Understanding and Interpreting the Employment Impacts of Shale Drilling

*Shale Symposium: What Communities Need to Know*

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The Utica underlies the Marcellus in many areas, coming closer to the surface in eastern Ohio. (Source for Marcellus and Utica outlines: Energy Information Administration.)
Drilling Expands and Contracts with Gas Prices

Figure 1. Drilling for Natural Gas Fluctuates with Natural Gas Prices

Source: Multi-State Shale Collaborative based on U.S. Energy Information Administration
Shift to Wet Gas Moved Drilling from PA to OH
Natural Gas: Not an Infant Industry

Figure 4. Prior to Shale, Ohio, Pennsylvania, and West Virginia Had Many Low-Producing Wells

Source. Multi-State Shale Collaborative based on U.S. Energy Information Administration
Methodology: Measuring Shale-Related Jobs

- Identify industries with shale company or “support” jobs; these also include oil, conventional gas, and mining jobs
- Identify industries (sometimes broader ones) for which data exist across six states
- Count growth in these industries’ jobs since 2005 as “shale-related”
- Conservative in two ways
  - Attributes ALL growth to shale, none to coal or conventional oil and gas
  - Already includes some supply chain jobs (e.g., pipeline construction)
- Consensus methodology: our method is the same as PA Dept. of Labor & Industry and PA Independent Fiscal Office
Counting Shale Jobs: Our Method in a Picture

Figure 8. Estimating Shale-Related Employment

- Employment in Conventional Oil and Gas Extraction and Support Activities Prior to Significant Fracking
- Employment in Conventional Oil and Gas Extraction and Support Activities assumed constant at 2005 level
- Estimate of Employment in Shale Gas Extraction and Support Activities (also referred to as 'Shale-Related Employment')

Source. Multi-State Shale Collaborative based on QCEW data.
Total Shale-Related Employment

2005-Q2 to 2012-Q2
2005-Q2 to 2014-Q2

25,000
20,000
15,000
10,000
5,000
0

Maryland New York Ohio Pennsylvania Virginia West Virginia

Source: Multistate Shale Collaborative based on QCEW data.
Shale Jobs Less Than 1% of WV Jobs

Figure 10. Shale-related Employment as a Share of Total Covered Employment in West Virginia

Source: Multi-State Shale Collaborative based on QCEW data
Shale Jobs Less Than Half a % of PA Jobs

Figure 9. Shale-related Employment as a Share of Total Covered Employment in Pennsylvania

Source: Multi-State Shale Collaborative based on QCEW data
Shale Jobs One Tenth of 1% of Ohio Jobs

Figure 11. Shale-related Employment as a Share of Total Covered Employment in Ohio

Source: Multi-State Shale Collaborative based on QCEW data
Shale Jobs in Context

• Education and health care employ 4.5 million people in the six states – not 33,000

• Education and health care account for one in six jobs are in education and health care versus one in 794 for shale-related jobs

• In Pennsylvania, # times as many jobs have been lost in the public sector since 2010 as shale-related jobs have been created since 2005
Figure 12. Growth in Shale Jobs Makes Little Difference to State Job Growth, 2005-12

% Change Actual vs. % Change Excluding Shale-Related Jobs

Source: Multi-State Shale Collaborative based on QCEW data.
Drilling Counties Cushioned Slightly From Recession

Figure 14. Employment Growth in Drilling and Non-Drilling Counties Before and After Drilling Take-Off

Source: Multi-State Shale Collaborative based on QCEW data.
Statistical Research Also Shows No Relationship Between Wells and Total County Job Growth

• Academic study in PA through 2009 by Weinstein and Partridge
• We update to 2011/2012, expand to 3&6 states, and use two sources of data...
• ...with same result: no statistically significant relationship found between number of wells and employment growth
• Number of wells is related to higher income growth:
  • Weinstein & Partridge suggest some royalty income stays local
  • Not clear how many people benefit
Total Jobs Impact of Drilling

• Total jobs impact includes jobs at drillers AND suppliers AND consumer industries where drilling industry & supplier owners, workers, and lease holders shop

• Independent academic studies estimate total jobs impact to be about twice shale-related jobs

• Industry-funded studies estimate (or “project”) jobs at twice to seven times the independent academic studies – using flawed assumptions

• Result: impression created of hundreds of thousands of jobs when the reality is tens of thousands
Sewing More Confusion on Total Jobs

• Count every UPS driver – and all the 200,000 workers in 30 “ancillary” industries with some shale supplier jobs – as “shale supported”
  • But wait, these industries had almost as many jobs before fracking
  • So 95-99% of these jobs are unrelated to shale

• Count “new hires” – there are lots of those
  • But 29 of 30 new hires replace someone who left – they are not new jobs
  • “Yes but new hires is a nice big number”
Ancillary Jobs Are Unrelated to Shale: in a Picture

Figure 15. Very Little Change in Ancillary Employment

Note. Projected ancillary employment is calculated in 2006-2012 as 2.925% of total covered employment in each year. The data presented here as for private sector employers.
Source. Multi-State Shale Research Collaborative based on Quarterly Census of Employment and Wages data.
Shale-Related Employment Peaked in 2012

Year over year change in first quarter shale-related employment 2002 to 2014

Note. Shale related employment is defined here as employment in Oil and Gas Extraction (211), Support Activities for Mining (213), and Oil & Gas Pipeline & Related Structures Construction (237120) in MD, NY, OH, PA, VA and WV.

Source. Multi-State Shale Collaborative based on QCEW data

From Boom to Bustlet?