Unemployment and Wages in New New Trade Models

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What is new in the new new trade literature

More realistic picture of product markets

- Globalization acts as Darwinian selection mechanism (survival of the fittest)
- Trade liberalization triggers *intra*-sectoral reallocation of resources from unproductive to more productive firms
- Theoretical rationale why trade liberalization fosters aggregate productivity

$\Longrightarrow$ New (additional) gains from trade

$\Longrightarrow$ New (additional) potential costs due to labor churning reallocation

Caveats

The following is a survey on recent literature.

- It is selective
- It is incomplete
- It draws on very recent (partly unpublished and/or unrefereed) research papers

Real wages and trade liberalization when labor markets are perfectly competitive, I

Single sector, single factor perspective (Melitz, AER, 2003; Melitz and Ottaviano, RES 2008)

- *Homogeneous firms:* Trade liberalization increases real wage due to increased availability of varieties and/or reduced monopoly power of firms
- *Heterogeneous firms:* Additional positive effect on real wages through higher average labor productivity; dominates a possible negative variety effect

Real wages and trade liberalization when labor markets are perfectly competitive, II

Two-sector, two-factor (high- and low-skilled) Heckscher-Ohlin perspective (Bernard, Redding and Schott [BRS], RES, 2007)

- *Homogeneous firms:* average real wage goes up, but Stolper-Samuelson theorem holds (real wage of one skill-group **necessarily** falls, the other rises)
- *Heterogeneous firms:* Stolper-Samuelson result may no longer hold as *both* skill-types work at more productive firms

Trade liberalization and **imperfectly** competitive labor markets

New new trade models allow to ask new questions

1. Link between aggregate productivity and aggregate labor market outcomes
    1. The structural rate of unemployment
    2. The average real wage
2. Link between firm heterogeneity and wage dispersion
3. Link between product market churning (firms) and labor market churning (workers)

Outline

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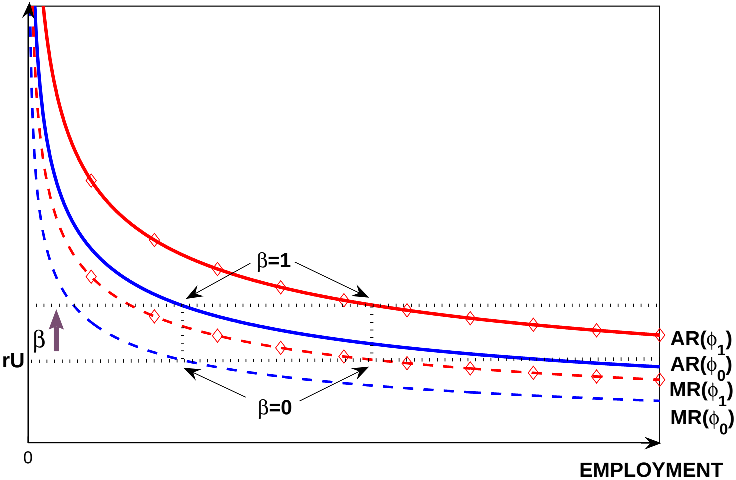
Felbermayr and Prat (JEEA, 2009)

- Simplest combination of NTT framework with search-and-matching unemployment
- Wage rate is constant across heterogeneous firms
  - Despite costly labor turnover (search costs)
  - Despite rent sharing (cf. Eckel and Egger, JIE, 2009)
- Intuition
  Wage bargaining outcomes depends on two things:
  - Firms' marginal revenues: firms with different productivities charge different prices and achieve different sales; but, with the price-quantity trade-off identical across firms (CES!), firms have identical *marginal revenues*
  - *Outside options of workers:* value of unemployment is identical over (identical) workers

Illustration: collective (*efficient*) bargaining at firm-level

Vertical contract curves; equalization of marginal revenues



The role of trade liberalization

Felbermayr, Prat and Schmerer [FPS] (2008, JET, r&r)

- Trade liberalization increases the real wage and lowers structural unemployment in the long-run
- **Intuition**
  Do firms have additional incentives to create jobs? Sufficient to look at the *average* firm. If marginal gain from additional filled job is larger than associated search costs, firms post more vacancies. As long as search costs are not fully indexed to wages, job creation goes up. This creates additional demand for workers, the real wage rises and the unemployment rate falls.
- These findings obtain also in a two-sector Ricardian setup with search frictions
- Firm heterogeneity magnifies quantitative effects

Aggregate evidence

- Model suggest causal chain: Trade liberalization $\longrightarrow$ total factor productivity (TFP) $\longrightarrow$ unemployment
  - Alcala and Ciccone (QJE, 2004): Trade liberalization increases total factor productivity
  - Dutt, Mitra, and Ranjan (JIE, 2009): Trade liberalization lowers rate of unemployment in a cross-section of countries
  - FPS (2009): confirm this finding in panel data analysis for 20 OECD countries. Moreover, the effect of trade operates through TFP
- Similarly, real wage up ...
  - Single-sector view not sufficient
  - But cross-sectional evidence suggests per capita income gains

Strategic foreign investment, trade-unions, and wage bargaining

Eckel and Egger (JIE, 2009)

- Melitz (2003) model, where firms can either serve foreign markets through exports (hiring domestic workers) or through a foreign plant (hiring foreign workers)
- There are plant-specific trade unions, "rights-to-manage" approach
- Highly productive firms have an incentive to invest in foreign country since this helps them to bargain lower wages (outside option improved); hence, multinational firms have lower wages
- Trade liberalization lowers wages, firms move down their marginal revenue curves and rate of unemployment falls

Multi-sector models

- Helpman and Itshoki (2008)
- Sector A: without search frictions, no trade costs, perfect competition, homogeneous firms
- Sector B: search frictions, trade costs, monopolistic competition, heterogeneous firms
- When trade costs fall, reallocation of workers into sector B. Hence, aggregate unemployment goes up, but also average real wage rises
- Sectoral assumptions drive unemployment results through composition effects

Outline

Evidence from matched employer-employee data

- Arai (JOLE, 2003): Swedish data
  Controlling for observed and unobserved worker heterogeneity, wages and firm-level profits are positively correlated
- Schank, Schnabel and Wagner (JIE, 2007): German data
  Exporters pay higher wages than non-exporters, controlling for size and productivity of firms, but wage premium is very small
- Problem: Unobserved firm characteristics?
  Hedonic/risk-adjusted wages?

$\Longrightarrow$ Require some theory of firm-level rent-sharing to explain this fact

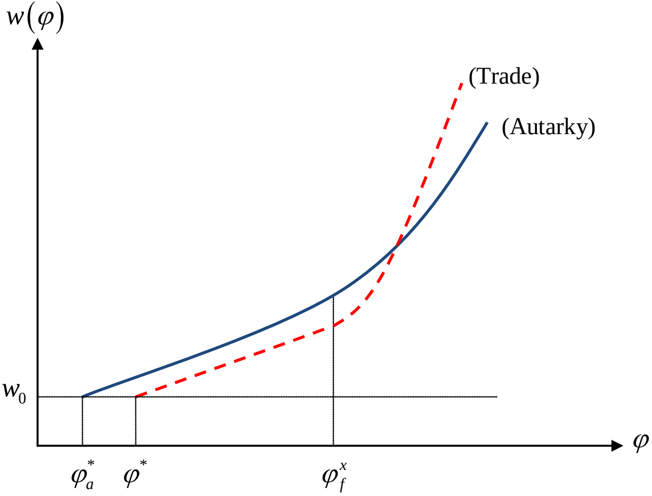
When does productivity heterogeneity imply wage dispersion for homogeneous workers?

- Interesting question, since *within group wage inequality* is a key ingredient in overall inequality (Autor et al., REStat, 2008)
- Need to modify standard model
  - Break proportional link between wage costs and firm size (i.e. employment)
  - Or: allow for convex search costs (average cost of vacancy posting rises with number of vacancies)
  - Or, easier: firm-level endogenous minimum wages motivated by efficiency (or fair) wage motive

Amiti and Harrigan (2008)

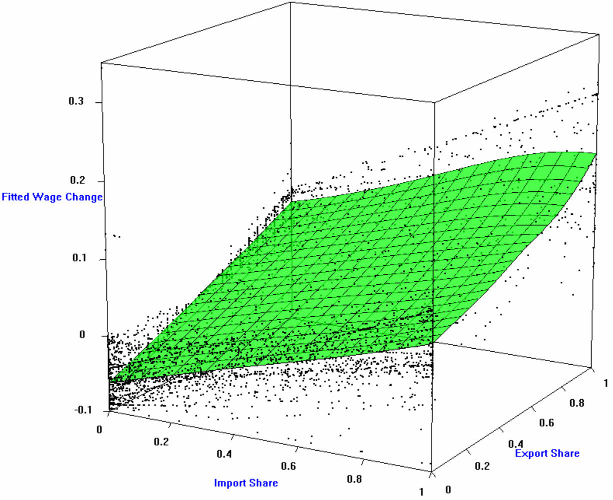
- Fair wage mechanism (cf. Egger and Kreickemeier, IER, 2009)
    - Workers require a minimum wage linked to their employer's profits; otherwise they would not provide effort
    - No underbidding because workers are homogeneous and would behave similarly at the same firm
- This mechanism generates a wage distribution that follows the distribution of profits
- Trade liberalization triggers an increase in profit inequality and therefore also in wage inequality

Illustration: wages and the transition from autarky to trade



Empirical evidence: Amiti and Harrigan (2008)

Indonesian data



Good Jobs, Bad Jobs, and Trade Liberalization

Davis and Harrigan (2008)

- Firms differ with respect to productivity and monitoring costs (jointly distributed)
- Efficiency wages
  - Workers dislike work effort; they need to be disciplined by threat of unemployment
  - Firms monitor workers, but monitoring is incomplete
  - Hence, need to pay higher than market clearing wages to make threat of unemployment big enough
- Firms with same productivity but worse monitoring technology pay higher wages ("good jobs")
- Trade liberalization threatens those "good jobs"
- [Complicated details, depending on correlation between productivity and monitoring costs)

Good Jobs, Bad Jobs, and Trade Liberalization, cont'd

Assumption: More productive firms have somewhat worse monitoring technologies

- Positive correlation of wages and firm sizes
- For fixed productivity, trade liberalization destroys jobs with highest wages
- It is, however, still possible that trade expands the number of high wage jobs such that average wage goes up
- Higher average wage requires higher unemployment rate to ensure that workers do not shirk

Outline

Crucial role of worker reallocation

- Effect on number of available varieties is not crucial for welfare gains
- But reallocation is essential!
- Product marking churning leads to labor market churning

$\Longrightarrow$ Trade liberalization: aggregate gains come with substantial costs on individual level

  - Workers transit through periods of unemployment (lost earnings)
  - Firms must engage in costly search for workers (search costs)
  - Steady-state churning: larger fraction of start-ups fail

Importance of labor market churning in two-sector setup

Bernard, Redding and Schott (2007)

Churning as a result of trade liberalization

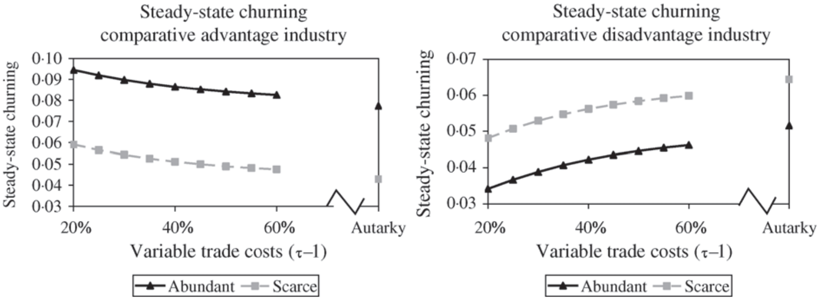
Job turnover as trade costs fall

	Comparative advantage industry		Comparative disadvantage industry	
	Job turnover	Decline from autarky to 20%	Job turnover	Decline from autarky to 20%
Abundant factor	Total	20·7	Total	14·3
	Between industry	7·3	Between industry	−7·3
	Within industry	13·3	Within industry	7·0
Scarce factor	Total	11·6	Total	16·7
	Between industry	6·9	Between industry	−6·9
	Within industry	4·7	Within industry	9·8

Importance of labor market churning in two-sector setup

Bernard, Redding and Schott (2007)

Steady state churning



Outline

The possibility of ex post Pareto improvements

- Egger and Kreickemeier (2008)
  - Fair wage mechanism: wages linked to productivity; existence of unemployment
  - Profit-tax based redistribution system with lump-sum transfers
- Can an ex post Pareto improvement be "engineered"?
  - It effectively lowers labor income inequality
  - It also introduces an efficiency loss
  - But, if share of exporting firms is large enough, aggregate gains from trade liberalization persist

Policy implications

- Reallocation of workers within and between sectors is crucial for welfare gains
- Policy should not choke this mechanism

$\Rightarrow$ Protect workers, not firms!

$\Rightarrow$ Hidden wage subsidies are not the right way!

$\Rightarrow$ **Flexicurity**