The Effect of Land And Labor Mobility on Welfare And Poverty Dynamics of Agriculture Households In Indonesia*

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Presentation Outline

• Background and Literature Review
• Research Design
  • Data
  • Empirical Strategy
• Results and Analysis
• Conclusion
  • Concluding remarks
  • Policy Recommendation
Farmland and Occupations in Indonesia: An Indication of Dual Sector Theory

Indication of Lewis Dual Sector Theory:
- The number of households working in agriculture is decreasing;
- At the same time, farmland ownership per household is also decreasing
- Indicating Structural Transformation

Two implication of dual sector theorem:
- Landless farmers move to other sectors with a higher productivity \(\Rightarrow\) should be a welfare improvement
- Farmers move to other sectors with a higher productivity and convert their land into other assets \(\Rightarrow\) should be a welfare improvement
Moving Out of Agriculture: 2000-2014

Source: IFLS Dataset
Research Questions

1. What is the effect of labour mobility to agricultural household’s welfare and poverty dynamics?

2. What is the effect of farmland ownership to agricultural household’s welfare and poverty dynamics?
## Literatures: Impacts of Moving Out of Agriculture

<table>
<thead>
<tr>
<th>Authors</th>
<th>Country</th>
<th>Findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Johnson (1985)</td>
<td>China</td>
<td><strong>Moving Out Of Agriculture has a positive effect on income</strong> which also lowers inequality</td>
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<tr>
<td>Cook (1999)</td>
<td>China</td>
<td>Moving out of agriculture has a <strong>high risk</strong></td>
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<tr>
<td>Nguyen et al. (2005) and Tran et al. (2013)</td>
<td>Viet Nam</td>
<td><strong>Industrialization in agriculture decreases</strong> possibility farmers of having jobs and mostly move to informal sector.</td>
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<tr>
<td>Alisjahbana and Manning (2006)</td>
<td>Indonesia</td>
<td><strong>Labour In Agriculture (Even in Full Employment) Tend To have Higher Probability of Being Poor</strong> Compared To Other Sectors</td>
</tr>
<tr>
<td>Nguyen et al. (2005)</td>
<td>Viet Nam</td>
<td><strong>Farmland loss</strong> due to industrialization <strong>decreases income</strong> of farmers and lower possibility of having jobs.</td>
</tr>
<tr>
<td>Tuyen and Huong (2013)</td>
<td>Viet Nam</td>
<td><strong>Farmland loss</strong> due to industrialization <strong>does not affect total household income and decreases probability of poverty</strong></td>
</tr>
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</table>

**Evidence have been inconclusive on how labor mobility and farmland ownership affect welfare**
Research Design

• Using impact evaluation methodology of quasi experiment: Difference in Difference as most of previous studies found a correlation not a causal inference;

• Welfare measures: Poverty($3.2) and per-capita expenditure
Empirical Strategy

Based on Khandker, Koolwal, & Samad (2009) and Dartanto et al. (2020):

**DiD Poverty Model:**

\[
\text{Poverty }_{3.2it} = \theta_1 \text{Year}_{it} + \theta_2 \text{Treatment}_{it} + \theta_3 \text{Treatment} \times \text{Year}_{it} + \sum_{j=1}^{J} \theta_j \text{SocioDemo}_{jit} + \sum_{l=1}^{L} \theta_l \text{Regional}_{lit} + \sum_{m=1}^{M} \theta_m \text{Economic}_{mit} + \epsilon_{it}
\]

**DiD Expenditure Model:**

\[
\text{ExpPerCapita}_{it} = \beta_1 \text{Year}_{it} + \beta_2 \text{Treatment}_{it} + \beta_3 \text{Treatment} \times \text{Year}_{it} + \sum_{j=1}^{J} \beta_j \text{SocioDemo}_{jit} + \sum_{l=1}^{L} \beta_l \text{Regional}_{lit} + \sum_{m=1}^{M} \beta_m \text{Economic}_{mit} + \epsilon_{it}
\]

**Poverty Dynamics Model (Ordered Logit):**

\[
\text{PovDynamic}_i = \theta_1 \text{LandDec}_i + \theta_2 \text{LaborMob}_i + \theta_3 \text{FormalLabMob}_i + \sum_{j=1}^{J} \theta_j \text{SocioDemo}_j + \sum_{l=1}^{L} \theta_l \text{Regional}_l + \sum_{m=1}^{M} \theta_m \text{Economic}_{mi} + \epsilon_i
\]

DiD Main Results: Labor Movement Impact

**2000 - 2007**

- **Movement Out of Agriculture**
- **Movement to Formal**

**2007 - 2014**

- **Movement Out of Agriculture**
- **Movement to Formal**

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**Note:**
Landless informal refers to landless-informal agriculture HH
Findings From DiD Results

• Between 2000 – 2007, movement out of agriculture significantly decreases the probability of being poor. However, movement out of agriculture between 2007 – 2014 does not significantly affect poverty status or expenditures.

• There is no persistent effect of movement to formal sector on poverty and household welfare.

• Land ownership, education levels, electrical access, and farm business asset ownership significantly affect agriculture household probability of being poor and welfare.
Ologit Main Results: Labor Movement Impact

- **2000 - 2007**

- **2007 - 2014**

- **2000 - 2014**
Findings from Poverty Dynamics Results

• Between 2000 – 2007, movement out of agriculture significantly decreases the probability of continually being poor. In contrast, during 2007–2014, labor mobility did not significantly affect the probability of continually being poor.

• Movement out of agriculture in 2007 – 2014, only reduced probability of being continuously poor if moving to formal sector.

• Land ownership, education levels, electrical access, and farm business asset ownership significantly reduce probability of being continuously poor.
Concluding Remarks

• DiD and Poverty Dynamics results are relatively consistent.
• Conventional wisdom says that moving out of agriculture creates a better life for farmers (Lewis). YES! However, THAT IS IN THE PAST.
• When farmland ownership decreases, agriculture households lose their main livelihood, decreasing welfare.
• Households with higher education, higher agriculture business assets, and have access to electricity tend to be not poor.
Policy Implications

• In the current situation, moving out of agriculture isn’t the guarantee solution to improve the condition of agriculture households.

• Keeping land ownership is important for agriculture households.

• Improving education dan agriculture modernization (assets and technology) improves productivity through human capital and physical capital.
The Manuscript can be Accessed at: https://authors.elsevier.com/c/1br788jbZmPbKD

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