

# Shale Public Finance

## Local government revenues and costs associated with oil and gas development

Daniel Raimi and Richard G. Newell, Duke University

### Project Objective

Oil and gas development has increased substantially in the United States over the past decade, largely associated with shale resources. This increase has important implications for local government's financial capacity to provide quality services to citizens. This issue brief provides an overview of the major revenues and service demands (i.e., costs) associated with new oil and gas development for local governments, along with the net fiscal impact to date for county and municipal governments across ten oil and gas plays in eight states: Arkansas, Colorado, Louisiana, Montana, North Dakota, Pennsylvania, Texas, and Wyoming. For the full report and interactive maps showing some of our key findings see: <http://energy.duke.edu/shalepublicfinance>.

### Research Methods

We examined a range of new revenues and costs for local governments based on structured on-site interviews with more than 100 local government experts, detailed analysis of local government financial reports and state and local tax policies, and a workshop with local government officials, independent and university researchers, and representatives from the oil and gas industry.

We examined local governments in regions that varied across several important variables, such as areas where oil and gas activity was booming or had slowed in recent years, regions that experienced different scales of oil and gas activity, and that varied in their fiscal policy structures. This includes local governments in urban, semi-urban, and rural regions, where population density and government capacity vary substantially.

### Key Findings

- In states where local governments are allowed to levy property taxes on oil and gas production (AR, CO, TX, and WY), increased production has led to rapid increases in property tax receipts, especially for counties. In three states where local governments are not allowed to levy property taxes (MT, ND, and PA), allocations of state-collected taxes/fees on production or drilling activity have been the most significant new source of revenue.
- Population growth and increased economic activity associated with the industry has boosted sales tax revenue for many local governments, especially municipalities. Some local governments have leased county- or city-owned land for oil and gas production, generating large lease revenues.
- Major costs for local governments have tended to center around three issues: increased demand for road repair associated with industry-related truck traffic; increased demand for sewer and water services associated with industry-driven population growth; and a variety of staff costs, such as expanding police or emergency services and raising compensation to compete with high-paying jobs in the oil and gas sector.
- In-kind contributions and collaboration between local governments and oil and gas operators have been an important part of limiting road maintenance costs for some local governments, especially in Arkansas, Pennsylvania, and some parts of Colorado.

## Conclusions

Our research indicates that the net impact of recent oil and gas development has generally been positive for local public finances in the regions we examined. However, local governments in western North Dakota and municipalities in eastern Montana's Bakken region have experienced net negative fiscal effects to date, and some municipalities in rural parts of Colorado and Wyoming struggled to manage rapid population growth during heavy drilling activity in the mid-late 2000's. As oil and gas activity in these regions slowed, the net fiscal effects for local governments generally improved, and we observed small net positive or roughly neutral fiscal effects.

We observed net positive fiscal effects in regions where oil and gas activity was booming (such as Colorado's Denver-Julesberg basin, the Eagle Ford shale region, and Permian basin in Texas) or had slowed in recent years (such as Arkansas's Fayetteville shale region, Colorado's Piceance Basin, and Louisiana's Haynesville shale region). We also observed net positive fiscal effects in communities that had experienced large impacts associated with the oil and gas industry, as well as those that experienced modest impacts. This includes local governments in urban (e.g., Fort Worth, Texas), semi-urban (e.g., southwest Pennsylvania) and rural regions (e.g., northeast Pennsylvania or Colorado's Piceance basin), where population density and government capacity vary substantially.

Fiscal effects change over time, with service demands and associated costs tending to peak during the most active periods of drilling and hydraulic fracturing, when truck traffic tends to be heaviest and population growth tends to be most rapid. Local government revenues tend to rise more slowly, though it depends on the revenue mechanism. Local sales taxes, lease payments, or in-kind payments may accrue to local governments very quickly, while property taxes and allocations of state severance taxes generally take longer to flow to local governments.

Collaboration between local governments and oil and gas companies can play a major role in limiting costs, especially for road maintenance and repair. For regions where in-kind contributions to local governments for road maintenance were common, costs were far lower than they would otherwise be, and we generally observed substantial net positive fiscal effects in these regions.

## Authors

### Richard G. Newell

Director, Duke University Energy Initiative  
Gendell Professor of Energy and Environmental Economics  
richard.newell@duke.edu  
(919) 681-8663

### Daniel Raimi

Associate in Research  
Duke University Energy Initiative  
daniel.raimi@duke.edu  
(919) 886-1952

## About the Shale Public Finance Project

This report is the first in a series to be produced by the Duke University Energy Initiative on shale public finance, supported by the Alfred P. Sloan Foundation. The Shale Public Finance project is examining the financial implications for local governments associated with increased domestic oil and gas production, largely from shale resources. A separate report will focus on state policies for the collection and allocation of revenue from oil and gas production, followed by detailed case studies of experiences in particular regions.

For more information, to view interactive maps showing some of our key findings, or to be notified when new publications are released, visit <http://energy.duke.edu/shalepublicfinance>.