

# Comparative Advantage and Skill-Specific Unemployment

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# Why bother about Unemployment

- It's the main public concern
- Labor market frictions might alter the effects of trade liberalization
- Distributional consequences
- Optimal economic policy

# Recent Literature

- Felbermayr, Prat and Schmerer (2008) introduce search and matching unemployment into the Melitz-model
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- Helpman, Itskhoki and Redding (2008) introduce worker heterogeneity
- One common feature of these models: There is only one factor of production
- We introduce search and matching unemployment into the model of Bernard, Redding and Schott (2007)

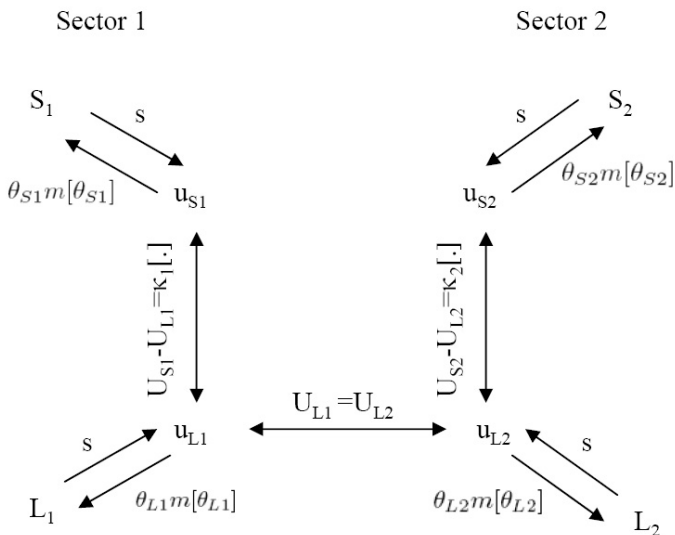
# Main Features of our Model

- Firms are heterogenous with respect to their productivity
- Fixed costs of production, of exporting and entering the market
- Two factors of production: Skilled labor and unskilled labor
- Two goods: One skill-intensive, one unskill-intensive

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- Fixed costs of production, of exporting and entering the market
- Two factors of production: Skilled labor and unskilled labor
- Two goods: One skill-intensive, one unskill-intensive
- Four separate labor markets with search and matching unemployment
- Mobility of workers: Workers can move from one sector to the other or train themselves

# Worker Mobility



# Consumption and Production

Utility function:

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Production function:

$$q_i[\varphi_i] = \varphi_i S^{\beta_i} L^{1-\beta_i},$$

# Labor Market

- Standard matching function for four separate labor markets:

$$m[\theta_{Li}] = m_0 (\theta_{Li})^{-\gamma},$$

- As in Stole and Zwiebel (96) each worker bargains individually and is treated as the marginal worker
- The wage is driven down to the outside option:

$$w_{Li} = rU_{Li} + \frac{\beta}{1 - \beta} \left( \frac{c}{m(\theta_{Li})} \frac{r + s}{1 - \delta} \right)$$

# Productivity-Thresholds

- After learning its productivity the firm will decide whether to take up production and whether to export
- Entry threshold:

$$(1 - \delta) \frac{\pi_d[\varphi_{id}^{*H}]}{r + \delta} = \frac{cP_i^H S[\varphi_{id}^{*H}]}{m[\theta_{Si}^H]} + \frac{cP_i^H L[\varphi_{id}^{*H}]}{m[\theta_{Li}^H]} + fP_i^H,$$

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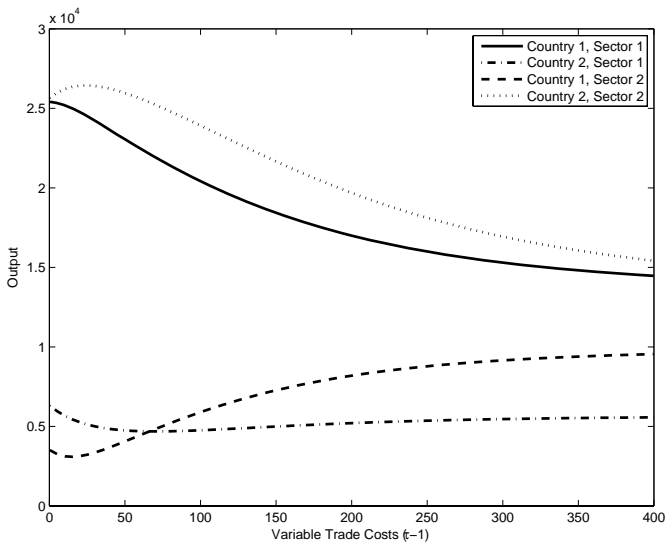
- Exporting threshold:

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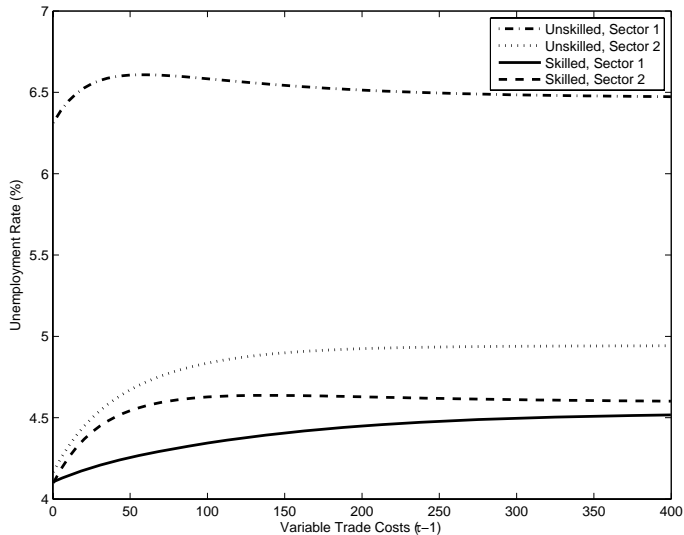
# Calibration

- Product market similar to Bernard, Redding, Schott (2007)
- Labor market of low-skilled workers in sector one similar to Felbermayr, Prat, Schmerer (2008)
- Same parameter values for the other labor markets
- Asymmetry:
  - Sector 1 is skill-intensive:  $\beta_1 = 1 - \beta_2 = 0.8$
  - Country 1 has better training-opportunities: 50% skilled workers vs. 20% skilled workers in country 2

# Specialization in Output

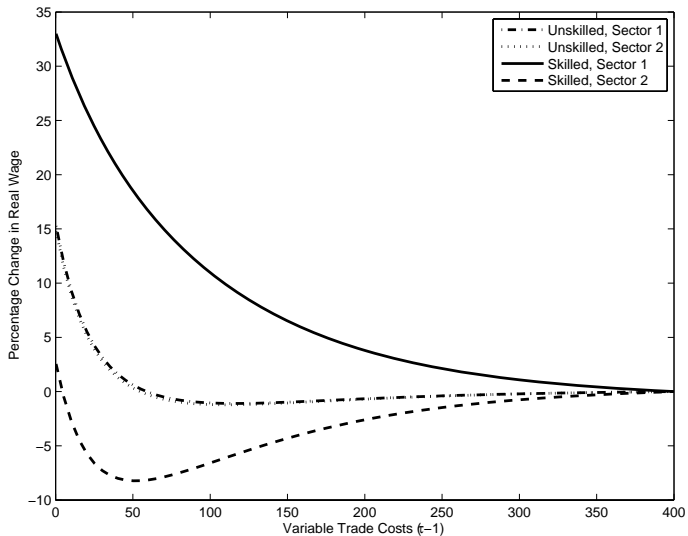


# Sector-specific Unemployment

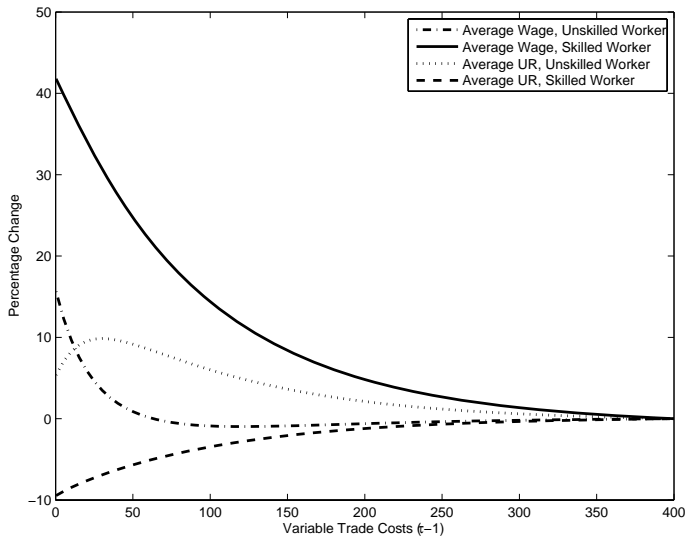




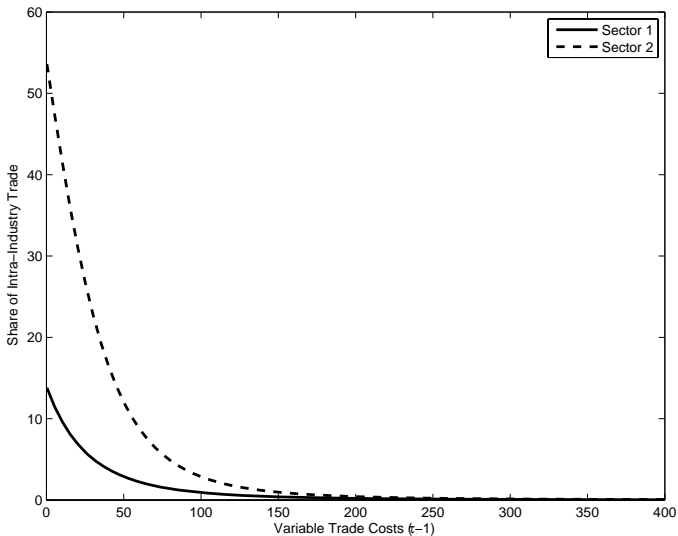
# Sector-specific Wages



# Average Unemployment and Wages



# Intra-Industry Trade



# Conclusion

- As trade costs decrease, a country with a relative advantage in the training technology will specialize in the production of the skill intensive good.
- Workers will migrate to this sector and invest more in their human capital.
- The big winners are the skilled workers in the export sector, while skilled workers in the import sector loose.
- The effects for unskilled labor (the more mobile factor) are much more equally distributed. In line with the Heckscher-Ohlin model, in the country exporting the skill-intensive good, unskilled labor will suffer losses: Unemployment goes up and wages go down. Only for very low trade costs, intraindustry trade can overturn this result.