Lectures 13 & 14 outline
Trade, Agglomeration and Technological change

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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, $\sigma = 1/(1-\rho)$, $A_f$
- Factor-augmenting technological change
- With CES factors are $q$-complements ($q$-substitutes) if higher endowment of factor $i \rightarrow$ 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 \(\rightarrow\) price growth higher in S
  - income inelastic demands \(\rightarrow\) 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)