Economic Impact Assessment

Colorado’s Recent Rule Makings & Impacts on Garfield County

2022 Energy & Environment Symposium
April 13-14, 2022
Many studies estimating regulatory costs & benefits during regulatory rule makings

This study looks at these costs after implementation

Why? County tax base is affected by new investment

Objectives of this study are three-fold
  - Identify & measure regulatory compliance costs,
  - Estimate impacts investment & production, and
  - Estimate the associated economic and fiscal impacts
Regulatory Compliance Costs

- Senate Bill 19-181 shifted focus from fostering oil & gas development (investment) to environmental protection
- Several rules, many of which are just being implemented
- We surveyed gas producers in Garfield County
  - Opened a dialogue on how to measure compliance costs,
  - How did costs change after passage of SB19-181?
  - How can we classify costs?
- Discovered an easy way to classify marginal compliance costs into:
  - Lease operating costs, and
  - Drilling & completion costs
### Impacts on Net Back Price & Drilling & Completion Costs

#### Lease Operating Expenses (LOE)

<table>
<thead>
<tr>
<th>Item</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Incremental Compliance Costs (million)</td>
<td>$2.8</td>
</tr>
<tr>
<td>Incremental Output (mmcfe)</td>
<td>21.54</td>
</tr>
<tr>
<td>Incremental Compliance Costs ($ / mcf)</td>
<td>$0.13</td>
</tr>
<tr>
<td>Kern Hub Price ($ / mcf)</td>
<td>$5.05</td>
</tr>
<tr>
<td>Net Back Price ($ / mcf)</td>
<td>$3.08</td>
</tr>
<tr>
<td>Percentage Change in Net Back Price</td>
<td>-4.2%</td>
</tr>
</tbody>
</table>

#### Drilling and Completion Costs (D&C)

<table>
<thead>
<tr>
<th>Item</th>
<th>Value</th>
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</thead>
<tbody>
<tr>
<td>Incremental D&amp;C Compliance Costs (million per well)</td>
<td>$0.25</td>
</tr>
<tr>
<td>D&amp;C costs per well</td>
<td>$3.55</td>
</tr>
<tr>
<td>Percentage change in D&amp;C Costs</td>
<td>7.0%</td>
</tr>
</tbody>
</table>
Rig Comparisons

Six Month Moving Average of Drilling Rig Counts as a Percent of Pre-Pandemic Peak

- Utah: 164.6%
- New Mexico: 82.7%
- Wyoming: 53.7%
- Other States: 45.9%
- Colorado: 36.1%
- Garfield County: 16.7%
Developed a model of drilling activity, number of wells drilled depends upon:
- Net back price,
- Well productivity, and
- Drilling and completion costs

Given the 4.2% reduction in net back price & the 7% increase in drilling & completion costs
- Investment falls $13.4 million (one-year), and
- Production declines by $4.5 (one-year)

These losses have economic consequences
Economic Impacts

Total Economic Impacts

- Environment, $2.0
- Environment, $2.3
- Production, ($1.6)
- Production, ($2.5)
- Investment, ($6.6)
- Investment, ($7.8)
- Net Change, ($6.3)
- Net Change, ($8.0)

Million dollars

Labor Income

Value Added
Fiscal Impacts

Changes in Tax Revenues to Garfield County & Special Districts

- Environment, $35
- Production, ($201)
- Investment, ($704)
- Net Change, ($870)
- Environment, $29
- Production, ($168)
- Investment, ($587)
- ($725)

Thousand Dollars

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Summary

- Recent regulatory making in Garfield County during 2021:
  - Reduces the netback wellhead price by 4%, and
  - Increases capital costs for new wells by 7%,
- Consequently, in just one year:
  - Investment declines by $13.4 million,
  - Labor income falls $6.3 & there are 180 fewer jobs, and
  - County tax revenues decline $1.6 million
- Discounted lost future production is $16 million
- Future severance & ad valorem taxes are $1.5 million lower
Future regulatory costs could increase significantly
Need to consider impacts on investment & local economies
How do setbacks affect investment?
  Is there a smaller playing field?
  Is there an impact on productivity?
Will continue this work for Garfield
Could be applied to other counties in Colorado
Thank You

Questions, Comments, and Suggestions Welcome