A Bonanza for Bad Politicians: Informal Gold Mining and Criminal Candidates in Peru

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Madre de Dios

Figure: Left: Luis Otsuka, Governor of Madre de Dios. Right: Modesto Figueroa Minaya, Congressman from Madre de Dios
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- Both being investigated for connections to the illegal mining business
Resource Booms: Informal and Illegal Industries

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In this paper I find that price shocks that affect an informal/illegal industry worsens the quality of politicians.
The Deleterious Effects of Extraction of Natural Resources

Resource booms have a negative effect on governance and accountability. The effect travels through the increase in non-tax revenues: it provides a source of rents for the politicians, and voters can’t or decide not to punish (Brollo et al., 2013; Martínez, 2015).

If voters are unaware of the existence or can’t monitor additional public funds, they can’t hold politicians accountable, which allows the incumbent to dispose of the extra revenue.

Is this the only negative consequence of natural resource booms? Probably not, because natural resource booms and the expansion of informal industries produce a lot of revenue that does not go through the state.
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Pre-election shocks: Increase criminal politicians who want to gain office (adverse selection)

After election shocks: induce worse behavior of already elected politicians (moral hazard)
The deleterious effects of extraction of natural resources

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- Following Persson and Tabellini (2000), we have a very simple model in which politicians maximize return to illegal activity, constrained by the probability that they get caught:
  - Pre-elections shocks: Increase criminal politicians who want to gain office (adverse selection).
  - After election shocks: induce worse behavior of already elected politicians (moral hazard).
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  - It isolates the fiscal channel (formal mines don’t overlap with deposits that are mined informally)
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   - Informal gold mining in Peru offers a great opportunity to analyze whether there is a direct effect of availability of informal or illegal rents on candidates.
     - It isolates the fiscal channel (formal mines don’t overlap with deposits that are mined informally).
     - There was a big expansion of informal and illegal gold mining produced by international prices of gold (exogenous to the quality of local governments in Peru).
Background: Informal Gold Mining in Peru

Soaring gold prices and War on Drugs reduced the returns from drug trafficking during the 2000s, incentivizing criminal groups to move into gold mining.

Fragmented nature of artisanal gold mining due to its ease of transportation across borders.

Economically disadvantaged individuals were also attracted to informal gold mining.

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  - Gold is easy to move across borders
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Illegal Gold Mining in Peru
Informal gold mining has many bad consequences, but they are very observable for enforcers and policy-makers. This means that informal resource extraction necessitates the protection of local level law enforcement and politicians, which generates an opportunity to collude with law enforcers to increase output. If politicians maximize return to protection of this illegal activity, I expect that more criminal candidates will compete in elections in districts with informal mining, when the price of gold rises. And more elected candidates will behave badly when the price of oil rises, in municipalities that have more informal mining.
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Informal Gold Mining in Peru: Empirical Strategy

• I follow a differences-in-differences strategy to exploit variation across provinces with gold deposits that are mined informally to examine the effect of the expansion of the gold industry on the criminality of candidates.

• Due to geological characteristics, informal gold mining is restricted to certain type of deposits (alluvial, placer and disseminated type of gold deposits), so informal miners did not share territory with formal, large scale operations during the first phase of the mining boom (Echave, 2013).

• The expansion of the industry is captured by the changes in the international price of gold.

• Formally,

\[ y_{prt} = \alpha_p + \beta_t + \lambda(GoldDeposits_{pr} \times GoldPrice_t) + X_{prt}\phi \]  

(1)
Informal Gold Mining in Peru: Empirical Strategy

Outcome
- I scraped the CVs and criminal records of 1,058 candidates
  - Gender, occupation, education, year of indictment, type of crime
- 7 regions, 60 provinces, two electoral years (2002-2006)
- Indicators of criminality of elected candidate and number of criminal candidates

Cross-section variation
- I geolocated three types of gold deposits (out of over 30)
- Alluvial, Placer and Vein-disseminated types, which are more efficiently mined informally
Gold Deposits in Peru
Informally Mined Gold Deposits in Peru
Table: The effect of the price of gold on electoral outcomes

<table>
<thead>
<tr>
<th></th>
<th>(1) Number of Candidates</th>
<th>(2) Margin of Victory</th>
<th>(3) Number of Criminal Candidates</th>
<th>(4) Elected Candidate is of Criminal Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>GoldDeposits × GoldPrice</td>
<td>0.057*** (0.013)</td>
<td>0.001** (0.000)</td>
<td>0.046*** (0.011)</td>
<td>0.013** (0.005)</td>
</tr>
<tr>
<td>Observations</td>
<td>118</td>
<td>118</td>
<td>118</td>
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</tr>
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Robust standard errors in parentheses clustered at the province level

*** p<0.01, ** p<0.05, * p<0.1

Baseline specification presented in equation 1. Controls include the log of population and poverty.
Informal Gold Mining in Peru: Results

**Table: The effect of the price of gold on the criminality of candidates before and after the elections**

<table>
<thead>
<tr>
<th></th>
<th>(5) Number of candidates who committed crimes before the election</th>
<th>(6) Number of candidates who committed crimes after the election</th>
<th>(7) Elected candidate committed a crime before the election</th>
<th>(8) Elected candidate committed a crime after the election</th>
</tr>
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<tr>
<td>GoldDeposits × GoldPrice</td>
<td>0.017** (0.006)</td>
<td>0.025** (0.008)</td>
<td>-0.003* (0.001)</td>
<td>0.016** (0.006)</td>
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Moving forward

- Mechanisms that link increase in prices to worse quality politicians: how do informal and illegal mining groups interact with politicians?