

Session 2: The economics of location choice: theory

Jacob L. Vigdor

Duke University and NBER

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Outline

- The classics
 - Roy model of selection into occupations.
 - Sjaastad's rational choice analysis of migration behavior.
 - Tiebout's model of choice among jurisdictions.
- Open theoretical questions.
- Econometric underpinnings of the study of migrant destination choice.

Roy (1951)

- Suppose there is a unidimensional measure of skill, and occupations vary in terms of returns to skill.
- Prediction: high skill sort into high-returns occupation and v/v .
- Implication: the distribution of earnings (presuming competitive labor markets, etc...) is skewed.
- When skill is multidimensional and uncorrelated, additional sorting possible, implications for distribution of earnings complicated.

Roy (1951)

- Applications to migration:
 1. Destinations with high returns to skill will attract more skilled migrants.
 2. Within a destination, migrants lacking a specific skill will gravitate toward locations where the returns to that skill are minimal.

Roy and Ghettos

- Ghettos offer employment networks that reduce the return to knowledge of local language, customs, etc.
- For example: hypothetical potential earnings...

Language ability	In ghetto	Outside ghetto
Fluent	2	3
None	1	0

- Note that incentive to improve language ability over time persists... as well as incentive to depart ghetto when language improves.

Sjaastad (1962)

- Migration as a cost/benefit analysis.
- Motivated by persistent differences in earnings across U.S. states, existence of bidirectional migration (more on this in a moment).
- Costs (generally borne upfront)
 - Monetary (plane tickets, etc.) Sjaastad suggests these by themselves can't explain failure to equilibrate.
 - Opportunity costs while looking for work in new location.
 - “Psychic costs” of leaving home.

Sjaastad (1962)

- Benefits (accrue over time)
 - Higher wages
 - Direct effect
 - Indirect effect through changes in human capital investment opportunities.
 - Makes more sense to migrate when young.
 - Amenities/value of local consumption in new location.

Sjaastad and ghettos

- Ghettos reduce the costs of migration.
 - Social networks speed transition into the workforce.
 - Provision of specialized goods/services eases the “psychic costs.”
- Ghettos could also be thought of as providing a distinct benefit, rather than just reducing transition costs.
- Ghettos promote chain migration: early migrants have $B \gg C$; their followers need not.

Problems with Sjaastad

- Motivation 1: wages don't equilibrate.
 - Alternative explanation: compensating differentials. Living standards might well equilibrate across space, and there is some evidence that this is true.
- Motivation 2: bidirectional migration.
 - Sjaastad doesn't really explain this. Easy to explain with variation in returns to skill across space (e.g., low-skilled migrate Mexico to US, highly skilled migrate US to Mexico).

Tiebout (1956)

- A response to Samuelson's statement of the public good problem. Under certain conditions, the free rider problem is solved when public goods provided by autonomous local jurisdictions.
- The conditions:
 1. Costless mobility for all consumers.
 2. Full information.
 3. Number of jurisdictions sufficient to match consumer heterogeneity & satisfy remaining conditions.

Tiebout (1956)

4. Employment irrelevant.
5. No externalities between jurisdictions.
6. Scale economies such that jurisdictions can attain an optimum size, where the average cost of providing services is minimized.
7. Jurisdictions' objective is to attain the optimum size.

Tiebout and ghettos

- Tiebout introduces the concept of efficiency to the discussion of ghettos.
- Perhaps the concentration of ethnic groups in specific areas is “optimal”; the result of sorting.
- But maybe not!

Ghettos and efficiency

- Consider the following scenario:
 - Migrants are of two types, skilled and unskilled.
 - Type is not observable.
 - Natives statistically discriminate on the basis of a local sample.
- High skilled migrants have incentives to separate.
- Low skilled migrants have incentives to pool.
- Individual location decisions impact the welfare of third parties: externality present. Zero-sum game, though.

Ghettos and efficiency

- In alternative scenarios, ghettos can be “too big” or “too small.”
- Suppose locationally-restricted social networks improve wage offers of low-skilled without impacting the wage offers of high-skilled. Ghettos will be too small.
- Suppose ghettos retard the human capital accumulation of children, and parents are insufficiently altruistic. Ghettos will be too big.

The utility of future theory

- How can we infer whether ghettos are inefficiently large or small?
- What incentives can be imposed to artificially manipulate the size of a ghetto, while preserving an element of free choice?

The econometric evaluation of location choice

- With identical consumers, estimate the value of locational attributes with a hedonic model:

market price = $f(\text{observed attributes})$

- Not sensible for the study of immigrant ghettos, since premise is that value of attributes varies by ethnicity.
- More sophisticated model: McFadden's discrete choice method.

McFadden's model

- Likelihood of observing a household choosing housing unit n in community c :

$$P_{cn} = P(U_{cn} > U_{-cn}) \text{ for all units other than } c.$$

- Utility is presumed to be a function of observed and unobserved attributes of the housing unit and community. Call the observed component V_{cn} and assume the unobserved component follows an iid extreme value (Weibull) distribution.

McFadden's model

- Above assumptions motivate the conditional logit model for location choice:

$$P_{cn} = \frac{e^{V_{cn}}}{\sum_c \sum_n e^{V_{cn}}}$$

- Looks great, right? Only a couple of problems in practice.

McFadden's model

- Independence of Irrelevant Alternatives:
 - Error terms must be independent across choice alternatives. Patently implausible. Likelihood of choosing a specific house in neighborhood A, relative to neighborhood B, changes if we build an identical house next door.
 - Nested logit can potentially solve this problem. Model the choice process in two stages: neighborhood then house.

McFadden's model

- Analytical intractability with large choice sets.
 - Number of observations in conditional logit: consumers*choice alternatives.
 - McFadden shows that consistent parameters can be obtained with a fixed or random sample from the full choice set.
 - Implement as follows: take a random sample, add a term equal to the probability that an alternative in the restricted choice set was included (=1 for the chosen alternative, $\pi < 1$ for random alternatives).

McFadden's model

- Omitted variable problems.
 - If observed attribute X is correlated with unobserved attribute W , then the imputed attractiveness of X will be confounded.
 - For example, percent immigrant in a tract may be correlated with unobserved elements of housing unit quality.
 - One solution to this problem: boundary discontinuities (Bayer, Ferreira, and McMillan). Only works for evaluating the attractiveness of things that vary discontinuously, though.

Is discrete choice modeling useful?

- What's the alternative?
- Special challenges with immigrants. Do they choose city first, then neighborhood? Or do they seek out particular types of neighborhoods and select among cities that have them?