

Global Migration and Demography

Using ACS data to measure unauthorized immigration: Methods, Trends and Characteristics

Jeffrey S. Passel

Senior Demographer

Council of Professional Associations on Federal Statistics (COPAFS) .S. Army War College
Bureau of Labor Statistics Conference Center
Washington, DC—6 December 2019

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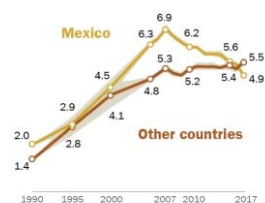
HISPANIC | JUN 12, 2019

Mexicans Decline to Less Than Half the U.S. Unauthorized Immigrant Population

For the first time, Mexican unauthorized immigrants no longer account for the majority of the 10.5 million living in the U.S. illegally.

- Interactive: Unauthorized Immigrant population trends
- Video: How we estimate the U.S. unauthorized immigrant population

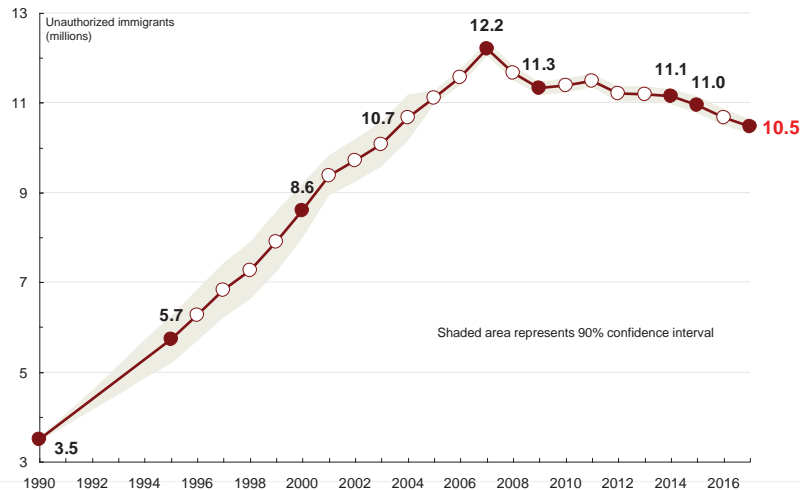
U.S. unauthorized immigrants by origin, in millions



Today's presentation

- **Measurement methods**
 - Description of Residual Method
 - Microdata **status assignments**
 - Who is “authorized” vs. “unauthorized”
- **Data sources**
 - Survey data & microdata – **ACS** & **CPS**
 - Role of weighting in measurement
 - Cross-year & cross-system comparisons
- **Example results**
 - Trends and composition
 - Family and labor force characteristics

Unauthorized immigrants grew 500K/year to reach 12+ million in '07; Sudden reversal, DROP of 500K/year; Slower declines to '17 as population drops to '04 (!) level



Source: Pew Research Center estimates based on residual methodology, Passel & Cohn (2019).

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Outline of Pew methodology

- **Estimate unauthorized in survey**
 - **Residual** = survey “immigrants” *minus* lawful (LPRs)
 - Demographic estimate of LPRs from admin records
- **Adjust for omissions**
 - Based on several external data sources
- **Assign legal status in microdata**
 - Create status variable for individuals, families, households
 - Deterministic for legal temps, refugees, naturalized
 - Probabilistic “multiple imputations” for lawful/unauthorized
- **Tabulate microdata**

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Estimating the population

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Residual estimates of unauthorized immigrants

$$\begin{aligned}
 \text{Unauthorized immigrants} = & \\
 & \text{Total immigrants (Survey)} \\
 & \text{minus} \\
 & \text{Lawful immigrants (Estimate)}
 \end{aligned}$$

- **Widely used:**
 - DHS-OIS '05–'16; Warren '80–'00
 - Passel (et al.) '80–present
 - Binational Study '96
 - Warren & Warren '13 (Variant)

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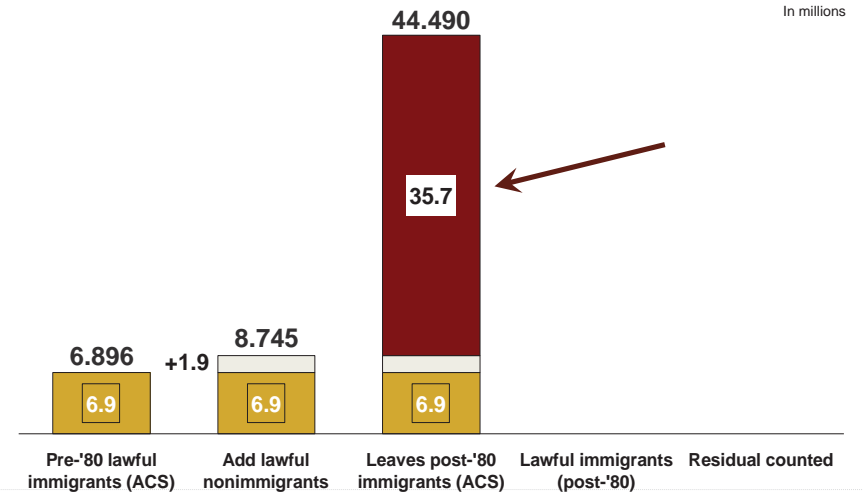
Equations for Pew estimate of unauthorized immigrants

$$\begin{aligned}
 \text{Unauthorized Immigrants} &= \text{Total Immigrants} \text{ minus } \text{Lawful Immigrants} \\
 &\quad \downarrow \\
 &\quad \text{Less Estimated Undercount} \\
 \text{Unauthorized Counted} &= \text{Counted Immigrants} \text{ minus } \text{Counted Lawful Immigrants} \\
 \text{Counted Immigrants} &= \text{Survey Foreign-Born} \text{ minus } \text{Counted Lawful Non-Immigrants}
 \end{aligned}$$

Note: All populations are for post-1980/1982 entrants.

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Residual estimate using 2017 American Community Survey



Source: Pew Research Center, consistent with Passel & Cohn 2019.

Pew Research Center

Residual estimate of unauthorized immigrants

$$\text{Total unauthorized immigrants} = \text{Counted unauthorized immigrants} \text{ plus } \text{Missed unauthorized immigrants}$$

Some assumptions:

a. Estimated undercount

% Undercount for lawful immigrants – based on Census coverage studies – *age-sex-race* * 1.75 for recent arrivals

% Undercount for unauthorized immigrants – 1.83 * specific rates for lawful immigrants

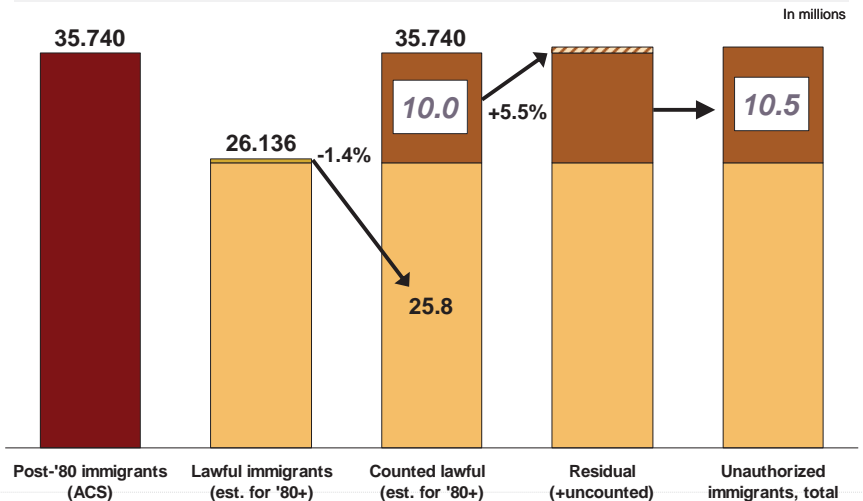
b. Estimated undercount (2)

New work (Van Hook et al. 2014) shows improvements in ACS/CPS coverage for Mexicans from '90s to late '00s

c. Internal migration – ACS rates for F-B for lawful pop

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Residual estimate using 2017 ACS: a. Reduce estimate of lawful by undercount; b. Initial estimate of "counted unauthorized"; c. Add uncounted → Total unauthorized



Source: Pew Research Center, consistent with Passel & Cohn 2019.

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Who are the “Lawful Immigrants”?

Components of lawful immigrants:

- a. Refugee arrivals (ORR, DHS/INS, State)
- b. Asylum approvals (DHS/INS)
- c. Cuban-Haitian entrants, Amerasians, some parolees (ORR)
- d. Other entrants, other parolees (DHS/INS)
- e. IRCA legalizations approved—SAWs & “LAWs” (INS)
- f. DHS/INS “new arrival” green cards (except Amerasians in d.)
- g. Adjustments to LPR status, except from a.-e. above (DHS/INS)
- h. Pre-1980 (or 1982) arrivals (ACS/CPS counts)

a.-g. are combined year-by-year using allowances for mortality, emigration, & state-to-state movement to estimate the legal population

Who are the “Unauthorized”?

- Not “lawful” or nonimmigrants (temporary)
- Overstays (~40-45% or more) & EWIs
- “Quasi”-lawful, including:
 - a. DACA Beneficiaries (~700,000)
 - b. TPS, especially Central Americans (~300,000)
 - c. Asylum applicants, defensive/affirmative (600,000-900,000)
 - d. NCARA & ABC beneficiaries, DED
 - e. Adjustment applicants (esp. K, V Visas)
- Overlapping categories (& little data)
- Possibly one-sixth of unauthorized in a.-c.

Status assignments (microdata)

Types of data and estimates

- **Analytic** estimates of unauthorized
 - a. “Counted” in survey
 - b. “Corrected” for undercount
 - c. **Totals by country/region birth** (i.e., Mexico, Latin America, Asia, Rest of World)
 - d. **6 States** (CA, FL, IL, NJ, NY, TX) and Rest of Country
 - e. Some, limited demographic information:
 - * **Age (<18/18+)** and sex
 - * Period of entry
- **Status assignments** into survey
- **Final estimates** may differ from **analytic** totals for some countries, age groups, regions, etc.

Status assignments (I)

• **Lawful temporary immigrants**

- a. Students (F, M visas) & scholars (J visa)
- b. “High-tech” guest workers (H-1B), intracompany transfers (L visas), nurses (H-1A) and physicians (J visas)
- c. International organizations (G visas), diplomats and embassy employees (A visas)
- d. Religious workers (R visas), athletes, artists, entertainers and “outstanding” talent (O,P visas)
- e. Au pairs and exchange visitors (J visas)
- f. Based on occupation, period of entry, relationships in household, other characteristics (e.g. programs)
- g. No targets, tends to understate DHS estimates
- h. Many more in ACS than CPS

Status assignments (II)

• **Refugees/asylees** (at entry)

- a. Country of birth
- b. Year/period of entry
- c. Demographic estimates (targets) control the assignments

• **Naturalized citizens**

- a. In US < 6 years → edit to alien (except spouses)
- b. In US ≥ 6 years →
 - **Mexico** → potential unauthorized (revert to naturalized)
 - **Central America** → same as Mexico
 - **All others countries** → keep as naturalized
- c. No demographic targets

Status assignments (IIa—Lawful)

• **Definite lawful immigrants**

- a. Naturalized citizens, refugees, legal temps (previous)
- b. Entered US before 1982/1980
- c. Occupations/employers →
 - Government workers, veterans, military
 - Law enforcement and related occupations
 - Court and legal employees
 - Licensed occupations (e.g., medical)
 - Security occupations (esp. with licensing; e.g., police, ATC)
 - Assorted other minor occupations
- d. Program participation (SSI, TANF, Medicaid*, Medicare)
- e. Family members (most) of lawful immigrants
- f. No demographic targets

• **Others: “Potential unauthorized” →**

Status assignments (III-Unauthorized)

• **Targets**

- a. 6 **States** (CA, FL, IL, NJ, NY, TX) and balance of US
- b. Total, **Under 18**
- c. ACS: **Mexico, Latin America, Asia, all other** (may collapse)
- d. CPS: **Mexico, all other**

• **Random assignments of Potentials**

- a. Replicate households for “multiple” imputation
 - 1) Weights are fractionalized (10 in ACS; 100 in CPS)
 - 2) Random assignments separately for individuals in each replicate
 - 3) “Like” assignments collapsed at end
- b. Initial **p**'s = Target (above) / potential unauthorized (previous)
 - 1) Parents and non-parents done separately
 - 2) Assignments for parents use child estimates as targets

Status assignments (*IIIa*-Unauthorized)

- **Final status assignments of *Potentials***
 - a. Household edits for consistency of parents, children & relatives (based on date of arrival)
 - b. Adjustment of *p*'s from (Target /potential unauthorized)
 - 1) Initial modification based on IRCA LPS occupation groups
 - 2) Possibility of using other data here (e.g., SIPP, Marcelli)
 - 3) Adjust each state-region of birth for convergence to targets
 - 4) Separate adjustments for parents/non-parents by state-region
 - c. Iterate assignments and edits until targets are hit
 - d. Relatively insensitive to initial assignments (a.-b.) since targets are 80–95% of **potential unauthorized targets**
- **Adjust weights for undercount**
 - a. From analytic estimates by state-region of birth-ages

Legal Status data

- ACS datasets → "**Legal status**" variable
- **Other variables created**
 - a. Nuclear families ("MHUs") including parent-child linkages
 - b. Family legal status (hierarchical)
 - c. Household legal status (hierarchical)
- **Uses of data**
 - a. Geography — states (except 6 "targets"); metro areas
 - b. Detailed country of birth (except Mexico "target")
 - c. Family/household data by status
 - d. Characteristics of legal and unauthorized populations

Selected measurement issues

- **Problematic components, especially...**
 - a. Emigration
 - b. Backlogs for legal admission
 - c. Counts for "quasi-legal" groups, esp. asylum backlogs
- **Categorical issues**
 - a. Definition of US residence (esp. for Mexicans)
 - b. Gross flows in/out of US and of immigration categories
- **Data issues**
 - a. Census/survey coverage (esp. for status groups)
 - b. Reliance on Census/CPS/ACS population controls
 - c. Accuracy of date of entry variable versus DHS/INS
- **Government/survey issues**
 - a. Consistent population controls & weighting over time
 - b. More microdata, especially from DHS (OIS)
 - c. Direct collection of legal status in more surveys

Survey data issues

American Community Survey

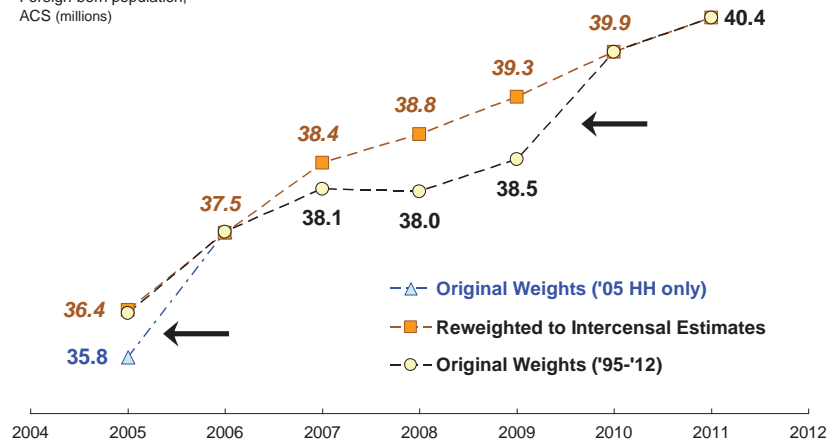
- **Universe:** Total population ('06→), households only '05
- **Sample size** (Random, representative, minor stratification)
 - a. Full sample: ~3.5 million households (~300,000 per month), 2012+
 - b. Subsampling for nonresponse → 2.1 million interviewed households
- **Key variables**
 - a. State/country of birth, citizenship, year of "entry"
 - b. **No** country of birth of parents
 - c. Public-use sample → 1% of US population (3.2+ million cases)
- **Weighting issues**
 - a. 12 merged monthly samples; 5 merged years
 - b. Comparable geography, 2000-2011, 2012- PUMAs
 - c. New population controls every year (!)
 - d. Occasional postcensal revisions & new census create breaks in estimates for some groups
 - e. Intercensal reweighting a **LARGE** impact on 2007-2009 estimates
 - f. Census Bureau **RARELY** revises weights (even if needed)

Key dates for population controls

- **Pre-2010 population estimates**
 - a. Immigration revisions in Vintages 2007, 2008, 2009, 2010
- **Census 2010-based controls**
 - a. Large revisions to Asians and Hispanics
 - b. Intercensal estimates revise population data for 2001-2009
 - c. No revisions to weights
- **Revisions to weights and data sets**
 - a. Census Bureau almost never revises weights
 - b. Pew has **revised survey weights** (using methods that replicate, to the extent possible, the Census Bureau's methods)
 - 1) ACS 2005-2009 for intercensals
 - 2) March CPS 1995-1999, 2001-2009 (Census revised 2000, 2010, 2011)
 - c. Pew has created new data for group quarters population in 2005 ACS to provide data for entire US population

Consistent ACS weights matter for '05, '07-'09 and year-to-year

Foreign-born population, ACS (millions)



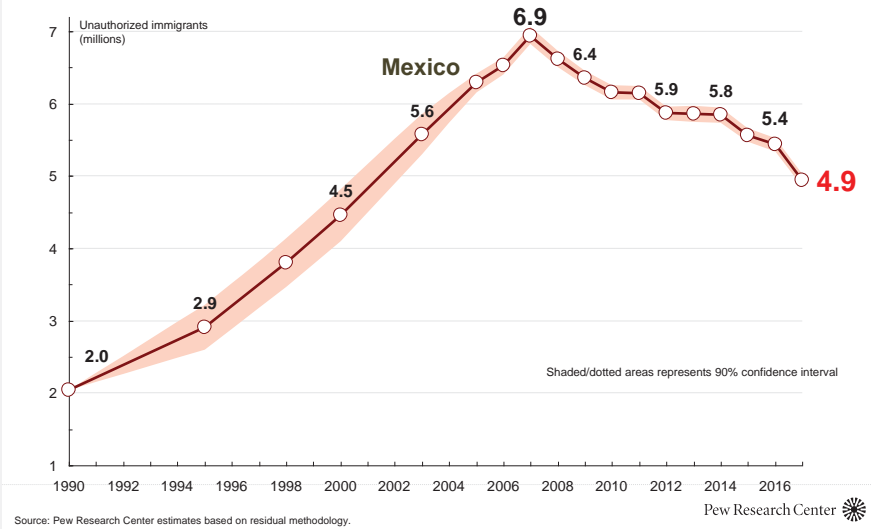
Conclusions

- **Unauthorized immigrants are represented in ACS**
 - a. Methods are available for estimating immigrant populations
 - b. Extensions to determine characteristics are also available
- **Population controls can directly affect analyses**
 - a. Extreme care is needed in measuring trends, especially across census dates
 - b. Consistent weights are available for ACS-CPS from Pew
- **Better data on coverage is needed**
 - a. Direct measures for foreign-born not available
 - b. Separate estimates for unauthorized immigrants would help
- **Much can be learned from ACS and CPS**
 - a. Careful analysis is required
 - b. CPS has diverged from ACS in last few years
 - c. CPS data seems problematic, especially for Mexicans

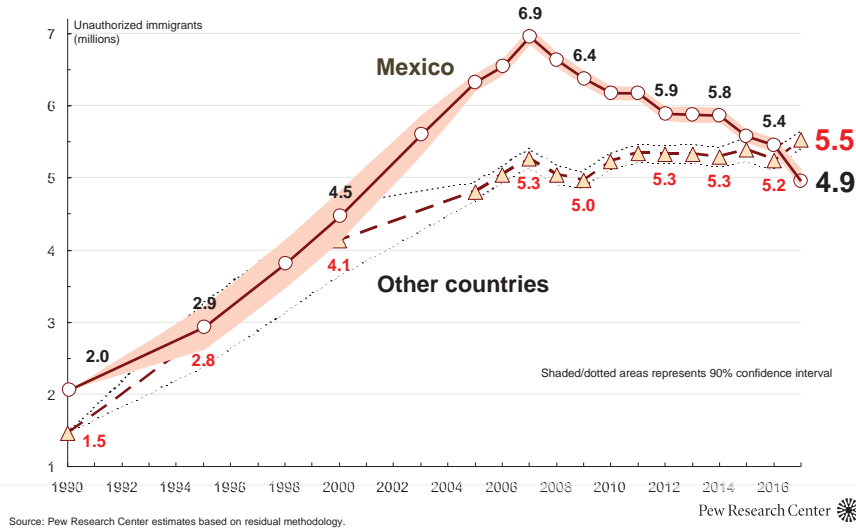
Selected results

Pew Research Center

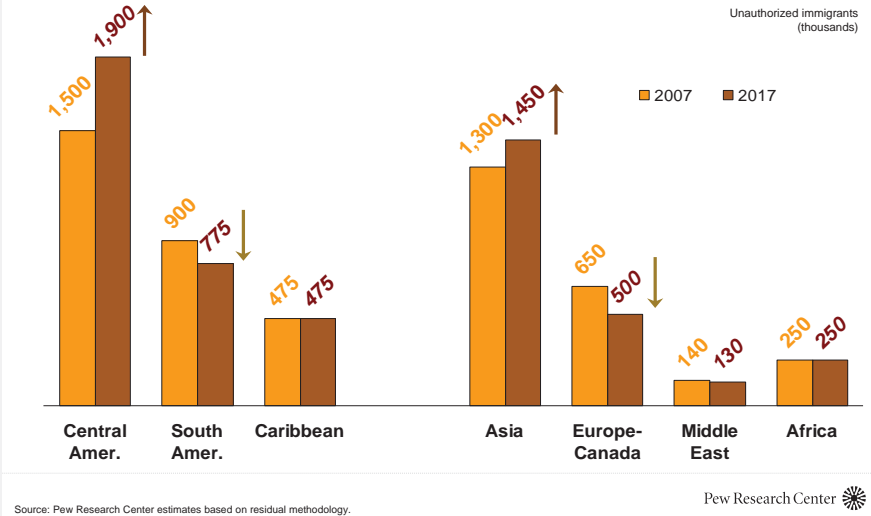
Unlike total, Mexican declines continue — Down by **2 million (!)** from peak



Unauthorized from countries other than Mexico show rapid increase to '07; small increase since; Mexicans LESS THAN HALF of total for 1st time ever in '17

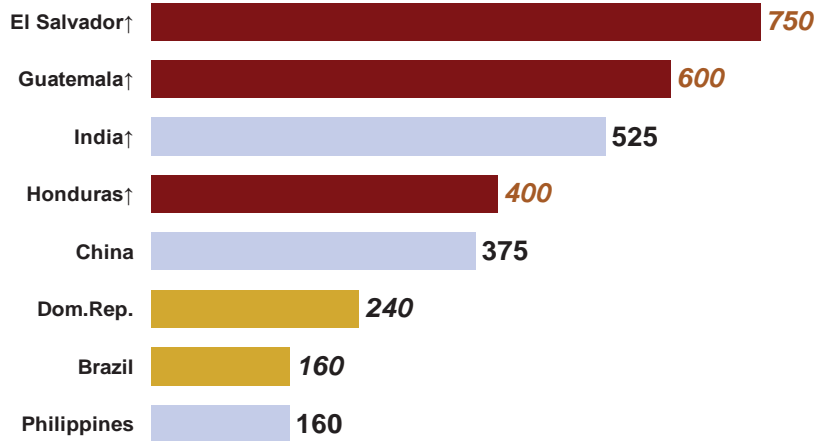


Mexico down 2 million since '07; Central America, Asia – UP; South America, Europe-Canada - DOWN; Others stable



Next 4 countries all up for 2007-2017; Then next 4 unchanged

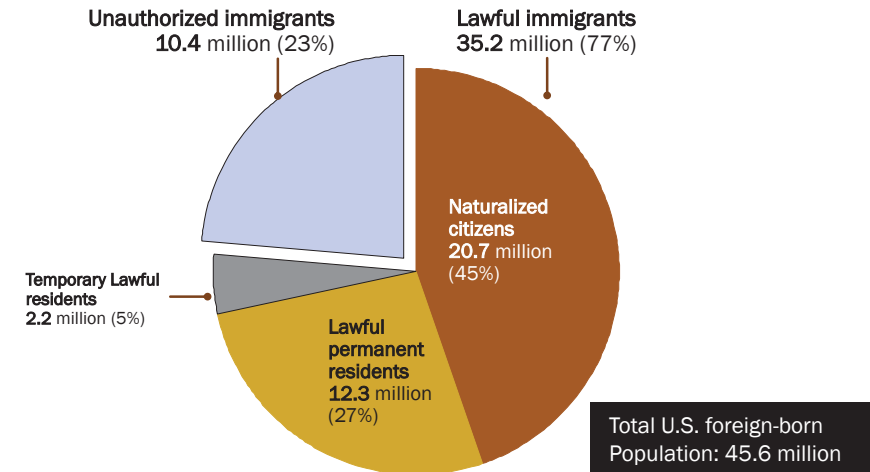
Unauthorized immigrant population (thousands)



Source: Pew Research Center based on augmented 2017 ACS. ↑ indicates change since 2007.

Pew Research Center

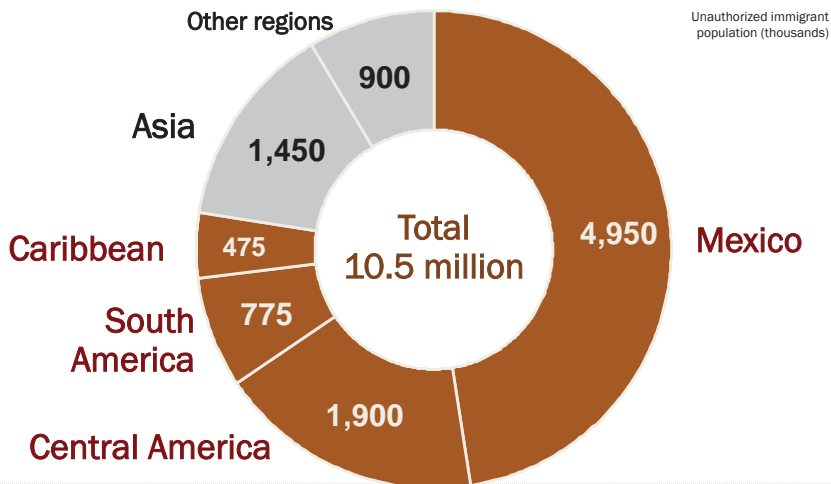
About one-in-four U.S. immigrants are unauthorized



Source: Pew Research Center based on augmented 2017 ACS.

Pew Research Center

Unauthorized immigrant population dominated by Mexico, Latin America

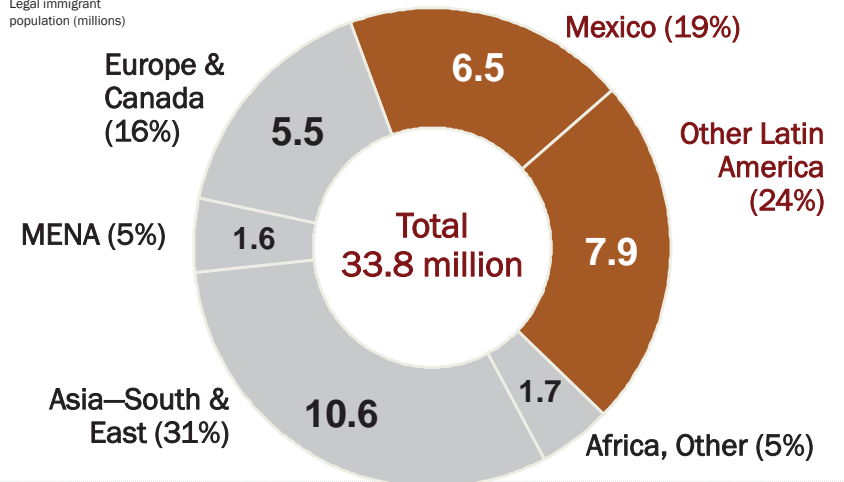


Source: Pew Research Center based on augmented 2017 ACS.

Pew Research Center

Mexico is largest single source of legal foreign-born, also

Legal immigrant population (millions)



Source: Pew Research Center based on augmented 2017 ACS.

Pew Research Center

Unauthorized Immigrants and control of the Border

Implications of changing patterns

- Growth through '07 and then decline driven by Mexican immigrants
- Drop in "new arrivals" also driven by Mexico
- Most unauthorized from places other than Mexico & Central America are visa overstayers
- The southern border is generally "secure"
 - Apprehensions of Mexicans are at a 50-year low
 - Central Americans (esp. families) are not trying to evade capture
 - Strong deterrence from (1) urban fencing; (2) Border Patrol build up; (3) technology; and (4) violence in northern Mexico
 - Evading capture is very difficult
 - Costly and risky to sneak into or re-enter the US
- Unauthorized immigrants increasingly rooted in the US
 - Time in the US has gone up markedly
 - US-born children (both in school and graduated from school)
 - Social support networks in the US
 - Geographic diversity gives employment and settlement options

Drop in "New Arrivals" especially large for Mexico (-75%) versus others (-1% overall)

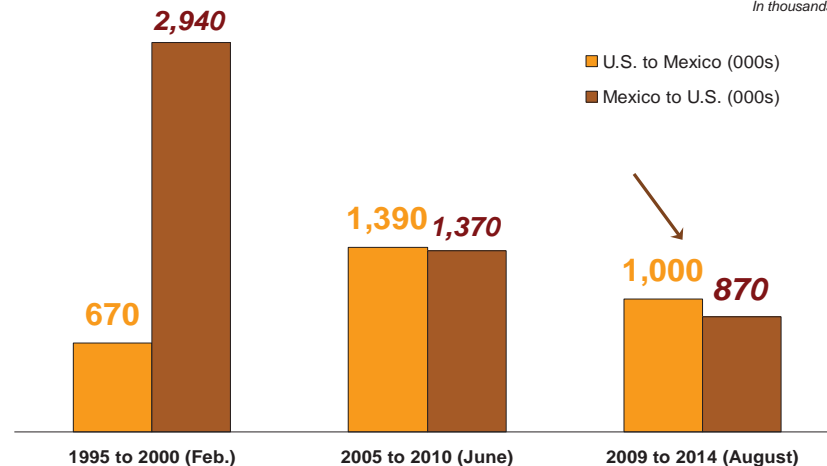
Unauthorized immigrants (000s)

	Annual arrivals (avg.) 2012-17		Annual arrivals (avg.) 2002-07	
	No.	Share	No.	Share
Mexico	85	20%	375	52%
Northern Triangle	75	17%	80	11%
Asia	100	23%	95	13%
Other countries	170	40%	170	24%
Total	425		725	

Source: Pew Research Center based on augmented 2017 & 2007 ACS.

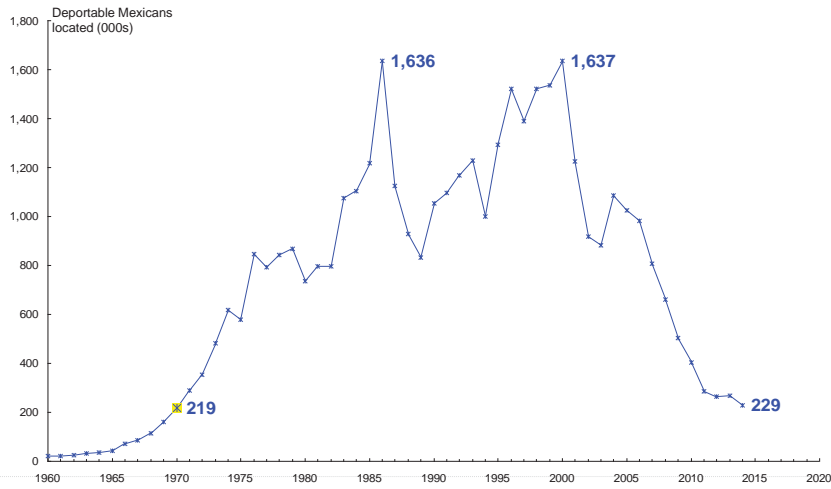
Mexican Entries Down—Returns Up → Net ZERO '05-'10; Net to Mexico for '09-'14

In thousands



Source: Pew Research Center based on various sources, Gonzalez-Barrera 2015.

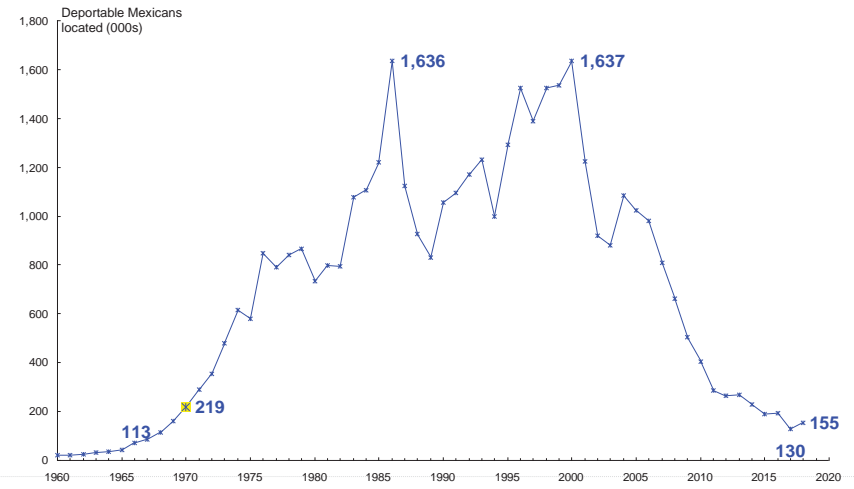
Apprehensions of Mexicans in 2014— Lowest since 1971



Source: Department of Homeland Security and INS, CBP apprehension statistics

Pew Research Center

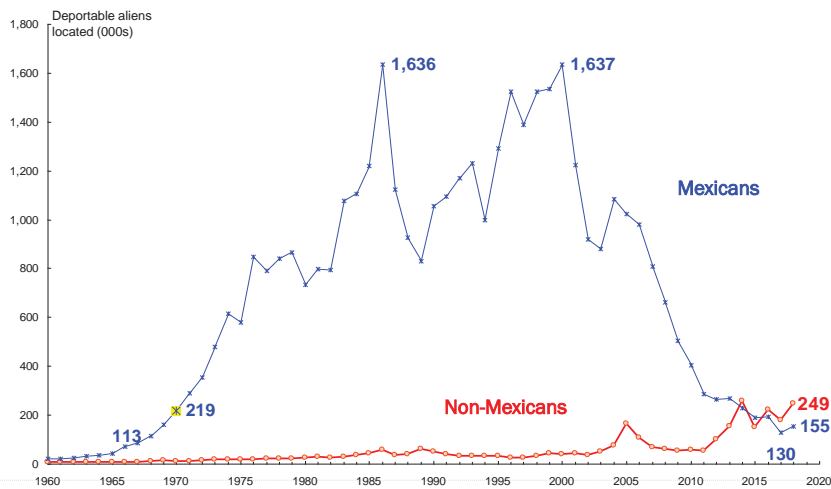
Apprehensions of Mexicans in 2017-18 Lower still → lowest since 1968



Source: Department of Homeland Security and INS, CBP apprehension statistics

Pew Research Center

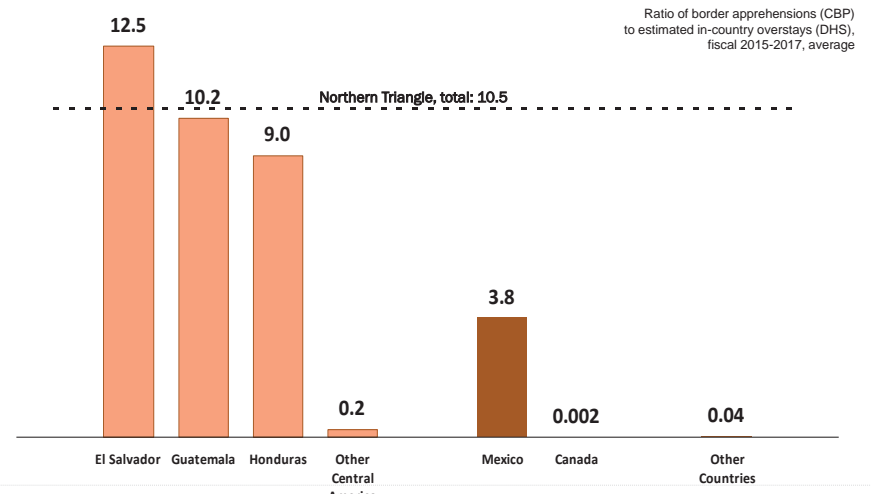
Non-Mexican apprehensions exceed Mexicans, but total still low



Source: Department of Homeland Security and INS, CBP apprehension statistics

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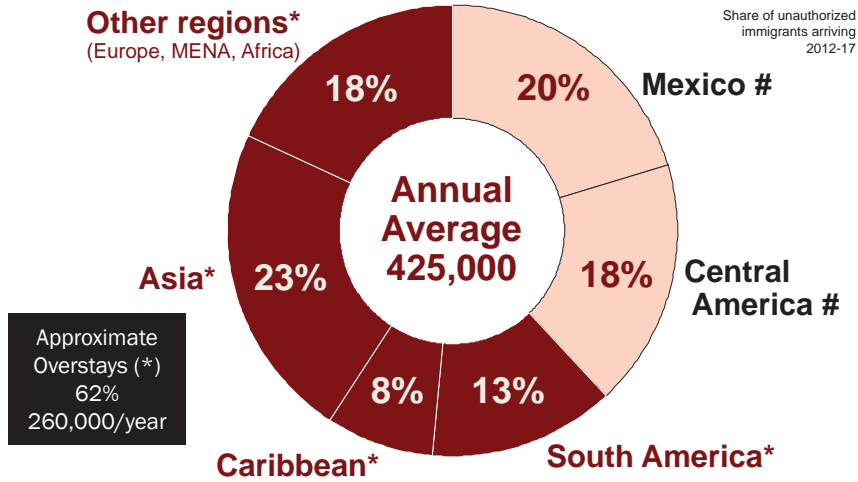
Cross-border entries are main source of unauthorized immigrants for Northern Triangle countries and Mexico; Apprehensions for other countries (even in Central America) pale in comparison to visa overstays



Source: DHS apprehensions from CBP and Overstay reports for FY 2015-2017.

Pew Research Center

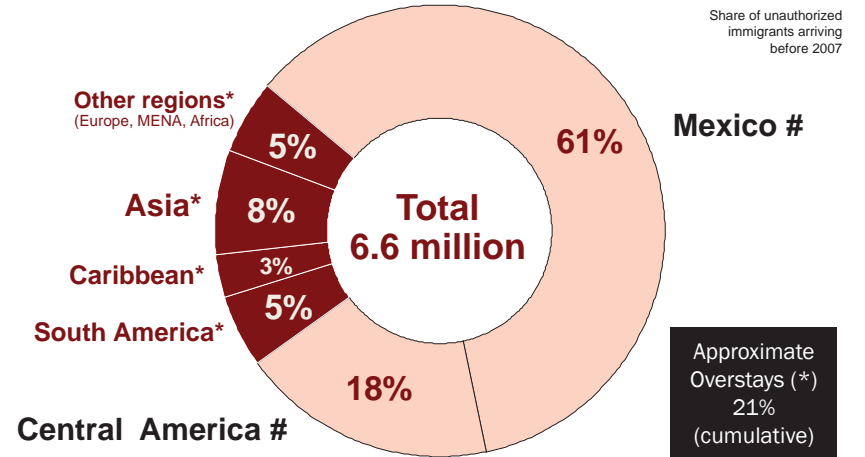
New unauthorized immigrants in 2017 are NOT illegal entrants(#) but likely overstays(*)



Source: Pew Research Center based on augmented 2017 ACS

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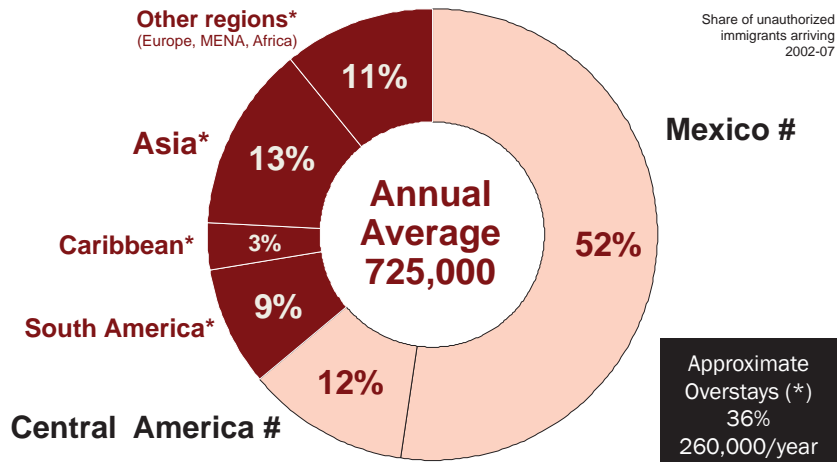
Long-term residents are overwhelmingly illegal entries (#), NOT overstays (*)



Source: Pew Research Center based on augmented 2017 ACS

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New unauthorized immigrants in 2007 were illegal entrants(#) NOT likely overstays(*)



Source: Pew Research Center based on augmented 2007 ACS

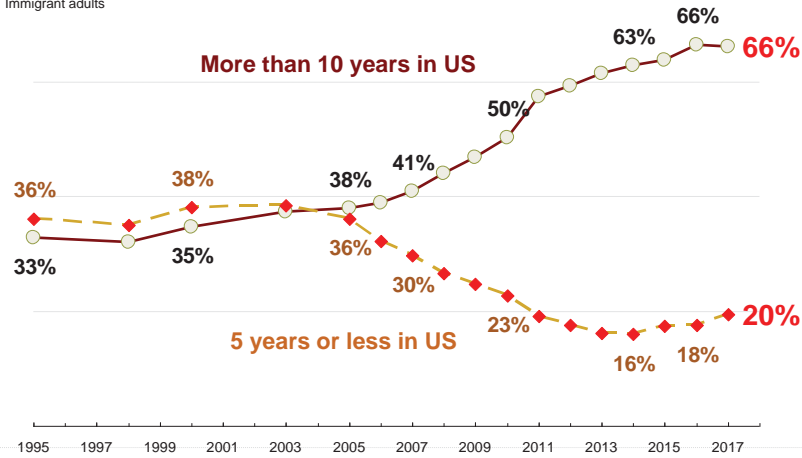
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Immigrant families & children

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Increasing % of unauthorized immigrant adults in the US for many years

Share of unauthorized immigrant adults

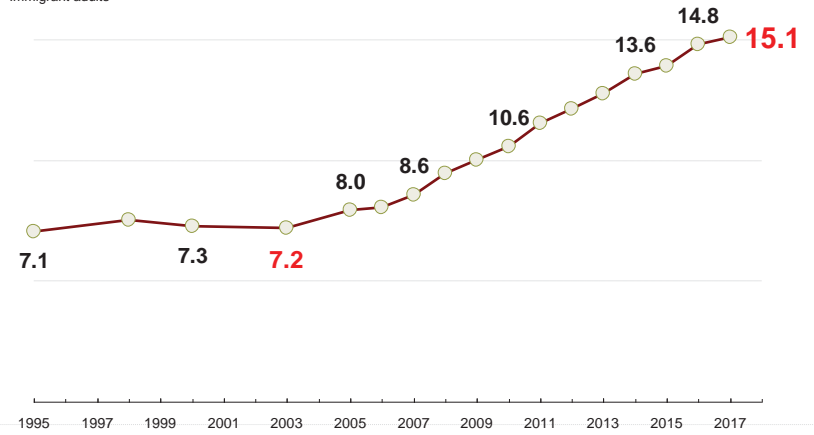


Source: Pew Research Center based on augmented 1995-2003 CPS, 2005-2017 ACS

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Average years in the U.S. (15) has more than doubled in the last 15 years

Median years in U.S. for unauthorized immigrant adults

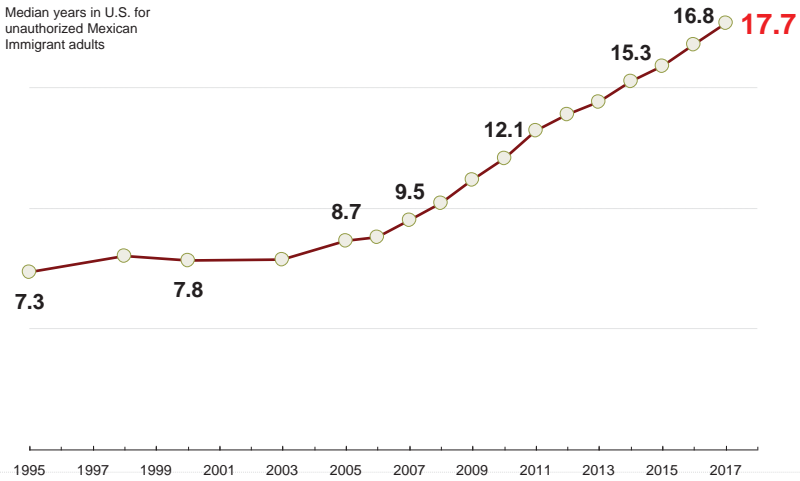


Source: Pew Research Center based on augmented 1995-2003 CPS, 2005-2017 ACS

Pew Research Center

“Typical” Mexican unauthorized immigrant came in the 20th century, not the 21st

Median years in U.S. for unauthorized Mexican immigrant adults

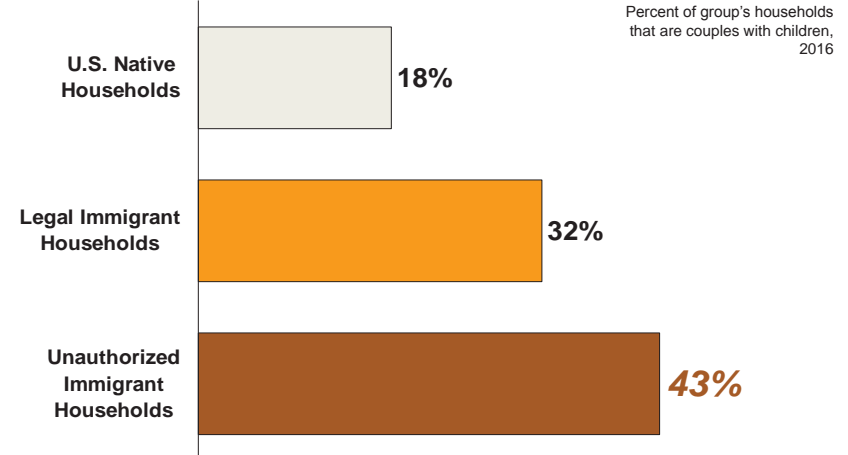


Source: Pew Research Center based on augmented 1995-2003 CPS, 2005-2017 ACS

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Immigrants, especially unauthorized, more likely to be couples with children

Percent of group's households that are couples with children, 2016

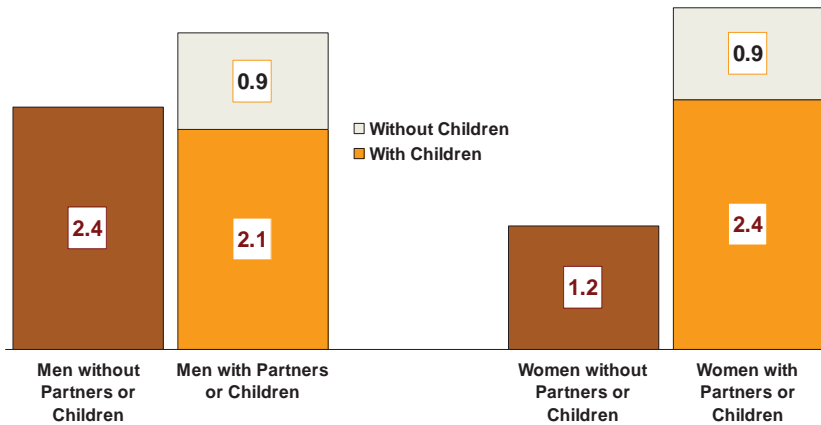


Source: Pew Research Center based on augmented 2016 ACS

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A majority of unauthorized adults are married or have children

Unauthorized immigrant Adults, 2016 (millions)

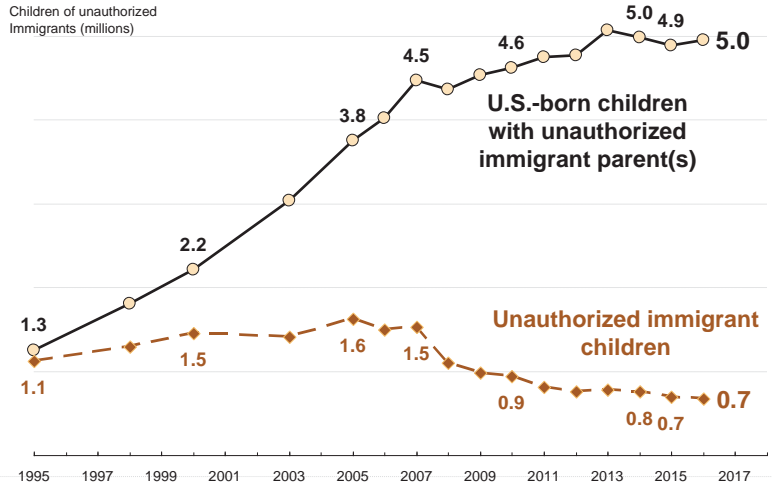


Source: Pew Research Center based on augmented 2016 ACS.

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Unauthorized immigrant kids down more than half with reduced inflows; US-born children with authorized immigrant parent(s) increase rapidly and then level off (from aging out)

Children of unauthorized Immigrants (millions)

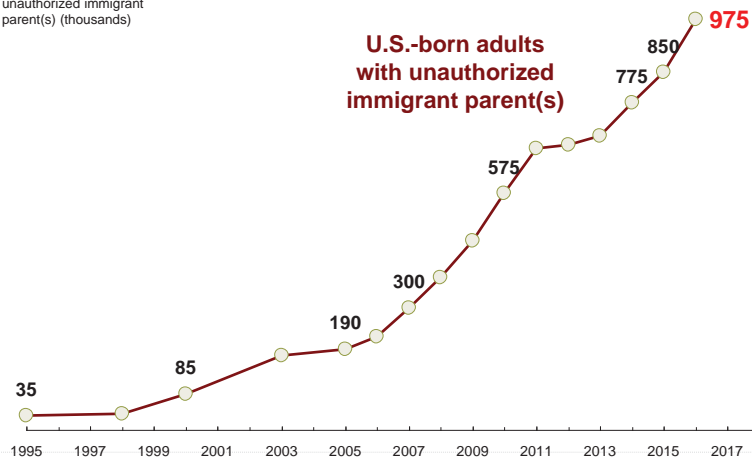


Source: Pew Research Center based on augmented 1995-2003 CPS, 2005-2017 ACS

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Adult U.S.-born children of unauthorized immigrants increased rapidly in recent years

Adult children with unauthorized immigrant parent(s) (thousands)



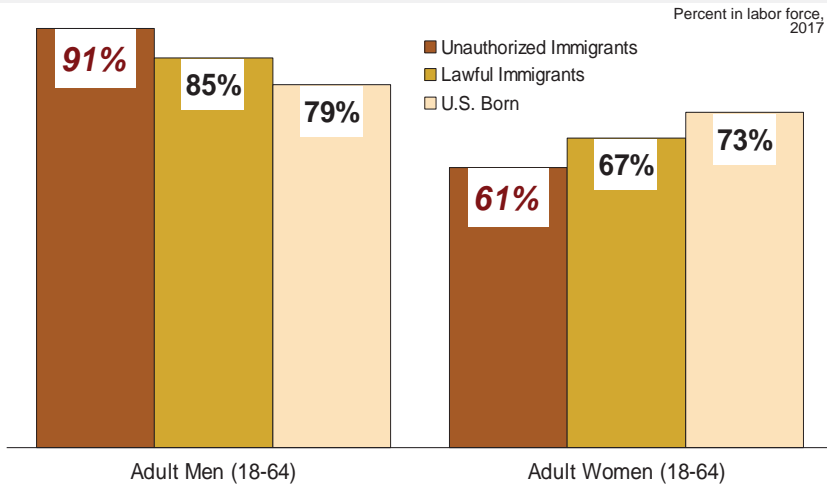
Source: Pew Research Center based on augmented 1995-2003 CPS, 2005-2017 ACS

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Unauthorized immigrants and the workforce

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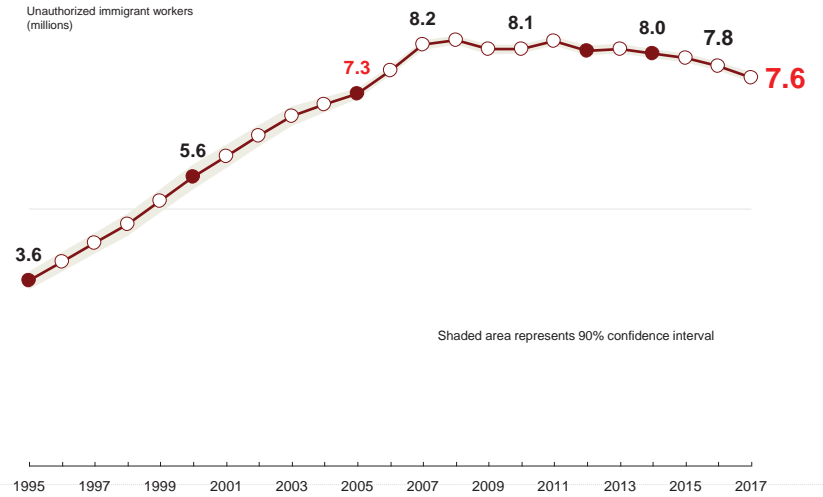
Immigrant men work more than natives; Women work less



Source: Pew Research Center based on augmented 2017 ACS

Pew Research Center

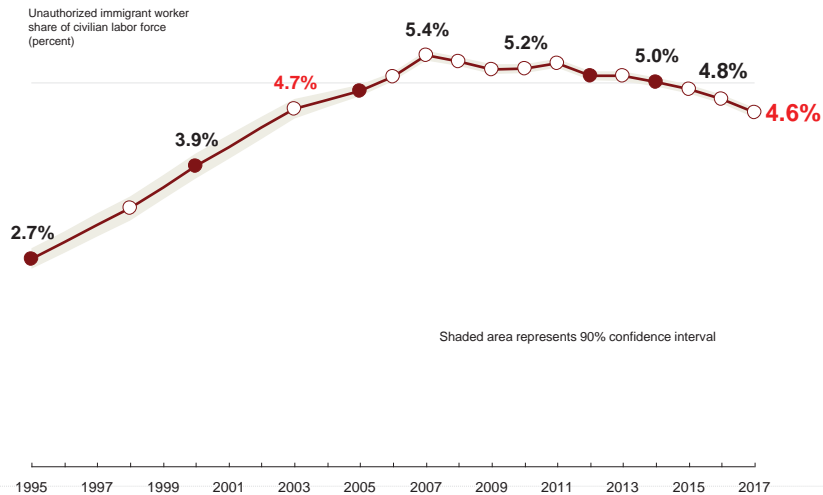
Unauthorized immigrant workforce trending down; Under 8 million — lowest since 2005



Source: Pew Research Center estimates based on residual methodology.

Pew Research Center

Unauthorized immigrant share of workforce — Continues to down to lowest share since 2003



Source: Pew Research Center estimates based on residual methodology.

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**There's a lot more in the reports!
Thank you! Questions?**

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Contact Information

Jeffrey S. Passel

Senior Demographer

jpassel@pewresearch.org

202-419-3625 (direct)

202-527-2146 (mobile)

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