

Study suggests hydraulic fracturing boosts local economies

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The first nationwide study of the comprehensive local impacts of hydraulic fracturing finds that when costs and benefits are added up, communities on average benefit from allowing it.

In studying the economic impacts of the technology that's become critical to U.S. oil and [natural gas production](#), Michael Greenstone, the Milton Friedman Professor in Economics at the University of Chicago, and his co-authors take into account [local](#) changes in amenities, including factors that contribute to the quality of life such as truck traffic, criminal activity and beliefs regarding [negative health effects](#). The researchers found such costs are outweighed by the benefits, which total \$1,200 to \$1,900 a year for the average household.

In the last decade, [hydraulic fracturing](#), or fracking, has helped deliver lower energy prices, enhanced energy security, and lowered air pollution and greenhouse gas emissions. But there have been concerns over negative health and social impacts outweighing the economic benefits for local communities where such drilling takes place.

"This study makes it clear that on net there are benefits to local economies—which we believe is useful information for leaders in the United States and abroad who are deciding whether to allow fracking in their communities," said co-author Chris Knittel, the George P. Shultz Professor of Applied Economics at the Massachusetts Institute of Technology Sloan School of Management and director of the Center for Energy and Environmental Policy Research.

The benefits include a six percent increase in average income, driven by rises in wages and royalty payments, a 10 percent increase in employment, and a six percent increase in housing prices. On the costs side, fracking reduces the typical household's quality of life by about \$1,000 to \$1,600 annually—excluding the increase in

household income.

"Our estimates are based on the knowledge that communities currently have," said Greenstone, who also serves as director of the Energy Policy Institute at Chicago. "So, for example, if new information emerges that indicates that there are larger negative local health effects than is currently believed, this would likely lead to declines in housing prices and overall welfare impacts. But based on what is currently known, the average community that has allowed fracking has enjoyed substantial net benefits."

The authors also find that each region is affected differently, with some benefiting more than others. For example, the estimated effect on house prices was much larger in North Dakota's Bakken shale and Pennsylvania's Marcellus shale than in other regions.

"There appears to be a good deal of heterogeneity in the estimates across the nine shale regions in our sample," said co-author Alex Bartik, a doctoral student at MIT. "These differences reflect both variation in how large fracking activity is relative to the local economy, as well as differences in local housing markets. In future research, we're working on understanding this heterogeneity better."

Despite the heterogeneity, the overall trend is clear. "All in all, the current data shows that on average the overall [benefits](#) to [local communities](#) outweigh the costs," Greenstone said.

More information: Bartik, Alexander Wickman and Currie, Janet and Greenstone, Michael and Knittel, Christopher R., The Local Economic and Welfare Consequences of Hydraulic Fracturing (December 22, 2016). Available at SSRN: ssrn.com/abstract=2692197

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