

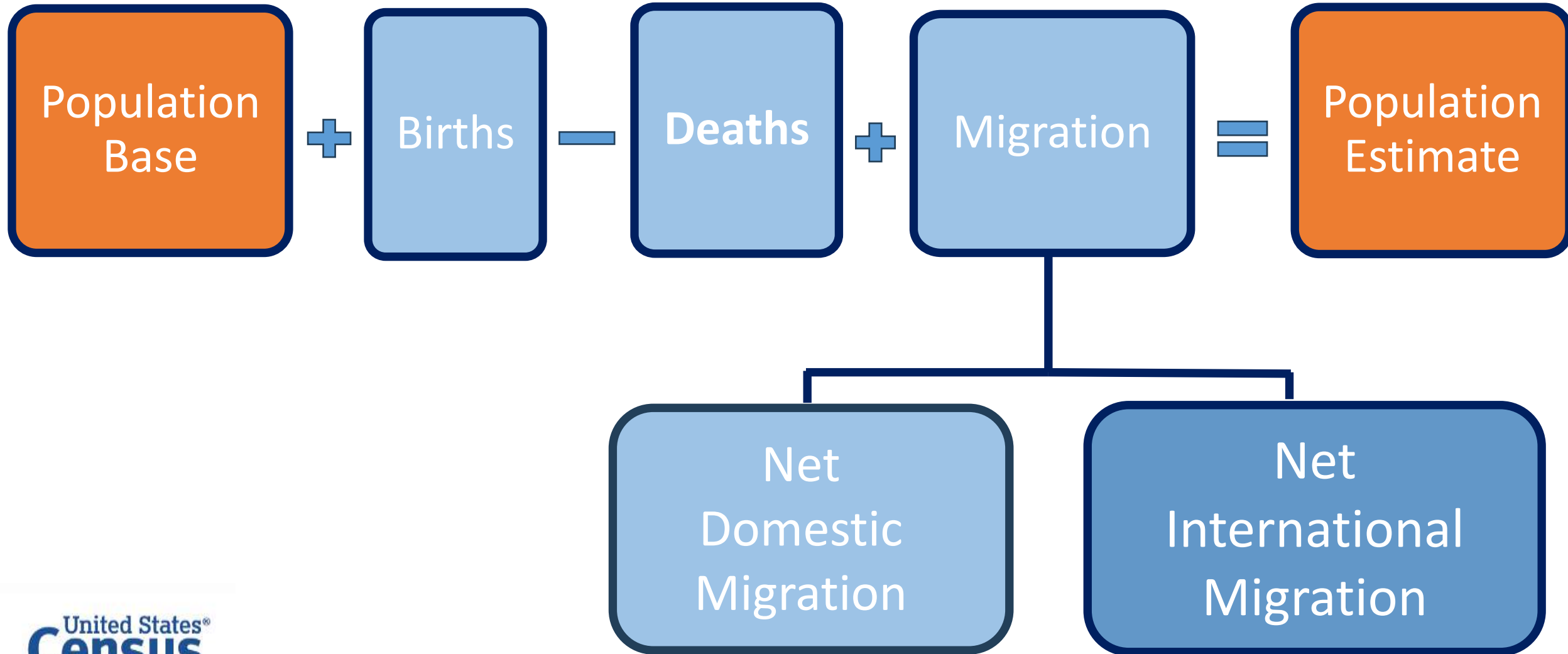
# Measuring Emigration from the United States: Past, Present, and Future Approaches

Esther R. Miller

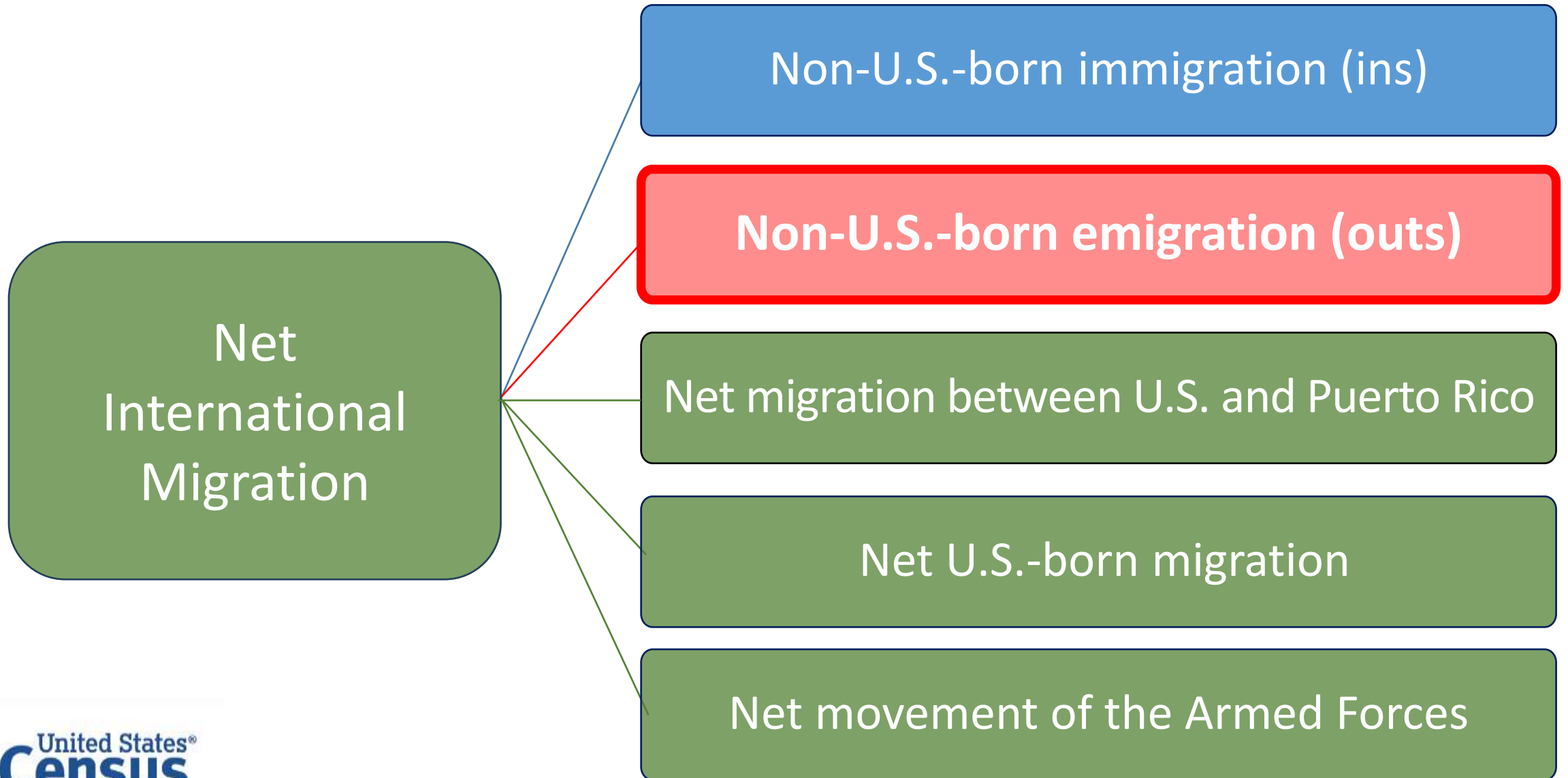
U.S. Census Bureau

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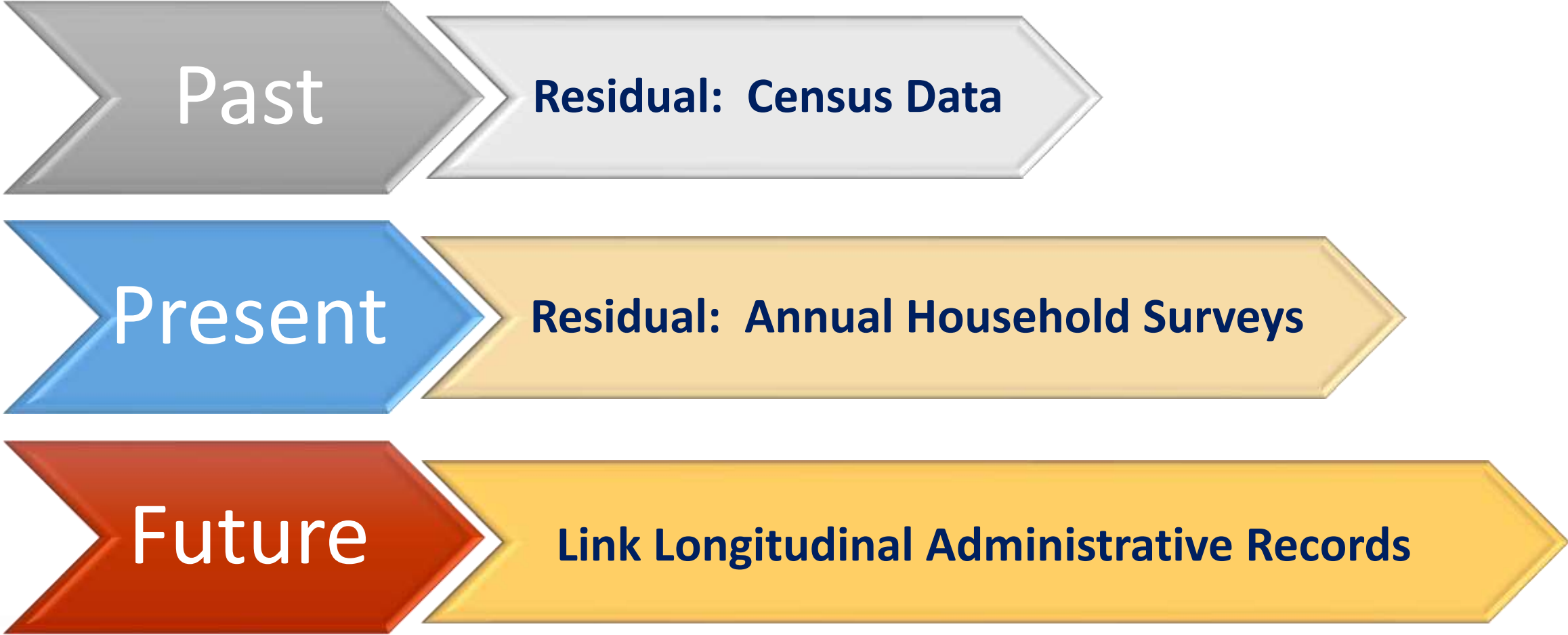
# Demographic Balancing Equation for Population Estimates



# Components of Net International Migration



# Approaches to Estimate Emigration of the Non-U.S.-born Population



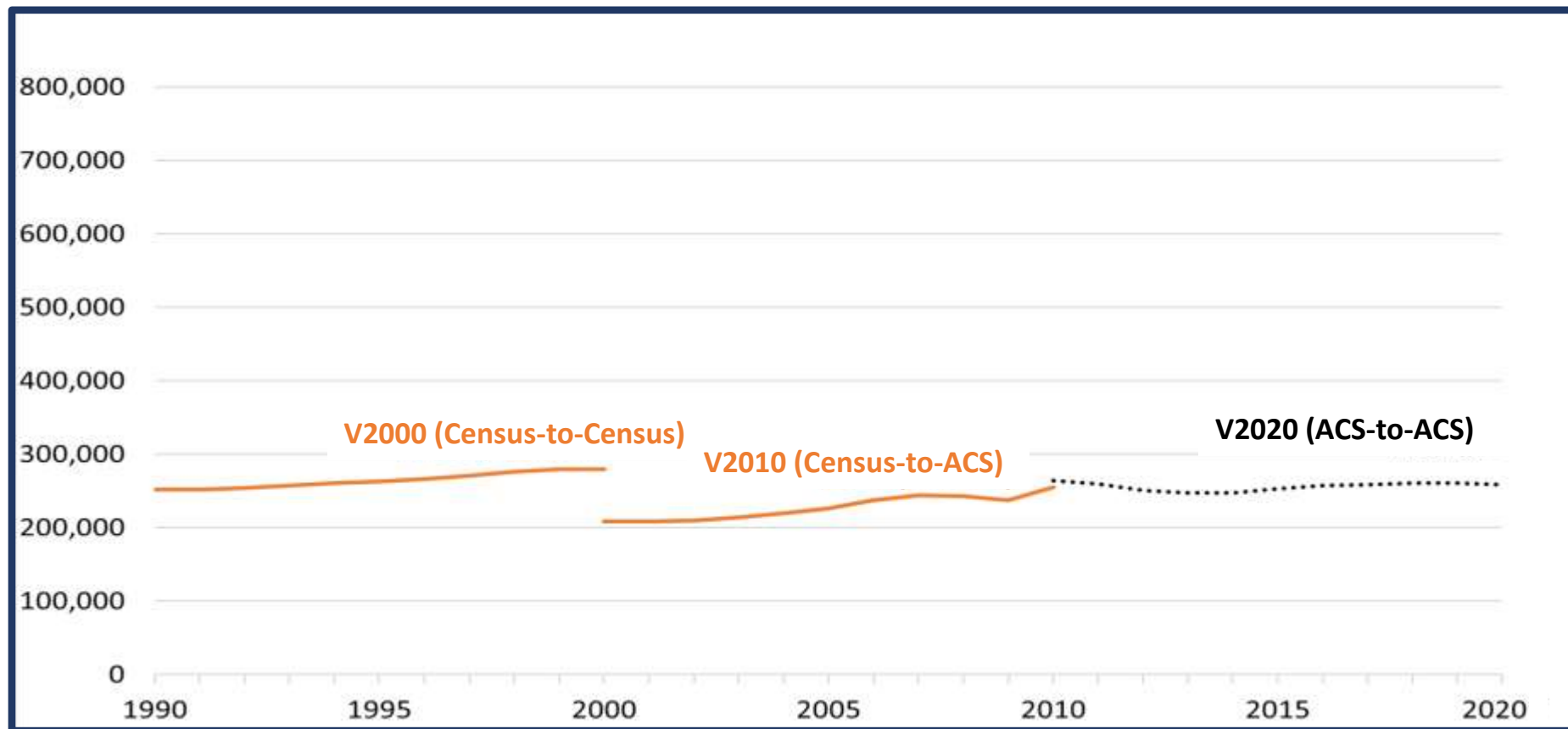


Past

Residual:  
Census

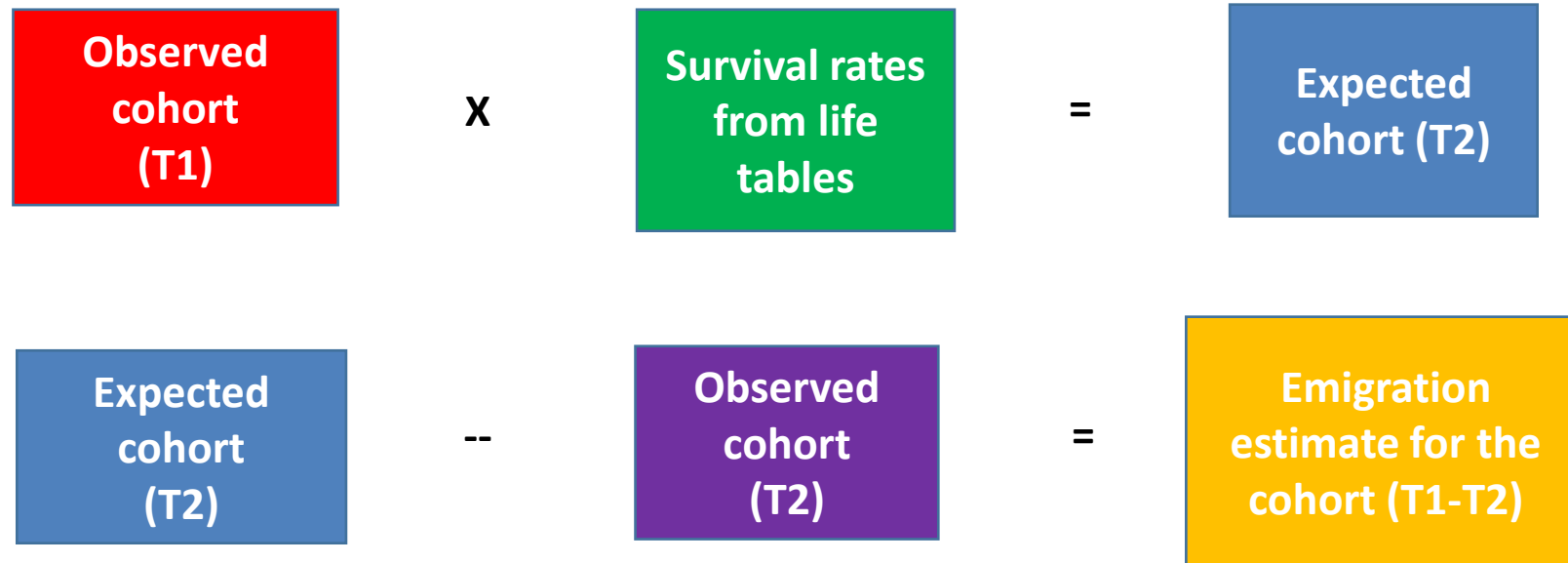
# Estimates of Non-U.S.-born Emigration Using 10-Year Residuals: 1990 - 2020

- Rates held constant for V2000 and V2010
- Pattern expected given stability of responses to American Community Survey (ACS)



U.S. Census Bureau, Population Division, Internal Simulations

# Explanation of Residual Emigration Estimates



# ACS Questionnaire Changes Affect Estimate of Immigration

- Questionnaire changes led to higher numbers of *recent* immigrants measured in Time 2
- Increase in recent immigrants will increase emigration rates/estimates

## Before 2015

**9** When did this person come to live in the United States? *Print numbers in boxes.*

Year

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## 2015-present

**9** When did this person come to live in the United States? *If this person came to live in the United States more than once, print latest year.*

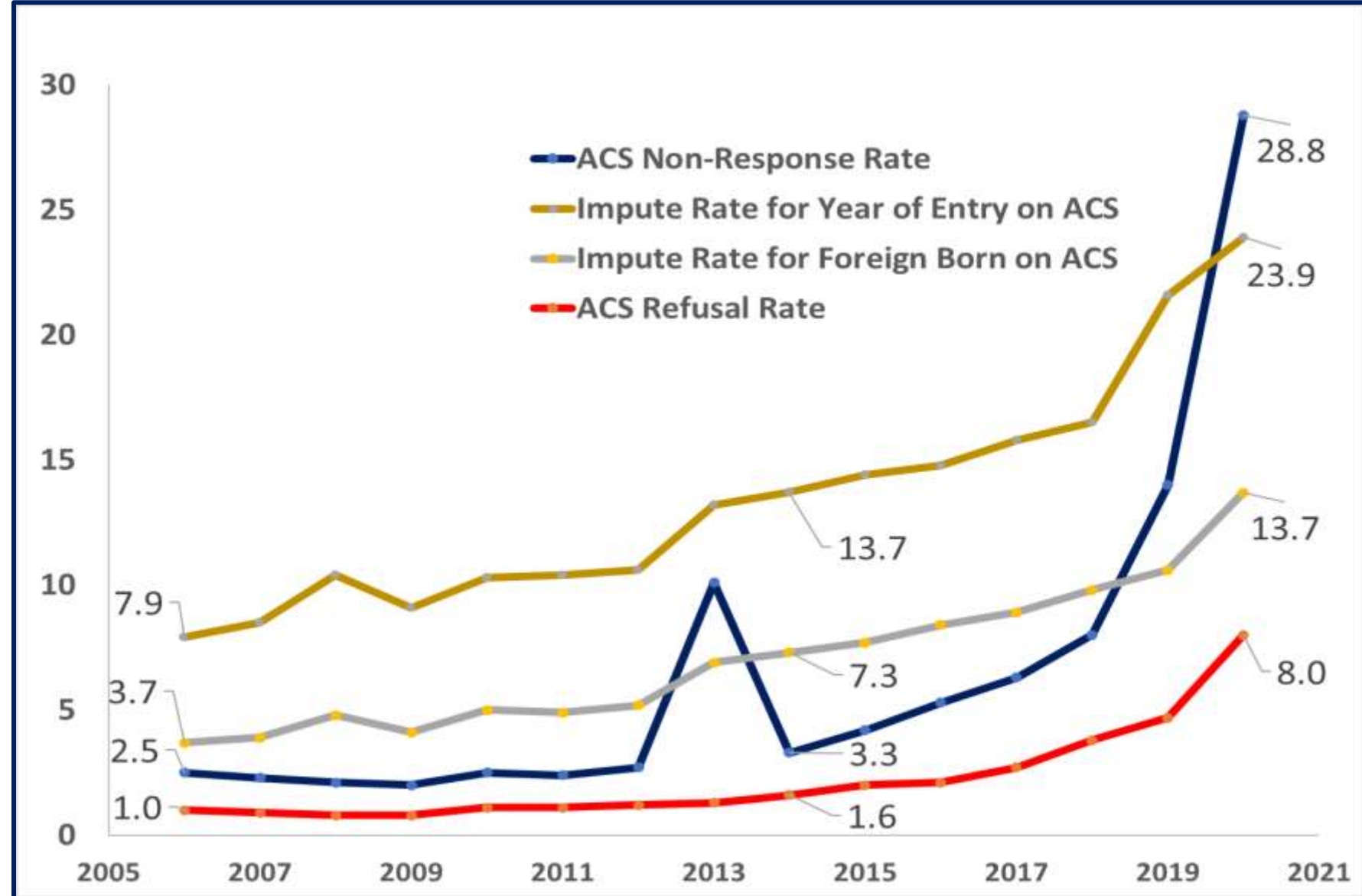
Year

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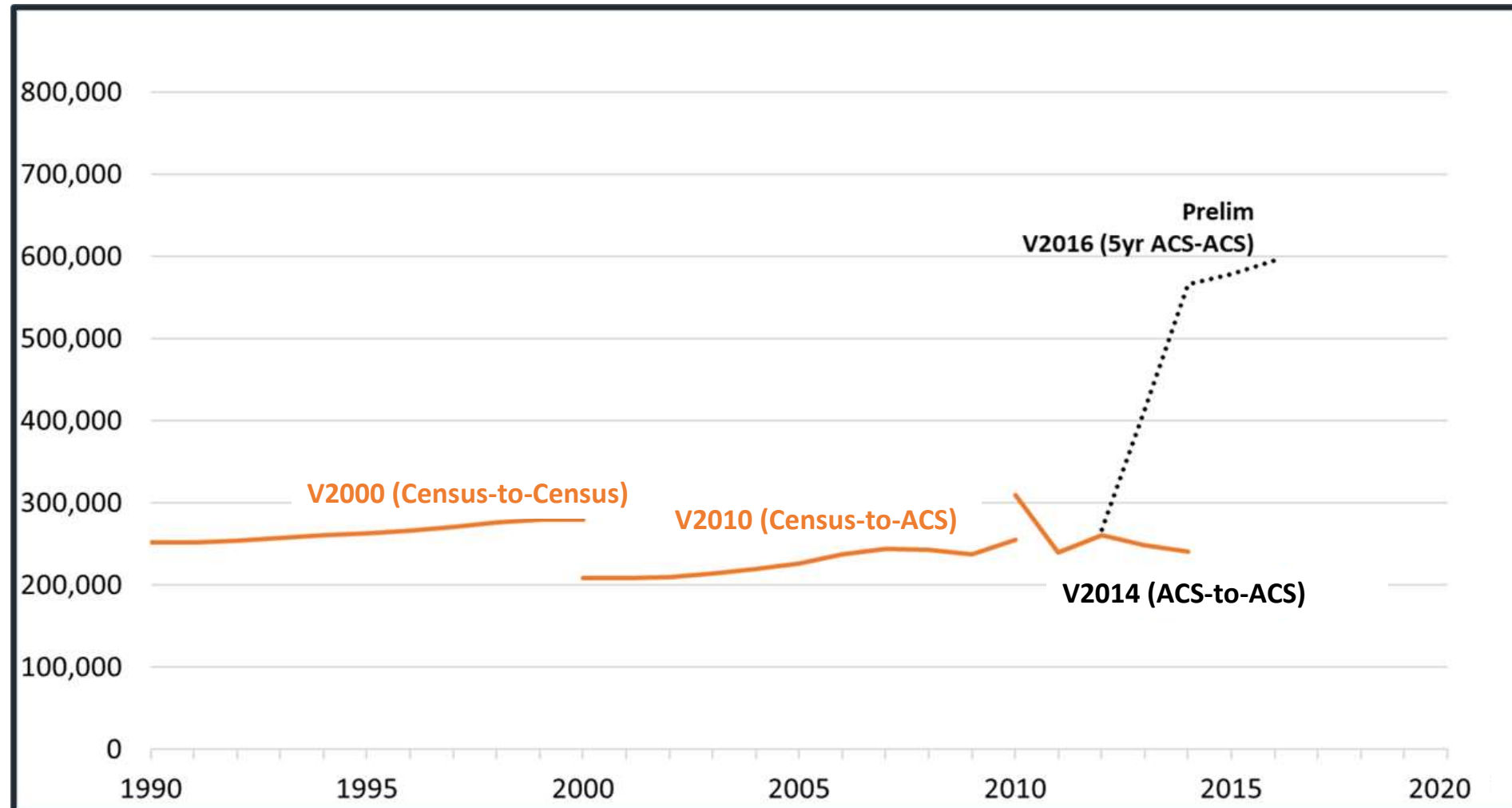
# Data Quality Measures in the ACS Survey: 2005-2021

- Increases in non-response, refusal, and imputation rates lead to lower quality data
- Lower quality of data affects estimates of the population and immigration
- Ultimately affects estimates of emigration (residual)



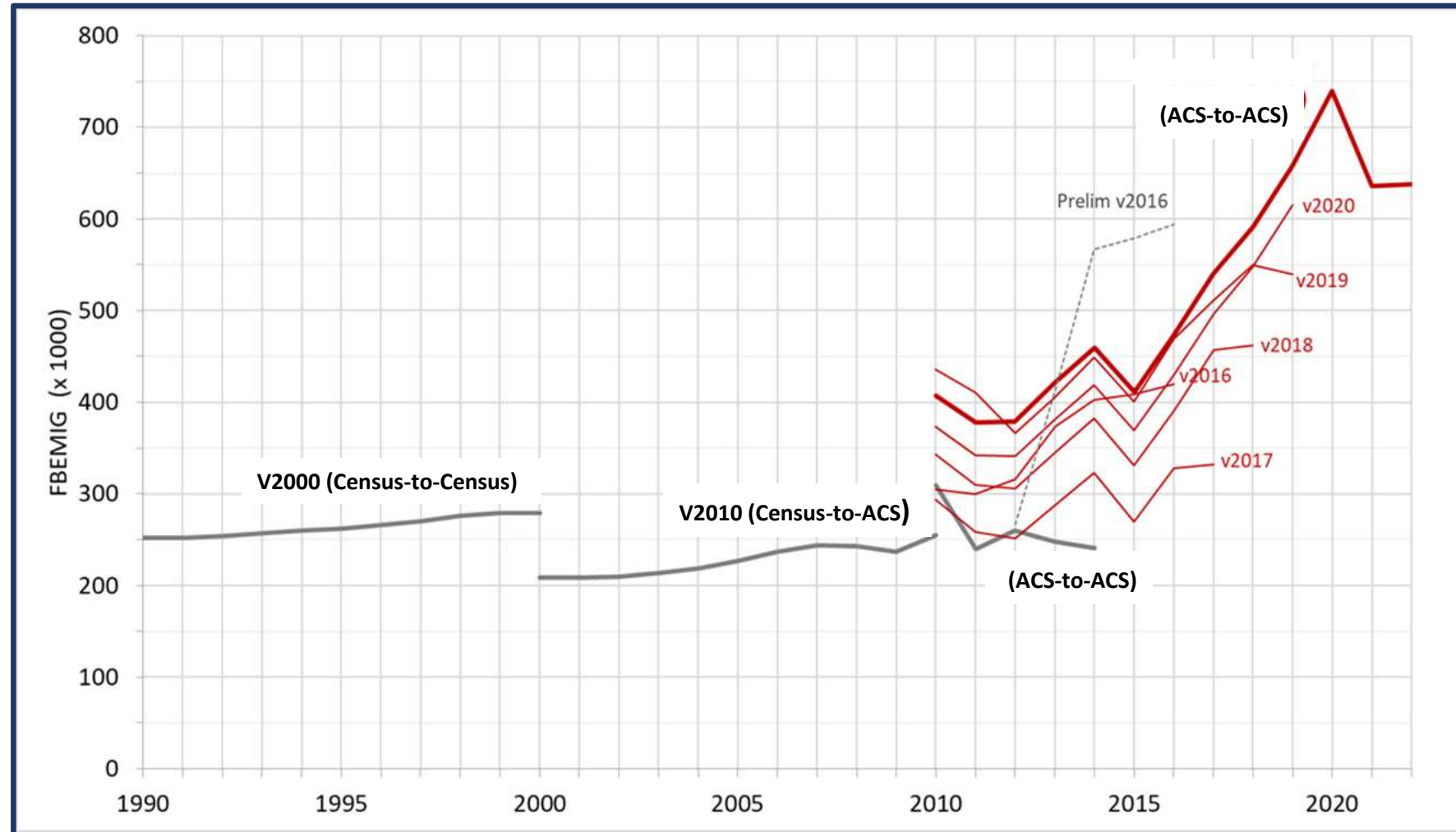
# Estimates of Non-U.S.-born Emigration: 1990-2020

- Estimate tripled between V2014 and V2016
- Due to declines in data quality and questionnaire changes in 2015 ACS



# Estimates of Non-U.S.-born Emigration Using Shortened Residual Periods: 2010-2020

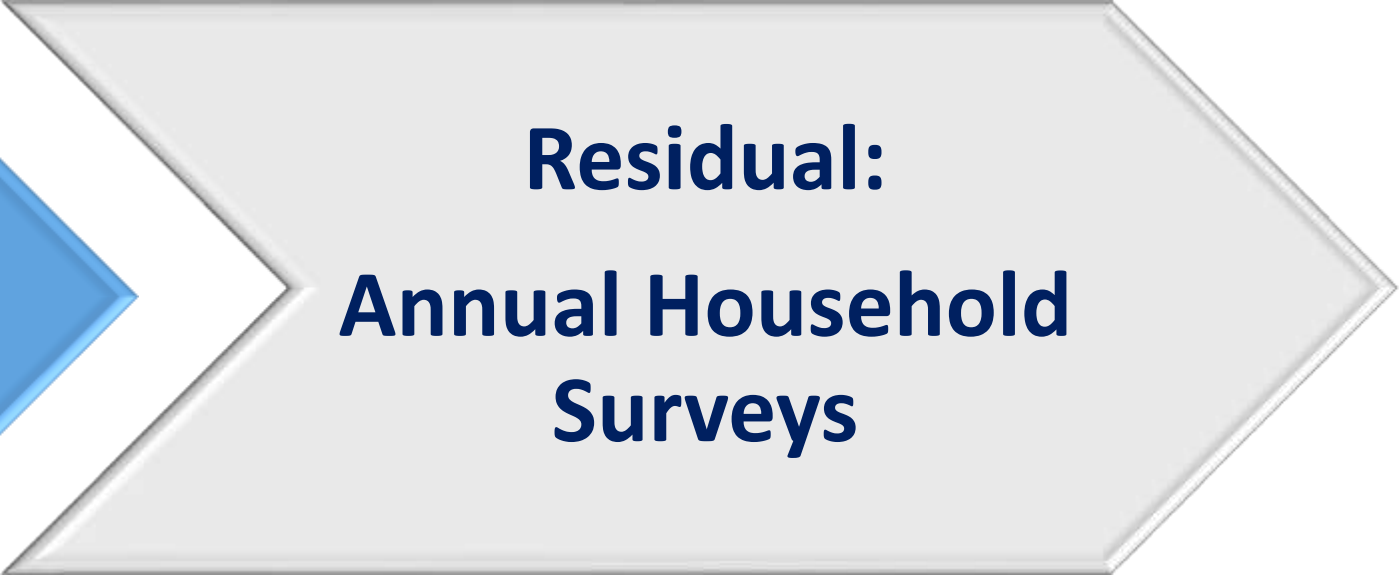
- Estimates of emigration rise dramatically in recent years from one vintage to the next
- Ultimately, produces negative net-migration



Source: U.S. Census Bureau, Population Division, Internal Simulations



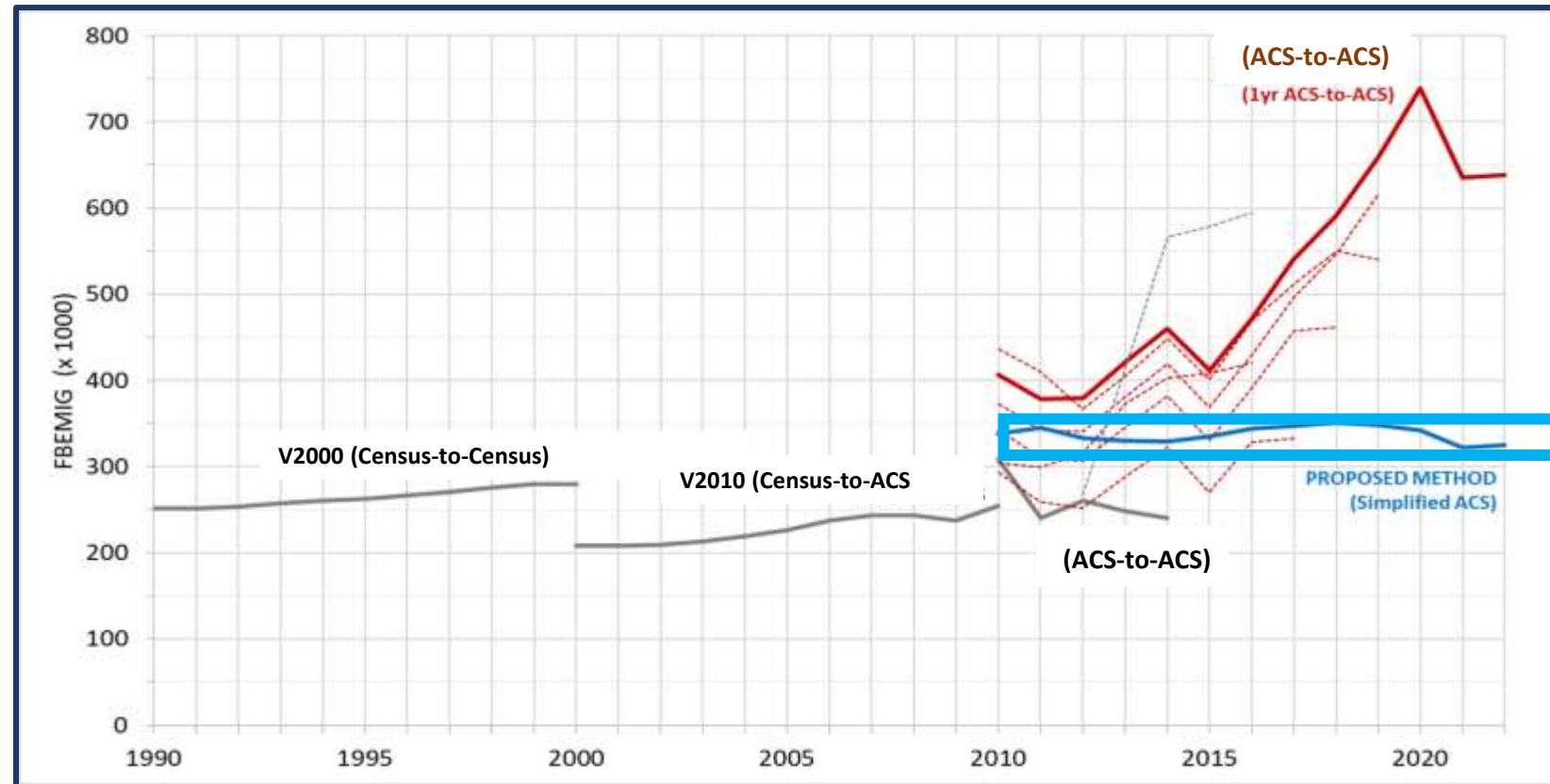
Present



**Residual:  
Annual Household  
Surveys**

# Hold Rates Constant: Average of Three Rates Calculated in Beginning of Decade

- Solution: Hold residual rate constant across decade using average of early-decade residuals
- Net-migration will be positive (or zero)



Source: U.S. Census Bureau, Population Division, Internal Simulations



# “Signs of Life” Emigration Framework

Link individual records using Protected Identification Keys (PIKs)

Construct starting population estimate

Track resident non-U.S.-born population over time

Look for evidence non-U.S.-born person exited the U.S. (Confirmed Emigrant)

# Linked Administrative Records Datasets

## NUMIDENT

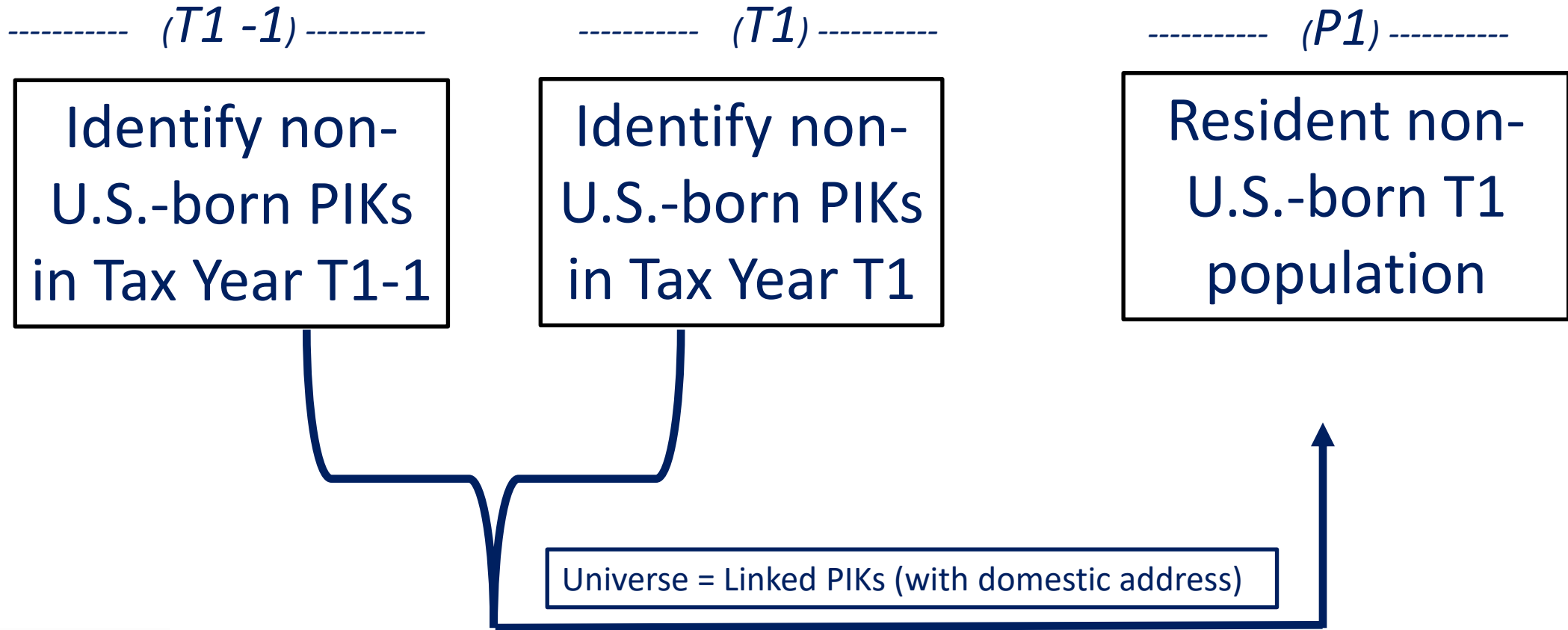
- Social Security Number (SSN)
- Place of Birth
- Citizenship status
  - Native Born
  - Naturalized Citizen
  - Non-citizen
- Year SSN assigned

## Tax Forms (IRS)

- Tax Identifier ID
  - TIN (SSN)
  - ITIN (Assigned by IRS – no link to Numident)
- Address
  - Domestic
  - Abroad



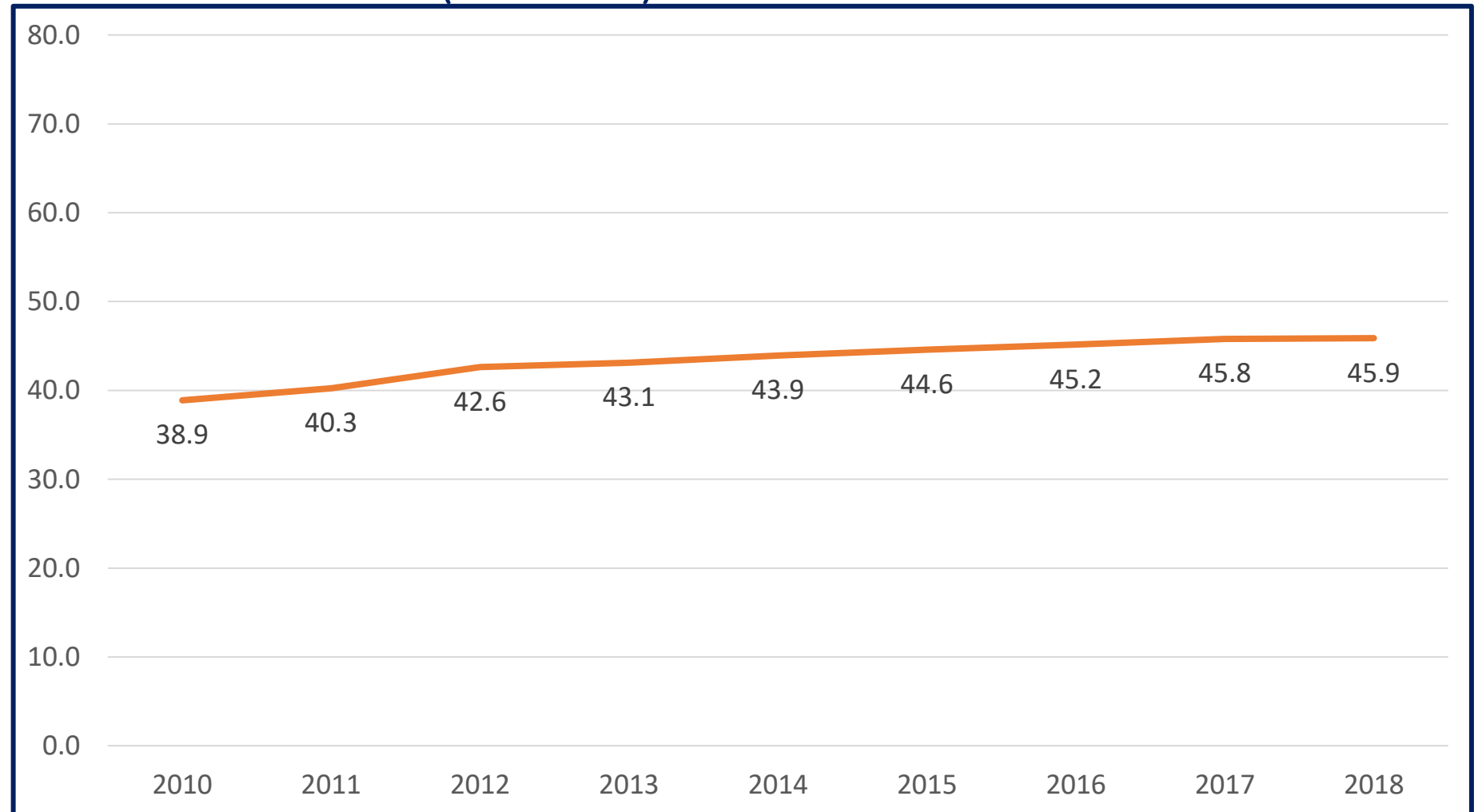
# Derive Starting Population of Non-U.S. Born from Two Consecutive Years of IRS Data



# Starting Population Derived from Administrative Records: Tax Years 2010 - 2018

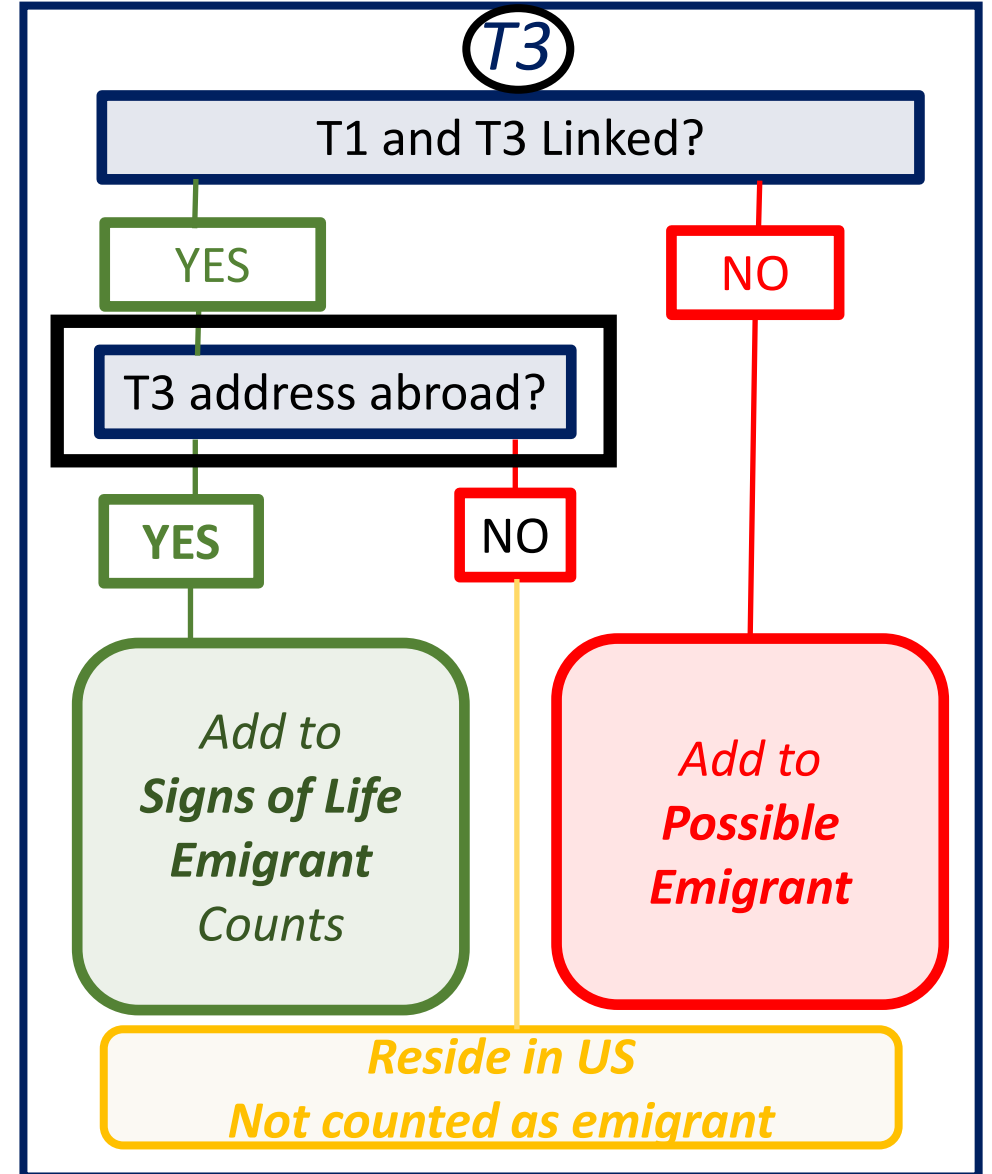
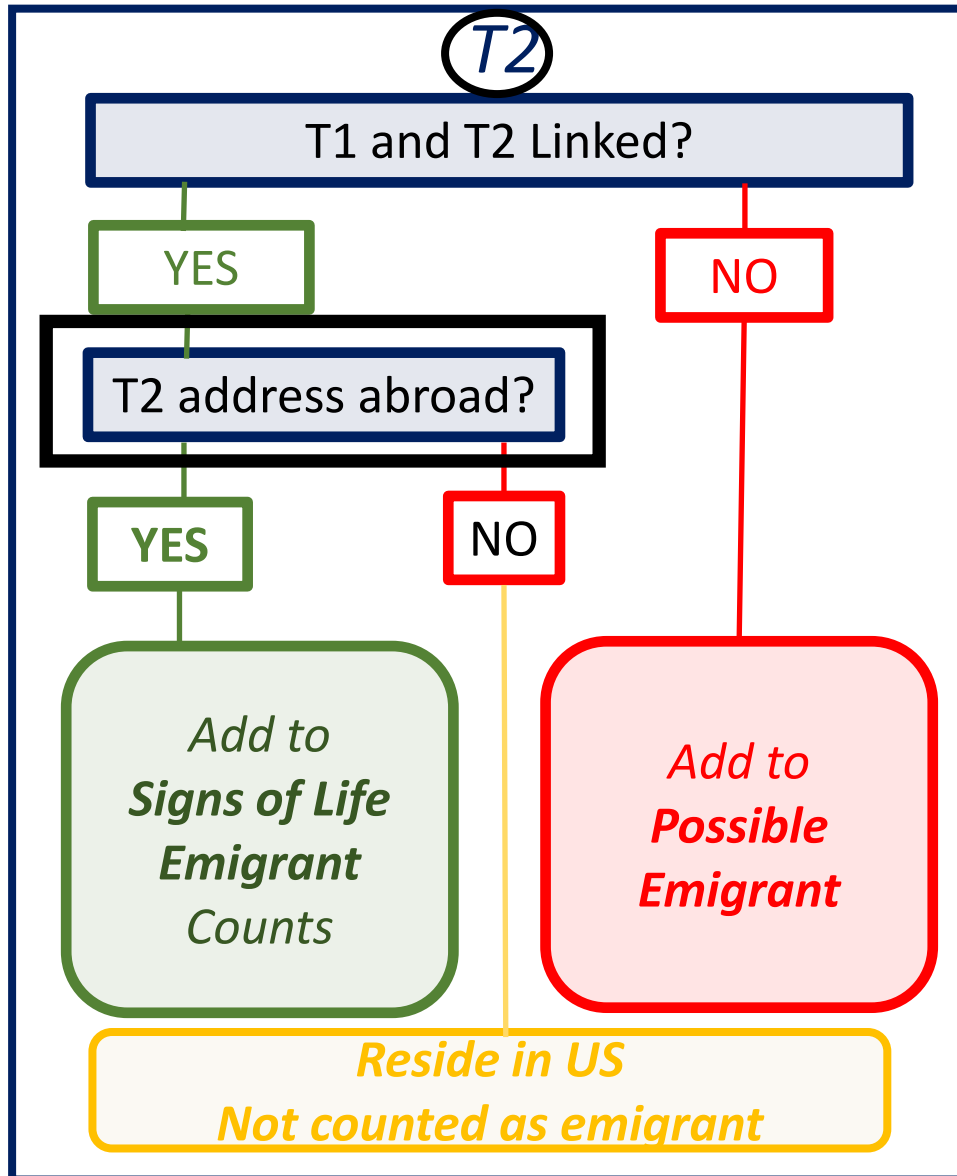
(in millions)

- Linking two consecutive years of files is stable across time
- Eight years later, increase of 6 million people

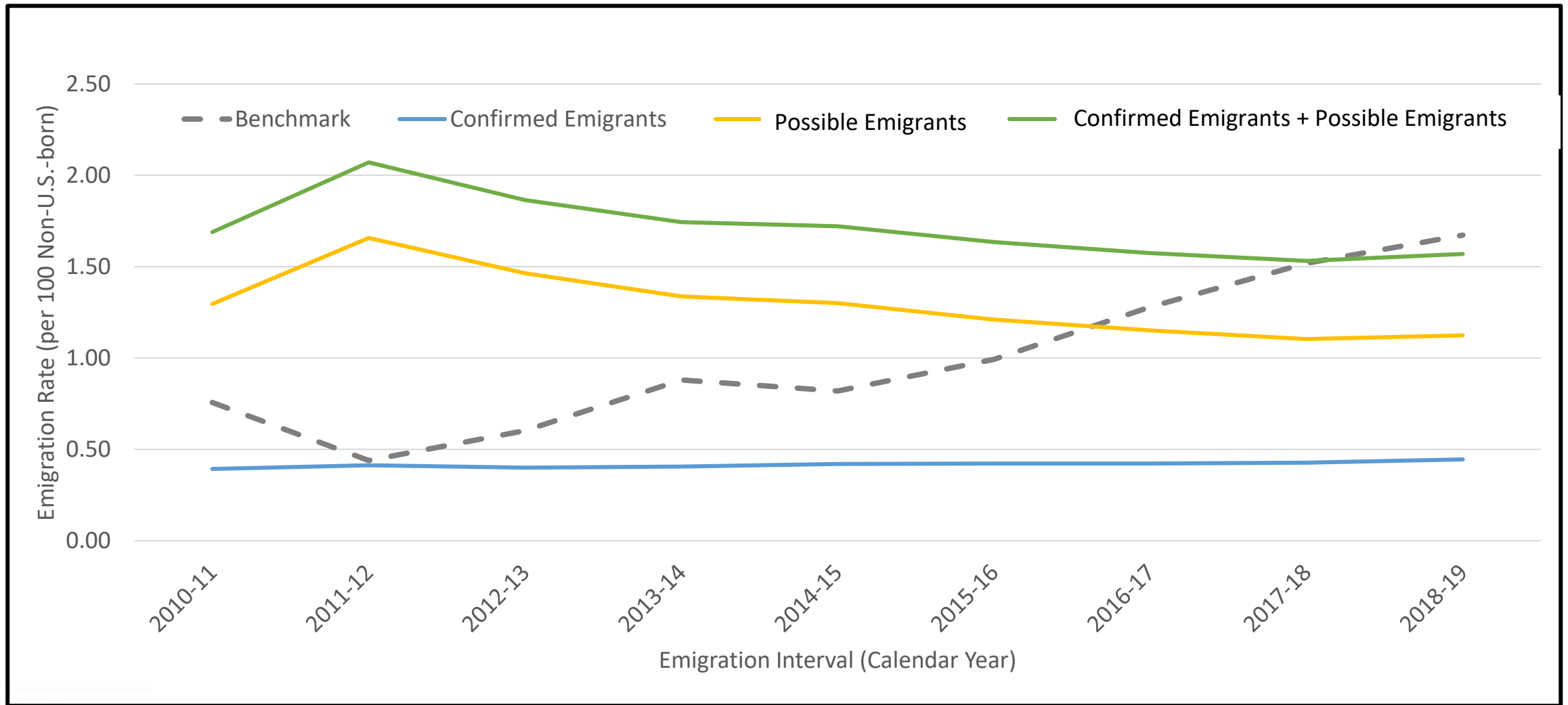


# Track Individuals Over Time to Look for “Signs of Life”

**T1**  
Annual starting non-U.S.-born population estimate



# Non-U.S.-born Emigration Rates: 2010-2019



# Summary

## Residual

- Survey data are affected by declining quality and changes to questionnaire
- Mirror statistics do not support past residual computations

## Linking administrative Records

- “Signs of Life” framework produces consistent emigration rates
- Possible migrants difficult to determine
- Under-coverage, especially children
- Geographic assignment may be difficult
- Other

Conclusion

**“Signs of Life” Method is  
Promising  
and as always,  
Needs Further Research**

# Contact Information

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