

HAS MOTORIZATION IN THE U.S. PEAKED? PART 4: HOUSEHOLDS WITHOUT A LIGHT-DUTY VEHICLE

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16. Abstract <p>Recent studies have shown that—per person, per driver, and per household—we now have fewer light-duty vehicles, we drive each of them less, and we consume less fuel than in the past. These trends suggest that motorization in the U.S. might have reached a peak several years ago.</p> <p>The present study examined recent trends in the proportion of households without a light-duty vehicle as another index of the motorization level. Two analyses were performed. The first analysis examined the changes in this proportion for the entire U.S. from 2005 through 2012. The second analysis studied the variations in this proportion among the 30 largest U.S. cities for 2007 (the year with the lowest overall proportion) and 2012 (the latest available year). The data came from the American Community Survey.</p> <p>The main findings are as follows:</p> <ol style="list-style-type: none"> (1) In 2012, 9.2% of U.S. households were without a vehicle, compared to 8.7% in 2007 (the year with the lowest recent proportion). (2) The proportion of households without a vehicle varies greatly among the 30 largest U.S. cities: In 2012, the maximum was 56.5% (in New York) and the minimum was 5.8% (in San Jose). (3) In six of the 30 cities, more than 30% of households do not have a vehicle. (4) From 2007 to 2012, there was an increase in the proportion of households without a vehicle in 21 of the 30 cities examined. (5) The 13 cities with the largest proportions all showed an increase from 2007 to 2012. <p>The recent increase in the proportion of households without a vehicle provides additional support for the hypothesis that motorization in the U.S. peaked during the previous decade.</p>					
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Introduction

In three reports published last year (Sivak, 2013a; 2013b; 2013c), I examined recent trends in the numbers of registered light-duty vehicles in the U.S. fleet, and the corresponding distances driven and fuel consumed. All three studies considered the total numbers and the rates per person, per licensed driver, per household, and (in the cases of the distance-driven and fuel-consumption rates) per vehicle. The period examined in each study was from 1984 through 2011.

The combined evidence from these three studies indicates that—per person, per driver, and per household—we now have fewer vehicles, we drive each of them less, and we consume less fuel than in the past. Importantly, the maxima in these rates were reached between 2001 and 2006—several years prior to the onset of the economic downturn in 2008. Therefore, it is likely that the declines in these rates prior to 2008 reflect other societal changes that influence the need for vehicles (e.g., increased telecommuting, increased use of public transportation, increased urbanization of the population, and changes in the age distribution of drivers). (In the case of the fuel-consumption rates, improving vehicle fuel economy is also a contributing factor.) Therefore, the recent maxima in these rates have a reasonable chance of being long-term peaks as well.

The present study examined recent trends in the proportion of households without a light-duty vehicle as another index of the motorization level. Of interest were both the proportion for the entire U.S. and the variation in this proportion among the largest U.S. cities. The data came from the American Community Survey (ACS, 2013).

Method

The variable of interest was the percentage of households without a light-duty vehicle. This percentage was derived from the information in the American Community Survey (ACS, 2013). The present study used the data in the annual estimates for 2005 through 2012. (In addition to annual estimates, American Community Survey also includes 3-year and 5-year estimates.)

Two analyses were performed. The first analysis examined the change in this proportion for the entire U.S. for 2005 through 2012. The second analysis studied the variations and changes in this proportion among the 30 largest U.S. cities by population (U.S. Census Bureau, 2013) for two selected years: the year with the lowest recent proportion for the entire U.S. and the latest available year.

Results

Households without a vehicle: the U.S.

Table 1 lists the proportions of U.S. households without a vehicle for 2005 through 2012. The results indicate that this proportion decreased from 2005 to 2007, increased from 2007 to 2011, and decreased from 2011 to 2012. The value for 2012 was the second highest recent value.

Table 1
U.S. households without a vehicle (%).

Year	Percentage
2005	8.87
2006	8.78
2007	8.72
2008	8.84
2009	8.90
2010	9.01
2011	9.29
2012	9.22

Households without a vehicle: 30 largest U.S. cities

Table 2 lists the proportions of U.S. households without a vehicle in the 30 largest U.S. cities (U.S. Census Bureau, 2013). The data are for two years: 2007 (the year with the lowest recent proportion for the entire U.S.; see Table 1) and 2012 (the latest available year).

The proportion of households without a vehicle varies greatly among the cities examined. In 2012, the proportion ranged from 56.5% in New York to 5.8% in San Jose.

From 2007 to 2012, there was an increase in the proportion of households without a vehicle in 21 of the 30 cities examined. The 13 cities with the largest proportions all showed an increase from 2007 to 2012.

Table 2

Households without a vehicle in the 30 largest U.S. cities, 2007 and 2012 (%).
 (The entries in red are cities with an increase in households without a vehicle.)

City	Population rank	2007	2012	Change
New York	1	54.1	56.5	+2.4
Washington, D.C.	24	35.5	37.9	+2.4
Boston	21	36.0	36.9	+0.9
Philadelphia	5	32.4	32.6	+0.2
San Francisco	14	29.5	31.4	+1.9
Baltimore	26	29.3	31.2	+1.9
Chicago	3	25.6	27.9	+2.3
Detroit	18	21.2	26.2	+5.0
Milwaukee	30	18.4	19.9	+1.5
Seattle	22	15.3	16.6	+1.3
Portland	28	14.5	15.3	+0.8
Los Angeles	2	12.8	13.6	+0.8
Memphis	20	12.5	12.8	+0.3
Denver	23	12.3	11.7	-0.6
Louisville	27	11.1	11.4	+0.3
Indianapolis	13	7.6	10.3	+2.7
Houston	4	10.1	10.1	0.0
Dallas	9	10.4	10.1	-0.3
Columbus	15	10.5	10.0	-0.5
Jacksonville	12	7.3	9.0	+1.7
San Antonio	7	9.2	8.8	-0.4
El Paso	19	9.9	8.6	-1.3
Phoenix	6	8.2	8.5	+0.3
Nashville	25	8.0	8.5	+0.5
Charlotte	17	7.2	7.9	+0.7
San Diego	8	7.6	7.4	-0.2
Oklahoma City	29	6.9	7.2	+0.3
Austin	11	7.0	6.5	-0.5
Ft. Worth	16	7.0	6.1	-0.9
San Jose	10	5.4	5.8	+0.4

Discussion

Variability in the proportion of households without a vehicle

The proportion of households without a vehicle varies approximately 10-fold among the 30 largest U.S. cities. In 2012, the maximum was in New York (56.5%) and the minimum in San Jose (5.8%). In six of the 30 cities, more than 30% of households do not have a vehicle.

Factors influencing the proportion of households without a vehicle

The proportion of households without a vehicle is likely influenced by a variety of factors. Examples of such factors include the quality of public transportation, urban layout and walkability, availability and cost of parking, income, price of fuel, and local weather. For example, the five cities with the highest proportions of households without a vehicle were all among the top five cities in a recent ranking of the quality of public transportation (Walkscore, 2012). However, a formal analysis of the actual contribution to vehicle ownership in large cities of the many possible factors was beyond the scope of this study.

Changes in households without a vehicle vs. changes in vehicles per household

The number of vehicles per household has recently decreased, dipping to below two vehicles per household (Sivak, 2013a). The present data indicate that this trend is a consequence, at least in part, of an increase in the proportion of households without any vehicle. The relevant data are summarized in Table 3 for 2007 and 2011, the latest year for which the number of vehicles per household is available. (The possible reduction in the number of extra vehicles in excess of one vehicle was not examined in this study.)

Table 3
 Vehicles per U.S. household and
 U.S. households without a vehicle, 2007 and 2011.

Year	Number of vehicles per household (Sivak, 2013a)	Percentage of households without a vehicle (present study)
2007	2.03	8.72
2011	1.95	9.29

Has motorization in the U.S. peaked?

Previous research has shown that, per household, we now have fewer vehicles and we drive each of them less than we did several years ago (Sivak, 2013a; 2013b). The recent increase in the proportion of households without a vehicle provides additional support for the hypothesis that motorization in the U.S. peaked during the previous decade.

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