

**Ohio Shale Coalition Report Appears to Have Overestimated Ohio Shale Job Creation by
About 400%¹**

By

Mark Partridge and Amanda Weinstein

AED Economics Swank Program in Rural-Urban Policy

The Ohio State University.

March 8, 2012

The Ohio Shale Coalition, a partnership including energy interests and their suppliers, released its [study](#) suggesting that the direct, indirect, and induced employment effects of oil and gas extraction from Ohio's shale resources will result in approximately 66,000 jobs by 2014. This runs contrary to the 20,000 jobs (through 2015) estimated by the OSU Swank program using the *actual industry employment outcomes* that occurred in Pennsylvania's shale experience (see [Weinstein and Partridge, 2011](#)). In producing the estimates, the Swank program followed the convention of using actual data in making predictions as is common among regional and urban economists. We also follow their convention of comparing the estimated results from impact studies to the actual employment outcomes in places that have already experienced similar shocks—i.e., this is akin to what social scientists call external validity.

The Ohio Shale Coalition study, in contrast, used industry drilling *plans* for oil and gas spending within Ohio to predict the employment impacts. This runs counter to a maxim by economists of “looking for what people *actually* do rather than what they *say* they will do.”

Standard economic impact analyses develop estimates of the resulting total employment impacts based on the direct employment effects. Namely, the direct employment in the affected industry is the key number because the total employment impact is simply the product of direct employment and the multiplier. The multiplier adjusts total employment gains that arise from additional workers in downstream suppliers and spending by employees. More direct employment yields more total employment impact—i.e., without workers drilling wells, there would be no need for other downstream employment and infrastructure improvements that increase employment. Unfortunately, the Ohio Shale Coalition only reports total employment effects and do not report a table that specifically lists direct employment impacts across *all* industries and the resulting indirect and induced employment effects across *all* industries (the same is true of their output effects as well). Hence, it is difficult to compare their results to standard impact reports that have been done for decades. Without this standard reporting of showing how their final employment numbers are obtained, it is difficult for outside experts to assess the accuracy of their work. Instead, we will assess the accuracy of their forecast using the external validity criteria referred to above. Namely, we will compare their Ohio prediction with the *actual* experience in Pennsylvania, whose experience provides a nice benchmark because Pennsylvania

¹We thank Allen Klaiber for his comments on this release.

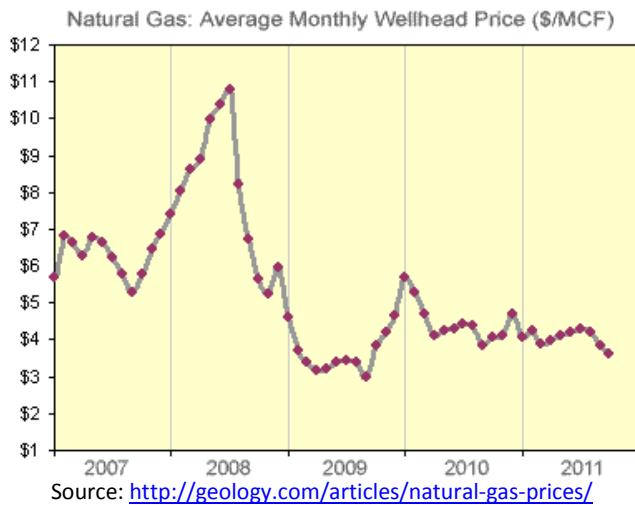
like Ohio, had limited infrastructure for drilling as their boom began. Thus, rolling out a new shale infrastructure should unfold in a similar fashion across the two states.

Between 2011 (one year before drilling commenced) and 2014 (two years after drilling began in 2012), the Ohio Shale Coalition study forecasts 10,843 direct jobs will be created in the oil and natural gas industry (see Table 7 in the Ohio Shale Coalition study). To produce a highest possible three-year employment number, we will assume that Pennsylvania shale drilling began in earnest in 2007. Hence examining a similar three year timeframe as done in the Ohio Shale Coalition report (2006-2009), Pennsylvania directly added only 2,761 additional jobs in the oil and natural gas industry.² In other words, the Ohio Shale Coalition report expects direct oil and natural gas employment to grow at four times the rate of Pennsylvania, which is simply not plausible in our opinion. If the authors of the Ohio Shale Coalition had instead more credibly assumed that Ohio's direct shale employment would have grown at the Pennsylvanian rate, then their employment estimate would have been in the range of 16,500 over the 2011-2014 period (one forth of 66,000), which is not far from the 20,000 estimate produced by Weinstein and Partridge for the 2011-2015.

Weinstein and Partridge, nevertheless, caution that economic impact studies are not taken seriously by regional and urban economists, especially when undergoing rigorous peer review. There are numerous well-known flaws in such studies—even well done impact studies. Instead, in the last few decades, there have been numerous methodological advances that are now used in peer-reviewed research. Weinstein and Partridge discuss these advances in more detail and confirm their results using these more modern and accepted practices.

Generally, economists would predict that drilling and employment would be positively related to profitability. Thus, even more worrisome for the Ohio Shale Coalition's forecast is its expectation that Ohio will make these remarkable gains in the face of rapidly decreasing natural gas prices that make shale gas extraction increasingly less appealing throughout the U.S. (See [Cleveland Plain Dealer Report](#) on natural gas prices). Thus, even if there are other components being mined in the shale (e.g., wet liquids), a key support for future drilling and resulting employment growth has been removed, especially until the certainty of wet products are determined.

²If we had chosen the 2003-2006 period with drilling beginning in 2004, Pennsylvania's direct oil and natural gas employment rose by only 1,358—i.e., the Ohio Shale Coalition forecast is then eight times larger for Ohio. The data source for our Pennsylvania employment figures is the QCEW series from the U.S. Department of Labor, which uses firm tax data to produce employment numbers. The direct oil and natural gas industries we consider for Pennsylvania are NAICS 2111, 213112, and 213111.



The Ohio Shale Coalition study produces some broad lessons for evaluating impact studies for the public, policymakers, and especially the media. First, when the media receives the results of these impact studies, they should ask who pays for them, keeping in mind advocacy groups typically wish for “large” employment effects and their consultants feel direct and indirect pressure to produce the desired results. As we have pointed out in our past work ([Weinstein et al., 2010](#)), green energy employment estimates were also greatly exaggerated by its proponents. Hence, this exaggeration problem is not isolated to the oil and natural gas industry. Second, reporters and the public should subject such studies to basic smell tests as we did in comparing the Ohio estimates to Pennsylvania, which is rather simple to do (but something that the media rarely does). Third, they should ask if market conditions would even support a boom. For example, falling natural gas prices may lead one to even question whether Pennsylvania’s case is already far too optimistic. Finally, the decision of whether to conduct policy in general (in this case shale mining) should be based on benefits and costs of the activity and not on one simplistic measure such as job creation. We could imagine conducting shale drilling with picks and shovels. It could employ millions of workers at incredible expense, but would that be a good policy?

We do note that the Ohio Shale Coalition employment estimates are far more reasonable than previous impact studies, most notably by [Kleinhenz & Associates \(2011\)](#), which estimated Ohio oil and gas extraction from shale would create over 200,000 jobs by 2015. Nevertheless, the bottom line is industry funded impact studies typically fail to pass simple smell tests and the media and the public need to do a better job of weighing the credibility of such reports if good public policy and business planning is to done.