Challenges and opportunities for studying international migration in North America

Instructions: Click on the link to access each author's presentation.

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Participants:

Mélanie Meunier: Measuring the number of temporary immigrants in Canada: how to better model temporary permit renewals

Mauricio Rodriguez Abreu: Measuring International Migration in Mexico with the 2020 Census and Household Surveys

Angelica Menchaca: Measuring Net International Migration for the U.S. Census Bureau Population Estimates

Jason Schachter: Challenges and benefits of using longitudinal administrative data: Lessons learned from development of the Office of Homeland Security Statistics' Immigrant Benefit Lifecycle

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Measuring the number of temporary immigrants in Canada: how to better model temporary permit renewals

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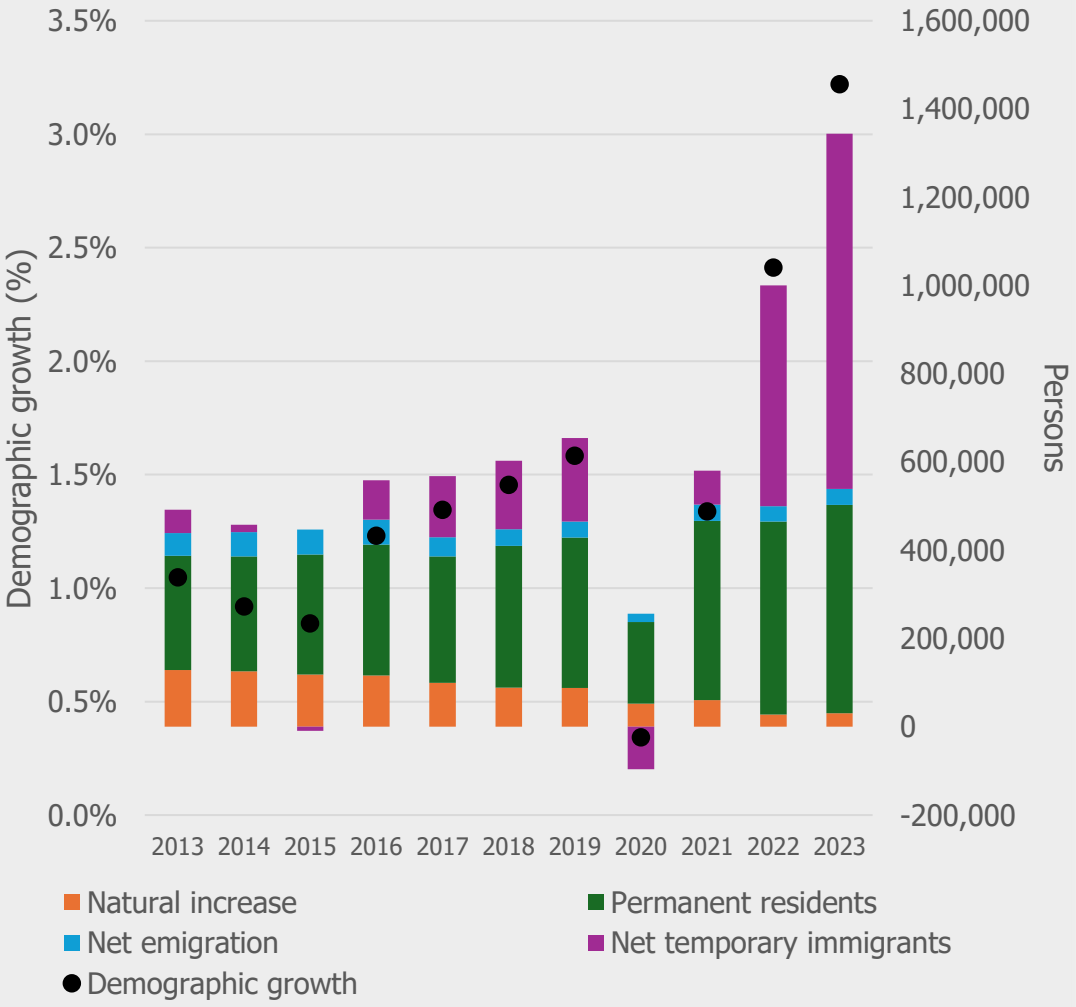
Agenda

1. International migration in the Canadian context
2. Issue: permit renewals
3. Solution: partnership with our Immigration Department
4. Lessons learned
5. Conclusion

International migration is by far the main driver of demographic growth in Canada



Source: Statistics Canada, Demographic Estimates Program.

- 2023: +3.2 % annual growth, strongest growth since 1957
- Record-high levels of immigration, both long-term and short-term
- Almost 1 in 4 Canadians are born abroad (2021 Census)
- Linked with various issues (e.g.: housing, aging, infrastructure, official languages)
- Increasingly strong interest by users for accurate and timely migration statistics

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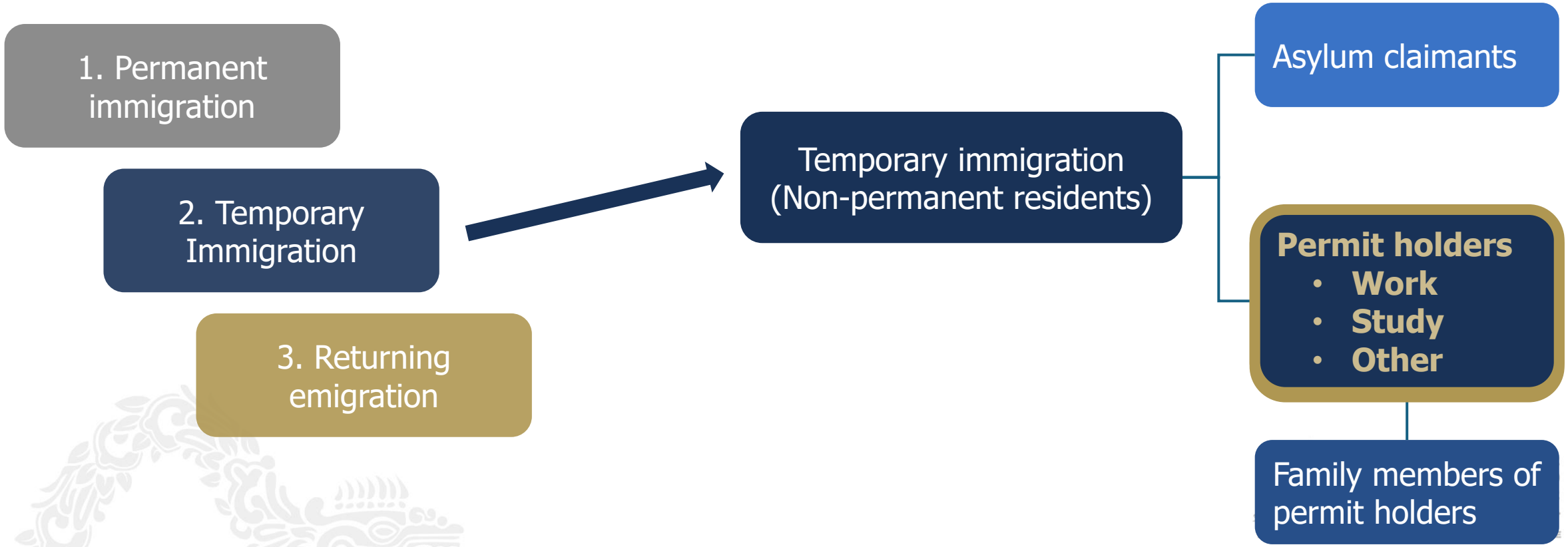
Temporary immigration is an important aspect of Canadian migration

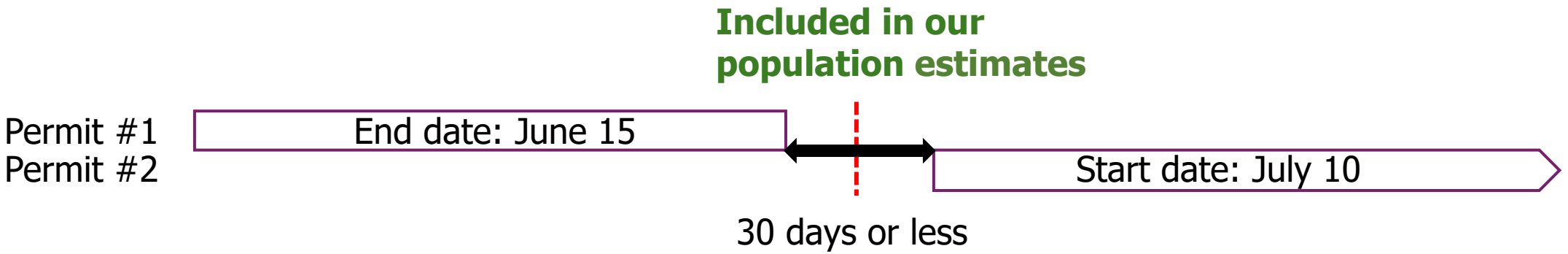


Issue: permit renewal delays strongly increased since the pandemic

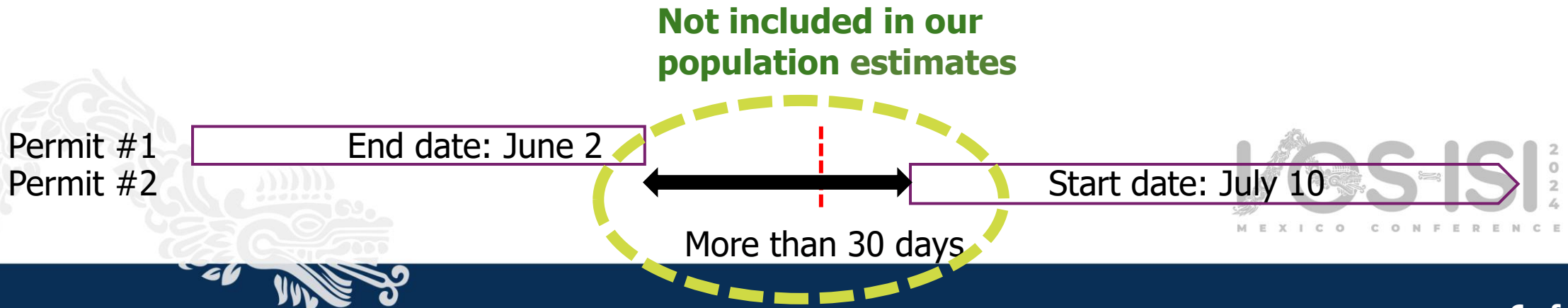
- Number of permit holders is estimated using **administrative data** from the Immigration Department.
- A permit holder has a **start date** and an **end date**.
  - The assumption that they are in Canada for the entire duration of their permit is made.
- Several types of permits can be renewed. There may be some delays.
- Previous method: the 30-day standard has long been accepted in our model.
- An increase in temporary immigration and the pandemic led to a rise in renewals.
  - The departure assumption is less valid.
- Temporary public policy to exempt certain out-of-status foreign nationals in Canada from immigration requirements during the COVID-19 pandemic.

Allowing 30 days for permit renewal has long been an acceptable measure

Scenario A: 30 days or less between two permits



Scenario B: More than 30 days between two permits



The solution: leveraging our partnership with our Department of Immigration

- Statistics Canada works closely with the Immigration Department (Immigration, Refugees and Citizenship Canada) through:
  - Memorandum of Understanding
  - Working groups
  - Peer reviews
- Joint development to quantify processing times for permit renewals:
  - Processing times are available daily on the Immigration Department website
  - The Immigration Department provided the information for the historical series
- This partnership was used to develop a demographic method that is not only valid and accurate, but also transparent for users.

Permit extensions processing are available online

Check processing times

* **Select an application type. (required)**

Temporary residence (visiting, studying, working)

* **Which temporary residence application? (required)**

Study permit extension

Get processing time

Study permit extension

Processing time

53 days

Last updated: May 7, 2024 Updated weekly

We're showing an overall processing time, which includes online and paper applications. Applying online is mandatory for most applications since June 4, 2019.

▶ How we calculated this processing time

Already applied?

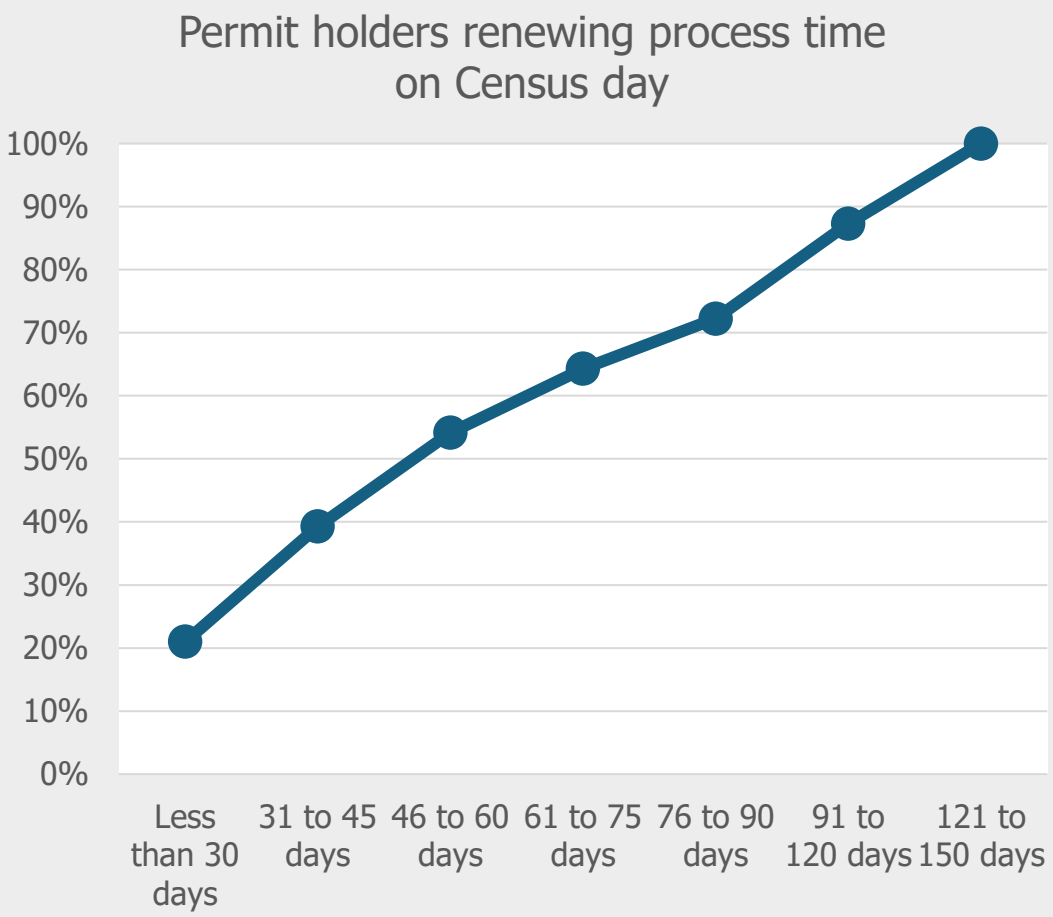
- **Don't** send a new application.
  - The longer you've been waiting, the closer you are to the front of the line.
- We'll contact you if we need more information.
  - You don't need to do anything else.

Check your application status

Common questions about processing times

Source: Immigration, Citizenship and Refugees Canada website ; Check processing times - Canada.ca

The 2021 Census is consistent overall with processing times



Source: Statistics Canada, Demographic Estimates Program.

- On Census day, immigration processing times were around 105 days.
- Based on Census, 85% of permit renewals were within 91 and 120 days.
- Those beyond 105 days were assumed to have left the country.
- Although the final outcome of this improvement is moderate, it filled a gap for a visible aspect of our methodology.
- It is important to adapt to new policies quickly to stay relevant.

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Some lessons learned

- Relevance: users needs evolve quickly. It is challenging to stay relevant.
  - Migration is evolving fast and processing times are increasing.
- Timeliness: increasingly important → trade-offs needed.
  - Monthly data are reactive to policy and operational changes.
- Transparency: users are critical of our data and models, as more and more demographic models are required.
  - Using publicly available data from data provider instead stronger assumptions.
- Partnership: leveraging the expertise of data owner.
  - Collaboration was essential to be aware of these data and use data correctly.

Conclusion

- As immigration is a key demographic dynamic of Canada, an increased interest from public on temporary immigrants will likely continue.
- The permit renewal improvement was well received by users who criticized our data and our reaction to COVID.
- Collaboration takes time and effort to build and maintain but is highly beneficial.
- Canada is working on temporary immigration targets, which continues to increase interest in our work.
- Working to acquire Entry/Exit Program data (border data)
    - Long process

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Thank you

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Challenges for Measuring Immigration in Mexico

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Introduction

- The increased mobility of people between countries **highlights the request for systematised statistics** on migration.
- **Migration presents strong challenges** due to its dynamic and complex nature.
- **Censuses** are the **main source** in migration studies.
- This paper analyses **how migration in Mexico has evolved between 2010-2020**.

Background of immigration

Mexico is a transit and destination country

Late 20th century

Bracero Programme showed the enormous demand for workers required by the US, and a significant number of Mexicans migrated northwards, outside of the Programme and in an irregular way.

-Refugees (e.g. Spain)

Beginning of the 21st Century

Important changes begin: The return migrations of Mexicans living in the US begins, and México becomes a place of asylum for migrants from Central and South America.

Nowadays

México is currently facing one of the biggest challenges receiving thousands of people transiting through its territory in caravans or large groups, may of them are staying.

The **need** to have **systematized** migration **statistics**

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Challenges for Measuring Immigration

- The **dynamism of the phenomenon**.
- The **motivations for migration.**
- The **volume of migratory movements that occur informally.**
- **Criminal activity** and the commission of crimes that occur in cross-border movement.
- **Social dynamics**, such as children of interracial marriages, dual nationality, or identity and belonging.
- The **dispersion of official statistics** hinders the connection and complementarity between the various sources of information.

Sources of information and census challenges

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Sources of information

Population and Housing Censuses

Administrative records

Surveys

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- ENADID
- EDER

COLEF

- Survey on Migration on the Northern and Southern Border (EMIF, in Spanish)

Census challenges

- Information **updated more slowly.**
- **Loss of the registration of shorter movements**.
- Movements involving the **entire family are lost.**
- **Migrant population that is passing through** or intends to pass through and that, for different reasons.
- **Under-registration**

Immigrants in Mexico in numbers, 2010 & 2020

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Distribution of immigrants in Mexico

- **Population and Housing Census 2020.**
- **Population aged 5 years and older** from the 2010 and 2020 censuses.

2010 Census

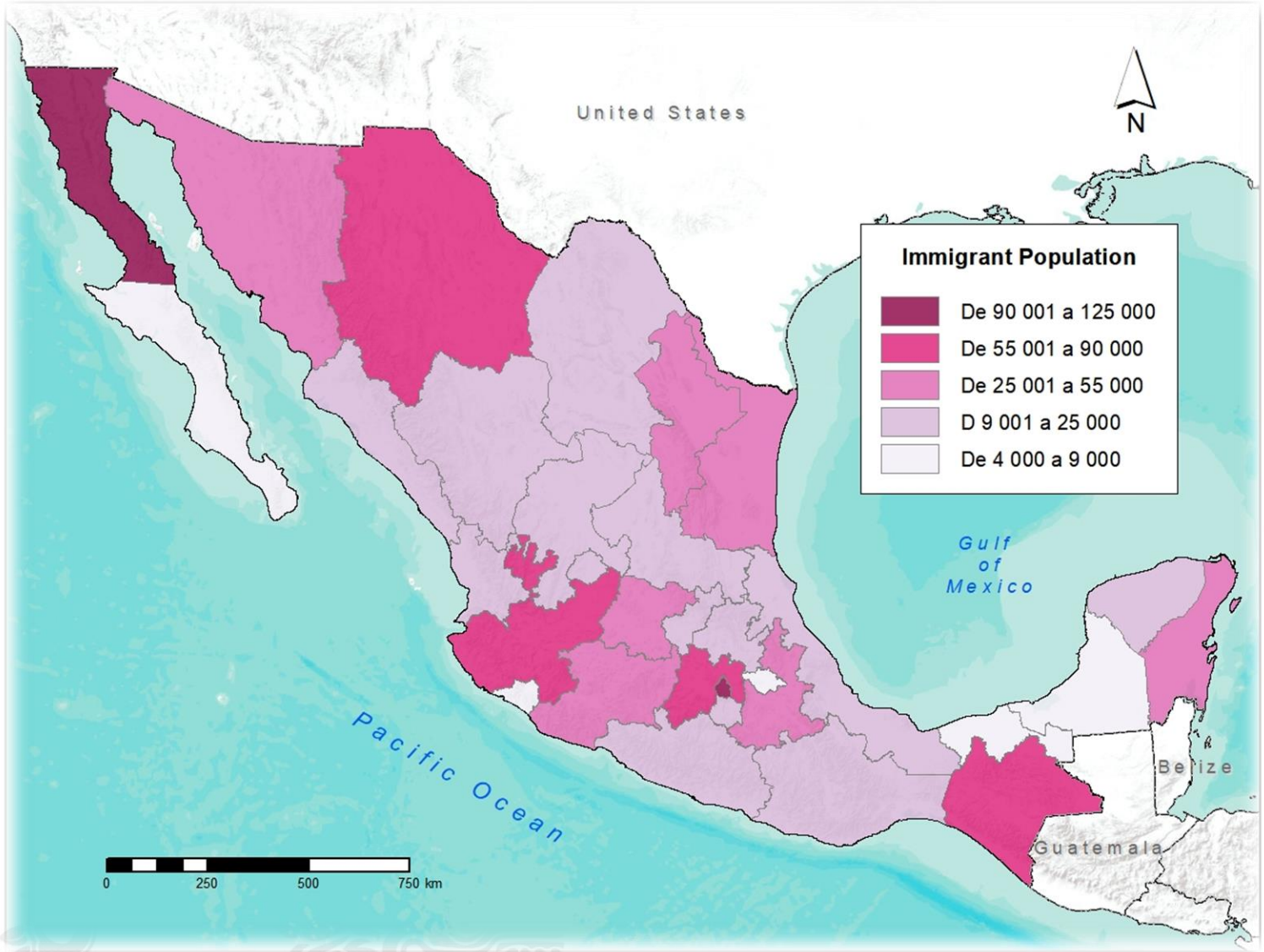
- 758 651 people born in another country
- 0.8 percent of the total national population

2020 Census

- 1 060 067 people born in another country
- 0.9 percent of the total national population

Immigrant population increased by 39.7 percent

Foreign-Born Population by State, 2020



- **Baja California** (124 310, 11.7 %)
- **Mexico City** (103 843, 9.8 %)
- **Jalisco** (80 114, 7.6 %)
- **Chihuahua** (78 341, 7.4 %)
- **State of Mexico** (63 533, 6.0 %)

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Source: INEGI, Censo de Población y Vivienda 2020. Cuestionario Ampliado.

Immigration for State and Territorial Scope, 2020

States where half of the total international immigrants residing in urban areas:

- Baja California (109 802, **14.2 %**)
- Mexico City (103 500, **13.4 %**)
- Chihuahua (67 611, **8.8 %**)
- Jalisco (55 072, **7.1 %**)
- State of Mexico (47 485, **6.1 %**)

States where half of the total international immigrants residing in rural areas:

- Chiapas (37 083, **12.9 %**)
- Jalisco (25 042, **8.7 %**)
- Michoacán (20 602, **7.2 %**)
- State of Mexico (16 048, **5.6 %**)
- Oaxaca (15 282, **5.3 %**)

Urban areas are considered statistical localities with 15 000 or more inhabitants, and rural areas are considered statistical localities with fewer than 15 000 inhabitants.

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Source: INEGI, Censo de Población y Vivienda 2020. Cuestionario Ampliado.

Immigration for main metropolis, 2020

Metropolis	Total	
	Absolute	Percentage
Total	**1,060,067**	100
MA of Mexico City	150,520	14.2
MA of Tijuana	79,844	7.5
MMA of Juárez	51,112	4.8
MA of Guadalajara	39,566	3.7
MA of Monterrey	36,577	3.5
MMA of Mexicali	26,605	2.5
MA of Tapachula	24,292	2.3
MA of Querétaro	19,399	1.8
MA of Cancún	17,946	1.7
MA of Reynosa	14,612	1.4
MA of Puebla-Tlaxcala	14,524	1.4
MMA of Nuevo Laredo	14,073	1.3
MA of Mérida	12,643	1.2
Rest	558,354	53.7

Immigrants concentrate in the largest metropolitan areas, mainly in the center and the northern border, except Tapachula and Cancún.

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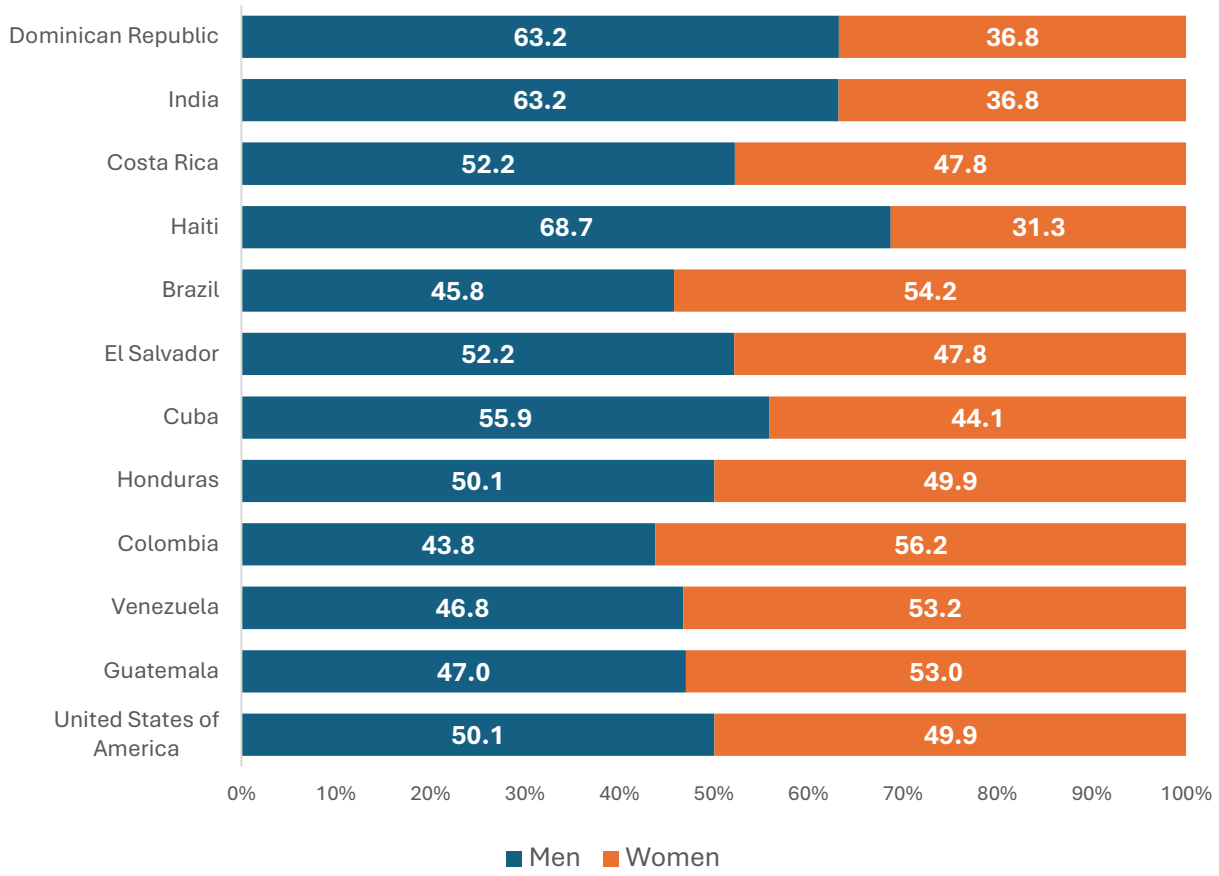
Source: INEGI, Censo de Población y Vivienda 2020. Cuestionario Ampliado and SEDATU-CONAPO-INEGI, 2023.

Immigration for main country of birth and sex, 2020

Main countries

- United States of America (61.6 %)
- Guatemala (5.4 %)
- Venezuela (5.2 %)
- Colombia (3.2 %)
- Honduras (3.1 %)
- Cuba (2.4 %)
- El Salvador (1.8 %)
- Haiti (0.8 %)
- Brazil (0.8 %)
- Costa Rica (0.3 %)
- India (0.2 %)
- Dominican Republic (0.2 %)



Source: INEGI, Censo de Población y Vivienda 2020. Cuestionario Ampliado.

Immigrants by main country birth for age group, 2020

Country of Birth	Age group			
	Less than 15	From 15 to 29	From 30 to 59	60 and over
United States of America	46.1	36.8	11.8	5.3
Guatemala	8.5	29.5	51.6	10.4
Venezuela	11.5	22.5	57.3	8.7
Colombia	4.9	24.3	60.0	10.8
Honduras	12.0	33.1	50.0	4.8
Cuba	4.8	20.5	57.6	17.1
El Salvador	8.6	26.2	53.2	11.9
Brazil	9.6	20.6	66.2	3.6
Haiti	0.6	23.3	75.5	0.6
Costa Rica	3.3	21.7	58.0	17.0
India	2.6	24.7	63.4	9.3
Dominican Republic	3.3	23.2	56.8	16.8

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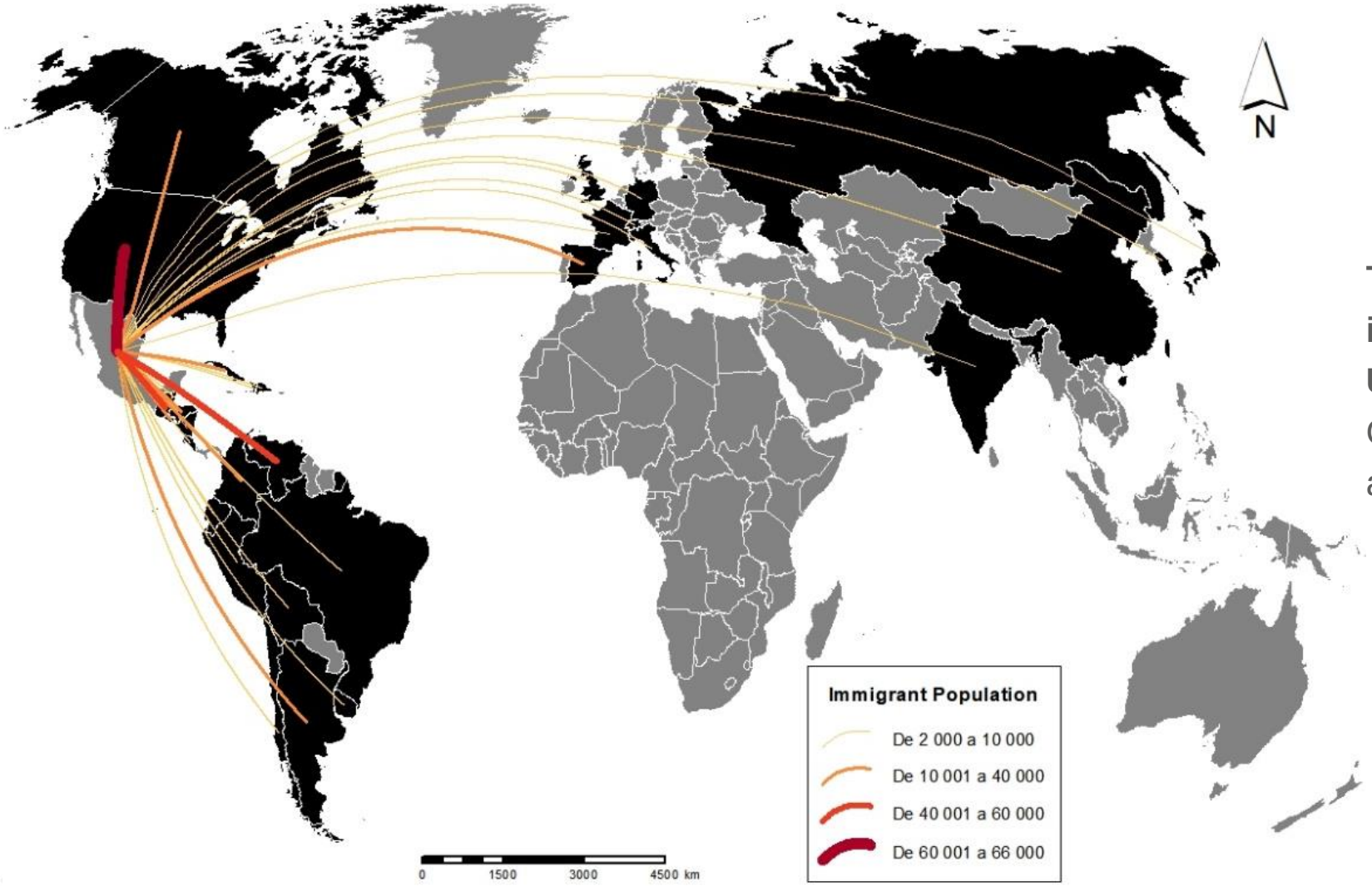
Source: INEGI, Censo de Población y Vivienda 2020. Cuestionario Ampliado.

Biggest Foreign-Born Population, 2020



Two out of every four international immigrants in Mexico are from the United States of America (61.6 %), Guatemala (5.4 %), Venezuela (5.2 %), and Colombia (3.2 %).

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Source: INEGI, Censo de Población y Vivienda 2020. Cuestionario Ampliado.

	Country of birth	Immigrants 2020	Immigrants 2010	Increase Absolute	Increase Relative	Average annual growth rate 2010-2020
		1,060,067	**758,651**	**301,416**	**39.7**	**1.03**
1	Haiti*	8,705	622	8,083	1,299.5	1.27
2	Venezuela	54,905	10,415	44,490	427.2	1.17
3	India	2,493	718	1,775	247.2	1.13
4	Honduras	32,391	9,800	22,591	230.5	1.12
5	Colombia	34,143	12,517	21,626	172.8	1.10
6	Brazil	8,926	3,662	5,264	143.7	1.09
7	Cuba	25,629	11,742	13,887	118.3	1.08
8	El Salvador	18,884	8,735	10,149	116.2	1.08
9	Dominican Republic	2,470	1,224	1,246	101.8	1.07
10	Costa Rica	3,609	1,896	1,713	90.3	1.07
11	Guatemala	57,253	31,082	26,171	84.2	1.06
12	Bolivia	3,195	1,982	1,213	61.2	1.05
13	Ecuador	4,518	2,830	1,688	59.6	1.05
14	Switzerland	2,141	1,368	773	56.5	1.05
15	Japan	4,593	3,127	1,466	46.9	1.04
16	Perú	9,629	6,739	2,890	42.9	1.04
17	Belize	2,060	1,497	563	37.6	1.03
18	Chile	7,659	5,576	2,083	37.4	1.03
19	Russia	2,880	2,098	782	37.3	1.03
20	Italy	6,996	5,179	1,817	35.1	1.03
21	Argentina	18,647	13,982	4,665	33.4	1.03
22	**United States of America**	**653,357**	**536,631**	**116,726**	**21.8**	**1.02**
23	France	9,364	8,080	1,284	15.9	1.02
24	Korea	4,016	3,480	536	15.4	1.01
25	Canada	10,069	9,009	1,060	11.8	1.01
26	Spain	21,510	19,634	1,876	9.6	1.01
27	Nicaragua	4,629	4,230	399	9.4	1.01
28	United Kingdom	3,616	3,418	198	5.8	1.01
29	Germany	7,264	6,905	359	5.2	1.01
30	Uruguay	2,396	2,594	-198	-7.6	0.99
31	China	6,432	7,445	-1,013	-13.6	0.99
	Rest of countries	25,688	20,434	5,254	25.7	1.02

Immigrant population growth for main country of birth, 2020

The results from the expanded questionnaire allow the identification of individuals born in other countries, with 125 countries identified as their place of birth according to their declarations. The analysis was conducted by sorting the population born in another country from highest to lowest, and cases with estimates with a high level of precision, based on their coefficient of variation (CV) (less than 15 %), were selected.
In the analysis, Haiti is considered the country of origin despite being the only case with a low statistical precision (CV greater than 30 %) due to the significant increase in the floating population in Mexico.

Source: INEGI, Censo de Población y Vivienda 2020. Cuestionario Ampliado.

Place of birth and place of residence 5 years ago

Relative increases:

- **Foreign-Born**
  - The top ten important positions are occupied by **nine countries from the American continent and one from Asia.**
    1. **Haití*** increase of almost **1 300 percent**.
    2. **Venezuela**, with a relative growth of **427 percent**.
    3. **India**, which had an increase of **247 percent**.
- **Recent migration**
    1. Just over 29 000 **Venezuelans** arrived **relative increase of 544 percent**.
    2. **Honduras,** which contributed 11 310 more people as residents in Mexico, representing a **relative increase of 552 percent**.

    Following Honduras, the most significant absolute growths came from individuals born in Cuba, Colombia, and Guatemala.

* The estimates using data from the 2020 census for Haiti indicate a high coefficient of variation (CV) of 48.1 %, which determines that the estimates have low statistical precision.

Demographic and socioeconomic characteristics

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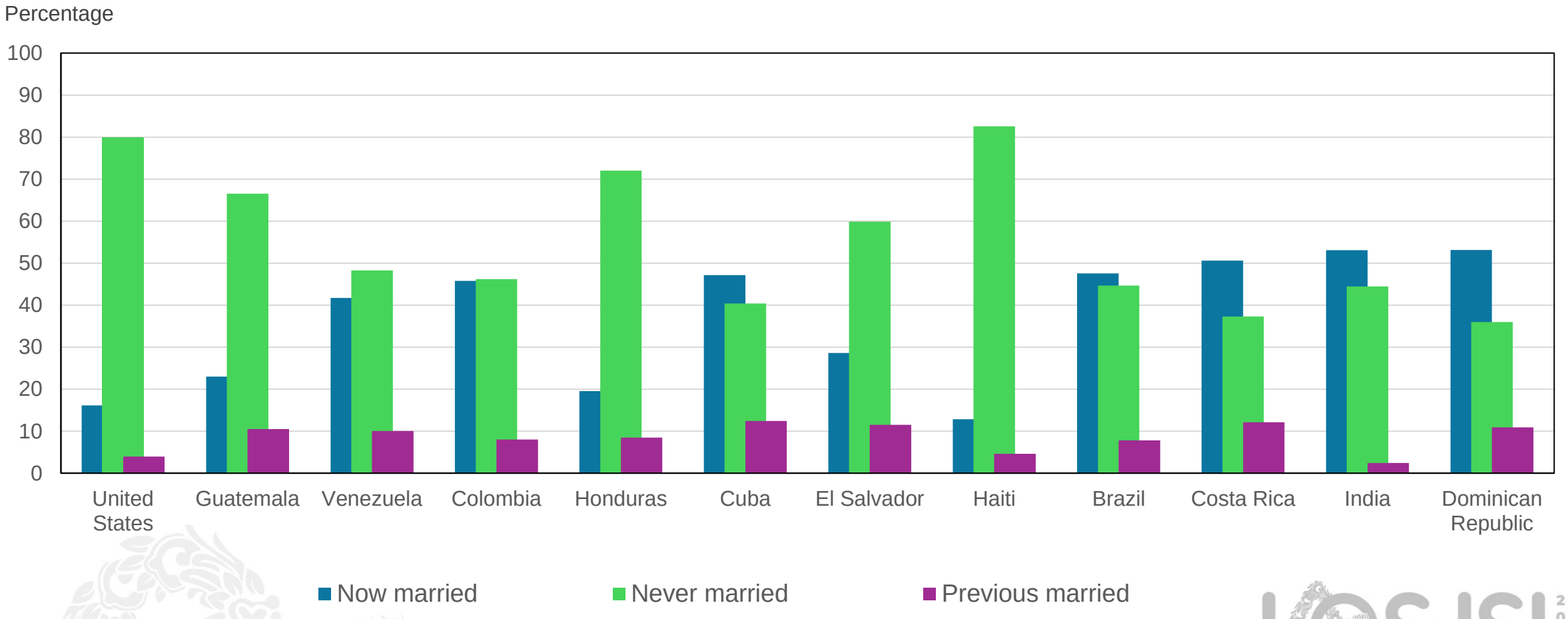
Immigrants by main country of birth and marital status, 2020



Source: INEGI, Censo de Población y Vivienda 2020. Cuestionario Ampliado.

Immigrants by main country of birth and Afro-descent identity, 2020

Country of birth	Total	Self-ascription		No Self-ascription	
		Absolute	Percentage	Absolute	Percentage
United States of America	653,357	11,521	1.8	641,836	98.2
Guatemala	57,253	939	1.6	56,314	98.4
Venezuela	54,905	3,175	5.8	51,730	94.2
Colombia	34,143	1,883	5.5	32,260	94.5
Honduras	32,391	2,230	6.9	30,161	93.1
Cuba	25,629	6,420	25.0	19,209	75.0
El Salvador	18,884	686	3.6	18,198	96.4
Haiti	8,705	5,603	64.4	3,102	35.6
Brazil	8,926	1,187	13.3	7,739	86.7
Costa Rica	3,609	76	2.1	3,533	97.9
India	2,493	174	7.0	2,319	93.0
Dominican Republic	2,470	816	33.0	1,654	67.0

Source: INEGI, Censo de Población y Vivienda 2020. Cuestionario Ampliado.

Immigrants by main country of birth with availability of health services affiliation, 2020

Country of birth	Total	Access		No Access	
		Absolute	Percentage	Absolute	Percentage
Costa Rica	3,609	2,772	76.8	837	23.2
India	2,493	1,732	69.5	761	30.5
Colombia	34,143	23,665	69.3	10,478	30.7
Brazil	8,926	6,127	68.6	2,799	31.4
Venezuela	54,905	32,345	58.9	22,560	41.1
United States of America	653,357	360,578	55.2	292,779	44.8
Dominican Republic	2,470	1,278	51.7	1,192	48.3
Cuba	25,629	13,195	51.5	12,434	48.5
El Salvador	18,884	7,936	42.0	10,948	58.0
Honduras	32,391	12,483	38.5	19,908	61.5
Guatemala	57,253	18,262	31.9	38,991	68.1
Haiti	8,705	2,372	27.2	6,333	72.8

Source: INEGI, Censo de Población y Vivienda 2020. Cuestionario Ampliado.

Immigrants by main country of birth and disability status, 2020

Country of birth	Total	Disabled		Without disability	
		Absolute	Percentage	Absolute	Percentage
Brazil	8,926	67	0.8	8,859	99.2
Haiti	8,705	79	0.9	8,626	99.1
Dominican Republic	2,470	24	1.0	2,446	99.0
India	2,493	31	1.2	2,462	98.8
Colombia	34,143	493	1.4	33,650	98.6
Venezuela	54,905	1,084	2.0	53,821	98.0
United States of America	653,357	15,952	2.4	637,405	97.6
Honduras	32,391	908	2.8	31,483	97.2
Cuba	25,629	837	3.3	24,792	96.7
Guatemala	57,253	2,327	4.1	54,926	95.9
El Salvador	18,884	841	4.5	18,043	95.5
Costa Rica	3,609	177	4.9	3,432	95.1

Source: INEGI, Censo de Población y Vivienda 2020. Cuestionario Ampliado.

Immigrants by main country of birth and Average Level of Schooling, 2020

Country of birth	Average Level of Schooling
India	16.2
Colombia	14.8
Brazil	14.6
Cuba	14.6
Venezuela	14.6
Dominican Republic	13.2
Costa Rica	12.8
United States of America	11.3
Haiti	9.0
El Salvador	8.9
Honduras	8.1
Guatemala	5.3

Source: INEGI, Censo de Población y Vivienda 2020. Cuestionario Ampliado.

Labor participation rate and Occupation rate by Country of birth, 2020

- The employed population demonstrates significant **labor market segmentation**.
- Immigrants from **Haiti** are predominantly employed as **operators of industrial machinery, assemblers, chauffeurs, and transport drivers** (44.2 %).
- Conversely, individuals born in **India** are primarily working as **professionals and technicians**[4] (60.9 %).

Country of birth	Labor participation rate	Occupation rate
Haiti	85.4	73.7
India	73.2	72.2
Venezuela	67.7	65.4
El Salvador	66.7	63.5
Colombia	62.3	60.5
Cuba	63.1	60.3
Dominican Republic	61.3	59.3
Brazil	59.4	58.0
Guatemala	58.7	57.2
Costa Rica	57.7	56.6
Honduras	59.4	56.5
United States of America	29.7	28.1

[4] Estimates by major groups indicate that people from India are employed as researchers and professionals in the exact sciences, biological sciences, engineering, computer science, and telecommunications. This may explain the high educational level identified in this population.

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Source: INEGI, Censo de Población y Vivienda 2020. Cuestionario Ampliado.

Final considerations

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Final considerations

- **Only 0.3 percent reside abroad**.
- Regarding immigrants, **78.0 percent of those born in another country have lived in Mexico for at least five years**, while 22.0 percent have resided elsewhere.
- **Predominance of immigrants from the United States.**
- **Significant increase in relative terms of Haitian immigrants,** whose population increased by 1 300 percent between 2010 and 2020.
- Importance as a **labor destination**.

Final considerations

- Measuring international migration presents **significant challenges** due to underreporting, **variable definitions**, **lack of reliable records**, **temporary and circular migrations**, **difficulties in monitoring**, and **biases in the data**. In addition, aspects such as forced displacement, which **has increased the number of refugees**, add to the **complexity of the migration issue**.

- Sociodemographic features show **the diversity in immigrant profiles and experiences**, highlighting disparities in areas such as access to health care, education and employment opportunities **among different national origins**.

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Thank you

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Measuring International Migration in the United States

Angelica Menchaca

International Migration Branch

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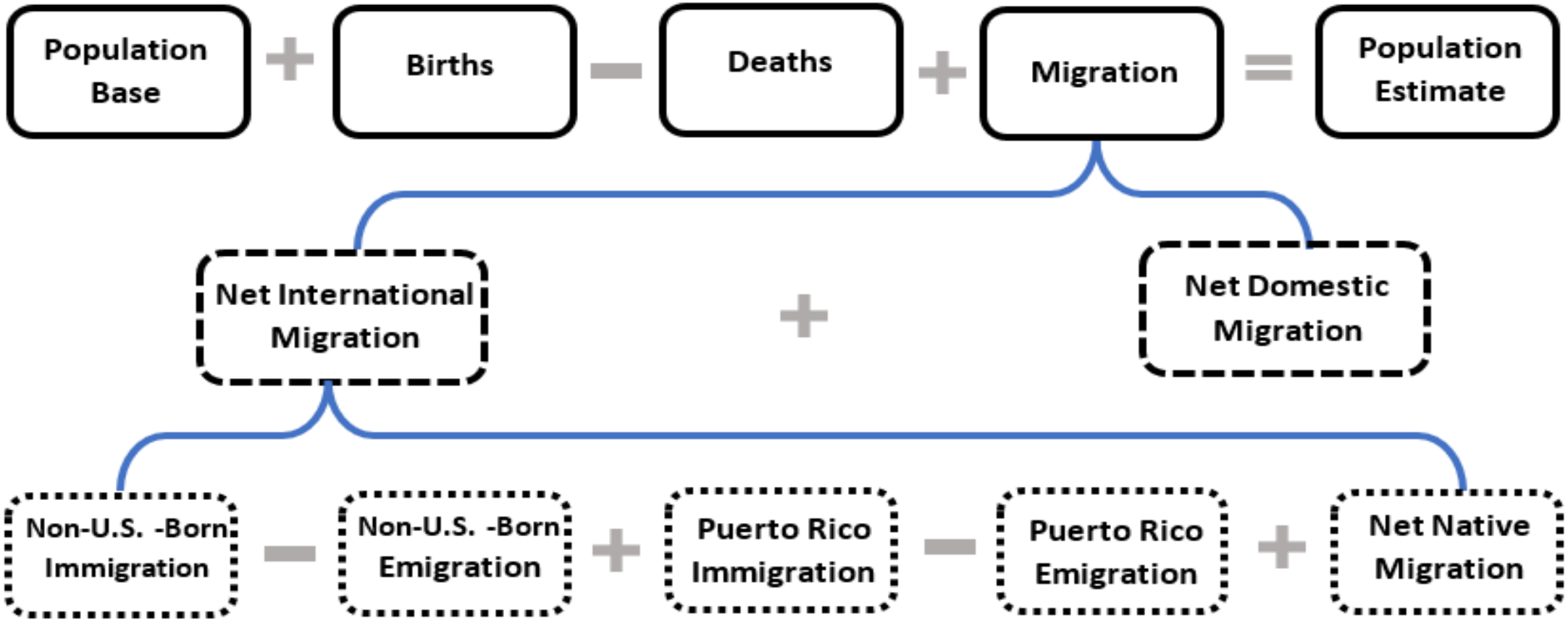
May 16, 2024

The Cohort-Component Method for Producing Population Estimates



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Background

- American Community Survey (ACS)
  - 3.5 million addresses surveyed yearly
  - One-year file (national)
  - Five-year files (sub-national) estimates
- Key migration variables
  - Place of Birth
  - Citizenship
  - Year of Entry
  - **Residence One Year Ago (ROYA)**

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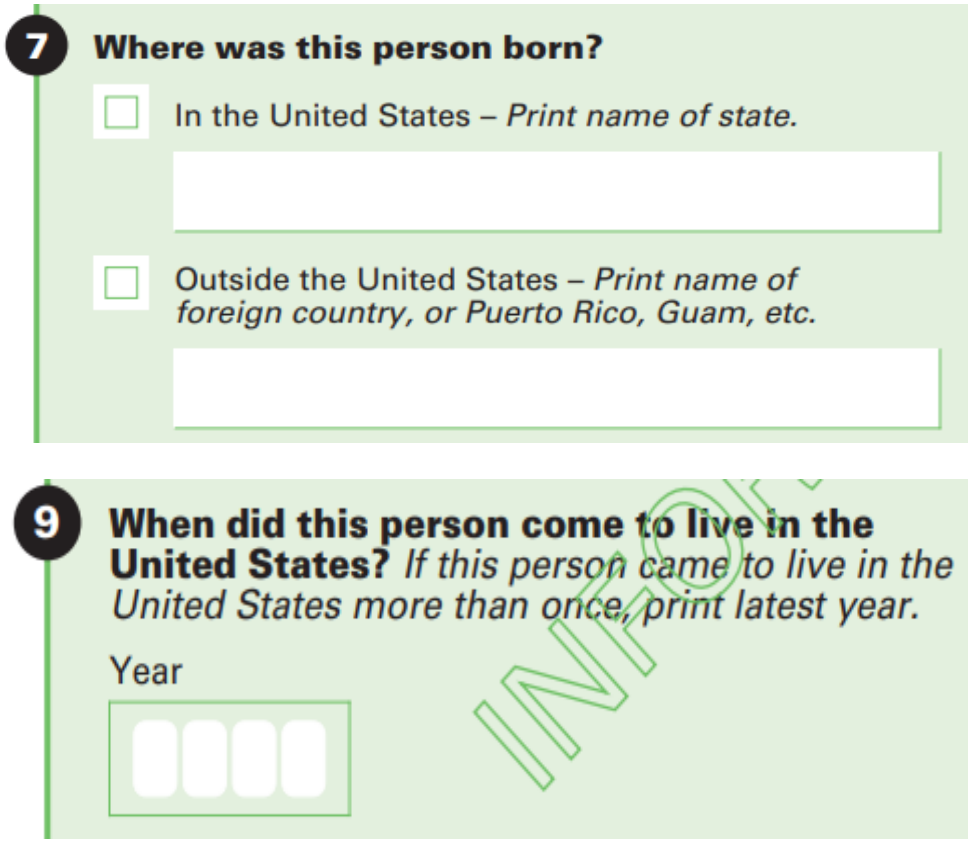
Background: Country of birth, citizenship and year of entry

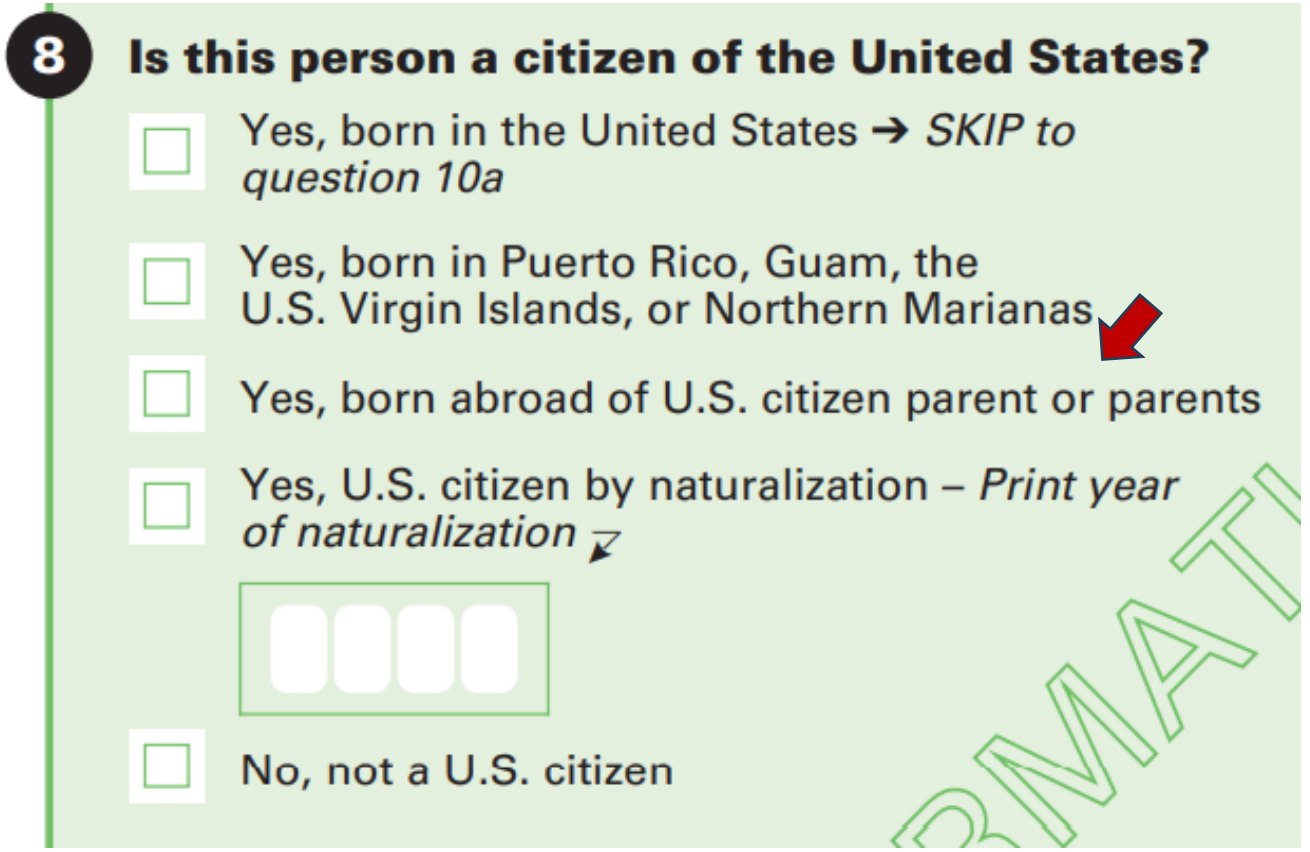


7 **Where was this person born?**

- ☐ In the United States – *Print name of state.*
- ☐ Outside the United States – *Print name of foreign country, or Puerto Rico, Guam, etc.*

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



8 **Is this person a citizen of the United States?**

- ☐ Yes, born in the United States ➔ *SKIP to question 10a*
- ☐ Yes, born in Puerto Rico, Guam, the U.S. Virgin Islands, or Northern Marianas
- ☐ Yes, born abroad of U.S. citizen parent or parents
- ☐ Yes, U.S. citizen by naturalization – *Print year of naturalization*
- ☐ No, not a U.S. citizen

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Challenges

- July 1 – June 30 annual estimates
  - Estimates lag one year
  - Lag prevents analysis of current trends

- COVID-19 survey-related disruptions
  - High non-response bias in 2020
  - Increasing imputation rates and non-response rates

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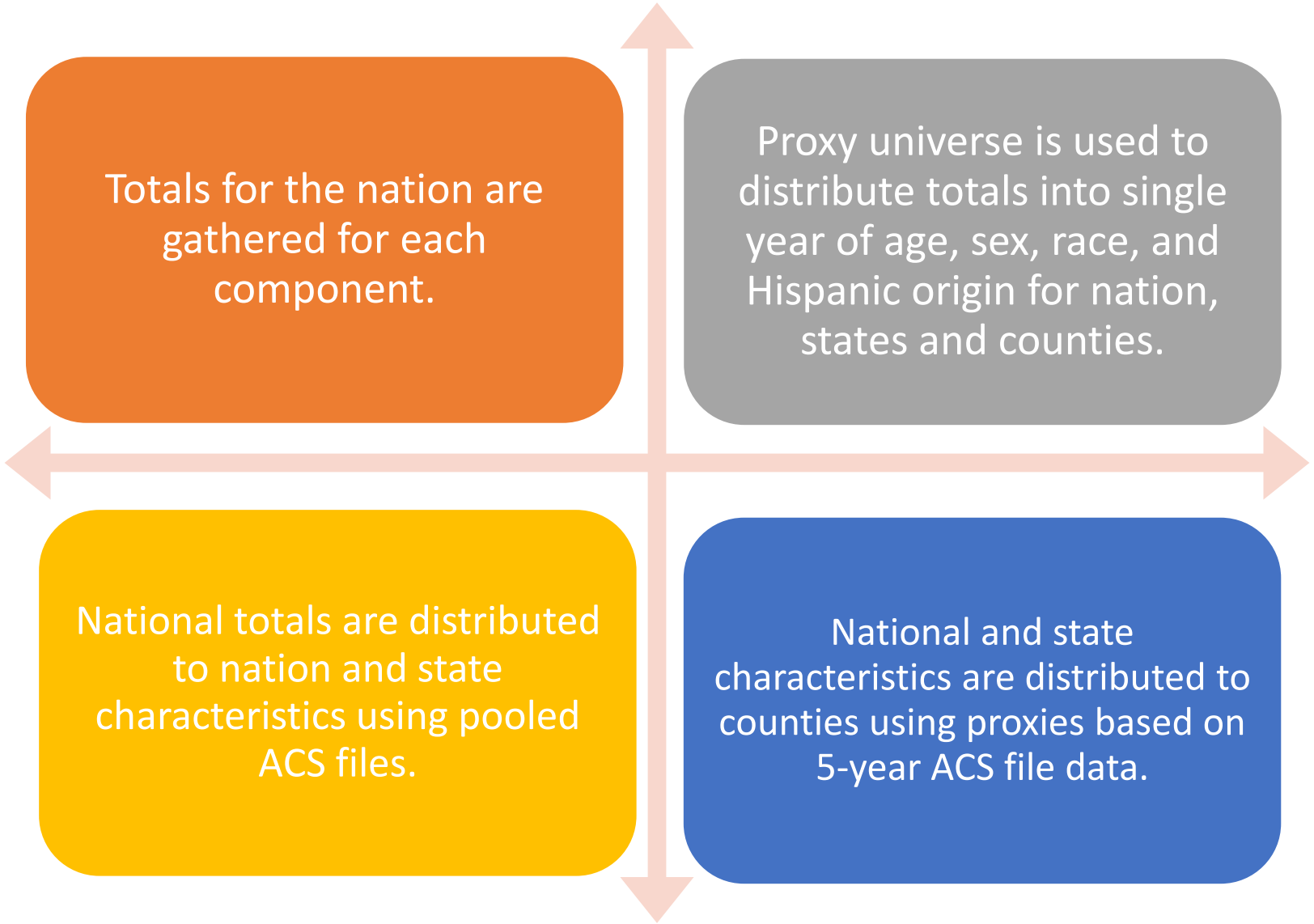
Net International Migration (NIM) Life Cycle



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Subcomponents of NIM

NON-U.S.-BORN IMMIGRATION	NET NATIVE MIGRATION	NON-U.S.-BORN EMIGRATION

• Mexico
• All other countries
	• Puerto Rico
	• Native Born
	• Military
		• **Recent**
		  • Mexico only
		  • All other countries
		• **Non-Recent**
		  • Mexico
		  • All other countries

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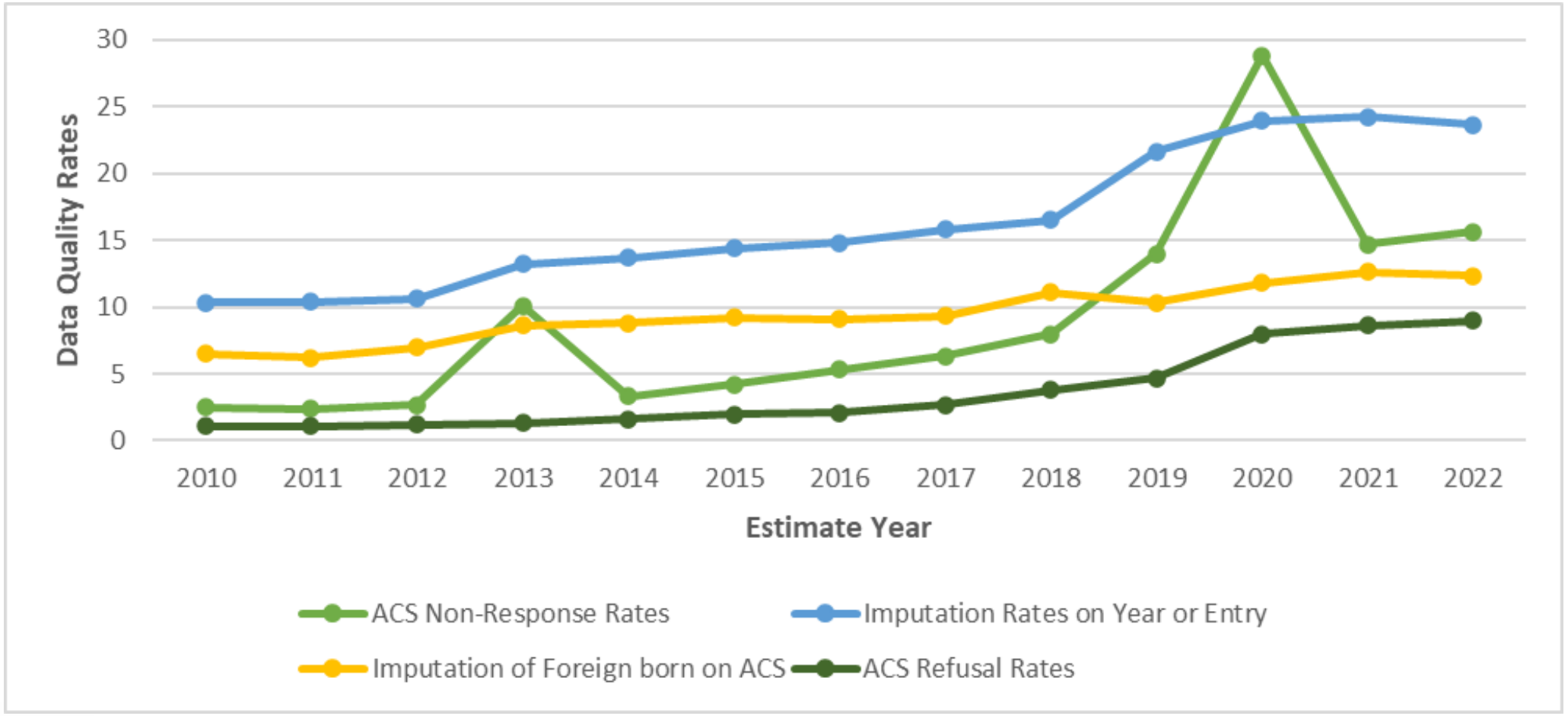
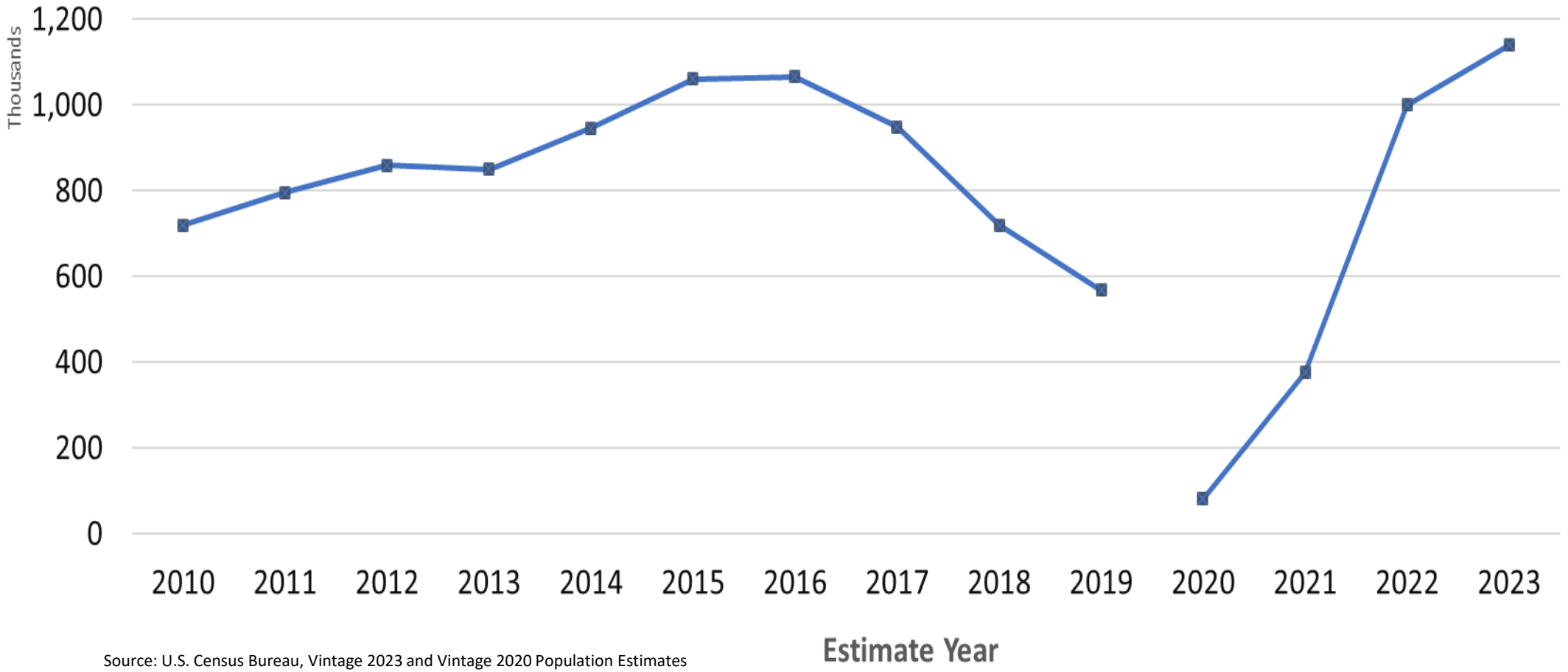
ACS Data Quality Measures: 2005-2021



Source: ACS Sample Size and Data Quality web page
https://www.census.gov/acs/www/methodology/sample-size-and-data-quality/response-rates/index.php

Net International Migration: 2010-2023



Source: U.S. Census Bureau, Vintage 2023 and Vintage 2020 Population Estimates

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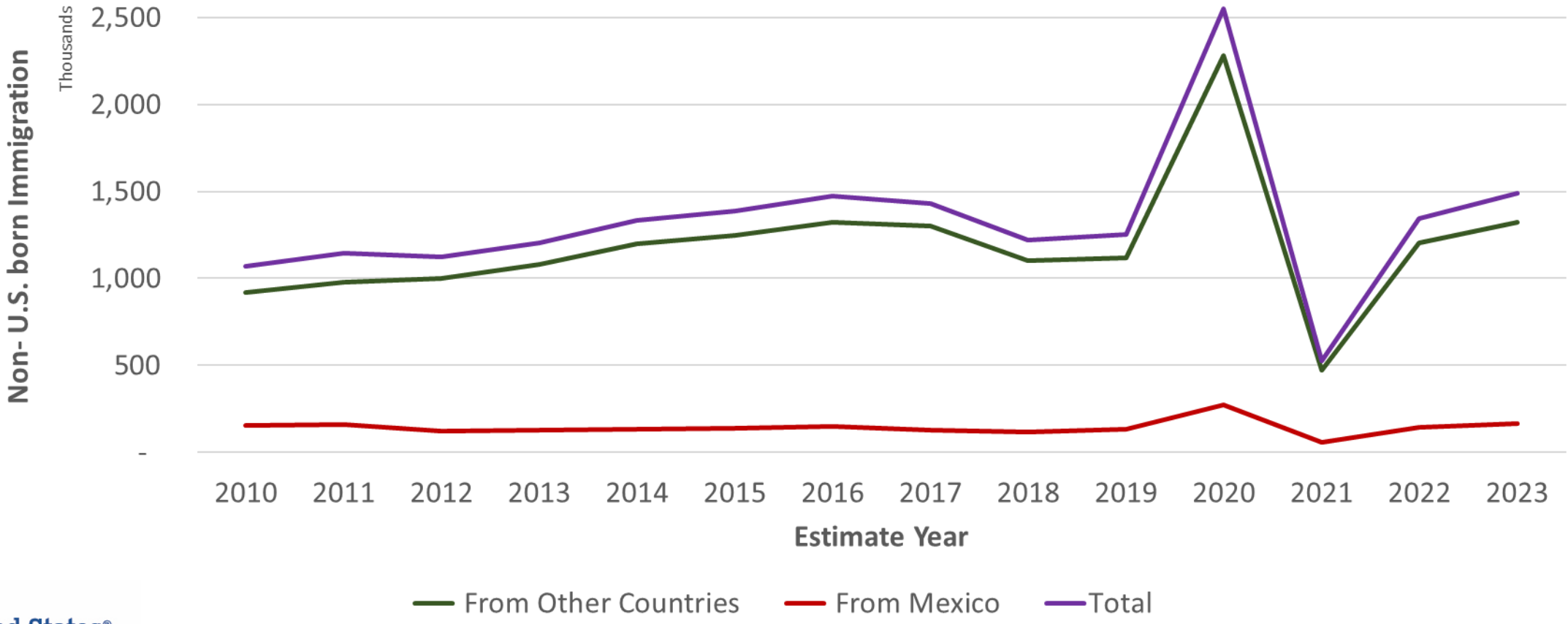
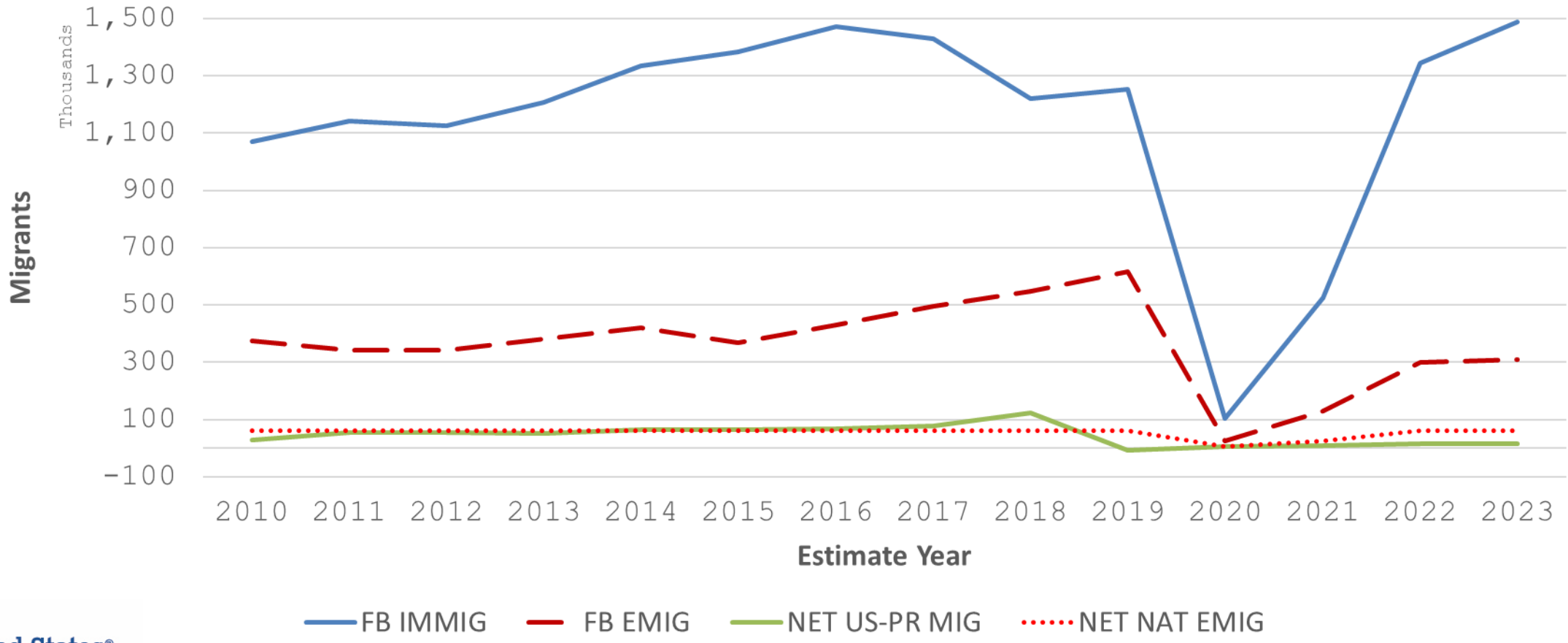
Annual Estimates of Non-U.S.-born Immigration: 2010-2023



Source: U.S. Census Bureau, Vintage 2023 and Vintage 2020 Population Estimates (internal file)

Annual Estimates of International Migration by Components: 2010-2023



Source: U.S. Census Bureau, Vintage 2023 and Vintage 2020 Population Estimates (internal file)

Current Administrative Records Research

Identify non-U.S.-born population	• Use data from Social Security Administration, Internal Revenue Service, and other administrative record sources • Link records
Immigration	• Identify geographic and demographic characteristics of non-U.S.-born • Adjust for under-coverage
Emigration	• Track resident non-U.S.-born population over time • Look for evidence non-U.S.-born person exited the U.S. • Adjust for under-coverage

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Linked Administrative Records Datasets

Numident	IRS Tax Forms

• Social Security Number (SSN)
• Place of Birth
• Citizenship status
  • Native Born
  • Naturalized Citizen
  • Non-citizen
• Year SSN assigned
	• Tax Identifier ID
	  • TIN (SSN)
	  • Individual Tax ID Number (ITIN) (Assigned by IRS – no link to Numident)
	• Address
	  • Domestic
	  • Abroad

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U.S. Administrative Data Sources

Department of Homeland Security		
Citizenship and Immigration Services	**Customs and Border Protection**	**Immigration and Customs Enforcement**

• Lawful Permanent Resident (LPR)
  • Class of Admission
  • Country of Birth/Citizenship
  • Demographic Characteristics
  • Year of Status Change
	• Arrival and Departure Information System (ADIS)	• Student and Exchange Visitor Information System (SEVIS)

• Affirmative Asylee Statistics		

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In use | Needs processing | Not acquired

U.S. Administrative Data Sources

Department of Justice	Department of State	Department of Transportation

• Defensive Asylee Statistics	• Worldwide Refugee Admissions Processing System
	• Visa Statistics
	  • Year Visa Issued
	  • Country
	  • Visa Class
		• Airline Passenger Data
		  • Entries
		  • Exits
		• Land Border Crossing Data
		  • Entries Only

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In use | Needs processing | Not acquired

U.S. Administrative Data Sources

<table>
<tr><th colspan="2">Department of Treasury</th></tr>
<tr><th>Internal Revenue Services</th><th>Social Security Administration</th></tr>
<tr><td>• Federal Tax Exemptions
  • Movement
  • Subnational totals</td><td rowspan="2">• Numident
  • Age
  • Sex
  • Country of Birth
  • Implied Year of Entry</td></tr>
<tr><td>• ITIN
  • Movement
  • Implied non-citizenship
  • Implied Year of Entry</td></tr>
</table>

United States® Census Bureau

In use | Needs processing | Not acquired

Continuing research…

- Improve ACS coverage, timeliness, and recency issues
- Continue efforts to acquire, improve, and incorporate administrative data sources
- Monitor changes in sensitivity levels of migration flows in response to U.S. policy changes or major economic shocks (i.e. pandemic, conflict, natural disaster)
- Continue working with external agencies, organizations, and countries to collaborate and exchange methodology
- UNECE-Eurostat Work on Emigration Statistics

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North American Collaborative Agreement

- In 2022, a Memorandum of Understanding (MOU) titled the “North American Collaborative Agreement” (NACA) was signed
- Arrangement between
  - Statistics Canada
  - U.S. Census Bureau
  - Instituto Nacional de Estadistica y Geografia (Mexico)

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North American Collaborative Agreement (cont.)

The goals of the agreement are to:

- Promote the exchange of methodological information and successful experiences
- Exchange data on circulatory migration and temporary moves in existing censuses, surveys, or administrative data
- Develop individual or multilateral products according to the needs arising from the MOU

United States® Census Bureau

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F-1 Student Arrivals to the United States: Lessons learned from Development of the Office of Homeland Security Statistics' Immigrant Benefits Lifecycle Database

Challenges and Opportunities for Studying International Migration in North America

IAOS-ISI 2024 Mexico Conference

Mexico City, May 16, 2024

Jason Schachter, Program Manager

Office of Homeland Security Statistics

Migration Analysis Center

U.S. Department of Homeland Security

Introduction

- Office of Homeland Security Statistics (OHSS) has worked to expand person-centric based analysis of migrants as they move through the U.S. immigration system
- Developed PERSIST to conduct longitudinal analysis of the Enforcement Lifecyle
  - Individual outcomes as border encounters move through each stage of the enforcement process
- Want to develop a similar method to analyze the Immigrant Benefit Lifecycle
  - Follow outcomes as migrants move through the U.S. immigration system's benefits processes, including changes in visa statuses, permission to work and reside in the country, and acquisition of permanent residence status and U.S. citizenship.
  - Inhibited by lack of unique identifiers (e.g. A#s) for nonimmigrant visa holders
- DHS person-centric data systems
  - U.S. Customs and Border Protection (CBP): Arrival and Departure Information System (ADIS)
  - U.S. Citizenship and Immigration Services (USCIS): Person Centric Identity Services (PCIS)
- Test viability of using ADIS to conduct Benefit Lifecycle Analysis
  - Exploratory longitudinal analysis of a cohort of the F-1 (international student) population

Immigrant Benefit Lifecycle Project

- Follow immigrants through the benefits system (or until they leave the country) to study migrant integration/adaptation
- Benefits provided by DHS (USCIS)
  - Work authorization, lawful permanent residence status (LPR), citizenship
- Longitudinal histories (including pre-migratory experiences/application process) to see what factors impact benefit-related outcomes
  - Cohort analysis to compare different groups over time- if experienced different social, economic, and political conditions, or other period effects
- Data Linkage (matching) more difficult for nonimmigrants
  - ADIS and PCIS, though not created to track immigrant benefits, already have their own advanced data linking methodologies (PCIS not fully operational)
  - If systems already exist, can we leverage them to conduct Benefit Lifecyle Analysis?

Arrival and Departure Information System (ADIS)

- Originally developed by Immigration and Naturalization Services (INS) in 2002 (transferred to CBP in 2014)
  - Automate the process of recording arrivals/departures of foreign nationals
- Includes biographic information, biometric indicators, and encounter data
- Data from DHS systems (CBP, USCIS, ICE), as well as State Department (DOS) and the Social Security Administration (SSA)
- ADIS is primarily used to identify individuals who may have violated their terms of admission by staying in the United States beyond their authorized entry period
- Match individuals based on biographic (e.g. fingerprint, name, date of birth) and event information (e.g. border crossings, I-94 arrival/departure forms, etc.)
  - Deterministic and Probabilistic Methods
- Limitations
  - Matching best from 2014 onwards; limited coverage of US to Mexico land border crossings: potential mismatch of individuals (multiple IDs for same person or multiple persons same ID)

Methodology

- Focus on F-1 international student population
  - Allows admission to the United States as a full-time student at an accredited college, university, seminary, conservatory, academic high school, elementary school, or other academic institution or in a language training program
  - Relatively well documented population; less cross-border movement with Mexico
  - Single cohort –first time arrival to US on a F-1 visa (FY 2015) –as far back as possible, up to nine years of outcomes

- Limit analysis to most recent outcomes as of November 28, 2023 (date of analysis)
  - Don't examine intermediary benefits/outcomes
  - Latest (visa) status: H1-B, Lawful Permanent Residence (LPR), U.S. citizen, emigrant, etc.

- Characteristics at time of first admission (FY 2015)
  - Age, Sex, Country of Nationality, Current State of Residence

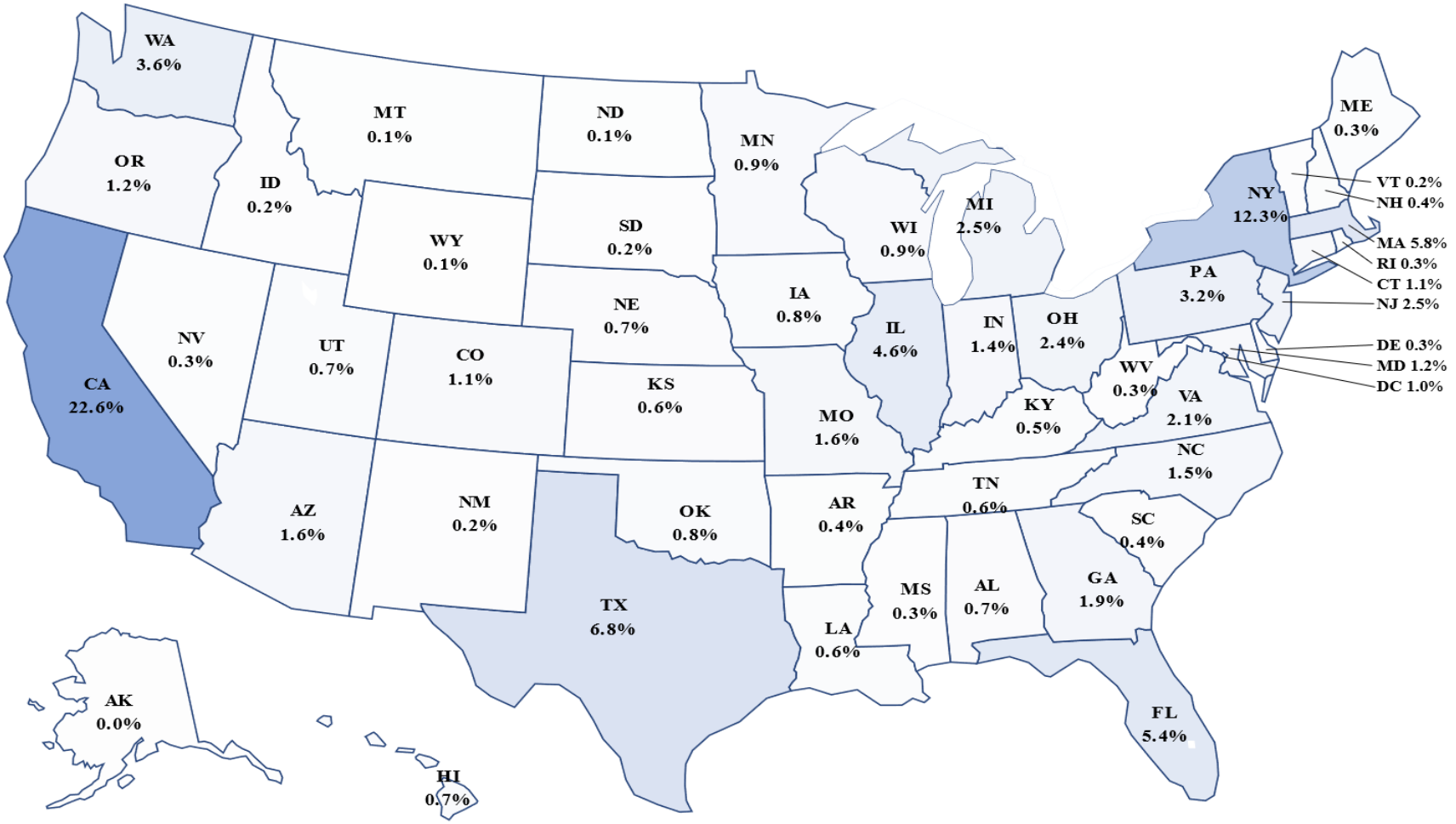
- Link with additional Student and Exchange Visitor Information System (SEVIS) variables
  - Education Level (undergraduate, graduate, language training), initial geographic location of school
    - Adjusted some records to account for overwriting of SEVIS ID information when students transferred schools

Characteristics of the F-1 population

- 409,600 first time F-1 arrivals to the United States in FY 2015
  - 1 million unique F-1 admissions (all cohorts)
  - 678,000 F visas issued in FY 2015 by DOS
- 31% graduate programs, 28% language training, 24% undergraduate
- 55% male (61% of graduate students), 45% female
- 23% Chinese, 17% Indian (69% male), 5% Saudi Arabian (75% male), 5% South Korean, 4% Japanese (58% female)
- Median age: 22 years. Graduate students 24 years, Language training 22 years, Bachelor's 19 years, K-12 16 years
- 30% of undergraduate students from China, 47% of graduate students from India, and 16% of language training students from Saudi Arabia

Geographic Distribution

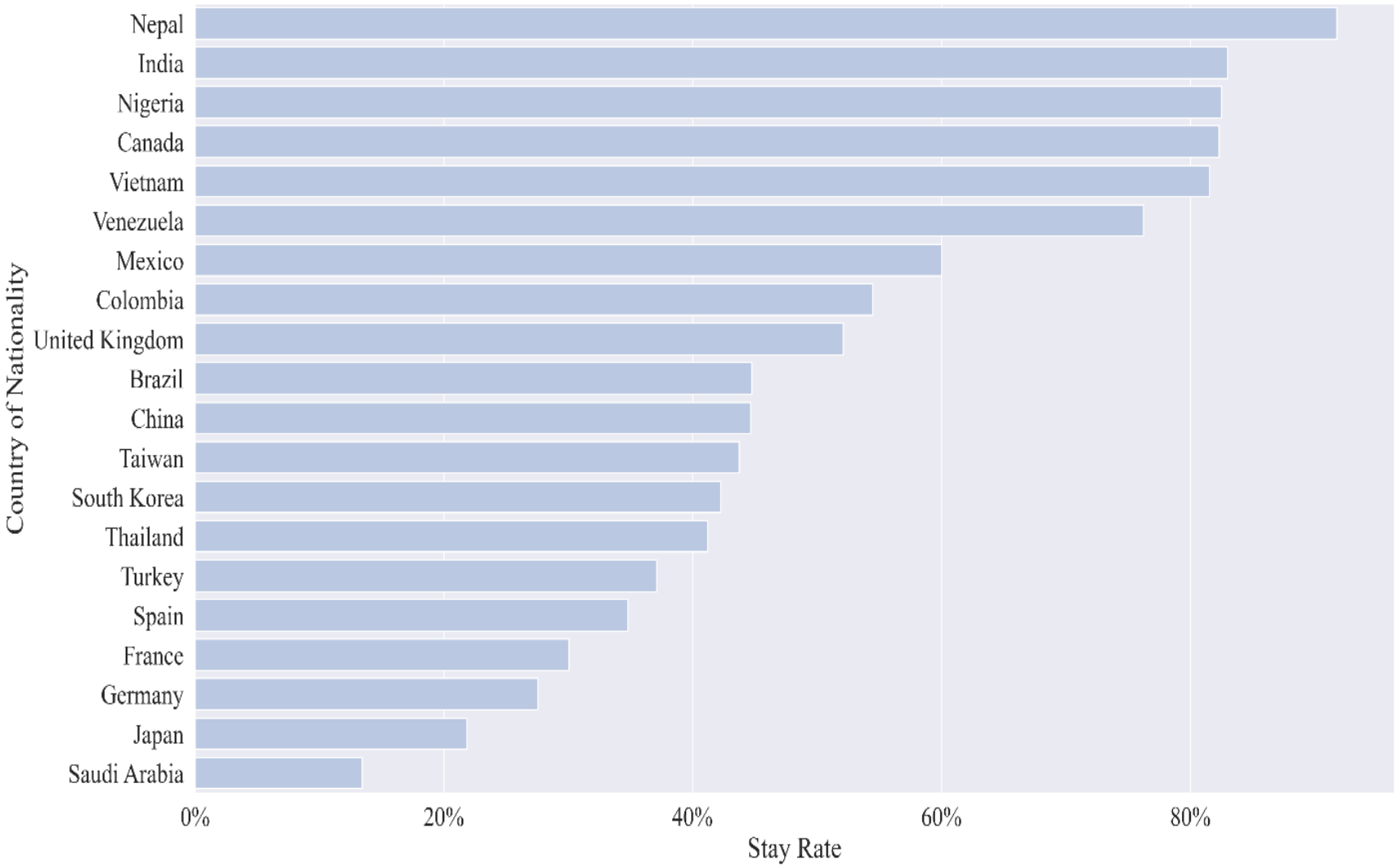
F-1s Student Arrivals by State of Academic Program: Fiscal Year 2015



Retention of F-1 students

- Foreign students often viewed as a source of high-skilled labor, and many countries have policies specifically geared towards retaining them
  - The United States allows international students to stay up to one year (or even longer for STEM fields) after graduation to gain practical training in their field of study (Optional Practical Training (OPT))
- "Retention" or "Stay" rate: percentage of international students who remain in the country after graduation
- Calculate 6- and 12-month stay rates (emigrant: left US and did not return for at least the past 6 or 12 months (continuous absence))
  - 9-year rates: 49% were still in the US for at least the past 6 months; 52% were still in the US for at least the past 12 months
- Compares favorably to other developed countries: (10-year rate) Germany 46%, Canada 44%, Australia 30%, France 20%, United Kingdom 17%, Italy 10%.
- Stay Rates by Education Level: 72% of graduate students (some entered as undergraduates), 59% K-12, 59% Associate, 53% Bachelor's, 33% language training.

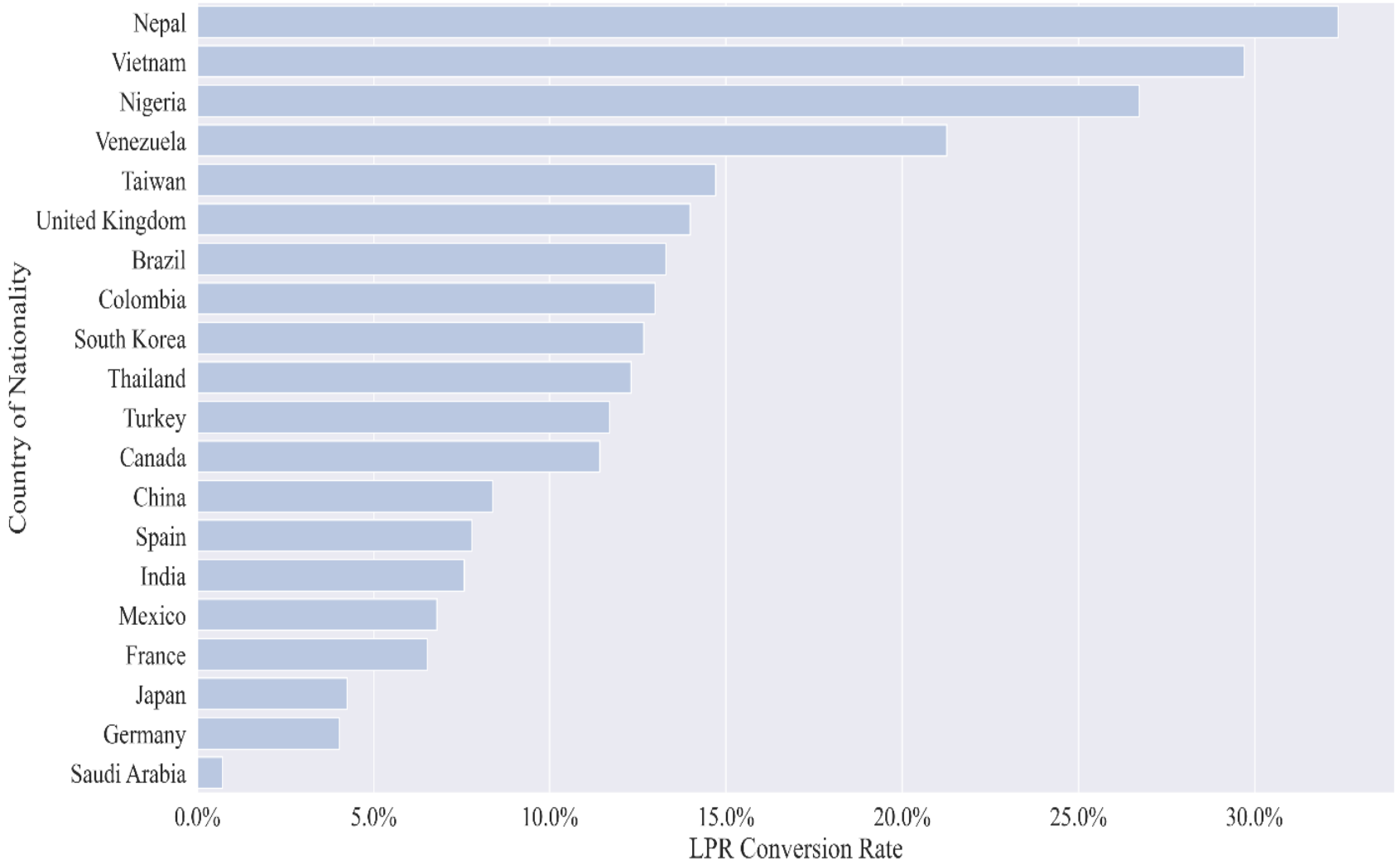
Top 20 F-1 Students Nationalities (FY 2015) by State Rate (as of November 2023)



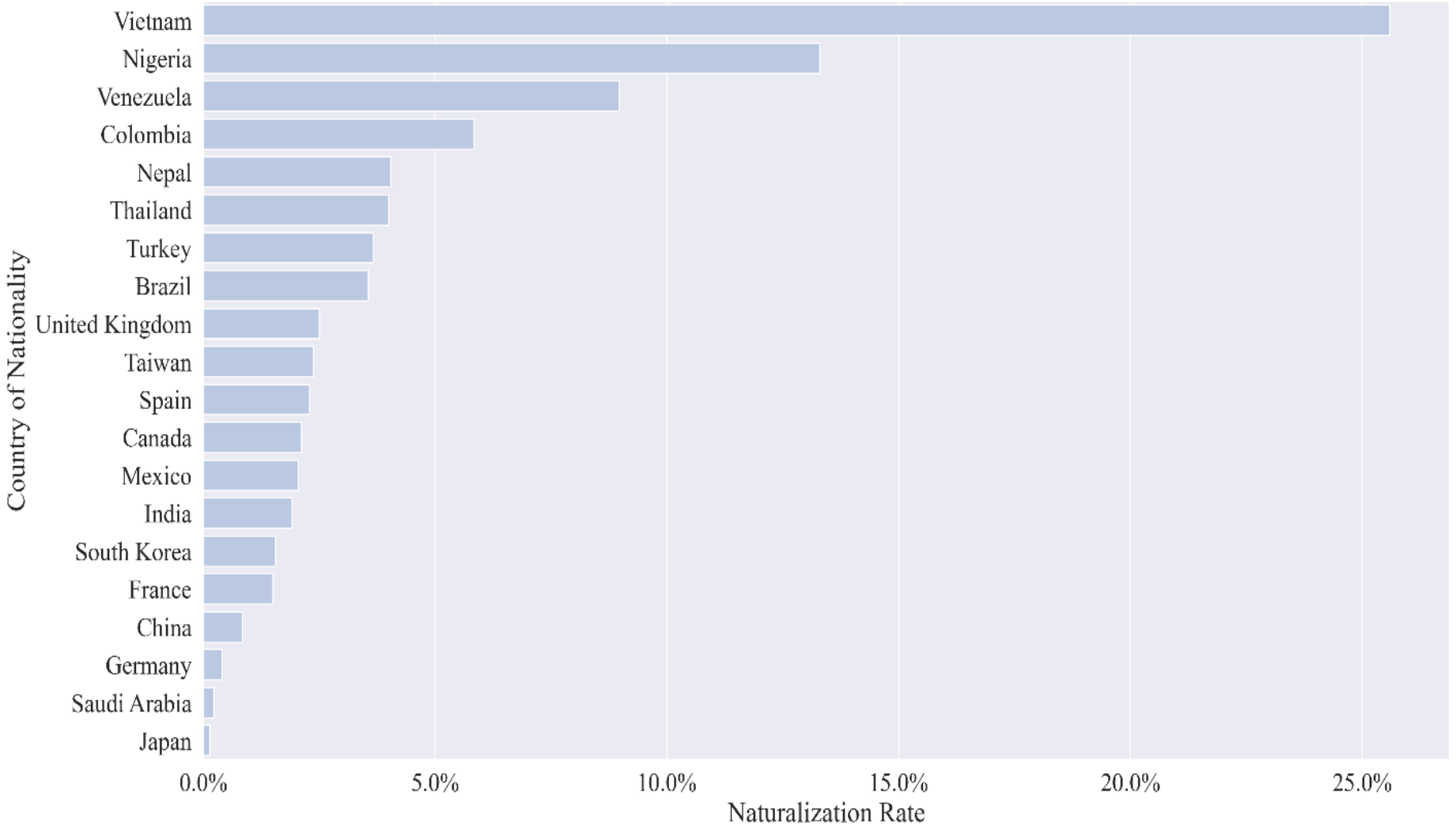
Outcomes: Current Immigration Status

- Nine years after initial arrival students could have followed several different pathways
  - Left the country, still a student, employment visa, lawful permanent resident, naturalized, etc..
- Of those still residing in the United States:
  - 29% students, 21% H1-B (employment) visas, 19% LPR, 11% B-2 (tourist) visas, 5% U.S. citizens, 13% “other” status
    - Expect low naturalization rates after 9 years (increase in future)
  - Females more likely than males to be LPRs (12% vs 9%) and U.S. citizens (4% vs 2%)
  - Males more likely to have H-1B status than females (14% vs 8%)
  - 52% of Indians have H-1Bs, with Chinese next highest at 5%
  - 58% of Chinese and 52% of Saudi Arabians still have F-1 status, compared to 11% of Indians
- The likelihood that a person has become a LPR or a naturalized U.S. citizen also varied greatly by country of origin

Top 20 F-1 Nationalities (FY 2015) by LPR Conversion Rate (as of November 2023)



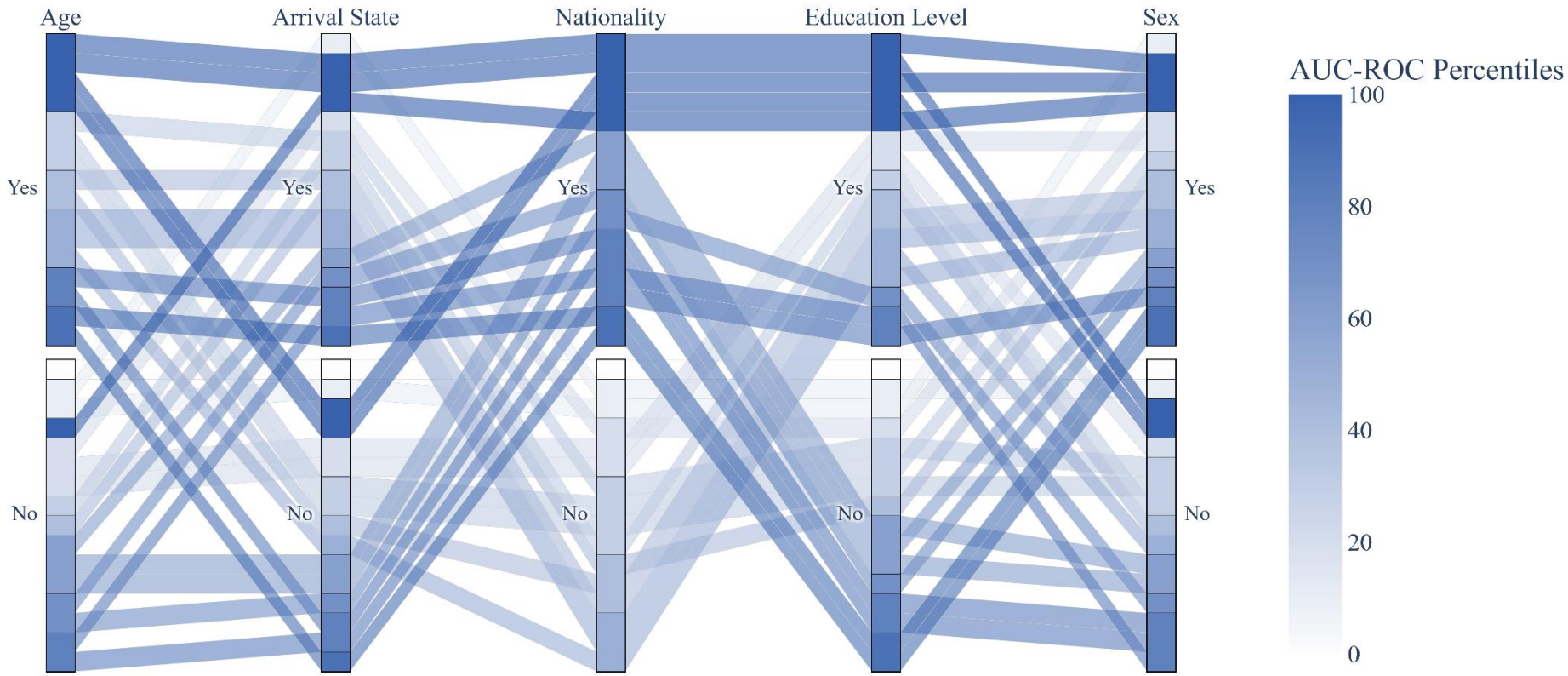
Top 20 F-1 Nationalities (FY 2015) by Naturalization Rate (as of November 2023)



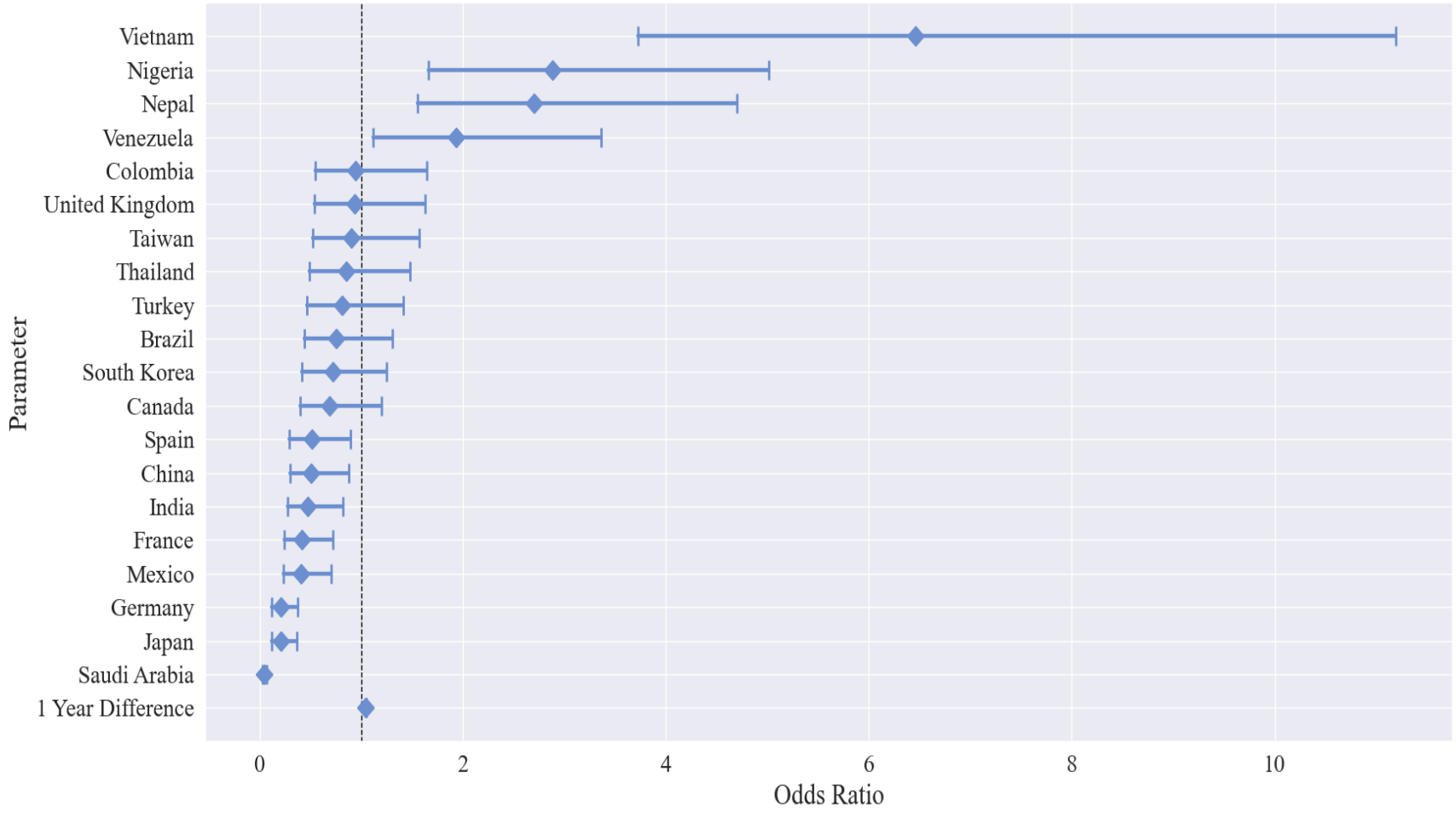
Multivariate Analysis to Predict Permanent Status

- Developed multivariate logistic regression models to predict the likelihood an international student gained permanent status within the United States, either as a lawful permanent resident or naturalized citizen
  - Dependent variable: if LPR or naturalized citizen, or not
  - Independent variables: Characteristics at the time of initial arrival to the United States
    - Sex, age at arrival, education level, country of citizenship, US destination state
- 80 percent of data for training the model and 20 percent of data for evaluation
- To better interpret predictors and observe potential multicollinearity between variables, multiple logistic models were trained with differing combinations of predictor variables
- Age at arrival and country of citizenship were found to be the best predictors of permanent resident status (see next slides)
- Model could be improved with more precise longitudinal arrival/departure information (time spent outside the United States)

Learning Parameter Combinations and Model Performance (AUC-ROC)



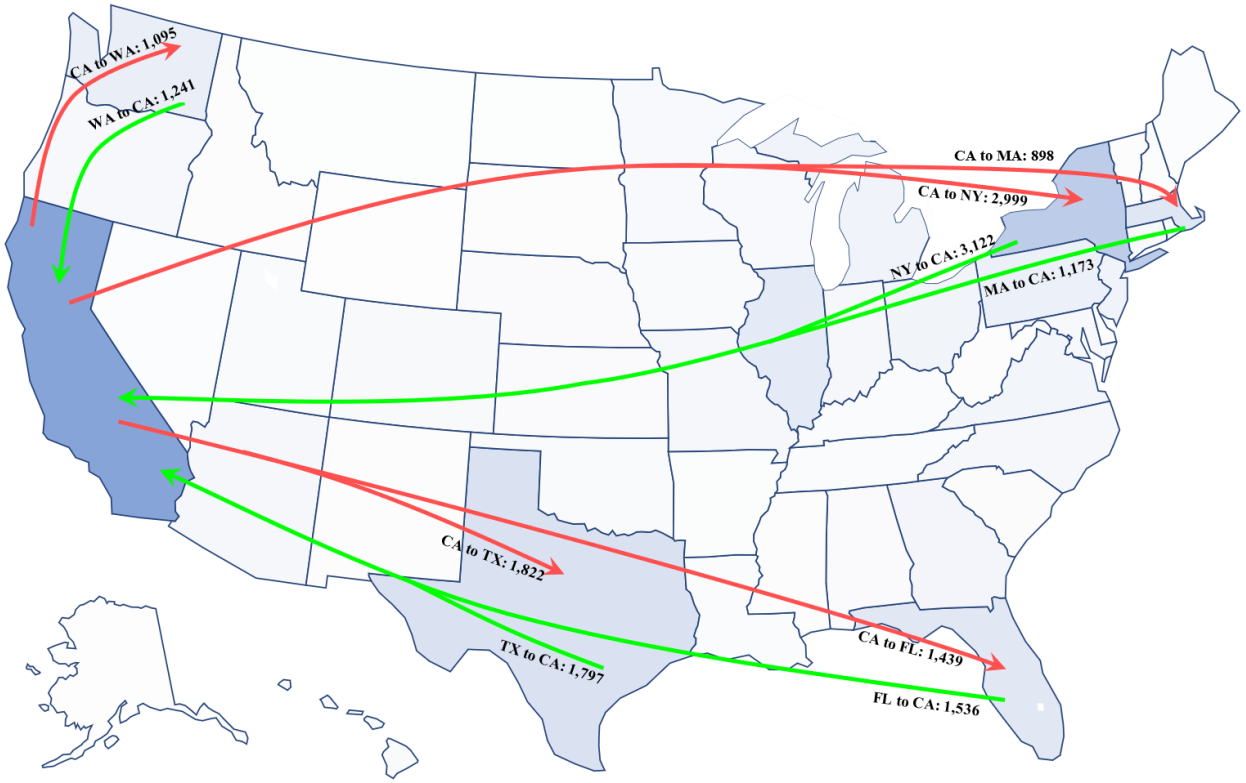
Odds Ratios (and Confidence Intervals) of Attaining Permanent Status for Countries of Origin and Age



Secondary Migration

- After initial arrival, international migrants can relocate to different areas of the country which can impact the demographic, social, and economic make-up of destination areas
- 62% of international students still residing in the United States live in a different state nine years later
  - In 2022, U.S. national 1-year moving rate was 12% and only 2.5% made an inter-state move
  - Though expect students to move to take jobs after graduation, if valid, then F-1 population is far more mobile than the general U.S. population
    - Quality of current address information provided to DHS? (warrants further investigation)
- State variation among FY 2015 arrivals still residing in the United States who moved to another state
  - Massachusetts 62%, New York 60%, Texas 57%, Florida 57%, and California 50%
- California had the largest net domestic migration gain of international students at 3,300
  - 19,500 students arrived from other states, 16,200 departed California to other states

Top 5 State-to-State Migration Flows of California F-1 Arrivals: FY 2015 to November 2023



Future Analysis

- This exploratory analysis of a single cohort of the F-1 student population serves as a proof of concept for the immigrant benefits lifecycle project and helped verify ADIS's ability to conduct this sort of longitudinal analysis
- Expand analysis
  - Other F-1 cohorts (FY 2016 and beyond)
  - Replicate later to see if outcomes change (e.g. naturalization/LPR rates and retention rates after 15 years, as opposed to nine years)
  - Compare same cohort using different data system (PCIS, own matching methodology)
  - Look at other groups, such as H-1Bs (specialty employment visas), H-2Bs (agricultural visas), and humanitarian migrant groups (refugees, asylees, Temporary Protected Status (TPS), etc.)

Next Steps/Future Work

- Development of the Immigrant Benefit Lifecycle Database
  - Ideally, look at all subsequent events after initial arrival to the United States, as well as events prior to arrival (beyond the scope of this preliminary analysis).
- Three options for the future development
  - 1) Further develop ADIS (substantial reprogramming of reporting logic and re-merging of some deleted historical records) or use PCIS (still in development) to fit needs
  - 2) Use ADIS and PCIS in tandem (assumes ADIS migrates to same cloud-based environment as PCIS, resulting in seamless transfer of information across platforms)
    - No guarantee will happen or when it would occur
  - 3) OHSS develops its own system, with ADIS as “spine,” and then links USCIS benefit data to individual ADIS records.
    - Takes advantage of ADIS’ matching and border entry coverage, while OHSS can create its own reporting structure/environment to address specific data analysis needs

Thank you!

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