

DHS Overestimates Visa Overstays for 2016; Overstay Population Growth Near Zero During the Year

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Executive Summary

For years, noncitizens who fail to abide by the terms of their nonimmigrant (temporary) visas were not widely recognized as major contributors to the US undocumented population. Yet since 2005, the ratio of overstays to illegal entries across the border has increased rapidly as the number of border crossings dropped to 1970s levels. As a result, the inflow of overstays has exceeded border crossers for nearly a decade. These developments highlight the importance of accurate and timely estimates of overstays.

In 2017, the US Department of Homeland Security (DHS) released a report, *Fiscal Year 2016 Entry/Exit Overstay Report*, showing estimates of overstays, by country, for the 50.4 million nonimmigrants admitted in fiscal year 2016 (DHS 2017). At the end of the fiscal year, DHS had not verified the departure of 628,799 nonimmigrants.¹

The Center for Migration Studies (CMS) compared the DHS overstay estimates to CMS's estimates of the number of undocumented residents that arrived in the past few years. Data were available to make the comparisons for 133 countries; these countries account for 99 percent of all overstays. The major findings include the following:

- For 90 of the 133 countries, the DHS and CMS estimates differ by less than 2,000, and the correlation between the estimates for those 90 countries is .97, which indicates a very close mutual relationship.
- The DHS estimates of overstays for Canada are far too high.
- The DHS estimates greatly exceed the CMS estimates for about 30 countries, half of them participants in the US Visa Waiver Program (VWP).²

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¹ The 628,799 figure refers to nonimmigrants that arrived in 2016 and whose departure had not been verified by the end of 2016. Thus, as demonstrated in this paper, it includes nonimmigrant admissions whose departure was not verified *and* actual overstays.

² The US Visa Waiver Program (VWP) is described at https://www.dhs.gov/visa-waiver-program, as follows: "The VWP, which is administered by the Department of Homeland Security (DHS) in consultation with the State Department, permits citizens of 38 countries to travel to the United States for business or tourism for stays of up to 90 days without a visa. In return, those 38 countries must permit US citizens and nationals to travel to their countries for a similar length of time without a visa for business or tourism purposes."

- Slightly more than *half* of the 628,799 reported to be overstays by DHS actually left the country but their departures were not recorded.
- After adjusting the DHS estimates to take account of unrecorded departures, as well as departures in 2016 of overstays that lived here in 2015, overstay population growth was near zero in 2016.
- Thus, while overstays account for a large percentage of the newly undocumented, they represent less than half (44 percent) of the overall undocumented population, and they are less likely than illegal border crossers to be long-term residents.
- The country-specific figures shown here should help DHS focus its efforts on improving the verification of departures of temporary visitors.
- Finally, these comparisons indicate that the DHS estimates do not provide a sound basis for making decisions about admission to, or continuation in, the VWP.

Introduction

Since 2008, the primary mode of entering the undocumented population in the United States has been to arrive legally (after screening) on nonimmigrant (temporary) visas, and then overstay the period of admission or otherwise violate the terms of the visas (Warren and Kerwin 2017). Before 2008, far more arrived illegally across the southern border (entry without inspection, EWI) than overstayed. The reversal in these two modes of entry did not occur because overstays increased but because the annual number of EWIs dropped sharply from 2000 to 2015, reaching historically low levels in the past few years (Warren 2017).

The issue of overstays has become increasingly important in discussions of immigration policy in the past two years. A recent Center for Migration Studies (CMS) report noted: "The striking change in the mode of arrival after 2005 raises important policy questions not just about the need for a 2,000-mile wall, but about the allocation of immigration enforcement resources and funding levels for border enforcement compared to other strategies that might reduce new arrivals into the undocumented population and strategies to reduce the overall size of this population" (Warren and Kerwin 2017).

Despite the increasing recognition of the importance of overstays, official statistics on this phenomenon have not been available until recently. The newest US Department of Homeland Security (DHS) estimates of overstays, released in 2017, are in the *Fiscal Year 2016 Entry/Exit Overstay Report*.³ The report "provides data on departures and overstays, by country, for foreign visitors to the United States who entered as nonimmigrant visitors through an air or sea Port of Entry (POE) and who were expected to depart in FY 2016 (October 1, 2015 - September 30, 2016)" (DHS 2017). The DHS procedures used to

³ US Department of Homeland Security (DHS) reporting requirements for overstays are set forth in Section 2(a) of the Immigration and Naturalization Service Data Management Improvement Act of 2000 (Pub. L. No. 106-215, 114 Stat. 337 [2000]), House Report 114-668, and Senate Report 114-264.

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estimate overstays are described in detail in the report. The DHS statistics evaluated here are the sum of the figures shown in the "Suspected In-Country Overstays" column in tables B through F.

This report assesses the credibility of the 2016 DHS estimates for 133 countries by comparing them to estimates for comparable countries derived by CMS. The CMS estimates are based on statistics on the foreign-born population collected in the Census Bureau's American Community Survey (ACS), as described in detail in Warren (2014). A summary of the estimation procedure is presented in the Appendix. Essentially, the CMS estimates for the 133 countries are the number of undocumented residents that arrived in approximately 2013⁴ and were counted in 2014 and 2015.

Strictly speaking, neither the DHS nor CMS estimates actually are estimates of overstays. The DHS figures represent actual overstays plus arrivals whose departure could not be verified. That is, they include both actual overstays and unrecorded departures. The CMS estimates are for *net* arrivals in recent years. They include overstays *minus* those who overstayed and then left⁵ the overstay population. In addition, the CMS estimates are subject to sampling variability and other possible errors. Despite these differences, the information shown in the three tables below make it apparent that, even with these potential differences, useful information can be derived by comparing the two sets of data.

Comparison of DHS and CMS Estimates

The similarity of the estimates for many countries as well as the correlation of .97 between the two sets of estimates in Table 1 show that, even with the caveats above, the DHS and CMS estimates measure approximately the same population. The "2,000 difference" standard used to distinguish the nations in the three tables is arbitrary; however, given the fundamental differences in the underlying data, it is remarkable that the results are within plus or minus 2,000 for 90 of the 133 countries evaluated in this report. In fact, the reasonably close correspondence between the two sets of estimates in Table 1 greatly increases confidence in the significant findings in Table 2.

⁴ The gap of roughly one year or so between arrival (approximately 2013) and being counted (average of the 2014 and 2015 estimates) means that some overstays would have left the population. On the other hand, it is likely that some overstays would have been added to the population (for example, if they were in status for a year or more and then overstayed). The similarity of the DHS and Center for Migration Studies (CMS) estimates for the 92 countries in Table 1 suggests that the departures and additions tended to cancel each other. 5 Overstays can leave the population in four ways: emigrate voluntarily, adjust to lawful status, be removed by DHS, or (a relatively small number) die. Also, nonimmigrants can enter the overstay population after being in the United States for more than a year, for example by working without authorization or remaining in the United States after attending college.

Table 1. Countries with Less Than 2,000 Difference between CMS and DHS Estimates of Nonimmigrant Overstays

Correlation, these 90 countries = .97

Country	CMS	DHS	Country	CMS	DHS
These 90 countries	86,500	109,900			
Afghanistan	1,400	500	Honduras	4,800	5,600
Albania	1,000	500	Hungary**	300	1,900
Algeria	400	400	Iceland**	Z	200
Antigua-Barbuda	100	200	Indonesia	600	1,700
Armenia	400	300	Iran	1,600	900
Azerbaijan	100	300	Iraq	Z	1,200
Barbados	100	1,600	Kazakhstan	500	800
Belarus	500	700	Kenya	2,500	1,100
Belgium**	100	1,400	Kuwait	200	1,000
Belize	300	600	Laos	500	300
Bhutan	1,200	100	Latvia**	Z	300
Bolivia	200	1,200	Lebanon	700	1,000
Bosnia	300	300	Liberia	800	800
Bulgaria	300	800	Libya	300	400
Cambodia	600	200	Lithuania**	200	500
Cameroon	1,100	1,200	Macedonia	700	400
Cape Verde	600	900	Malaysia	800	1,600
China	24,300	25,500	Micronesia	400	Z
Congo	1,100	800	Moldavia	400	1,000
Costa Rica	1,000	2,700	Montenegro	100	300
Croatia	100	300	Morocco	500	800
Cyprus	Z	100	New Zealand**	Z	1,600
Czech Republic**	100	1,000	Nicaragua	1,400	1,400
Denmark**	z	1,600	Norway**	100	1,100
Dominica	400	300	Pakistan	4,500	3,000
Egypt	3,000	2,100	Panama	200	900
Eritrea	800	600	Paraguay	100	400
Fiji	300	300	Romania	700	1,500
Finland**	z	700	Saint Lucia	200	400
Gambia	100	200	Saint Vincent	Z	400
Georgia	200	1,100	Senegal	400	400
Ghana	3,100	1,200	Serbia	500	1,200
Greece**	400	1,300	Sierra Leone	1,200	200
Grenada	100	300	Singapore**	100	600
Guatemala	5,800	6,600	Slovakia**	400	800
Guinea	100	300	Somalia	Z	Z
Guyana	1,700	1,900	South Africa	600	1,200

^{**} denotes Visa Waiver country.

z indicates zero or rounds to zero.

Table 1. Countries with Less Than 2,000 Difference between CMS and DHS Estimates of Nonimmigrant Overstays – *continued*

Correlation, these 90 countries = .97

Country	CMS	DHS	Country	CMS	DHS
Sri Lanka	200	500	Trinidad and Tobago	600	1,000
Sudan	800	400	Uganda	300	500
Syria	1,100	900	United Arab Emirates	100	500
Taiwan**	900	2,000	Uruguay	100	1,400
Tanzania	100	300	Uzbekistan	1,000	900
Thailand	3,000	3,200	Yemen	300	300
Togo	200	300	Zambia	100	200
Tonga	100	300	Zimbabwe	Z	200

^{**} denotes Visa Waiver country.

z indicates zero or rounds to zero.

Source: CMS estimates of undocumented residents in 2014 and 2015 by year of arrival; DHS estimates (sum of all categories) shown in DHS (2017).

Table 2 shows comparisons for the 36 countries in which the DHS estimates exceeded the CMS estimates by 2,000 or more. For the non-Visa Waiver Program (VWP) countries in the left panel of Table 2, the country that stands out the most is Canada: 119,400 DHS overstays compared to only 900 new arrivals in the undocumented population. Other notable differences in the left panel are Brazil (39,100 vs. 4,900), Colombia (19,600 vs. 6,000), Nigeria (13,800 vs. 4,000), and Venezuela (23,900 vs. 5,300).

Even though they differ by more than 2,000, the DHS and CMS estimates for four relatively large sending countries in Table 2 are fairly close: Mexico (46,700 vs. 42,100);⁶ India (24,400 vs. 18,800); Dominican Republic (10,400 vs. 7,500); and Korea (7,000 vs. 4,400).

The largest differences in Table 2, and possibly the most significant from a policy perspective, are for the VWP countries in the right panel. With the exception of Korea, as noted, all of the DHS estimates for VWP countries shown in Table 2 greatly exaggerate the number of overstays. In fact, excluding Korea, total DHS overstays in the right panel of Table 2 outnumber the CMS estimates by 115,800 to 4,200. For nine VWP countries — Australia, Austria, France, Germany, Italy, Netherlands, Sweden, Switzerland, and the United Kingdom — the DHS estimates of overstays in just one year, 2016, are higher than the CMS estimates of the *total* undocumented population from each of those countries in 2015.

⁶ The CMS estimate of overstays in 2016 is based partly on DHS estimates of overstays from Mexico in 2015. Thus, it is not surprising that the CMS and DHS estimates for Mexico are reasonably close in 2016.

Table 2. Countries in Which the DHS Estimate Exceeds the CMS Estimate of Nonimmigrant Overstays by 2,000 or More

All 36 countries 120,700 484,900 Non-VWP 112,100 362,100 VWP countries 8,600 122,800 Argentina 900 7,000 Australia** 100 7,000 Bahamas 400 4,000 Austria** z 2,900 Brazil 4,900 39,100 Chile** 600 5,600 Canada 900 119,400 France** 200 11,000 Colombia 6,000 19,600 Germany** 500 19,500 Dom. Rep. 7,500 10,400 Ireland** 100 2,400 Ecuador 4,500 7,600 Italy** 500 15,300 El Salvador 2,900 5,100 Japan** 400 5,400 India 18,800 24,400 Korea** 4,400 7,000 Israel 100 3,900 Netherlands** z 4,300 Jamaica 5,300 10,800 Portugal** 400 3,500	Country	CMS	DHS	Country	CMS	DHS
Argentina 900 7,000 Australia** 100 7,000 Bahamas 400 4,000 Austria** z 2,900 Brazil 4,900 39,100 Chile** 600 5,600 Canada 900 119,400 France** 200 11,000 Colombia 6,000 19,600 Germany** 500 19,500 Dom. Rep. 7,500 10,400 Ireland** 100 2,400 Ecuador 4,500 7,600 Italy** 500 15,300 El Salvador 2,900 5,100 Japan** 400 5,400 India 18,800 24,400 Korea** 4,400 7,000 Israel 100 3,900 Netherlands** z 4,300 Jamaica 5,300 10,800 Portugal** 400 3,500 Jordan 100 2,600 Spain** 800 12,100 Mexico 42,100 46,700 Sweden**	All 36 countries	120,700	484,900			
Bahamas 400 4,000 Austria** z 2,900 Brazil 4,900 39,100 Chile** 600 5,600 Canada 900 119,400 France** 200 11,000 Colombia 6,000 19,600 Germany** 500 19,500 Dom. Rep. 7,500 10,400 Ireland** 100 2,400 Ecuador 4,500 7,600 Italy** 500 15,300 El Salvador 2,900 5,100 Japan** 400 5,400 India 18,800 24,400 Korea** 4,400 7,000 Israel 100 3,900 Netherlands** z 4,300 Jamaica 5,300 10,800 Portugal** 400 3,500 Jordan 100 2,600 Spain** 800 12,100 Mexico 42,100 46,700 Sweden** 100 2,800 Nigeria 4,000 13,800 Switzerland**	Non-VWP	112,100	362,100	VWP countries	<u>8,600</u>	<u>122,800</u>
Brazil 4,900 39,100 Chile** 600 5,600 Canada 900 119,400 France** 200 11,000 Colombia 6,000 19,600 Germany** 500 19,500 Dom. Rep. 7,500 10,400 Ireland** 100 2,400 Ecuador 4,500 7,600 Italy** 500 15,300 El Salvador 2,900 5,100 Japan** 400 5,400 India 18,800 24,400 Korea** 4,400 7,000 Israel 100 3,900 Netherlands** z 4,300 Jamaica 5,300 10,800 Portugal** 400 3,500 Jordan 100 2,600 Spain** 800 12,100 Mexico 42,100 46,700 Sweden** 100 2,800 Nigeria 4,000 13,800 Switzerland** z 2,300 Peru 3,900 6,000 UK** <	Argentina	900	7,000	Australia**	100	7,000
Canada 900 119,400 France** 200 11,000 Colombia 6,000 19,600 Germany** 500 19,500 Dom. Rep. 7,500 10,400 Ireland** 100 2,400 Ecuador 4,500 7,600 Italy** 500 15,300 El Salvador 2,900 5,100 Japan** 400 5,400 India 18,800 24,400 Korea** 4,400 7,000 Israel 100 3,900 Netherlands** z 4,300 Jamaica 5,300 10,800 Portugal** 400 3,500 Jordan 100 2,600 Spain** 800 12,100 Mexico 42,100 46,700 Sweden** 100 2,800 Nigeria 4,000 13,800 Switzerland** z 2,300 Peru 3,900 6,000 UK** 500 21,700 Poland 1,000 3,000 OUK** 500 21,700	Bahamas	400	4,000	Austria**	Z	2,900
Colombia 6,000 19,600 Germany** 500 19,500 Dom. Rep. 7,500 10,400 Ireland** 100 2,400 Ecuador 4,500 7,600 Italy** 500 15,300 El Salvador 2,900 5,100 Japan** 400 5,400 India 18,800 24,400 Korea** 4,400 7,000 Israel 100 3,900 Netherlands** z 4,300 Jamaica 5,300 10,800 Portugal** 400 3,500 Jordan 100 2,600 Spain** 800 12,100 Mexico 42,100 46,700 Sweden** 100 2,800 Nigeria 4,000 13,800 Switzerland** z 2,300 Peru 3,900 6,000 UK** 500 21,700 Poland 1,000 3,000 VK** 500 21,700	Brazil	4,900	39,100	Chile**	600	5,600
Dom. Rep. 7,500 10,400 Ireland** 100 2,400 Ecuador 4,500 7,600 Italy** 500 15,300 El Salvador 2,900 5,100 Japan** 400 5,400 India 18,800 24,400 Korea** 4,400 7,000 Israel 100 3,900 Netherlands** z 4,300 Jamaica 5,300 10,800 Portugal** 400 3,500 Jordan 100 2,600 Spain** 800 12,100 Mexico 42,100 46,700 Sweden** 100 2,800 Nigeria 4,000 13,800 Switzerland** z 2,300 Peru 3,900 6,000 UK** 500 21,700 Poland 1,000 3,000 OK** 500 21,700	Canada	900	119,400	France**	200	11,000
Ecuador 4,500 7,600 Italy** 500 15,300 El Salvador 2,900 5,100 Japan** 400 5,400 India 18,800 24,400 Korea** 4,400 7,000 Israel 100 3,900 Netherlands** z 4,300 Jamaica 5,300 10,800 Portugal** 400 3,500 Jordan 100 2,600 Spain** 800 12,100 Mexico 42,100 46,700 Sweden** 100 2,800 Nigeria 4,000 13,800 Switzerland** z 2,300 Peru 3,900 6,000 UK** 500 21,700 Poland 1,000 3,000	Colombia	6,000	19,600	Germany**	500	19,500
El Salvador 2,900 5,100 Japan** 400 5,400 India 18,800 24,400 Korea** 4,400 7,000 Israel 100 3,900 Netherlands** z 4,300 Jamaica 5,300 10,800 Portugal** 400 3,500 Jordan 100 2,600 Spain** 800 12,100 Mexico 42,100 46,700 Sweden** 100 2,800 Nigeria 4,000 13,800 Switzerland** z 2,300 Peru 3,900 6,000 UK** 500 21,700 Poland 1,000 3,000	Dom. Rep.	7,500	10,400	Ireland**	100	2,400
India 18,800 24,400 Korea** 4,400 7,000 Israel 100 3,900 Netherlands** z 4,300 Jamaica 5,300 10,800 Portugal** 400 3,500 Jordan 100 2,600 Spain** 800 12,100 Mexico 42,100 46,700 Sweden** 100 2,800 Nigeria 4,000 13,800 Switzerland** z 2,300 Peru 3,900 6,000 UK** 500 21,700 Poland 1,000 3,000	Ecuador	4,500	7,600	Italy**	500	15,300
Israel 100 3,900 Netherlands** z 4,300 Jamaica 5,300 10,800 Portugal** 400 3,500 Jordan 100 2,600 Spain** 800 12,100 Mexico 42,100 46,700 Sweden** 100 2,800 Nigeria 4,000 13,800 Switzerland** z 2,300 Peru 3,900 6,000 UK** 500 21,700 Poland 1,000 3,000	El Salvador	2,900	5,100	Japan**	400	5,400
Jamaica 5,300 10,800 Portugal** 400 3,500 Jordan 100 2,600 Spain** 800 12,100 Mexico 42,100 46,700 Sweden** 100 2,800 Nigeria 4,000 13,800 Switzerland** z 2,300 Peru 3,900 6,000 UK** 500 21,700 Poland 1,000 3,000	India	18,800	24,400	Korea**	4,400	7,000
Jordan 100 2,600 Spain** 800 12,100 Mexico 42,100 46,700 Sweden** 100 2,800 Nigeria 4,000 13,800 Switzerland** z 2,300 Peru 3,900 6,000 UK** 500 21,700 Poland 1,000 3,000	Israel	100	3,900	Netherlands**	Z	4,300
Mexico 42,100 46,700 Sweden** 100 2,800 Nigeria 4,000 13,800 Switzerland** z 2,300 Peru 3,900 6,000 UK** 500 21,700 Poland 1,000 3,000	Jamaica	5,300	10,800	Portugal**	400	3,500
Nigeria 4,000 13,800 Switzerland** z 2,300 Peru 3,900 6,000 UK** 500 21,700 Poland 1,000 3,000	Jordan	100	2,600	Spain**	800	12,100
Peru 3,900 6,000 UK** 500 21,700 Poland 1,000 3,000	Mexico	42,100	46,700	Sweden**	100	2,800
Poland 1,000 3,000	Nigeria	4,000	13,800	Switzerland**	Z	2,300
	Peru	3,900	6,000	UK**	500	21,700
Russia 1,600 4,200	Poland	1,000	3,000			
	Russia	1,600	4,200			
Saudi Arabia 400 3,100	Saudi Arabia	400	3,100			
Turkey 200 3,300	Turkey	200	3,300			
Ukraine 1,300 4,200	Ukraine	1,300	4,200			
Venezuela 5,300 23,900	Venezuela	5,300	23,900			

^{**} denotes Visa Waiver country

z indicates zero or rounds to zero.

Source: CMS estimates of undocumented residents in 2014 and 2015 by year of arrival; DHS estimates (sum of all categories) shown in DHS (2017).

The CMS estimate exceeds the DHS estimate of overstays by 2,000 or more in only seven countries (Table 3). In general, we would expect the DHS estimates to be higher because they include unverified departures as well as actual overstays. Some of the differences — especially those for Bangladesh, Burma, Ethiopia, Haiti, and Nepal — might be explained by sampling variability or other errors in the CMS data. However, the CMS estimates for the Philippines and Vietnam appear to be too high. The data and assumptions that CMS used to derive estimates for those two countries should be reexamined. The outcome of that review will not affect the findings presented here because the overall assessment of the DHS estimates is based on the figures shown in Tables 1 and 2.

Table 3. Countries in Which the CMS Estimate Exceeds the DHS Estimate of Nonimmigrant Overstays by 2,000 or More

Country	CMS	DHS	Country	CMS	DHS
All 7 countries	52,000	25,500	Haiti	8,100	5,700
Bangladesh	3,600	1,500	Nepal	4,900	1,500
Burma	2,600	300	Philippines	17,200	10,800
Ethiopia	4,100	1,000	Vietnam	11,500	4,700

Source: CMS estimates of undocumented residents in 2014 and 2015 by year of arrival; DHS estimates (sum of all categories) shown in DHS (2017).

Discussion

The CMS estimates shown here are the only data that are sufficiently detailed and precise to evaluate the country-by-country overstay numbers reported by DHS. Even with the differences in the two data sets, the comparability of the estimates for 90 countries shown in Table 1 indicate that the two sets of estimates measure approximately the same population.

The figures presented above show that overstays are significantly overestimated for more than 30 countries in the 2016 DHS report, and half of those are VWP countries. In addition to assessing the DHS estimates for individual countries, the estimates in Tables 1 and 2 provide a basis for assessing the accuracy of DHS's *total* of 628,799 overstays reported for 2016. In Table 1, total DHS overstays are higher than the CMS estimates by about 23,000. In Table 2, the DHS total for the 36 countries is 485,000; the CMS total is 121,000. Increasing the CMS estimate by 50 percent (an extreme assumption) would raise the CMS total to 181,000. Thus, the DHS estimates shown in Table 2 are likely to be overstated by at least 300,000 (485,000 minus 181,000). Subtracting the total DHS overestimates in both tables would reduce the DHS total of 628,799 by 323,000. In other words, about 323,000, or slightly more than half, of the 628,799 reported to be overstays by DHS actually left the country but their departures were not recorded. The result is a revised total of about 306,000 estimated overstays in 2016.

It is important to keep the estimated 306,000 overstays in demographic perspective. Arrivals of overstays during the year do not represent undocumented population growth any more than births during the year represent total population growth. To estimate population change, those who were here at the beginning of the year, and left during the year, must be taken into account. Statistics reported by CMS⁷ indicate that about 5.7 percent left the overstay population annually from 2008 to 2015. At that rate, about 275,000 of the 4,830,000 overstays that resided here at the end of 2015 would have left during 2016. The net growth of about 31,000 (306,000 minus 275,000) in 2016 indicated by these estimates is subject to a considerable amount of error. However, the estimate is not far from the average net growth of 20,000 from 2008 to 2015 shown in Table 5 in the Appendix. In summary, the

⁷ The "statistics reported by CMS" in this paragraph primarily refer to the estimates in Table 5 of Warren (2017). For reference, Table 5 from that report is replicated at the end of the Appendix.

DHS estimate of overstays in 2016, reduced to account for unrecorded departures of those who arrived in 2016, as well as departures during 2016 of overstays that lived here in 2015, indicates that overstay population growth was near zero in 2016.

Conclusion

It is clear that the DHS estimates of overstays from Canada and from VWP countries that have very small undocumented populations, as well as the *total* number, erroneously include very large numbers of nonimmigrants that departed but their departure could not be verified. The country-specific figures shown in Table 2 should help DHS focus its efforts on improving the verification of departures of temporary visitors.

The findings reported here are important for at least two other reasons. First, the remarkably high, and erroneous, number of overstays reported by DHS for many VWP countries could lead to mistaken efforts to remove specific countries or to eliminate the program entirely. Second, the unsubstantiated report that more than 600,000 nonimmigrants overstayed in 2016 could revive fears that undocumented population growth has resumed or could lead to enforcement tactics or funding levels unjustified by the size of the overstay challenge. The best information available indicates that overstays from VWP countries remain at extremely low levels and that the total overstay population is growing very slowly.

The findings also add to a growing body of literature that argues for broad immigration reform. Since 2013, the Center for Migration Studies has released a dozen reports on the US undocumented population that demonstrate that:

- illegal entries to the United States fell dramatically between 2000 and 2015 (Warren 2017);
- given diminished illegal entries, the majority of new entries into the US undocumented population in recent years has come from nonimmigrants who overstayed or otherwise violated the terms of their temporary visas (Warren and Kerwin 2017); and
- most US undocumented residents have lived in the United States for long periods, have built strong equitable ties, and have contributed substantially to the country (Warren and Kerwin 2015, 98-100).
- Based on these trends, CMS has argued against the necessity of building a 2,000 mile border wall (Warren and Kerwin 2017). It has also presented several options for legalizing different groups of undocumented residents, and has argued that these options, combined with reform of the legal immigration system and immigration enforcement, would lead to a substantial, permanent reduction in the US undocumented population (Kerwin and Warren 2017, 320-23).

This paper finds that DHS has greatly overstated the number of noncitizens from roughly 30 counties who have overstayed their nonimmigrant (temporary) visas. In particular, the DHS estimates for 2016 include significant numbers of nonimmigrants that left the undocumented population, but whose departure could not be verified. Thus, the actual number of overstays in 2016 was about half of the number estimated by DHS. Accurately

recording the arrival and departure of more than 50 million temporary admissions each year is a monumental task. DHS deserves substantial praise for accounting for well over 99 percent of all departures.

These findings provide further evidence that the conditions for broad immigration reform — a robust immigration enforcement system, a legal immigration system that has not been overhauled in 52 years, and a large, long-term undocumented population — are firmly in place.

Appendix

A. Derivation of the CMS Estimates in This Report

Steps 1 to 5 below summarize the CMS methodology for deriving annual estimates of the undocumented population. Steps 6 and 7 describe how those estimates were used to compile the CMS estimates shown in Tables 1 to 3 above.

CMS used the procedures below (Steps 1 to 5) to derive estimates of the undocumented resident population in 2010. The same steps⁸ were followed to derive annual estimates for 2011 to 2015. The classification of noncitizens as undocumented residents was done at the microdata level. The CMS estimates shown here were compiled by country of origin and single year of entry from those data sets. Warren (2014) provides a detailed description of the methodology and compares the CMS estimates based on this methodology to estimates derived using the residual method.

- **Step 1.** The first step in the estimation procedure was to compile data from the 2010 ACS for all noncitizens who entered the United States from 1982 to 2010. It was assumed that nearly all undocumented residents are in the category "noncitizens who entered the US after 1981." Very few who entered before 1982 would still be residing here as undocumented residents in 2010.9
- **Step 2.** A series of edits, referred to as "logical edits," ¹⁰ were used to identify and remove as many legal residents as possible based on responses in the survey.
- **Step 3.** Separate population controls were estimated for 145 countries or areas for undocumented residents counted in the 2010 ACS. For each country or area, the ratio of the population control to the logically edited population (from Step 2) was computed.

⁸ The country-by-country selection ratios for 2010, computed in Step 3, were used in Step 4 for every year. Independent population controls were computed *only* for 2010.

⁹ A large percentage of those who entered before 1982 obtained legal status under the Immigration Reform and Control Act of 1986 (IRCA) and those who did not apply for legalization have had more than 25 years in which to leave the undocumented resident population — that is, to adjust to legal status, be removed, leave voluntarily, or die.

¹⁰ The term logical edit refers to the process of determining probable legal status by examining survey data; for example, respondents were assigned to the legal category if they worked in occupations that generally require legal status, had the characteristics of legal temporary migrants, were immediate relatives of US citizens, received public benefits restricted to legal residents, were from countries where most arrivals would be refugees, or were age 60 or older at entry.

- **Step 4**. The country-by-country ratios derived in Step 3 were used to make final selections of individual respondents in the ACS to be classified as undocumented residents.
- **Step 5.** The estimates of those counted in the ACS (from Step 4) were adjusted for undercount.
- **Step 6.** The CMS estimates from Step 5 were first compiled by single year of entry. Then, for each of the 133 countries listed in Tables 1, 2, and 3, the average of the following five recent entry cohorts was computed: three entry cohorts (2012, 2013, and 2014) from the 2015 estimates, and two entry cohorts (2012 and 2013) from the 2014 estimates.
- **Step 7.** Step 6 yields estimates of *total* undocumented arrivals; however, estimates of *overstay* arrivals were needed for the CMS data shown in Tables 1, 2, and 3. Total arrivals were converted to overstay arrivals using the percentages and procedures shown in Table A-1. That is, 34.7 percent of the total undocumented arrivals from Mexico (computed in Step 6) were estimated to be overstays.

Table A-1. Percent of Total Arrivals Estimated to be Overstays

Country	Percent
Mexico	34.7%
El Salvador	11.0%
Guatemala	24.9%
Honduras	20.4%
Nicaragua	56.3%
Dominican Republic	54.4%
All other countries	See below

Note: These percentages, along with the method of estimation, are shown in Warren and Kerwin (2017). See Table A-1 in that report.

Estimating overstays for each of the 127 countries not listed in Table A-1. The method of estimating illegal border crossers (EWIs) and overstays for each of the 127 countries that are not shown in Table A-1 has been updated and improved for these estimates. The first step was to estimate EWIs from each of these 127 countries. EWIs were estimated to be the *least* of (a) 5 percent of CMS's estimate of total arrivals from each of these countries, or (b) 25 percent of aliens apprehended by DHS for each of these countries in 2015. The second step was to subtract EWIs from CMS's estimates of total entries for each country. Unrounded estimates were used to derive all of the figures shown in this report, and then the estimates for each country were rounded to hundreds.

The largest estimates of EWIs for the countries *not* listed in Table A-1 were: India (700), China (500), Brazil, Haiti, Jamaica, and Colombia (300 each), Ecuador and Peru (200 each), and 100 for 10 other countries. The estimates of EWIs for all other countries were less than 50.

B. Table Replicated from Warren (2017)

Table 5. Change in the Undocumented Population, 2008 to 2015, by Mode of Entry

Numbers in thousands, rounded independently.

	2008 to 2015 period			Percent that		
	Undoc.		Left the	Undoc.	left the pop.	Average
Mode of entry	pop. in	Net	undoc.	pop. in	from 2008	annual
	2008	arrivals	pop.*	2015	to 2015	change
	(1)	(2)	(3)	(4)	(5)=(3)/(1)	(6)=(2)-(3)/7
Total	11,460	3,095	3,510	11,045	31%	-60
EWIs	6,775	1,080	1,640	6,215	24%	-80
Overstays	4,690	2,015	1,870	4,830	40%	20
Percent overstays	41%	65%	53%	44%	-	-

Source: Center for Migration Studies. Columns 1 and 4, estimates derived by CMS. Column 3 = [population in 2008] - [population in 2015 that*arrived before 2008*]. Col. <math>2 = Col. 4 - Col. 1 + Col. 3.

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^{*} Undocumented residents can leave the population in four ways: emigrate voluntarily, adjust to lawful status, be removed by DHS, or (a relatively small number) die.

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