# Factors associated with internal migration at the local level in the United States

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# Objective

- Several studies described associations of socioeconomic and demographic characteristics with internal migration rates in the United States
  - There is less focus on the profile and spatial distribution of internal migrants
- We investigate
  - Factors associated with internal migration in recent years
  - Local indicators of spatial association to understand clusters of internal migrants

# Recent trends in migration

- The U.S. has been experiencing the lowest levels of internal migration since the late 1940s (Frey 2019)
  - 20% in 1950–1960
  - 9.8% in 2019

- Migration rates are higher for better educated, whites, African Americans, households without children, renters, unemployed (Molloy, Smith, Wozniak 2011; Moretti 2011)

# Reasons for decline

- Robust economy in 1950–1960 (Frey 2019)
- In more recent decades (Frey 2019)
  - Older population
  - Labor market more homogeneous across country
  - Telecommuting, jobs from home
  - 2008 economic recession
- Neoclassical theory emphasizes that people move to places with more job opportunities
  - Fewer people are changing jobs, which seems to be related with the decline of internal migration (Molloy, Smith, Wozniak, 2017)

# 2008 economic recession

- Low-skilled Mexican immigrants were more responsive to the 2008 economic crisis than low-skilled U.S.-born workers (Cadena, Kovak 2016)
  - Reallocation of immigrants within the U.S. diminished spatial differences between local labor markets
  - Low-skilled U.S.-born workers in areas with many Mexican immigrants were shielded from the crisis
- Social networks (Motel, Patten 2012)
  - Communities with large proportions of Mexican immigrants are more likely to facilitate the flexibility of these groups in the labor market

# Data and geographical areas

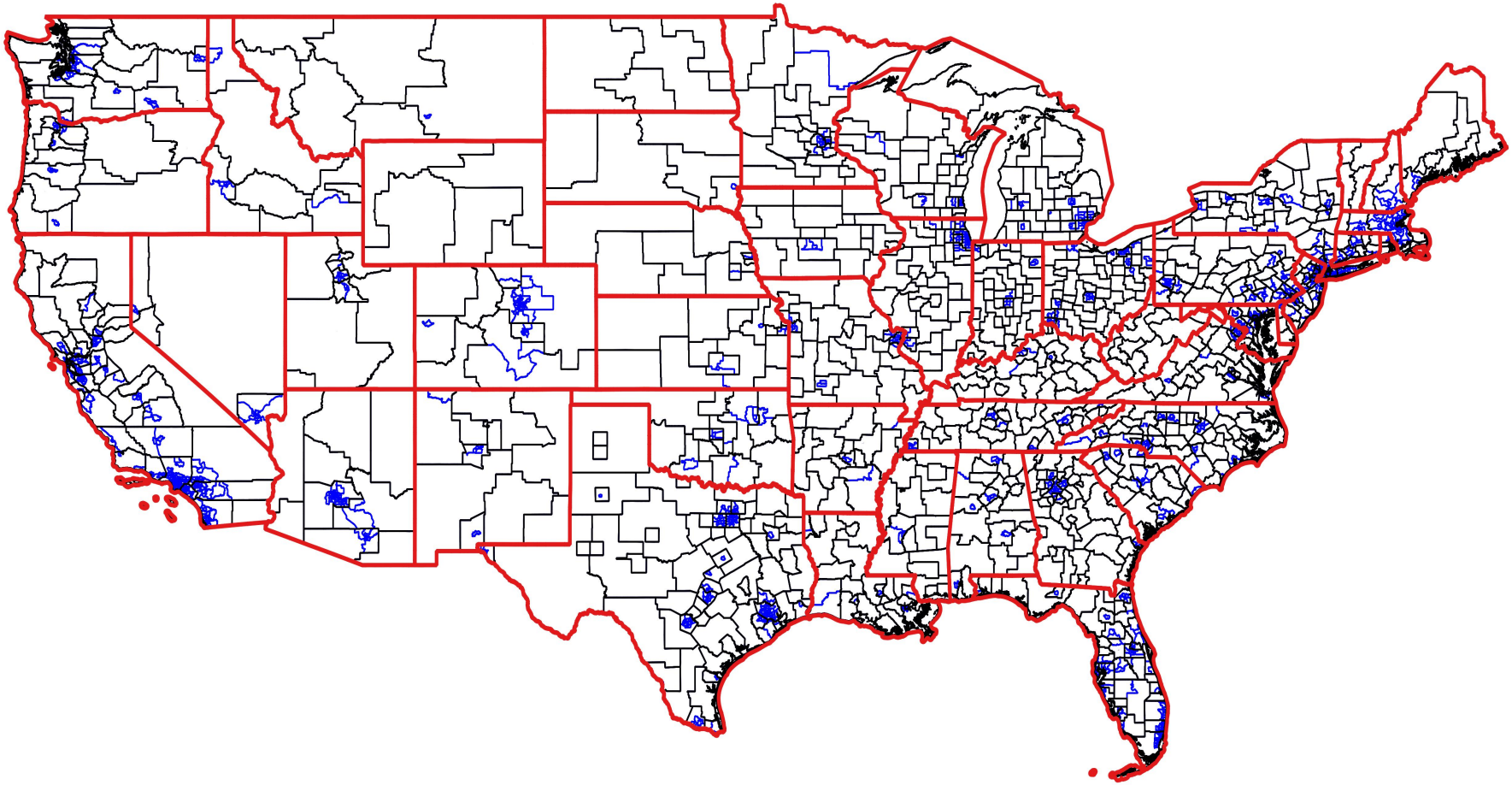
- We analyze spatial distributions of internal migrants with the 2005–2018 American Community Surveys
- Areas of destination (current residence)
  - Publicly available data has information on Public Use Microdata Areas (PUMAs) as the lowest level of geographic aggregation (100,000+ residents)
- Areas 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



# Migration status

- Internal migrants
  - Those who resided in another PUMA (or 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)

# Methods

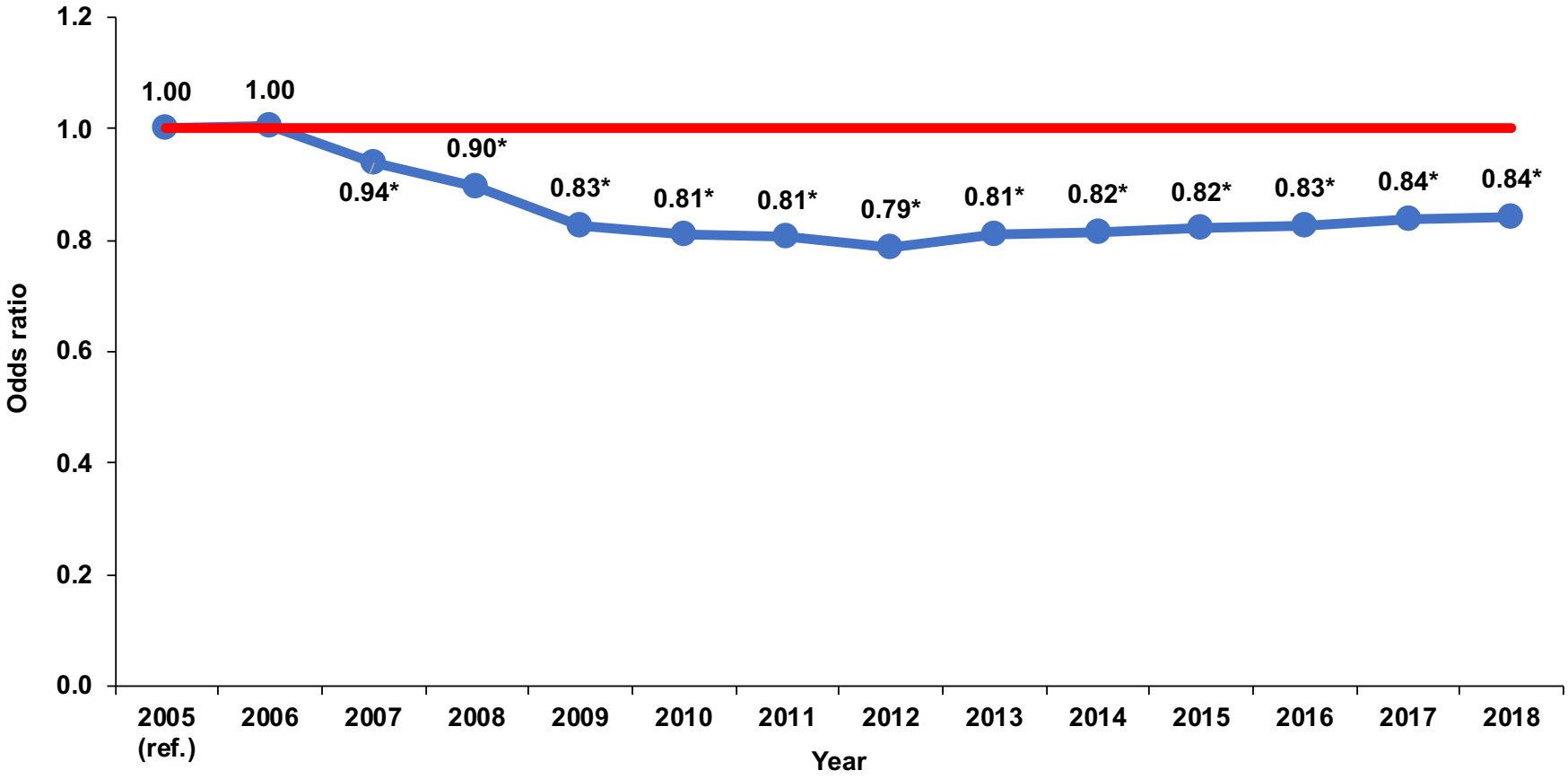
- Estimate factors associated with internal migration flows
  - 2005–2018 American Community Surveys (ACS)
  - Logistics models
  - Dependent variable: internal migrants vs. non-migrants
  - Sample size: 33,453,699 (only people aged 18+)
- Analysis of spatial association of proportion of internal migrants
  - 2017 ACS: focus on area of destination
  - Local indicators of spatial association (LISA)

# Logistic regressions

- Independent variables
  - Year
  - Sex
  - Age group
  - Educational attainment
  - Marital status
  - Citizenship
  - Nativity (foreign born, U.S. born)
  - Race/ethnicity
  - At least one child in the household
  - Homeownership
  - Region of residence one year ago
- Interaction
  - Nativity * race/ethnicity
- For people 18+
  - In school
  - Speak English
  - Any disability
  - Occupation and employment status
  - Top 50% income

**Note: Based on Molloy, Smith, Wozniak (2011, 2017).**

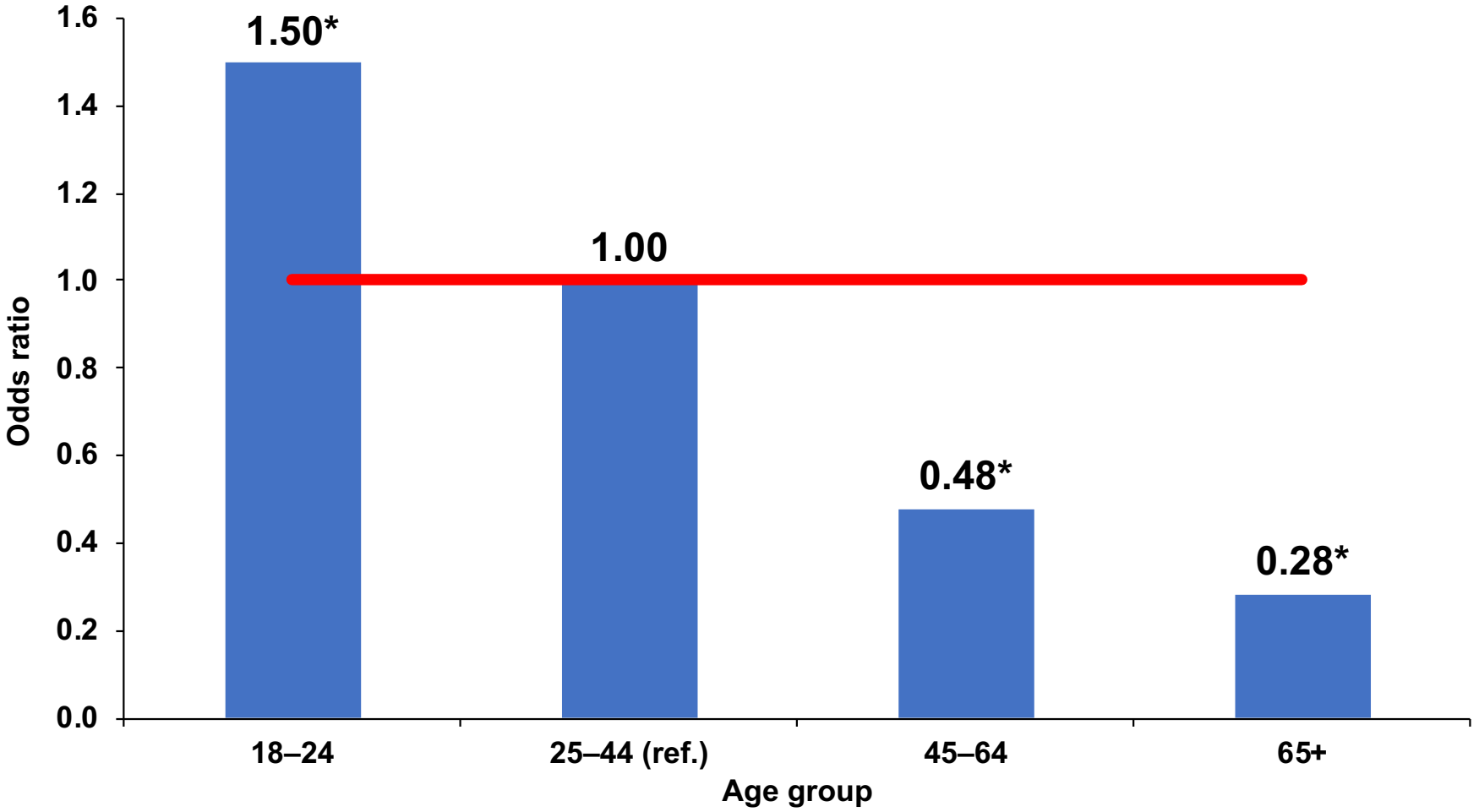
# Odds ratios of being an internal migrant by year




**Note: Only for people aged 18+. * Significant at p<.01.**

**Source: 2005–2018 American Community Surveys.**

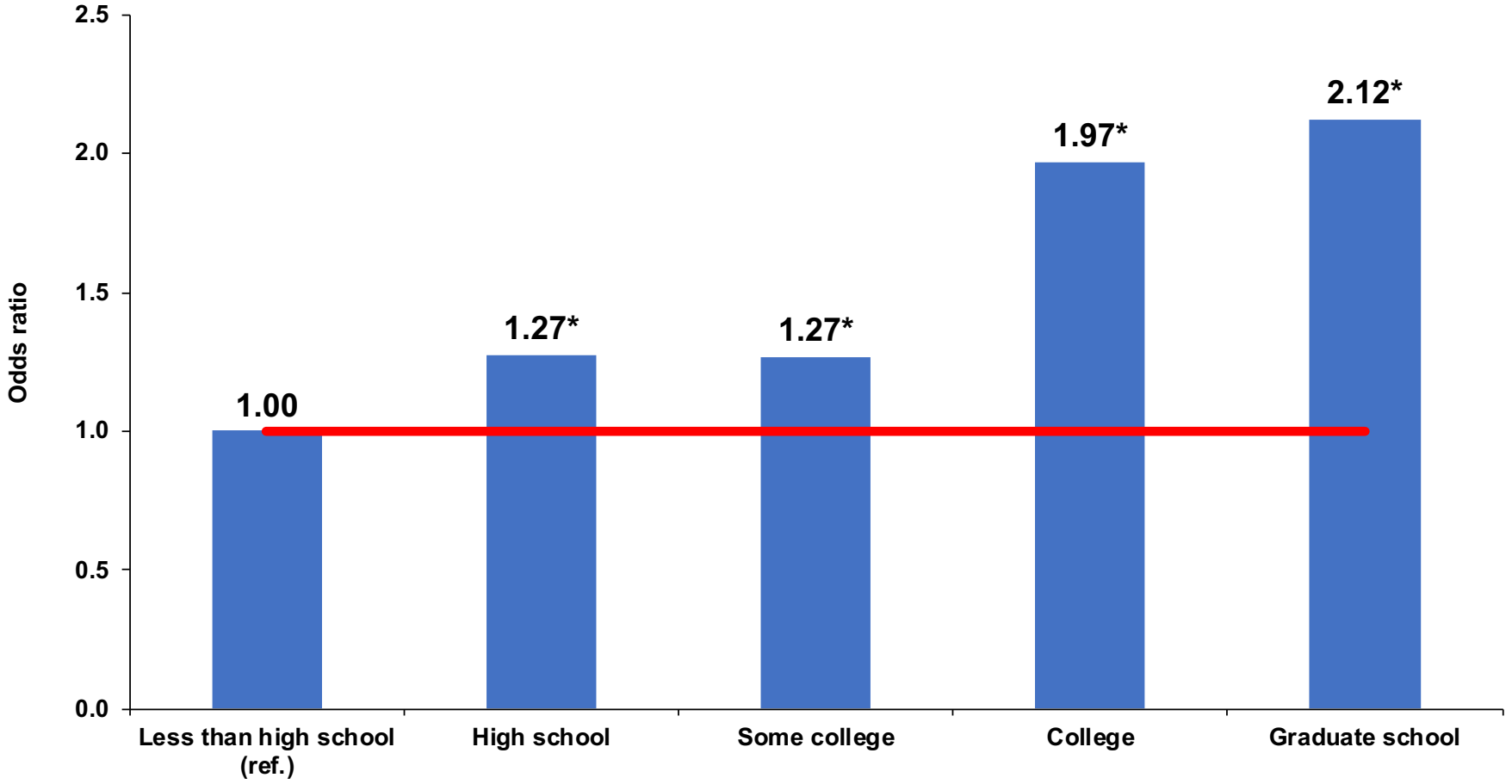
# Odds ratios of being an internal migrant by age group




Note: Only for people aged 18+. * Significant at p<.01.

Source: 2005–2018 American Community Surveys.

# Odds ratios of being an internal migrant by educational attainment




**Note: Only for people aged 18+. * Significant at p<.01.**

**Source: 2005–2018 American Community Surveys.**

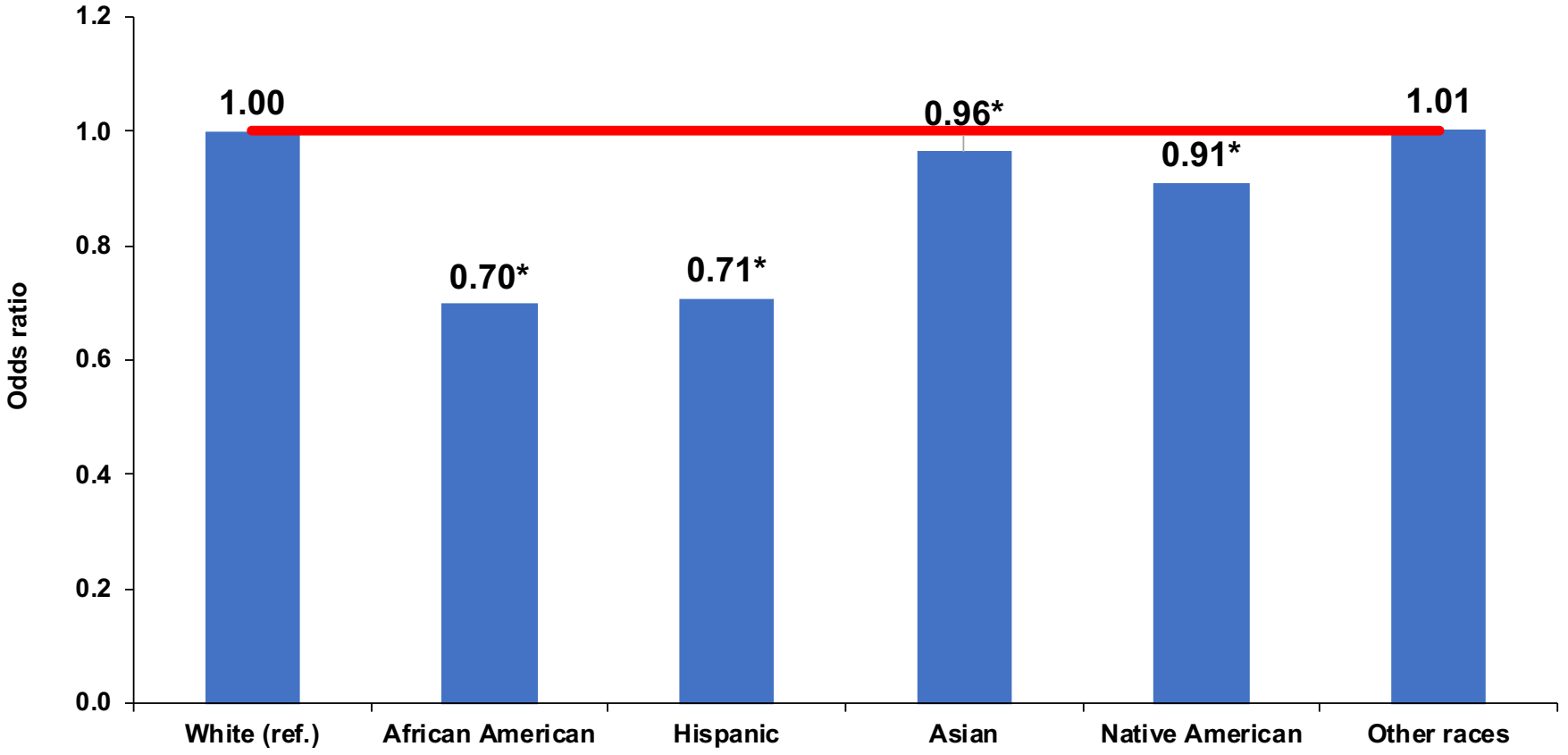
# Odds ratios, selected variables

- Citizenship
  - Non-citizen (ref.): 1.00
  - Citizen: 1.07*
- Nativity
  - U.S. born (ref.): 1.00
  - Foreign born: 0.90*

**Note: Only for people aged 18+. * Significant at p<.01.**

**Source: 2005–2018 American Community Surveys.**

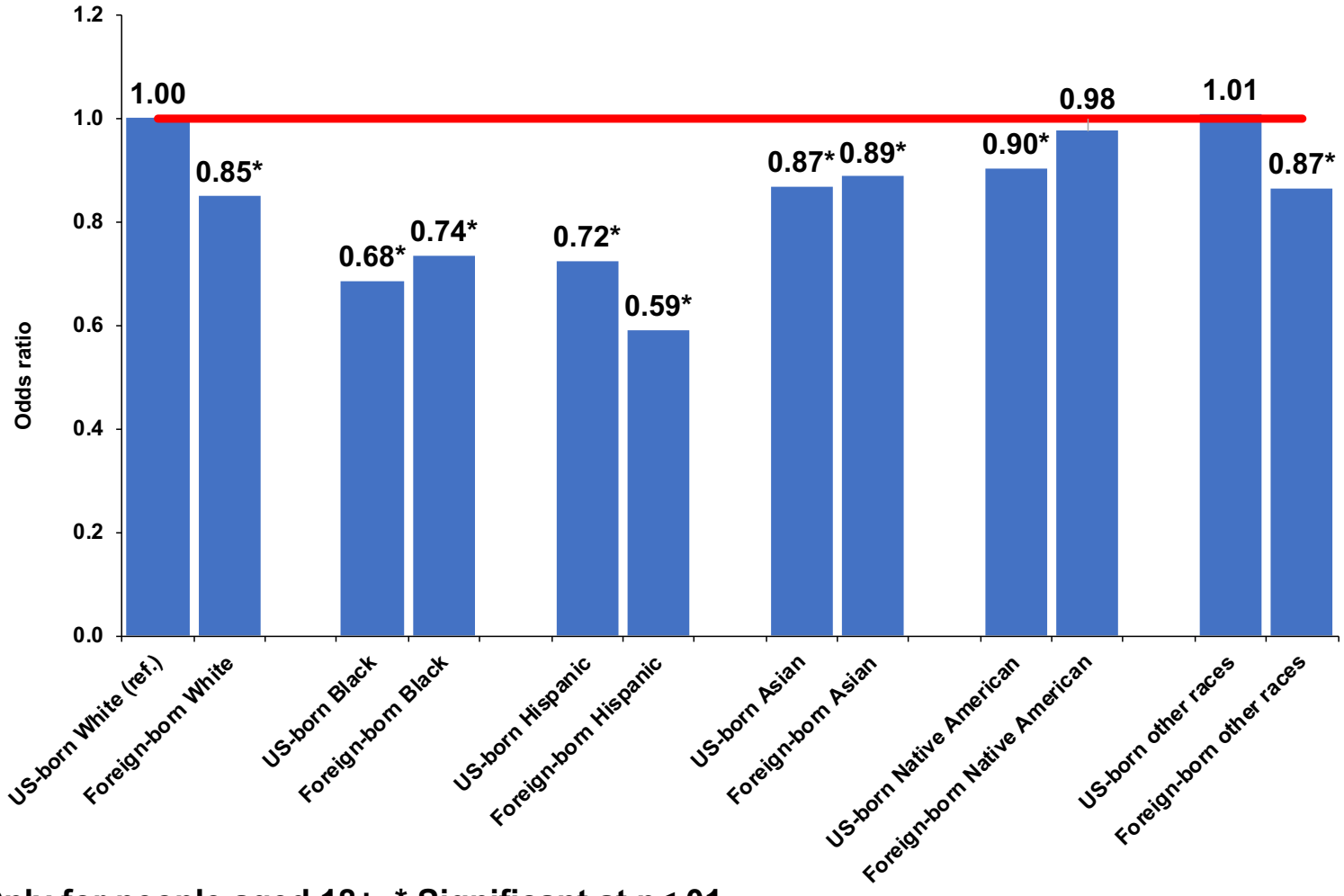
# Odds ratios of being an internal migrant by race/ethnicity




Note: Only for people aged 18+. * Significant at p<.01.

Source: 2005–2018 American Community Surveys.

# Odds ratios of being an internal migrant by nativity and race/ethnicity




**Note: Only for people aged 18+. * Significant at p<.01.**

**Source: 2005–2018 American Community Surveys.**

# Analysis of spatial association

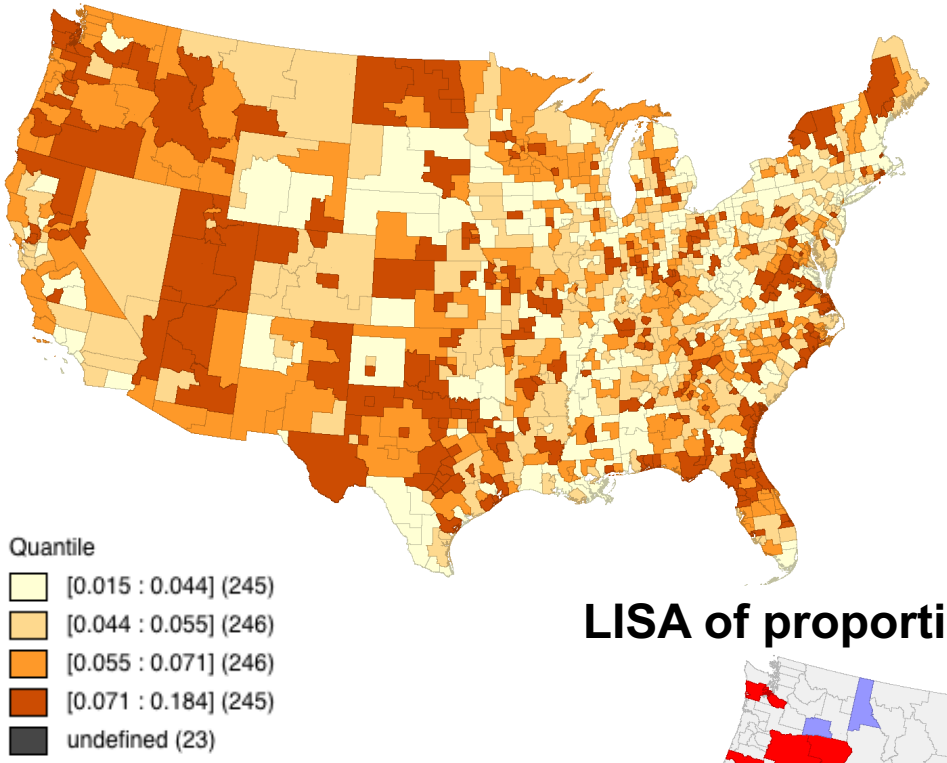
- In spatial association analysis, we recognize that people are not randomly distributed over space
- Local indicator of spatial association (LISA) identifies local clusters and spatial outliers
  - LISA allows for the decomposition of global indicators into the contribution of each individual area (Anselin 1995)
- We analyze concentration of internal migrants in areas of destination in the U.S.

# Local spatial autocorrelation

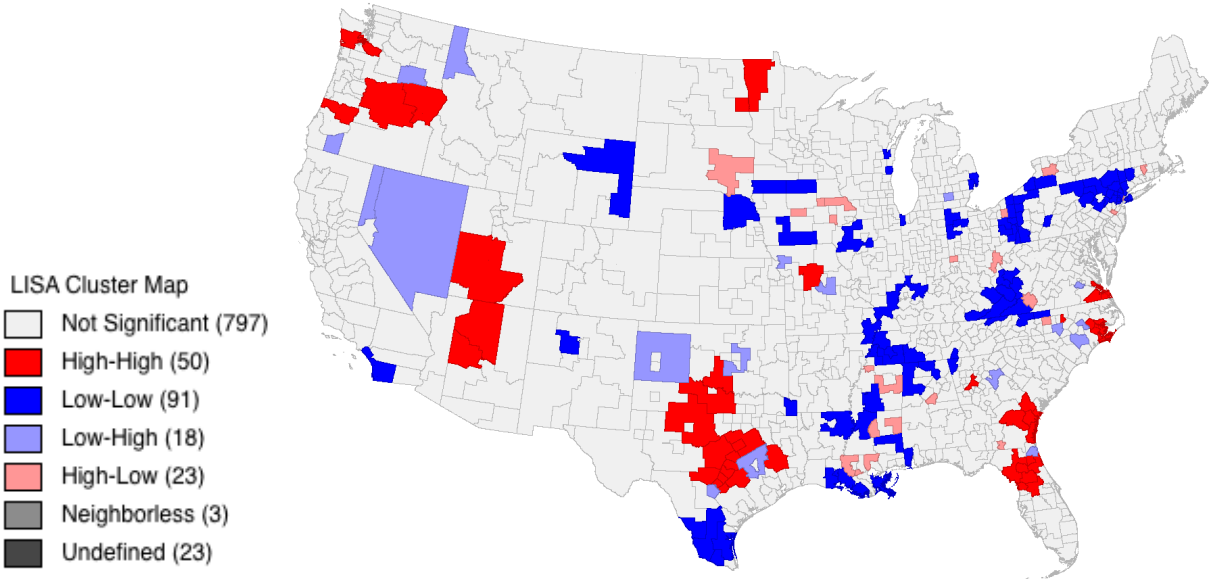
- LISA allows for a classification of significant locations as
  - **High-high** and **low-low** spatial clusters
  - **High-low** and **low-high** spatial outliers

- Reference to high and low is relative to the mean of the variable
  - It should not be interpreted in an absolute sense

# Proportion of internal migrants, 2016–2017



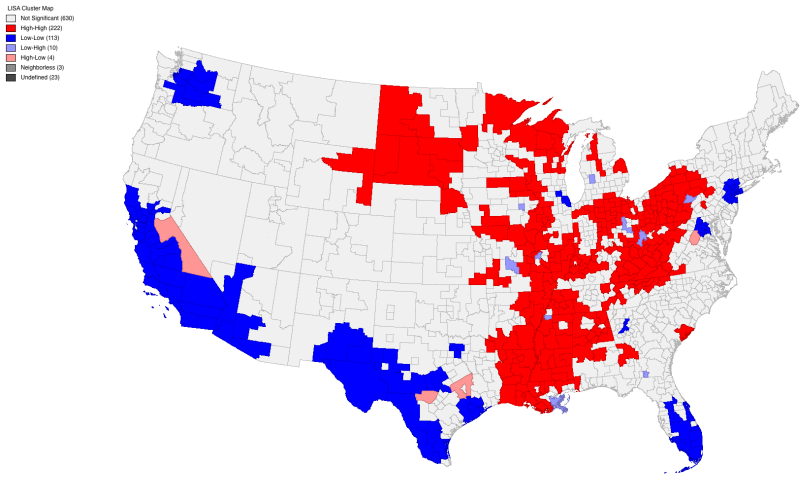

# LISA of proportion of internal migrants, 2016–2017



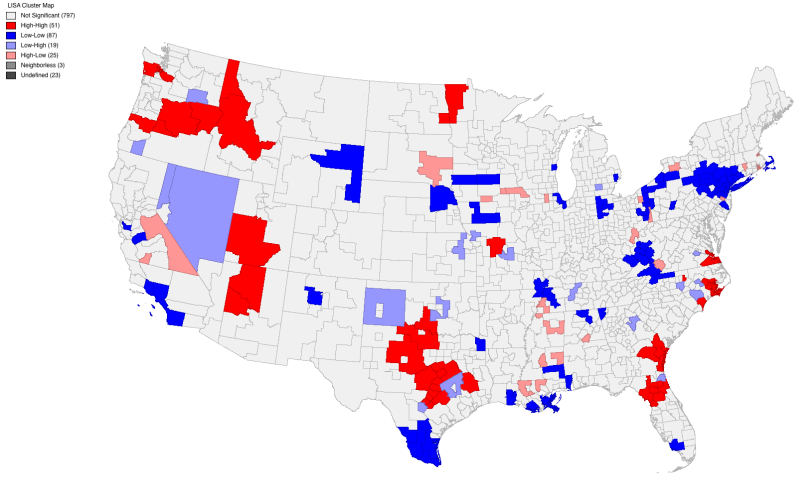

Source: 2017 American Community Survey.

# Internal migrants are those who changed residence between 2016 and 2017

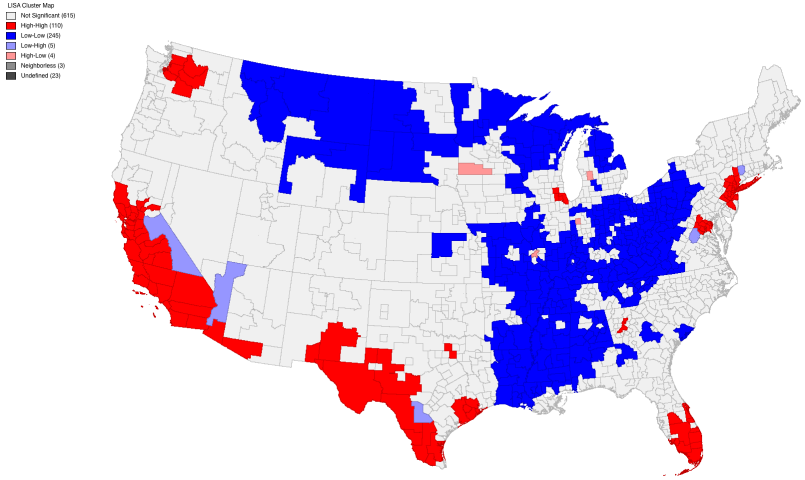
## US-born non-migrants



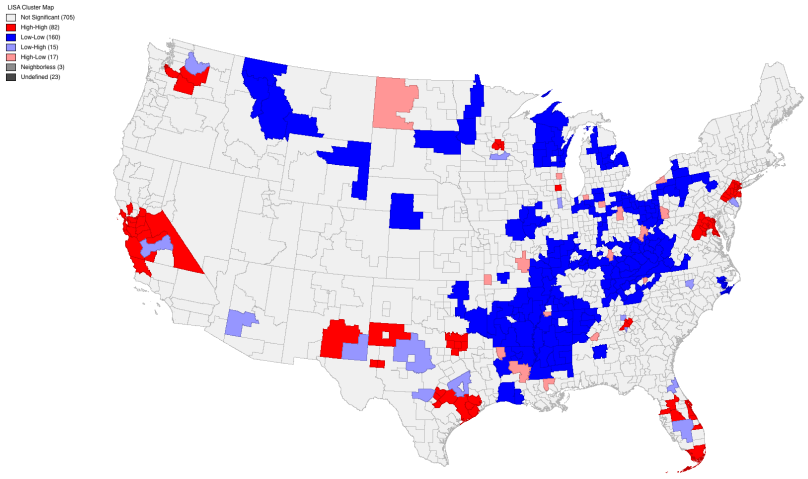

## US-born internal migrants




## Foreign-born non-migrants



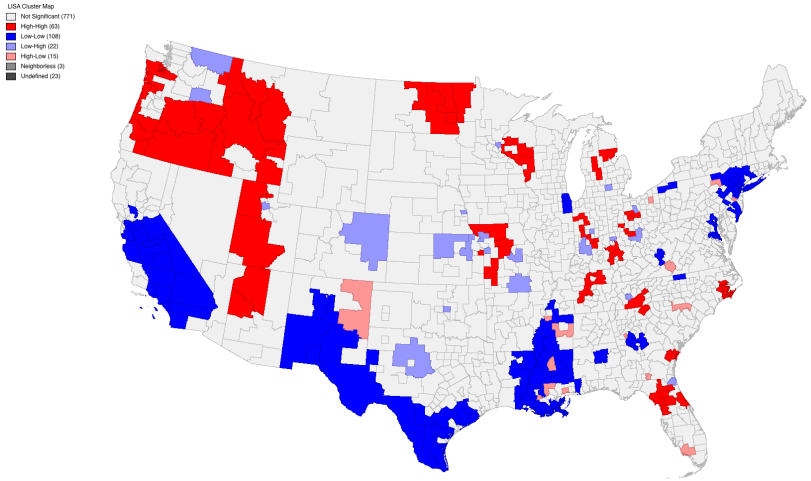

## Foreign-born internal migrants



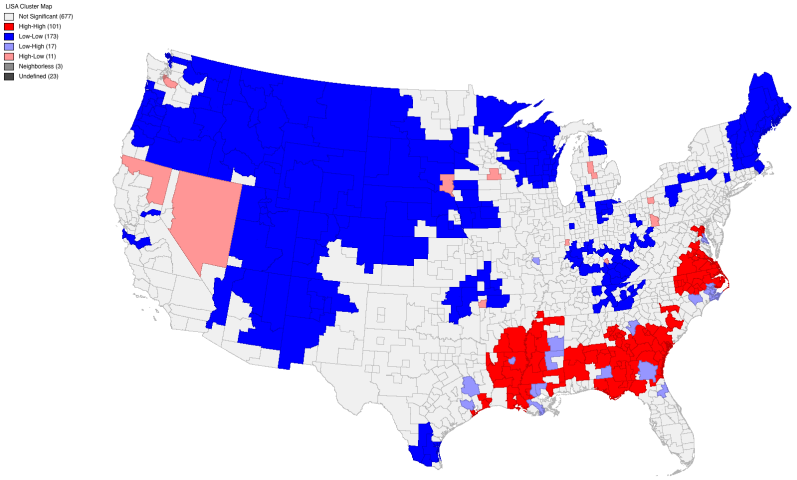

Source: 2017 American Community Survey.

# All maps below are for internal migrants, 2016–2017

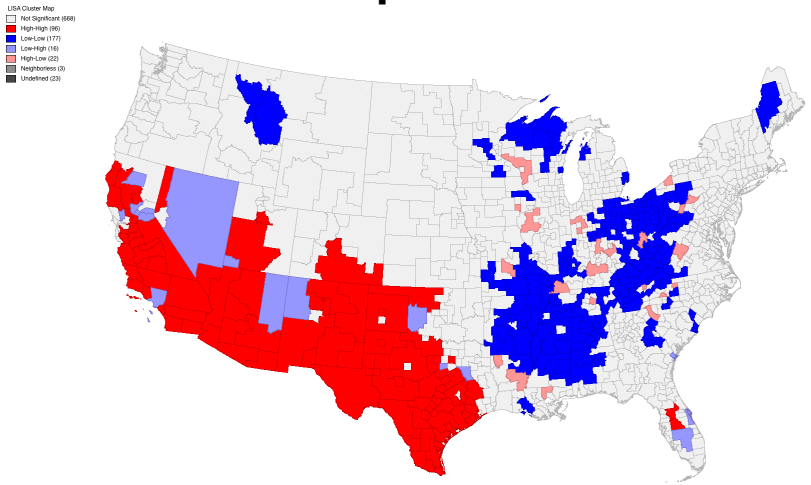
## Non-Hispanic Whites



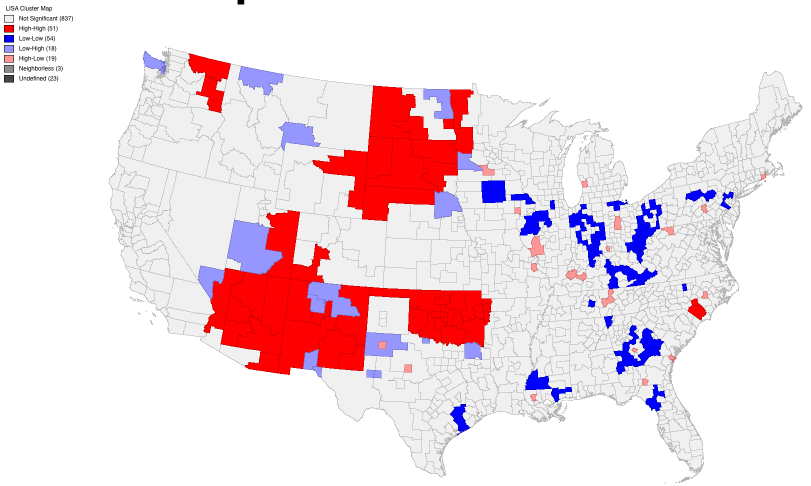

## Non-Hispanic African Americans




## Hispanics




## Non-Hispanic Native Americans




Source: 2017 American Community Survey.

# Final considerations

- Factors associated with migration rates similar to previous findings (Molloy, Smith, Wozniak 2011; Moretti 2011)
- Neoclassical theory (Molloy, Smith, Wozniak, 2017)
  - People move to areas with more jobs
  - Areas in Midwest with economic issues still have higher concentration of non-migrants
- Social networks (Motel, Patten 2012)
  - Spatial patterns of internal migration vary for different nativity and race/ethnicity groups
  - Areas with large proportions of specific race/ethnicity groups are attracting more of these groups

# Next steps

- We will continue this analysis by incorporating 1950–2000 Decennial Censuses
  - Analyze restricted data at the Texas Research Data Center (TXRDC) at Texas A&M University
- Estimate more refined models
  - Gravity models: distance among areas
  - Spatial dependence: influence of neighboring areas at origin and destination
  - Bayesian statistical approach: use priors based on other data sources and historical trends

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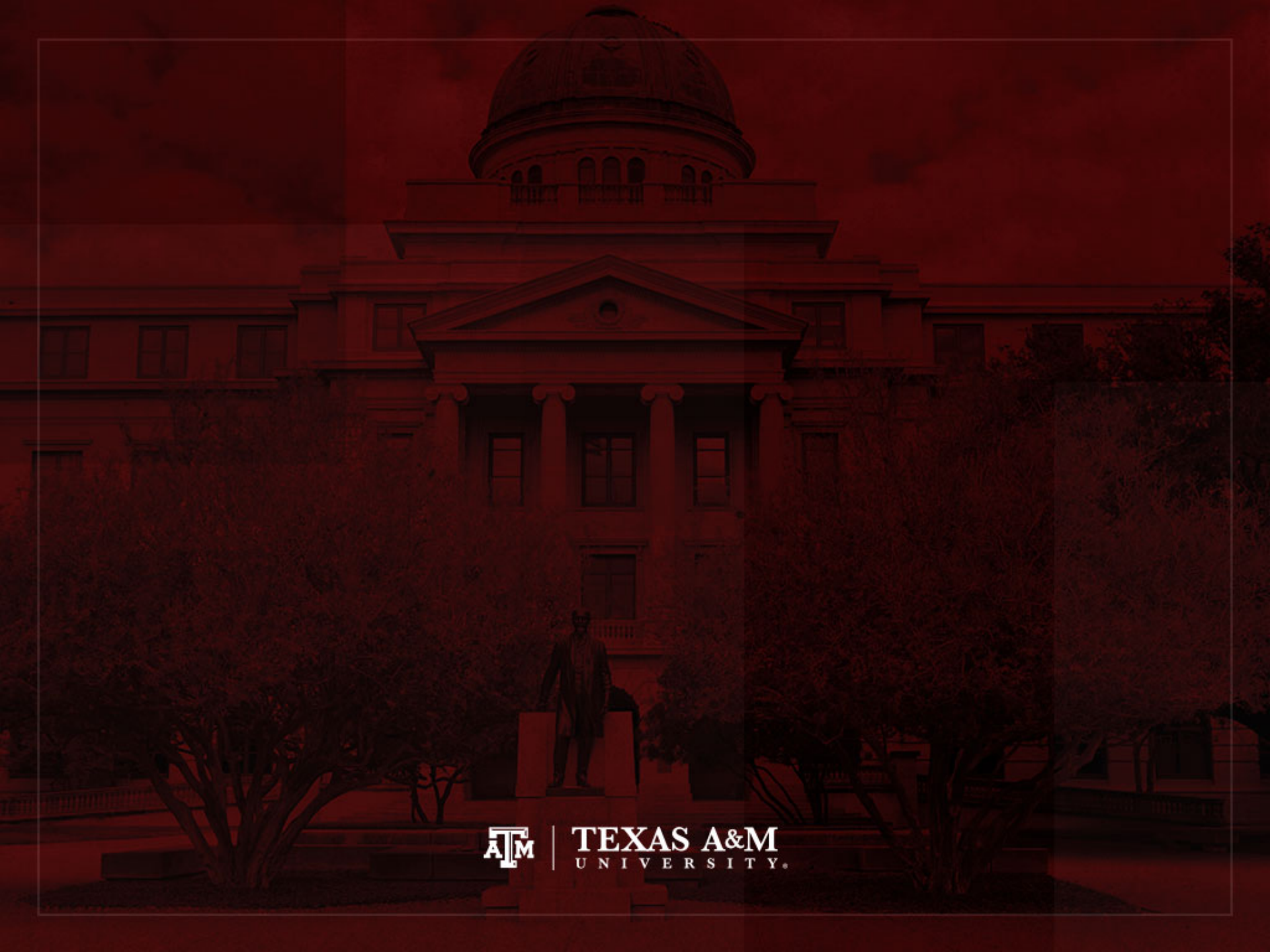
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