Oil and gas revenues in 16 U.S. States

Daniel Raimi, Senior Research Associate
University of Ohio webinar
December 6, 2017
About Resources for the Future

Resources for the Future (RFF) is an independent, nonprofit research institution in Washington, DC.

RFF’s mission is to improve environmental, energy, and natural resource decisions through impartial economic research and policy engagement.
About the Shale Public Finance project

• Supported by
  • The Alfred P. Sloan Foundation
  • Duke University Energy Initiative
  • RFF

• Carried out at Duke University and Resources for the Future
  • Richard Newell, co-principal investigator
    • President and CEO of RFF
  • Daniel Raimi, co-principal investigator
    • RFF and University of Michigan
Research objectives

• Oil and gas development has increased dramatically in the United States over the past ~10 years

• How has this increase affected local government’s ability to provide services?

• How have governments managed revenue associated with oil and gas activity?

• What lessons can be learned?
Research methods

• Examined every major onshore oil- and gas-producing region in the United States (21 regions in 16 states)

• Structured interviews with over 250 local public officials
  • 61 counties, 80 municipalities, 12 other local government entities

• Detailed analysis of state and local fiscal policies
Our travels: heat map of recent drilling permits

Map source: Drilling Info 2.0. Heat map data represents drilling permits issued in the 90 days leading up to Feb. 20, 2015. Permit data not available for Alaska.
We quantify the key sources of direct revenue for state and local governments

- For every $1 of revenue from oil and gas production, what percentage do state and local governments collect from:
  - Federal leases
  - State leases
  - Severance taxes (or similar mechanisms)
  - Property taxes

- Other revenue sources can be significant, but are more difficult to precisely quantify
  - Sales taxes
  - Income taxes
Direct oil and gas revenues for U.S. state and local governments in FY 2013

Share of oil and gas value collected by state and local governments

- State lands
- Federal lands
- Local property taxes
- Severance and other state taxes/fees


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States allocate these revenues for a variety of purposes

• State current expenditures
  • Largest recipient of funds

• State trust funds
  • Savings for future state government operations

• Education current expenditures
  • Second largest recipient of funds

• Education trust funds
  • Savings for future education expenditures

• Local government current expenditures
Oil and gas revenue allocation in FY 2013

<table>
<thead>
<tr>
<th>Destination</th>
<th>Share of Oil and Gas Value Flowing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Local governments</td>
<td></td>
</tr>
<tr>
<td>Education trust funds</td>
<td></td>
</tr>
<tr>
<td>Education current expenditures</td>
<td></td>
</tr>
<tr>
<td>State trust funds</td>
<td></td>
</tr>
<tr>
<td>State current expenditures</td>
<td></td>
</tr>
</tbody>
</table>

**Source:** Newell and Raimi, 2017, in Energy Policy.
### North Dakota oil and gas revenue flows in FY 2013

<table>
<thead>
<tr>
<th>Total $m</th>
<th>Share of prod. value</th>
<th>Revenue source</th>
<th>Revenue recipient</th>
<th>Total $m</th>
<th>Share of prod. value</th>
</tr>
</thead>
<tbody>
<tr>
<td>92</td>
<td>0.4%</td>
<td>Federal lands</td>
<td>Local governments</td>
<td>766</td>
<td>3.1%</td>
</tr>
<tr>
<td>345</td>
<td>1.4%</td>
<td>State lands</td>
<td>Education trust funds</td>
<td>455</td>
<td>1.9%</td>
</tr>
<tr>
<td>-</td>
<td>-</td>
<td>Property taxes</td>
<td>Education current expenditures</td>
<td>79</td>
<td>0.3%</td>
</tr>
<tr>
<td>2,408</td>
<td>9.8%</td>
<td>Severance taxes (or similar)</td>
<td>State trust funds</td>
<td>778</td>
<td>3.2%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>State current expenditures</td>
<td>768</td>
<td>3.1%</td>
</tr>
</tbody>
</table>

Source: Newell and Raimi 2017. A: Some state current expenditures are allocated through an annual budget process to education and local government.
## Pennsylvania oil and gas revenue flows in FY 2013

<table>
<thead>
<tr>
<th>Total $m</th>
<th>Share of prod. value</th>
<th>Revenue source</th>
<th>Revenue recipient</th>
<th>Total $m</th>
<th>Share of prod. value</th>
</tr>
</thead>
<tbody>
<tr>
<td>-</td>
<td>-</td>
<td>Federal lands</td>
<td>Local governments</td>
<td>156</td>
<td>1.6%</td>
</tr>
<tr>
<td>144</td>
<td>1.5%</td>
<td>State lands</td>
<td>Education trust funds</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>-</td>
<td>-</td>
<td>Property taxes</td>
<td>Education current expenditures</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>226</td>
<td>2.3%</td>
<td>Impact Fee</td>
<td>State trust funds</td>
<td>213</td>
<td>2.2%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>State current expenditures</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Newell and Raimi 2017. A: Some state current expenditures are allocated through an annual budget process to education and local government.
### Ohio oil and gas revenue flows in FY 2013

<table>
<thead>
<tr>
<th>Total $m</th>
<th>Share of prod. value</th>
<th>Revenue source</th>
<th>Revenue recipient</th>
<th>Total $m</th>
<th>Share of prod. value</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.2</td>
<td>0.02%</td>
<td>Federal lands</td>
<td>Local governments</td>
<td>1</td>
<td>0.1%</td>
</tr>
<tr>
<td>0.005</td>
<td>0.001%</td>
<td>State lands</td>
<td>Education trust funds</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>5</td>
<td>0.5%</td>
<td>Property taxes</td>
<td>Education current expenditures</td>
<td>3</td>
<td>0.4%</td>
</tr>
<tr>
<td>5</td>
<td>0.5%</td>
<td>Severance taxes (or similar)</td>
<td>State current expenditures\textsuperscript{a}</td>
<td>5</td>
<td>0.5%</td>
</tr>
</tbody>
</table>

Source: Newell and Raimi 2017. A: Some state current expenditures are allocated through an annual budget process to education and local government.

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Context, analysis, and conclusions
• Ohio collects less revenue than any other major oil- and gas-producing state
  • This includes severance taxes and property taxes
  • Most analysis suggests that moderate severance taxes do not have a large effect on private investment decisions
• However, more revenue flowing to government does not necessarily enhance wealth retention
  • The private benefits of shale development have been large
• In regions that are heavily dependent on energy extraction, building public funds makes more sense to mitigate “busts”
  • Alaska, North Dakota, Wyoming, etc.
• In regions with more diverse economies, this may be less necessary
  • California, Colorado, Ohio?
Conclusions

• States have different approaches to tax policy based on history, economic structures, political dynamics, etc.
  • It is appropriate for states to take different approaches

• The larger the “boom,” the more challenges arise related to economic diversification
  • Ohio – as a whole – has not “boomed” like North Dakota
  • But some regions have been heavily affected

• In a case like this, a preferred fiscal policy would focus on revenue for the local or regional, rather than state level
A shameless plug

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www.thefrackingdebate.com
Thank you

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