factors to a Boomtown Bust

This fact sheet describes the economic impacts related to energy development. While an abundance of a natural resource such as oil and gas should enhance economic activity, and reduce poverty, it has in some instances increased poverty, weakened local government, and undermined sustained economic development.

4: Developing A Model to Measure Economic Change in an Energy Economy

This fact sheet summarizes the variables used in a model designed to measure the economic impact of energy development and the corresponding results.

5: Local Economic Development Strategies for Energy Boomtowns

Economic development strategies can be developed and implemented to leverage the positive impacts needed to transcend a potential bust. This fact sheet reviews how a proactive approach helps mitigate the inevitable downturn, while capturing and retaining economic opportunities during the upswing to ensure future growth.

6: Community Planning Strategies for Energy Boomtowns

Community sustainability planning considers the impacts of energy development by developing strategies to leverage benefits while reducing losses resulting from the boom-bust cycle. This fact sheet reviews three planning strategies to help boomtown communities achieve their long-term goals.

SUMMARY OF THE MODEL

What makes this model unique in comparison to previous research is that the scope combines a variety of variables including community size, time frame, energy resource potential, economic sector, geography, historical intensity of energy infrastructure, and a host of other demographic and educational attainment variables.

SUMMARY OF RESULTS

The research team's model indicates that there is no single factor that can best predict the economic impact of an energy shock. But the model provides a comprehensive approach to a multi-faceted economic issue. Detailed analysis, discussion, and tables of the modelling results are available in the full report titled "Economics of Modern Energy Boomtowns: Do Oil and Gas Shocks Differ from Shocks in the Rest of the Economy²." Below is a summary of the key findings:

Impact on metro counties

- The effects of energy sector expansion on metropolitan employment are less pronounced compared to nonmetropolitan counties.
- After one year, estimates show a crowding out of jobs in other sectors of the economy as the energy sector expands.
- Crowding out causes the manufacturing sector to decline as a result of energy sector expansion.
- Employment in transportation and warehousing sectors increase after one year.

Impact on non-metro counties

- Positive effects are shown to increase with time, peaking at six years and declining afterwards.
- Between 2001 and 2013 an average county experienced a 0.1% annual job growth due to the energy sector.
- Construction, transportation and warehousing, wholesale trade, accommodation and food, and real estate are the industries that benefited most in terms of new employment. In contrast, manufacturing and agriculture lost some jobs.
- Comparing the job creation effects of energy shocks to equal-sized shocks in the rest of economy, growth elsewhere in the economy generally had larger net positive spillovers.

¹ Ohio Department of Natural Resources Division of Oil and Gas (ODNR). (2016, September). Shale Well Drilling & Permitting. Retrieved October 2016, from Oil and Gas Resources: <http://oilandgas.ohiodnr.gov/shale#SHALE>

² Tsvetkova, A., & Partridge, M. D. (September 01, 2016). Economics of modern energy boomtowns: Do oil and gas shocks differ from shocks in the rest of the economy?. *Energy Economics*, 59, 81-95.