Trade Liberalization and Labor Monopsony: Evidence from Chinese Firms

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A Great Paper!

- **Important Question**: Significant concerns about labor shares when countries open to trade.
- **Critical Insight**: Aggregate labor supply is essential for understanding markdown responses.
- **Rich Empirics**: Diverse variations and novel results provide robust insights.

Theory

- Firm labor supply elasticity: $\epsilon_{\mathsf{k}}^{-1}\left(\ell_{\mathsf{i}}\right) \equiv \eta + (\nu - \eta)\frac{\ell_{\mathsf{i}}^{\phi}}{\mathcal{L}_{-\mathsf{i}}^{\phi} + \ell_{\mathsf{i}}^{\phi}}$
  - Larger $\epsilon_{\mathsf{k}}^{-1}\left(\ell_{\mathsf{i}}\right)$ means greater monoposony/oligopsony power
  - η: across-firm substitution cost
  - ν: across-market substitution cost
- Condition for lower markdown in response to lower input tariffs: $\kappa > \frac{\frac{\tilde{\mu}}{1-\tilde{\mu}}}{\frac{1-\tilde{\mu}-\lambda}{1-\tilde{\mu}} + \nu}$
  - κ: across-market substitutability
- Mechanism: With symmetric firms, if $\kappa = 0$, fewer firms would operate in response to increased labor demand arising from lower input prices and labor market power will rise. When κ large enough, more number of firms in a market decreases oligopsony power.

Number of Firms

- Number of firms expansion is the key mechanism
  - Why not directly test this?
  - Conceptually labor supply expansion does not necessarily mean firm expansion
  - Table 3: 3-to-5-year difference estimators significant:
    Maybe firm number / aggregate labor adjustment takes time?
  - How are employment and firm numbers expansion correlated cross-sectionally and over-time?
  - Are there some location-sectors where we see employment expansion but not firm number expansion? Are markdown responses different?
  - Felix (2022): trade liberalization reduced number of firms, employment, and wages in local labor markets more exposed to import competition relative to less exposed markets.

Role of Input Tariffs

- Equilibrium Condition: $\left(\mathsf{N}_{\mathsf{k}}\right)^{\frac{(\nu-\eta)}{\varphi}}\left(1+\eta+(\nu-\eta)\frac{1}{\mathsf{N}_{\mathsf{k}}}\right)\left(\frac{\mathsf{L}_{\mathsf{k}}}{\mathsf{N}_{\mathsf{k}}}\right)^{(1+\nu)-\frac{\tilde{\lambda}}{1-\tilde{\mu}}}=\frac{\tilde{\lambda}}{1-\tilde{\mu}}[\tilde{\mathsf{z}}]^{\frac{1}{1-\tilde{\mu}}}\mathsf{B}\left(\mathsf{r}_{\mathsf{k}}\right)$
  - Aggregate labor supply elasticity: $\frac{\partial \log \mathsf{L}_{\mathsf{k}}}{\partial \log\left((1+\tau_{\mathsf{k}})\tilde{\mathsf{r}}\right)}=\triangleq -\kappa.$
  - Productivity and market condition: $[\tilde{\mathsf{z}}]^{\frac{1}{1-\tilde{\mu}}}\mathsf{B}\left(\mathsf{r}_{\mathsf{k}}\right)\triangleq[\tilde{\mathsf{z}}]^{\frac{1}{1-\tilde{\mu}}}(1-\tilde{\mu})\left[\tilde{\mu}/\mathsf{r}_{\mathsf{k}}^{\frac{\tilde{\mu}}{1-\tilde{\mu}}}[\mathsf{A}]^{\frac{1}{1-\tilde{\mu}}}\right].$
- Is there any difference between $\mathsf{r}_{\mathsf{k}}, \tilde{\mathsf{z}}, \mathsf{A}$?
  - r_{k} is good exogenous variation and useful for testing;
  - But maybe $\tilde{\mathsf{z}}, \mathsf{A}$ also respond?

    Large literature on how firm productivity, quality, etc., respond to input tariffs.
  - Can help us understand what happened in China better.

Skill Heterogeneity

- Skilled labor markets are more subject to monopsony power frictions
  - Skilled labor might also have greater mobility.
  - Do we see level difference in firms of different skill intensity to begin with?
- $\frac{\partial^2 \log N_k}{\partial \log r_k \partial \tilde{\lambda}} > 0$: What's the exact role of λ?
  - In theory: $\theta_\ell(\ell, m) = \lambda$, both elasticity and share.
  - In data: the fraction of employees who completed college.
  - A bit more discussion on the mechanism and the parameter constraint condition: $\left(\frac{\tilde{\mu}}{1-\tilde{\mu}}\right) > \kappa \left(\frac{\nu-\eta}{\varphi}\right)$ and $\log \frac{L_k}{N_k} + \frac{1-\tilde{\mu}}{\tilde{\lambda}} > 0$.

Robustness

- Processing trade firms: exempt from input tariffs, should not be affected.

General Equilibrium

- Differential effects of trade policy across firms
  - Does not estimate level effects
  - If China's aggregate labor supply does not expand, the aggregate markdown should increase?
- Aggregate labor share counterfactual: $\frac{1}{\eta_L} = \sum_{i=1}^{I} \sum_{k=1}^{K} \sum_{n=1}^{N_{ki}} \left[\frac{\mu^L_{nki}}{\mu^M_{nki}} \frac{\mu^M_{nki} - \theta^M_{nki}}{\theta^L_{nki}} \omega^L_{nki} \right]$
  - Compute counterfactual labor markdown without tariff changes using estimation coefficients; More about what if labor expansion exactly cancels tariff induced firm number change.
  - A more careful exercise would specify what parameters change, and recompute everything.

In the Future

- Trade liberalization on labor markdowns is novel and interesting.
  - Yet quantitatively, not the first-order driver of declining labor share.
- What are the other parts, and how these channels might be related.
  - E.g., aggregate labor supply from agri to manuf.
- I learnt and enjoyed reading this paper a lot!

  Look forward to the next iteration and future works!