Discussion of

“Firm Dynamics, Job Turnover, and Wage Distribution in an Open Economy”

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“New-new trade theory”

• Before 1980: Neoclassical trade theory
  — Ricardian productivity differences
  — Heckscher-Ohlin relative factor endowment differences
  — Focus on comparative advantage at the sectoral level and between-group inequality (skill premium)

• 1980-90s: New trade theory
  — Krugman and Helpman-Krugman models
  — Increasing returns and love of variety
  — Intraindustry trade and home market effects

• After mid-1990s: New-new trade theory
  — Melitz model, BEJK model
  — Comparative advantage at the level of the firm
  — Fixed cost of trade and selection into export market
  — Focus on within-industry between-firm reallocation and wage effects
“New-new trade theory”

- Late 1990s: Firm-level datasets and empirical facts
  “Exceptional Exporter Performance”
  - Large, productive, skill- and capital-intensive
  - Reallocation within industries across firms
  - Majority of changes in inequality also at this level
  - Size and exporter wage effects

- Early 2000s: Product market modeling
  - Focus on selection, revenue and employment effects
  - Structural estimation by EKK

- Late 2000s: Labor market modeling
  - Departures from competitive labor markets to capture wage distributional effects: new story for trade and inequality
  - Unemployment? Short-run versus long-run
  - This paper: structural estimation
• Ingredients
  — Two-sector small open economy, homogeneous workers
  — Nontradable service sector pins down outside option
  — Melitz tradable industrial sector with DMP search friction, firing costs, and stochastic idiosyncratic productivity
  — Stationary equilibrium
  — Unemployment = informality

• Trade liberalization and labor market deregulation lead to:
  (i) less job security (greater turnover)
  (ii) increase in informality/unemployment
  (iii) increase in average wages and welfare
  (iv) increase in wage inequality
Mechanisms

1. Firing costs: standard (more job creation and job destruction)

2. Trade and selection: amplification of shocks

3. Hiring costs:

\[ C_h(\ell, \ell') = \gamma \left( \frac{\ell' - \ell}{\phi(\theta)\ell^{\lambda_2}} \right)^{\lambda_1}, \quad \lambda_1 \geq 1, \lambda_2 \geq 0. \]

4. No exogenous separations: firing firms pay outside option

5. Informality: large pool of unemployment with low job finding rate
Wage inequality

- Assume separation rate $s = \delta + \sigma$ and no firing costs

- Labor market:

\[
J^E - J^U = (w - rJ^U) + \frac{1 - s}{1 + r}(J^{E'} - J^{U'}),
\]

\[
J^F = \varphi'(\ell) + \frac{1 - s}{1 + r}J^{F'},
\]

\[
J^F = J^E - J^U,
\]

where $\varphi(\ell) = R(\ell) - w(\ell)\ell - f$, $R(\ell) = A(z\ell)^\beta$
Wage inequality

• Assume separation rate \( s = \delta + \sigma \) and no firing costs

• Wage schedule (Stole-Zweibel):

\[
\begin{align*}
    w(\ell) &= \frac{\beta}{1 + \beta} \frac{R(\ell)}{\ell} + \frac{1}{2} rJ^U, \\
    \varphi(\ell) &= \frac{1}{1 + \beta} R(\ell) - \frac{1}{2} rJ^U \ell
\end{align*}
\]
Wage inequality

- Assume separation rate \( s = \delta + \sigma \) and no firing costs

- Wage schedule (Stole-Zweibel):

\[
w(\ell) = \frac{\beta}{1 + \beta} \frac{R(\ell)}{\ell} + \frac{1}{2} rJU, \\
\varphi(\ell) = \frac{1}{1 + \beta} R(\ell) - \frac{1}{2} rJU \ell
\]

- Equilibrium wage (close to firm optimal size):

\[
\frac{1 + r}{r + s} \varphi'(\ell') \approx J_{\ell'}^F = \frac{\partial}{\partial \ell'} C_h(\ell, \ell') = b \frac{(\ell' - (1 - \sigma)\ell)^{\lambda_1 - 1}}{\ell^{\lambda_1 \lambda_2}}
\]
Wage schedule

\[ w(\ell', \ell) \approx rJ^U + (r + s)b \frac{(\ell' - (1 - \sigma)\ell)^{\lambda_1 - 1}}{\ell^{\lambda_1 \lambda_2}} \]
Wage schedule

\[ w(\ell', \ell) \approx rJ^U + (r + s)b\left(\frac{(\ell' - (1 - \sigma)\ell)^{\lambda_1 - 1}}{\ell^{\lambda_1 \lambda_2}}\right) \]

- When \( \lambda_1 = 1 \) and \( \lambda_2 = 0 \):

\[ w(\ell) = rJ^U + (r + s)b \]
Wage schedule

\[ w(\ell', \ell) \approx rJ^U + (r + s)b \frac{(\ell' - (1 - \sigma)\ell)^{\lambda_1-1}}{\ell^{\lambda_1\lambda_2}} \]

- When \( \lambda_1 = 1 \) and \( \lambda_2 = 0 \):
  \[ w(\ell) = rJ^U + (r + s)b \]

- At optimal employment \( \ell' = \ell \):
  \[ w(\ell) = rJ^U + (r + s)b\sigma^{\lambda_1-1} \ell^{\lambda_1-1-\lambda_1\lambda_2} \]
  - ‘Long-run’ (optimal employment) effect: \( \lambda_1 - 1 - \lambda_1\lambda_2 > 0 \)
  - Large firms pay more
Wage schedule

\[ w(\ell', \ell) \approx rJ^U + (r + s)b\left(\frac{\ell' - (1 - \sigma)\ell}{\ell}\right)^{\lambda_1 - 1} \]

- When \( \lambda_1 = 1 \) and \( \lambda_2 = 0 \):
  \[ w(\ell) = rJ^U + (r + s)b \]

- At optimal employment \( \ell' = \ell \):
  \[ w(\ell) = rJ^U + (r + s)b\sigma^{\lambda_1 - 1}\ell^{\lambda_1 - 1 - \lambda_1\lambda_2} \]
  - ‘Long-run’ (optimal employment) effect: \( \lambda_1 - 1 - \lambda_1\lambda_2 > 0 \)
  - Large firms pay more

- Away from optimal employment (assume \( \lambda_1 - 1 - \lambda_1\lambda_2 = 0 \))
  \[ w(\ell', \ell) \approx rJ^U + (r + s)b\left(\sigma + \frac{\ell' - \ell}{\ell}\right)^{\lambda_1 - 1} \]
  - ‘Short-run’ (convexity) effect: \( \lambda_1 > 1 \)
  - Firms that are small relative to their optimal size pay more
Wage schedule
Estimated parameters

- Parameters

\[ \lambda_1 = 2.2 \quad \Rightarrow \quad \epsilon_1 = \lambda_1 - 1 = 1.2 \gg 0, \]
\[ \lambda_2 = 0.35 \quad \Rightarrow \quad \epsilon_2 = \lambda_1 - 1 - \lambda_1 \lambda_2 = 0.43 \gg 0. \]

- Both short-run and long-run effects are huge:
  - \( \epsilon_1 \sim \) elasticity of wage with respect to firm growth rate
  - \( \epsilon_2 \sim \) elasticity of wage with respect to firm employment size

- Test: run a size-wage regression controlling for firm growth rate. Do large but decreasing firms pay less?

- Why such parameters:

\[ \text{corr}(\ell, \ell') = 0.95 \quad \text{while} \quad \text{corr}(z, z') = 0.86 \]
Additional comments

• Distance of firms from desired size explains inequality. How long is the transition to desired size relative to the persistence of shocks?

• Welfare results are very sensitive to no worker heterogeneity: Do workers move much around firms of different size and export status?

• Informality: Do workers move much between informal and formal sectors?

• No fixed cost heterogeneity

• Evidence on misallocation. Here $w \sim MPL$. Dispersion of employment?
Conclusion

• Right focus: within industry, between firms
Conclusion

- Right focus: within industry, between firms

**Figure**: Wage inequality in Brazil: Within vs Between Occupations
Conclusion

- Right focus: within industry, between firms

Figure: Wage inequality in Brazil: Within vs Between Sectors
Conclusion

- Right focus: within industry, between firms

Figure: Wage inequality in Brazil: Within vs Between Firms
Conclusion

- Right focus: within industry, between firms

Figure: Wage inequality in Brazil: Within vs Between Firms

- How much does this mechanism (short-run convexities) contribute to inequality?