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# Labor Mobility

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# Introduction

- Labor mobility is the mechanism labor markets use to improve the allocation of workers to firms.
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# Labor Mobility

- What are the determinants of migration?
  - How do the migrants differ from the persons who choose to stay?
  - What factors determine how migrants are self-selected?
  - What are the consequences of migration, both for the migrants themselves and for the localities that they move to?
  - How large are the efficiency gains from migration?
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# Geographic Labor Migration as an Investment in Human Capital

- Mobility decisions are guided by comparing present value of lifetime earnings among alternative employment opportunities in different locations.



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- **Psychic cost** – the pain and suffering that inevitably occurs when one moves away from family, friends, and social networks
  - Present value of lifetime earnings in the alternative employment opportunities

$$PV^A = w_{20}^A + \frac{w_{21}^A}{(1+r)} + \frac{w_{22}^A}{(1+r)^2} + \dots$$

$$PV^B = w_{20}^B + \frac{w_{21}^B}{(1+r)} + \frac{w_{22}^B}{(1+r)^2} + \dots$$

$$\text{Net gain to migration} = PV^B - PV^A - M$$

The worker moves from A to B if the net gain is positive

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1. An improvement in the economic opportunities available in the destination increases the net gains to migration
  2. An improvement in the economic opportunities at the current region of residence decreases the net gains to migration and lowers the probability that the worker moves
  3. An increase in migration costs lowers the net gains to migration and reduces the likelihood of a move
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# Determinant

- The role of uncertainty:
    - PV includes future job opportunities (depends on future possibility of unemployment and amount of new hiring in the destination)
    - Cost includes psychic cost (assimilation) → create chain migration
  - Role of distance: Trip cost, information cost, and psychic cost
  - Role of income distribution and welfare programs
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- A worker decides to move if the net gain from moving is positive.
  - Migration occurs when there is a good chance the worker will recoup his investment in the move.
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# Internal Migration in the United States

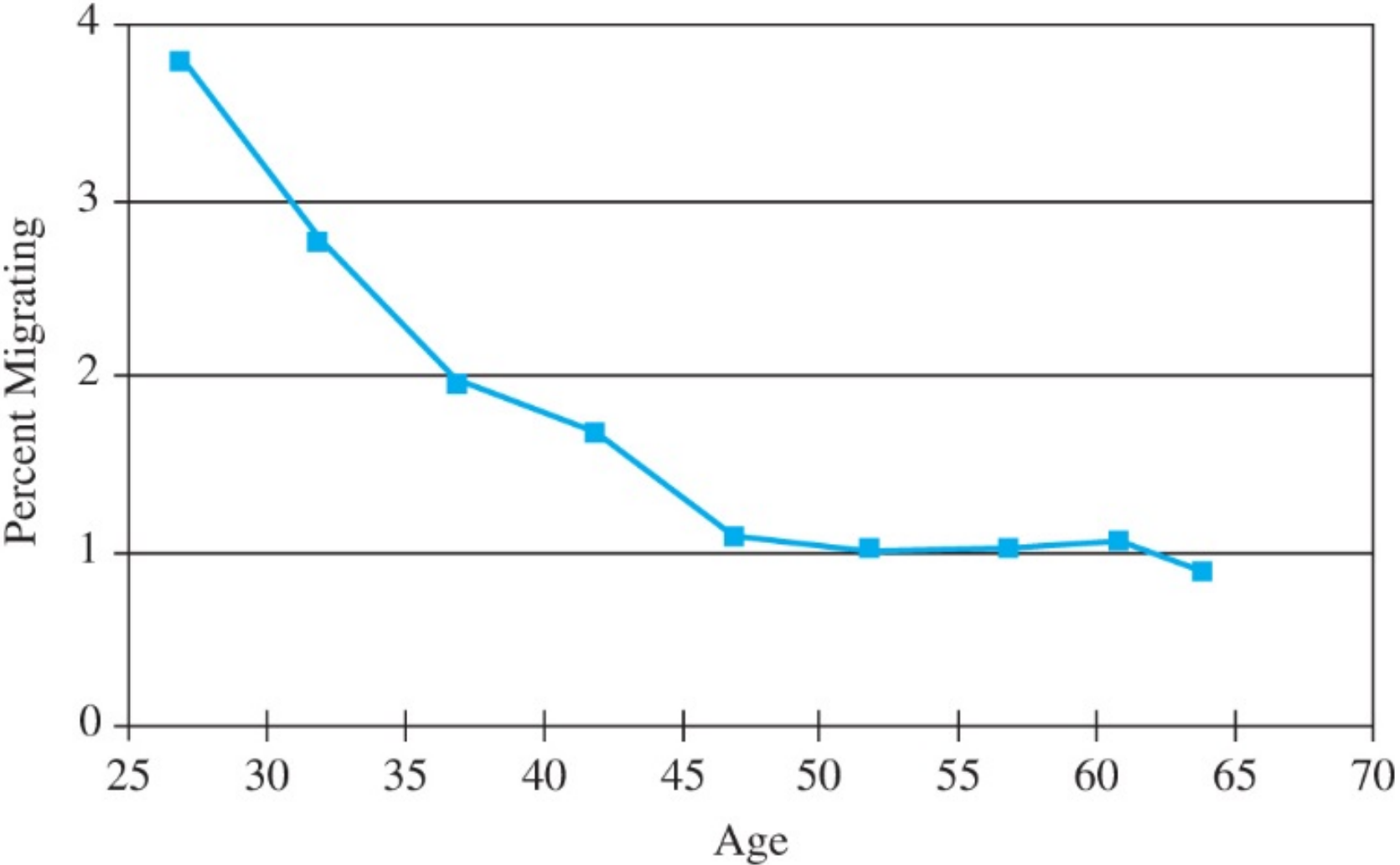
- Impact of Region-Specific Variable on Migration
- Impact of Worker Characteristics on Migration
- Return and Repeat Migration



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- The probability of migration is sensitive to the income differential between the destination and original locations.
  - There is a positive correlation between improved employment conditions and the probability of migration.
  - There is a negative correlation between the probability of migration and distance.
    - Distance is taken as a proxy for migration costs.
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- There is a positive correlation between a worker's educational attainment and the probability of migration.
  - Workers that have migrated are likely to return to the location of origin (**return migration**) and are more likely to migrate again (**repeat migration**).
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# Probability of Migrating across State Lines between 2016 and 2017, by Age



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# Why is there so little migration?

- Why do more workers not take advantage of the higher wage in some regions?
  - Example: in 2016, the typical tile setter in the construction industry in Puerto Rico earned \$28,300; his counterpart in the U.S. earned \$44,770
  - Puerto Ricans are U.S. citizens by birth, there are no legal restrictions limiting their entry into the U.S.
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- The large income gap has motivated around a third of the Puerto Rican population to migrate to the U.S. since WWII
  - Two-thirds of Puerto Ricans chose not to move
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Let  $w_{PR}$  be the wage the worker can earn in Puerto Rico and let  $w_{US}$  be the wage the worker can earn in the U.S.

Assume these wages are constant over the life cycle.

Suppose that the sum in equations have many terms, so that the worker lives practically forever.

$$PV^A = w_{20}^A + \frac{w_{21}^A}{(1+r)} + \frac{w_{22}^A}{(1+r)^2} + \dots$$

$$PV^B = w_{20}^B + \frac{w_{21}^B}{(1+r)} + \frac{w_{22}^B}{(1+r)^2} + \dots$$

$$\text{Net gain to migration} = PV^B - PV^A - M$$

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We can then write the discounted PV as

$$PV_{PR} = \frac{(1+r)w_{PR}}{r} \quad \text{and} \quad PV_{US} = \frac{(1+r)w_{US}}{r}$$

A Puerto Rican worker is indifferent between moving and staying if the discounted gain from moving are exactly equal to moving costs.

$$\frac{(1+r)(w_{US} - w_{PR})}{r} = M$$

How large  $M$  must be for a worker to be indifferent?

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$$\frac{(1+r)(w_{US} - w_{PR})}{r} = M$$

Divide both sides by  $w_{PR}$  and let  $\pi = \frac{M}{w_{PR}}$

The variable  $\pi$  gives the fraction of a worker's salary that is spent on moving costs.

We can then rewrite the equation as

$$\frac{(1+r)}{r} \frac{w_{US} - w_{PR}}{w_{PR}} = \pi$$

The ratio  $\frac{w_{US} - w_{PR}}{w_{PR}}$  is about 0.5 indicating that a tile setter can increase his wage by about 50 percent by migrating to the U.S.

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If the rate of discount is 5 percent, the

$$\frac{(1+r)}{r} \frac{W_{US} - W_{PR}}{W_{PR}} = 10.5$$

In other words, migration costs for a worker who is indifferent between migrating or not equal to 10.5 times his salary.

If the worker earns the average wage in Puerto Rico (\$28,300), moving costs are around \$300,000.

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What exactly is the nature of this expense?

- The marginal Puerto Rican probably attaches a very high utility value to the social and cultural amenities in his birthplace
  - Moving costs are likely to be even larger in other contexts such as international migration, where there are legal restrictions and much greater differences in language and culture
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# Family Migration

- The family unit will move if the family's net gain are positive

$$\Delta PV_H + \Delta PV_W > 0$$

The family migrates if the sum of the private gains to the husband and to the wife is positive

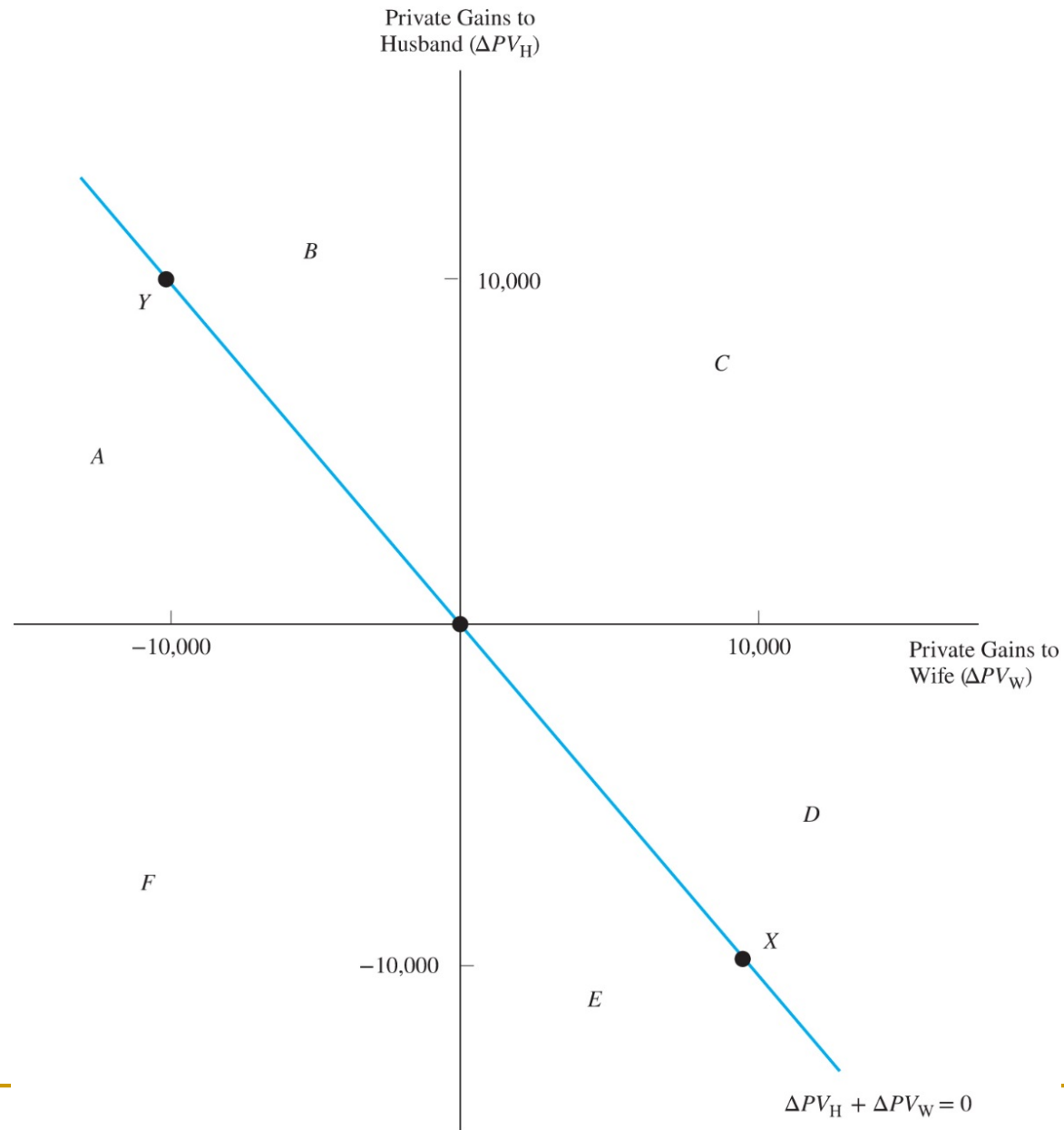
- The optimal decision for the family is not necessarily the same as the optimal choice for a single person
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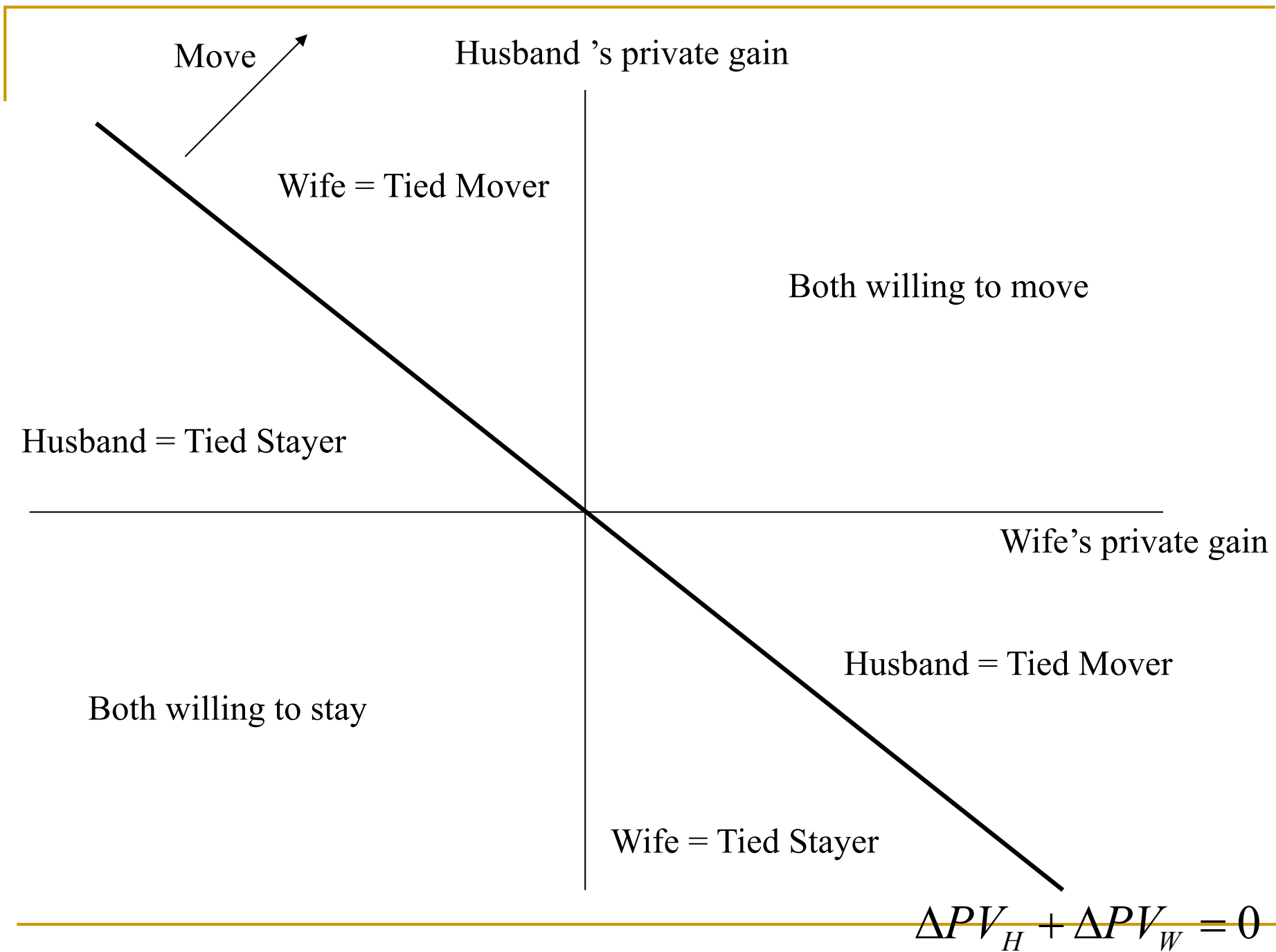
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# Family Migration

- The family unit will move if the net gains to the family are **positive**.
  - The optimal choice for a member of the family may not be optimal for the family unit (and vice versa).
    - Tied stayer: someone who sacrifices better income opportunities elsewhere because the partner is better off in the current location
    - Tied mover: someone who moves with the partner even though his or her employment outlook is better in the current location.
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# Tied Movers and Tied Stayers





# Power Couples

- Dora L. Costa and Matthew E. Kahn, “Power Couples: changes in the Locational Choice of the College Educated, 1940-1990” Quarterly Journal of Economics 115 (November 2000):1287-314
- Janice Compton and Robert A. Pollak, “Why are Power Couples Increasingly Concentrated in Large Metropolitan Areas,” Journal of Labor Economics 25 (July 2007): 475-512

## **Percentage of Couples with Working Wives Residing in Large Metropolitan Areas**

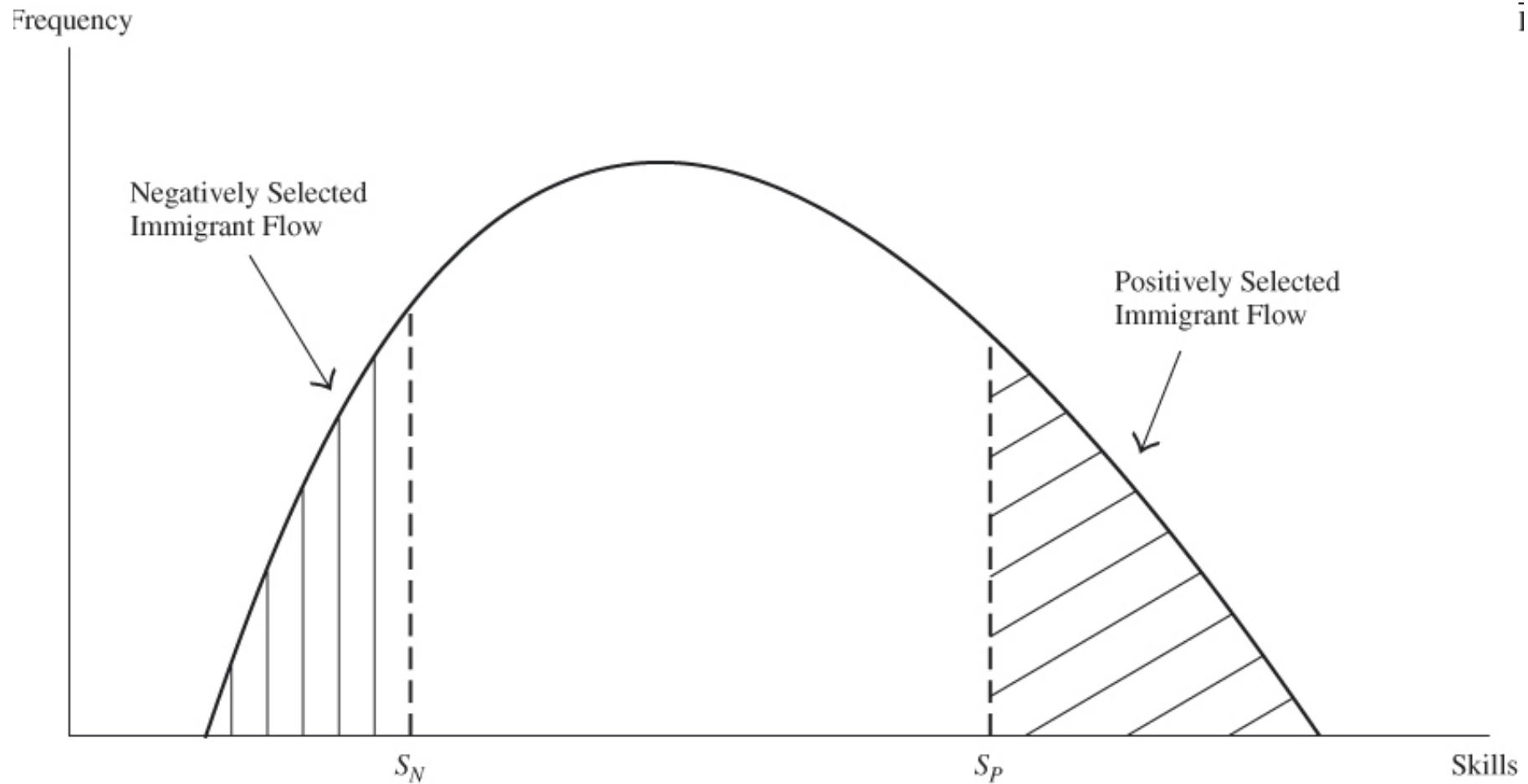
	1970	1990	Difference
Power couples	14.6	34.8	20.2
Low-power couples	8.3	20.0	11.7
<b>Difference-in-Difference</b>			<b>8.5</b>

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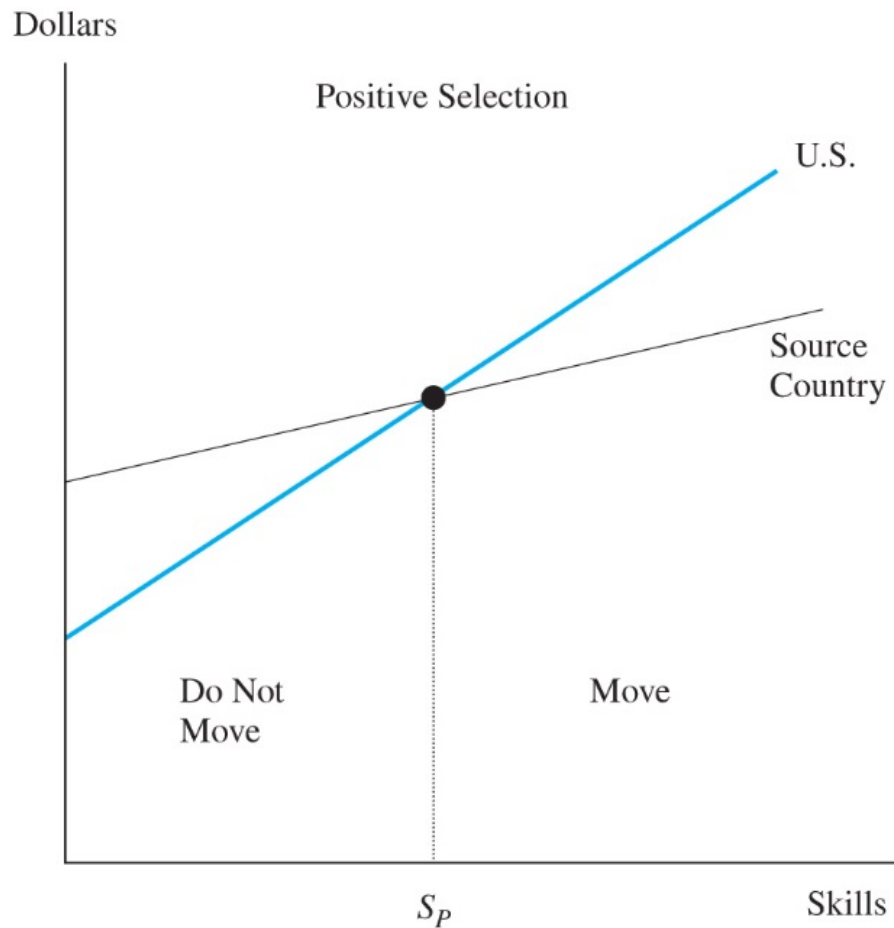
# The Roy Model

- Describes how workers sort themselves among employment opportunities
  - **Positive Selection**
    - The migration flow is composed of workers in the upper tail of the skill distribution
  - **Negative Selection**
    - The migration flow is composed of workers in the least-skilled workers in the source country
  - The relative payoff for skills across countries determines the skill composition of the immigrant flow
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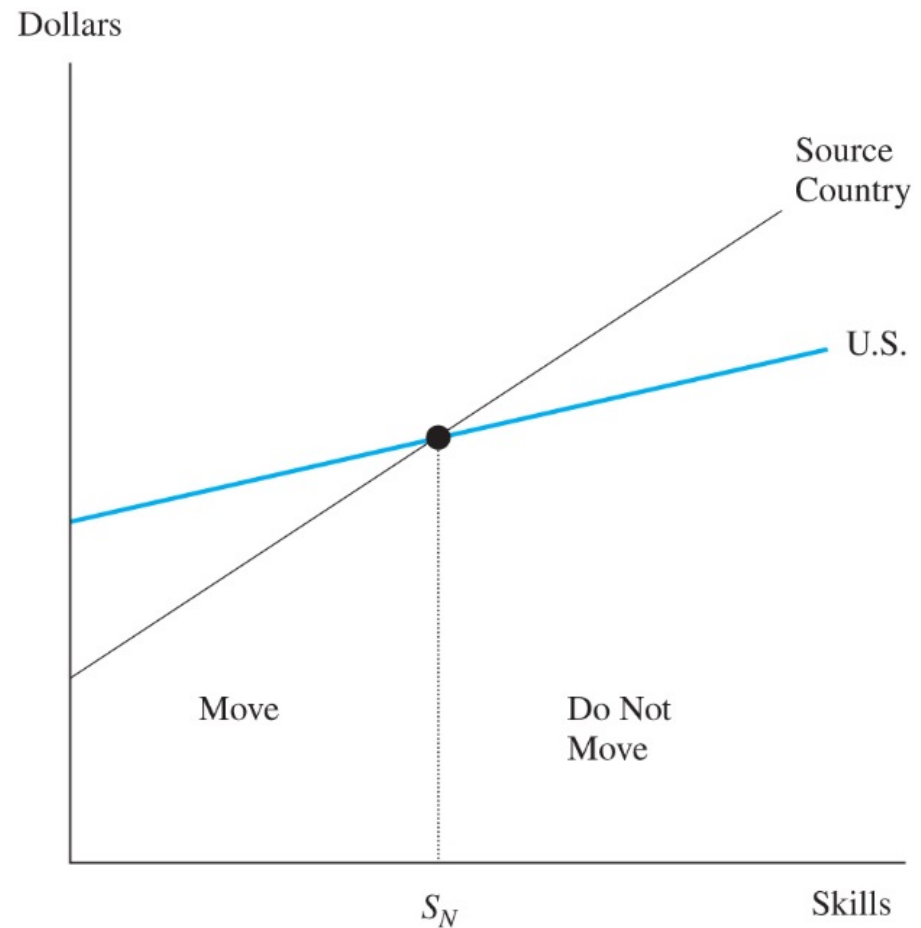
# The Distribution of Skills in the Source Country



# The Self-Selection of the Immigrant Flow



(a) Positive Selection



(b) Negative Selection

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# Changes in income levels and migration costs

## **Positive selection**

- If the payoff for skills in the United States exceeds the payoff in the source country
- Fewer workers now find it optimal to migrate to the United States

## **Negative selection**

- If the payoff for skills is higher in the source country
  - Only workers who have skill levels below the threshold level want to move, the drop in the U.S. incomes again reduces the number of immigrants
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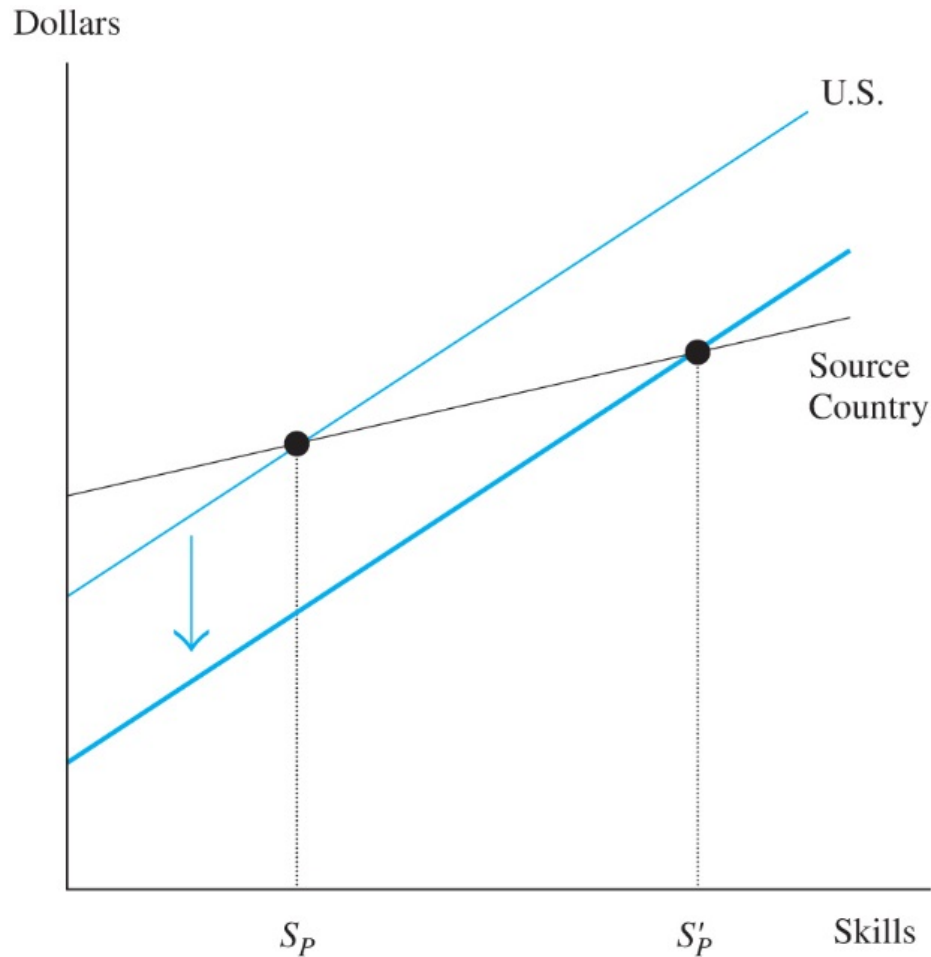
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# Policy Application:

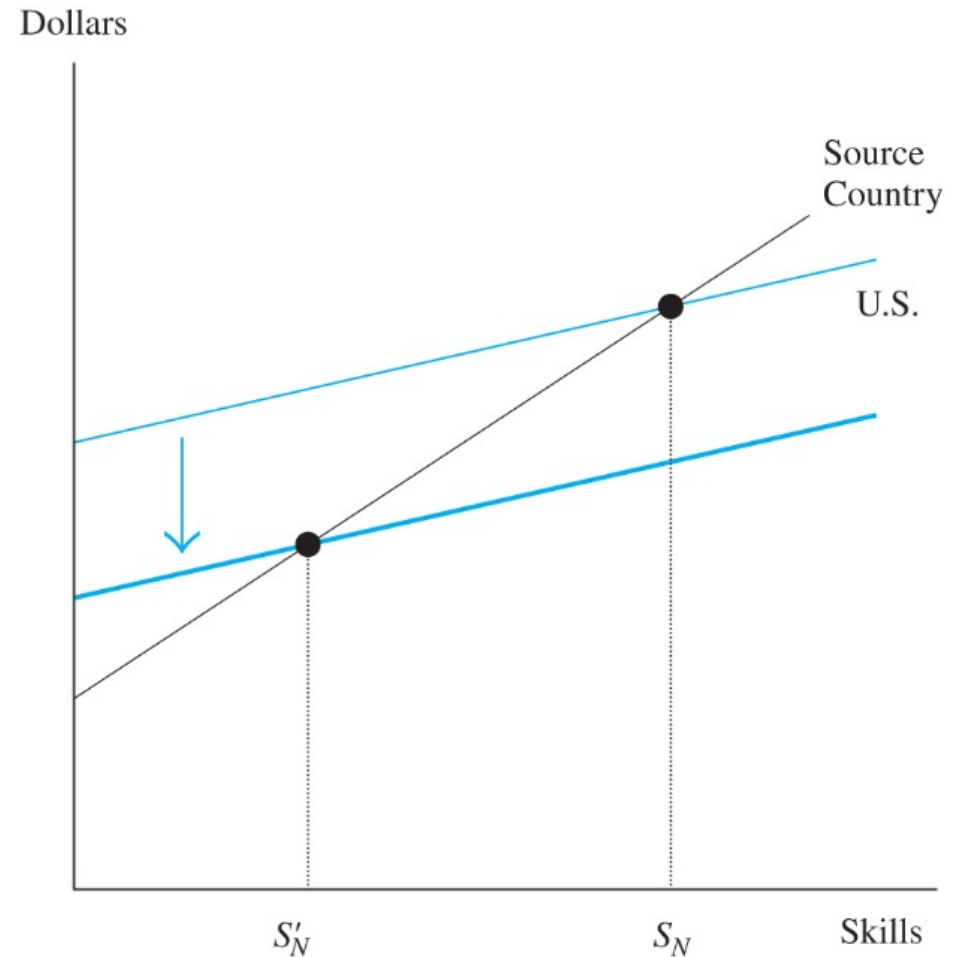
## Economic Benefits of Migration

- The immigrant surplus is a measure of the increase in national income that occurs as a result of immigration. (The surplus accrues to natives.)
  - Immigration raises national income by more than it costs to employ immigrants.
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# The Impact of a Decline in U.S. Incomes



(a) Positive Selection



(b) Negative Selection

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# Decline in U.S. Incomes

- The previous graphs shows that when U.S. incomes decrease (shift down in the returns-to-skills curve):
    - Fewer workers migrate to the U.S.
    - The type of selection (positive vs. negative) doesn't change.
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## Policy Application:

### Labor Flows in Puerto Rico

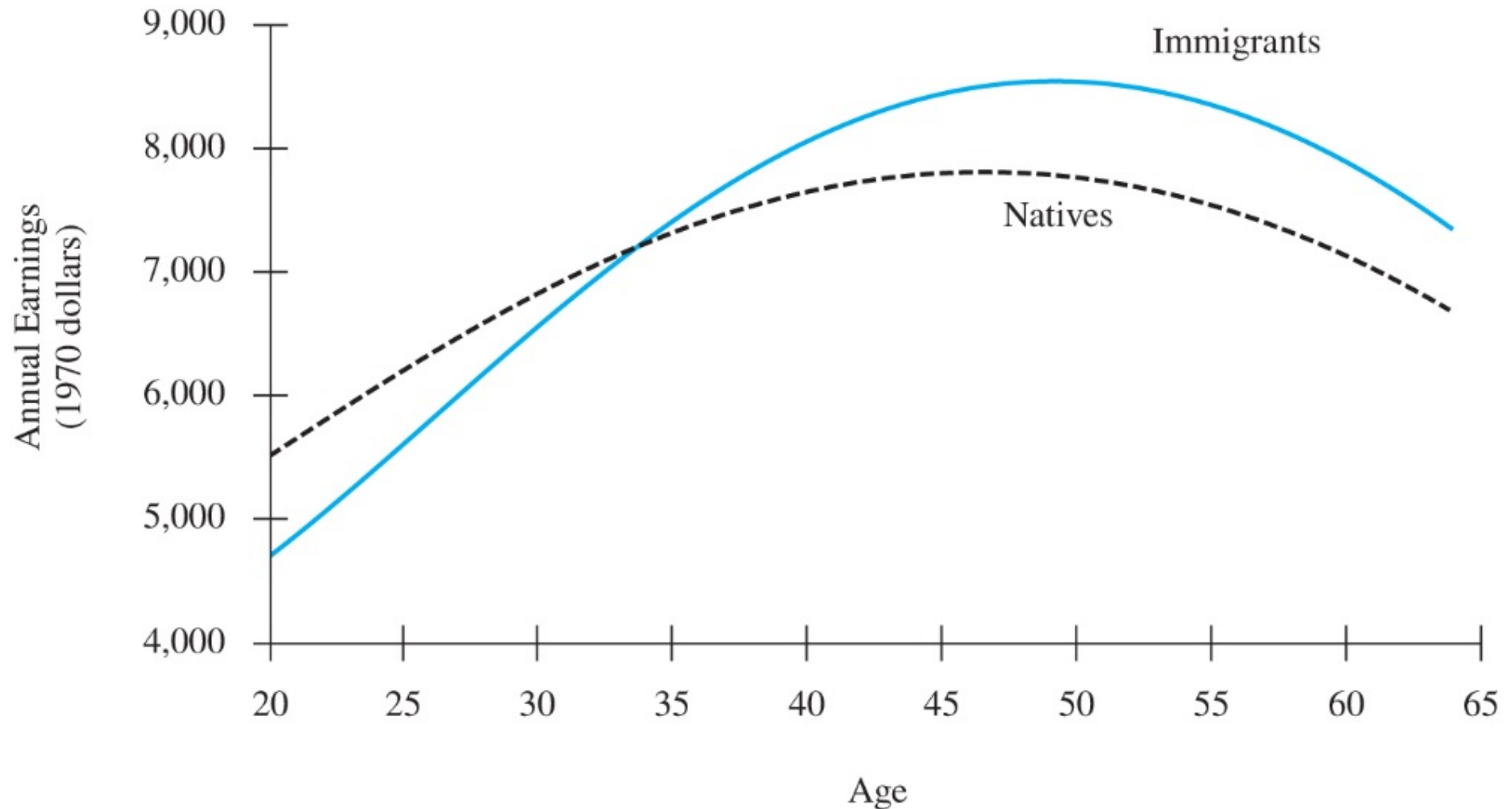
- The case study of Puerto Rico confirms an important insight of the Roy model: skills flow to where they receive their highest return.
    - The rate of return to skills is much higher in Puerto Rico than in the United States, so the Roy model predicts that a relatively higher fraction of the least-educated Puerto Ricans would leave the island.
    - As of 2000, nearly 45 percent of Puerto Rican-born working age men who lacked a high school diploma had moved to the United States. In contrast, only 30 percent of working age men with at least a college education had moved to the United States.
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# Immigration in the United States

- There has been a resurgence of immigration to the United States in recent decades.
  - The United States receives the largest immigrant flow in the world.
  - The mix of countries of origin has changed substantially over time.
    - In the 1950s, 6% of immigrants came from Asia.
    - Presently, 31% of immigrants come from Asia.
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# The Age-Earnings Profiles of Immigrant and Native Men in the Cross Section

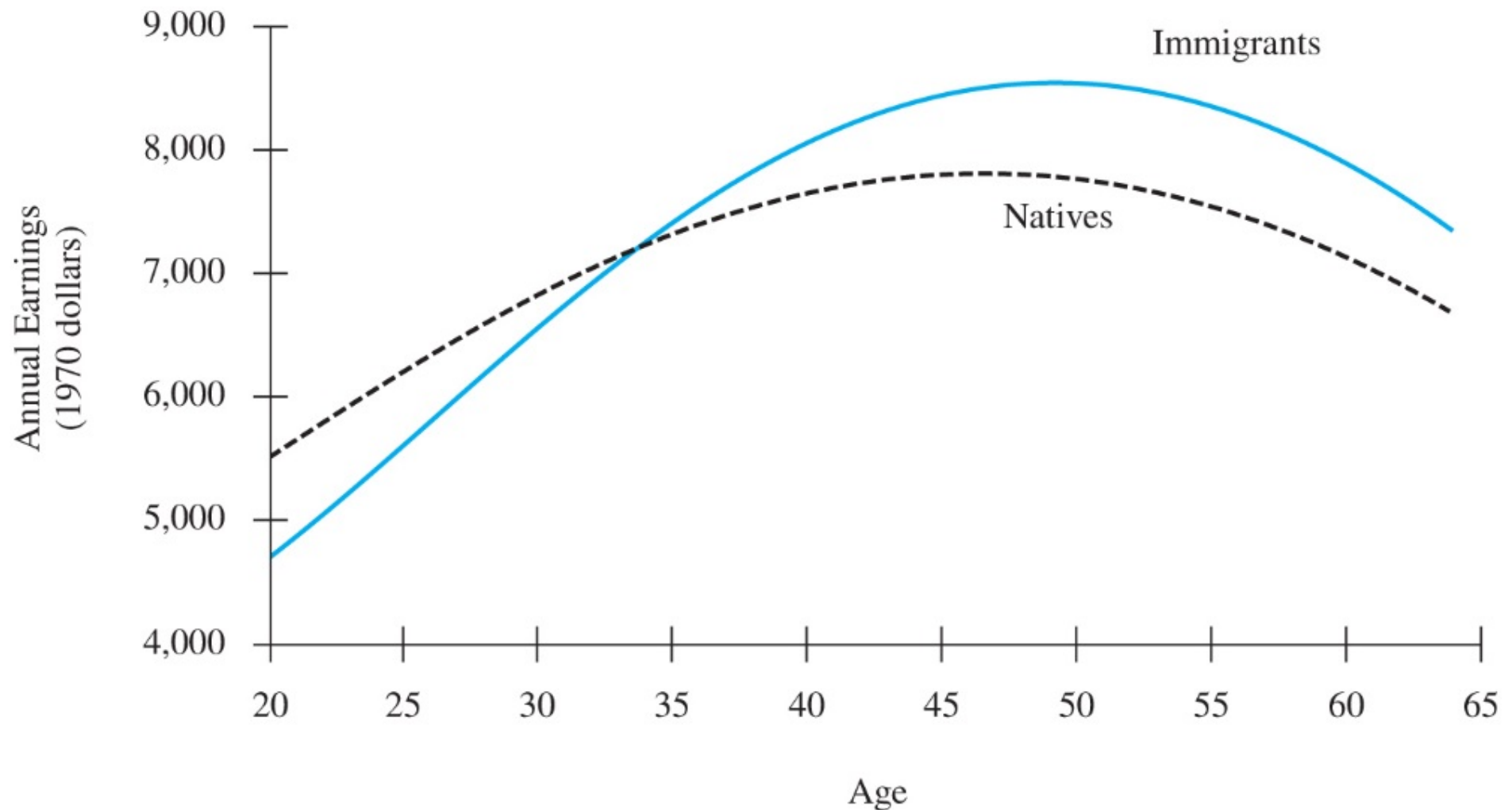


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# Immigrant Performance in the U.S. Labor Market

- Immigrants who can adapt well and are successful in new jobs make a significant contribution to economic growth.
  - The economic impact of immigration depends on the skill composition of the immigrant flow.
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# The Age-Earnings Profiles of Immigrant and Native Men in the Cross Section

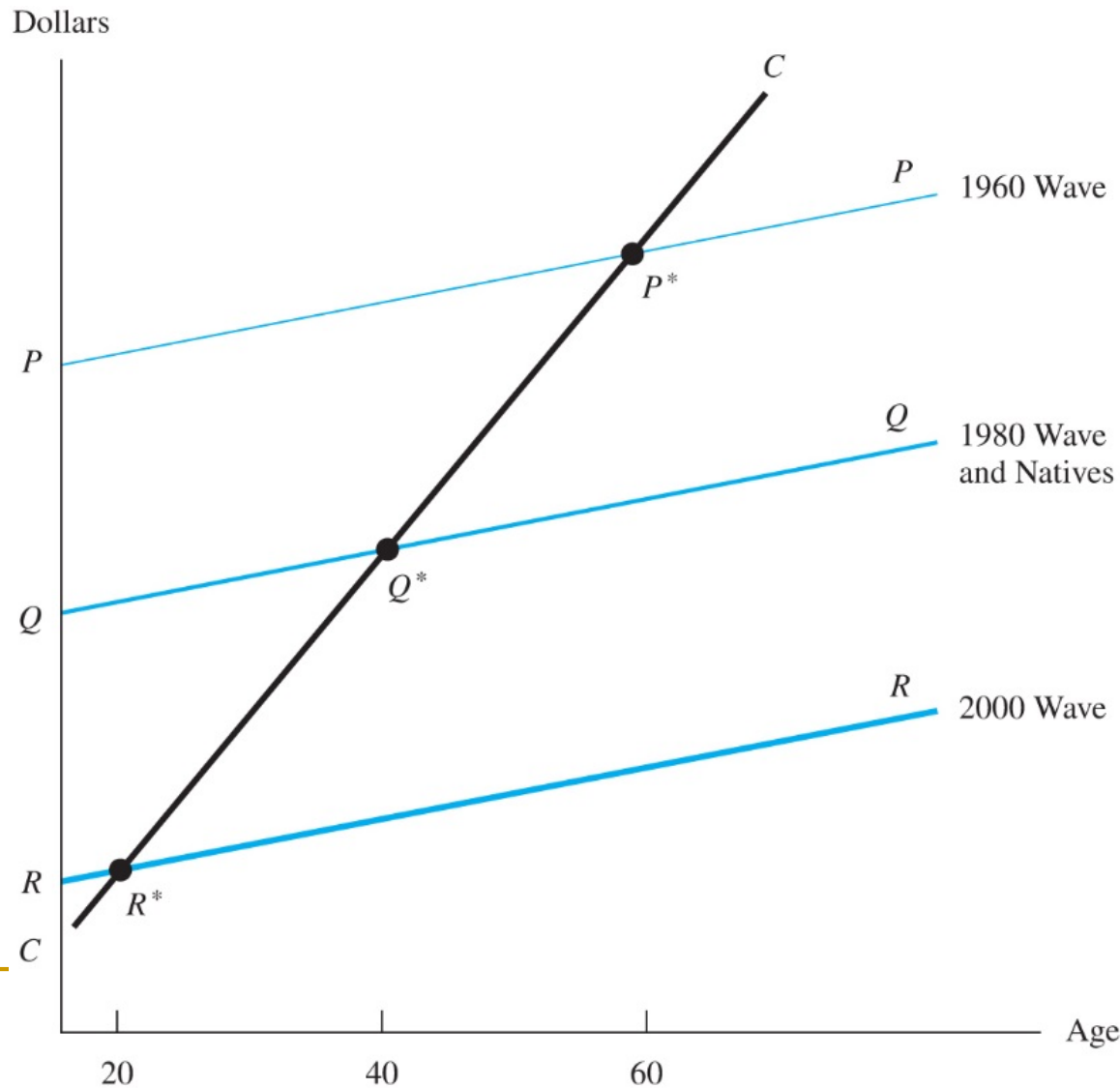


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# The Decision to Immigrate

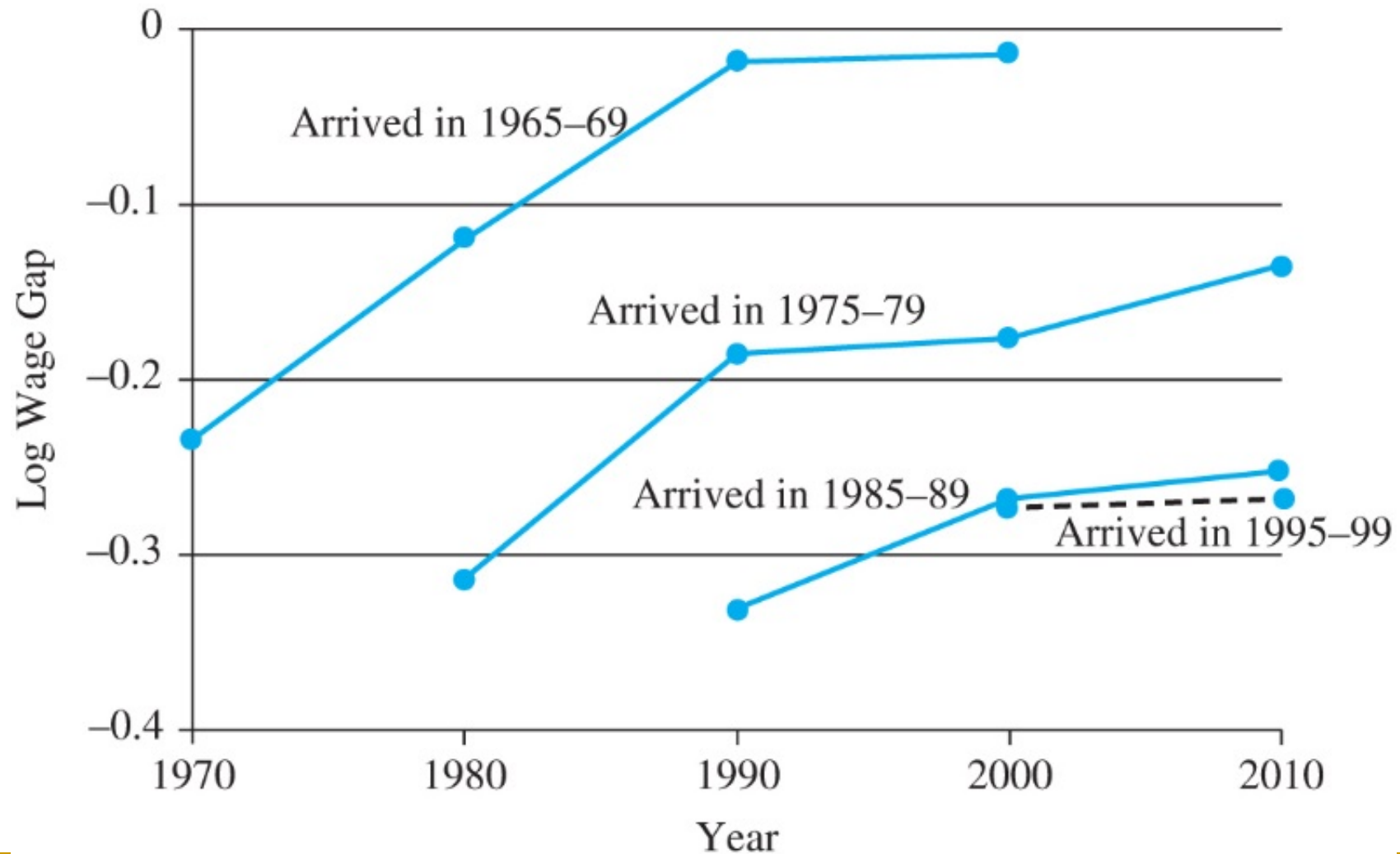
- Skills vary across country-of-origin (or source country) immigrant groups.
  - The general rule: Workers decide to immigrate if U.S. earnings exceed earnings in the source country.
    - The decision ultimately depends on individual skills and the returns to those skills in the source and destination countries.
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# Cohort Effects and the Immigrant Age-Earnings Profile



The cross-sectional age-earnings profile erroneously suggests that immigrant earnings grow faster than those of natives.

# Evolution of Wages for Specific Immigrant Cohorts over the Life Cycle



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# Job Turnover

- Voluntary (quit) vs. Involuntary (discharge/layoff)
  - **Voluntary turnover**
    - labor moves toward jobs that is more attractive. Job search model applies (explain 1/3 of total increase in wage)
  - **Tenure**
    - turnover decreases by tenure (wage increase)
    - But if wage constant, a worker with longer tenure is more likely to quit.
  - Education and job specific training deter occupational mobility.
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# Job Turnover: Stylized Facts

- Newly hired workers tend to leave their jobs within 24 months of being hired, while workers with more seniority rarely leave their jobs.
  - The rate of job loss is highest among the least educated workers
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# Job Turnover: Stylized Facts

- There is a strong negative correlation between a worker's age and the probability of job separation.
    - This fits with the hypothesis that labor turnover can be an investment in human capital.
    - Older workers have a smaller payoff period to recoup the costs associated with job search. Thus, they are less likely to search (or move).
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# The Job Match

- Each particular pairing of a worker and employer has its own unique value.
  - Workers and firms might improve their situation by shopping for a better job match.
  - Efficient turnover is the mechanism by which workers and firms correct matching errors and obtain a better and more efficient allocation of resources.
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# Specific Training and Turnover

- When a worker receives specific training, his productivity improves only at the current firm.
  - This implies there should be a negative correlation between the probability of job separation and job seniority.
    - As age increases, the probability of job separation decreases.
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# Job Turnover and the Age-Earnings Profile

- Young people who quit often experience substantial increases in their wages.
  - Workers who are laid off often experience wage cuts.
  - A worker's earnings depend on total labor market experience and seniority on the current job. (Workers experiencing a good job match will have low probabilities of job separation, and these workers will tend to have seniority on the job.)
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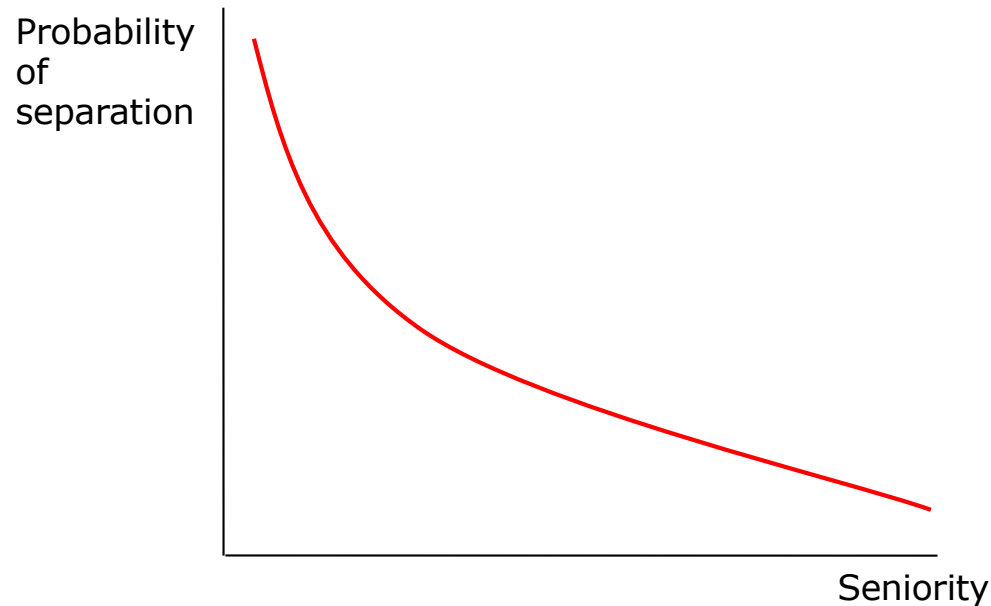
# Specific Training and Job Turnover

- If a worker acquires specific training as he accumulates more seniority, the probability that the worker will separate from the job declines over time



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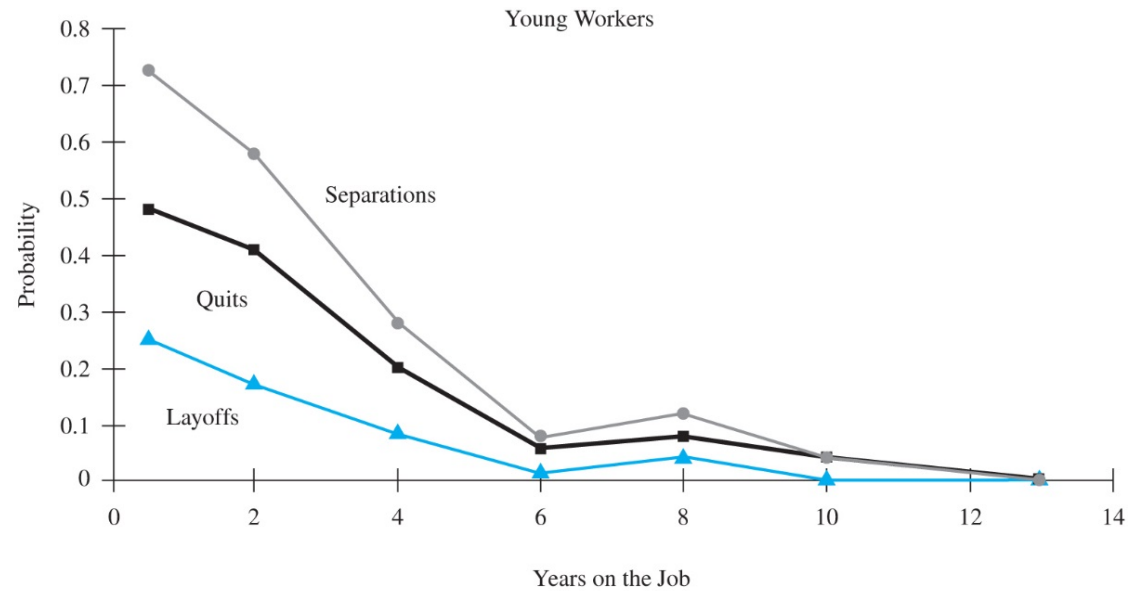
# Specific Training and the Probability of Job Separation



If a worker acquires specific training as he accumulates more seniority, the probability that the worker will separate from the job declines over time. The probability of job separation then exhibits negative state dependence; it is lower the longer the worker has been in a particular employment state.

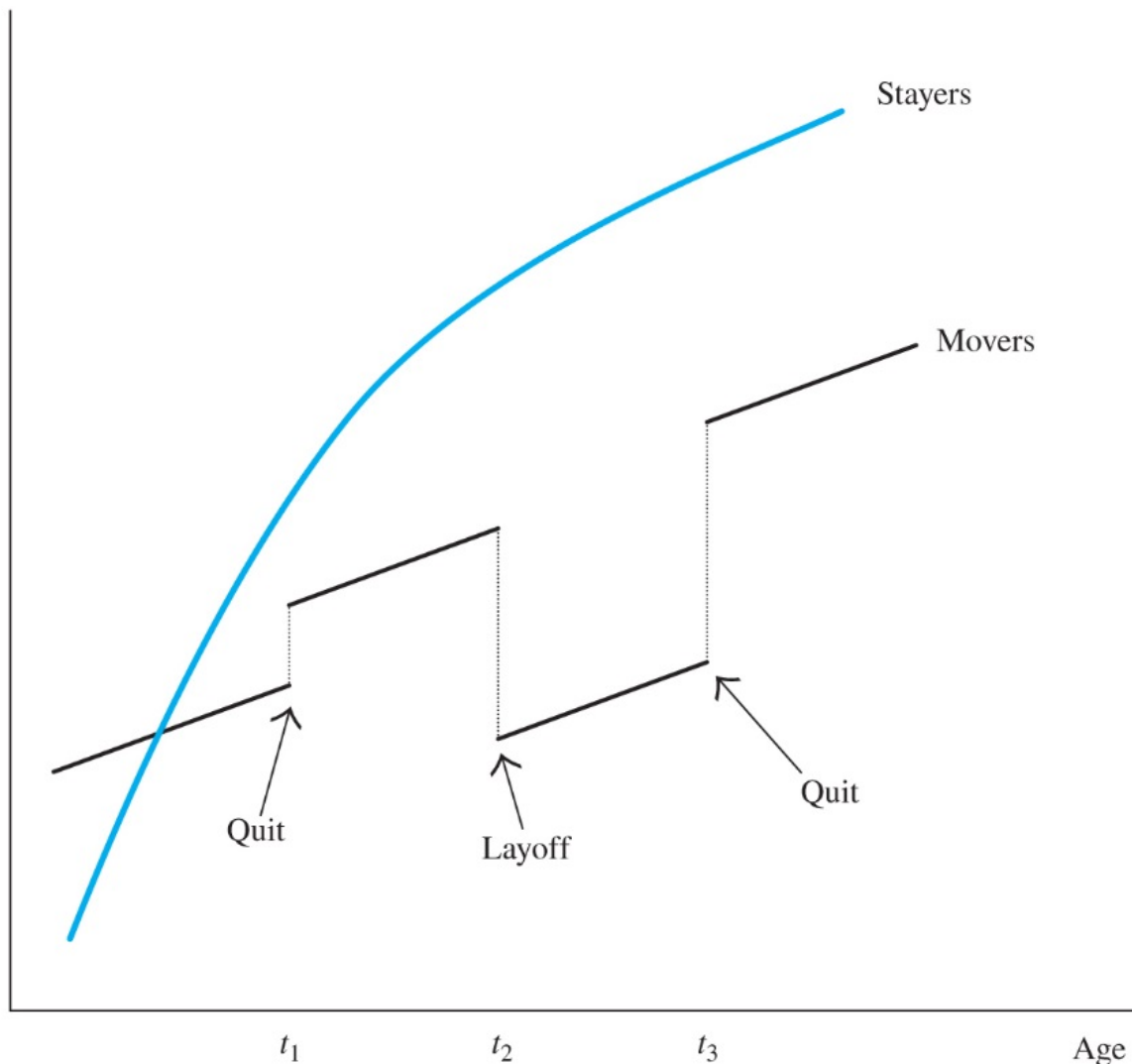
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# Probability of Job Turnover over a 2-Year Period



# Impact of Job Mobility on the Age-Earnings Profile

Wage



The age-earnings profile of movers is discontinuous, shifting up when they quit and shifting down when they are laid off. Long job matches encourage firms and workers to invest in specific training, and steepen the age-earnings profile. As a result, stayers have a steeper age-earnings profile within any given job.