Discussion of “Trade, Jobs, and Worker Welfare” by Erhan Artuç, Paulo Bastos , and Eunhee Lee

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Background and Main Idea

- Recent studies with job reallocation and trade
  - Artuc et al. (2010), Dix-Carneiro (2014), Caliendo et al. (2019), Traiberman (2019),...
  - Sector reallocations due to individual and aggregate shocks
  - Limited role for within-sector job reallocation given observables
- Here: number of jobs are an autonomous source of welfare gain
  - More jobs make it more likely to find a "match"
  - Greater within-sector reallocation reveal higher welfare
- Interesting potential channel
  - Sharp predictions for sector size
  - "New" source of welfare gain
  - Not explored in trade

Summary of Paper

1. Reduced-form evidence. Sector-level export shock leads to:
   - Less workers leaving and more workers entering
   - More switching within sector
2. Estimate a trade and labor mobility model (+within-sector reallocation)
   - Revisit regressions using model-based welfare measure
3. Counterfactuals: sector-level trade shock
   - Show results with constant number of jobs within sector

Broad Assessment

- Paper extends existing models & builds upon dynamic-hat-algebra tricks
- We would like to see:
  1. Suggestive evidence
  2. Parameters that index the intensity of the new channel
  3. Counterfactuals that demonstrate its welfare relevance

Equilibrium in a Nutshell (Steady-State, 2 Sectors)

- $\{L^i\}$ determined given $\{w^i, N^i\}$ through dynamic labor supply decision:
  - Value of starting in k

$$V^k = w^k + \nu \ln \left(OV^k \right)$$

$$OV^k = \exp\left(\frac{\beta V^k}{\nu}\right) + \left(N^k - 1\right) \exp\left(\frac{\beta V^k - \delta}{\nu}\right) + N^l \exp\left(\frac{\beta V^l - C(k,l) - \delta}{\nu}\right)$$

  - Employment distributions, inflows=outflows:

$$\frac{L^k}{L^l} = \frac{\text{Prob of switching from } l \text{ to } k}{\text{Prob of switching from } k \text{ to } l} = \frac{N^k}{N^l}\frac{OV^k}{OV^l} \exp\left(\beta\left(V^k - V^l\right)\right)$$

- $\{w^i, N^i\}$ determined given $\{L^i\}$ through static equilibrium of trade model
  - Tasks: $O^k = \arg\max_O P^k \left(L^k\right)^\gamma O^{\frac{1}{\delta - 1}} - cO - w^k L^k$
  - "Jobs": $N^k = \rho\left(O^k\right)$
- I did not understand: why is $N^k \neq L^k$. What is N^k?

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Suggestive Evidence?

- Implication for job flows across regions?
  - This model: higher within-sector worker reallocation in large sector-regions
  - vs. Bilal (2020): higher-wage (=larger) regions have low job-finding and even lower job-destruction rates
- Paper shows: export shock to k, then
  - $\uparrow \frac{\text{Prob of switching within sector } k}{\text{Prob of keeping job}} = \left(N^k - 1\right) \exp\left(-\frac{\delta}{\nu}\right)$
  - $\uparrow \frac{\text{Prob of switching within sector } k}{\text{Prob of switching out of } k} = \frac{N^k - 1}{N^l} \exp\left(\frac{\beta\left(w^k - w^l\right) - C(k,l)}{\nu}\right)\left(\frac{OV^k}{OV^l}\right)^{\beta}$
  - Interpretation: through N^k (= "job opportunities")
- Also consistent with standard within-sector reallocations
  - Frictionless: Melitz model
  - Frictional: Cosar, Guner and Tybout (AER 2016)
- Would like to see: sector size ("# jobs") matters for labor supply
  - Conditional on wages and job-finding rate
  - Akin to agglomeration effect in urban economics (cf. Diamond 2016)

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  - δ and c are differenced out
  - $\tilde{\sigma}$ and $\rho(O)$ matter through: $N^k = \rho\left(\left(\frac{P^k (L^k)^\gamma}{(\tilde{\sigma}-1)c}\right)^{\frac{\tilde{\sigma}-1}{\tilde{\sigma}-2}}\right)$
    - $\rho(O)$ assumed linear
    - $\tilde{\sigma}$ normalized so that output has CRS in tasks and other factors
- A hidden parameter: how differentiated are jobs within a sector?
  - In the paper, differentiation across sectors = within sectors
    - As if assuming same σ for all goods to measure love from variety
  - Solution: Nested Logit, bring in within-sector ν

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Counterfactuals and Welfare Effects?

- Key relationship:

$$V_t^k = w_t^k + \beta E_t V_{t+1}^k - \nu \ln \left(1 - \text{probability of leaving job at } t\right)$$

  - Regressions: relate (estimated) switching probabilities to export shocks
  - Given wages, an increase in switching probability reveals a welfare increase

- But model has only one channel to interpret within-sector relation

- Welfare implications are more nuanced in general
  - No job-to-job transitions (Cosar et al. 2016), switching workers worse off
  - With JTJ transitions (Fajgelbaum 2020), some switching workers better off
  - $\rightarrow$ Welfare implication of average within-sector switching not clear

Main Counterfactual

Table 8: Average changes in present discounted values as a percentage of the annual labor income (%)

	Baseline	No job opportunity channel
Aggregate	120.43	92.64
Agriculture	100.78	71.75
Manufacturing	124.39	96.83
Services	120.21	92.42

Notes: Table reports for each model specification the average of changes in present discounted lifetime utility as a percentage of the initial annual labor income, weighted by the initial employment share of a labor market.

- Why is job opportunity channel more important in agriculture (since the export shock is to manufacturing)?

My Suggestions

1. Show empirical evidence that is more directly suggestive of the channel
   - Key: sector size matters conditioning on wage
2. Remove micro-foundation through tasks –no empirical counterpart anyhow
   - I.e. remove $\rho(N)$ and $\tilde{\sigma}$, use a completely standard trade model
   - Impose that jobs=jobs ($N = L$)
   - Work with nested logit, estimate within-sector differentiation
3. How to deal with other forces leading to reallocations?
   - Across-firms reallocations, job destruction
4. (Mind the writing)