

Who Drives to Work? Commuting by Automobile in the United States: 2013

American Community Survey Reports

By Brian McKenzie
August 2015
ACS-32

INTRODUCTION

The automobile has played a fundamental role in shaping where we live and how we get around. It has influenced the form and density of our communities and expanded the geographic range of daily travel. Nationally, the private automobile is the predominant form of transportation for work and other travel purposes.¹ In 2013, about 86 percent of all workers commuted to work by private vehicle, either driving alone or carpooling (Figure 1). In recent years, the percentage of workers who commute by private vehicle remained relatively stable after decades of consistent increase. For several individual years since the mid-2000s, the average number of vehicle miles traveled in the United States has either increased at a slower pace than in previous decades or declined.^{2,3,4} Although such shifts in travel behavior are slight, they have captured attention because they represent a disruption in an unequivocal, decades-long pattern of increased automobile travel.

This report focuses on patterns of commuting by private vehicle among U.S. workers in 2013. It highlights differences in rates of automobile commuting by key population characteristics such as age, race, ethnicity, and the types of communities in which workers live. The information presented is based on data from the

¹ U.S. Department of Transportation, "Summary of Travel Trends: 2009 National Household Travel Survey," Technical Report No. FHWA-PL-11-022. 2011, <www.nhts.ornl.gov/publications.shtml>.

² Michael Sivak, "Has Motorization in the United States Peaked?," Transportation Research Institute, University of Michigan, 2014, <www.umtri.umich.edu/our-results/publications/has-motorization-us-peaked>.

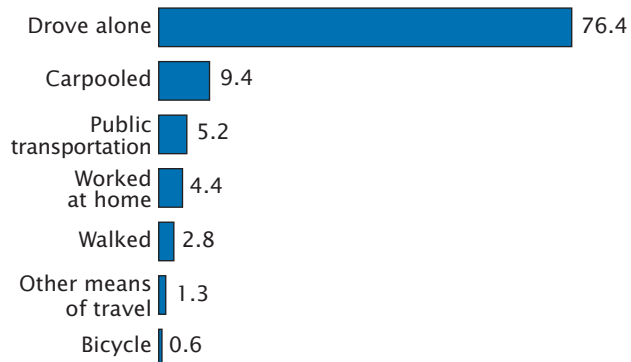
³ Department of Transportation, "Beyond Traffic 2045: Trends and Choices," 2015, <www.dot.gov/beyondtraffic>.

⁴ American Association of State Highway and Transportation Officials, "Commuting in America 2013: Brief 12 Auto Commuting 2013," Washington, DC, 2015, <traveltrends.transportation.org>.

Figure 1.

How People Travel to Work: 2013

(Percentage of workers. Universe: workers 16 years and older. Data based on sample. For information on confidentiality protection, sampling error, nonsampling error, and definitions, see www.census.gov/acs/www/)



Source: U.S. Census Bureau, 2013 American Community Survey, Table S0801.

American Community Survey (ACS), a survey conducted annually by the U.S. Census Bureau to gather information about changes in the socioeconomic, housing, and demographic characteristics of communities across the United States.⁵ ACS questions related to travel focus solely on commuting and do not ask about leisure travel or other nonwork trips. Among other questions about work-related travel, the ACS asks respondents how they get to work. Respondents may choose from among several transportation modes (Figure 2).⁶ In the United States, commutes make up less than 20

⁵ Estimates for Puerto Rico are not included in this report.

⁶ Commutes may involve multiple transportation modes, but ACS respondents are restricted to indicating the single mode used for the longest distance.

Figure 2.
Reproduction of the Question on Travel Mode from the 2013 American Community Survey

31 How did this person usually get to work LAST WEEK?

If this person usually used more than one method of transportation during the trip, mark (X) the box of the one used for most of the distance.

- | | |
|---|---|
| <input type="checkbox"/> Car, truck, or van | <input type="checkbox"/> Motorcycle |
| <input type="checkbox"/> Bus or trolley bus | <input type="checkbox"/> Bicycle |
| <input type="checkbox"/> Streetcar or trolley car | <input type="checkbox"/> Walked |
| <input type="checkbox"/> Subway or elevated | <input type="checkbox"/> Worked at home → <i>SKIP to question 39a</i> |
| <input type="checkbox"/> Railroad | <input type="checkbox"/> Other method |
| <input type="checkbox"/> Ferryboat | |
| <input type="checkbox"/> Taxicab | |

Source: U.S. Census Bureau, 2013 American Community Survey Questionnaire. See <www.census.gov/acs/www/methodology/questionnaire_archive>.

percent of all trips taken, but play an important role within the mix of daily travel by determining peak travel demand across transportation systems.⁷ This information is critical for tracking trends in travel behavior over time and informing transportation planning and policy decisions.

To explore recent changes in travel behavior, several 2013 estimates are compared to estimates from 2006, the earliest year of full ACS implementation.⁸ The analysis is limited to workers 16 years and older and employed during the ACS reference week. ACS commuting questions have served as the basis

⁷ American Association of State Highway and Transportation Officials, "Commuting in America 2013: Brief 12 Auto Commuting 2013," Washington, DC, 2015, <traveltrends.transportation.org>.

⁸ Data are based on a sample and are subject to sampling variability. Margins of error are presented for all estimates. A margin of error is a measure of an estimate's variability. The larger the margin of error in relation to the size of the estimates, the less reliable the estimate. When added to and subtracted from the estimate, the margin of error forms the 90 percent confidence interval.

for several U.S. Census Bureau reports, but this is the first of such reports to take a comparative look at patterns of commuting by private vehicle.⁹

REPORT HIGHLIGHTS

- About 86 percent of U.S. workers commuted to work by automobile in 2013; 3 out of 4 commuters drove alone.
- At 76.6 percent of workers, driving alone to work peaked in 2010.
- The rate of carpooling has declined during each decade since 1980. About 9.0 percent of workers carpoled in 2013, down from 19.7 percent in 1980.
- At 78 percent, workers living in principal cities within metro areas had a lower rate of automobile commuting in 2013 than

⁹ For more U.S. Census Bureau reports on specific commuting modes, see <www.census.gov/hhes/commuting/data/commuting.html>.

Definitions

Private Vehicle and *Automobile* are used interchangeably in this report to refer collectively to cars, trucks, or vans used for commuting. This includes workers who drive alone or carpool.

Workers are civilians and members of the Armed Forces, 16 years and older, who were at work the previous week. Persons on vacation or not at work the prior week are not included.

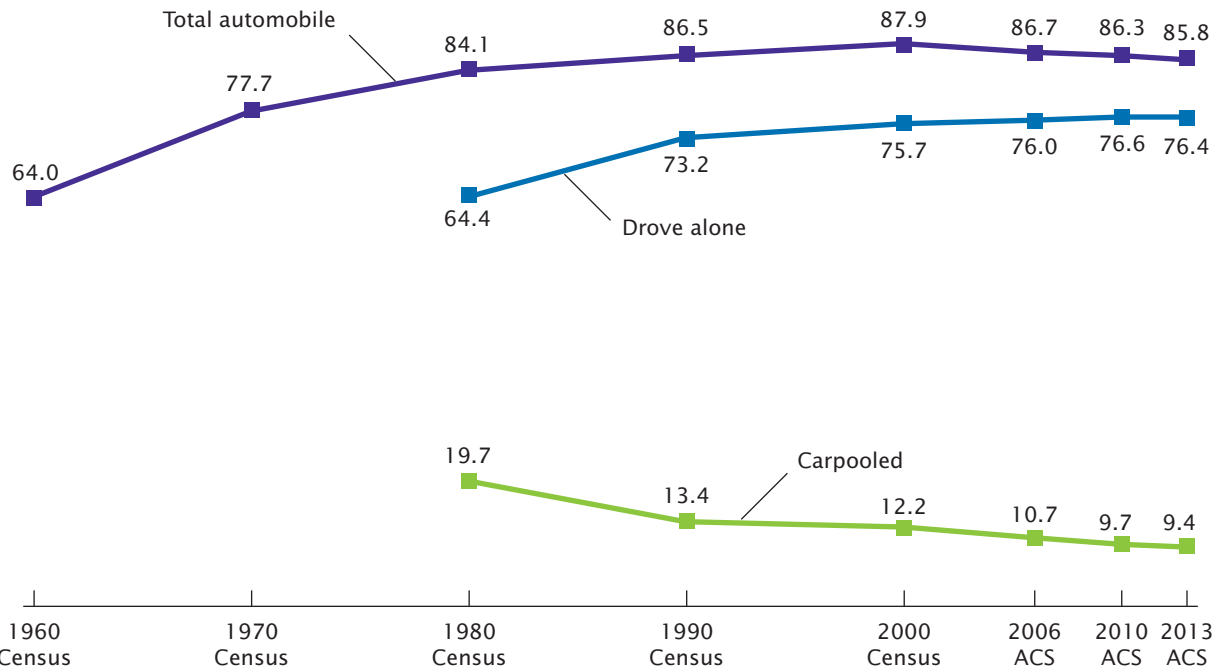
Means of transportation to work refers to the principal mode of travel that the worker usually used to get from home to work during the reference week. People who used different means of transportation on different days of the week were asked to specify the one they used most often. People who used more than one means of transportation to get to work each day were asked to report the one used for the longest distance during the work trip.

A *principal city* is designated as the largest city in each metropolitan or micropolitan statistical area. Additional cities qualify if certain population requirements are met. For more detailed definitions of these and other ACS terms, see the ACS subject definitions list at <www.census.gov/acs/www/data_documentation/documentation_main/>.

Figure 3.

Commuting by Automobile: 1960 to 2013

(Percentage of workers. Universe: workers 16 years and older. Data based on sample. For information on confidentiality protection, sampling error, nonsampling error, and definitions, see www.census.gov/acs/www/)



Sources: U.S. Census Bureau, 1960, 1970, 1980, 1990, 2000 Census; 2006, 2010, 2013 American Community Survey.

their suburban or nonmetropolitan counterparts (89 percent and 91 percent, respectively).

- Urban workers aged 25 to 29 showed about a 4-percentage point decline in automobile commuting between 2006 and 2013.
- Workers aged 25 to 29 showed the largest increase in public transportation commuting between 2006 and 2013, from 5.5 percent to 7.1 percent.
- Hispanic workers showed the highest rate of carpooling in 2013 and the largest declines in carpooling between 2006 and 2013, from 18.6 percent to 14.7 percent.
- Among the workers with the highest earnings and no vehicle at home, the rate of bicycle commuting more than doubled

between 2006 and 2013, from 1.1 percent to 2.4 percent.

NATIONAL TRENDS IN COMMUTING BY AUTOMOBILE

Transportation networks, whether transit lines, sidewalks, or roads, have played an important role in guiding the design of our communities. The flexibility and speed afforded by automobile travel has contributed to an urban form vastly different from the dense hub-and-spoke patterns associated with streetcar-oriented development or the grid-like patterns associated with early walking-oriented cities.¹⁰ The automobile, among

¹⁰ Kenneth Jackson, "Crabgrass Frontier: The Suburbanization of the United States," New York: Oxford University Press, 1985.

other forces, facilitated decentralization of the workplace and greater physical separation of home from work.¹¹ Many of the nation's now-mature automobile-oriented landscapes include residential and commercial spaces not easily accessible by other means, which has reinforced the automobile's predominance among travel modes.

Figure 3 shows the percentage of U.S. workers who commuted by private vehicle between 1960 and 2013. It differentiates between carpooling and driving alone beginning in 1980, the first year

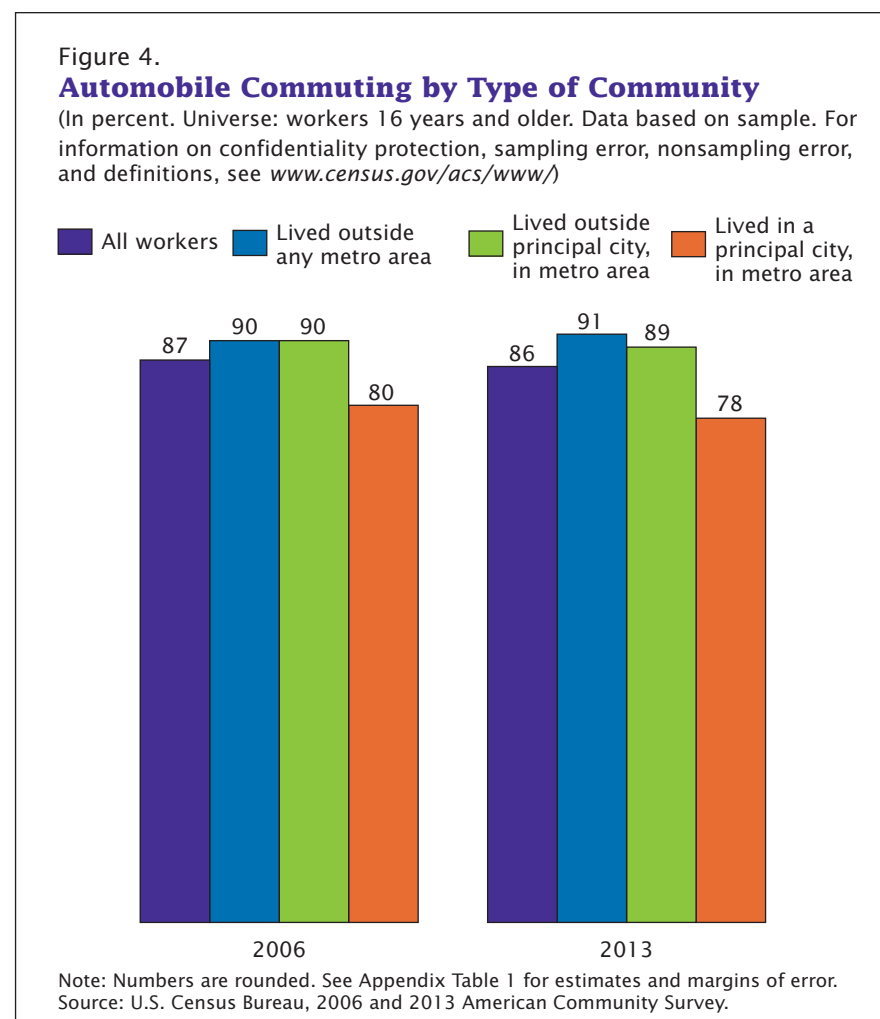
¹¹ Nathaniel Baum-Snow, "Changes in Transportation Infrastructure and Commuting Patterns in U.S. Metropolitan Areas, 1960–2000," *American Economic Review Papers and Proceedings*, 100 (2): 378–382, 2010.

this detailed information became available. Commuting by private vehicle continuously increased from 64.0 percent in 1960 to its peak at 87.9 percent in 2000. The largest gains occurred between 1960 and 1970, when the rate of automobile commuting increased by almost 14 percentage points. Between 2000 and 2013, the rate of automobile commuting declined from 87.9 percent to 85.8 percent. While information about carpooling has been available only since 1980, a clear trend of declining rates of carpooling is evident. Almost 20 percent of U.S. workers carpoled to work in 1980, but this number declined over the next 3 decades, reaching its lowest point in 2013, at 9.4 percent. Driving alone to work increased notably during the 1980s and 1990s, but the pace of increase slowed during the early 2000s. The peak rate of driving alone to work occurred in 2010, with 76.6 percent of all workers.

TRENDS IN COMMUTING BY AUTOMOBILE ACROSS COMMUNITIES

The interchange of people, goods, and services that provide the building blocks of regional economies often transcend municipal boundaries to encompass several contiguous communities. This is also true of transportation networks, such as roads and transit systems. For this reason, metropolitan statistical areas (referred to as metro areas in this report for brevity) and their components are often the most appropriate geographic units for assessing travel patterns. A metro area contains a core urban area population of 50,000 or more and consists of one or more counties.¹²

¹² For more detailed information about the Office of Management and Budget standards for delineating metropolitan and micropolitan statistical areas, visit <www.census.gov/population/metro/>.



They include counties containing core urban areas, as well as any adjacent counties that have a high degree of social and economic integration with urban cores. Large central cities within each metropolitan or micropolitan statistical area are designated “principal cities,” a commonly used geographic unit within this report.

The automobile is the predominant commuting mode for all metro areas, even those with comparatively low rates of automobile travel.¹³ Some of the most striking community-level differences

¹³ For a list of rates of driving alone or carpooling for metropolitan statistical areas, see ACS Tables GCT0802 and GCT0803 in American FactFinder at <www.Factfinder2.census.gov>.

in automobile commuting occur across different types of communities within the same metro area, such as central cities and their suburbs. Figure 4 compares rates of private vehicle commuting for workers who lived in principal cities within metro areas, workers who lived outside of principal cities within metro areas, and workers who lived outside of any metro area in 2006 and 2013.¹⁴

¹⁵ At 78 percent, workers living in principal cities within a metro area had a lower rate of private vehicle

¹⁴ Unless otherwise stated, metro area comparisons across years use each respective year’s metro area definitions and boundaries.

¹⁵ Figure 4 and several other figures have corresponding appendix tables, located at the end of this report, that include the numbers and margins of error associated with them.

Table 1.

Metro Areas of Populations 500,000 or Greater Among Those With the Largest Declines in Rate of Automobile Commuting Between 2006 and 2013

(For information on confidentiality protection, sampling error, and definitions, see www.census.gov/programs-surveys/acs/guidance.html)

| Rank | Metropolitan statistical area | Percentage of workers 2006 | Margin of error (±) | Percentage of workers 2013 | Margin of error (±) | Decline | Margin of error (±) |
|------|---|----------------------------|---------------------|----------------------------|---------------------|---------|---------------------|
| 1 | San Francisco-Oakland-Hayward, CA | 73.6 | 0.5 | 69.8 | 0.5 | 3.8 | 0.7 |
| 2 | Boston-Cambridge-Newton, MA-NH | 78.9 | 0.5 | 75.6 | 0.4 | 3.3 | 0.7 |
| 3 | Durham-Chapel Hill, NC | 86.8 | 1.2 | 83.9 | 1.4 | 2.9 | 1.8 |
| 4 | Cape Coral-Fort Myers, FL | 91.6 | 0.9 | 88.7 | 1.9 | 2.9 | 2.1 |
| 5 | Bridgeport-Stamford-Norwalk, CT | 81.3 | 1.2 | 78.5 | 1.0 | 2.8 | 1.6 |
| 6 | Seattle-Tacoma-Bellevue, WA | 82.3 | 0.5 | 79.5 | 0.6 | 2.8 | 0.8 |
| 7 | Philadelphia-Camden-Wilmington, PA-NJ-DE-MD | 83.1 | 0.4 | 80.5 | 0.4 | 2.7 | 0.6 |
| 8 | Deltona-Daytona Beach-Ormond Beach, FL | 92.0 | 0.8 | 89.4 | 1.2 | 2.7 | 1.5 |
| 9 | Madison, WI | 84.5 | 0.8 | 81.9 | 1.1 | 2.7 | 1.4 |
| 10 | New Orleans-Metairie, LA | 91.7 | 0.7 | 89.1 | 0.7 | 2.6 | 1.0 |
| 11 | Springfield, MA | 89.7 | 0.9 | 87.1 | 1.1 | 2.6 | 1.4 |
| 12 | Boise City, ID | 90.9 | 1.0 | 88.5 | 1.1 | 2.4 | 1.5 |
| 13 | New York-Newark-Jersey City, NY-NJ-PA | 59.1 | 0.3 | 56.9 | 0.3 | 2.2 | 0.4 |
| 14 | Syracuse, NY | 89.6 | 0.9 | 87.4 | 0.9 | 2.1 | 1.2 |
| 15 | Albuquerque, NM | 91.4 | 0.8 | 89.3 | 0.8 | 2.1 | 1.2 |

Note: Universe: workers 16 years and older. See ACS Table S0802 in American FactFinder at <www.Factfinder2.census.gov>. The differences in percentages in this table may not be statistically different from one another, or other metro areas not shown. Data are based on a sample and are subject to sampling variability. A margin of error is a measure of an estimate's variability. The larger the margin of error in relation to the size of the estimates, the less reliable the estimate. When added to and subtracted from the estimate, the margin of error forms the 90 percent confidence interval.

Source: U.S. Census Bureau, 2006 and 2013 American Community Survey.

commuting in 2013 than their suburban or nonmetropolitan area counterparts (89 percent and 91 percent, respectively).¹⁶ Between 2006 and 2013, workers living in principal cities also showed the largest decline, from 80 percent to 78 percent, in automobile commuting.

Table 1 ranks the 15 large metro areas (populations of 500,000 or greater) among those with the largest declines in private vehicle commuting between 2006 and 2013.¹⁷ Even with relatively high rates of

¹⁶ In this report, the term "suburb" refers to areas within a metropolitan statistical area but outside of a principal city.

¹⁷ Note that this table uses the most recent metropolitan statistical area definitions, updated in 2013, and allows a direct comparison with their equivalent county aggregates in 2006. For this reason, 2006 estimates presented here may differ slightly from those based on the 2006 metropolitan statistical area definitions.

decline, the level of private vehicle commuting of several metro areas on the list remained above the 2013 national average of about 86 percent of workers. The list includes metro areas from all four U.S. regions. Large metro areas, such as San Francisco and Boston, show relatively large declines in automobile commuting rates between 2006 and 2013. The automobile commuting rate in the San Francisco metro area declined by about 4 percentage points. The New York City metro area, the nation's largest, showed the lowest rate of automobile commuting, at 56.9 percent in 2013, down from 59.1 percent in 2006.

Table 2 shows metro areas with the lowest rates of private vehicle

commuting in 2013 with the travel mode other than the automobile most commonly used to get to work.¹⁸ The list includes a diverse set of metro areas and a variety of secondary travel modes. Metro areas that contain some of the nation's largest cities such as New York City, Washington, DC, San Francisco, Chicago, and Boston relied heavily on their subway and bus systems. Those associated with college towns such as Ithaca, NY,

¹⁸ In the Bremerton, WA metro area, the rate of walked (5.6 percent) and worked from home (5.4 percent) are not statistically different from that of ferry commuting. In the Corvallis, OR metro area, the rate of walked (7.9 percent) and worked from home (7.7 percent) are not statistically different from that of bicycle commuting. In the Missoula, MT metro area, the rate of bicycle commuting (5.2 percent) is not statistically different from that of walking.

Table 2.

Metro Areas Among Those With the Lowest Rates of Automobile Commuting and Their Second Most Common Commute Mode: 2013

(For information on confidentiality protection, sampling error, and definitions, see www.census.gov/programs-surveys/acs/guidance.html)

| Rank | Metropolitan statistical area | Percentage of workers who commuted by private vehicle | Margin of error (±) | Alternative travel mode with highest commuting share | Second most common commute mode (percentage of workers) | Margin of error (±) |
|------|--|---|---------------------|--|---|---------------------|
| 1 | New York-Newark-Jersey City, NY-NJ-PA | 56.9 | 0.3 | Subway or elevated rail | 18.9 | 0.2 |
| 2 | Ithaca, NY | 68.7 | 3.6 | Walked | 17.5 | 2.4 |
| 3 | San Francisco-Oakland-Hayward, CA | 69.8 | 0.5 | Bus or trolley bus | 7.6 | 0.3 |
| 4 | Boulder, CO | 71.9 | 1.8 | Worked at home | 11.1 | 1.3 |
| 5 | Corvallis, OR | 72.6 | 3.9 | Bicycle | 8.8 | 2.5 |
| 6 | Iowa City, IA | 73.4 | 2.8 | Walked | 11.1 | 2.0 |
| 7 | Boston-Cambridge-Newton, MA-NH | 75.6 | 0.4 | Subway or elevated rail | 6.2 | 0.3 |
| 8 | Washington-Arlington-Alexandria, DC-VA-MD-WV | 75.7 | 0.4 | Subway or elevated rail | 8.0 | 0.3 |
| 9 | Bremerton-Silverdale, WA | 77.0 | 1.9 | Ferry | 6.4 | 1.0 |
| 10 | Missoula, MT | 77.2 | 4.3 | Walked | 8.5 | 3.1 |
| 11 | Champaign-Urbana, IL | 78.4 | 1.6 | Walked | 7.9 | 1.3 |
| 12 | Bridgeport-Stamford-Norwalk, CT | 78.5 | 1.0 | Long distance or commuter rail | 7.6 | 0.6 |
| 13 | Chicago-Naperville-Elgin, IL-IN-WI | 79.1 | 0.4 | Bus or trolley bus | 4.7 | 0.2 |
| 14 | Urban Honolulu, HI | 79.1 | 1.0 | Bus or trolley bus | 7.9 | 0.7 |
| 15 | State College, PA | 79.2 | 2.2 | Walked | 9.9 | 1.9 |

Note: Universe: workers 16 years and older. See ACS Table S0801 in American FactFinder at <www.Factfinder2.census.gov>. Data are based on a sample and are subject to sampling variability. A margin of error is a measure of an estimate's variability. The larger the margin of error in relation to the size of the estimates, the less reliable the estimate. When added to and subtracted from the estimate, the margin of error forms the 90 percent confidence interval.

Source: U.S. Census Bureau, 2013 American Community Survey.

Corvallis, OR, and State College, PA, showed high rates of walking and bicycling to work. In the Boulder, CO metro area, more than 1 in 10 people worked at home. Almost 8.0 percent of workers in the Bridgeport, CT metro area got to work by commuter rail, and 6.4 percent of workers in the Bremerton, WA metro area used a ferry for their longest commute segment.

DIFFERENCES IN AUTOMOBILE COMMUTING BY AGE

Rapidly evolving transportation options and changing demographics across communities raise several questions about current and future travel patterns. Young people show some deviation from several long-standing travel-related indicators, including higher rates of commuting by travel modes other than private vehicles

and lower rates of vehicle availability.^{19, 20} Driver's licensing rates among young people have also declined or held steady in recent years.^{21, 22, 23} To what extent these deviations may become a sustained pattern remains unclear. This question is closely tied to other patterns of population change, such as labor market

¹⁹ Brian McKenzie, "Modes Less Traveled: Bicycling and Walking to Work in the United States: 2008–2012," *American Community Survey Reports*, ACS-25, U.S. Census Bureau, Washington, DC, 2014.

²⁰ Joseph Kane and Adie Tomer, "Millennials and Generation X Commuting Less by Car, But Will the Trends Hold?," Brookings Institution, Metropolitan Infrastructure Initiative, Washington, DC, 2014.

²¹ U.S. PIRG Education Fund and Frontier Group, "New Directions: Our Changing Relationship With Driving and Implications for America's Future," 2013, <www.uspirg.org/sites/pirg/files/reports/>.

²² U.S. Department of Transportation, Federal Highway Administration, Highway Statistics Series, <www.fhwa.dot.gov/policyinformation/statistics/>.

²³ Noreen C. McDonald, "Are Millennials Really the 'Go-Nowhere' Generation?," *Journal of the American Planning Association*, 81(2), 1–14, 2015.

trends, the types of communities in which young workers live and work, and the transportation options within those communities.

Table 3 shows differences in commuting mode by age for 2006 and 2013. With few exceptions, the likelihood of driving alone to work increased with age in 2013, while carpooling declined. Workers aged 16 to 24 show the lowest rates of driving alone, at 70.1 percent in 2013. Between 2006 and 2013, the rate of carpooling declined across all age categories. The universal decline in carpooling coincided with a mixed pattern of increases in other modes. Driving alone increased from 76.0 percent to 76.4 percent among all workers and increased by about 1 percentage point among workers in the youngest and oldest age categories. The three youngest age groups experienced an increase in commuting

Table 3.

Commuting Mode by Age Group: 2006 and 2013(For information on confidentiality protection, sampling error, and definitions, see www.census.gov/programs-surveys/acs/guidance.html)

| Age group and commute mode | 2006 | | | 2013 | | |
|---------------------------------------|---------------------------|--------------------------|------------------------|---------------------------|--------------------------|------------------------|
| | Workers (in thousands) | Percentage of workers | Margin of error (±) | Workers (in thousands) | Percentage of workers | Margin of error (±) |
| ALL WORKERS | | | | | | |
| Total workers | 138,266 | 100 | Z | 142,962 | 100 | Z |
| Car, truck, or van: drove alone | 105,046 | 76.0 | 0.1 | 109,277 | 76.4 | 0.1 |
| Car, truck, or van: carpooled | 14,852 | 10.7 | 0.1 | 13,387 | 9.4 | 0.1 |
| Public transportation | 6,684 | 4.8 | Z | 7,393 | 5.2 | Z |
| Bicycle | 623 | 0.5 | Z | 882 | 0.6 | Z |
| Walked | 3,952 | 2.9 | Z | 4,000 | 2.8 | Z |
| Other means | 1,698 | 1.2 | Z | 1,793 | 1.3 | Z |
| Worked at home | 5,411 | 3.9 | Z | 6,229 | 4.4 | Z |
| 16 to 24 years | | | | | | |
| Car, truck, or van: drove alone | 13,619 | 69.1 | 0.2 | 13,143 | 70.1 | 0.2 |
| Car, truck, or van: carpooled | 2,914 | 14.8 | 0.2 | 2,300 | 12.3 | 0.1 |
| Public transportation | 1,026 | 5.2 | 0.1 | 1,091 | 5.8 | 0.1 |
| Bicycle | 154 | 0.8 | Z | 204 | 1.1 | Z |
| Walked | 1,235 | 6.3 | 0.1 | 1,234 | 6.6 | 0.1 |
| Other means | 319 | 1.6 | 0.1 | 310 | 1.7 | 0.1 |
| Worked at home | 427 | 2.2 | 0.1 | 455 | 2.4 | 0.1 |
| 25 to 29 years | | | | | | |
| Car, truck, or van: drove alone | 11,185 | 74.6 | 0.2 | 11,687 | 74.8 | 0.2 |
| Car, truck, or van: carpooled | 1,951 | 13.0 | 0.2 | 1,594 | 10.2 | 0.1 |
| Public transportation | 831 | 5.5 | 0.1 | 1,117 | 7.1 | 0.1 |
| Bicycle | 92 | 0.6 | Z | 148 | 0.9 | Z |
| Walked | 414 | 2.8 | 0.1 | 499 | 3.2 | 0.1 |
| Other means | 197 | 1.3 | 0.1 | 203 | 1.3 | 0.1 |
| Worked at home | 317 | 2.1 | 0.1 | 376 | 2.4 | 0.1 |
| 30 to 34 years | | | | | | |
| Car, truck, or van: drove alone | 11,041 | 75.3 | 0.2 | 11,830 | 75.6 | 0.2 |
| Car, truck, or van: carpooled | 1,726 | 11.8 | 0.1 | 1,605 | 10.3 | 0.2 |
| Public transportation | 841 | 5.7 | 0.1 | 979 | 6.3 | 0.1 |
| Bicycle | 79 | 0.5 | Z | 116 | 0.7 | Z |
| Walked | 340 | 2.3 | 0.1 | 394 | 2.5 | 0.1 |
| Other means | 178 | 1.2 | 0.1 | 197 | 1.3 | 0.1 |
| Worked at home | 462 | 3.1 | 0.1 | 534 | 3.4 | 0.1 |
| 35 to 44 years | | | | | | |
| Car, truck, or van: drove alone | 25,660 | 77.0 | 0.1 | 23,507 | 77.0 | 0.1 |
| Car, truck, or van: carpooled | 3,486 | 10.5 | 0.1 | 2,985 | 9.8 | 0.1 |
| Public transportation | 1,635 | 4.9 | 0.1 | 1,539 | 5.0 | 0.1 |
| Bicycle | 133 | 0.4 | Z | 165 | 0.5 | Z |
| Walked | 697 | 2.1 | Z | 605 | 2.0 | Z |
| Other means | 401 | 1.2 | Z | 375 | 1.2 | Z |
| Worked at home | 1,319 | 4.0 | 0.1 | 1,350 | 4.4 | 0.1 |
| 45 to 54 years | | | | | | |
| Car, truck, or van: drove alone | 25,449 | 78.7 | 0.1 | 25,223 | 78.6 | 0.1 |
| Car, truck, or van: carpooled | 2,966 | 9.2 | 0.1 | 2,758 | 8.6 | 0.1 |
| Public transportation | 1,399 | 4.3 | 0.1 | 1,424 | 4.4 | 0.1 |
| Bicycle | 108 | 0.3 | Z | 140 | 0.4 | Z |
| Walked | 660 | 2.0 | Z | 611 | 1.9 | Z |
| Other means | 356 | 1.1 | Z | 373 | 1.2 | Z |
| Worked at home | 1,391 | 4.3 | Z | 1,581 | 4.9 | 0.1 |
| 55 years and older | | | | | | |
| Car, truck, or van: drove alone | 18,092 | 77.8 | 0.1 | 23,889 | 78.8 | 0.1 |
| Car, truck, or van: carpooled | 1,808 | 7.8 | 0.1 | 2,145 | 7.1 | 0.1 |
| Public transportation | 952 | 4.1 | 0.1 | 1,243 | 4.1 | 0.1 |
| Bicycle | 56 | 0.2 | Z | 109 | 0.4 | Z |
| Walked | 605 | 2.6 | 0.1 | 657 | 2.2 | Z |
| Other means | 246 | 1.1 | Z | 336 | 1.1 | Z |
| Worked at home | 1,495 | 6.4 | 0.1 | 1,932 | 6.4 | 0.1 |

Z Rounds to zero.

Note: Universe: workers 16 years and older. Data are based on a sample and are subject to sampling variability. A margin of error is a measure of an estimate's variability. The larger the margin of error in relation to the size of the estimates, the less reliable the estimate. When added to and subtracted from the estimate, the margin of error forms the 90 percent confidence interval.

Source: U.S. Census Bureau, 2006 and 2013 American Community Survey.

Figure 5.

Commuting by Automobile by Age and Community Type: 2006 and 2013

(Percentage of workers. Universe: workers 16 years and older. Data based on sample. For information on confidentiality protection, sampling error, nonsampling error, and definitions, see www.census.gov/acs/www/)



Note: See Appendix Table 2 for estimates and margins of error.
 Source: U.S. Census Bureau, 2006 and 2013 American Community Survey.

by public transportation. Workers aged 25 to 29 showed the highest public transportation increase, from 5.5 percent to 7.1 percent. Younger workers also showed notable increases in bicycle commuting. For example, for workers in two age categories, 25 to 29 years and 30 to 34 years, the percentage of bicycle commuters increased about 0.3 percentage points, a small absolute increase, but a substantial proportional increase given the small numeric base for bicycle commuting. Technological and policy changes not only affect

how we travel, but whether or not we travel. Working from home has consistently captured an increased share of overall commutes over the last few decades.²⁴ Between 2006 and 2013, the rate of workers who worked at home increased from 3.9 percent to 4.4 percent.

Differences in travel patterns are evident across age groups, perhaps because age often aligns with important social and economic

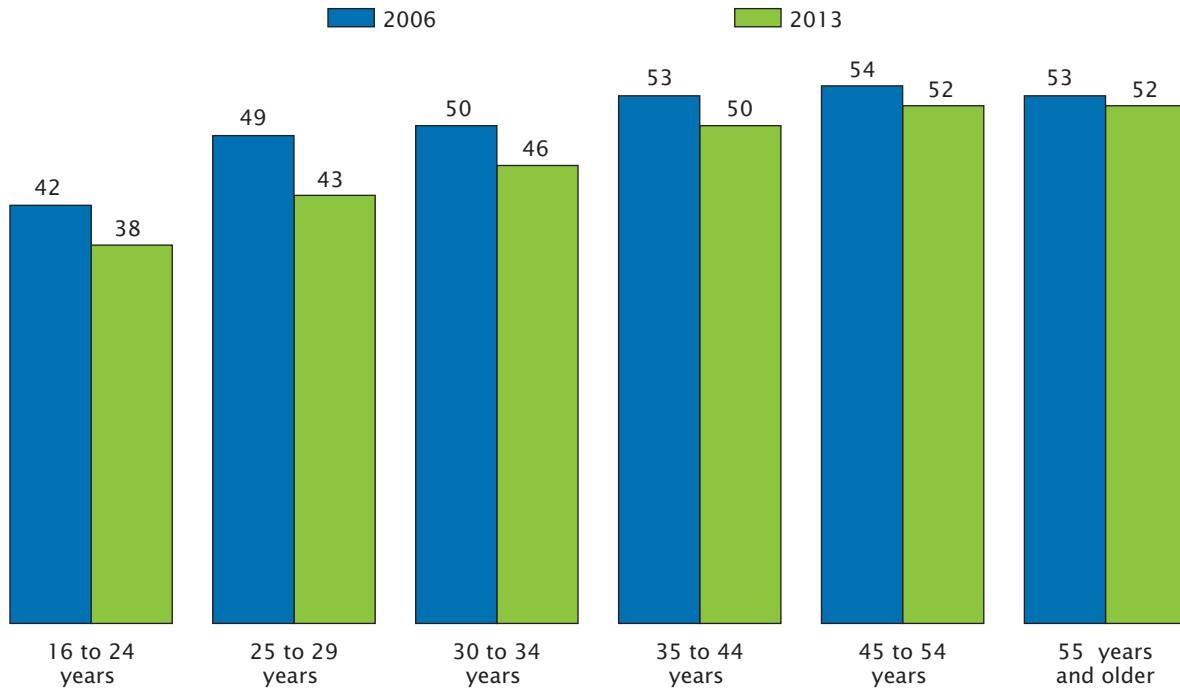
²⁴ Peter J. Mateyka, Melanie A. Rapino, and Liana Christin Landivar, "Home-Based Workers in the United States: 2010," *Current Population Reports*, P70-132, U.S. Census Bureau, Washington, DC, 2012.

predictors such as education, family structure, or community of residence, which influence transportation options and preferences. Figure 5 combines the drove alone and carpooling categories to show an overall rate of automobile commuting by age and the type of community in which workers live. This figure compares workers living within principal cities within metro areas to all other workers. Young workers in principal cities (in metro areas) showed relatively low rates of automobile commuting in 2013 and declines in rates of driving between 2006 and 2013. Among

Figure 6.

Automobile Commuting by Age in the Ten Cities With the Most Public Transportation Activity: 2006 and 2013¹

(Percentage of workers within ten cities (combined). Universe: workers 16 years and older. Data based on sample. For information on confidentiality protection, sampling error, nonsampling error, and definitions, see www.census.gov/acs/www/)



¹ Level of public transportation activity is based on passenger trips and passenger miles associated with the area's transit agency in 2013. Cities include: New York, Los Angeles, Chicago, Washington, DC, Boston, Philadelphia, San Francisco, Atlanta, Seattle, Baltimore. See APTA 2014 Public Transportation Fact Book at www.apta.com/resources/statistics.

Note: Numbers are rounded. See Appendix Table 3 for estimates and margins of error. Source: U.S. Census Bureau, 2006 and 2013 American Community Survey.

them, workers aged 16 to 24 showed the lowest rate of automobile commuting at 73.6 percent in 2013. Automobile commuting rates changed little for most age groups between 2006 and 2013, but rates for younger workers, the focus of increased media attention in recent years, showed some decline. Workers aged 25 to 29 living in principal cities showed the largest decline in automobile commuting, from 80.6 percent in 2006 to 76.7 percent in 2013. Compared with their urban counterparts, workers who lived outside of principal cities in metro areas were more likely

to commute by automobile and showed less variation in automobile commuting rates across age groups. Among urban workers in 2013, workers aged 45 to 54 had the highest rate of automobile commuting at 80.5 percent, whereas workers living elsewhere reached their highest rate of automobile commuting between ages 25 and 29 at 90.9 percent.²⁵

Differences between cities and the communities that surround them

²⁵ Among nonurban workers, the automobile commuting rate for workers aged 25 to 29 was not statistically different from that of workers aged 30 to 34.

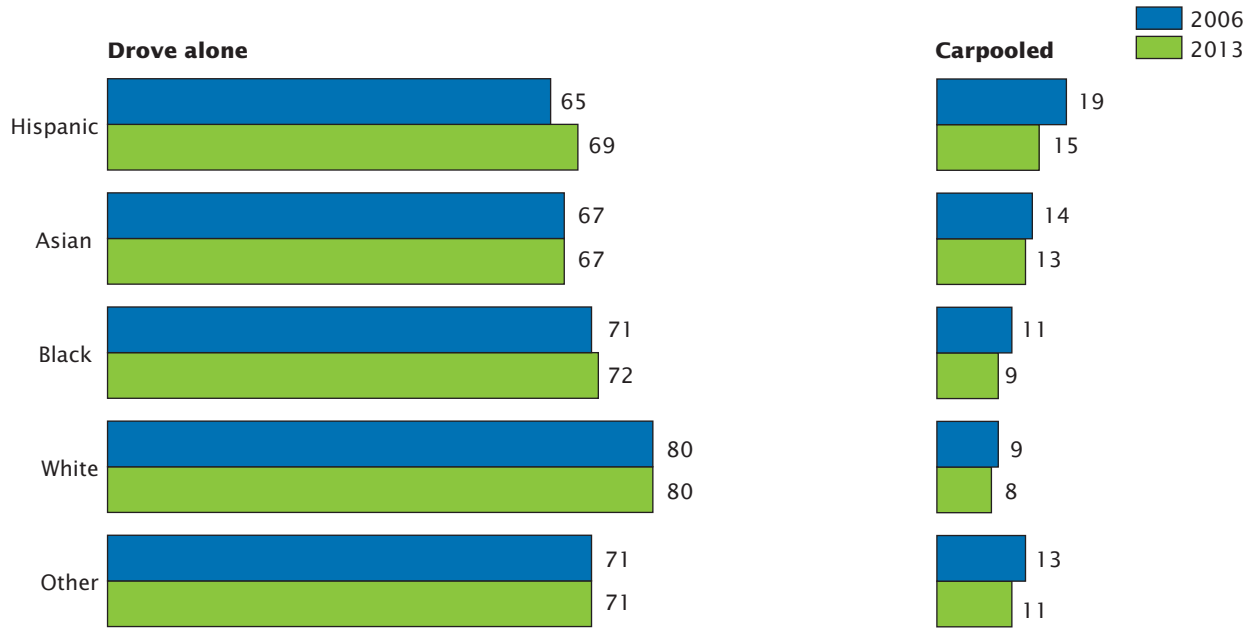
become more acute within some of the nation's largest metro areas, particularly those with extensive public transportation systems. Figure 6 shows rates of automobile commuting by age for the ten cities with the highest level of public transportation activity based on passenger trips: New York City, Los Angeles, Chicago, Washington, DC, Boston, Philadelphia, San Francisco, Atlanta, Seattle, and Baltimore.²⁶ The graph reinforces

²⁶ American Public Transportation Association, "Public Transportation Fact Book," Appendix A: Historical Tables, Washington, DC, 2014, www.apta.com/resources/statistics.

Figure 7.

Rates of Driving Alone and Carpooling by Race and Ethnicity: 2006 and 2013

(In percent. Universe: workers 16 years and older. Data based on sample. For information on confidentiality protection, sampling error, nonsampling error, and definitions, see www.census.gov/acs/www/)



Note: Numbers are rounded. See Appendix Table 4 for estimates and margins of error. Source: U.S. Census Bureau, 2006 and 2013 American Community Survey.

the pattern of declining automobile commuting rates in urban areas with a diverse set of transportation options. Automobile commuting rates generally declined between 2006 and 2013, regardless of age, but younger workers showed the largest declines. Workers aged 16 to 24 showed the lowest rate of automobile commuting in 2013 at 38 percent, but workers aged 25 to 29 showed the sharpest decline in automobile commuting between 2006 and 2013, from 49 percent to 43 percent.

TRENDS IN DRIVING ALONE AND CARPOOLING BY RACE, ETHNICITY, AND FOREIGN-BORN STATUS

Figure 7 shows the rate of driving alone and carpooling by race and ethnicity.²⁷ In 2013, White workers

²⁷ Federal surveys now give respondents the option of reporting more than one race. Therefore, two basic ways of defining a race group are possible. A group such as Asian may be defined as those who reported Asian and no other race or as those who reported Asian regardless of whether they also reported another race. This report shows data using the first approach (race alone). For further information, see the report "Overview of Race and Hispanic Origin: 2010 (C2010BR-02)" at www.census.gov/library/publications/2011/dec/c2010br-02.html. Each group, including in the analysis that falls outside of the Hispanic category, includes only workers who identified as "non-Hispanic."

had the highest rate of driving alone to work at 80 percent, and the lowest rate of carpooling at 8 percent. Asian workers had the lowest rate of driving alone at 67 percent. Between 2006 and 2013, all groups listed showed declines in carpooling. Hispanic workers showed the highest rate of carpooling in 2013 at 15 percent, down from 19 percent in 2006, the largest decline among groups.

Table 4 takes a closer look at differences in commuting mode by race and ethnicity. It compares workers living within principal cities in metro areas to those in all other types of communities. White workers living outside of a metro area's

Table 4. **Travel Mode by Ethnicity, Race, and Community Type: 2013**

(For information on confidentiality protection, sampling error, and definitions, see www.census.gov/programs-surveys/acs/guidance.html)

| Ethnicity and race and type of community of residence | Total number of workers within community type for each group (thousands) | Percent-age of workers within community type for each group | Car, truck, or van: drove alone | | Car, truck, or van: car-pooled | | Public transportation | | Bicycle | | Walked | | Other means | | Worked at home | |
|---|--|---|---------------------------------|---------------------|--------------------------------|---------------------|-----------------------|---------------------|-------------|---------------------|-------------|---------------------|-------------|---------------------|----------------|---------------------|
| | | | Per-centage | Margin of error (±) | Per-centage | Margin of error (±) | Per-centage | Margin of error (±) | Per-centage | Margin of error (±) | Per-centage | Margin of error (±) | Per-centage | Margin of error (±) | Per-centage | Margin of error (±) |
| HISPANIC | | | | | | | | | | | | | | | | |
| Total | 22,562 | 100.0 | Z | 68.9 | 0.2 | 14.7 | 0.2 | 7.7 | 0.1 | 0.7 | 3.2 | 0.1 | 1.9 | 0.1 | 2.9 | 0.1 |
| Lived in principal city, in metro area..... | 10,161 | 45.0 | 0.2 | 63.9 | 0.3 | 14.0 | 0.2 | 12.4 | 0.2 | 1.0 | 4.0 | 0.1 | 2.0 | 0.1 | 2.8 | 0.1 |
| All other community types..... | 12,401 | 55.0 | 0.2 | 73.1 | 0.3 | 15.3 | 0.2 | 3.8 | 0.1 | 0.5 | 2.5 | 0.1 | 1.8 | 0.1 | 3.0 | 0.1 |
| ASIAN | | | | | | | | | | | | | | | | |
| Total | 7,652 | 100.0 | Z | 66.8 | 0.3 | 12.9 | 0.2 | 10.9 | 0.2 | 0.6 | 3.9 | 0.1 | 1.1 | 0.1 | 3.9 | 0.1 |
| Lived in principal city, in metro area..... | 3,654 | 47.8 | 0.3 | 60.4 | 0.5 | 12.1 | 0.3 | 16.0 | 0.3 | 0.8 | 5.8 | 0.2 | 1.2 | 0.1 | 3.6 | 0.2 |
| All other community types..... | 3,998 | 52.2 | 0.3 | 72.6 | 0.4 | 13.5 | 0.3 | 6.1 | 0.2 | 0.3 | 2.1 | 0.1 | 1.1 | 0.1 | 4.2 | 0.2 |
| BLACK | | | | | | | | | | | | | | | | |
| Total | 15,328 | 100.0 | Z | 72.2 | 0.2 | 9.5 | 0.2 | 11.0 | 0.1 | 0.3 | 2.8 | 0.1 | 1.5 | 0.1 | 2.7 | 0.1 |
| Lived in principal city, in metro area..... | 7,350 | 48.0 | 0.2 | 65.8 | 0.3 | 9.1 | 0.2 | 16.9 | 0.2 | 0.4 | 3.6 | 0.1 | 1.5 | 0.1 | 2.6 | 0.1 |
| All other community types..... | 7,978 | 52.1 | 0.2 | 78.1 | 0.3 | 9.8 | 0.2 | 5.5 | 0.1 | 0.3 | 2.1 | 0.1 | 1.5 | 0.1 | 2.7 | 0.1 |
| WHITE | | | | | | | | | | | | | | | | |
| Total | 94,004 | 100.0 | Z | 79.9 | 0.1 | 7.7 | Z | 3.1 | Z | 0.6 | 2.6 | Z | 1.1 | Z | 5.0 | Z |
| Lived in principal city, in metro area..... | 24,656 | 26.2 | 0.1 | 73.3 | 0.2 | 7.2 | 0.1 | 7.1 | 0.1 | 1.5 | 4.4 | 0.1 | 1.3 | Z | 5.3 | 0.1 |
| All other community types..... | 69,348 | 73.8 | 0.1 | 82.3 | 0.1 | 7.9 | 0.1 | 1.7 | Z | 0.3 | 1.9 | Z | 1.0 | Z | 4.9 | Z |
| OTHER | | | | | | | | | | | | | | | | |
| Total | 3,416 | 100.0 | Z | 71.0 | 0.4 | 11.4 | 0.3 | 6.4 | 0.2 | 0.9 | 4.3 | 0.2 | 1.8 | 0.1 | 4.3 | 0.2 |
| Lived in principal city, in metro area..... | 1,253 | 36.7 | 0.5 | 64.3 | 0.7 | 11.0 | 0.5 | 11.8 | 0.5 | 1.5 | 5.6 | 0.4 | 1.7 | 0.2 | 4.1 | 0.3 |
| All other community types..... | 2,164 | 63.3 | 0.5 | 74.8 | 0.5 | 11.7 | 0.4 | 3.2 | 0.2 | 0.5 | 3.5 | 0.2 | 1.9 | 0.1 | 4.4 | 0.3 |

Z Rounds to zero.

Note: Universe: workers 16 years and older. Race groups do not include workers who identified as Hispanic. Data are based on a sample and are subject to sampling variability. A margin of error is a measure of an estimate's variability. The larger the margin of error in relation to the size of the estimates, the less reliable the estimate. When added to and subtracted from the estimate, the margin of error forms the 90 percent confidence interval.

Source: U.S. Census Bureau, 2013 American Community Survey.

Table 5.

Carpooling Rates Across Industries by Hispanic Origin: 2013

(For information on confidentiality protection, sampling error, and definitions, see www.census.gov/programs-surveys/acs/guidance.html)

| Industry | All workers | | | Hispanic workers | | | Non-Hispanic workers | | |
|--|--------------------------------|-------------------|---------------------|--------------------------------|-------------------|---------------------|--------------------------------|-------------------|---------------------|
| | Number of workers (thou-sands) | Percent carpooled | Margin of error (±) | Number of workers (thou-sands) | Percent carpooled | Margin of error (±) | Number of workers (thou-sands) | Percent carpooled | Margin of error (±) |
| Total | 13,387 | 9.4 | 0.1 | 3,321 | 14.7 | 0.2 | 10,066 | 8.4 | 0.1 |
| Construction | 1,385 | 15.9 | 0.3 | 577 | 25.2 | 0.7 | 808 | 12.6 | 0.2 |
| Agriculture, forestry, fishing, hunting, and mining | 395 | 14.1 | 0.4 | 210 | 27.2 | 1.2 | 185 | 9.1 | 0.3 |
| Arts, entertainment, and recreation, and accommodation and food services | 1,492 | 10.9 | 0.2 | 408 | 13.3 | 0.4 | 1,084 | 10.2 | 0.2 |
| Manufacturing | 1,576 | 10.5 | 0.1 | 399 | 17.1 | 0.5 | 1,176 | 9.3 | 0.1 |
| Other services, except public administration | 670 | 9.5 | 0.2 | 164 | 12.4 | 0.5 | 506 | 8.8 | 0.2 |
| Professional, scientific, and management, and administrative and waste management services | 1,436 | 9.1 | 0.2 | 444 | 18.2 | 0.5 | 992 | 7.5 | 0.1 |
| Educational services, and health care and social assistance | 2,743 | 8.5 | 0.1 | 381 | 10.3 | 0.3 | 2,362 | 8.2 | 0.1 |
| Retail trade | 1,393 | 8.4 | 0.1 | 295 | 11.4 | 0.3 | 1,099 | 7.9 | 0.1 |
| Wholesale trade | 324 | 8.3 | 0.3 | 107 | 15.7 | 1.0 | 217 | 6.8 | 0.2 |
| Armed Forces | 81 | 8.3 | 0.5 | 14 | 9.8 | 1.4 | 67 | 8.0 | 0.5 |
| Public administration | 541 | 8.0 | 0.2 | 75 | 9.9 | 0.6 | 466 | 7.8 | 0.2 |
| Transportation and warehousing, and utilities | 535 | 7.7 | 0.2 | 119 | 11.2 | 0.6 | 416 | 7.1 | 0.2 |
| Information | 204 | 6.7 | 0.2 | 32 | 9.7 | 0.9 | 173 | 6.4 | 0.2 |
| Finance and insurance, and real estate and rental and leasing | 612 | 6.5 | 0.1 | 97 | 8.9 | 0.5 | 515 | 6.2 | 0.1 |

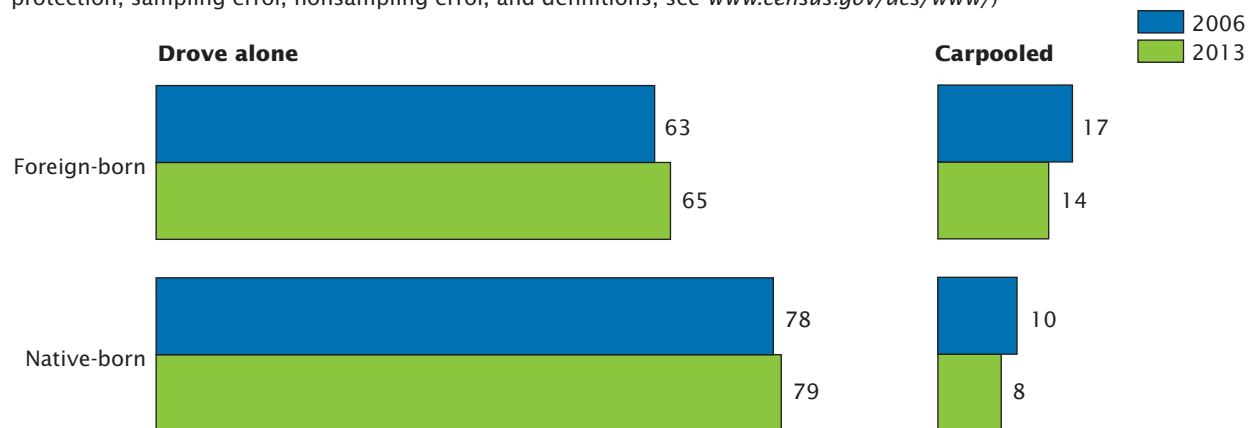
Note: Universe: workers 16 years and older. Data are based on a sample and are subject to sampling variability. A margin of error is a measure of an estimate's variability. The larger the margin of error in relation to the size of the estimates, the less reliable the estimate. When added to and subtracted from the estimate, the margin of error forms the 90 percent confidence interval.

Source: U.S. Census Bureau, 2013 American Community Survey.

Figure 8.

Rates of Driving Alone and Carpooling by Foreign-Born Status: 2006 and 2013

(In percent. Universe: foreign-born workers 16 years and older. Data based on sample. For information on confidentiality protection, sampling error, nonsampling error, and definitions, see www.census.gov/acs/www/)



Note: Numbers are rounded. See Appendix Table 4 for estimates and margins of error. Source: U.S. Census Bureau, 2006 and 2013 American Community Survey.

principal city had the highest rate of driving alone at 82.3 percent in 2013, while Asian workers living within a metro area’s principal city had the lowest rate at 60.4 percent. Hispanic workers living outside of a principal city showed the highest rate of carpooling at 15.3 percent. For all groups, commuting by public transportation was more common for workers within a metro area’s principal city than those living elsewhere. For example, 16.9 percent of Black workers living within principal cities commuted by transit compared with only 5.5 percent of their counterparts living elsewhere. Differences in rates of bicycle commuting between city dwellers and other workers varied considerably across groups. Among White workers living in principal

cities, 1.5 percent commuted by bicycle, compared with only 0.3 percent of those living in all other community types.

Table 5 shows rates of carpooling by Hispanic origin and industry for 2013. Among all workers, those in the construction industry showed the highest rates of carpooling in 2013 at 15.9 percent, followed by agriculture, forestry, fishing, hunting, and mining at 14.1 percent. Among Hispanic workers in these industries, about 1 in 4 carpooled to work. Workers in information, finance and insurance, real estate, and rental and leasing showed the lowest rate of carpooling at 6.7 percent and 6.5 percent, respectively.

Travel patterns also vary by foreign-born status. Figure 8 shows

that in 2013, foreign-born workers were less likely than native-born workers to drive alone to work, at 65 percent and 79 percent, respectively. Between 2006 and 2013, native- and foreign-born workers showed a small increase in driving alone to work. Foreign-born workers were more likely than native-born workers to carpool to work in 2013 at 14 percent and 8 percent, respectively. Rates of carpooling declined for both groups between 2006 and 2013.

Table 6 takes a closer look at variation in travel mode among foreign-born workers, differentiating by place of birth and current type of community. Travel patterns across foreign-born groups are closely linked to both differences in sociodemographic characteristics

Table 6. Travel Mode by Place of Birth and Community Type Among Foreign-Born Workers: 2013

(For information on confidentiality protection, sampling error, and definitions, see www.census.gov/programs-surveys/acs/guidance.html)

| Place of birth and type of community of residence | Total number of workers in group (thousands) | Car, truck, or van: drove alone | | Car, truck, or van: carpooled | | Public transportation | | Bicycle | | Walked | | Other means | | Worked at home | |
|---|--|---------------------------------|---------------------|-------------------------------|---------------------|-----------------------|---------------------|---------|---------------------|---------|---------------------|-------------|---------------------|----------------|---------------------|
| | | Percent | Margin of error (±) | Percent | Margin of error (±) | Percent | Margin of error (±) | Percent | Margin of error (±) | Percent | Margin of error (±) | Percent | Margin of error (±) | Percent | Margin of error (±) |
| Africa | | | | | | | | | | | | | | | |
| Principal city within metro area | 536 | 63.1 | 1.4 | 8.0 | 0.7 | 19.0 | 1.1 | 0.4 | 0.1 | 4.2 | 0.6 | 2.2 | 0.4 | 3.1 | 0.4 |
| All other community types | 552 | 75.8 | 1.2 | 9.3 | 0.8 | 7.4 | 0.7 | 0.3 | 0.1 | 2.7 | 0.4 | 1.2 | 0.3 | 3.3 | 0.5 |
| Asia | | | | | | | | | | | | | | | |
| Principal city within metro | 3,191 | 61.0 | 0.5 | 12.6 | 0.3 | 15.1 | 0.3 | 0.7 | 0.1 | 5.6 | 0.2 | 1.3 | 0.1 | 3.7 | 0.2 |
| All other community types | 3,566 | 72.2 | 0.5 | 13.9 | 0.4 | 6.0 | 0.2 | 0.3 | 0.0 | 2.1 | 0.2 | 1.1 | 0.1 | 4.5 | 0.2 |
| Caribbean | | | | | | | | | | | | | | | |
| Principal city within metro area | 950 | 45.3 | 1.0 | 8.7 | 0.6 | 35.2 | 0.9 | 0.5 | 0.1 | 5.7 | 0.5 | 1.5 | 0.3 | 3.1 | 0.3 |
| All other community types | 1,226 | 74.9 | 0.8 | 10.9 | 0.6 | 7.0 | 0.5 | 0.2 | 0.1 | 2.2 | 0.2 | 1.5 | 0.2 | 3.3 | 0.3 |
| Central America | | | | | | | | | | | | | | | |
| Principal city within metro area | 969 | 54.3 | 1.2 | 17.3 | 0.9 | 17.1 | 0.8 | 1.5 | 0.3 | 4.5 | 0.4 | 2.8 | 0.4 | 2.5 | 0.3 |
| All other community types | 1,107 | 62.5 | 1.0 | 19.7 | 0.9 | 7.6 | 0.5 | 1.0 | 0.3 | 3.3 | 0.4 | 3.0 | 0.5 | 3.0 | 0.4 |
| Europe | | | | | | | | | | | | | | | |
| Principal city within metro area | 1,006 | 56.1 | 0.8 | 8.2 | 0.4 | 18.4 | 0.7 | 2.3 | 0.2 | 6.8 | 0.4 | 1.7 | 0.2 | 6.5 | 0.5 |
| All other community types | 1,415 | 76.8 | 0.6 | 8.7 | 0.4 | 4.3 | 0.3 | 0.5 | 0.1 | 2.0 | 0.2 | 1.1 | 0.1 | 6.6 | 0.3 |
| Mexico | | | | | | | | | | | | | | | |
| Principal city within metro area | 3,243 | 63.2 | 0.6 | 18.6 | 0.5 | 9.1 | 0.4 | 1.0 | 0.1 | 3.4 | 0.2 | 2.5 | 0.2 | 2.3 | 0.2 |
| All other community types | 3,671 | 68.0 | 0.6 | 20.9 | 0.5 | 2.9 | 0.2 | 0.6 | 0.1 | 2.9 | 0.2 | 2.1 | 0.2 | 2.7 | 0.2 |
| North America (remainder) | | | | | | | | | | | | | | | |
| Principal city within metro area | 160 | 62.6 | 2.0 | 7.1 | 0.9 | 11.8 | 1.4 | 2.4 | 0.5 | 5.9 | 0.9 | 2.1 | 0.7 | 8.1 | 1.1 |
| All other community types | 263 | 76.7 | 1.3 | 7.4 | 0.9 | 3.1 | 0.5 | 0.7 | 0.2 | 2.3 | 0.5 | 1.2 | 0.3 | 8.6 | 0.8 |
| Oceania and At Sea | | | | | | | | | | | | | | | |
| Principal city within metro area | 60 | 56.3 | 3.8 | 10.5 | 2.7 | 15.5 | 3.6 | 2.4 | 1.1 | 7.8 | 1.9 | 1.5 | 0.9 | 6.0 | 1.5 |
| All other community types | 66 | 71.0 | 3.3 | 11.9 | 2.0 | 4.8 | 1.5 | 0.9 | 0.6 | 2.6 | 0.9 | 3.1 | 1.4 | 5.9 | 1.5 |
| South America | | | | | | | | | | | | | | | |
| Principal city within metro area | 719 | 49.9 | 1.2 | 10.4 | 0.7 | 27.7 | 1.1 | 1.0 | 0.2 | 5.5 | 0.5 | 1.3 | 0.2 | 4.0 | 0.4 |
| All other community types | 994 | 71.2 | 1.0 | 12.6 | 0.7 | 7.0 | 0.5 | 0.4 | 0.1 | 2.3 | 0.3 | 1.6 | 0.3 | 4.9 | 0.5 |

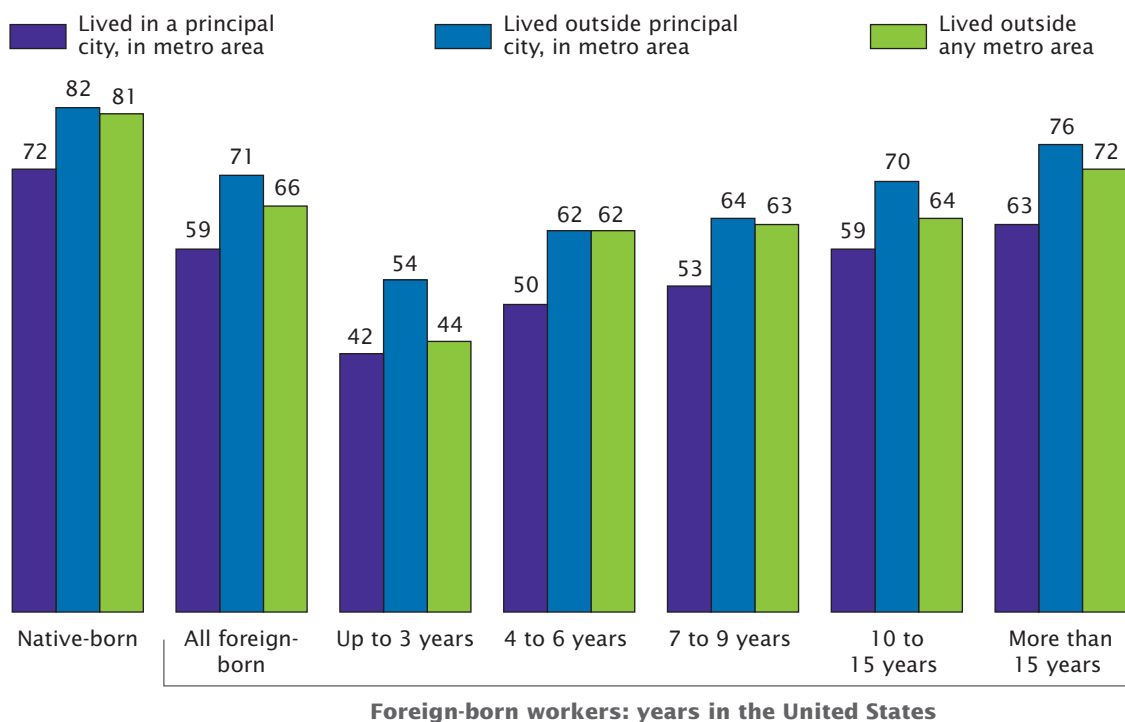
Note: Universe: foreign-born workers 16 years and older. Data are based on a sample and are subject to sampling variability. A margin of error is a measure of an estimate's variability. The larger the margin of error in relation to the size of the estimates, the less reliable the estimate. When added to and subtracted from the estimate, the margin of error forms the 90 percent confidence interval.

Source: U.S. Census Bureau, 2013 American Community Survey.

Figure 9.

Driving Alone for Native-Born and Foreign-Born Workers by Year of Entry to the United States and Community Type: 2013

(Percentage of workers within each group. Universe: workers 16 years and older. Data based on sample. For information on confidentiality protection, sampling error, nonsampling error, and definitions, see www.census.gov/acs/www/)



Note: Numbers are rounded. See Appendix Table 4 for estimates and margins of error.
Source: U.S. Census Bureau, 2013 American Community Survey.

and residential location.²⁸ Some groups have disproportionately settled in urban areas, which may increase their likelihood of using a diverse set of travel modes. Among foreign-born workers from the Caribbean who lived in a principal city, 45.3 percent drove alone to work, the lowest rate among groups. Foreign-born workers from Europe, North America, and Africa who lived outside of a principal city had the highest rates of driving alone to work, at 76.8 percent, 76.7 percent, and 75.8 percent,

²⁸ Gil Tal and Susan L. Handy, "Travel Behavior of Immigrants: An Analysis of the 2001 National Household Transportation Survey," *Transport Policy*, 17 (2), 85–93, 2010.

respectively. Foreign-born workers from Mexico and Central America who lived outside of a principal city had the highest rates of carpooling, at 20.9 percent and 19.7 percent, respectively. Rates of bicycling and walking to work were relatively high among workers from Europe, North America, and Oceania/Born at Sea living in a principal city within a metro area.

Social science research shows that, for several socioeconomic indicators, the foreign-born population increasingly mirrors the native-born population as the number of years spent in the United States increases. Travel behavior is no exception to this

pattern.^{29, 30} Figure 9 shows that foreign-born workers had lower rates of driving to work alone than native-born workers in 2013, regardless of year of entry, but the difference generally declines as the number of years spent in the United States increases for foreign-born workers. Among foreign-born newcomers living in principal cities (up to 3 years in the United States), 42 percent drove alone to work, compared with 63 percent among foreign-born workers who had lived

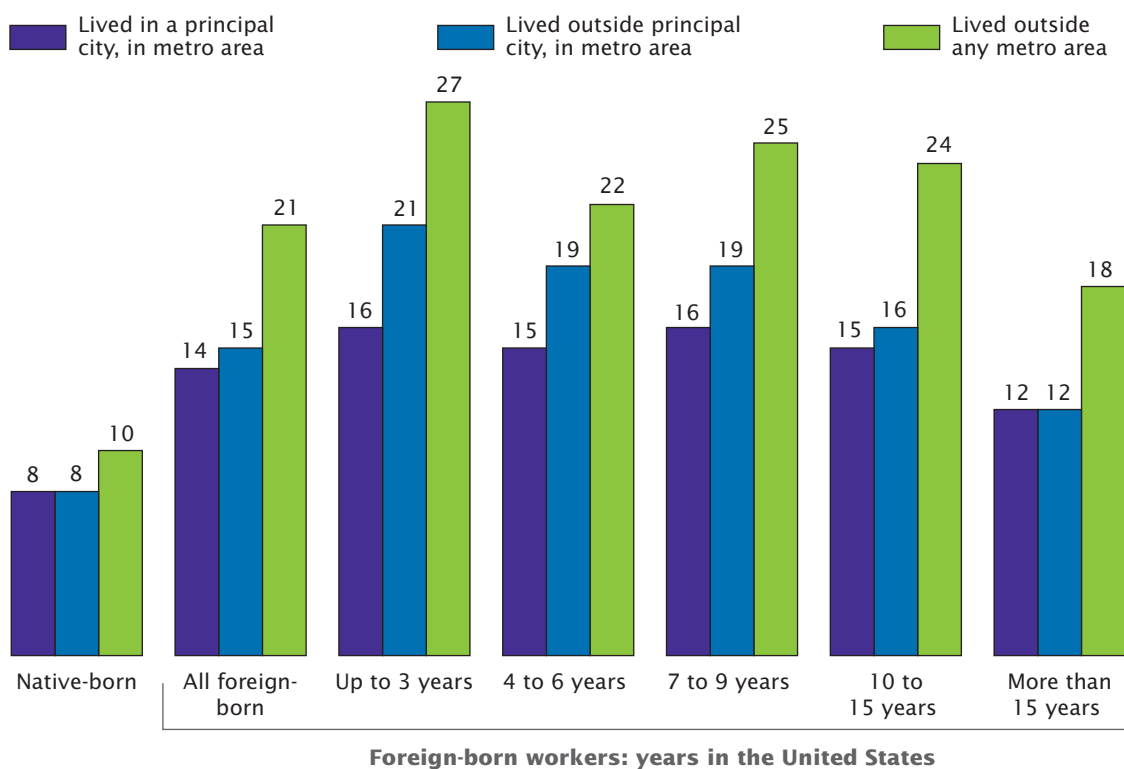
²⁹ Sungyop Kim, "Immigrants and Transportation: An Analysis of Immigrant Workers' Work Trips," *Cityscape* 11.3, 155–170, 2009.

³⁰ Daniel G. Chatman, "Explaining the 'Immigrant Effect' on Auto Use: the Influences of Neighborhoods and Preferences," *Transportation*, 41 (3):441–461, 2014.

Figure 10.

Carpooling for Native-Born and Foreign-Born Workers by Year of Entry to the United States and Community Type: 2013

(Percentage of workers within each group. Universe: workers 16 years and older. Data based on sample. For information on confidentiality protection, sampling error, nonsampling error, and definitions, see www.census.gov/acs/www/)



Note: Numbers are rounded. See Appendix Table 5 for estimates and margins of error.
Source: U.S. Census Bureau, 2013 American Community Survey.

in the United States for more than 15 years. Foreign-born workers in suburbs and outside of metro areas show similar patterns of converging toward the automobile commuting rates of native-born workers within the same type of communities.

Native-born workers showed little variation in commuting by carpool across the three types of residence communities in 2013, whereas the carpooling rate for foreign-born workers living outside of metro areas was about 7 percentage points higher than that of their urban counterparts (Figure 10). Among foreign-born workers, recent arrivals generally had higher rates of carpooling than those who had been in the United States for

several years. Among foreign-born workers living in the United States for 3 years or fewer and living outside of a metro area, about 1 in 4 carpoled to work.

VEHICLE AVAILABILITY

Travel choices are highly influenced by not only a household's access to private means of transportation, but also public infrastructure such as roads, public transportation systems, bicycle lanes, and sidewalks. Most U.S. workers do not have the option of taking a subway to work, but less obvious travel limitations such as perceived monetary, temporal, and safety costs associated using a particular travel mode also influence travel decisions. The ACS asks respondents "How many automobiles, vans, and

trucks of 1-ton capacity or less are kept at home for use by members of this household?" Workers may lack access to a private vehicle for a variety of reasons, such as financial constraints, preference for other modes of travel, or disability that prevents them from driving. Given the high dependence on automobiles within most communities, vehicle availability may play an important role in the overall mobility options of many workers and households.³¹

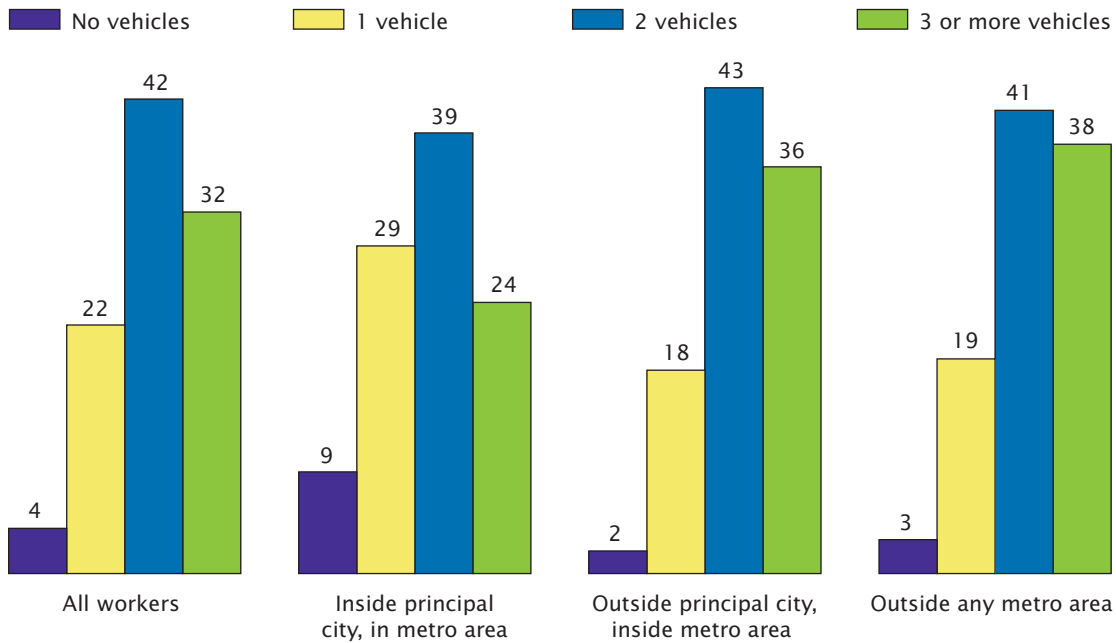
Figure 11 shows that a plurality of workers, 42 percent in 2013, live in a household with access to two

³¹ For more information on trends in vehicle availability, see: American Association of State Highway and Transportation Officials, "Commuting in America 2013: Brief 7, Vehicle and Transit Availability," Washington, DC, 2015, <traveltrends.transportation.org>.

Figure 11.

Number of Vehicles Available by Community Type: 2013

(Percentage of workers within group. Universe: workers 16 years and older in households. Data based on sample. For information on confidentiality protection, sampling error, nonsampling error, and definitions, see www.census.gov/acs/www/)

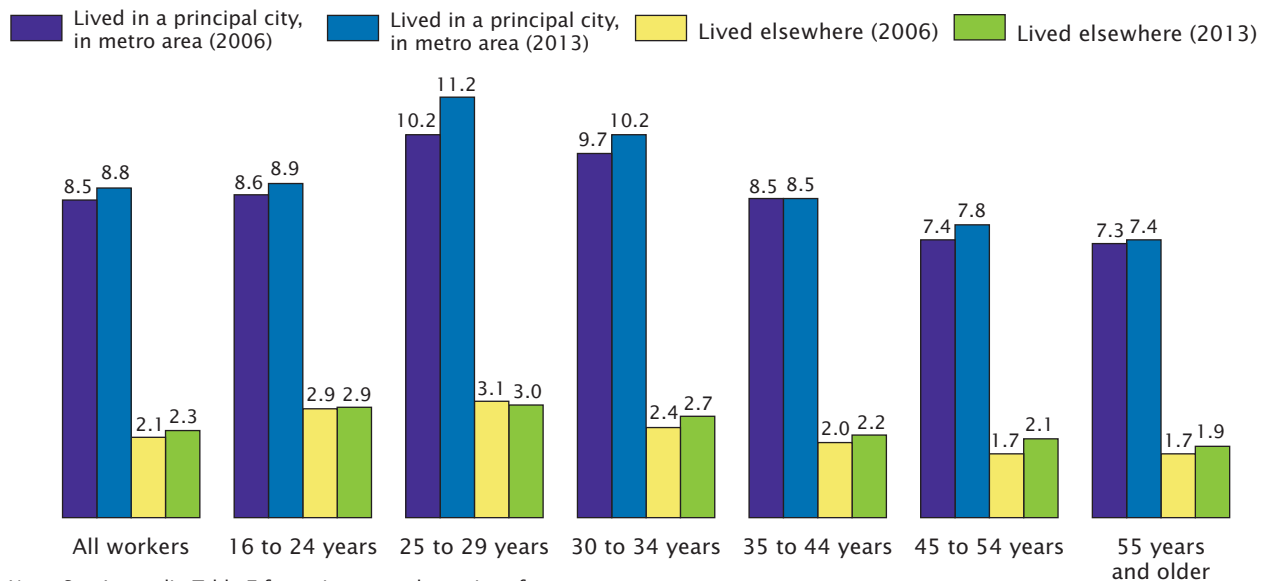


Note: Numbers are rounded. See Appendix Table 6 for estimates and margins of error.
Source: U.S. Census Bureau, 2013 American Community Survey.

Figure 12.

Workers With No Available Vehicle by Age and City Residence: 2006 and 2013

(Percentage of workers. Universe: workers in households 16 years and older who did not have access to a vehicle at home. Data based on sample. For information on confidentiality protection, sampling error, nonsampling error, and definitions, see www.census.gov/acs/www/)



Note: See Appendix Table 7 for estimates and margins of error.
Source: U.S. Census Bureau, 2006 and 2013 American Community Survey.

Table 7.

How Workers With No Access to a Vehicle Get to Work by Earnings Categories and Travel Mode: 2006 and 2013

(For information on confidentiality protection, sampling error, and definitions, see www.census.gov/programs-surveys/acs/guidance.html)

| Person earnings and travel mode | 2006 | | | 2013 | | |
|---|---------------------|-----------------------|---------------------|---------------------|-----------------------|---------------------|
| | Workers (thousands) | Percentage of workers | Margin of error (±) | Workers (thousands) | Percentage of workers | Margin of error (±) |
| ALL WORKERS LIVING IN HOUSEHOLDS | | | | | | |
| Total | 5,742 | 100.0 | Z | 6,351 | 100.0 | Z |
| Car, truck, or van: drove alone | 1,004 | 17.5 | 0.3 | 1,326 | 20.9 | 0.3 |
| Car, truck, or van: carpooled | 810 | 14.1 | 0.3 | 731 | 11.5 | 0.2 |
| Public transportation | 2,399 | 41.8 | 0.4 | 2,602 | 41.0 | 0.4 |
| Bicycle | 147 | 2.6 | 0.1 | 202 | 3.2 | 0.1 |
| Walked | 871 | 15.2 | 0.3 | 919 | 14.5 | 0.3 |
| Other means | 298 | 5.2 | 0.2 | 307 | 4.8 | 0.2 |
| Worked at home | 214 | 3.7 | 0.1 | 264 | 4.2 | 0.2 |
| \$0 TO \$24,999 | | | | | | |
| Total | 3,407 | 100.0 | Z | 3,387 | 100.0 | Z |
| Car, truck, or van: drove alone | 477 | 14.0 | 0.3 | 614 | 18.1 | 0.4 |
| Car, truck, or van: carpooled | 588 | 17.3 | 0.4 | 487 | 14.4 | 0.3 |
| Public transportation | 1,331 | 39.1 | 0.5 | 1,283 | 37.9 | 0.4 |
| Bicycle | 106 | 3.1 | 0.2 | 120 | 3.5 | 0.2 |
| Walked | 576 | 16.9 | 0.4 | 553 | 16.3 | 0.4 |
| Other means | 199 | 5.8 | 0.3 | 191 | 5.6 | 0.3 |
| Worked at home | 130 | 3.8 | 0.2 | 138 | 4.1 | 0.2 |
| \$25,000 TO \$74,999 | | | | | | |
| Total | 1,925 | 100.0 | Z | 2,256 | 100.0 | Z |
| Car, truck, or van: drove alone | 437 | 22.7 | 0.5 | 559 | 24.8 | 0.5 |
| Car, truck, or van: carpooled | 204 | 10.6 | 0.5 | 214 | 9.5 | 0.3 |
| Public transportation | 876 | 45.5 | 0.6 | 980 | 43.4 | 0.6 |
| Bicycle | 37 | 1.9 | 0.2 | 65 | 2.9 | 0.2 |
| Walked | 230 | 11.9 | 0.4 | 265 | 11.7 | 0.4 |
| Other means | 78 | 4.0 | 0.3 | 89 | 3.9 | 0.2 |
| Worked at home | 64 | 3.3 | 0.2 | 84 | 3.7 | 0.2 |
| \$75,000 OR MORE | | | | | | |
| Total | 410 | 100.0 | Z | 708 | 100.0 | Z |
| Car, truck, or van: drove alone | 90 | 22.0 | 0.9 | 152 | 21.5 | 0.7 |
| Car, truck, or van: carpooled | 17 | 4.1 | 0.5 | 30 | 4.2 | 0.4 |
| Public transportation | 192 | 46.8 | 1.4 | 339 | 47.8 | 1.1 |
| Bicycle | 4 | 1.1 | 0.3 | 17 | 2.4 | 0.3 |
| Walked | 65 | 15.8 | 0.9 | 101 | 14.3 | 0.7 |
| Other means | 21 | 5.2 | 0.5 | 28 | 3.9 | 0.4 |
| Worked at home | 21 | 5.0 | 0.6 | 41 | 5.8 | 0.5 |

Z Rounds to zero.

Note: Universe: workers in households 16 years and older who did not have access to a vehicle at home. Data are based on a sample and are subject to sampling variability. A margin of error is a measure of an estimate's variability. The larger the margin of error in relation to the size of the estimates, the less reliable the estimate. When added to and subtracted from the estimate, the margin of error forms the 90 percent confidence interval.

Source: U.S. Census Bureau, 2006 and 2013 American Community Survey.

vehicles, and only 4 percent have no access to a vehicle at home. Among workers living within cities in metro areas, 9 percent had no vehicle access, compared with 2 percent for those who lived in a suburb and 3 percent for those who lived outside of a metro area in 2013. About 1 out of 4 workers living within a principal city in

a metro area had access to three vehicles or more, compared with 38 percent of workers living outside of a metro area. Just as rates of driving to work vary by age and community type, so do rates of vehicle access (Figure 12). In 2013, 11 percent of workers between the ages of 25 and 29 who lived within principal cities in a metro area

lacked access to a vehicle at home, higher than any other age group. The rate of no vehicle accessibility changed little between 2006 and 2013. Workers aged 25 to 29 experienced the sharpest decline, at just over 1 percentage point.

More than 6 million workers in the United States lack access to

a private vehicle at their home.³² Among them, strategies for getting to work vary according to a number of factors, such as financial constraints, physical ability, distance to work, or the availability of other forms of transportation. Many workers who lack vehicle access also lack access to public transportation, often creating barriers to accessing employment, particularly for low-income workers.³³ Table 7 shows how workers with no available vehicle traveled to work across earnings categories and how this changed between 2006 and 2013. Across all earnings categories, workers who did not have access to a vehicle used public transportation at much higher rates than the 5.2 percent national average. In 2013, workers without vehicle access earning \$75,000 or more, the highest earnings category, were most likely to ride transit to work at 46.8 percent. This may reflect the prevalence of high earners in very large cities with high rates of public transportation usage such as New York, San Francisco, and Washington, DC. Among the highest earners, the rate of bicycle commuting more than doubled between 2006 and 2013, from 1.1 percent to 2.4 percent. The relatively high rate of workers who reported driving alone with no vehicle access is a surprising outcome. In the two highest earning categories, more than 20 percent of workers

³² See American Community Survey Table B08014, 2013 American Community Survey on American Factfinder at <www.Factfinder2.census.gov>.

³³ Adie Tomer and Robert Puentes, "Transit Access and Zero-Vehicle Households," Brookings Institution, Washington, DC, 2011.

reported driving to work alone.³⁴ Between 2006 and 2013, the rate of working from home and commuting by bicycle increased among workers without vehicle access across all earnings categories.³⁵

Solutions to transportation problems vary across households and communities. The travel concerns of many rural workers may vary dramatically from those of urban workers, and the most efficient travel mode for a 25-year-old living alone may differ from that of a larger household with young children. Overall, commuting patterns have changed only modestly at the national level in recent years, but rates of change are notably higher within certain population subgroups. The higher prevalence of young and urban workers lacking automobile access is consistent with their low rates of automobile commuting within cities. Historically, perhaps driven by necessity, transportation change and innovation has largely occurred within cities. In many ways, recent changes in the landscape of transportation options are no exception. Several cities now offer car sharing and bicycle sharing programs. Mobile apps for smart phones are able to follow public transportation arrivals in real time, eliminating some of the uncertainty typically associated with waiting for buses and trains. On-demand ride-sharing

³⁴ The ACS question about vehicle availability asks respondents, "How many automobiles, vans, and trucks of 1-ton capacity or less are kept at home for use by members of this household?" Some workers report that they have no vehicle at home, but they drive to work. This combination of responses may result from several possible scenarios. For example, a worker may use a company car, borrow another person's car, have a private driver, have a vehicle of more than 1-ton capacity, or use a car-sharing program. It is also possible that some respondents who do not have access to a vehicle report their commute by some form of transportation, such as vanpool or taxi as a trip made by private vehicle.

³⁵ The rates of working from home for the highest earners were not statistically different between 2006 and 2013.

services that operate similar to taxis have also proliferated in some urban areas. These technological changes offer some insight into the higher rates of declining automobile commuting within cities discussed throughout this report. Other factors, such as demographic changes in the workforce, transportation and housing policies, and changing neighborhood preferences, may also play an important role in people's decisions about how to get to work.

CONCLUSION

Commuting is only one aspect of daily travel, but serves as a critical indicator of changing travel behavior across populations and places. The automobile continues to dominate work-related travel, but the rate of automobile commuting has stabilized in recent years after decades of increase. Since 1980, carpooling has captured a declining share of workers' commutes, while the rate of driving alone increased until 2010, and then changed little thereafter.

Disaggregating the working population reveals differences in commuting patterns across population subgroups. For example, younger workers, those under the age of 35, show lower rates of automobile commuting and sharper declines in automobile commuting in recent years than their older counterparts. The sharpest declines in rates of driving are associated with workers between the ages of 25 to 29, particularly those living in cities where there are more transportation options and more potential for variation in travel mode. The extent to which today's young workers will retain their travel habits as they age will be an important determinant of future travel patterns. Regardless of age, workers living in cities showed sharper declines

in rates of driving to work in recent years than their counterparts living in more suburban communities, or communities outside of a metro area.

Commuting is a local-level phenomenon, so transportation infrastructure, such as highways, transit systems, bicycle lanes, and sidewalks, play some role in influencing travel decisions across households and communities. Individual and household characteristics, such as family structure, financial resources, job type, and housing preferences, all affect decisions about vehicle ownership and commuting choices. While modest shifts away from automobile travel have captured headlines in recent years, the automobile remains the dominant commuting mode among workers in the majority of the nation's communities, even many large cities.

Technological changes will continue to shape the transportation landscape and will influence the relative efficiency and attractiveness of travel options, old and new. Smart phones have provided new ways of utilizing familiar means of travel, such as bicycles and automobiles, in the form of mobile apps. The possibilities for working at home or remotely have expanded across numerous labor market sectors in recent years. Beyond technological changes, many communities have prioritized creating environments with multiple transportation options, including nonmotorized forms of travel, such as bicycling and walking. Travel surveys generally cannot completely capture the rapidly changing and increasingly complex transportation landscape, but the ACS provides valuable insight into the most common commuting modes. The pace of

changes in transportation infrastructure and travel behavior will inevitably vary across communities and demographic groups, as this report shows with the distinct commuting patterns of young and urban workers. As travel patterns evolve, the ACS remains one of our most important tools for tracking local and national changes in how we get to work.

SOURCE OF THE ESTIMATES

The American Community Survey (ACS) is a nationwide survey designed to provide communities with reliable and timely demographic, social, economic, and housing data for congressional districts, counties, places, and other localities every year. It has an annual sample size of about 3.5 million addresses across the United States and Puerto Rico and includes both housing units and group quarters. The ACS is conducted in every county throughout the nation, and every municipio in Puerto Rico, where it is called the Puerto Rico Community Survey. Beginning in 2006, ACS data for 2005 were released for geographic areas with populations of 65,000 and greater. For information on the ACS sample design and other topics, visit www.census.gov/acs/www.

ACCURACY OF THE ESTIMATES

The estimates presented in this report are primarily based on the ACS sample interviewed during 2013. The report also includes several estimates from the 2006 ACS for comparison. The estimates based on this sample approximate the actual values and represent the entire U.S. resident household and group quarters populations.

Sampling error is the difference between an estimate based on a sample and the corresponding value that would be obtained if the estimate were based on the entire population (as from a census). Measures of the sampling error are provided in the form of margins of error for all estimates included in this report. All comparative statements in this report have undergone statistical testing, and comparisons are significant at the 90 percent level, unless otherwise noted. In addition to sampling error, nonsampling error may be introduced during any of the operations used to collect and process survey data such as editing, reviewing, or keying data from questionnaires. For more information on sampling and estimation methods, confidentiality protection, and sampling and nonsampling errors, please see the 2013 ACS Accuracy of the Data document located at

www.census.gov/acs/www/Downloads/data_documentation/Accuracy_of_ACS_Accuracy_of_Data_2013.pdf.

For more reports related to the commuting patterns of U.S. workers, go to the U.S. Census Bureau's Journey to Work and Migration Statistics Branch Web site, at www.census.gov/hhes/commuting/, or contact the Journey to Work and Migration Statistics Branch at 301-763-2454.

SUGGESTED CITATION

McKenzie, Brian, "Who Drives to Work? Commuting by Automobile in the United States, 2013," *American Community Survey Reports*, ACS-32, U.S. Census Bureau, Washington, DC, 2015.

Appendix Table 1.

Commuting by Automobile by Community Type and Travel Mode: 2006 and 2013(For information on confidentiality protection, sampling error, and definitions, see www.census.gov/programs-surveys/acs/guidance.html)

| Community type and travel mode | 2006 | | | 2013 | | |
|--|---------------------|-----------------------|---------------------|---------------------|-----------------------|---------------------|
| | Workers (thousands) | Percentage of workers | Margin of error (±) | Workers (thousands) | Percentage of workers | Margin of error (±) |
| LIVED IN PRINCIPAL CITY, IN METRO AREA | | | | | | |
| Total | 44,059 | 100.0 | Z | 47,074 | 100.0 | Z |
| Automobile | 35,247 | 80.0 | 0.1 | 36,851 | 78.3 | 0.1 |
| Drove alone | 30,453 | 69.1 | 0.1 | 32,409 | 68.8 | 0.1 |
| Carpooled | 4,795 | 10.9 | 0.1 | 4,442 | 9.4 | 0.1 |
| Other mode | 8,812 | 20.0 | 0.1 | 10,223 | 21.7 | 0.1 |
| LIVED OUTSIDE PRINCIPAL CITY, IN METRO AREA | | | | | | |
| Total | 72,410 | 100.0 | Z | 76,827 | 100.0 | Z |
| Automobile | 64,966 | 89.7 | 0.1 | 68,560 | 89.2 | 0.1 |
| Drove alone | 57,533 | 79.5 | 0.1 | 61,586 | 80.2 | 0.1 |
| Carpooled | 7,433 | 10.3 | 0.1 | 6,974 | 9.1 | 0.1 |
| Other mode | 7,444 | 10.3 | 0.1 | 8,267 | 10.8 | 0.1 |
| LIVED OUTSIDE ANY METRO AREA | | | | | | |
| Total | 21,796 | 100.0 | Z | 19,062 | 100.0 | Z |
| Automobile | 19,685 | 90.3 | 0.1 | 17,253 | 90.5 | 0.1 |
| Drove alone | 17,060 | 78.3 | 0.1 | 15,283 | 80.2 | 0.1 |
| Carpooled | 2,624 | 12.0 | 0.1 | 1,970 | 10.3 | 0.1 |
| Other mode | 2,112 | 9.7 | 0.1 | 1,808 | 9.5 | 0.1 |

Z Rounds to zero.

Note: Universe: workers 16 years and older. Data are based on a sample and are subject to sampling variability. A margin of error is a measure of an estimate's variability. The larger the margin of error in relation to the size of the estimates, the less reliable the estimate. When added to and subtracted from the estimate, the margin of error forms the 90 percent confidence interval. This table corresponds to Figure 4.

Source: U.S. Census Bureau, 2006 and 2013 American Community Survey.

Appendix Table 2.

Commuting Mode by Community Type, Age, and Travel Mode: 2006 and 2013(For information on confidentiality protection, sampling error, and definitions, see www.census.gov/programs-surveys/acs/guidance.html)

| Type of community, age, and travel mode | 2006 | | | 2013 | | |
|---|-------------------------------------|--|---------------------------|-------------------------------------|--|---------------------------|
| | Number of workers (thousands) | Percentage of all workers within group | Margin of error (±) | Number of workers (thousands) | Percentage of all workers within group | Margin of error (±) |
| WORKERS WHO LIVED IN A PRINCIPAL CITY, IN A METRO AREA | | | | | | |
| All workers within specified community type | | | | | | |
| Automobile..... | 35,247 | 80.0 | 0.1 | 36,851 | 78.3 | 0.1 |
| Drove alone..... | 30,453 | 69.1 | 0.1 | 32,409 | 68.8 | 0.1 |
| Carpooled..... | 4,795 | 10.9 | 0.1 | 4,442 | 9.4 | 0.1 |
| Other mode..... | 8,812 | 20.0 | 0.1 | 10,223 | 21.7 | 0.1 |
| 16 to 24 years | | | | | | |
| Automobile..... | 5,073 | 75.9 | 0.3 | 4,953 | 73.6 | 0.3 |
| Drove alone..... | 4,103 | 61.4 | 0.3 | 4,164 | 61.8 | 0.4 |
| Carpooled..... | 970 | 14.5 | 0.3 | 789 | 11.7 | 0.2 |
| Other mode..... | 1,613 | 24.1 | 0.3 | 1,781 | 26.4 | 0.3 |
| 25 to 29 years | | | | | | |
| Automobile..... | 4,404 | 80.6 | 0.3 | 4,953 | 76.7 | 0.3 |
| Drove alone..... | 3,723 | 68.1 | 0.3 | 4,343 | 67.2 | 0.3 |
| Carpooled..... | 681 | 12.5 | 0.3 | 610 | 9.4 | 0.2 |
| Other mode..... | 1,059 | 19.4 | 0.3 | 1,507 | 23.3 | 0.3 |
| 30 to 34 years | | | | | | |
| Automobile..... | 4,236 | 79.9 | 0.3 | 4,638 | 77.7 | 0.3 |
| Drove alone..... | 3,616 | 68.2 | 0.3 | 4,067 | 68.1 | 0.3 |
| Carpooled..... | 620 | 11.7 | 0.3 | 572 | 9.6 | 0.3 |
| Other mode..... | 1,069 | 20.1 | 0.3 | 1,329 | 22.3 | 0.3 |
| 35 to 44 years | | | | | | |
| Automobile..... | 8,490 | 80.7 | 0.2 | 7,942 | 79.5 | 0.3 |
| Drove alone..... | 7,394 | 70.3 | 0.2 | 6,950 | 69.6 | 0.3 |
| Carpooled..... | 1,096 | 10.4 | 0.2 | 992 | 9.9 | 0.2 |
| Other mode..... | 2,026 | 19.3 | 0.2 | 2,047 | 20.5 | 0.3 |
| 45 to 54 years | | | | | | |
| Automobile..... | 7,628 | 81.7 | 0.2 | 7,495 | 80.5 | 0.2 |
| Drove alone..... | 6,742 | 72.2 | 0.2 | 6,654 | 71.5 | 0.3 |
| Carpooled..... | 886 | 9.5 | 0.2 | 841 | 9.0 | 0.2 |
| Other mode..... | 1,706 | 18.3 | 0.2 | 1,814 | 19.5 | 0.2 |
| 55 years and older | | | | | | |
| Automobile..... | 5,416 | 80.2 | 0.3 | 6,869 | 79.7 | 0.2 |
| Drove alone..... | 4,874 | 72.2 | 0.3 | 6,231 | 72.3 | 0.2 |
| Carpooled..... | 542 | 8.0 | 0.2 | 638 | 7.4 | 0.1 |
| Other mode..... | 1,339 | 19.8 | 0.3 | 1,745 | 20.3 | 0.2 |

See note at end of table.

Appendix Table 2.

Commuting Mode by Community Type, Age, and Travel Mode: 2006 and 2013—Con.(For information on confidentiality protection, sampling error, and definitions, see www.census.gov/programs-surveys/acs/guidance.html)

| Type of community, age, and travel mode | 2006 | | | 2013 | | |
|--|-------------------------------------|--|---------------------------|-------------------------------------|--|---------------------------|
| | Number of workers (thousands) | Percentage of all workers within group | Margin of error (±) | Number of workers (thousands) | Percentage of all workers within group | Margin of error (±) |
| ALL OTHER WORKERS | | | | | | |
| All workers within specified community type | | | | | | |
| Automobile. | 84,651 | 89.9 | 0.1 | 85,813 | 89.5 | 0.1 |
| Drove alone | 74,594 | 79.2 | 0.1 | 76,869 | 80.2 | 0.1 |
| Carpooled | 10,057 | 10.7 | 0.1 | 8,945 | 9.3 | 0.1 |
| Other mode | 9,556 | 10.1 | 0.1 | 10,076 | 10.5 | 0.1 |
| 16 to 24 years | | | | | | |
| Automobile. | 11,460 | 88.1 | 0.1 | 10,490 | 87.4 | 0.2 |
| Drove alone | 9,516 | 73.1 | 0.2 | 8,979 | 74.8 | 0.2 |
| Carpooled | 1,944 | 14.9 | 0.2 | 1,511 | 12.6 | 0.2 |
| Other mode | 1,549 | 11.9 | 0.1 | 1,514 | 12.6 | 0.2 |
| 25 to 29 years | | | | | | |
| Automobile. | 8,732 | 91.7 | 0.1 | 8,327 | 90.9 | 0.2 |
| Drove alone | 7,462 | 78.3 | 0.3 | 7,344 | 80.1 | 0.2 |
| Carpooled | 1,270 | 13.3 | 0.2 | 984 | 10.7 | 0.2 |
| Other mode | 793 | 8.3 | 0.1 | 836 | 9.1 | 0.2 |
| 30 to 34 years | | | | | | |
| Automobile. | 8,531 | 91.1 | 0.2 | 8,796 | 90.8 | 0.2 |
| Drove alone | 7,425 | 79.3 | 0.2 | 7,763 | 80.1 | 0.3 |
| Carpooled | 1,106 | 11.8 | 0.2 | 1,033 | 10.7 | 0.2 |
| Other mode | 831 | 8.9 | 0.2 | 890 | 9.2 | 0.2 |
| 35 to 44 years | | | | | | |
| Automobile. | 20,656 | 90.5 | 0.1 | 18,549 | 90.3 | 0.1 |
| Drove alone | 18,266 | 80.1 | 0.1 | 16,556 | 80.6 | 0.2 |
| Carpooled | 2,390 | 10.5 | 0.1 | 1,993 | 9.7 | 0.1 |
| Other mode | 2,158 | 9.5 | 0.1 | 1,988 | 9.7 | 0.1 |
| 45 to 54 years | | | | | | |
| Automobile. | 20,788 | 90.4 | 0.1 | 20,486 | 89.8 | 0.1 |
| Drove alone | 18,707 | 81.3 | 0.1 | 18,569 | 81.4 | 0.1 |
| Carpooled | 2,080 | 9.0 | 0.1 | 1,917 | 8.4 | 0.1 |
| Other mode | 2,209 | 9.6 | 0.1 | 2,315 | 10.2 | 0.1 |
| 55 years and older | | | | | | |
| Automobile. | 14,484 | 87.8 | 0.1 | 19,165 | 88.3 | 0.1 |
| Drove alone | 13,218 | 80.1 | 0.2 | 17,658 | 81.4 | 0.1 |
| Carpooled | 1,266 | 7.7 | 0.1 | 1,507 | 6.9 | 0.1 |
| Other mode | 2,016 | 12.2 | 0.1 | 2,533 | 11.7 | 0.1 |

Note: Universe: workers 16 years and older. Data are based on a sample and are subject to sampling variability. A margin of error is a measure of an estimate's variability. The larger the margin of error in relation to size of the estimates, the less reliable the estimate. When added to and subtracted from the estimate, the margin of error forms the 90 percent confidence interval. Estimates in this table correspond to Figure 5.

Source: U.S. Census Bureau, 2006 and 2013 American Community Survey.

Appendix Table 3.

Automobile Commuting by Age and Travel Mode (2006 and 2013) in Ten Cities With the Most Public Transportation Activity: New York, Los Angeles, Chicago, Washington, DC, Boston, Philadelphia, San Francisco, Atlanta, Seattle, Baltimore¹

(For information on confidentiality protection, sampling error, and definitions, see www.census.gov/acs/www/Downloads/data_documentation/Accuracy/ACS_Accuracy_of_Data_2013.pdf)

| Age and travel mode | 2006 | | | 2013 | | |
|--|---------------------------------------|---------------------------|---------------------|---------------------------------------|---------------------------|---------------------|
| | Workers within ten cities (thousands) | Percent within ten cities | Margin of error (±) | Workers within ten cities (thousands) | Percent within ten cities | Margin of error (±) |
| ALL WORKERS WITHIN TEN SPECIFIED CITIES | | | | | | |
| Total | 8,826 | 100.0 | Z | 9,481 | 100.0 | Z |
| Automobile | 4,496 | 50.9 | 0.3 | 4,533 | 47.8 | 0.3 |
| Drove alone | 3,753 | 42.5 | 0.3 | 3,870 | 40.8 | 0.3 |
| Carpooled | 743 | 8.4 | 0.2 | 662 | 7.0 | 0.2 |
| Other mode | 4,330 | 49.1 | 0.3 | 4,949 | 52.2 | 0.3 |
| 16 TO 24 YEARS | | | | | | |
| Total | 1,065 | 100.0 | Z | 1,032 | 100.0 | Z |
| Automobile | 451 | 42.4 | 0.9 | 397 | 38.5 | 0.8 |
| Drove alone | 350 | 32.9 | 0.8 | 325 | 31.4 | 0.8 |
| Carpooled | 101 | 9.5 | 0.5 | 73 | 7.0 | 0.5 |
| Other mode | 614 | 57.6 | 0.9 | 635 | 61.5 | 0.8 |
| 25 TO 29 YEARS | | | | | | |
| Total | 1,078 | 100.0 | Z | 1,454 | 100.0 | Z |
| Automobile | 529 | 49.1 | 0.8 | 618 | 42.5 | 0.7 |
| Drove alone | 433 | 40.2 | 0.8 | 531 | 36.5 | 0.7 |
| Carpooled | 96 | 8.9 | 0.5 | 87 | 6.0 | 0.3 |
| Other mode | 549 | 50.9 | 0.8 | 836 | 57.5 | 0.7 |
| 30 TO 34 YEARS | | | | | | |
| Total | 1,197 | 100.0 | Z | 1,356 | 100.0 | Z |
| Automobile | 593 | 49.6 | 0.7 | 619 | 45.7 | 0.9 |
| Drove alone | 497 | 41.5 | 0.7 | 537 | 39.6 | 0.8 |
| Carpooled | 96 | 8.0 | 0.5 | 82 | 6.1 | 0.4 |
| Other mode | 604 | 50.4 | 0.7 | 736 | 54.3 | 0.9 |
| 35 TO 44 YEARS | | | | | | |
| Total | 2,298 | 100.0 | Z | 2,136 | 100.0 | Z |
| Automobile | 1,213 | 52.8 | 0.6 | 1,078 | 50.5 | 0.6 |
| Drove alone | 1,030 | 44.8 | 0.6 | 920 | 43.1 | 0.6 |
| Carpooled | 183 | 8.0 | 0.3 | 158 | 7.4 | 0.3 |
| Other mode | 1,085 | 47.2 | 0.6 | 1,057 | 49.5 | 0.6 |
| 45 TO 54 YEARS | | | | | | |
| Total | 1,850 | 100.0 | Z | 1,847 | 100.0 | Z |
| Automobile | 1,000 | 54.1 | 0.6 | 965 | 52.2 | 0.6 |
| Drove alone | 842 | 45.5 | 0.7 | 821 | 44.5 | 0.5 |
| Carpooled | 159 | 8.6 | 0.4 | 143 | 7.8 | 0.3 |
| Other mode | 850 | 45.9 | 0.6 | 883 | 47.8 | 0.6 |
| 55 YEARS AND OLDER | | | | | | |
| Total | 1,337 | 100.0 | Z | 1,656 | 100.0 | Z |
| Automobile | 709 | 53.0 | 0.7 | 855 | 51.6 | 0.5 |
| Drove alone | 601 | 45.0 | 0.7 | 736 | 44.4 | 0.5 |
| Carpooled | 108 | 8.1 | 0.4 | 119 | 7.2 | 0.3 |
| Other mode | 628 | 47.0 | 0.7 | 801 | 48.4 | 0.5 |

Z Rounds to zero.

¹ Level of public transportation activity is based on passenger trips and passenger miles associated with the area's transit agency in 2013. Cities include: New York, Los Angeles, Chicago, Washington, DC, Boston, Philadelphia, San Francisco, Atlanta, Seattle, Baltimore. See APTA 2014 Public Transportation Fact Book at <www.apta.com/resources/statistics>.

Note: Universe: workers 16 years and older. Data are based on a sample and are subject to sampling variability. A margin of error is a measure of an estimate's variability. The larger the margin of error in relation to size of the estimates, the less reliable the estimate. When added to and subtracted from the estimate, the margin of error forms the 90 percent confidence interval. Estimates in this table correspond to Figure 6.

Source: U.S. Census Bureau, 2006 and 2013 American Community Survey.

Appendix Table 4.

Commuting by Automobile by Foreign-Born Status and Travel Mode: 2006 and 2013(For information on confidentiality protection, sampling error, and definitions, see www.census.gov/programs-surveys/acs/guidance.html)

| Nativity status and travel mode | 2006 | | | 2013 | | |
|------------------------------------|---------------------------------|--------------------------|------------------------|---------------------------------|--------------------------|------------------------|
| | Total workers (thousands) | Percentage of workers | Margin of error (±) | Total workers (thousands) | Percentage of workers | Margin of error (±) |
| FOREIGN-BORN WORKERS | | | | | | |
| Total | 21,589 | 100.0 | Z | 23,695 | 100.0 | Z |
| Automobile..... | 17,299 | 80.1 | 0.2 | 18,900 | 79.8 | 0.1 |
| Drove alone | 13,565 | 62.8 | 0.2 | 15,488 | 65.4 | 0.2 |
| Carpooled | 3,734 | 17.3 | 0.2 | 3,412 | 14.4 | 0.1 |
| Other mode | 4,290 | 19.9 | 0.2 | 4,796 | 20.2 | 0.1 |
| NATIVE-BORN WORKERS | | | | | | |
| Total | 116,677 | 100.0 | Z | 119,267 | 100.0 | Z |
| Automobile..... | 102,599 | 87.9 | Z | 103,765 | 87.0 | Z |
| Drove alone | 91,481 | 78.4 | 0.1 | 93,790 | 78.6 | 0.1 |
| Carpooled | 11,118 | 9.5 | 0.1 | 9,975 | 8.4 | 0.1 |
| Other mode | 14,078 | 12.1 | 0.0 | 15,502 | 13.0 | Z |

Z Rounds to zero.

Note: Universe: workers 16 years and older. Data are based on a sample and are subject to sampling variability. A margin of error is a measure of an estimate's variability. The larger the margin of error in relation to the size of the estimates, the less reliable the estimate. When added to and subtracted from the estimate, the margin of error forms the 90 percent confidence interval. This table corresponds to Figure 8.

Source: U.S. Census Bureau, 2006 and 2013 American Community Survey.

Appendix Table 5.

Commuting by Automobile by Foreign-Born Status, Years Living in the United States, Community Type, and Travel Mode: 2013

(For information on confidentiality protection, sampling error, and definitions, see www.census.gov/programs-surveys/acs/guidance.html)

| Nativity, years living in United States, community type, and travel mode | Total workers (thousands) | Percentage of workers | Margin of error (±) |
|--|---------------------------|-----------------------|---------------------|
| ALL NATIVE-BORN WORKERS | | | |
| Lived in principal city, in metro area | | | |
| Drove alone | 26,061 | 71.9 | 0.1 |
| Carpooled | 2,970 | 8.2 | 0.1 |
| Lived outside principal city, in metro area | | | |
| Drove alone | 53,057 | 81.8 | 0.1 |
| Carpooled | 5,226 | 8.1 | 0.1 |
| Lived outside any metro area | | | |
| Drove alone | 14,671 | 80.9 | 0.2 |
| Carpooled | 1,779 | 9.8 | 0.1 |
| ALL FOREIGN-BORN WORKERS | | | |
| Lived in principal city in metro area | | | |
| Drove alone | 6,347 | 58.6 | 0.3 |
| Carpooled | 1,473 | 13.6 | 0.2 |
| Lived outside principal city in metro area | | | |
| Drove alone | 8,529 | 71.4 | 0.3 |
| Carpooled | 1,748 | 14.6 | 0.2 |
| Lived outside any metro area | | | |
| Drove alone | 612 | 66.3 | 0.9 |
| Carpooled | 192 | 20.8 | 0.8 |
| FOREIGN-BORN WORKERS: YEARS IN UNITED STATES | | | |
| UP TO 3 YEARS | | | |
| Lived in principal city in metro area | | | |
| Drove alone | 352 | 42.1 | 1.1 |
| Carpooled | 133 | 15.9 | 0.8 |
| Lived outside principal city, in metro area | | | |
| Drove alone | 354 | 54.3 | 1.4 |
| Carpooled | 137 | 21.0 | 1.1 |
| Lived outside any metro area | | | |
| Drove alone | 32 | 44.2 | 3.0 |
| Carpooled | 20 | 26.9 | 3.2 |
| 4 TO 6 YEARS | | | |
| Lived in principal city, in metro area | | | |
| Drove alone | 407 | 49.8 | 1.2 |
| Carpooled | 125 | 15.3 | 0.9 |
| Lived outside principal city, in metro area | | | |
| Drove alone | 430 | 61.8 | 1.1 |
| Carpooled | 130 | 18.7 | 1.0 |
| Lived outside any metro area | | | |
| Drove alone | 39 | 62.4 | 3.1 |
| Carpooled | 14 | 22.3 | 3.0 |
| 7 TO 9 YEARS | | | |
| Lived in principal city, in metro area | | | |
| Drove alone | 511 | 52.6 | 1.1 |
| Carpooled | 160 | 16.5 | 0.9 |
| Lived outside principal city, in metro area | | | |
| Drove alone | 617 | 64.4 | 1.1 |
| Carpooled | 182 | 19.0 | 0.8 |
| Lived outside any metro area | | | |
| Drove alone | 51 | 62.5 | 3.1 |
| Carpooled | 20 | 25.3 | 2.6 |

See note at end of table.

Appendix Table 5.

Commuting by Automobile by Foreign-Born Status, Years Living in the United States, Community Type, and Travel Mode: 2013—Con.

(For information on confidentiality protection, sampling error, and definitions, see www.census.gov/programs-surveys/acs/guidance.html)

| Nativity, years living in United States, community type, and travel mode | Total workers (thousands) | Percentage of workers | Margin of error (±) |
|--|---------------------------|-----------------------|---------------------|
| FOREIGN BORN WORKERS: YEARS IN UNITED STATES—Con. | | | |
| 10 TO 15 YEARS | | | |
| Lived in principal city, in metro area | | | |
| Drove alone | 1,390 | 58.6 | 0.6 |
| Carpooled | 350 | 14.8 | 0.4 |
| Lived outside principal city, in metro area | | | |
| Drove alone | 1,830 | 69.9 | 0.5 |
| Carpooled | 425 | 16.2 | 0.5 |
| Lived outside any metro area | | | |
| Drove alone | 134 | 64.0 | 2.0 |
| Carpooled | 50 | 23.9 | 1.9 |
| 16 YEARS OR MORE | | | |
| Lived in principal city, in metro area | | | |
| Drove alone | 3,687 | 63.1 | 0.4 |
| Carpooled | 704 | 12.1 | 0.3 |
| Lived outside principal city, in metro area | | | |
| Drove alone | 5,297 | 75.5 | 0.3 |
| Carpooled | 874 | 12.5 | 0.2 |
| Lived outside any metro area | | | |
| Drove alone | 355 | 71.6 | 1.2 |
| Carpooled | 87 | 17.6 | 1.1 |

Note: Universe: workers 16 years and older. Data are based on a sample and are subject to sampling variability. A margin of error is a measure of an estimate's variability. The larger the margin of error in relation to the size of the estimates, the less reliable the estimate. When added to and subtracted from the estimate, the margin of error forms the 90 percent confidence interval. This table corresponds to Figures 9 and 10.

Source: U.S. Census Bureau, 2013 American Community Survey.

Appendix Table 6.

Number of Vehicles Available at Home by Community Type: 2013(For information on confidentiality protection, sampling error, and definitions, see www.census.gov/programs-surveys/acs/guidance.html)

| Community type | Total workers (thousands) | Percentage of workers | Margin of error (±) |
|---|---------------------------|-----------------------|---------------------|
| ALL WORKERS | | | |
| No vehicles available | 6,351 | 4.5 | Z |
| 1 vehicle available | 30,598 | 21.6 | 0.1 |
| 2 vehicles available | 58,852 | 41.6 | 0.1 |
| 3 or more vehicles available | 45,789 | 32.3 | 0.1 |
| INSIDE PRINCIPAL CITY IN METRO | | | |
| No vehicles available | 4,131 | 8.9 | 0.1 |
| 1 vehicle available | 13,241 | 28.5 | 0.1 |
| 2 vehicles available | 18,020 | 38.8 | 0.2 |
| 3 or more vehicles available | 11,046 | 23.8 | 0.2 |
| INSIDE METRO, OUTSIDE PRINCIPAL CITY | | | |
| No vehicles available | 1,721 | 2.3 | Z |
| 1 vehicle available | 13,836 | 18.1 | 0.1 |
| 2 vehicles available | 33,136 | 43.4 | 0.1 |
| 3 or more vehicles available | 27,610 | 36.2 | 0.1 |
| OUTSIDE ANY METRO | | | |
| No vehicles available | 499 | 2.6 | 0.1 |
| 1 vehicle available | 3,521 | 18.7 | 0.2 |
| 2 vehicles available | 7,695 | 40.8 | 0.2 |
| 3 or more vehicles available | 7,133 | 37.8 | 0.3 |

Z Rounds to zero.

Note: Universe: workers 16 years and older in households. Data are based on a sample and are subject to sampling variability. A margin of error is a measure of an estimate's variability. The larger the margin of error in relation to the size of the estimates, the less reliable the estimate. When added to and subtracted from the estimate, the margin of error forms the 90 percent confidence interval. This table corresponds to Figure 11.

Source: U.S. Census Bureau, 2013 American Community Survey.

Appendix Table 7.

Number of Vehicles Available at Home by Community Type and Age: 2006 and 2013(For information on confidentiality protection, sampling error, and definitions, see www.census.gov/programs-surveys/acs/guidance.html)

| Community type and age | 2006 | | | 2013 | | |
|---------------------------------------|---------------------------|-----------------------|---------------------|---------------------------|-----------------------|---------------------|
| | Total workers (thousands) | Percentage of workers | Margin of error (±) | Total workers (thousands) | Percentage of workers | Margin of error (±) |
| INSIDE PRINCIPAL CITY IN METRO | | | | | | |
| 16 to 24 years | 576 | 9.3 | 0.2 | 596 | 9.6 | 0.2 |
| 25 to 29 years | 555 | 10.2 | 0.3 | 723 | 11.3 | 0.2 |
| 30 to 34 years | 517 | 9.8 | 0.2 | 605 | 10.2 | 0.2 |
| 35 to 44 years | 898 | 8.6 | 0.2 | 848 | 8.5 | 0.2 |
| 45 to 54 years | 686 | 7.4 | 0.2 | 723 | 7.8 | 0.1 |
| 55 years and older | 495 | 7.4 | 0.2 | 636 | 7.4 | 0.2 |
| ALL OTHER COMMUNITY TYPES | | | | | | |
| 16 to 24 years | 373 | 3.0 | 0.1 | 353 | 3.1 | 0.1 |
| 25 to 29 years | 290 | 3.1 | 0.1 | 270 | 3.0 | 0.1 |
| 30 to 34 years | 228 | 2.4 | 0.1 | 265 | 2.7 | 0.1 |
| 35 to 44 years | 452 | 2.0 | Z | 441 | 2.2 | 0.1 |
| 45 to 54 years | 390 | 1.7 | Z | 470 | 2.1 | 0.1 |
| 55 years and older | 282 | 1.7 | Z | 420 | 1.9 | Z |

Z Rounds to zero.

Note: Universe: workers 16 years and older in households. Data are based on a sample and are subject to sampling variability. A margin of error is a measure of an estimate's variability. The larger the margin of error in relation to the size of the estimates, the less reliable the estimate. When added to and subtracted from the estimate, the margin of error forms the 90 percent confidence interval. This table corresponds to Figure 12.

Source: U.S. Census Bureau, 2006 and 2013 American Community Survey.