Internal migration

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Outline

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

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

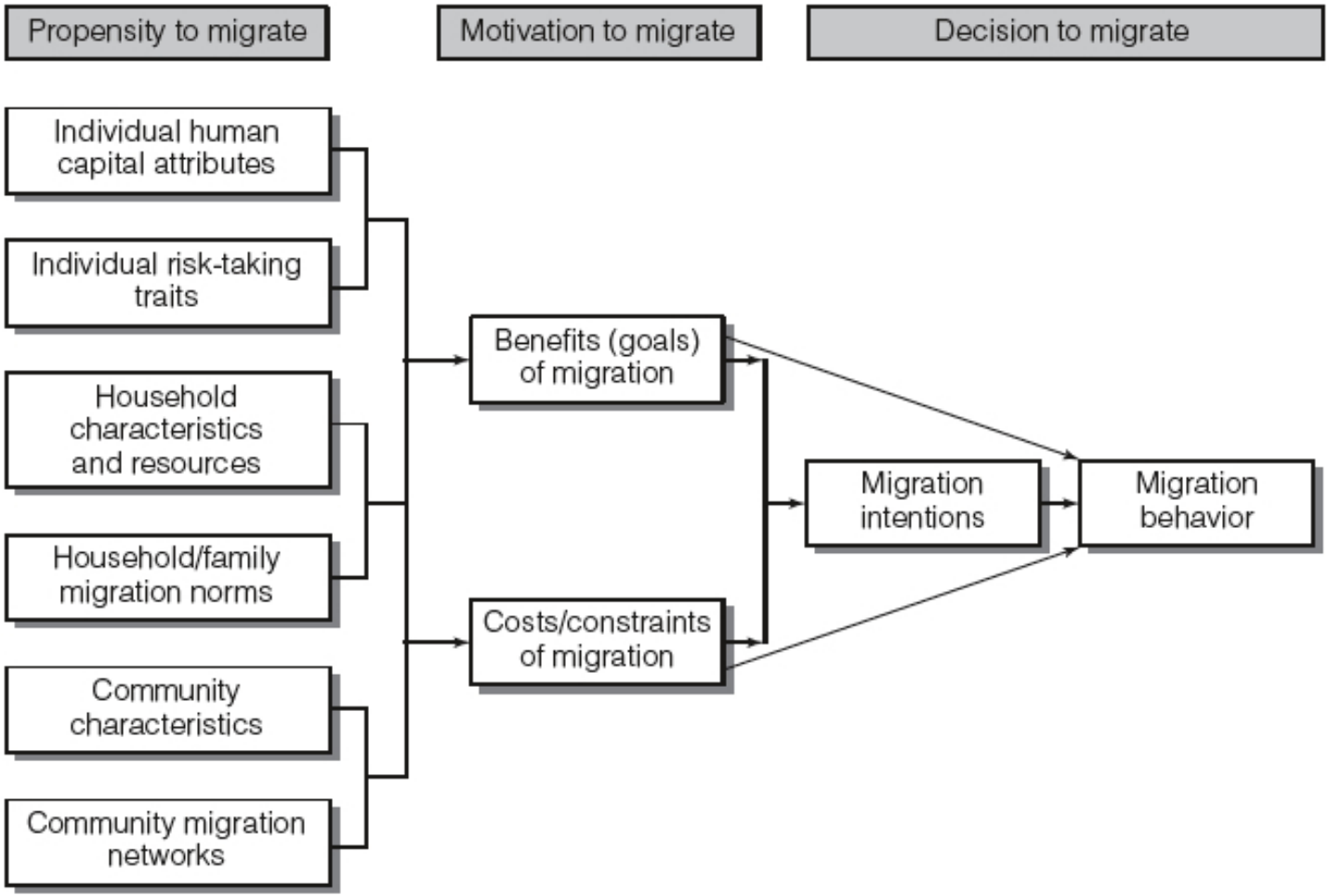
What is the migration transition?

- 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

Stocks versus flows

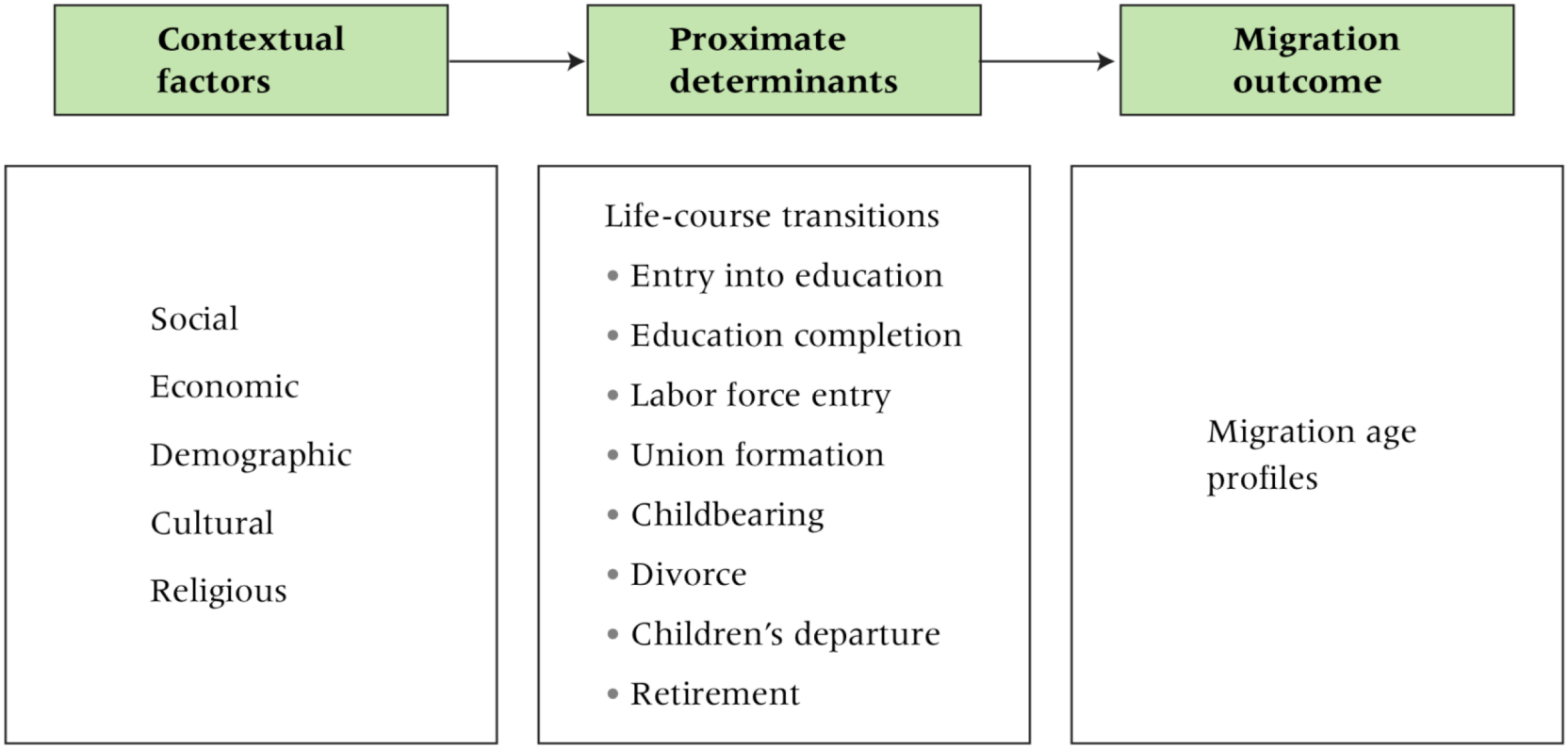
- The migration transition involves a process and a transformation
- The process is that people move from one place to another and this represents the migration flow
- The transformation is that the migrant stock changes as people move into and out of a given place

Conceptual model of migration decision making



Proximate determinants

FIGURE 3 Proximate determinants of migration age profiles



Source: Bernard, Bell, Charles-Edwards 2014, p.217.

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

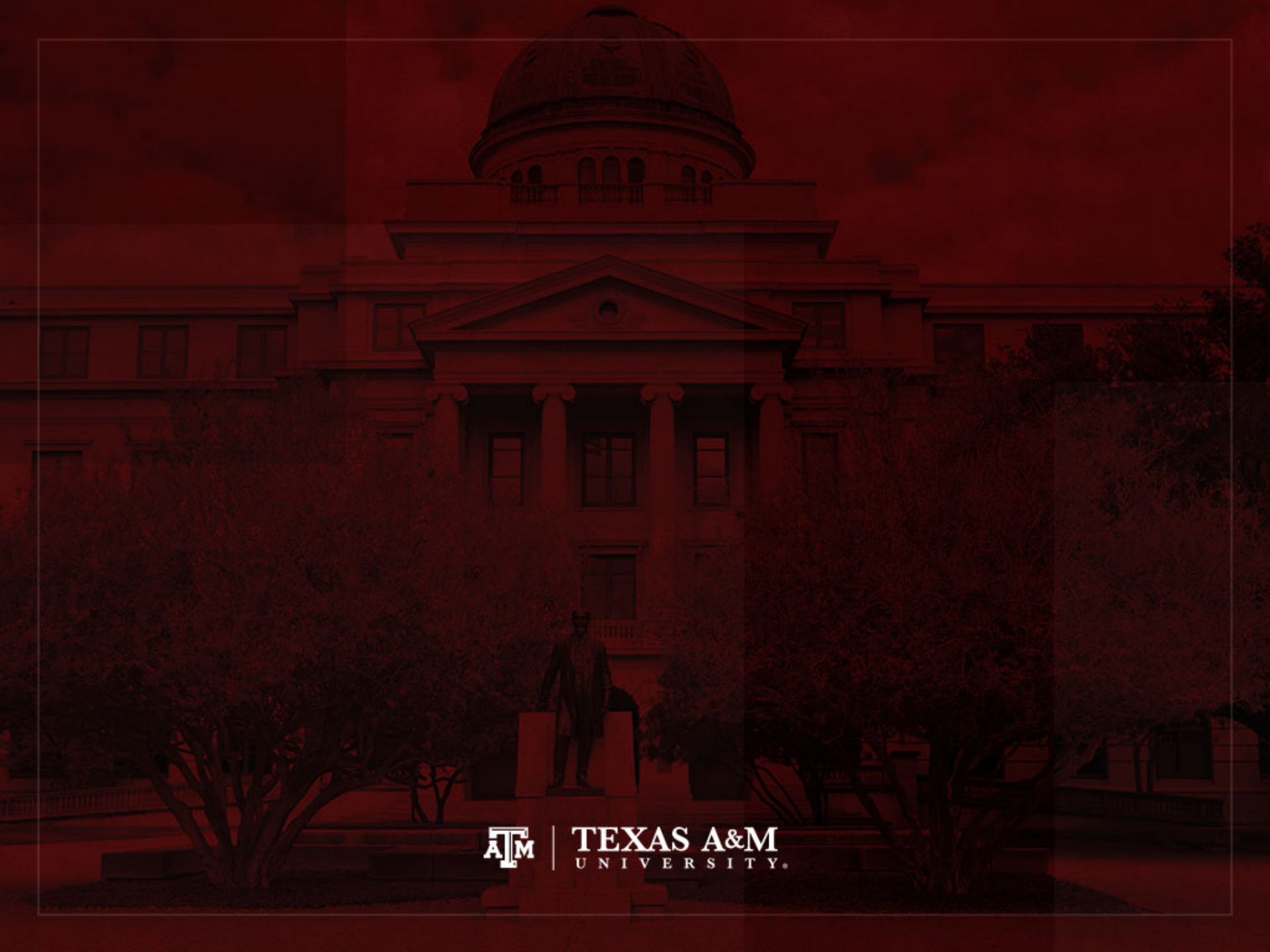
- Over time internal migration is a story of rural population growth leading to a redundancy of that population, so people look for jobs and life elsewhere
- When the population is almost entirely urban (as in the U.S. and most of western Europe), people move between urban places
  - We might call this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

Areas	**Internal migration (within countries)**	**International migration (between countries)**
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**

  Net-migration = In-migrants – 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**

  Gross-migration = In-migrants + 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

Stream and counterstream

(Lee 1966)

- Migration tends to take place largely within well defined streams
- For every major migration stream, a counterstream develops
- The efficiency of the stream is high if the major factors in the development of a migration stream were negative factors at origin
- The efficiency of stream and counterstream tends to be low if origin and destination are similar
- The efficiency of migration streams will be high if the intervening obstacles are great
- The efficiency of a migration stream varies with economic conditions, being high in prosperous times and low in times of depression

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

Characteristics of migrants

(Lee 1966)

- Migration is selective
- Migrants responding primarily to plus factors at destination tend to be positively selected
- Migrants responding primarily to minus factors at origin tend to be negatively selected
- Taking all migrants together, selection tends to be bimodal (positively and negatively selected)
- The degree of positive selection increases with the difficulty of the intervening obstacles
- The heightened propensity to migrate at certain stages of the life cycle is important in the selection of migrants
- The characteristics of migrants tend to be intermediate between the characteristics of the population at origin and the population at destination

Differential migration

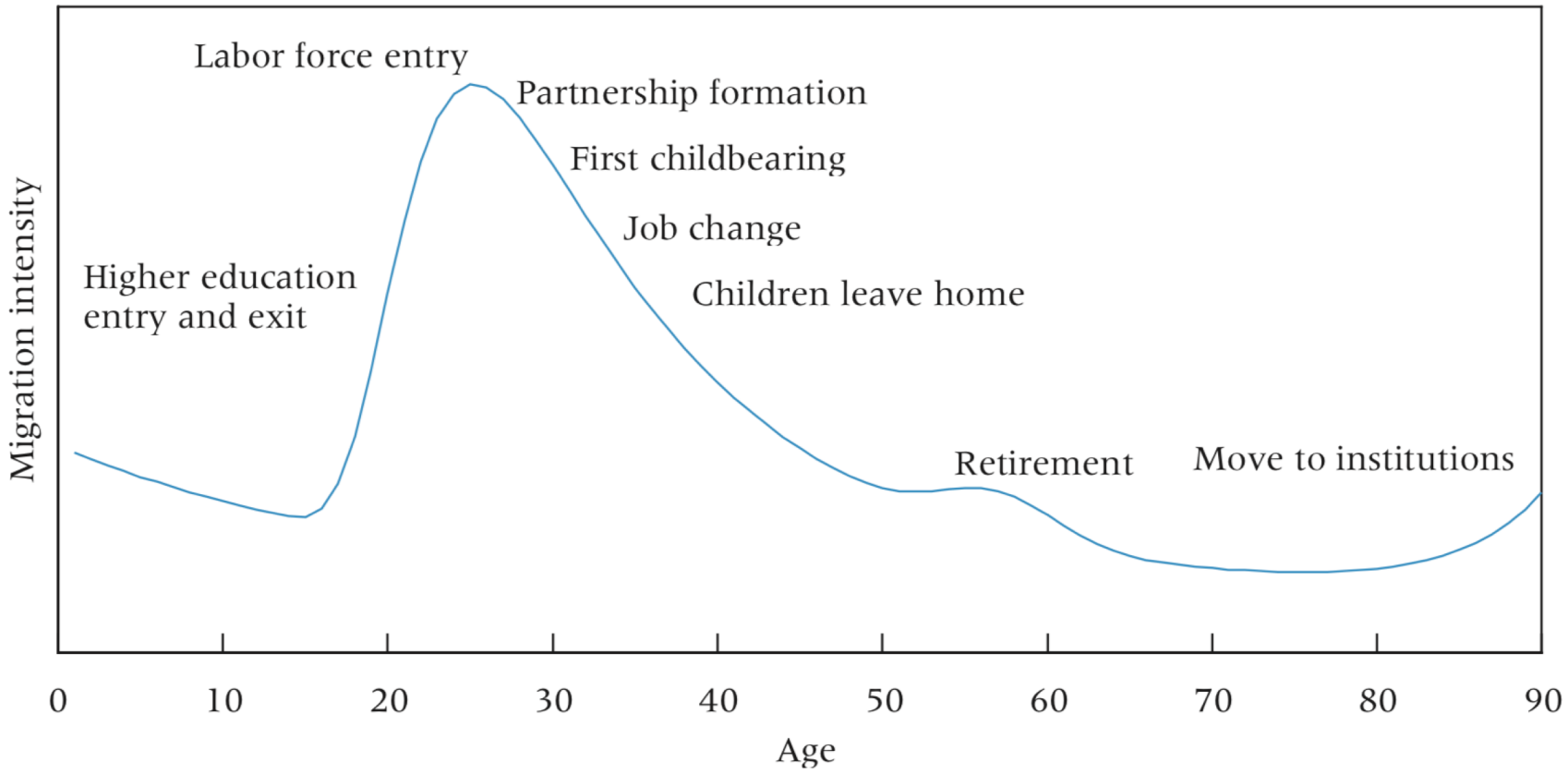
- **Differential migration**
  - Analysis of differences in migrant populations according to their demographic, social, and economic characteristics
- **Migration selectivity**
  - The migration process is selective: not everyone stays and not everyone moves
  - Usually related to demographic characteristics: 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

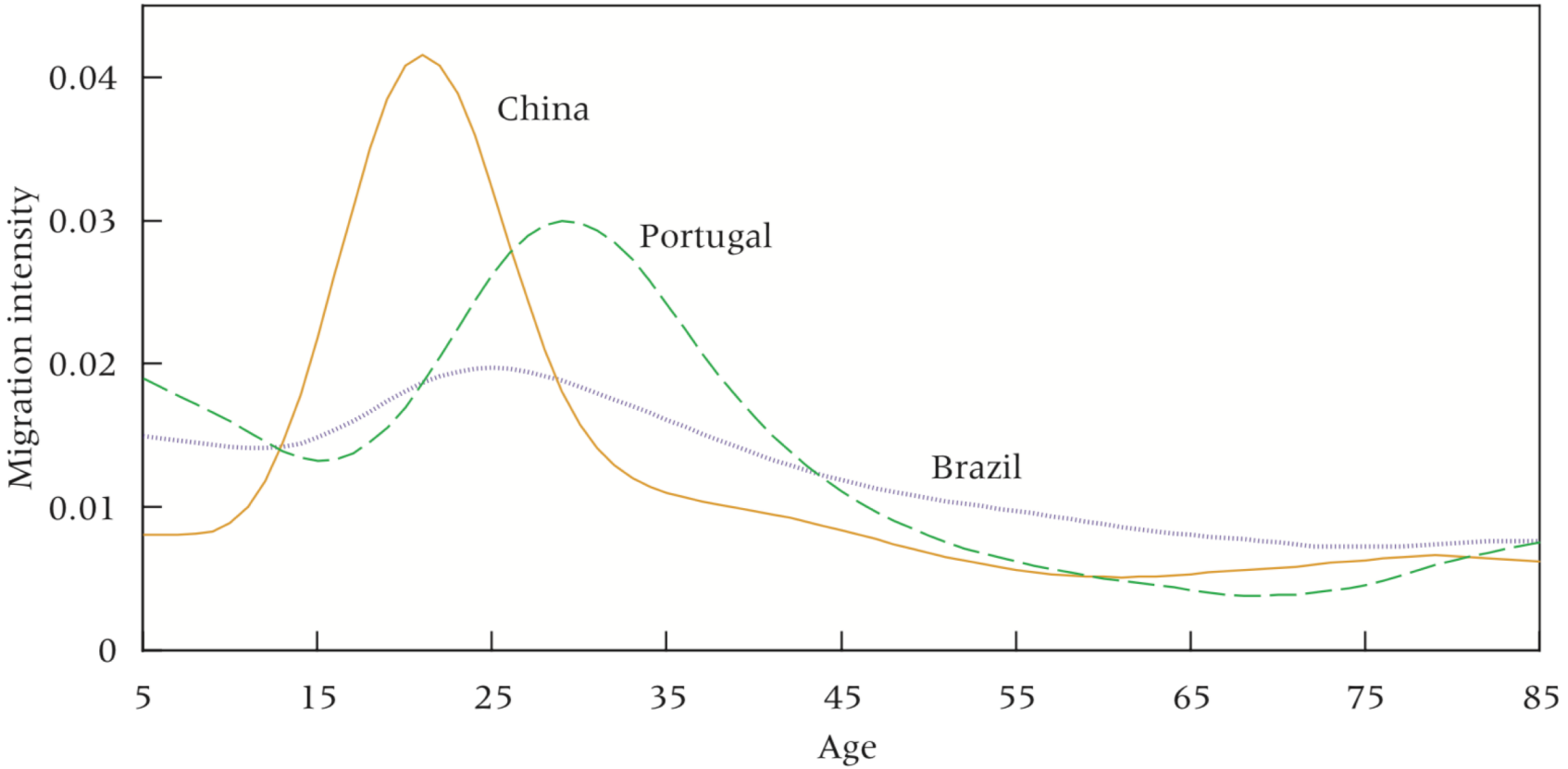
- Migrants tend to be negatively selected
  - When they are responding to negative push factors in the area of origin, such as economic stagnation
  - These migrants are less likely to have higher socioeconomic status than those responding to pull factors

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



Source: Bernard, Bell, Charles-Edwards 2014, p.215.

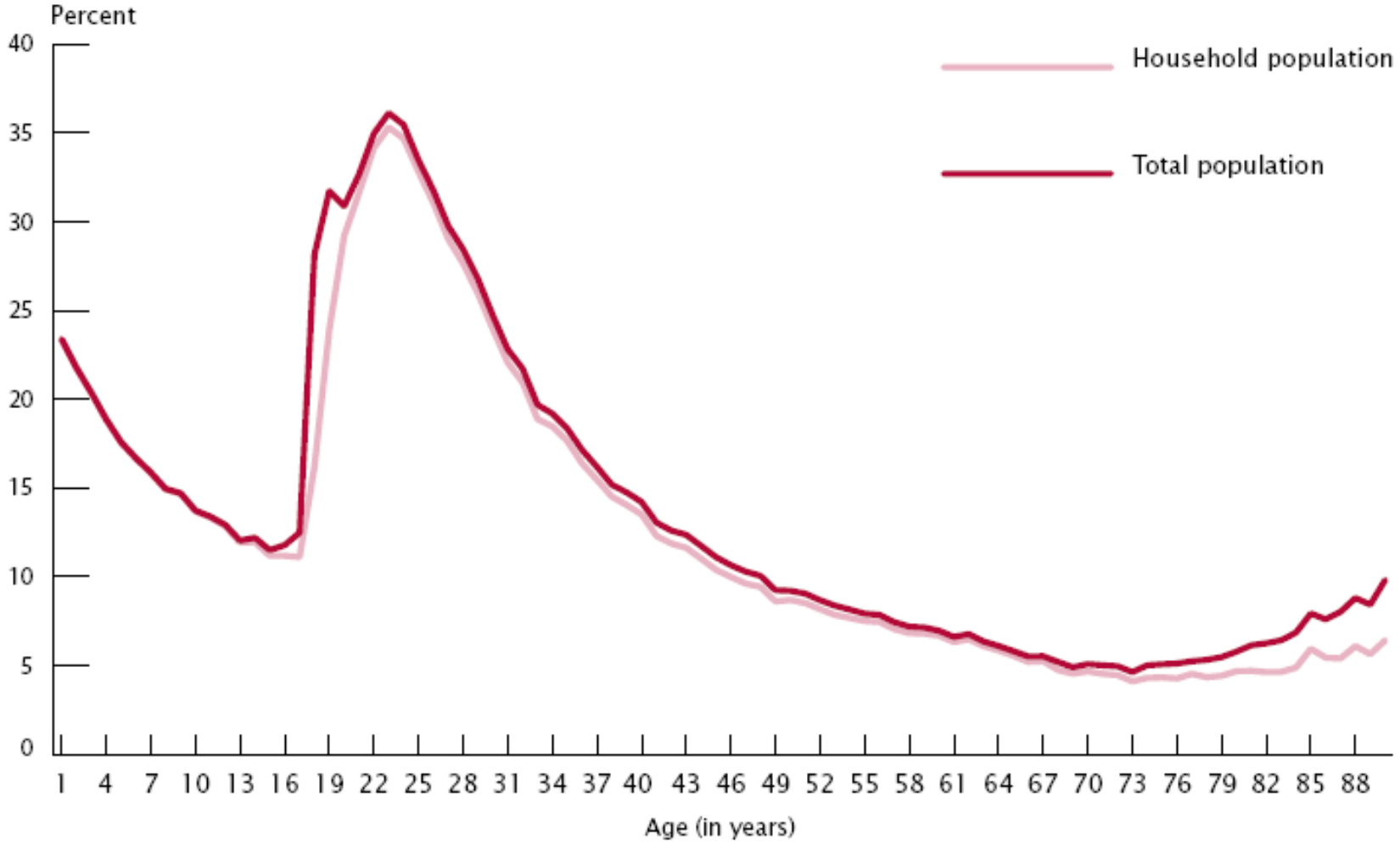
FIGURE 2 Cross-national variations in migration age profiles



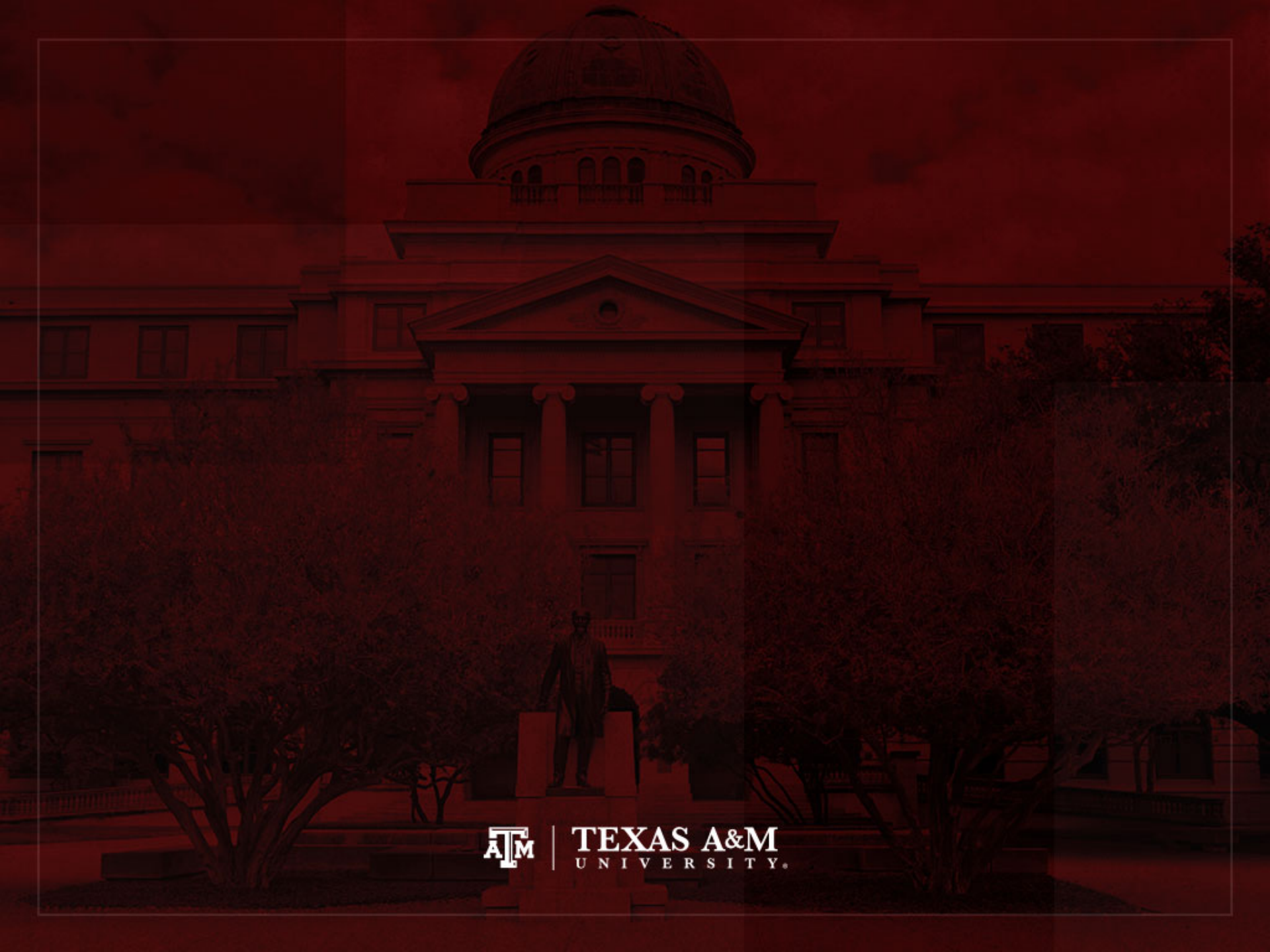
SOURCE: Authors' calculations based on five-year-interval migration data reported by single-year age groups. Migration data were normalized to sum to unity and smoothed using kernel regression (Bernard and Bell 2012).

Source: Bernard, Bell, Charles-Edwards 2014, p.216.

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



Source: Ihrke, Faber and Koerber, 2011: 4.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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 occurence
  - 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 five years prior to the date of the census (one year prior to the date of ACS)
- Administrative data
  - Internal Revenue Service (IRS) tax returns data

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

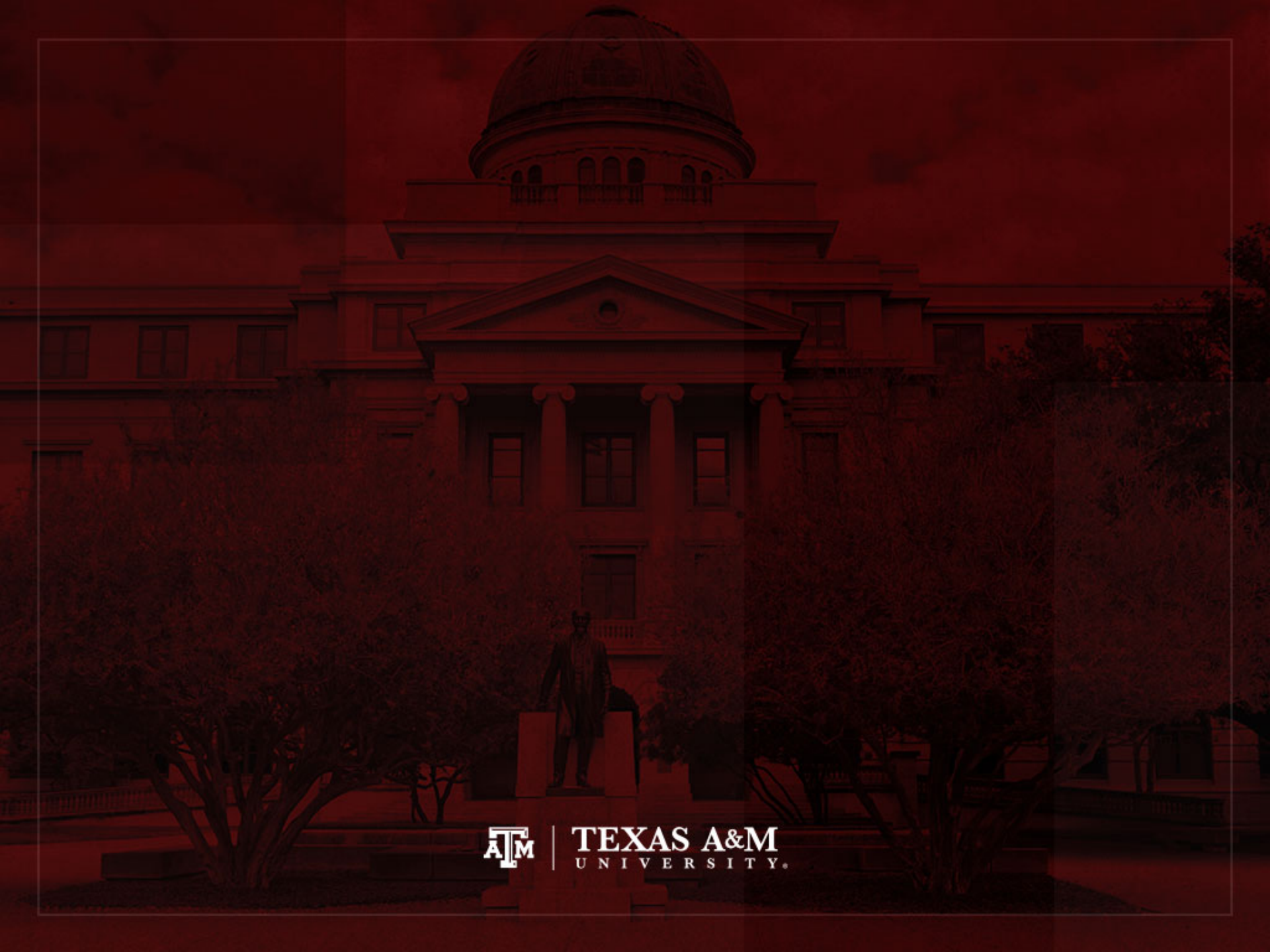
- Out-migration rate (*OMR*) is analogous to the crude death rate (*CDR*)
- In-migration rate (*IMR*) is analogous to the crude birth rate (*CBR*)
- Net migration rate (NMR) is analogous to the rate of natural increase/decrease

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

Source: Koerber, 2007 (from Poston, Bouvier, 2017). Calculations by Dudley L. Poston.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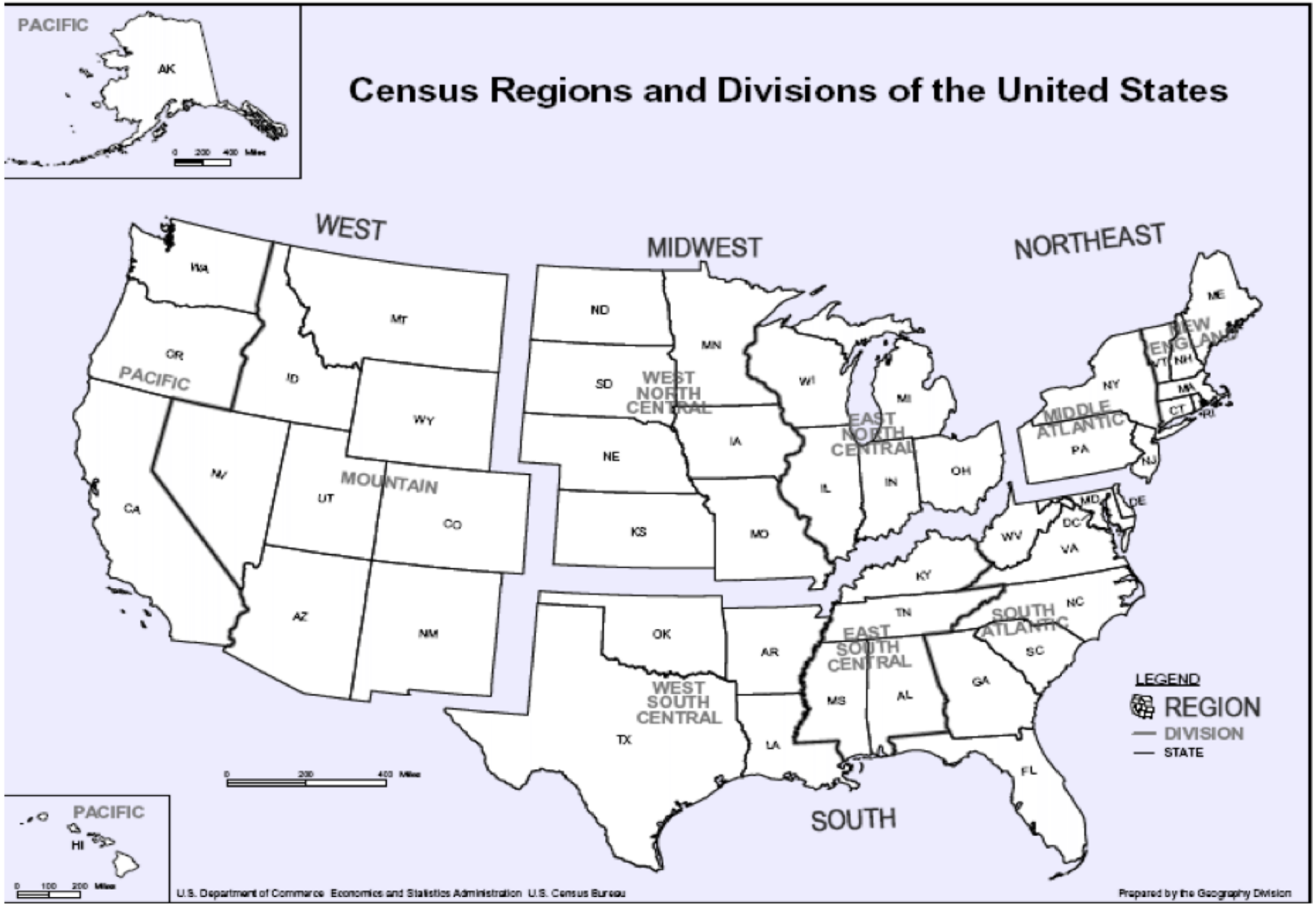
Domestic migration in the U.S.

- During the 19th and early 20th centuries, there was a steady stream of migration settling 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 State have been from East to West and from North to South

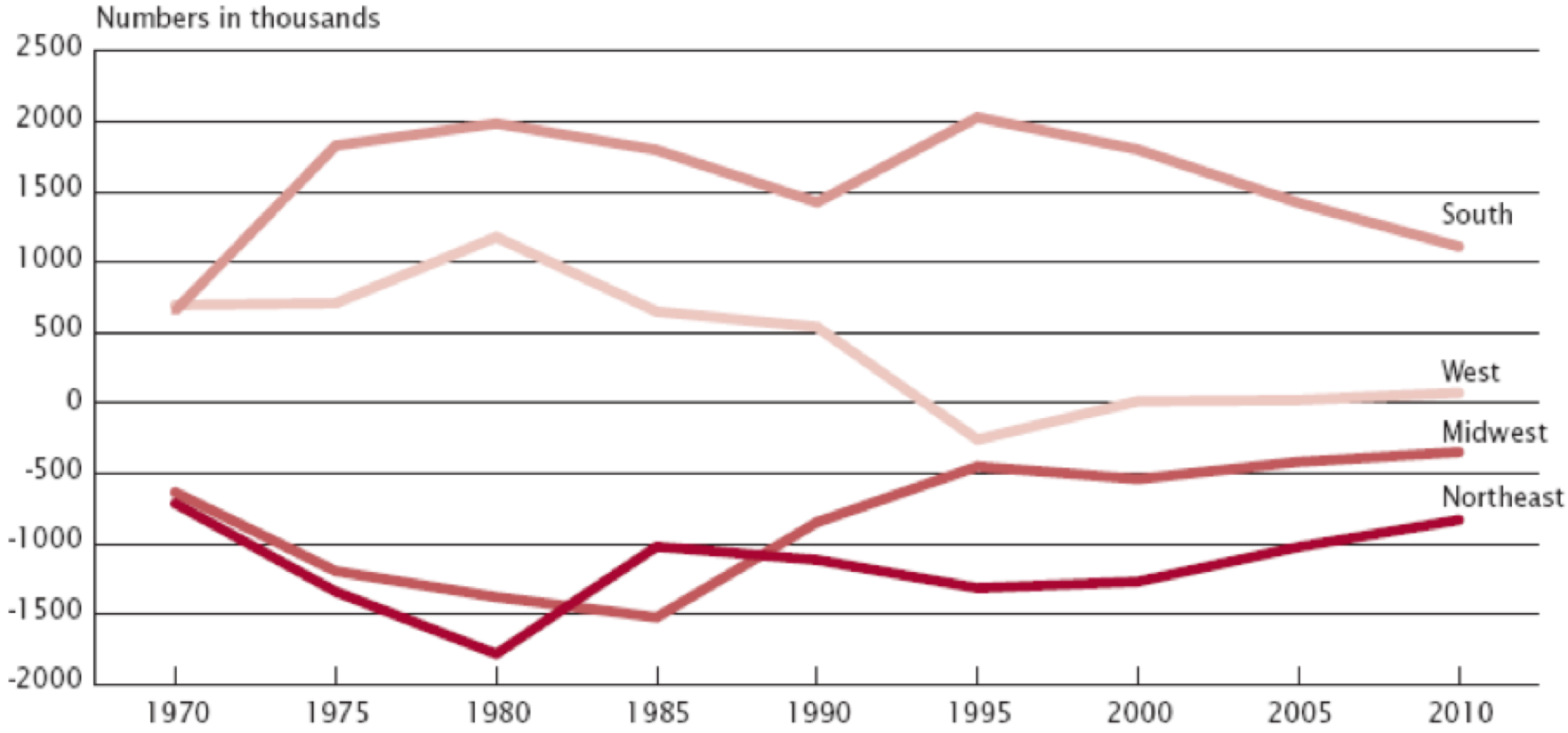


Source: U.S. Census Bureau: http://www2.census.gov/geo/pdfs/maps-data/maps/reference/us_regdiv.pdf (accessed April 29, 2016)

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



Source: Ihrke, Faber, 2012 (from Poston, Bouvier, 2017).

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

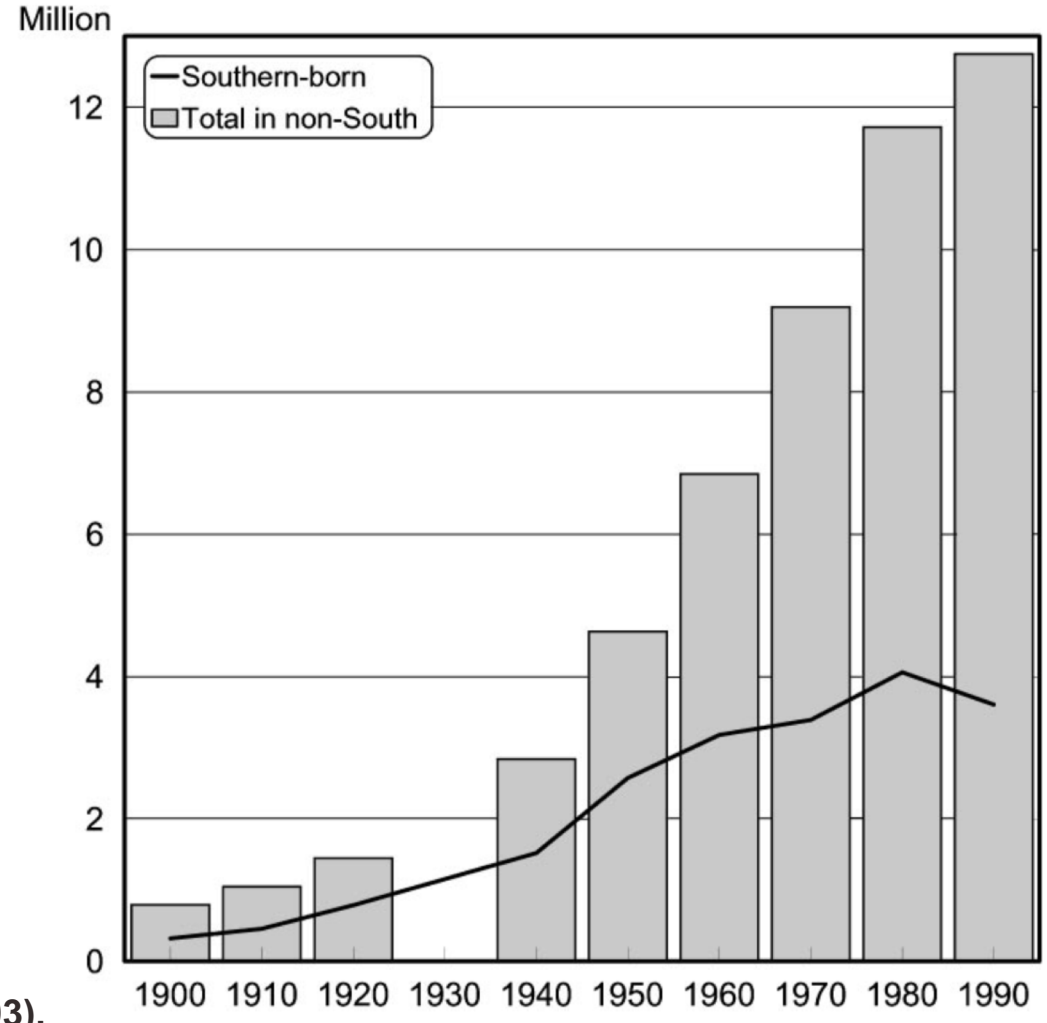
- By 1970, the states of New York, Illinois, and California had received large numbers of African Americans

African American Great Migration

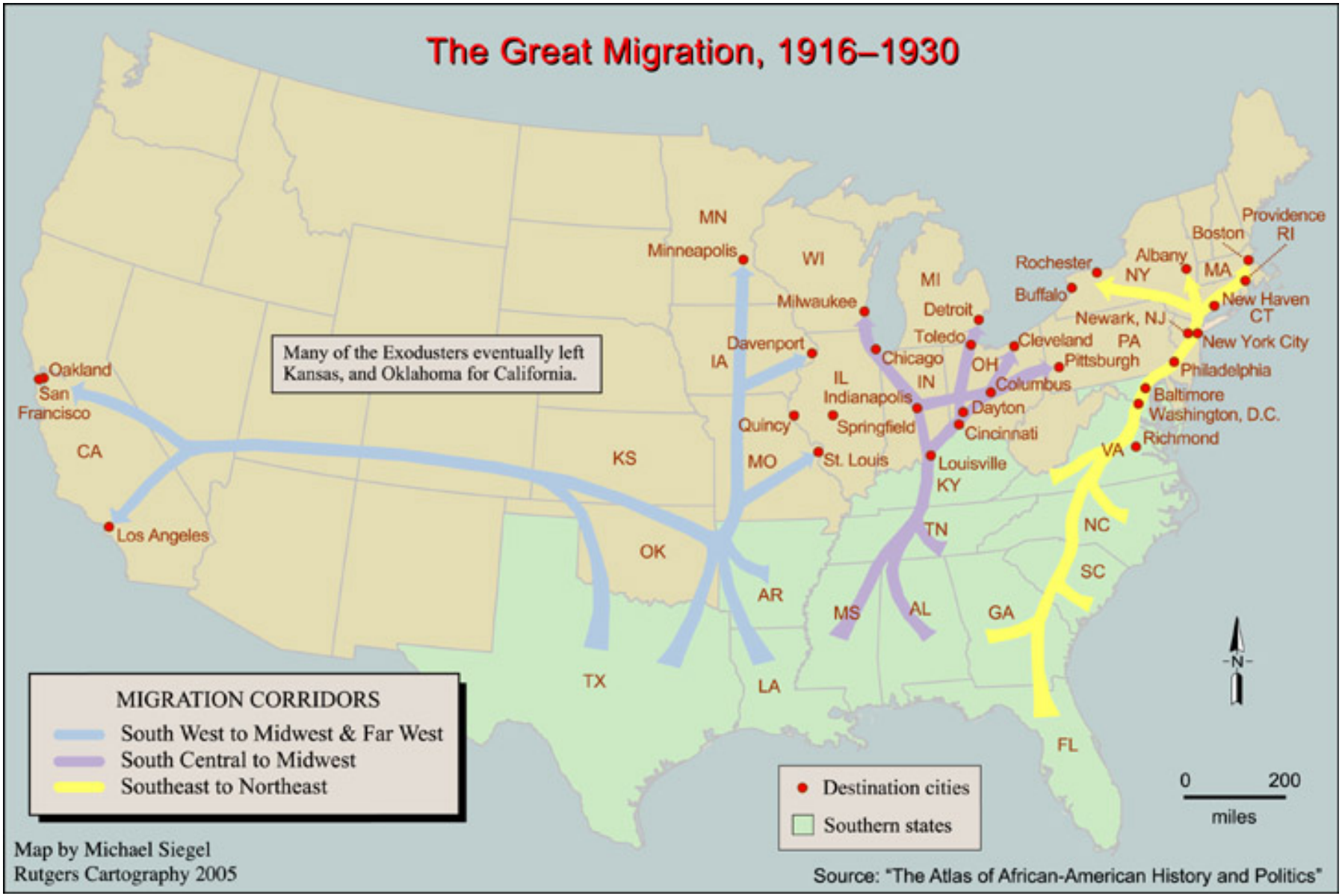
(Tolnay 2003)

- 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
Many of the Exodusters eventually left Kansas, and Oklahoma for California.
MIGRATION CORRIDORS
South West to Midwest & Far West
South Central to Midwest
Southeast to Northeast
Destination cities
Southern states
0
200
miles
N
Map by Michael Siegel
Rutgers Cartography 2005
Source: "The Atlas of African-American History and Politics"
Oakland
San Francisco
CA
Los Angeles
KS
OK
TX
MN
Minneapolis
WI
Milwaukee
IA
Davenport
Quincy
MO
St. Louis
AR
LA
MS
AL
GA
FL
SC
NC
TN
KY
Louisville
IL
Chicago
Springfield
Indianapolis
IN
MI
Detroit
Toledo
OH
Cleveland
Columbus
Dayton
Cincinnati
Pittsburgh
PA
NY
Rochester
Buffalo
Albany
Boston
MA
Providence
RI
New Haven
CT
Newark, NJ
New York City
Philadelphia
Baltimore
Washington, D.C.
Richmond
VA


The Second Great Migration, 1940–1970
Seattle
WA
Portland
OR
Oakland
San Francisco
CA
Los Angeles
Denver
CO
MN
Minneapolis
WI
Milwaukee
IA
Davenport
Chicago
IL
Indianapolis
Quincy
Springfield
MO
St. Louis
MI
Detroit
Toledo
IN
OH
Cleveland
Columbus
Pittsburgh
Dayton
Cincinnati
Louisville
KY
Rochester
Buffalo
NY
Albany
Boston
MA
Providence
RI
New Haven
CT
Newark, NJ
New York City
PA
Philadelphia
Baltimore
Washington, D.C.
Richmond
VA
Durham
NC
Columbia
SC
Charleston
Atlanta
GA
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Jackson
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N
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200
miles
Map by Michael Siegel
Rutgers Cartography 2005
Source: "The Atlas of African-American History and Politics"

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

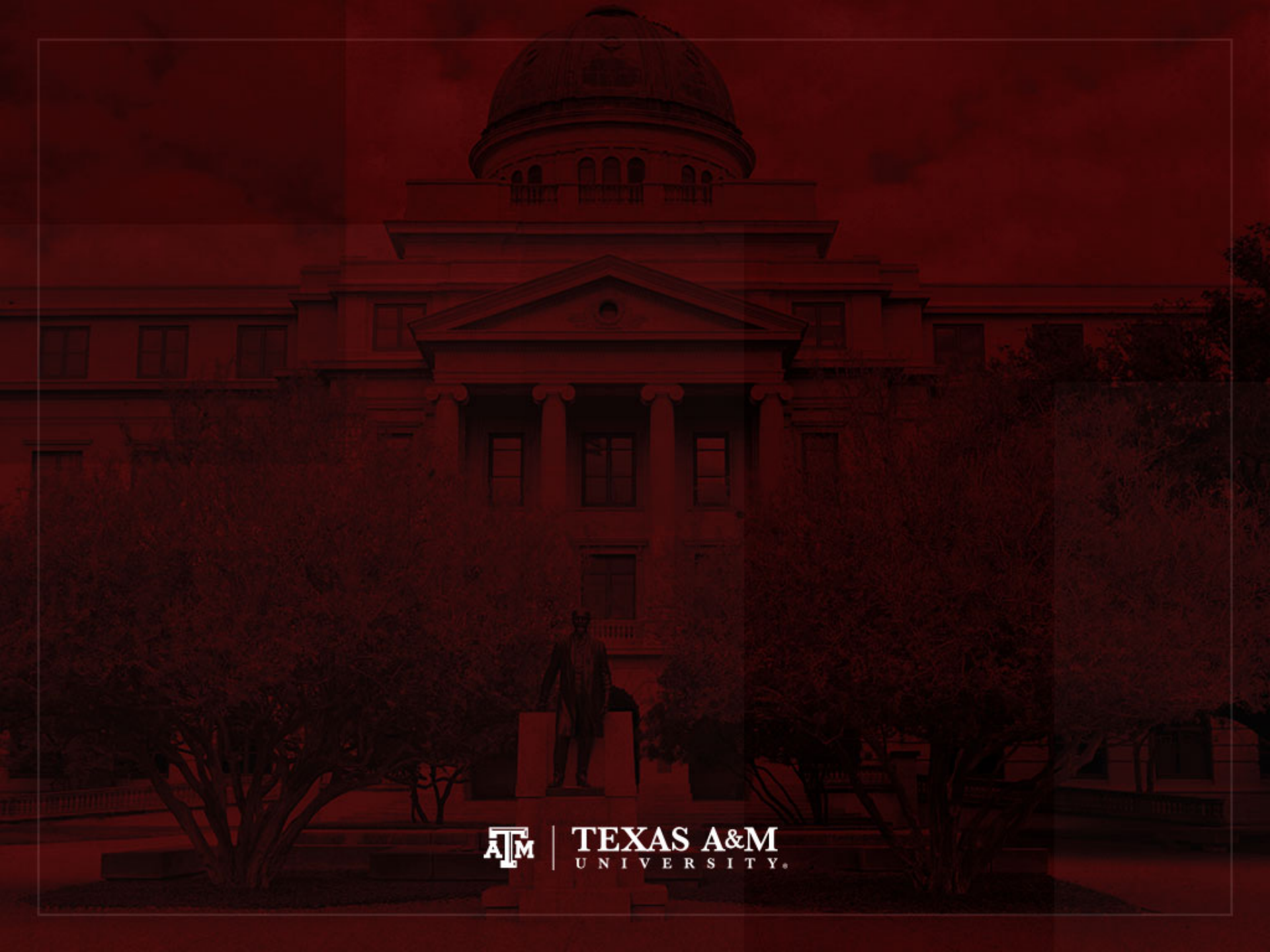
- Major effect of migration to an individual migrant
  - Whether social, economical, political, or physical characteristics of a new environment are more favorable or preferable than those of previous residence
- These preferences usually depend on
  - Migrant's personal observations and experiences
  - 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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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
  - I 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

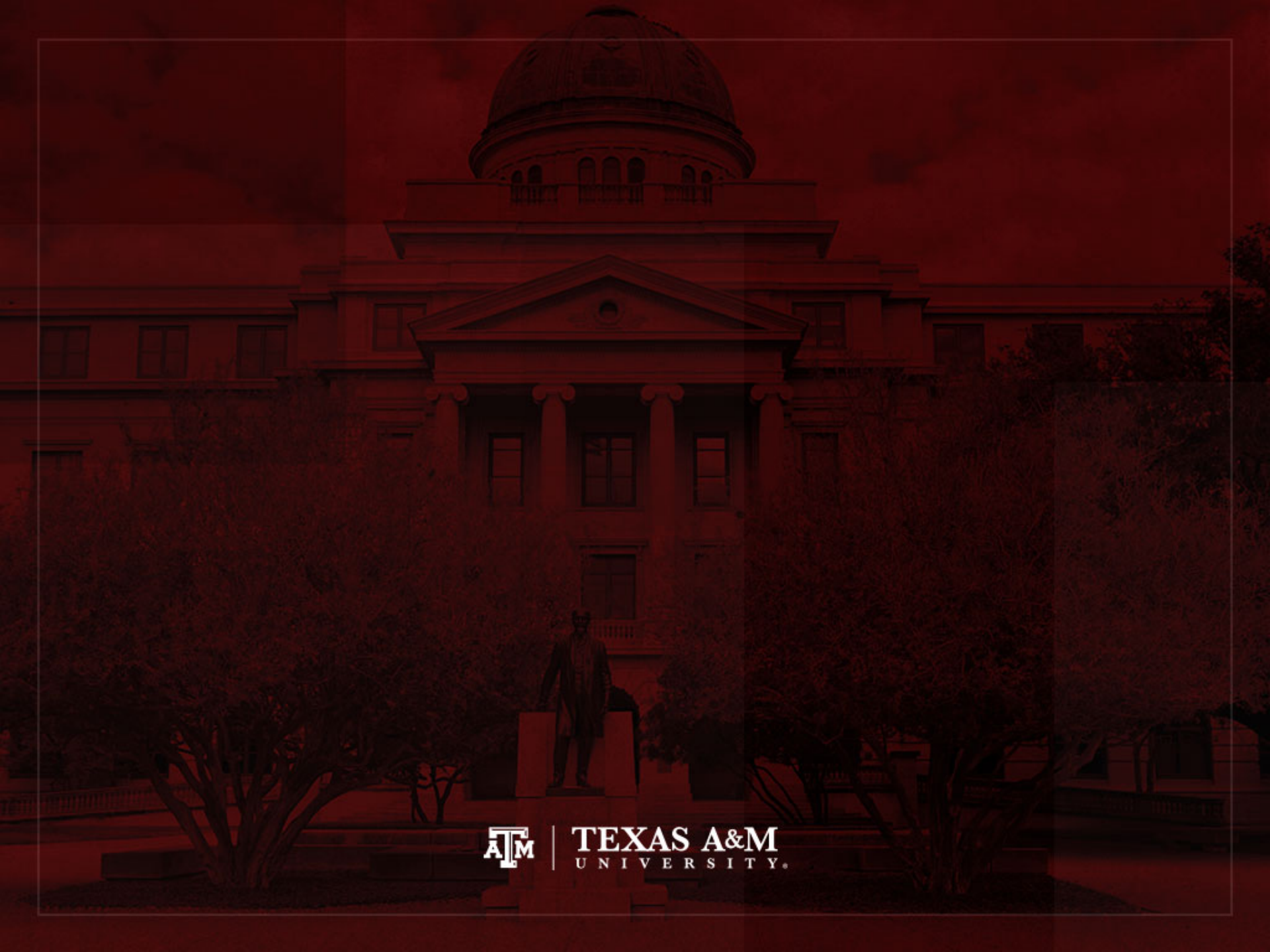
- Floating migration is the residential movement of crossing a political boundary without the government permission
  - Movers of this type of migration are known as **floaters**
  - They have not altered their permanent registration in a household registration office

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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Analysis of spatial association

(Anselin 1995)

- In spatial association analysis, we recognize that people are not randomly distributed over space
  - Spatial distribution is correlated with other variables
  - Especially with a large number of spatial observations (areas)
  - Assumption of stationarity (structural) stability over space is highly unrealistic

Exploratory spatial data analysis

- In exploratory spatial data analysis (ESDA)
  - The predominant approach to assess the degree of spatial association ignores the potential structural instability
  - It is based on global statistics, such as Moran's I

- Local indicator of spatial association (LISA) identifies local clusters and spatial outliers
  - LISA allows for the decomposition of global indicators into the contribution of each individual area

Source: Anselin 1995.

Local spatial autocorrelation

- LISA allows for a classification of significant locations as
  - **High-high** and **low-low** spatial clusters
  - **High-low** and **low-high** spatial outliers
- Reference to high and low is relative to the mean of the variable
  - It should not be interpreted in an absolute sense
- GeoDa software: an introduction to spatial data analysis
  - https://spatial.uchicago.edu/geoda

Source: https://geodacenter.github.io/workbook/6a_local_auto/lab6a.html.

LISA example

- Analyze concentration of internal migrants in areas of destination in the United States
  - Information on area of residence one year before the 2017 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)

Source: Amaral et al. 2019.

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

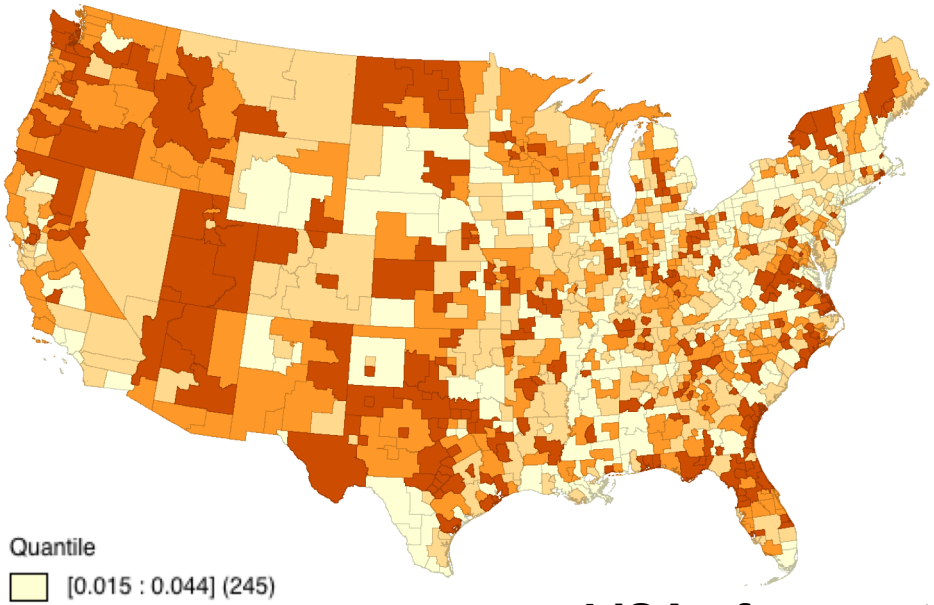
Source: Amaral et al. 2019.

Migration status

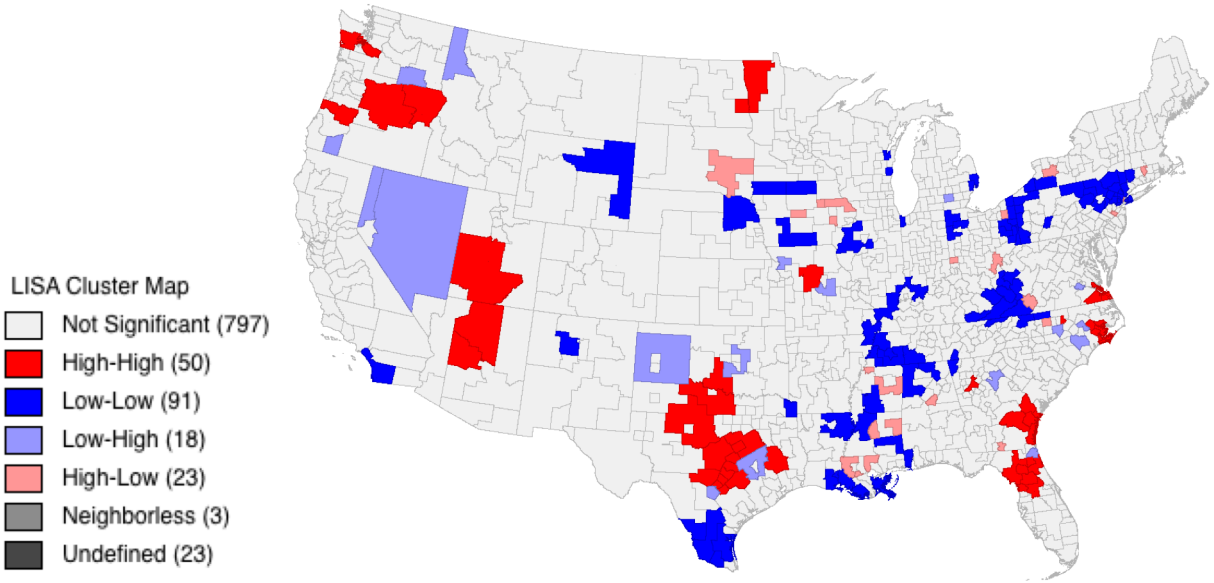
- Internal migrants (~5%)
  - Those who resided in another PUMA (or MIGPUMA) one year before the survey
- Non-migrants (~95%)
  - Those who resided in the same area in the previous year
- International migrants (~0.5%)
  - Those who resided in another country one year before the survey (not included in the following analysis)

Source: Amaral et al. 2019.

Proportion of internal migrants, 2016–2017



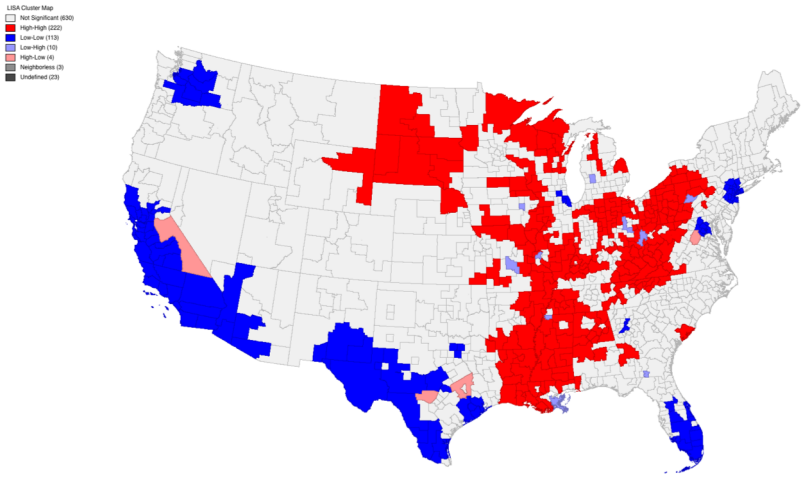
LISA of proportion of internal migrants, 2016–2017



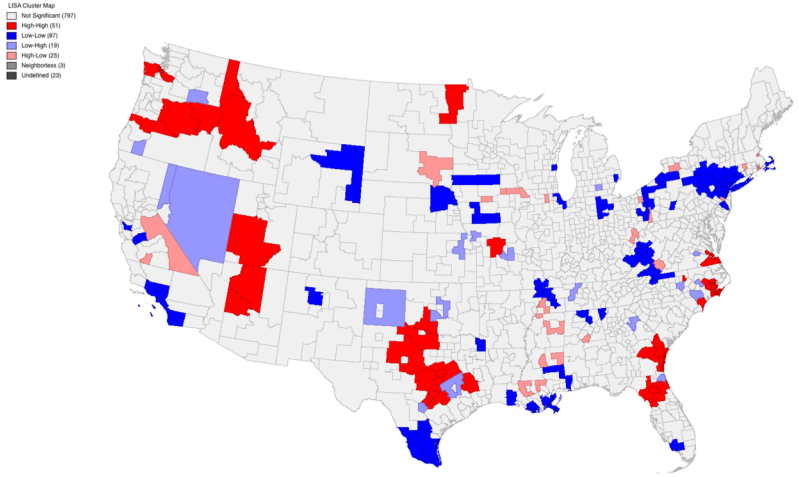
Source: Amaral et al. 2019.

Internal migrants are those who changed residence between 2016 and 2017

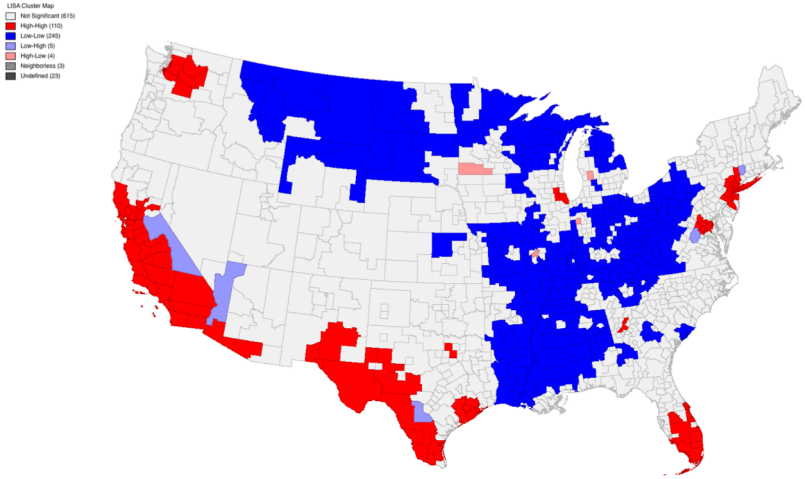
US-born non-migrants



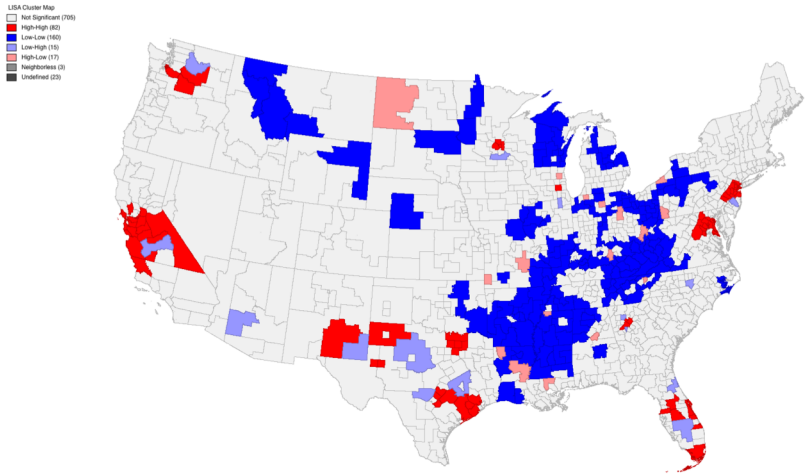
US-born internal migrants



Foreign-born non-migrants



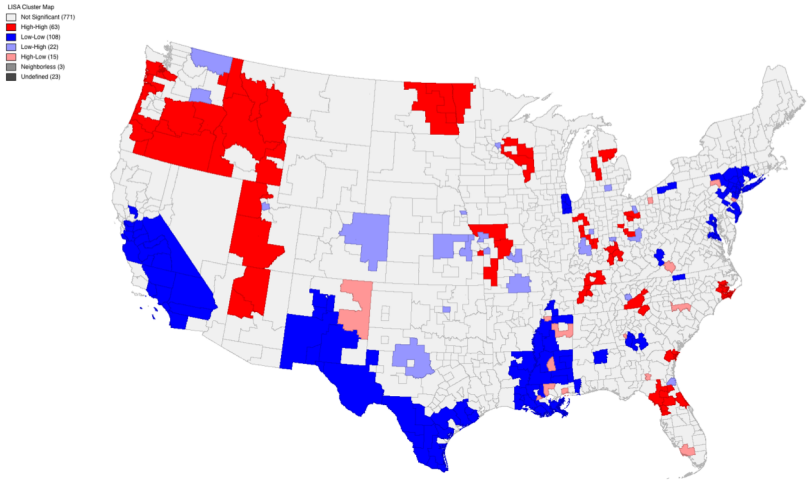
Foreign-born internal migrants



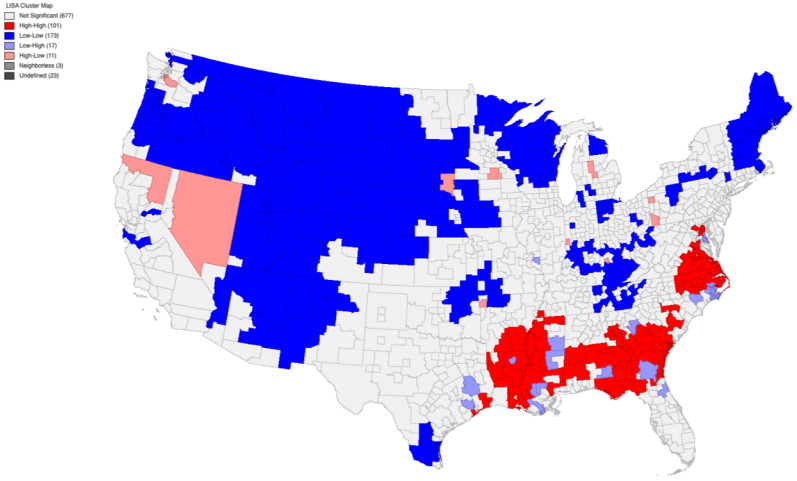
Source: Amaral et al. 2019.

All maps below are for internal migrants, 2016–2017

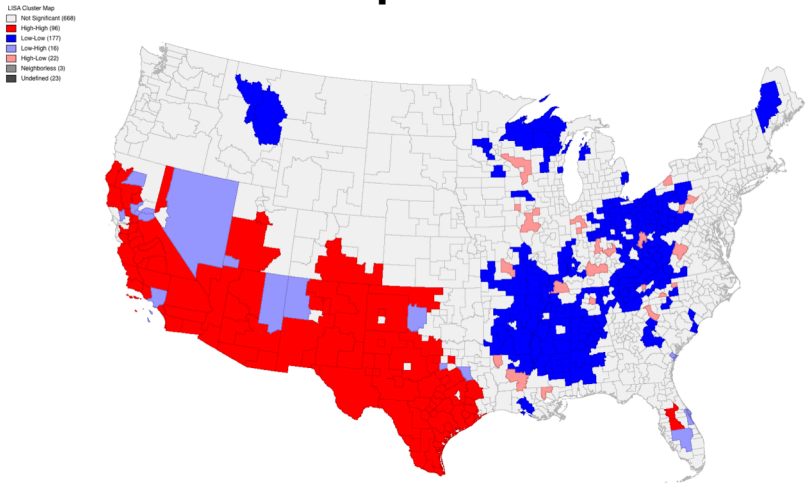
Non-Hispanic Whites



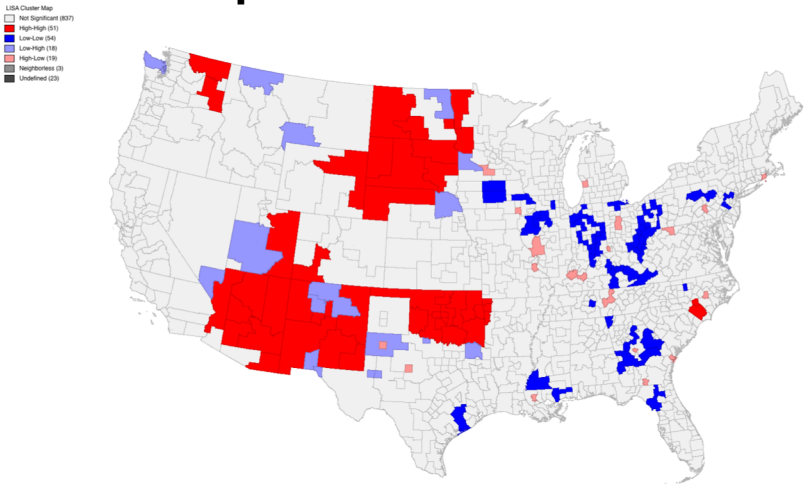
Non-Hispanic African Americans



Hispanics



Non-Hispanic Native Americans



Source: Amaral et al. 2019.

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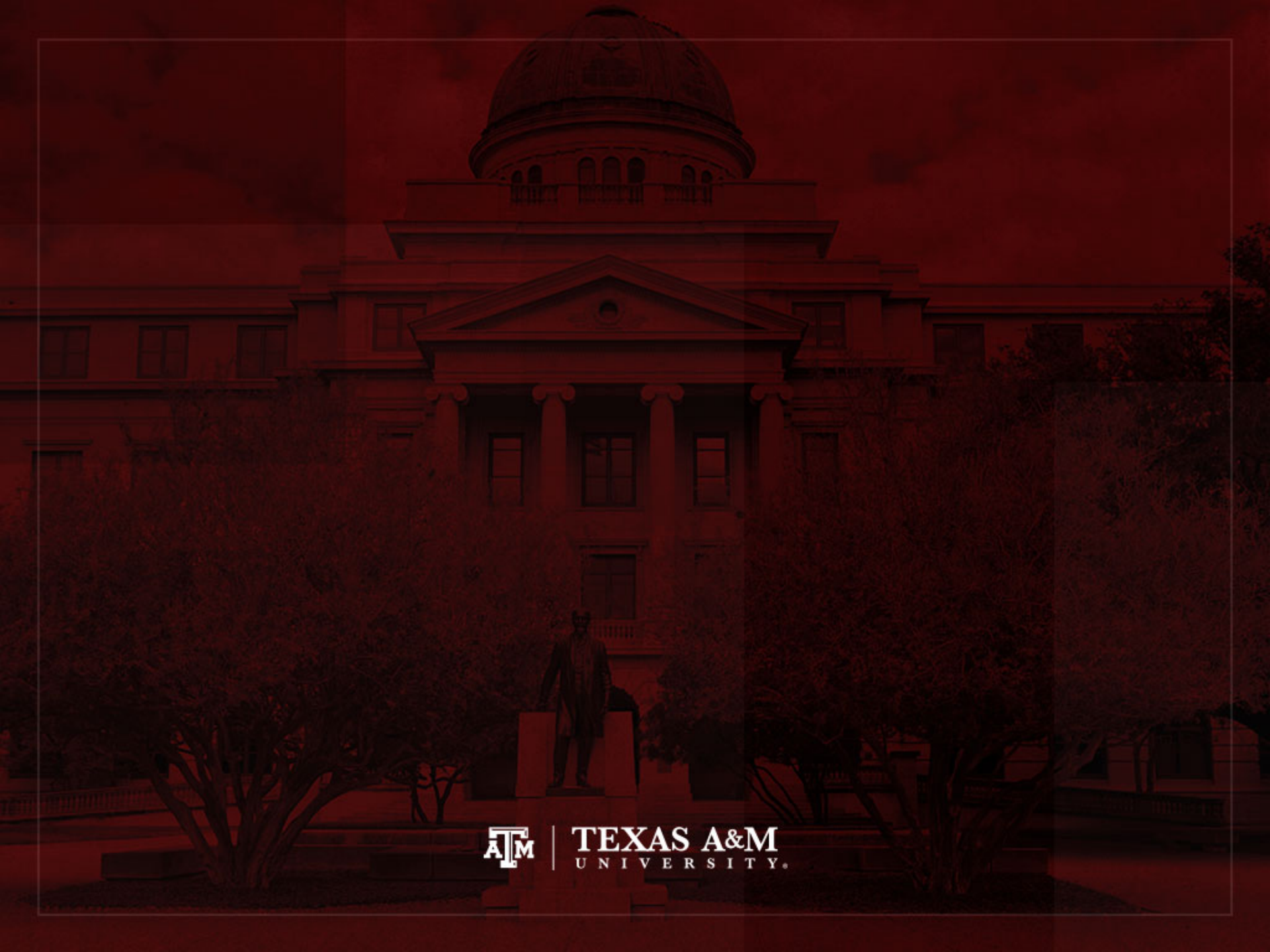
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