

# **ECON 4921: Lecture 12**

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# Roadmap

1. Introduction
2. Institutions and Economic Performance
3. The Firm
4. Organized Interest and Ownership
5. Complementarity of Institutions
6. Institutions and Commitment
7. Agency problems: Voters- Politicians-Bureaucrats
8. Fiscal Federalism
9. **System Competition**

# Redistribution

- An important role of government is to redistribute income. (Why?)
- Traditional public finance argues that the central level of government should be responsible for redistribution.
  - E.g. “redistribution is intrinsically a national policy” (Stigler, 1957 p. 217)
- Main worry: mobility of households

# Migration externality

- Households 'vote with their feet'.
- Governments have incentives to set fiscal variables to influence the location of households (and firms).
  - **avoid becoming 'welfare magnets'.**
- In equilibrium all local governments set lower benefits than they would in a hypothetical no-mobility world.
- Extreme case: 'race-to-the-bottom'
- More reasonable: Underprovision (as in Wildasin, 1991, Wheaton 2000).

## The model

$I$  local governments, indexed from  $i= 1, \dots, I$ .

Common labor market

Two kinds of households, 'rich' and 'poor', overall sizes fixed.

Poor household

- endowed with 1 unit of labor
- perfectly mobile across local governments
- no migration costs.

Rich households

- endowed with other factors of production
- immobile
- care for the poor

## The model

Each jurisdiction produces a numeraire good with labor from the poor,  $l_i$ .

Production technology  $f_i(l_i)$ ,  $f_i'(l_i) > 0$ ,  $f_i''(l_i) < 0$

Competitive labor market:  $w_i = f_i'(l_i)$

Rich households earn the remaining income  $y_i = f_i(l_i) - f_i'(l_i)l_i$ .

## Redistribution

The rich have altruistic preferences:  $u_i(y_i, z_i)$  where  $z_i = w_i + b_i$

Each poor household ('welfare client') receive  $b_i$  (similar for all poor)

Each rich household ('tax payer') pays  $\frac{b_i l_i}{n_i}$  (similar for all rich)

$n_i$  is the number of rich households in the jurisdiction

## Migration equilibrium

$z_i$  must be equal across all  $i$  (why?)

$$f'_i(l_i) + b_i = f'_j(l_j) + b_j, \quad i \neq j. \quad (1)$$

Common labor market ensures that wages equilibrate migration flows.

Let  $L$  denote the total number of poor households in the economy,

then:  $\sum_{i=1}^I l_i = L. \quad (2)$

Equation (1) and (2) determine the distribution of welfare clients across jurisdictions and their common net income,  $z$ , conditional on  $b_i, i=1, \dots, I$ .



## Migration equilibrium

Differentiating (2) with respect to  $b_j$  yields

$$\sum_{i=1}^I \frac{\partial l_i}{\partial b_j} = 0, \quad (3)$$

and differentiating (1) with respect to  $b_j$  yields

$$\begin{aligned} \frac{\partial z}{\partial b_j} &= f_i''(l_i) \frac{\partial l_i}{\partial b_j} + 1, \text{ for } i = j \\ \frac{\partial z}{\partial b_j} &= f_i''(l_i) \frac{\partial l_i}{\partial b_j}, \text{ for } i \neq j \end{aligned}, \quad (4)$$

## Migration equilibrium

Rearranging

$$\frac{\partial l_i}{\partial b_j} = \frac{\partial z}{\partial b_j} \cdot \frac{1}{f_i''(l_i)} - \frac{1}{f_i''(l_i)}, \text{ for } i = j$$
$$\frac{\partial l_i}{\partial b_j} = \frac{\partial z}{\partial b_j} \cdot \frac{1}{f_i''(l_i)}, \text{ for } i \neq j$$

(5)

Substituting this into (3) to solve for  $z$  as a function of the parameters  $(b_1, \dots, b_I)$  yields

$$\frac{\partial z}{\partial b_j} = \sigma_j > 0, \quad (6)$$

where  $\sigma_j = \frac{1}{f_j''(l_j)} / \frac{1}{\sum_{i=1}^I f_i''(l_i)}$ .

$\sigma_j \in [0, 1]$ . When welfare clients are evenly distributed across all local governments then  $\sigma_j = \frac{1}{I}$ .

## Migration equilibrium

And (5) can be written:

$$\begin{aligned} \frac{\partial l_i}{\partial b_j} &= \frac{\sigma_j - 1}{f_i'(l_i)} > 0, \text{ for } i = j \\ \frac{\partial l_i}{\partial b_j} &= \frac{\sigma_j}{f_i'(l_i)} < 0, \text{ for } i \neq j \end{aligned} \quad (7)$$

When  $b_j$  increases:

- jurisdiction  $j$  is more attractive and poor households migrate from other jurisdictions into jurisdiction  $j$ .
- Without the common labor market which introduces offsetting wage movements, then all the poor would move to the jurisdiction with the highest benefits.

## Choice of benefit levels

Decision taken by representative rich household

Each rich household receives  $1/n$  of total non-poor income

$$u(y_i, z_i) = u\left(\frac{f_i(l_i) - f_i'(l_i)l_i}{n_i} - \frac{b_i l_i}{n_i}, f_i'(l_i) + b_i\right). \quad (8)$$

Each jurisdiction maximizes  $u(y_i, z_i)$  wrt  $b_i$ , taking into account the migration effect in (7) and viewing other jurisdictions benefit levels as fixed.

$$MRS(y_i, z_i) = -\frac{\partial y_i / \partial b_i}{\partial z_i / \partial b_i}. \quad (9)$$

## Choice of benefit levels

Assuming a symmetric equilibrium (6) and (7) can be written as:

$$\frac{\partial z_i}{\partial b_i} = \frac{1}{I} \quad (10)$$
$$\frac{\partial y_i}{\partial b_i} = \frac{1}{n_i} \left( -\frac{1}{f_i''(l_i)} \cdot b_i \left( \frac{1}{I} - 1 \right) - l_i \cdot \frac{1}{I} \right)$$

and the FOC:  $n_i \cdot MRS(y_i, z_i) = l_i - \frac{b_i(I-1)}{f_i''(l_i)}$ . (11)

RHS of (11): private marginal social cost to taxpayers in jurisdiction i.

→ *Underprovision of welfare benefits*

To see why: consider FOC from no-mobility case:

$$n_i \cdot MRS(y_i, z_i) = l_i \cdot \quad (12)$$

## **Marginal cost of redistribution**

MC of redistribution is larger in the mobility case than in the no-mobility case

Intuition:

- the representative tax payer's compares altruistic gains from helping the poor to an increase in the tax burden.
- If the poor do not move, then the tax burden rises only because each of a fixed number of poor recipients receives a larger benefit.
- When welfare migration occurs, the size of the jurisdiction's poor population grows as its welfare benefit becomes more generous.

## Zero sum game

- Concerns about welfare migration depress welfare benefits in all jurisdictions.
- No jurisdiction succeeds in repelling welfare clients
- All jurisdictions set lower benefits than they would in the no-mobility case.
- The welfare benefits are therefore “too low” seen from the society’s point of view.

## The case for centralization

Decentralized responsibility for redistribution each jurisdiction to **choose its policy in isolation**, ignoring the positive external benefits it creates for other jurisdictions.

When a jurisdiction increases its welfare benefits, it attracts mobile low-income households, implicitly **reducing other jurisdictions redistributive burdens**.

This is only one part of the story.

- In a richer model: response of the rich may amplify the migration externality by moving out of the jurisdiction.