Lectures 13 & 14 outline
Trade, Agglomeration and Technological change

Marko Terviö Aalto University

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Local labor markets

- Interregional real wage and TFP variation
- Why non-convergence across regions despite same institutions and factor mobility
  - agglomeration or selection
  - path-dependence / symmetry-breaking
- Labor market interaction with
  - housing markets, capitalization/real wages
  - amenities, public goods
  - TFP [non-CRS technology]
- Classics
  - Roback: "Wages, Rents and the Quality of Life" (JPE 1982)

Rosen-Roback (+Moretti) model

- Multi-city labor markets, mobile factors but city-specific features
- Technology
  - continuum of households with city-preference shifters
  - production functions by city, CRS
  - housing supply functions by city, DRS (land immobile)
  - world supply of capital at constant rate
  - unit supply of labor by all workers, but need a house in the same city
- Equilibrium
  - marginal household indifferent between {wage, housing cost}
  - returns to capital equalized across cities
- Questions. What happens across cities (wage, housing cost, migration, welfare) when uneven change in...
  - TFP, housing supply elasticity, amenities
- Extensions: agglomeration, non-tradable goods, [skill types]

Agglomeration

- Region (local labor market) -level scale effects

Causes of agglomeration

- Sharing economy (fixed costs, love-of-variety)
- Love-of-variety (consumption, intermediate inputs)
- Market liquidity, esp. in matching markets (e.g. "power couples")
- Region-level assortative matching?
- Knowledge spillovers and accumulation

Related issues

- Regional specialization (industry clusters / coagglomeration)
- Externalities and industrial policy
- Multiple equilibria

Trade, Urban, and Labor economics

- Cities / commuting regions vs countries
  - "trade" = something cannot move costlessly between locations
- Classic trade theorems
  - FPE
  - Rybczynski (factor endowments -> goods outputs)
  - Stolper-Samuelson (output prices -> factor returns)
- Assignment models of trade - Costinot & Vogel (2014)
  - continua of goods, factors
  - everything ordered [incl. countries by tech and endowment] and complementary –> PAM in everything.
  - country = demand and production functions, factor endowments
  - One-factor Ricardian: Dornbusch, Fischer & Samuelson (AER 1977)
- Tricks of the trade
  - Log-supermodularity (Monotone Comparative Statics)
  - Fréchet/GEV distribution $F(x) = e^{-x^{-\alpha}}$

Technical change

Canonical model

- Perfect world with CES, σ $[= 1/(1-\rho)]$, A_f
- Factor-augmenting technological change
- With CES factors are q-complements (q-substitutes) if higher endowment of factor i –> higher (lower) equilibrium price of factor j
- Real wages vs skill premium
  - tech progress for any factor benefits all factors
  - only increase in same-factor quantity can reduce factor return
- Evolution of "skill bias" - compare with Solow residual

- Task-based Ricardian model
  - it's task types that get mechanised/offshored, not worker types
- Directed technical change (endogenous skill bias)
- Robots

Labor productivity and structural change

Alwyn Young (AER 2014) "cost disease" rethink paper

- Baumol's cost disease (1960s)
  - "why is health care/education/etc service getting so expensive..."
  - Productivity growth higher in M –> price growth higher in S
  - income inelastic demands –> share of service sector grows
- Average worker quality in industry related to industry employment share due to selection: "The Roy supply curve"
  $\zeta > -1$ elasticity of average worker efficacy to sector share of L
- Correlation of comparative and absolute advantage. $\zeta > 0$ possible
- Omitted channel bias in old school sectoral TFP estimates
- The Engel-Roy cost disease: growth of service sector employment affects negatively average worker type
- Is cost disease consistent with balanced productivity growth?
  - Young: "plausible, not proven explanation"
  - there are lots of bad instruments out there
- also Kuralbayeva and Stefanski (J Int. Econ. 2013), Heckman and Sedlacek (JPE 1985)