A More Holistic Economic Evaluation of Mining: Considering Benefits and Costs

Understanding the Impacts of Mining in the Western Lake Superior Region
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Why Is There Controversy over Sulfide Copper Mining?

• New High Paying Jobs
• New Income to Households and Governments
• Pure Benefits?
  – That is what “impact” analysis often suggests.
Why Are Mining Areas Not Uniformly Prosperous?

Mining and Local Prosperity

- Many mining areas are synonymous with lagging economies and, even, persistent poverty and unemployment
  - Appalachia, Ozarks, Four Corners
  - Copper Towns of Butte, MT, Silver City, NM, Globe-Miami, AZ, the Upper Peninsula of MI.
  - Iron Range, MN
  - Uranium belts of New Mexico and Western Colorado
  - Gold and Silver Mining Towns: Silver Valley, ID, and Lead and Deadwood, SD
## Economic Vitality in Mining Dependent Counties

### Ratios of Growth in Indicators of Economic Vitality

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<thead>
<tr>
<th></th>
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<tbody>
<tr>
<td>Personal Income</td>
<td>0.59</td>
<td>0.82</td>
<td>1.09</td>
<td>0.76</td>
</tr>
<tr>
<td>Population</td>
<td>-0.85</td>
<td>0.50</td>
<td>0.65</td>
<td>0.17</td>
</tr>
<tr>
<td>Per Capita Income</td>
<td>0.72</td>
<td>0.95</td>
<td>1.13</td>
<td>0.83</td>
</tr>
<tr>
<td>Earnings</td>
<td>0.41</td>
<td>0.69</td>
<td>1.13</td>
<td>0.54</td>
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### Level of Per Capita Income: Mining Dependent and Non-Mining Dependent Counties

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<tbody>
<tr>
<td>Mining-Dependent</td>
<td>$8,390</td>
<td>$13,754</td>
<td>$20,099</td>
<td>$30,240</td>
</tr>
<tr>
<td>Non-Mining Dependent</td>
<td>$10,201</td>
<td>$19,622</td>
<td>$29,548</td>
<td>$33,191</td>
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<tr>
<td>Difference</td>
<td>-$1,811</td>
<td>-$5,868</td>
<td>-$9,449</td>
<td>-$2,951</td>
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</tbody>
</table>

Source: US Dept. Comm., BEA, REIS Local Area Income, and author's calculations.

“Mining Dependent” = 20% or more of labor earnings are from mining (excluding oil and gas from “mining”)
Why Aren’t Mining Towns Prosperous?

1. The Instability/Volatility of Mining Jobs and Earnings
2. The Impact of Labor Displacing Technology
3. Heavy Environmental Damage: An Economic Problem
4. The Displacement of Other, More Sustainable, Economic Activity
Why Aren’t Mining Towns Prosperous? - 1

• The Reliability and Stability of the Economic Benefits
  – Unstable, volatile mineral prices
  – Worldwide competition
  – Booms and Busts
Note that recent peak copper prices were not the first time that real copper prices were in the $4.00/lb range. Prices regularly fall after reaching peak values.

Last time Minnesota considered sulfide Cu mining.
Why Aren’t Mining Towns Prosperous?

- The Deployment of Labor-Displacing Technology
  - Mining is one of the oldest human economic activities
  - That provides a long time to develop new technologies
  - One of the sources of high unemployment in mining areas
    - High wages + regular layoffs = workers remain in the local area hoping to be rehired
US Primary Copper Production Was Approximately the Same at the Beginning and End of This Period:
~1.2 million metric tonnes
The Impact of Labor-Displacing Technology on Minnesota Iron Mining Jobs

- 20,000 jobs
- 490 Workers per Million Tons of Iron Ore
- 3,300 Jobs
- 80 Workers/Million Tons
- -84%
- One-Sixth of Workers
Why Aren’t Mining Area’s Prosperous?-3

• The Need to Account for the Costs Too
  – Mining is landscape intensive
    • Irreparable damage to land: open pits, waste dumps, settling ponds, etc.
    • Destruction of wetlands
    • Potential for near-permanent water pollution
    • Threats to the Lake Superior Region’s World Class Landscapes and Recreation Opportunities
  – This is not just an environmental problem. It is also an *economic* problem.
The Changing Economic Role of Natural Landscapes

Our Natural Landscapes

<table>
<thead>
<tr>
<th>Commercial Commodities</th>
<th>Environmental Services</th>
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</thead>
<tbody>
<tr>
<td>Timber</td>
<td>Non-Commercial Recreation</td>
</tr>
<tr>
<td>Minerals</td>
<td>Clean Water</td>
</tr>
<tr>
<td>Forage</td>
<td>Wildlife</td>
</tr>
<tr>
<td>Outfitting</td>
<td>Fisheries</td>
</tr>
<tr>
<td>Commercial Recreation</td>
<td>Scenic Beauty</td>
</tr>
<tr>
<td>“Tourism”</td>
<td>Air Quality</td>
</tr>
<tr>
<td></td>
<td>Open Space</td>
</tr>
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Impact on Local Economic Well Being

<table>
<thead>
<tr>
<th>Employment &amp; Income in Mills, Mines, Resorts etc.</th>
<th>Improved Quality of Life.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Traditional Economic Base Expands Multiplier Impacts</td>
<td>Attract and Hold New Residents and Businesses</td>
</tr>
<tr>
<td>Additional Economic Activity</td>
<td>Additional Economic Activity</td>
</tr>
</tbody>
</table>
The Lake Superior Region Has Long Experience with Mining and Its Impacts

- Consider the collapse of the iron and copper industries in the late 1970s and early 1980s.
- What happened in the Lake Superior mining communities?
- Use St. Louis County, MN as an Example
  - The source of 75-80% of metal mining earnings in Minnesota.
Mining Jobs in St. Louis County, MN

- 12,000 jobs
- -9,300 jobs or -78%
- 2,700 jobs
The Impact of Unstable Employment and Income in Mining

• Uncertainty about the level of employment and income.

• Reduced willingness to invest in homes, businesses, and government infrastructure:
  – Higher mine and household expenditures, tax payments, and demand for public services may be temporary.
  – Miners avoid risking the investment in a home near the mine: Live away from the mine and commute.
  – Mining wages leak out of the local economy
  – Under-Developed / “Run Down” Economy
A Framework for Weighing the Costs and Benefits of Copper Mining

• Carefully and critically evaluate the expected monetary consequences, both positive and negative.
• Carefully and critically evaluate the non-market environmental consequences
• Consider requiring mitigation measures that maximize benefits and minimize costs.
• Make an informed judgment about whether the benefits justify the remaining, unavoidable costs.
Clearly We Need to Weigh Both Benefits and Costs

• Should not just display apparent spectacular positive “benefits.”
• Mining companies regularly weigh private benefits and costs and often decide **not** to mine.
  – That is why Minnesota’s known copper deposits have not been developed for over a century.
• The public and government agencies need to do the same thing
  – They, too, may rationally decide not to proceed with mining when the costs exceed the benefits.
Rejecting a Particular Mine Is Not Evidence of Being Anti-Mining

• Mining companies regularly reject proposed mineral developments because costs exceed revenue expectations.
• We will not have to go without copper if a particularly costly mine is rejected.
• We will turn to a less costly alternative. Hundreds of copper deposits are proposed for development around the world including across North America.
The Public Policy Challenge of the Proposed New Copper Mining

• How to support the ongoing revitalization of mining areas that was well underway when the current national economic meltdown struck?
• How to avoid stepping back onto the economic “roller coaster” that mining tends to create?
• How to avoid further damaging the natural environment of the Western Lake Superior Area and extending that damage to surrounding rivers, lakes, and wetlands?
• How to protect the water resources that are an important part of the current and future economic base of the Lake Superior region?
Thank You!

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