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Marcellus Spin-off Jobs?

As we noted in a previous *Policy Brief* (Volume 11, Number 38), natural gas drilling in the Marcellus Shale formation has had a tremendous impact on jobs in the mining and logging sector not only in the Pittsburgh region but in Pennsylvania as well. Across Pennsylvania the number of payroll employees working in mining and logging had risen by 46 percent from May 2007 to May 2011 while the increase in the Pittsburgh region was a bit higher at 66 percent. While there is little debate about the direct impact of this drilling on jobs in the mining and logging sector, there is some controversy over the number of spinoff jobs being created by the Marcellus Shale drilling boom. Is the Marcellus Shale drilling activity spinning off substantial jobs in other sectors?

Absent access to proprietary information from the companies involved with regard to where and from whom the drilling companies are making purchases and in what quantities, identifying spin-off effects in local economies must be arrived at indirectly. In our approach we compare activity change levels in industry categories that are most likely impacted by the drilling operations. The notion is that if there are localized spin-offs in areas where drilling is occurring, the change in employment in related industries should be stronger than in counties or MSAs where there is no drilling. Granted, this approach is not as precise or as definitive as one would like, but it can offer strong supporting evidence as to whether spin-off jobs are occurring. The alternative approach is to use what economists call multiplier effects. However for small geographic areas, estimates using multipliers can point to misleading results because of leakages of activity into surrounding states or regions.

Anecdotal evidence suggests that drilling in the Marcellus Shale formation has been responsible for spinoff jobs in, among other sectors, manufacturing; trade, transportation, and utilities; and leisure and hospitality (including eating places and hotels). It is argued that manufacturers have seen an increase in pipe and equipment orders for use in gas drilling and removal, the trucking industry has seen a boom as more truckers are required to haul fracking fluid and the leisure and hospitality industry has benefitted as drillers, particularly those from out of state, need places to stay and are frequenting restaurants. Have these industries experienced an increase in employment since the beginning of Shale drilling operations in 2007? To answer this question we will look at the employment numbers for these industries at the Pittsburgh regional and state levels.

Using updated Bureau of Labor Statistics' data from June 2007 to June 2011 we can examine payroll level data for the main industry classifications for not only the Pittsburgh MSA, but statewide, and when applicable to other MSAs in the state as well. Other MSAs with Marcellus Shale activity include State College (Centre County) and Williamsport (Lycoming County). To

provide some comparisons we will look at four MSAs without any Shale drilling activity: Erie; Harrisburg-Carlisle; Reading; and York-Hanover.

The manufacturing sector across the state has been losing jobs for years. For Pennsylvania as a whole the manufacturing sector lost 13 percent of its payroll employees from June 2007 to June 2011. The Pittsburgh MSA (a focus of drilling activity) during this timeframe lost 10.5 percent. The other Shale related MSAs, State College and Williamsport also did better than the state—with losses of 11.1 and 12.3 percent respectively. However, the majority of MSAs in this sample that did not have any Shale activity posted losses greater than the state—Erie (-15.2 percent), Harrisburg-Carlisle (-16.7 percent), and York-Hanover (-13.5 percent). The MSA that did not have any Shale drilling, but yet posted better manufacturing employment numbers than the state as a whole, was the Reading MSA with losses of 10.8 percent. It is noteworthy that manufacturing jobs across the state increased by 13,700 (2.4 percent) the past year (June 2010 to June 2011) and by 185,000 jobs nationally (1.6 percent). Thus, there has been some recovery in factory employment independent of gas drilling related activity.

While the MSA comparative data suggests some gas drilling effects, we cannot conclusively attribute relative gains (or smaller losses) in the manufacturing sector to Marcellus drilling. Without knowing exactly where the manufactured products used in the drilling/transportation process originated, attributing it to the corresponding MSA would be risky. Were the pipes made in Pennsylvania, or were they imported from another state? And if the pipes were manufactured in the Commonwealth, did one factory meet the entire demand or were there several factories throughout the state producing them? The answers to these questions hinge on proprietary information to which the general public does not have access.

Another sector that is mentioned in connection to Shale gas drilling is trade, transportation, and utilities. This sector encompasses utility work as well as trucking and wholesalers. Statewide this sector fell about 3.6 percent from June 2007 to June 2011. In the Pittsburgh MSA the loss was slightly lower at 3.3 percent. But this sector also had been in steady decline in the Pittsburgh MSA since 2001 when it had a reported June payroll count of 244,700 employees. By June 2009 the number had fallen to 214,500, a loss of 12 percent. In June 2010 the number of payroll employees rose to 215,300 and then to 218,700 in June 2011. The increase of about 4,200 employees in this sector from June 2009 to June 2011 is reflected more in wholesale trade where employment rose by 2,600, than in transportation and warehousing subsector which was up only 1,000 employees. How or whether the large increase in wholesale jobs relates to gas drilling is not clear.

The State College and Williamsport MSAs also reported losses in the trade, transportation, and utilities sector of 4.90 and 3.7 percent respectively. For the MSAs in this sample without any Shale activity, only Reading had a decrease smaller (-2.6 percent) than either the state or any of the three Shale related MSAs. Erie (-10 percent), Harrisburg-Carlisle (-7.4 percent), and York-Hanover (-4.91 percent) all had decreases greater than the state and the Pittsburgh, State College, and Williamsport MSAs. Using our comparative change methodology these data point to a significant drilling spin-off impact on the trade and transportation sector.

Perhaps the most commonly held assumption is that those working in the Shale drilling fields, be they from the Commonwealth or elsewhere in the country, are staying in hotels and frequenting local eateries. The sector that encompasses them both is leisure and hospitality. Statewide the leisure and hospitality sector increased its payroll employment by 2.25 percent from June 2007 to June 2011. However the Pittsburgh MSA was virtually unchanged with a decrease of less than

one percent. Bear in mind that it was during this period that the Rivers Casino opened and began hiring hundreds of employees and the Meadows was also expanding its operations.

The State College and Williamsport MSAs had substantial increases over the time frame of 5.8 percent and 14.6 percent respectively. For the non-Shale MSAs, Erie (1.4 percent), Harrisburg-Carlisle (0.30), Reading (0.7), and York-Hanover (-0.6 percent) all performed much lower than the state as well as the State College and Williamsport MSAs.

While the comparative employment data suggest that activity in the Marcellus Shale formation is creating spinoff jobs in some sectors, it is not ironclad. The most convincing evidence of spinoff jobs being created may be with the leisure and hospitality sector which posted very strong gains in the State College and Williamsport MSAs.

Other counties in the northern tier that had seen large drilling efforts do not belong to an MSA and therefore did not have the data available necessary to do area to area comparisons of job changes by sector. However, there is little doubt of the economic impact of Marcellus activity in those counties as we noted in our previous *Policy Brief*.

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