The Impact of the Coal Mining Industry on Government Revenue in Mozambique

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Motivation

• On the verge of a natural resource boom
• Gas discoveries in Cabo Delgado
• Mining projects for heavy sands, tantalum, iron, rubys, gold...
• What will be the impact of the coal mining industry on government revenue?
• What other benefits and risks are associated with this sector?
The Model

- Prices: $175/t of coking coal, $100/t of thermal coal
- 9 mines
- Mine and company specific information: capital expenditure, operating expenditure, losses carried forward 5 years and capital depreciation
The Model

- Transport scenarios:
  1. Sena line – 6mtpa
  2. Sena line and Nacala line – 31 mtpa
  3. Renovated Sena line and Nacala line – 50 mtpa
  4. Renovated Sena line, Nacala line and third railway – 85 mtpa

- Main assumptions:
  - All coal is to be exported, and the only way to bring it to the ports is by rail
  - Thermal coal is only exported if transport capacity is higher than coking coal production

- We only consider corporate taxes (32%) and royalties (3%)
Results

Government revenue (in millions of dollars):

- Scenario 1
- Scenario 2
- Scenario 3
- Scenario 4
- No constraint
## Results

<table>
<thead>
<tr>
<th></th>
<th>Scenario 1</th>
<th>Scenario 2</th>
<th>Scenario 3</th>
<th>Scenario 4</th>
<th>No constraint</th>
</tr>
</thead>
<tbody>
<tr>
<td>Value of annual coal exports by 2015 (millions of dollars)</td>
<td>0</td>
<td>5,386</td>
<td>5,386</td>
<td>5,386</td>
<td>7,248</td>
</tr>
<tr>
<td>Annual government revenue from coal by 2015 (millions of dollars)</td>
<td>0</td>
<td>158</td>
<td>161</td>
<td>162</td>
<td>218</td>
</tr>
<tr>
<td>Increase in GDP relative to baseline in 2015</td>
<td>0.0%</td>
<td>11.7%</td>
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<td>15.8%</td>
</tr>
</tbody>
</table>
## Results

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<tbody>
<tr>
<td>Maximum transport capacity (mtpa)</td>
<td>6</td>
<td>31</td>
<td>50</td>
<td>85</td>
<td>Unlimited</td>
</tr>
<tr>
<td>Quantity of coking coal exported annually by 2020 (mtpa)</td>
<td>0</td>
<td>31</td>
<td>50</td>
<td>51.5</td>
<td>51.5</td>
</tr>
<tr>
<td>Quantity of thermal coal exported annually by 2020 (mtpa)</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>33.5</td>
<td>36.7</td>
</tr>
<tr>
<td>Total value of coal exports from 2012 to 2030 (millions of dollars)</td>
<td>0</td>
<td>89,253</td>
<td>137,829</td>
<td>177,280</td>
<td>200,236</td>
</tr>
<tr>
<td>Value of annual coal exports by 2020 (millions of dollars)</td>
<td>0</td>
<td>5,425</td>
<td>8,750</td>
<td>12,361</td>
<td>12,683</td>
</tr>
<tr>
<td>Total government revenue from coal from 2012 to 2030 (millions of dollars)</td>
<td>0</td>
<td>12,835</td>
<td>26,277</td>
<td>28,884</td>
<td>34,512</td>
</tr>
<tr>
<td>Annual government revenue from coal by 2020 (millions of dollars)</td>
<td>0</td>
<td>791</td>
<td>1,908</td>
<td>2,209</td>
<td>2,482</td>
</tr>
<tr>
<td>Increase in GDP relative to baseline in 2020</td>
<td>0.0%</td>
<td>8.2%</td>
<td>13.3%</td>
<td>18.8%</td>
<td>19.3%</td>
</tr>
</tbody>
</table>
Other Economic Benefits

• Little direct job creation – 7,500 on the long run, 25,000 during construction phase

• Large scale investments in transport infrastructure (railways, ports...) can reduce transport costs for other sectors

• Plans to build thermal energy plants of over 8,000MW capacity would reduce production costs for all sectors, and could create over 2,000 jobs

• The presence of iron deposits raises the possibility of producing steel
Risks

• “Dutch Disease”: currency appreciation could penalise other sectors
• Exchange rate volatility
• Waste, social tensions, corruption
What to do with the revenue?

How to transform a temporary source of revenue into revenue and growth in the long run?

- Create a savings fund
- Create fiscal rules
- Direct transfer for citizens
Conclusion

- The coal sector can have a very large impact on government revenue
- The presence of transport infrastructure is crucial for the expansion of the coal sector
- It can have other positive impacts on the economy (employment, transport, energy)
- There are risks in terms of exchange rate appreciation and volatility, and may generate waste, social tensions and corruption
- It is important to start thinking about how to use this new source of revenue
- It is a great opportunity to start a new phase of economic growth and poverty reduction
THANK YOU
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