Local fiscal effects of oil and gas development in eight states

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Abstract

Oil and gas production in the United States has increased dramatically in the past 10 years. This growth has important implications for local governments, which often see new revenues from a variety of sources: property taxes on oil and gas property, sales taxes driven by the oil and gas workforce, allocations of state revenues from severance taxes or state and federal leases, leases on local government land, and contributions from oil and gas companies to support local services. At the same time, local governments tend to experience a range of new costs such as road damage caused by heavy industry truck traffic, increased demand for emergency services and law enforcement, and challenges with workforce retention. This report examines county and municipal fiscal effects in 14 oil- and gas-producing regions of eight states: AK, CA, KS, OH, OK, NM, UT, and WV. We find that for most local governments, oil and gas development—whether new or longstanding—has a positive effect on local public finances. However, effects can vary substantially due to a variety of local factors and policy issues. For some local governments, particularly those in rural regions experiencing large increases in development, revenues have not kept pace with rapidly increased costs and demand for services, particularly on road repair.

Key Words: Shale gas, tight oil, local public finance, severance tax, property tax, property values, hydraulic fracturing

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1. Report summary

Oil and gas production has grown rapidly in the United States over the past decades, in large part due to the development of shale resources. Local governments are affected by oil and gas development in a variety of ways, including impacts to revenues and demand for services. In this report, we build on our previous research by examining 14 additional regions across eight states with substantial oil and gas production: Alaska, California, Kansas, New Mexico, Ohio, Oklahoma, Utah, and West Virginia. Some of these regions have recently experienced substantial increases in oil and gas activity, while others have not. We describe the major revenue sources, the major demands for services (i.e., costs), and the net fiscal impacts for counties and municipalities in each region. Previous research (Newell & Raimi 2015b, a) examined 12 regions in eight different states: Arkansas, Colorado, Louisiana, Montana, North Dakota, Pennsylvania, Texas, and Wyoming.

We find wide variation in the net fiscal effects for local governments, with most local governments experiencing net fiscal benefits from the industry (See Table 1). However, local factors and state-level policies can play an important role, and some local governments in a variety of states have experienced net costs associated with oil and gas activity. As we found in parts of Kansas, New Mexico, Oklahoma, and Utah, large-scale and rapid oil and gas development in highly rural regions can negatively affect local government finances, which may struggle to keep up with demands for road repair, emergency and law enforcement services, and a variety of costs associated with hiring new and retaining existing staff. If local revenue sources or allocations from the state government are not sufficient to manage these new costs, local governments will experience net fiscal costs and services or infrastructure may deteriorate.

Table 1 Net financial impact for local governments examined in the study

State	Counties	Municipalities
Alaska*	Large net positive	Large net positive
California	Roughly neutral to large net positive	Medium net negative to large net positive
Kansas	Roughly neutral to large net positive	Small to large net positive
New Mexico	Roughly neutral to large net positive	Medium net negative to large net positive
Ohio	Medium to large net positive	Roughly neutral to small net positive
Oklahoma	Medium net negative to large net positive	Medium to large net positive
Utah	Medium net negative to large net positive	Medium to large net positive
West Virginia	Roughly neutral to medium net positive	Medium to large net positive

Note: Impact refers to the relative, not absolute, impact on a local government's financial position. For example, $1 million may represent a large sum for one local government, but a small sum for another. The terms "small," "medium," "large," and "neutral" are our best assessment, based on interviews with local experts and analysis of local government financial documents. *For Alaska, the "Counties" column refers to Borough governments.

Local factors such as geography, demographics, and pre-existing infrastructure can each play important roles in determining the net fiscal impacts for local governments in regions with rapidly expanding oil and gas activity. For example, two counties in eastern Utah's Uintah basin have

experienced substantial fiscal benefits associated with the industry due to large new revenues associated with production. But a neighboring third county has little oil and gas production leading to limited revenues and, because oil and gas vehicle traffic has increased substantially in this county, it has not been able to keep up with demand for road repair.

Throughout Alaska, and in parts of California, Kansas, New Mexico, and Oklahoma, where longstanding oil and gas production has been declining in recent years, a distinct set of issues tends to arise. Generally speaking, local governments in these regions experience substantial fiscal benefits due to a large, though declining, tax base driven by oil and gas property and the oil and gas workforce. For local governments in these regions, a key concern is diversification of public revenues, which is often related to the challenge of diversifying the regional economy. As oil and gas activity slows and the associated tax base erodes, local leaders are trying to increase diversification to support their communities and public coffers. The salience of this challenge will likely grow with the sharp drop in oil prices that began in late 2014 and persists through the time of this writing.

1.1 Local government revenues associated with oil and gas development

Local governments may benefit from a variety of revenue sources associated with oil and gas production including severance taxes, lease revenue from government land, property taxes, and sales taxes, but these sources vary from state to state. In some states, such as Kansas, Oklahoma, and West Virginia, a portion of state-collected severance taxes is allocated directly to local governments. In other states, such as Utah, the state government allocates to local governments a portion of revenues collected from federal oil and gas leases. Lease payments on local government land have also generated substantial revenues for some local governments in California, Kansas, Ohio, and Oklahoma, though these revenues depend on the extent of local government land holdings.

Each state we examine in this report allows local governments to apply their ad-valorem property taxes to the value of oil and gas property, though the applicability of these taxes varies. In some states, both oil and gas production and equipment are taxed as property; in some states, only the surface equipment is included; and in others, only the value of the underground reserves may be taxed as property. Oil and gas activity may also increase sales tax revenues for local governments, either directly through sales of oil and gas equipment, or indirectly through sales generated by the oil and gas workforce.

Finally, oil and gas companies may make in-kind or cash contributions directly to local governments. This can take the form of formal or informal agreements to provide materials or repair roads damaged by oilfield traffic; ad-hoc donations of cash, equipment, or training to local law

enforcement, fire departments, and emergency medical services (EMS); and more. We have been unable to establish why these types of contributions are common in some regions and not in others.

Table 2. Major local government revenue sources associated with oil and gas development

Revenue instrument	Deployed by	Basis for revenue	Allocated to
Severance tax	State	Value or volume of oil/gas production, number of wells drilled	Varies by state
Lease payments	Federal, state, county, muni	Negotiated lease terms and royalties	State, county, muni
Property taxes	County, muni	Value of oil/gas property (definitions vary by state)	County, muni
Sales tax	State, county, muni	Value of sales (rates vary by locality) affected by oil- and gas-related economic activity	State, county, muni
In-kind	County, muni	Negotiated agreements or donations	County, muni

1.2 Local government costs associated with oil and gas development

Oil and gas development may impose a variety of costs and increased demand for services on local governments. The largest challenge for local governments in most regions we examined was road damage caused by heavy industry truck traffic. This challenge tends to be most acute in regions experiencing large-scale development for the first time, though it also exists in regions with decades of history in oil and gas production. Road damage can be exacerbated by limited local crude oil pipeline infrastructure, which forces most crude to be moved by truck in some regions, as we observed in parts of Kansas, Ohio, Oklahoma, and Utah. Road damage can be mitigated by robust existing infrastructure and in-kind agreements between local governments and operators.

For local governments in highly rural regions experiencing rapid population growth, sewer and water services may be stressed and require costly upgrades. In several western states we visited for our first report (e.g., CO, ND, MT, and WY), sewer and water services were sometimes stressed and required costly upgrades in rural regions that experienced rapid population growth. This was generally not the case in regions examined in this report.

We did observe a variety of new staff costs. First, local governments in many regions have seen increased demand and costs for fire, EMS and law enforcement. These costs arise directly due to vehicle or well sites accidents, increased training and equipment needs to manage emergencies involving hazardous materials, and indirectly in response to increased fights, disorderly conduct, and impaired driving associated with oil- and gas-driven population growth. Second, local governments in a number of regions have needed to add new staff to accommodate increased demand for services from emergency services discussed above, road and bridge crews, administrative staff such as county

clerks, and more. Many local governments also face added costs as they must raise their employees' pay and/or replace workers who are drawn to high wages offered in the oil and gas sector.

Finally, local governments in some regions have experienced substantial costs related to environmental issues. In southern California, one small municipality faced costs from legacy environmental damage from oil production in the early 20th Century, and another has seen negative fiscal effects associated with developing regulations for potential future oil production. In Kansas and Oklahoma's Mississippian Lime region, earthquakes associated with oil and gas wastewater injection has caused damage to public property, which directly affects governments, and to private property, which may reduce property values and associated tax revenues.

Table 3. Major local government costs associated with oil and gas development

Service provided	Provided by	Connection to oil/gas industry
Road maintenance/repair	County, muni	Increased heavy truck traffic
Sewer/water	Muni	Population growth
Police, EMS, fire	County, muni	Oil and gas accidents, equipment, training
Staff costs/workforce retention	County, muni	Population growth, greater labor demand

1.3 Summary of findings in eight states

1.3.1 Alaska

Local governments across Alaska rely heavily on the oil and gas industry, both directly and indirectly. Since the 1970s, production has been dominated by the North Slope region, with more limited (but recently increasing) production from the Cook Inlet region. Many oil and gas industry employees live in southern parts of the state and commute to the North Slope for one- or two-week shifts. These workers and their associated corporate headquarters provide a substantial part of the local sales and property tax base for local governments in the south. In the North Slope, industry activity is largely confined to regions without substantial government services, and oil and gas companies provide their own roads, public safety, and other services. As a result, local governments in the north see few direct costs from the industry but benefit substantially from oil- and gas-related property taxes collected by the North Slope Borough.

Looking forward, Alaska's state and local governments face substantial fiscal challenges. More than 90 percent of state general fund revenues come from oil- and gas-related sources, and Alaska does not levy a state-wide sales tax or income tax (though many local governments collect sales taxes). Oil prices fell sharply in 2014 and, as production from the North Slope continues to fall, the state expects to face large deficits and will drain its reserve funds within the next several years without new revenue or substantial cuts in spending. This trend may have a sizeable effect on

Alaska's many small local government entities, which rely heavily on revenue sharing and grants from the state.

1.3.2 California

Local governments in California's oil- and gas-producing regions experience a range of fiscal effects from the industry. In the Los Angeles basin, Los Angeles city and county experience modest effects from oil and gas development due to their large and diverse economies. The city of Long Beach benefits substantially due to its unique position as the working interest in the giant Wilmington oilfield, while the nearby city of Signal Hill experiences substantial negative fiscal effects due to long-term environmental damages associated with oil and gas development in the first half of the 20th century.

In Kern County, where 70 percent of California's oil is produced, local governments experience large net fiscal benefits despite steadily declining oil and gas production. The county government relies on oil and gas property for a large share of its annual operating revenues. Cities in the region benefit from oil and gas companies and their employees that support the local economy and public finances.

1.3.3 Kansas

We examined local governments in southern Kansas' Mississippian Lime region and the southwestern Hugoton gas region. In the Mississippian Lime region, municipal governments have generally experienced net fiscal benefits associated with increased sales taxes driven by the oil and gas workforce. However, multiple county governments have not been able to keep up with demand for road repairs. This challenge has been exacerbated by state policies that make revenue from oil- and gas-related sources unpredictable and volatile. Specifically, oil and gas property valuation practices do not accurately reflect the changing price of oil and gas, and allocations from the state's Oil and Gas Depletion Trust Fund are unpredictable and subject to "sweeps," where the state government retains revenue that is statutorily allocated to counties. In addition, a number of counties have been subject to lawsuits due to disputes over the proper interpretation of state-issued guidelines for assessing the value of oil and gas property. In several cases, counties have been forced to repay hundreds of thousands of dollars in tax revenues collected in prior years. Finally, local governments in the Mississippian Lime region have experienced damage to public and private property from earthquakes associated with oil and gas wastewater injection.

For local governments in the Hugoton region, where natural gas production has occurred since the 1930s and has been declining for decades, the oil and gas industry provides an important tax base and local governments experience substantial benefits from the industry. For counties, ad valorem property taxes and allocations from the state's Oil and Gas Depletion Trust Fund, though

volatile, have easily outweighed costs associated with the industry. For municipalities, the oil and gas workforce helps support local sales taxes, with little in the way of new costs.

1.3.4 New Mexico

Both regions of New Mexico we examined, the Permian basin in the southeast and the San Juan basin in the northwest, are heavily dependent on the oil and gas industry as an economic driver. For local governments in these regions, local government fiscal health tends to grow stronger during years with high production, and weaken during periods of low production. For county governments, road damage has been the leading cost, but has generally been manageable thanks to revenue from property taxes on oil and gas production and equipment. One county out of the three we examined also receives substantial in-kind donations from industry on road maintenance and repair.

For municipalities, gross receipts taxes (which are similar to sales taxes but include transactions for both goods and services) are the dominant revenue source, and they tend to track oil and gas activity in both regions. Leading costs for municipalities primarily center on workforce retention when oil and gas activity is booming. The leading challenge for municipalities in both regions is diversification of their fiscal bases. Local officials aspire to greater diversification, but the prospects are challenging given high local housing costs, geographic isolation, limited long-distance transportation options, and limited access to amenities.

1.3.5 Ohio

Local governments in Ohio's Utica shale region have experienced a range of new revenues and costs associated with a rapid increase in shale development. The net effects have generally been positive, with counties benefiting from lease revenues and sales taxes, and municipalities benefiting from in-kind donations and increased municipal income taxes driven by oil and gas activity.

Road-use maintenance agreements (RUMAs) have played a large role in limiting road costs for counties and townships, which maintain much of the state's rural road networks. However, road costs have still been substantial. In addition, county and municipal governments have seen substantial increases in costs for law enforcement and emergency services associated with the industry, along with workforce retention challenges.

1.3.6 Oklahoma

Oil and gas activity has produced mixed fiscal results for Oklahoma local government finances. Counties in the Mississippian Lime region, where drilling has boomed in recent years, have experienced widespread damage to local roads, and allocations of the state's severance tax (called the Gross Production Tax, or GPT) have not been sufficient to manage these challenges. Counties collect substantial revenue from ad-valorem taxes on oil and gas property, but those revenues cannot

be used for local roads. Instead, roads are funded through several dedicated sources including allocations of the GPT. As a result, most facets of county government in the region have seen large fiscal benefits, while county roads have suffered. Local governments in the region have also experienced damage to public and private property from earthquakes associated with oil and gas wastewater injection. Counties in other parts of the state have also seen mixed experiences. Those with more robust infrastructure prior to heavy drilling activity have generally seen net fiscal benefits, while those with more limited infrastructure have struggled to repair roads damaged by industry truck traffic.

For municipal governments, oil and gas activity has largely been beneficial across the regions we examined. While population has increased in several cities, the growth has been manageable, and revenue from sales taxes and other sources have generally outpaced new demand for services and costs, such as increased compensation to retain staff. Oklahoma's substantial local oil and gas workforce is likely an important factor limiting population growth in rural cities.

1.3.7 Utah

Local governments we examined in Utah—with one exception—have experienced net fiscal benefits from increased oil and gas development in the Uintah basin region of Eastern Utah. Property taxes, sales taxes, and allocations of federal leasing dollars from the state government have boosted public finances for county governments. Most crude oil is trucked from the region rather than transported through pipelines, and counties often face challenges with repairing roads affected by this heavy truck traffic. Other major challenges for county governments are related to workforce retention and increased demands on law enforcement from traffic issues and crimes committed by the oil and gas workforce. For two of the three counties we examined, revenues have easily outweighed costs. In Carbon County, where oil and gas vehicle traffic is heavy but where relatively little production occurs, revenues have failed to keep pace with road costs.

Every city in eastern Utah that we examined has experienced substantial fiscal benefits from increased oil and gas development. Key revenue sources are state allocations of federal leasing revenue and sales taxes driven by the oil and gas workforce. Municipalities have also faced increased demand for road repair and emergency services, and have struggled with workforce retention during the most active phases of drilling. In all cases, however, new revenues have easily allowed them to manage these impacts.

1.3.8 West Virginia

Local government finances among the West Virginia local governments we examined have generally benefited from Marcellus shale development. For counties and municipalities, allocations from the state severance tax has been an important source of revenue. Municipalities have benefited

from sales taxes due to increased sales volumes associated with Marcellus-driven economic activity. Counties have benefited from increased property tax revenues, boosted by new natural gas properties and their associated infrastructure.

Local governments also described several common challenges, including damage to local roads. In West Virginia, the state government maintains rural road networks, so while road damage does not have a direct impact on county government finances, it does create challenges for local residents and businesses. For municipalities, industry vehicles have damaged city streets and added substantial costs. Heavy vehicle traffic associated with drilling and pipeline construction has also led to a surge in traffic accidents and EMS calls, creating substantial new demands on first responders and raising costs for counties and cities. In addition, a number of local governments in the region struggled to retain their workforce, and were forced to raise wages and other compensation to compete with the oil and gas industry.

1.3.9 Summary of major local government revenues and costs in eight states

Table 4. Major local government revenues associated with oil and gas development

		Severance tax*	Lease revenues*	Property tax	Sales tax	In-kind	Other
AK	Boroughs			$	$		
	Municipalities	$	$	$	$		
CA	Counties			$			
	Municipalities		$		$		$
KS	Counties	$		$			
	Municipalities		$		$		
NM	Counties			$	$		
	Municipalities				$		
OH	Counties		$		$	$	
	Municipalities		$			$	$
OK	Counties	$		$	$		
	Municipalities		$		$		
UT	Counties		$	$	$		
	Municipalities		$		$		
WV	Counties	$	$	$			
	Municipalities	$			$		

*Severance taxes and lease revenues from state and federal lands are typically collected by the state government and allocated to local governments according to formulae that vary from state to state.

Table 5. Major local government costs associated with oil and gas development

		Roads	Sewer and water	Staff/Workforce retention	Police/EMS	Other
AK	Boroughs			$		
	Municipalities			$		
CA	Counties	$		$		
	Municipalities			$		$
KS	Counties	$		$	$	$
	Municipalities	$		$		$
NM	Counties	$		$		
	Municipalities	$		$		
OH	Counties	$		$	$	
	Municipalities	$		$	$	
OK	Counties	$		$	$	$
	Municipalities			$		$
UT	Counties	$		$	$	
	Municipalities	$		$	$	
WV	Counties			$	$	
	Municipalities	$		$	$	

Note: Based on interviews with local government officials and examination of state and local government financial records. A dollar sign indicates that most or all local governments experienced the relevant category as a major new cost attributable primarily to oil and gas development.

1.4 Summary of key findings

The fiscal effects of oil and gas production on local governments can vary according to a number of local factors. For most regions we examined, oil and gas development—whether new or longstanding—has been a net positive for county and municipal finances. For highly rural communities with limited existing infrastructure, rapid and large scale industry growth tends to result in large new costs such as road repair, emergency services, and staff costs. For regions that are highly reliant on oil and gas as an economic base, decreasing production and associated revenues poses important questions about long-term fiscal health. Other key findings include:

Predictable, reliable revenue sources are beneficial for local governments with revenues that are closely tied to the oil and gas industry. While industry activity inevitably ebbs and flows with changes in regional gas and global oil prices, policies can either mitigate or exacerbate this volatility.

Flexible funding mechanisms, such as Utah's Community Impact Grants, can complement these more predictable revenues by supporting local governments experiencing unexpectedly high costs associated with oil and gas development.

Collaboration with oil and gas operators particularly on road repair, can substantially reduce the costs for local governments trying to maintain infrastructure affected by industry traffic.

Regions with long-term declining production face a distinct set of issues. Economic diversification is a goal for officials in these regions, but will be a challenge given the geographic isolation, limited amenities, and limited infrastructure available in many of these communities.

Oil- and gas-related environmental issues can affect local public finances. Legacy environmental issues in parts of southern California and damage from earthquakes associated with oil and gas wastewater injection in the Mississippian Lime region have created fiscal challenges.

Alaska faces distinct challenges. Many small local governments depend heavily on funding from the state, which faces revenue shortfalls for the foreseeable future. Larger local governments may also struggle if oil production and associated employment declines.

1.5 Summary of methodology

This report describes the recent fiscal impacts to local governments related to oil and gas development. The regions included in this report were selected to complement the states and regions examined in previous research (Newell & Raimi 2015b). In that report, we examined local governments where oil and gas activity had most rapidly increased in the preceding decade: Arkansas (Fayetteville), Colorado (Niobrara and Piceance basin), Louisiana (Haynesville), Montana (Bakken), North Dakota (Bakken/Three Forks), Pennsylvania (Marcellus), Texas (Barnett, Eagle Ford, Haynesville, and Permian basin), and Wyoming (Green River basin).

In this report, we examine every other major onshore oil- and gas-producing region of the United States. Therefore, we include regions where development has increased substantially in recent years, as well as regions where industry activity has changed little or declined. We include local governments in and around major producing regions in Alaska (Kenai Peninsula and North Slope), California (Kern County and Los Angeles basin), Kansas (Hugoton and Mississippian Lime), New Mexico (Permian and San Juan basins), Ohio (Utica), Oklahoma (Anadarko basin, Mississippian Lime and Woodford), Utah (Uintah basin), and West Virginia (Marcellus). Table 6 provides basic information on each region and its oil and gas development status.

Table 6: Major oil- and gas-producing regions examined

State	Play/region	Initial major production	Predominate type	Production status
AK	Kenai Peninsula	1960s	Oil/gas	Declining since 1960s, limited new activity
	North Slope	1970s	Oil	Declining since 1980s, limited new activity
CA	Los Angeles	1890s	Oil	Declining since 1970s, limited new activity
	Kern County	1920s	Oil	Slight decline since 1980s, strong new activity
KS	Hugoton	1930s	Gas	Declining since 1970s, limited new activity
	Mississippian Lime	2010s	Oil/gas	Very active in early 2010s
NM	Permian basin	1930s	Oil/gas	Very active in early 2010s
	San Juan basin	1980s	Gas	Very active in 2000s, declining in 2010s
OH	Utica	2010s	NGLs/gas	Very active in 2010s
OK	Anadarko basin	1970s	Oil/gas	Very active in 2010s
	Mississippian Lime	1950s	Oil/gas	Declining since 1970s, very active in 2010s
	Woodford	2000s	Gas	Very active in 2000s, declining in 2010s
UT	Uintah basin	1950s	Oil/gas	Very active in 2000s, declining in 2010s
WV	Marcellus	2000s	Gas	Very active in 2010s

While not a comprehensive survey of local governments in these regions, our methodology allows us to make fairly broad conclusions about overall fiscal effects of oil and gas activity. The local governments we examine vary across four important dimensions: scale of oil and gas development (i.e., how much oil and gas activity has occurred or is occurring), phase of oil and gas development (i.e., is the region currently experiencing large amounts of activity and population growth, or has activity slowed), size of government (e.g., a small town or a large city), and rurality of region (e.g., population density and existing infrastructure). Metrics illustrating these factors are provided throughout the report and are aggregated in Appendix tables A2 and A3. Examining local governments that varied across these dimensions allowed us to observe whether any or all of these variables weighed heavily on the net fiscal effects.

This analysis examines recent fiscal effects, rather than historical or potential future fiscal effects. However, if major challenges or opportunities concerning historical or long-term trends arose during our interviews (for example, how to make fiscal plans under uncertain oil and gas production and price scenarios), we make note of them in this report.

Our analysis is based on three major research components and is similar to the analysis conducted in Newell and Raimi (2015b). First, we traveled to each region to conduct structured interviews with leading elected officials (i.e., county commissioners or mayors), professional staff (i.e., city managers or county administrators), and subject area experts (i.e., finance directors or oil and gas department administrators). Second, we conducted a detailed analysis of local and state government financial documents along with data on oil and gas activity to understand whether recent fiscal trends were correlated with industry activity. Third, we analyzed revenue collection and allocation policies, which vary substantially between states.