

# Internal migration

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# Outline

- Introduction
- Concepts and definitions
- Measures of migration
- Domestic migration in the United States
- Analysis of spatial association
- Temporary (“floating”) migration in China

# Introduction

- Besides fertility and mortality, the third way that populations change their size is through migration
- The size of the population decreases in the **area of origin** and increases in the **area of destination**
- Unlike the former events, the event of migration may occur on multiple occasions or never occur during our lifetime



# Definition of migration

(Lee 1966)

- Migration is defined broadly as a permanent or semi-permanent change of residence
- No restriction is placed upon the distance of the move or upon the voluntary or involuntary nature of the act
- No distinction is made between external and internal migration
- Every act of migration involves an origin, a destination, and an intervening set of obstacles
  - Distance is always present as an intervening obstacle



# Definition of migration

- Permanent change of residence
  - Residential mobility
  - Moving a great enough distance that all activities are transferred from one place to another
- **International migrants**
  - Move between countries (either legally or without documentation)
- **Internal migrants**
  - Move within national boundaries (usually without constraint, but not always)



# Measuring migration

- “Permanence” usually means that you have been gone at least one year from the old place
- “Distance moved” in the U.S.
  - The Census Bureau defines a migrant as a person who has moved to a different county within the U.S.
- From the standpoint of a local school district, for example, a migrant would be someone moving into or out of the school district’s boundaries



# What is the migration transition?

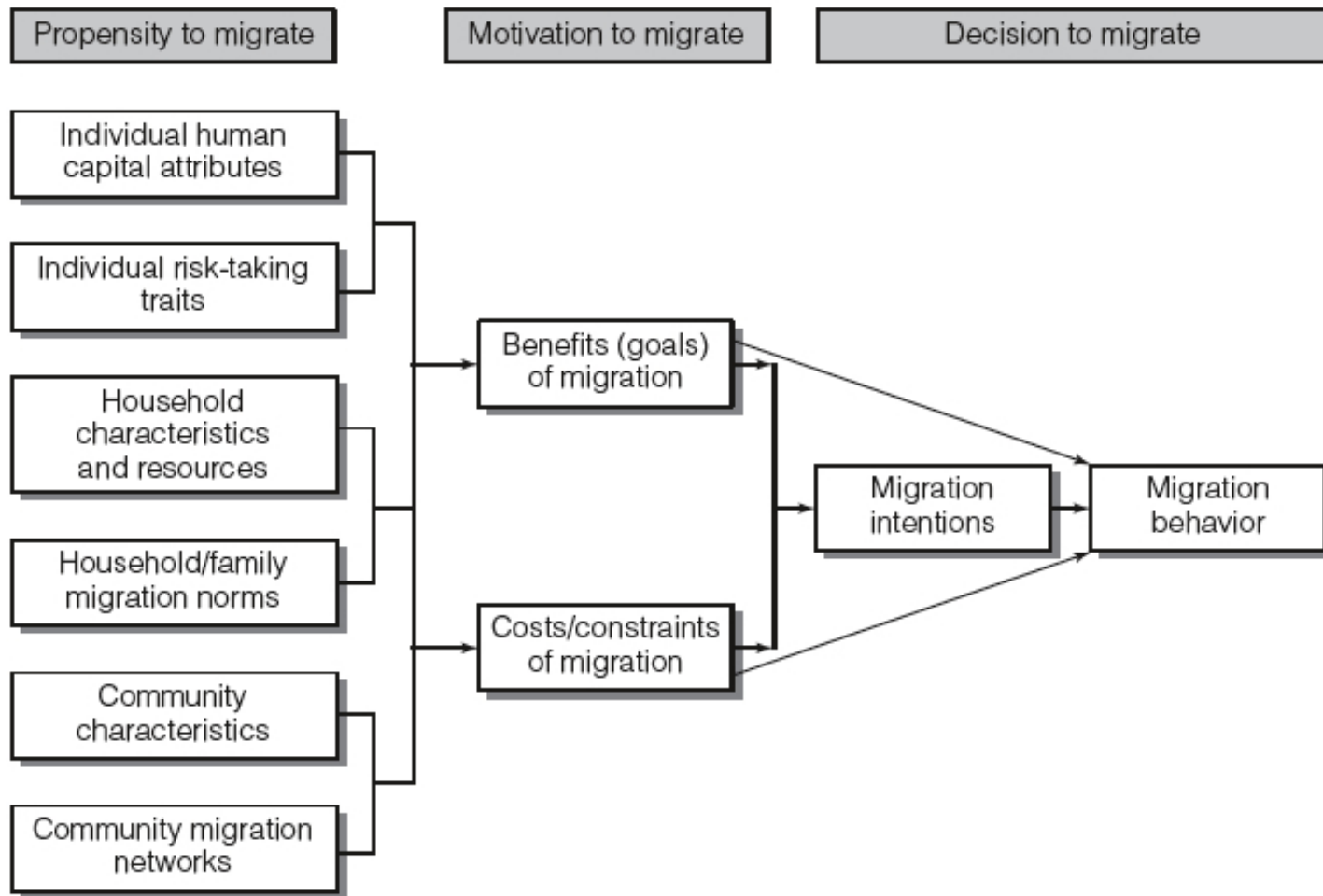
- The permanent movement of people from one place to another
- Usually in response to resource scarcity in the area of origin, typically caused by population growth, relative to perceived resources in the destination area
- It is closely related to the urban transition, because most migrants are moving to urban areas, no matter where they are from

# Flows versus stocks

- Migration transition involves a process and a transformation
- Migration flow: process of people moving from one place to another within a specific period
  - People moving from one place to another within a specified time interval
- Migration stock: transformation caused in areas of origin and destination as people move into and out given of places
  - Amount of migrants in areas of origin and destination at a specific time after previous population flows

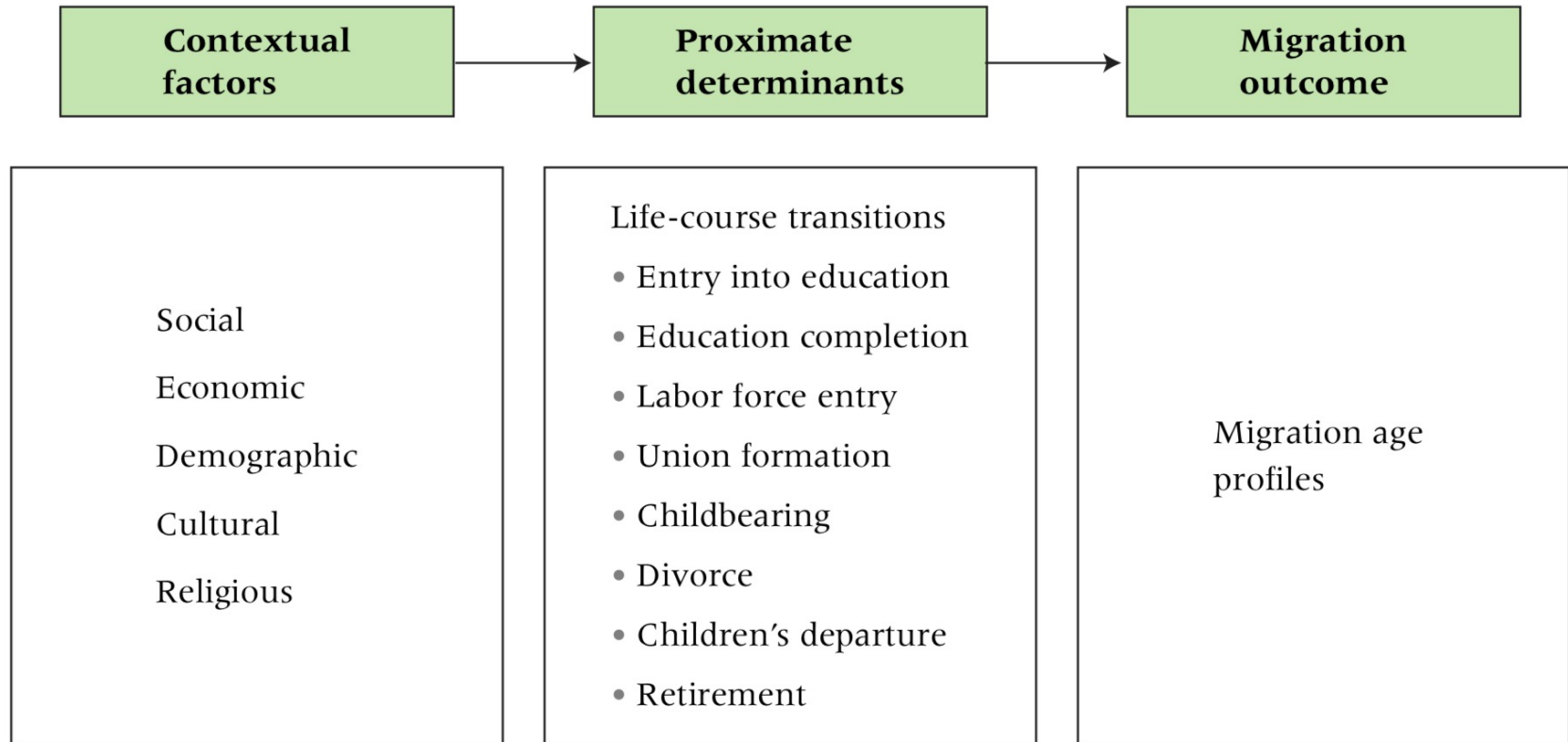


# Conceptual model of migration decision making

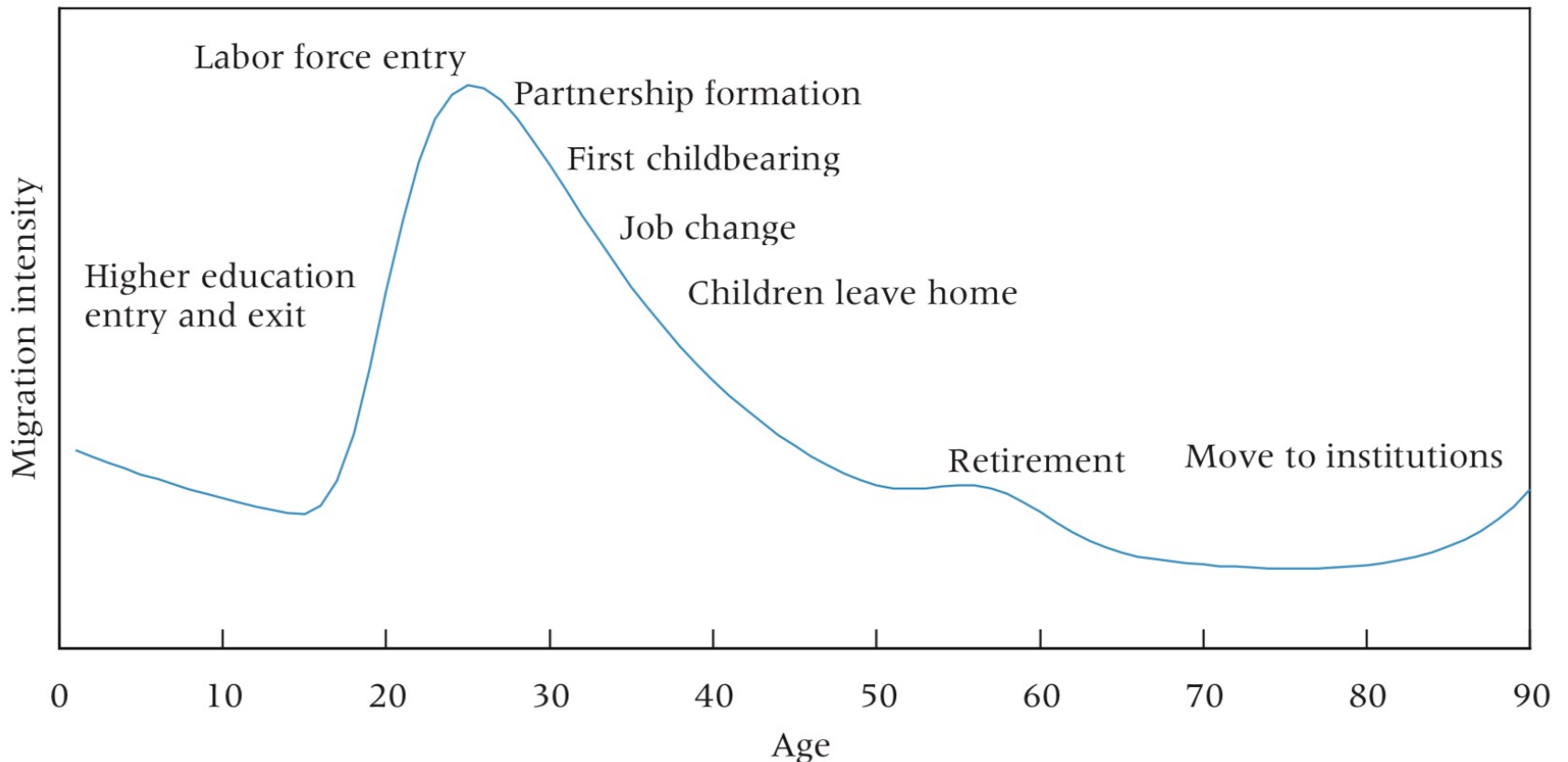


# Proximate determinants

FIGURE 3 Proximate determinants of migration age profiles

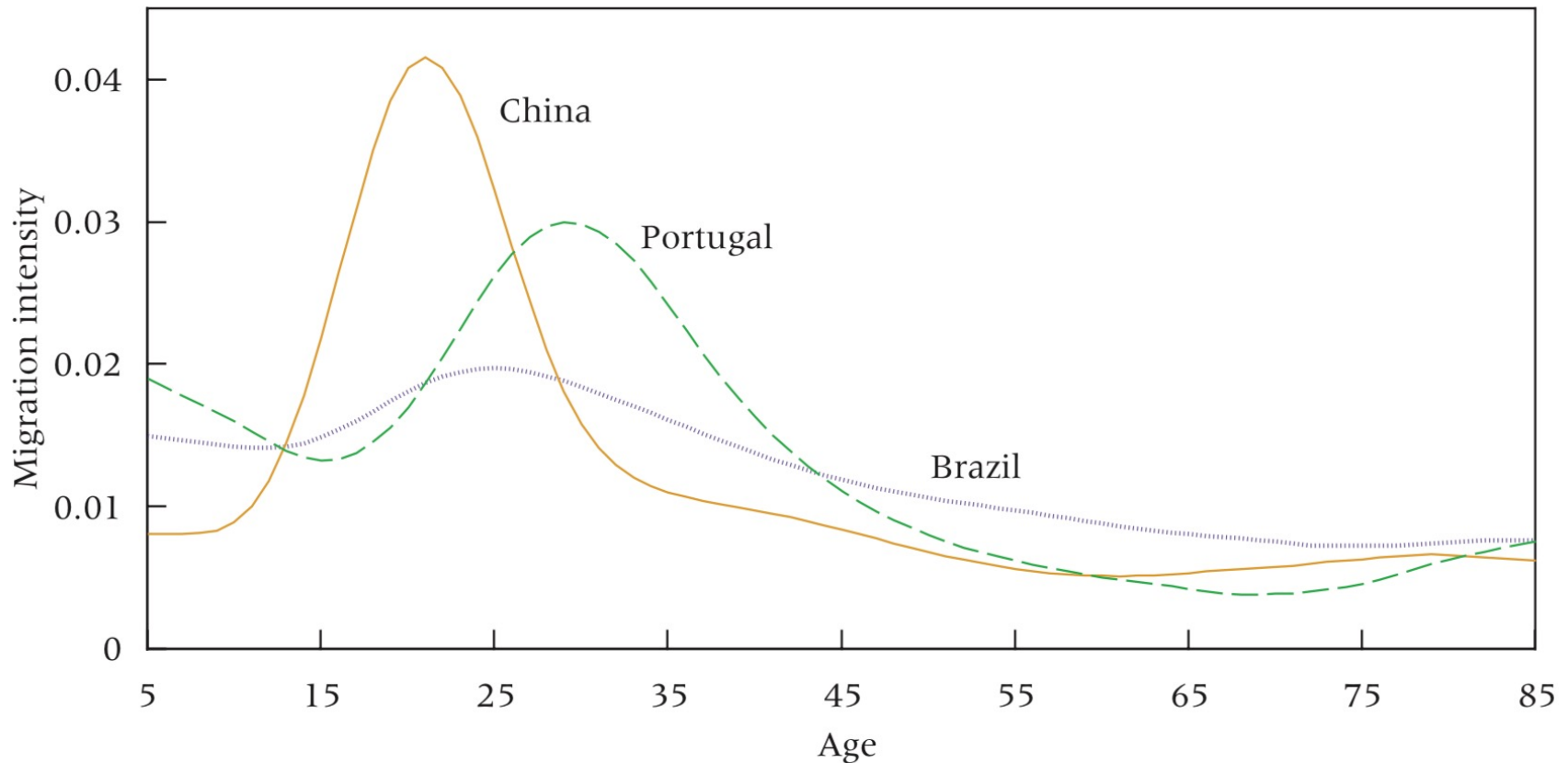


**FIGURE 1 Typical age profile of migration and key life-course transitions**



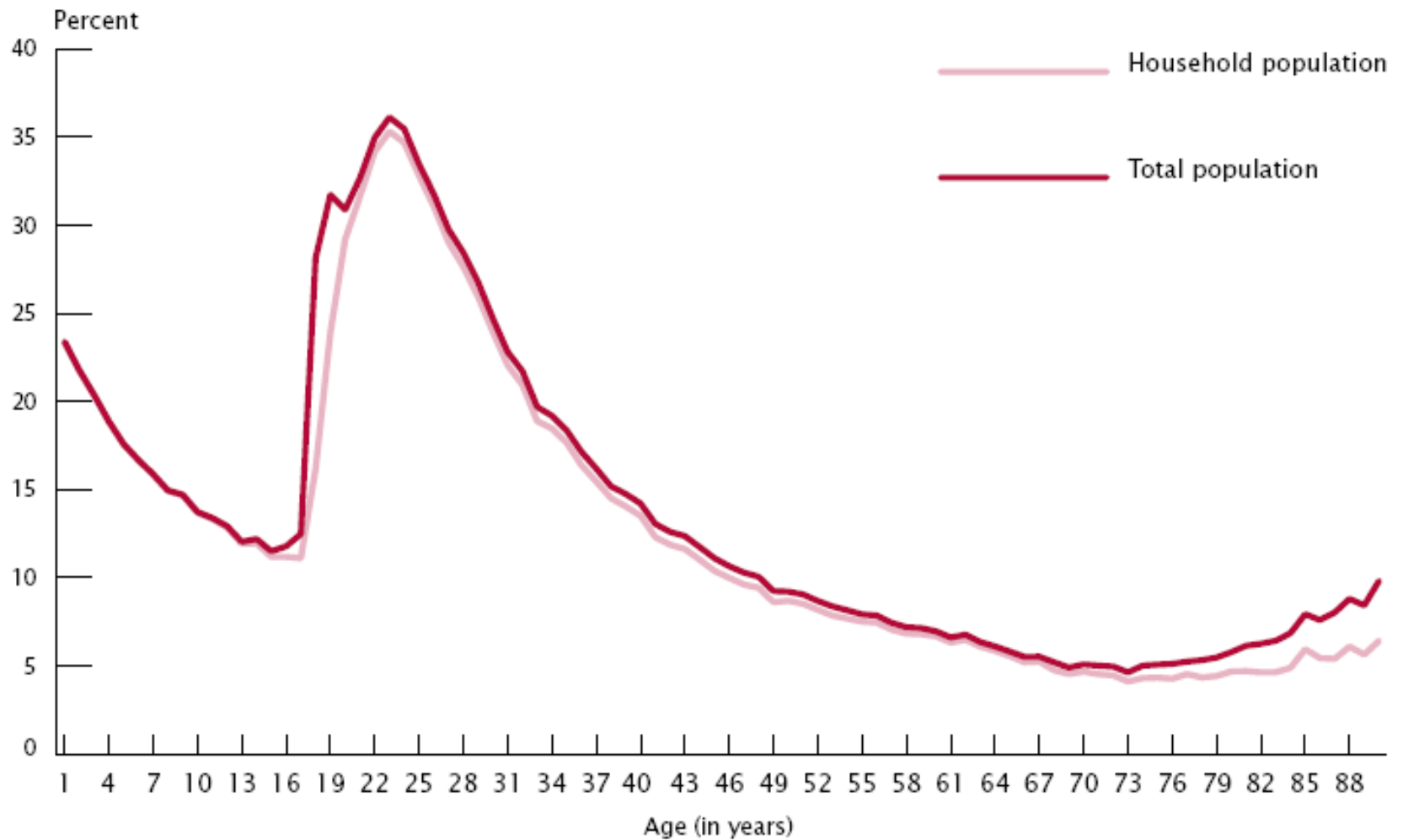


**FIGURE 2 Cross-national variations in migration age profiles**



SOURCE: Authors' calculations based on five-year-interval migration data reported by single-year age groups. Migration data were normalized to sum to unity and smoothed using kernel regression (Bernard and Bell 2012).

## Age-specific Rates of Residential Mobility, United States, 2008-2009



Source: Ihrke, Faber and Koerber, 2011: 4.



# Internal migration

- **Internal migration** is a geographical move resulting in a change of residence that crosses a political or jurisdictional boundary
- Usually a county-type geographical unit in a country



# Internal migration

- Over time internal migration is a story of rural population growth leading to a redundancy of that population, so people look for jobs and life elsewhere
- When the population is almost entirely urban (as in the U.S. and most of western Europe), people move between urban places
  - We might call this process as migration evolution, influenced especially by individual characteristics



# Mover and migrant

- Any person who changes his/her residence is a **mover**
  - Not all movers are migrants, because a person can move within the same community without involving the crossing of a political boundary
  - All migrants are movers because the residential movement of a **migrant** involves the move of at least a county-level jurisdictional boundary
  - Census Bureau demographers have estimated that a person in the United States may move around 12 times in one's lifetime



# Societal consequences of migration

- Impact on receiving and sending communities
  - Donor area (origin) typically loses young adults, which can slow down population growth in those areas
  - Host area (destination) gains those young adults, which can increase population growth and augment youth bulges
  - Remittances from migrants back to sending communities have become important to the economies of those places, and encourage continued migration







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# Concepts and definitions

- A permanent residential move either local or jurisdictional is usually defined as “a change in residence, lasting at least a year in duration”
  - The residential migration of persons moving into an area of destination is called **in-migration**
  - The migration of persons leaving an area of origin is known as **out-migration**
- **Return migration:** it is possible that a migrant might move back to one’s area of origin during one’s life course



# Migration terms

- **Internal migration:** permanent changes in residence that occur within a country
- **International migration:** permanent changes in residence that occur between countries

<b>Areas</b>	<b>Internal migration (within countries)</b>	<b>International migration (between countries)</b>
Receiving areas (destination)	In-migration	Immigration
Sending areas (origin)	Out-migration	Emigration

# Net-migration & Gross-migration

- When we subtract the number of out-migrants from the number of in-migrants of a given geographical area, we get **net-migration**

$$\textit{Net-migration} = \textit{In-migrants} - \textit{Out-migrants}$$

– The net balance could be positive, negative or zero

- When we add the in-migration and out-migration of an area, we get the **gross-migration**

$$\textit{Gross-migration} = \textit{In-migrants} + \textit{Out-migrants}$$



# Migration efficiency

- When we divide an area's net-migration by its gross-migration, we get **migration efficiency**
  - We say migration is positively efficient for an area, when there has been a lot of in-migration and little out-migration
  - Migration is negatively efficient for an area, when there has been a lot of out-migration and little in-migration
  - When the numbers of in-migration and out-migration are about the same, migration efficiency for the area becomes inefficient



# Migration stream

- **Migration stream:** group of migrants having a common area of origin and a common area of destination during a specified migration interval
  - A **migration counterstream**, usually smaller in size, moves in the opposite direction as the migration stream during the same time interval
- A **migration interval** is a temporal dimension of migration defined by the researcher
  - Time between two events, namely the time of arriving at the area of destination and the time of departing the area of origin

# Differential migration

- **Differential migration**
  - Analysis of differences in migrant populations according to their demographic, social, and economic characteristics
- **Migration selectivity**
  - The migration process is selective: not everyone stays and not everyone moves
  - Usually related to demographic characteristics: age, race, sex, socioeconomic status...
- Age and education are predictors of migration
  - Americans aged 18–24 are more likely to move due to events such as college and employment



# Selectivity by push-pull factors

- Migrants tend to be positively selected
  - When they are responding to positive pull factors in the area of destination
  - Such as economic growth and high employment rate
- Migrants tend to be negatively selected
  - When they are responding to negative push factors in the area of origin, such as economic stagnation
  - These migrants are less likely to have higher socioeconomic status than those responding to pull factors







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# Measures of migration

- Some difficulties in measuring migration are not encountered when analyzing fertility or mortality
  - Births and death are registered at the time of occurrence
  - In most countries, the residential move of a person is not registered at the time of occurrence
  - Few countries (e.g., China and Scandinavian countries) required people to register with the government when they move
- It is necessary to rely on other types of data



# Migration data in the U.S.

- American Community Survey (ACS) uses two items that were previously part of the decennial censuses
  - State of birth
  - Place of residence one year prior to the date of ACS (April 1<sup>st</sup>)
    - Up to the 2000 Decennial Census, there was a question about place of residence five years prior to the date of the Census (April 1<sup>st</sup>)
- Administrative data
  - Internal Revenue Service (IRS) tax returns data



# ACS & IRS migration data

- ACS has more detailed information about socioeconomic and demographic characteristics
- IRS sample size is much larger than ACS

## Comparison between American Community Survey and IRS county-to-county migration data

Issue	ACS Migration Products	IRS Migration Data
Sample size	Approximately 2 million households per year	116 million+ households
Data universe	Sample is all US households	Universe is tax-filing households
Coverage period	2005–2016	1990–2016
Time period reported	Five-year average	Annual
Demographic characteristics	Each five-year product reports different sociodemographic characteristics (e.g., 2010–2014 contains relationship, household type, and tenure, 2011–2015 contains age/sex/race/Hispanic origin)	No demographic characteristics

# Migration status

- Generate migration status using information on
  - State of birth
  - Place of residence at the enumeration time
  - Place of residence five years (or one year) before the enumeration date



# Migration categories examples

- Non-migrants (natives)
  - Living in a given state and born there
- Lifetime migrants
  - Living in a given state, but born somewhere else
  - Born in a given state but living in some other state
- Recent migrants
  - People who moved into the state of current residence within the past five years (Census) or one year (ACS)



# Caution with migration data

- People could have moved from and back a state several times between birth and the time of enumeration
- The same caution applies to measuring migration five years prior to the enumeration date



# Migration rates and ratios

- In-migration rate (*IMR*)

$$IMR = (I/P) * 1,000$$

- Out-migration rate (*OMR*)

$$OMR = (O/P) * 1,000$$

- Net migration rate (*NMR*)

$$NMR = [(I-O)/P] * 1,000$$

- Gross migration rate (*GMR*)

$$GMR = [(I+O)/P] * 1,000$$

- Migration efficiency ratio (*MER*)

$$MER = [(I-O)/(I+O)] * 100$$



# Symbols from previous formulas

- “*I*” refers to the number of in-migrants moving into a area (of destination) during a specified time interval (usually 1 or 5 or 10 years)
- “*O*” refers to the number of out-migrants moving out to an area (of origin) during a specified time interval
- “*P*” is the denominator of migration rates, and refers to the midyear or average size of the population of the resident area
  - Demographers use the resident population as the denominator to calculate migration rates



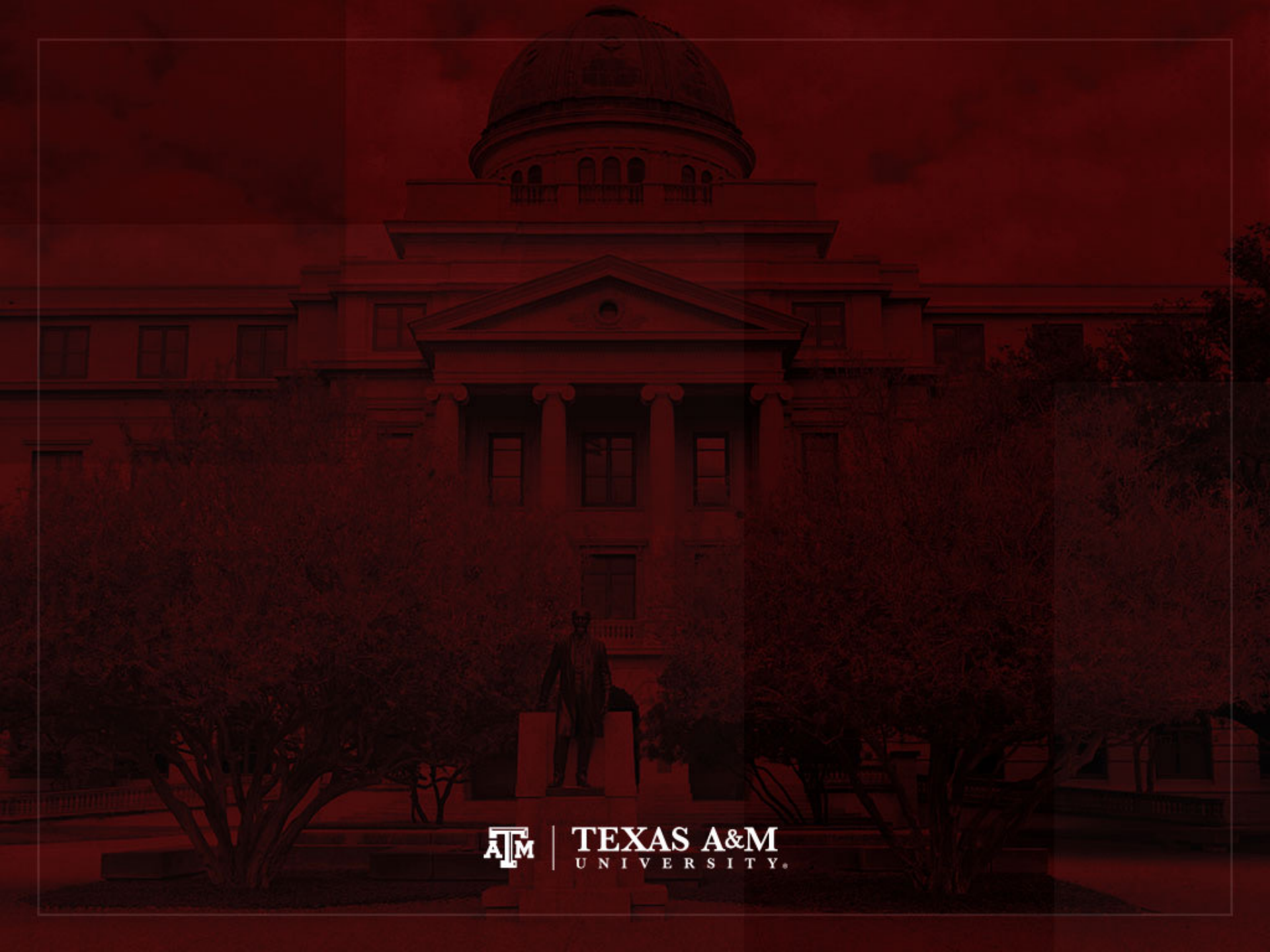
# Migration, mortality, and fertility

- Out-migration rate (*OMR*) is analogous to the crude death rate (*CDR*)
- In-migration rate (*IMR*) is analogous to the crude birth rate (*CBR*)
- Net migration rate (*NMR*) is analogous to the rate of natural increase/decrease

# State-to-state domestic migration: California, Nevada, New York, and Texas, 2004–2005

	Migration flows			
State	In-migrants	Out-migrants	Gross migrants	Net migrants
California	448,718	717,121	1,165,839	-268,403
Nevada	129,957	103,482	233,439	26,475
New York	226,065	465,913	691,978	-239,848
Texas	503,251	378,709	881,960	124,452

	Migration measures				
State	IMR	OMR	GMR	NMR	MER
California	12.9	20.5	33.4	-7.7	-23.0
Nevada	56.4	44.9	101.3	11.5	11.3
New York	12.2	25.1	37.3	-12.9	-34.7
Texas	23.4	17.6	41.0	5.8	14.1



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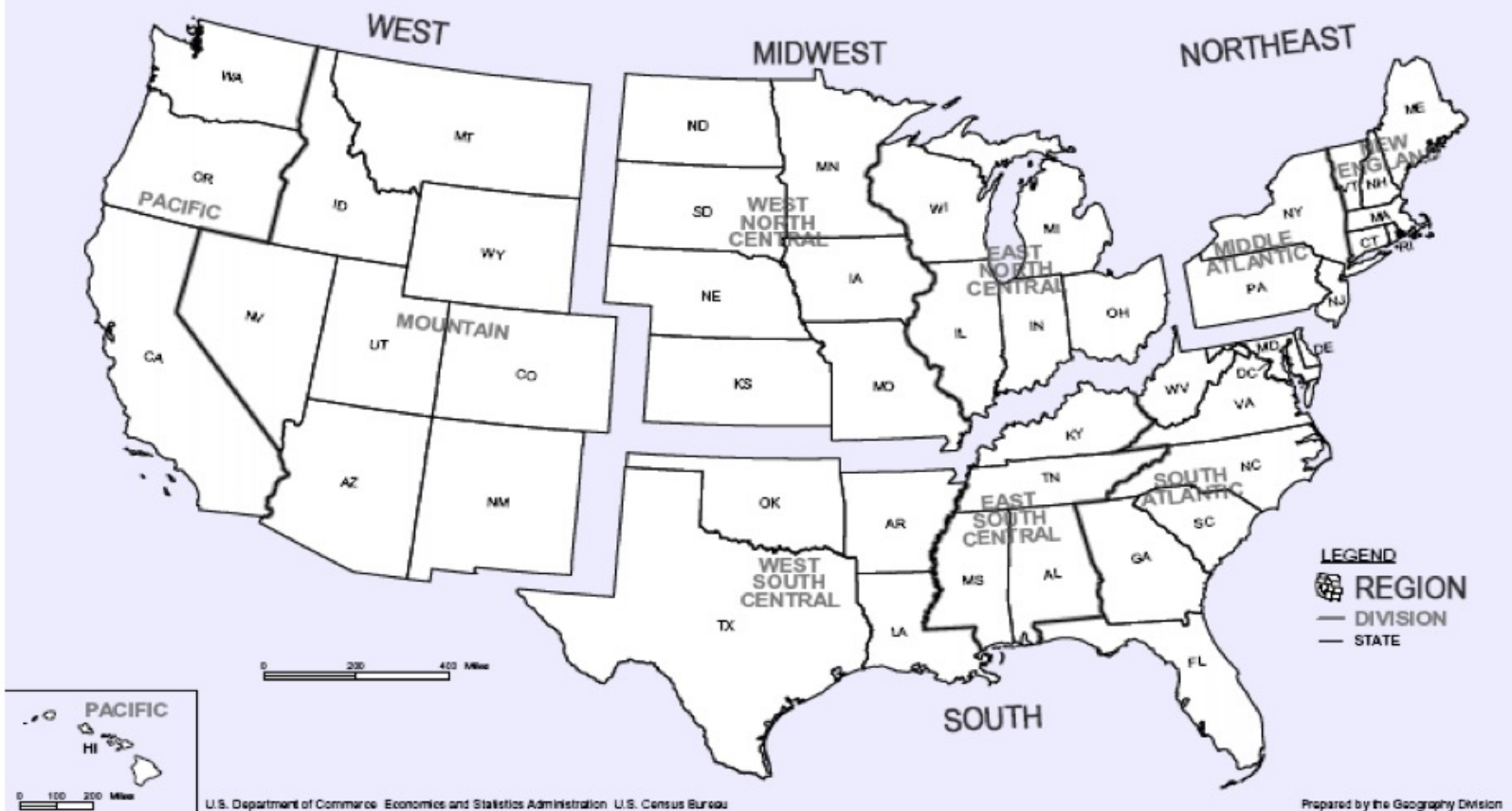
# Domestic migration in the U.S.

- During the 19th and early 20th centuries, there was a steady stream of migration settling in western areas beyond the Mississippi River
- Between the late 1800s and 1960s, the South had been the major exporter of people
- Since the 1970s, the major inter-regional migration flows within the United States have been from East to West and from North to South





## Census Regions and Divisions of the United States



Source: U.S. Census Bureau: [http://www2.census.gov/geo/pdfs/maps-data/maps/reference/us\\_regdiv.pdf](http://www2.census.gov/geo/pdfs/maps-data/maps/reference/us_regdiv.pdf) (accessed April 29, 2016)

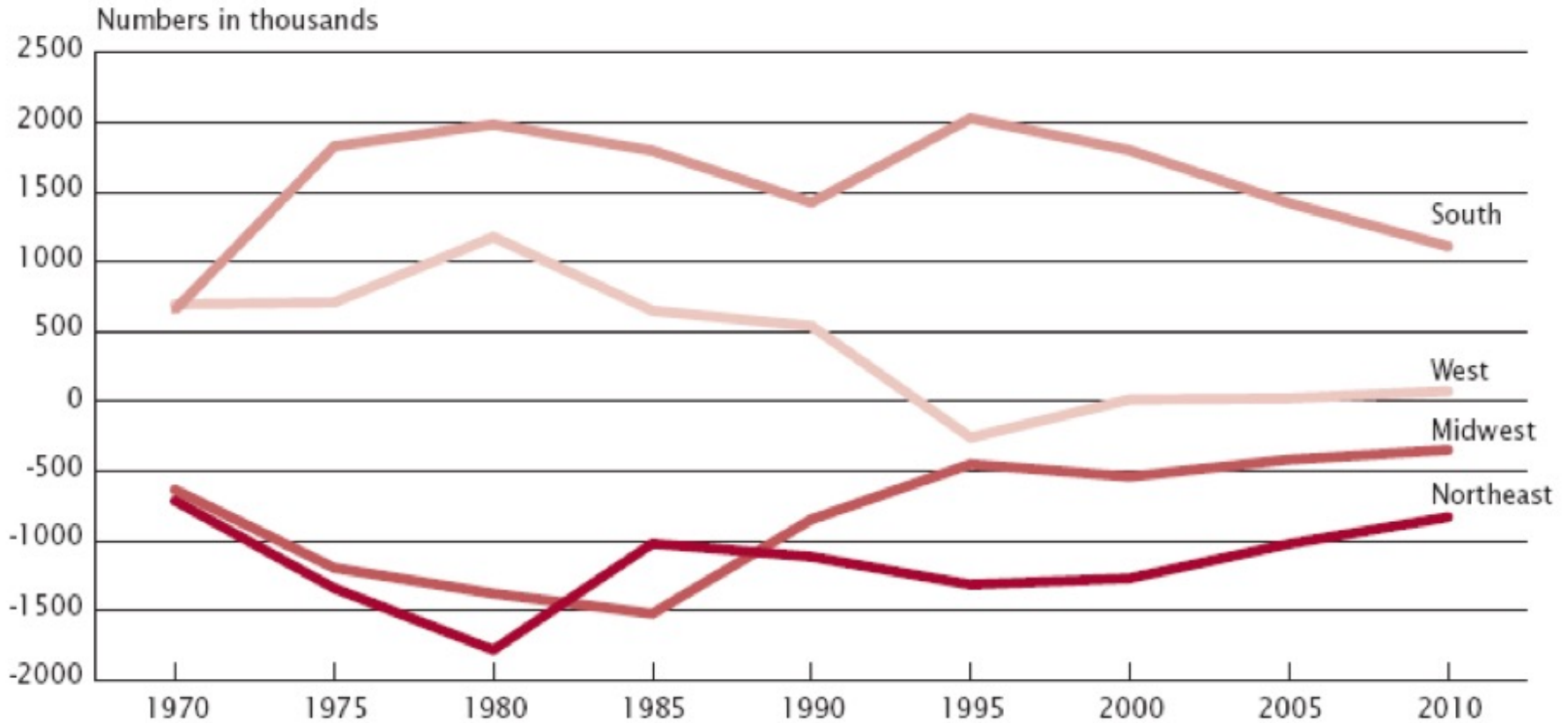
# Regional migration patterns

- For every 5-year period between 1970–2010, the South has been the only region to have continuously experienced positive net migration
- The West region has moved from positive to negative in 1995, and to slightly positive in 2010
  - The South and West were popular destinations particularly among graduate degree holders who are 25 years old and older
- The Midwest and Northeast regions have continuously had negative net migration





# Five-year domestic net migration by region, 1970–2010



# Great Migration

- During the **Great Migration** (1910–1970), over 6 million blacks moved out of the rural South to the Midwest, Northeast, and Pacific Coast
- Almost 90% of African Americans were living in the South in 1900
- By 1970, the states of New York, Illinois, and California had received large numbers of African Americans



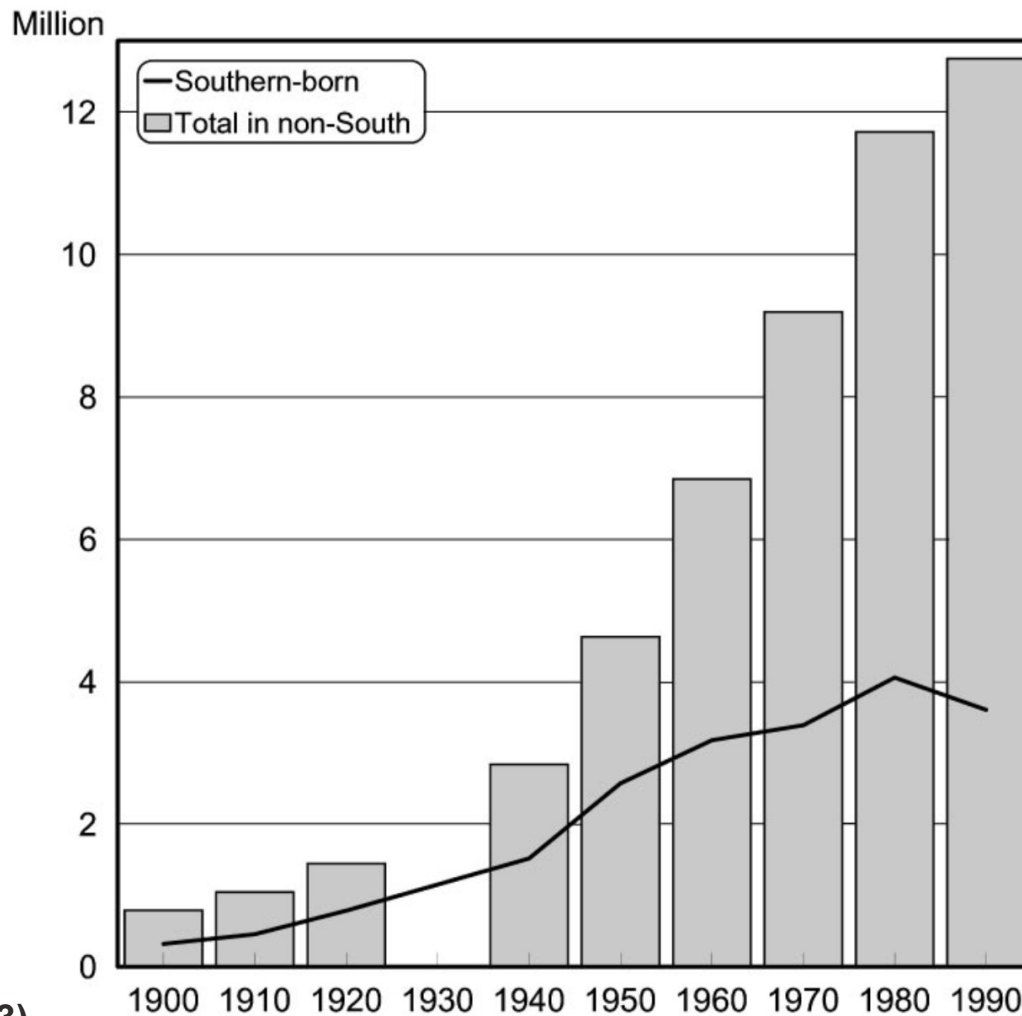
# African American Great Migration

(Tolnay 2003)

- African American Great Migration from the South to the North happened during the 20th century
- African Americans were seeking better socioeconomic opportunities for their families
- This migration contributed to social, economic, demographic, and cultural transformations in northern cities



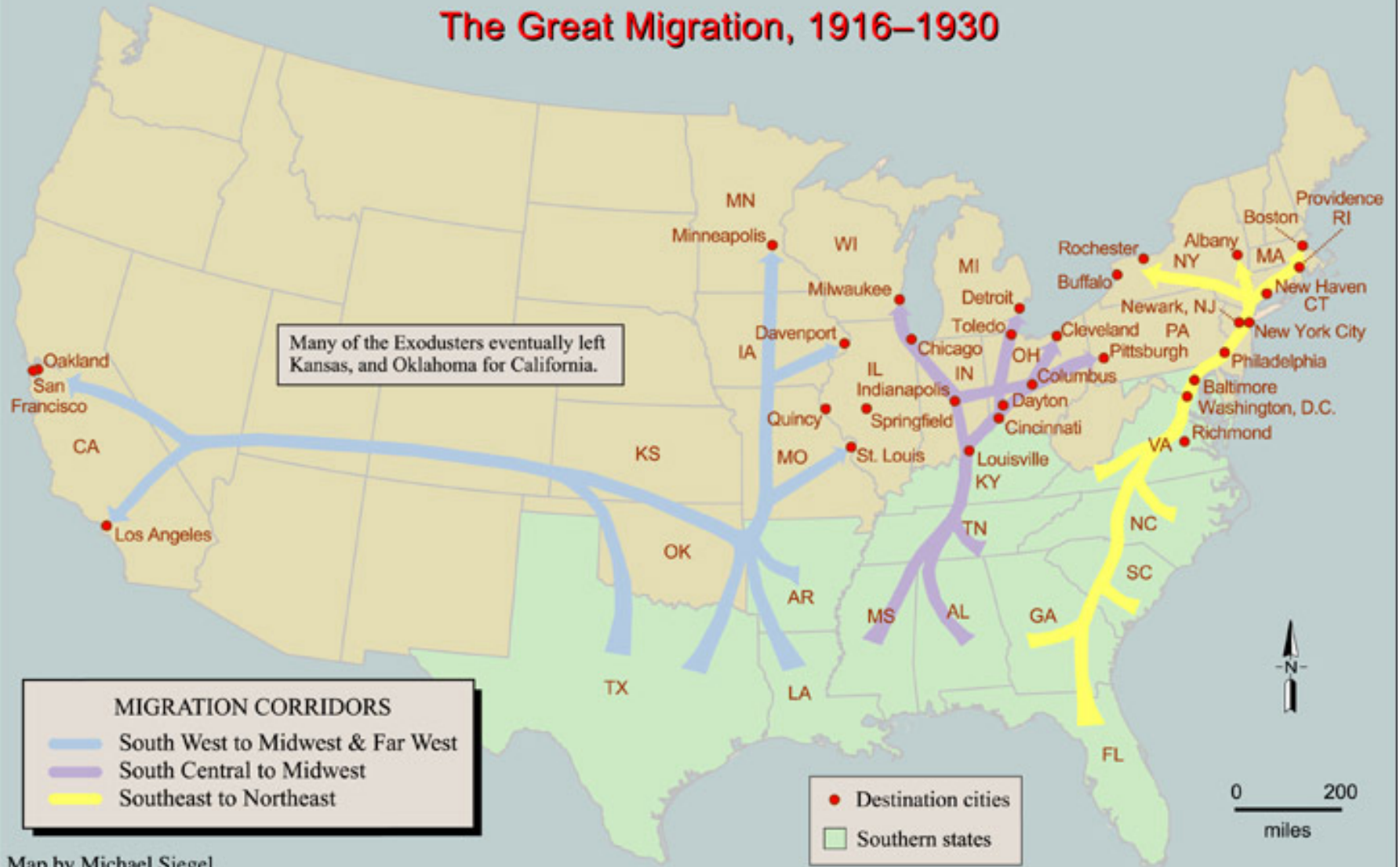
# African Americans in nonsouthern areas



Source: Tolnay (2003).



# The Great Migration, 1916–1930



Map by Michael Siegel  
Rutgers Cartography 2005

Source: "The Atlas of African-American History and Politics"



## The Second Great Migration, 1940–1970



# Racial and ethnicity hierarchy

(Tolnay 2003)

- Whites also moved to the North in large numbers between 1910 and 1970
- However, whites did not experience disadvantaged positions as blacks in the South
- Segregation and concentration of poverty in the growing northern ghettos, limited residential mobility of African Americans
- This historical process has to be understood in order to further investigate black migration and mobility



# Post-Great Migration

(Tolnay 2003)

- After the Great Migration, changes contributed to the desire by black inner-city residents to relocate to the suburbs and to better neighborhoods within the North
- Cross-generational familial and cultural connections contributed for blacks returning to the South
- Only after changes took place in the South, towards socioeconomic and political equality for blacks, return migration became attractive





# Recent migration

- After the 1970s, we see a reversal migration
- Younger, college-educated migrants moving to a more prosperous and post-civil rights South
- Cities and metro areas of Atlanta, Dallas, and Houston are among the most popular destinations for Whites, Blacks, and new immigrant minorities



# Migration by age

- Today, young adults (20–29) are more likely to move than anyone else
  - Reasons are related to school, employment, and marriage
- People 40+ are much less likely to move
  - Older people are more likely to stay in an area

# Migration by education

- Highly educated people are more likely to migrate
- The farther the move, the more likely education will play a major role in the decision of moving

# Migration by occupation

- White collar workers are the most mobile occupational group
- Farm and service workers are the least mobile
- Manual workers are more likely to move locally
- People who are not in the labor force are also likely to move



# Consequences of migration

- Decision to migrate
  - Likely reached when advantages of moving to destination outweigh disadvantages of staying in origin
- Population movements (small or large) have effects on the places of origin and destination
  - They affect movers and non-movers
- The effect of moving for an individual migrant differs from the effect of an aggregate migrant population



# Effects of individual migrant

- Major effect of migration to an individual migrant
  - Whether social, economic, political, or physical characteristics of a new environment are more favorable or preferable than those of previous residence
- These preferences usually depend on
  - Migrant's personal observations and experiences
  - Whether migrant possesses the right skills to adapt to the new area
  - Whether migrant is readily accepted



# Effects of aggregate migration

- The area of origin is affected by the number and the type of migrants moving out of the area
- A large out-migration will significantly affect an area's potential population growth
- For instance, if the net migration rate is highly negative and the population staying is largely elderly



# Effects of in-migration

- Two ways that in-migration contributes to the increase of population in the area of destination
  - Net number of in-migrants constitutes a **direct** effect of population increase
  - Number of children born to the in-migrants after their arrival is the **indirect** effect
- Magnitude of effects
  - Magnitude of **direct** effect depends on the relative size of migrants, compared to receiving population
  - Magnitude of **indirect** effect depends on the relative levels of reproductive behavior of migrants, compared to receiving population

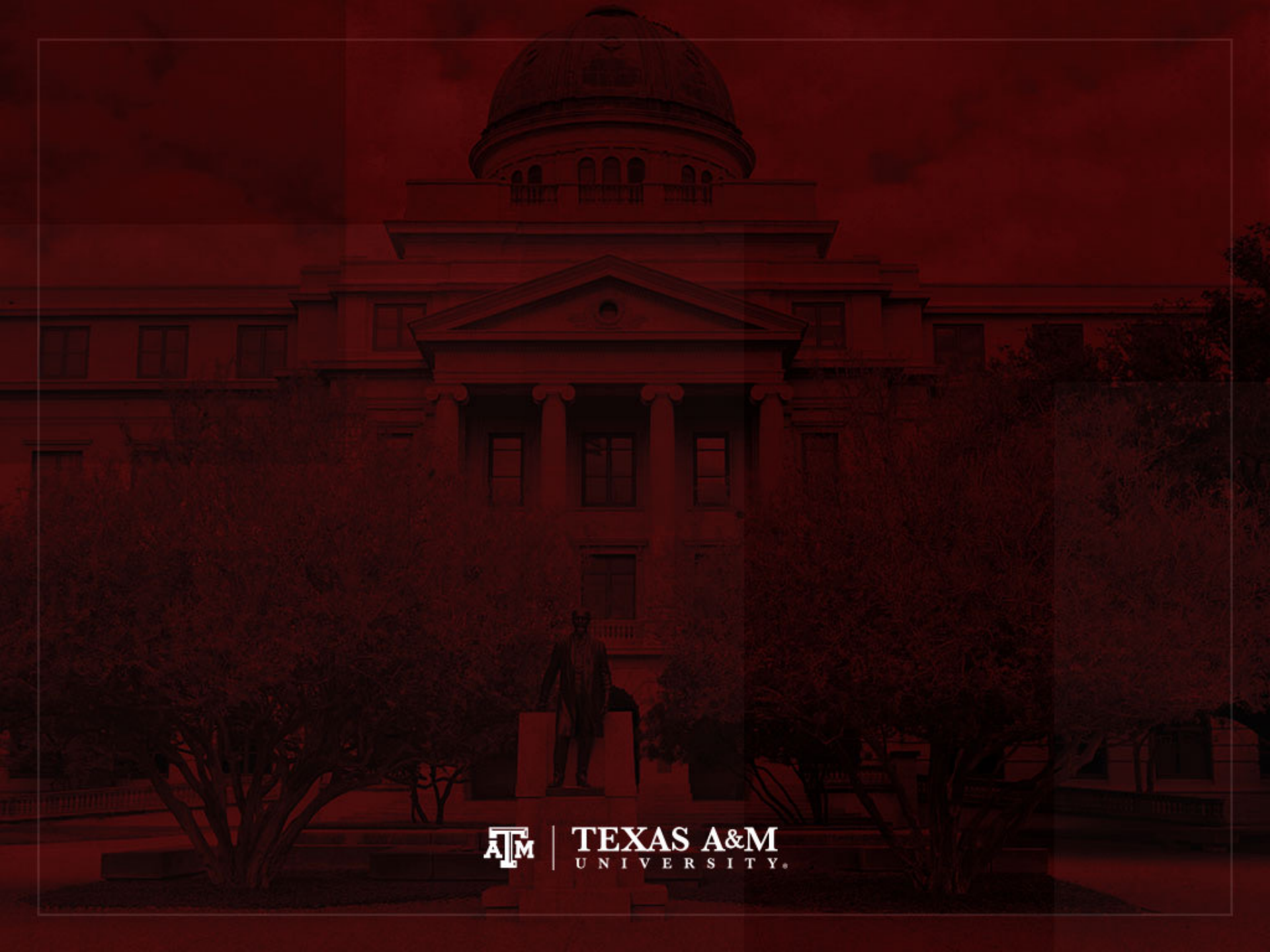
# Recent trends in migration

- The U.S. has been experiencing the lowest levels of internal migration since the late 1940s
  - 20% in 1950–1960
    - Robust economy in 1950–1960
  - 9.8% in 2019
- Reasons for decline
  - Older population
  - Labor market more homogeneous across country
  - 2008 economic recession
  - Telecommuting, jobs from home
- Internal migration might increase again
  - Maybe around 12% a year

Source: NPR interview with William Frey (November 23, 2019)

(<https://www.npr.org/2019/11/23/782335384/demographer-unpacks-why-fewer-americans-are-moving>).





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# Analysis of spatial association

- In spatial association analysis, we recognize that people are not randomly distributed over space
- Local indicator of spatial association (LISA) identifies local clusters and spatial outliers
  - It estimates contributions of each area (Anselin 1995)
  - We considered neighbors as areas sharing a border (queen contiguity)
- We analyze concentration of internal migrants in areas of destination in the U.S.



# Spatial clusters and outliers

- **Spatial clusters**

- **High-High**: areas with high levels of a specific indicator surrounded by areas with high levels for that indicator
- **Low-Low**: areas with low levels of a specific indicator surrounded by areas with low levels for that indicator

- **Spatial outliers**

- **High-Low**: areas with high levels of a specific indicator surrounded by areas with low levels for that indicator
- **Low-High**: areas with low levels of a specific indicator surrounded by areas with high levels for that indicator



# LISA example

- Analyze concentration of internal migrants in areas of destination in the United States
  - Information on area of residence one year before the 2019 American Community Survey (ACS)
  - For areas of destination (current residence)
    - Publicly available data has information on Public Use Microdata Areas (PUMAs) as the lowest level of geographic aggregation
  - Areas of origin (previous residence)
    - Data relates to PUMAs or, for confidentiality issues, groups of PUMAs (also known as MIGPUMAs)



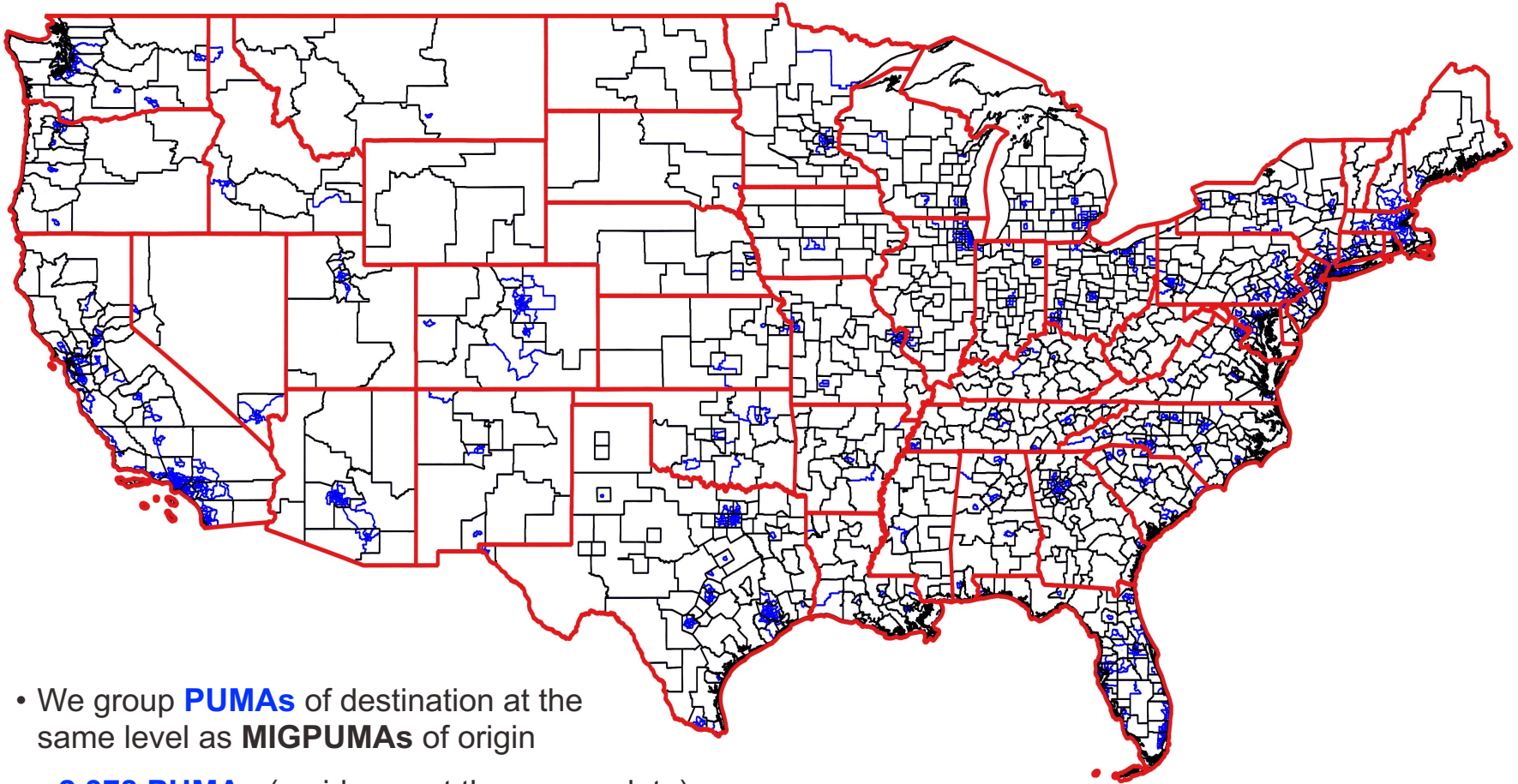


# Homogenize areas

- We group PUMAs of destination at the same geographic level as MIGPUMAs of origin
  - 2,378 PUMAs (current residence)
  - 1,005 MIGPUMAs (previous residence)
- This is a strategy to homogenize areas of previous and current residence



# State, MIGPUMA, PUMA



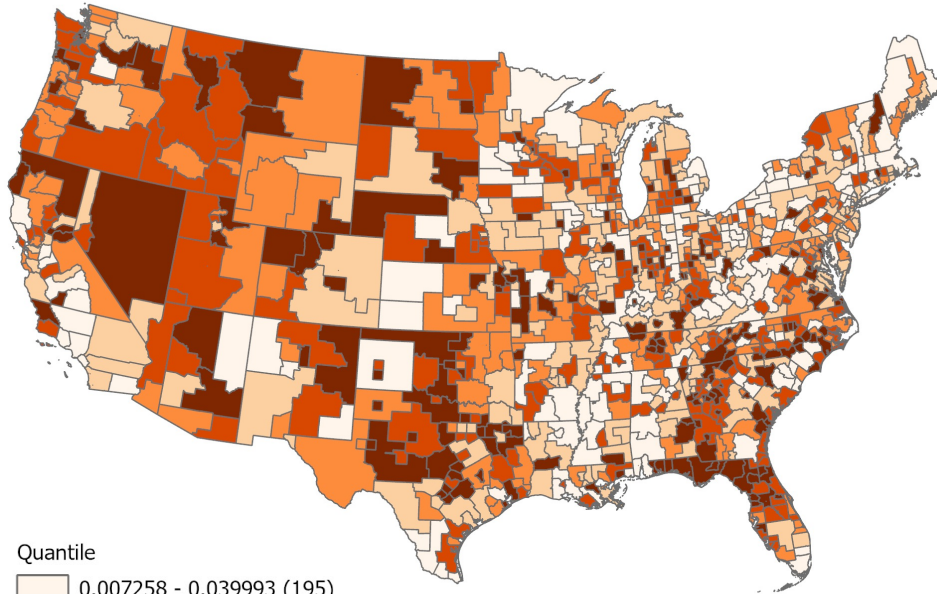
- We group **PUMAs** of destination at the same level as **MIGPUMAs** of origin
  - **2,378 PUMAs** (residence at the survey date)
  - **1,005 MIGPUMAs** (residence one year before the survey)

# Migration status

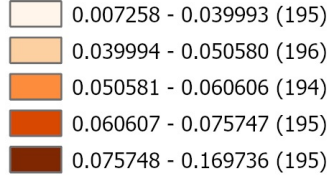
- Internal migrants
  - Those who resided in another MIGPUMA one year before the survey
- Non-migrants
  - Those who resided in the same area in the previous year
- International migrants
  - Those who resided in another country one year before the survey (not included in our analysis)



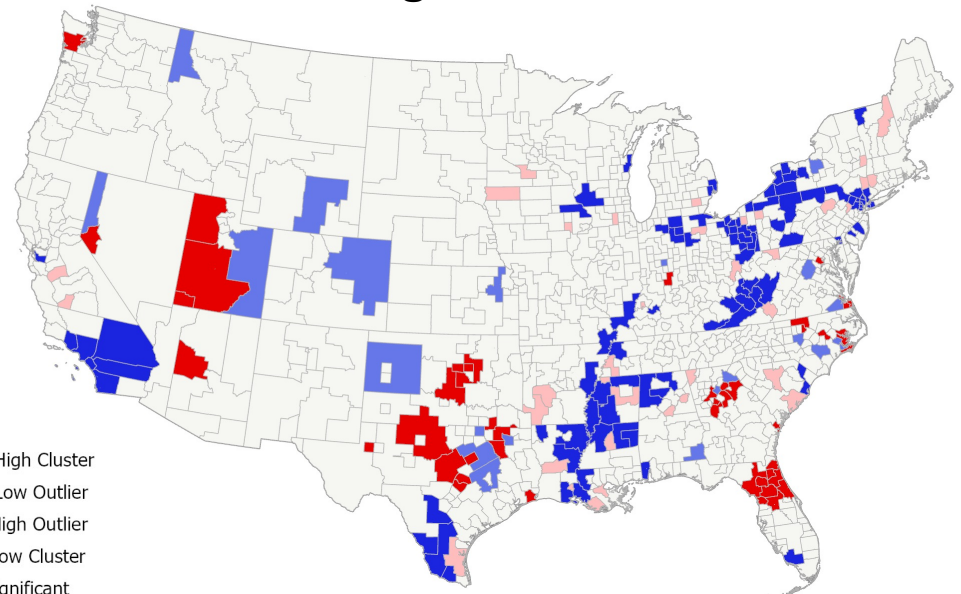
# Proportion of internal migrants, 2018–2019



Quantile



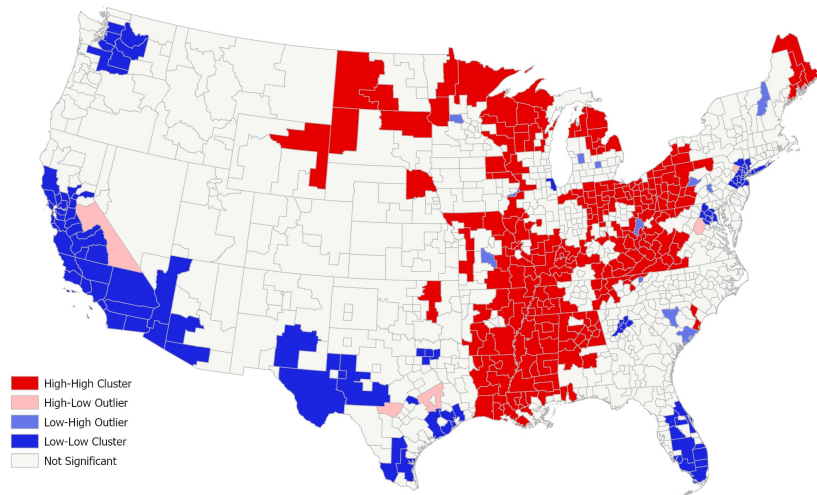
## LISA of proportion of internal migrants, 2018–2019



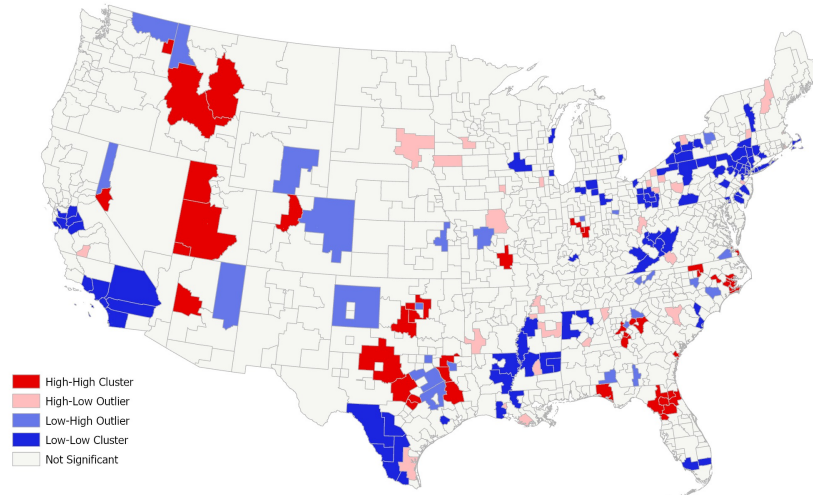


# Internal migrants are those who changed residence between 2018 and 2019

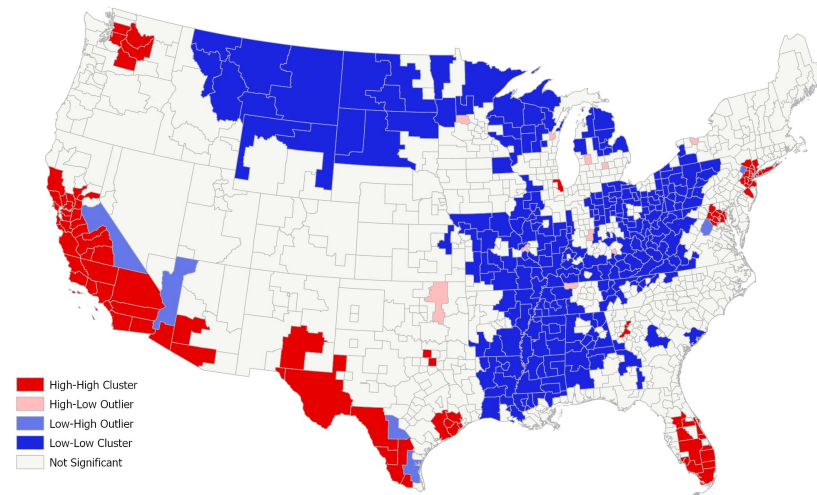
## US-born non-migrants



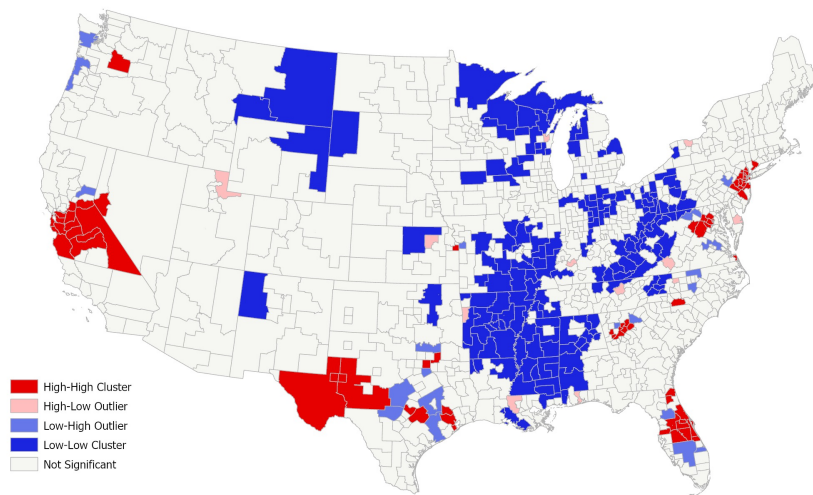
## US-born internal migrants



## Foreign-born non-migrants

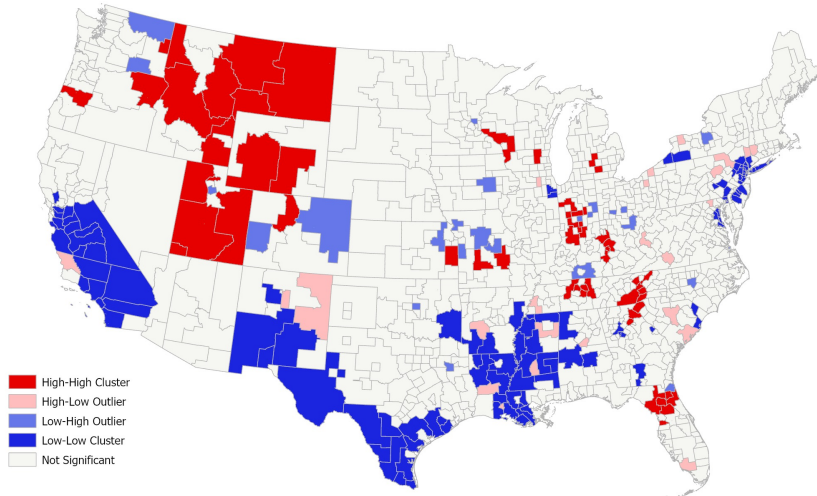


## Foreign-born internal migrants

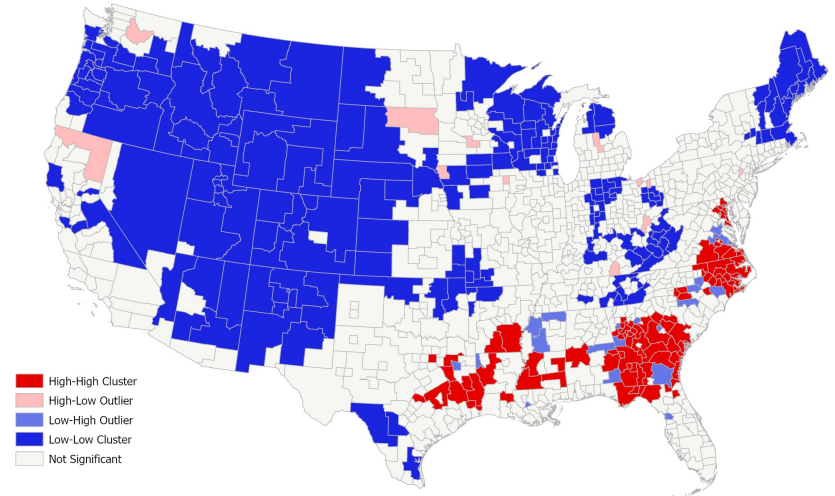


All maps below are for internal migrants, 2018–2019

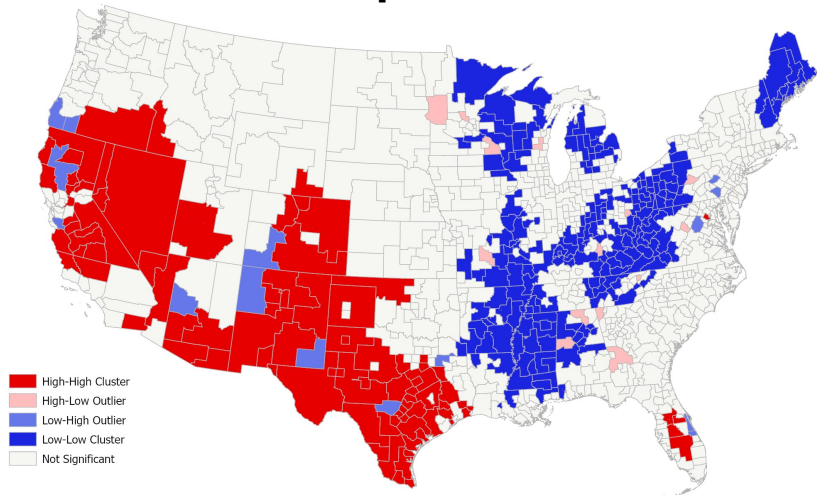
### Non-Hispanic Whites



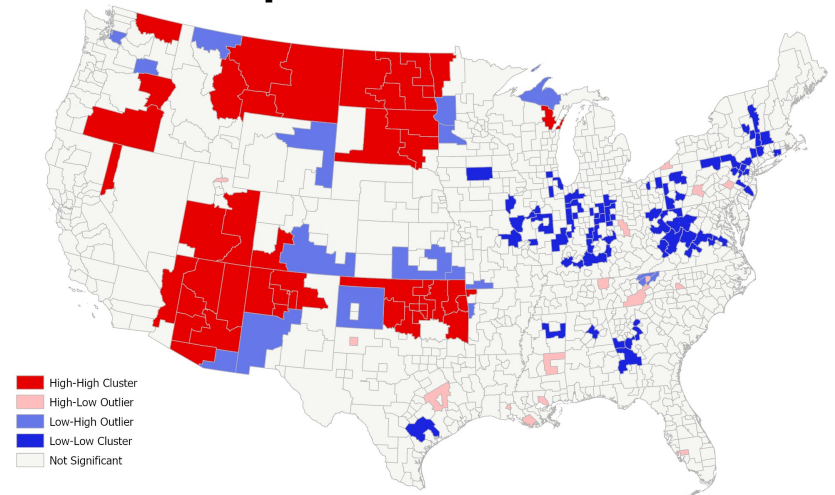
### Non-Hispanic African Americans



### Hispanics



### Non-Hispanic Native Americans







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# Temporary migration in China

- In China, a permanent change in residence requires the government approval
- With this approval, individuals can officially transfer their household registration (*Hukou*) from an area of origin to an area of destination



# *Hukou* system

- The *Hukou* system is a household registration system first enacted in 1948
  - It acted as a barrier to prevent rural residents from moving into urban areas
- Urban residents were entitled to subsidized housing, social insurance, medical care, and formal employment
- Rural residents were denied these rights and entitlements

# Changes in the 1970s

- In the late 1970s, Deng XiaoPing, who succeeded Mao Zedong, began making major economic reforms
- He opened many low-level construction, manufacturing, and household service job opportunities for rural agricultural workers

# Floating migration in China

- Two types of internal migration in China
  - Permanent change in the place-of-household registration, formally approved by the government
  - Move with no approval by the government
- Floating migration is the residential movement of crossing a political boundary without the government permission
  - Movers of this type of migration are known as **floaters**
  - They have not altered their permanent registration in a household registration office



# Recent levels of floaters

- In the 2010 census, there were more than 220 million floaters in China
- These migrants are mainly young and unmarried males and females looking for blue-collar, service and household jobs
- Overall, they are more educated than the rural population, but they are less educated than the general population



# Recent levels of floaters

- For every legally permitted migrant, there are about 12 to 13 inter-province floating migrants
  - Floaters comprise about 40% of the country's total urban population in China
- Floaters make 20% to 40% less than their permanent urban worker counterparts
  - Their wages in the big cities are still several times greater than the wages they would make in their home rural villages
  - They usually remit a large proportion of their salaries to their families in the home villages



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