The Impact of Trade on Employment, Welfare and Income Distribution in Unionized General Oligopolistic Equilibrium

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Motivation

Relevance of the topic

- Distributional and employment effects of international trade are major concern of general public and policy makers.
- Labor unions are often seen as part of the problem.

Labor unions in the literature

- Existing models consider rent-sharing at the firm- or industry-level and primarily look at welfare effects of trade.
- Due to partial equilibrium nature of most studies, (almost) no discussion about aggregate employment effect or distributional consequences.
Contribution of this paper

Novel modeling approach

- Introducing labor unions into Neary’s GOLE framework with sectors differing in productivities
- Aggregate unemployment as all sectors unionized
- Productivity differences generate sector-specific profits
- Rent-sharing generates sector-specific wages

Issues addressed

- Simultaneous discussion of distributional and employment effects of trade
- Distinction between inter-group effects (profits versus wages) and intra-group effects (among firm owners, among workers)
- Focus on income distribution across sectors!
Related literature

The GOLE framework

- Neary (2003)
  - theoretically tractable model of general oligopolistic equilibrium (GOLE)
  - no labor market imperfection

- Bastos and Kreickemeier (2009)
  - introduce labor unions
  - but only in part of the sectors (hence employment exogenous)
  - no discussion on inter-sectoral income inequality

Labor unions in PE model

### Assumptions

#### General setup
- Two countries (Home and Foreign)
- Continuum of imperfectly competitive industries with mass 1 (indexed by $z \in [0, 1]$)
- Firms have market power in their own industry but are small economy-wide

#### Unions and the labor market
- Workers are homogeneous and perfectly mobile across firms and sectors
- Firm-level monopoly unions, representing all workers in a firm
- "Right-to-manage": Rent maximizing unions set wages, firms choose employment (two-stage game)
Measures of income inequality

Inter-group inequality

- Ratio of average profits and average wages
  - $n \to \infty$: firms have no market power and hence the ratio approaches zero
  - Otherwise, the ratio is strictly positive and may exceed one if both the unemployment compensation and the number of firms are not too high
- Higher unemployment benefits lower the profit-wage ratio
Intra-group inequality among firm owners

**Figure:** The Lorenz curve for profit income
Intra-group inequality among workers

Figure: The Lorenz curve for wage income
**Autarky vs. Free Trade**

**Assumptions**
- Countries are identical in all respects
- No transport costs or other barriers to international trade
- Goods markets are fully integrated
- Labor markets remain internationally segmented and workers are immobile across countries

**Basic effects**
- Trade lowers wage claims of unions and hence stimulates employment and welfare
- Profit effects are ambiguous
  - More competition lowers profits
  - Lower wage claims raise profits
  - Second effect dominates if $n$ small
Distributional effects of trade

Inter-group inequality
- Effect in general ambiguous and depends on the size of $n$
  - If competition in the closed economy is strong, firm owners will lose relative to production workers
  - If competition in the closed economy is weak, firm owners will gain relative to production workers

Intra-group inequality
- Trade does not affect income inequality among firm owners
- Trade lowers income inequality among production workers.
  - Trade reduces wages in all sectors
  - But: wage compression due to unemployment benefits
Main findings

- Unions set higher wages
- Lower output, higher unemployment and higher welfare costs
- Income inequality
  - Inter-group inequality is lower
  - Intra-group inequality among firm owners remains unaffected
  - Intra-group inequality among workers is more pronounced
Most important insights

- Trade lowers wages and stimulates employment
- Firm owners may benefit from free trade if their market power in autarky is sufficiently high
- Trade may increase or decrease inter-group inequality between firm owners and production workers depending on the market power of firms
- Trade reduces income inequality among production workers but leaves income inequality among firm owners unaffected
  - Consistent with empirical observation that inter-sectoral inequality becomes less important factor of general income inequality (Faggio, Salvanes and Van Reenen, 2007)