Economic and social impacts of Permian basin oil and gas development

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Overview

• Economic impacts in the Permian
• Social impacts in the Permian
• Addressing remaining challenges
Economic impacts
Estimating economic impacts precisely is difficult

• Estimates vary over time and by methodology
  • Some modeling studies assume high “multiplier” effects
  • Most peer-reviewed work finds smaller economic and employment multipliers
  • No recent peer-reviewed work directly focuses on the Permian
Direct effects are easier to quantify, and show large economic benefits

<table>
<thead>
<tr>
<th>Region</th>
<th>Population</th>
<th>Employment</th>
<th>Per capita income</th>
</tr>
</thead>
<tbody>
<tr>
<td>US total</td>
<td>+15%</td>
<td>+19%</td>
<td>+18%</td>
</tr>
<tr>
<td>Midland &amp; Ector Counties</td>
<td>+36%</td>
<td>+74%</td>
<td>+52%</td>
</tr>
</tbody>
</table>

Economic benefits are not evenly distributed

- Mineral owners stand to benefit handsomely
- Workers also benefit substantially
- Others are less likely to benefit directly from economic growth
  - Those unable to work (the elderly, disabled, etc.)
  - Renters
  - “Split estate” surface owners
Longer-term economic effects are less clear

- Oil and gas activity could crowd out other sectors
  - This would prevent economic diversification
  - Evidence on this effect in the US is somewhat mixed
- A lack of economic diversification makes the region more susceptible to booms and busts
  - But because of low production costs, the Permian is less susceptible to busts than other regions
- The potential effects of climate policy exacerbate these risks
Social impacts
Housing costs have increased substantially

- Finding affordable housing has become a challenge
- Growing property values benefit landowners, but create challenges for others
Effects on education are complex

• Growth in property values increases tax base for local education
• But rapid population growth has increased strain on these schools

• Increased production on state lands benefits the UT system
• But research has shown that students may forgo college in favor of high-paying work in the industry
• This has obvious near-term benefits, but risks reducing educational attainment in the longer term
Increased industry traffic creates headaches and safety risks

• The Permian basin accounts for 2% of the Texas population, but 11% of its 2017 traffic fatalities
Other social impacts are harder to quantify

• Change in the pace of life for some rural regions
• Change in “sense of place” for some community members
Addressing remaining challenges
Texas tax policy exacerbates some fiscal challenges

• Texas allocates less oil and gas revenue to localities to manage impacts than most other states

• “Rollback” provisions on property taxes create additional challenges for local governments

• Texas does not use a permanent fund to support long-term economic diversification
  • “Rainy day” fund is helpful, but serves a different purpose

• Industry efforts such as the Permian Basin Strategic Partnership are welcome
  • But are unlikely to fully address these challenges
Summing up

• The good
  • Economic growth, employment growth, public revenue growth

• The bad
  • Strain on infrastructure, strain on education, strain on vulnerable populations

• The uncertain
  • Can the Permian economically diversify and reduce its “boom-bust” exposure?

• More research would be really useful!
The Economic Impacts of the Shale Revolution

Daniel Raimi

Growth is a natural-gas-oil production from shale is only modest compared to that of the United States, and its overall impact on the U.S. economy is likely to be small. However, the growth in natural-gas-oil production from shale is expected to have a significant impact on the U.S. economy and the global economy. The growth in natural-gas-oil production from shale is expected to reduce the cost of natural-gas-oil, which could help to reduce the cost of electricity and other energy-related goods and services. The growth in natural-gas-oil production from shale is also expected to increase the competitiveness of U.S. industries in the global market. The growth in natural-gas-oil production from shale is expected to reduce the cost of natural-gas-oil, which could help to reduce the cost of electricity and other energy-related goods and services. The growth in natural-gas-oil production from shale is also expected to increase the competitiveness of U.S. industries in the global market.

The Health Impacts of the Shale Revolution

Leah Redin

Shale revolution has dramatically increased drilling activity in both onshore and offshore areas in the United States. While this revolution has increased the production of energy, it has also led to a number of health and environmental concerns. The growth in natural-gas-oil production from shale is expected to reduce the cost of natural-gas-oil, which could help to reduce the cost of electricity and other energy-related goods and services. The growth in natural-gas-oil production from shale is also expected to increase the competitiveness of U.S. industries in the global market.

The Shale Revolution and Water Quality

Daniel Raimi

One of the first, and most obvious concerns associated with the growth of the shale gas development industry is the impact on water quality. The growth in natural-gas-oil production from shale is expected to reduce the cost of natural-gas-oil, which could help to reduce the cost of electricity and other energy-related goods and services. The growth in natural-gas-oil production from shale is also expected to increase the competitiveness of U.S. industries in the global market.

The Effects of the Shale Revolution on Local Governments

Daniel Raimi

In recent years, the growth of the shale gas development industry has led to a significant increase in the number of natural-gas-oil wells in the United States. This increase has led to a number of concerns, including the potential for contamination of water supplies and the risk of land subsidence. The growth in natural-gas-oil production from shale is expected to reduce the cost of natural-gas-oil, which could help to reduce the cost of electricity and other energy-related goods and services. The growth in natural-gas-oil production from shale is also expected to increase the competitiveness of U.S. industries in the global market.

Developed by me & Alan Krupnick

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Thank you very much!

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