Global prices and internal migration: Evidence from the palm oil boom in Indonesia

Previously titled “Global prices, trade protection, and internal migration: Evidence from Indonesia”

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Motivation

Global prices, especially commodity prices, matter.
- World shocks, stemming from commodity market, explain on average 33% of output fluctuations in individual countries (Fernández et al., 2017).
- Trade shocks may provide incentives for labor to move.
  - Most studies on the impact of trade shocks to labor, e.g., Autor, Dorn, and Hanson (2013), assume and find that trade shocks are localized.
  - Most studies in this stream of literature also use trade shocks that are disadvantageous to local income. (Pavcnik, 2017)
- 1 out of 10 people in the world is an internal migrant (Lucas, 2015).

Main Findings & Contribution

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- World shocks, stemming from commodity market, explain on average 33% of output fluctuations in individual countries (Fernández et al., 2017).
- Trade shocks may provide incentives for labor to move.
  - Most studies on the impact of trade shocks to labor, e.g., Autor, Dorn, and Hanson (2013), assume and find that trade shocks are localized.
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Context

Indonesian economy in the 2000s:
- The economy faced a commodity boom to its exports commodity, including palm oil.
- Palm oil experienced price-driven export growth.
- The country also has regionally-representative data that allows us to study regions.

Stylized Facts

1. Agricultural sector had higher importance in pre-shocks poorer district

<table>
<thead>
<tr>
<th>Crops</th>
<th>2010</th>
<th>2010</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rice</td>
<td>12</td>
<td>13</td>
</tr>
<tr>
<td>Oil palm</td>
<td>13</td>
<td>14</td>
</tr>
<tr>
<td>Maize</td>
<td>11</td>
<td>10</td>
</tr>
<tr>
<td>Rubber</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Coconuts</td>
<td>3</td>
<td>2</td>
</tr>
</tbody>
</table>

Rice and palm oil became the two main crops.

2. Districts face upward-sloping labor supply

Empirical Framework

1) Measurement of price shocks
   - Environment: 2-sector Specific Factor Model and multi-region economy as in Redding (2016)
   - Proposition: impact of price shocks to income depends on the share of the sector that experiences the shocks.
2) Welfare changes estimation
   - Environment: continuum of goods, multi-region economy (Redding, 2016)
   - Proposition: decomposition of welfare changes into gains from trade and gains from migration.

Empirical Setup

This paper: exploits the regional variation of potential share of palm-oil in the face of uniform price shocks from the world market.

Empirical strategy: difference in difference, with exposure to palm-oil price shocks as the treatment.

Results

Districts exposed to palm-oil price shocks had higher real expenditure per capita.

More Results and Conclusions

1) Palm-oil price shocks benefited producing districts with higher purchasing power.
   - Temporary.
   - Spurred through extensification in palm oil sector,
   - Internal migration diffuses the shocks.
2) There is evidence of spillovers of the shocks to non-exposed districts.
3) One-third of the welfare gains in 2005 to 2010 is explained by internal migration.