Self-Employment in the Global Economy
By Federico Diez and Ali Ozdagli

Discussion by:
David M. Arseneau
Federal Reserve Board

SCIEA System Meeting

Federal Reserve Bank of Atlanta
April 29, 2011
What Does this Paper Do?

Documents interesting empirical link between self-employment in manufacturing industry and degree of openness in an economy

- Aggregate cross-country data
- U.S. industry-level manufacturing data

Paper formalizes link in a theoretical model

- Builds on Lucas (1978) and Melitz (2003)
- Theory culminates with Propositions 1 & 2
  - ↓ openness (via trade costs) ⇒ ↓ exports & ↑ self-employment

Take theoretical predictions to the data

- Authors find supportive evidence in U.S. manufacturing data using simple econometric framework
Two Main Comments

• Authors need to make a more significant case that self-employment is interesting from the perspective of the aggregate economy
  • 10% of total U.S. employment (15 million jobs) is surprisingly large ...
  • ... but, what fraction of total output does this represent?

• Theory doesn’t differentiate between self-employment and firm size
  • Critical for matching facts on firm-level international trade ...
    • Bernard, Jensen, Redding, and Schott (2007)
  • ... therefore necessary for theoretically-motivated empirical analysis.
    • Is self-employment simply a proxy for small firm size?
Cross-country evidence dominated by emerging market economies

- Institutional differences that influence optimal firm size?
- Higher incidence of home production / non-market activity?
- Robust to alternative measures of openness?
Cross-industry evidence on self employment

**Suggestion:** Focus exclusively on link between self-employment and openness at the industry-level

- Model is about trade at the firm level
- All the empirics are done using U.S. industry level data
A model of openness and self-employment (I)

- **Closed economy setting**
  - Monopolistically competitive firms produce using labor only
  - Each agent receives an idiosyncratic productivity draw, $\varphi(j)$
    - If $\varphi(j) < \bar{\varphi}_d$, become a production worker
    - If $\varphi(j) \geq \bar{\varphi}_d$, become “self-employed” and run a firm
    - Most productive become self-employed; hire everyone else
  - $\uparrow$ product differentiation $\Rightarrow \uparrow$ monopoly rents $\Rightarrow \downarrow \bar{\varphi}_d$
    - Self-employment becomes more attractive relative to sunk cost of foregone wage that you could have earned as a production worker

**Question:** What do the authors mean by “self-employment”?

- **Entrepreneurs** have good ideas/skills and exploit them by starting firms, hiring workers, and growing the firm
  - Lucas (1978) was a theory of the distribution of firm size
- **Self-employed** are a type of entrepreneur, but tend toward smaller firms
  - Hipple (2010) reports 2/3 of self-employed are unincorporated
A model of openness and self-employment (II)

- **Open economy setting**
  - Introduce fixed and variable cost of entry into the export market
  - Idiosyncratic productivity draw, $\varphi(j)$; two cutoffs: $\bar{\varphi}_d \leq \bar{\varphi}_x$
    - $\varphi(j) < \bar{\varphi}_d$, production worker
    - $\bar{\varphi}_x > \varphi(j) \geq \bar{\varphi}_d$, self-employed domestic producer
    - $\varphi(j) \geq \bar{\varphi}_x > \bar{\varphi}_d$, self-employed exporter
    - Most productive become self-employed exporters
  - Melitz Channel: $\downarrow$ trade costs $\Rightarrow \uparrow$ returns to exporting $\Rightarrow \downarrow \bar{\varphi}_x$
    - $\uparrow$ demand for production workers $\Rightarrow \uparrow w$ $\Rightarrow \downarrow \bar{\varphi}_d$
    - Balanced trade assumption creates a spill over to foreign economy

- **Tension between “self-employment”, firm size, & export behavior**
  - Self-employment suggests small firm size ...
  - ... but we know in the data that exporters tend to be larger firms.
Cross-industry evidence: A Closer Look (I)

Concentrate on two specific industries:
- Furniture and related product manufacturing
- Petroleum and coal products manufacturing
Cross-industry evidence: A Closer Look (II)

BP’s Texas City Refinery, Texas City, Texas

Richard Weigand, Virginia Mountain Woodworkers, Independence, Virginia
Some Additional Minor Comments

- Empirical analysis
  - Control for average firm size, industry fixed effects
- Settle on one measure of openness in the paper
- Concentration on manufacturing activity limits the analysis...
  - ...but, I’m willing to believe this is a symptom of data availability

<table>
<thead>
<tr>
<th>Rank</th>
<th>Industry</th>
<th>Percent of total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Ag., forestry, fishing, hunting</td>
<td>39.8</td>
</tr>
<tr>
<td>2.</td>
<td>Construction</td>
<td>17.5</td>
</tr>
<tr>
<td>3.</td>
<td>Business services</td>
<td>13.3</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12.</td>
<td>Manufacturing</td>
<td>2.3</td>
</tr>
</tbody>
</table>
Conclusions

- Interesting paper on topic that has received relatively little attention
- Paper would benefit from:
  - More forceful case for why self-employment is important from an aggregate perspective
  - Clear delineation between self-employment and firm size in both theory and empirics