

A review of the Journey to Work data findings from the 2000 Census Supplementary Survey¹

Prepared for the Subcommittee on Highways and Transit
of the
Committee on Transportation and Infrastructure
U.S. House of Representatives

by
Alan E. Pisarski

The 2000 Census Supplementary Survey data, released in early August provide an excellent snapshot of trends since 1990. While these data exhibit some methodological differences from the decennial data, they can be used for comparison for most purposes until the decennial data are available a year from now. (The differences will be noted as appropriate in the text) Like the census, the survey provides information on three key elements of commuting activity: Ownership of personal vehicles; shares of commuters obtained by Modal alternatives, and travel times to work. These will be treated in turn with comparisons made to past decennial data to gain a greater sense of the trends.

1 MINUTE VERSION

New data for the Year 2000 are a preview of the decennial census results regarding commuting behavior. For the decade they show:

- ?? 128 million commuters were observed: 97 million in single occupant vehicles; 14 million in car pools; and another 14 million, taken together, in walking (3.4) working at home (4) and transit (6.4). The remaining 2 or so million were in miscellaneous modes. A relatively small gain in the number of commuters (workers) was shown, roughly 2/3 of the number gained in the 80's.
- ?? The mode use patterns of the 80's continued thru the 90's, with the most notable trend the further shift toward the single occupant vehicle rising from 73% to 76% of commuting.
- ?? Car pooling and walking continued to decline.
- ?? Transit increased in number of riders, enough to be able to approximately hold its share of commuting at around 5%.
- ?? Average commute travel times of 24.3 minutes, one way, increased about a minute and a half over 1990; more than double the 40 second gain from 1980 to 1990.
- ?? The under 20-minute commute dropped from 50% to 46% of commuters.
- ?? Commutes of over 60 minutes rose from 6% to 7% of commuters, about 9 million commuters.
- ?? A lot of long distance commuting seems implied by more rural states showing large gains in commute times.
- ?? Household vehicle ownership is now at 1.72 vehicles per household contrasted to 1.66 in 1990. Americans added about 27 million private vehicles in the 90's with the majority of households now having two or more vehicles
- ?? Despite the surge in immigrants, for the first time in our history the percentage of households with no vehicle dropped below 10%.

¹ This survey, conducted among 700,000 households in 2000, is part of the development of the American Community Survey, ACS, now planned to replace the controversial "long form" of the decennial census. The ACS survey, if Congress approves, would be expanded to about 3 million households each year that would produce a very effective annual snapshot of America and would be additive year by year to produce more detailed data similar to that of the traditional long form. The 2000 Supplementary Survey data provides comparable insights to the decennial data which will be available next year at about this time. Potential differences are noted where necessary.

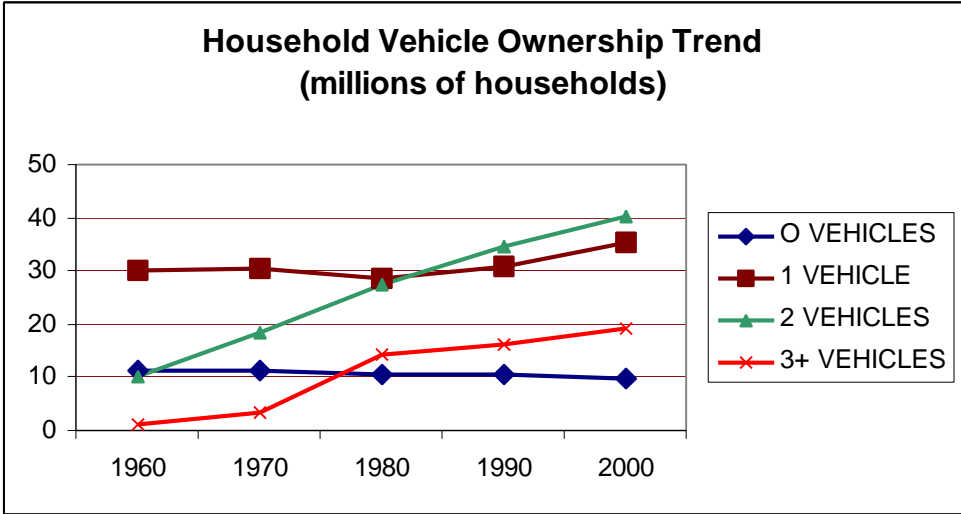
DETAILED MATERIAL

Ownership of Personal Vehicles

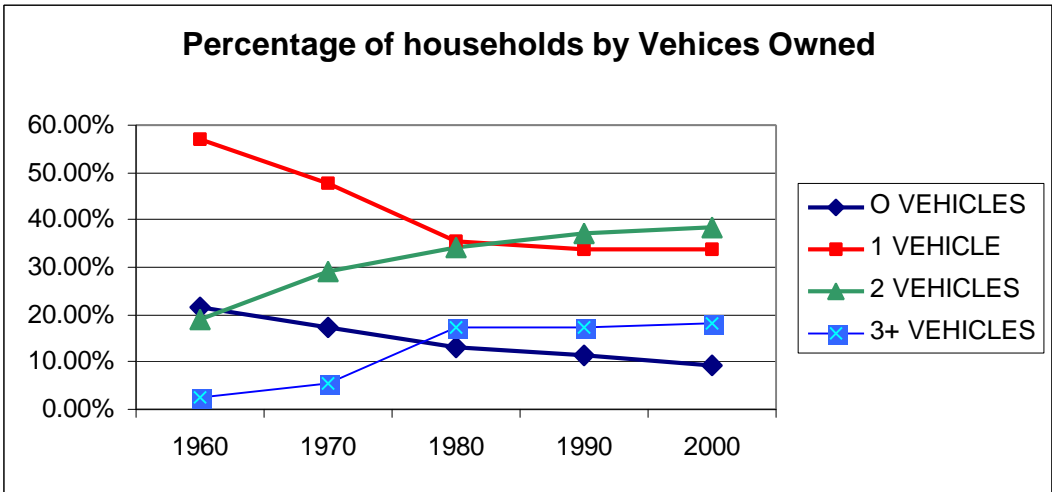
The American personal vehicle fleet continues to expand, despite the fact that the fleet largely can be said to be at effective saturation in American society. Some facts:

- The average household now has 1.72 vehicles contrasted to 1.66 in 1990;
- The majority of households has two or more vehicles;
- The increase in the number of vehicles, on the order of 27 million, exceeds the 23 million added between 1980 and 1990;
- The increase is less than the population growth, whereas in the 1980-90 period the increase in vehicles actually exceeded the increase in population.

Saturation is meaningful to discuss because vehicles now exceed licensed drivers and, in many respects, are less relevant than licenses for planning purposes. (Licenses are also moving toward saturation) Like television sets it is almost immaterial how many there are at this stage. Two facts in the chart below are notable: 1.) One car households took a significant jump in number after having been stable in a range of about 30 million households for years. It is my view that this is attributable to immigrant and minority households joining the mobility society. 2.) The number of households with no vehicle had also remained stable for 30 years at about 10 million households but has now dipped below the 10 million mark for the first time. This again must be attributed to vehicle purchases by immigrants and resident minorities. I see these data as surprising in that I fully expected to see increases in the number and share of households without vehicles given the prodigious levels of immigration. We will undoubtedly see increases in households without vehicles in individual metro areas, especially those in the South and South West where immigration levels are high. The decennial will provide greater enlightenment here and could show us many more immigrants with resulting effects on the data.



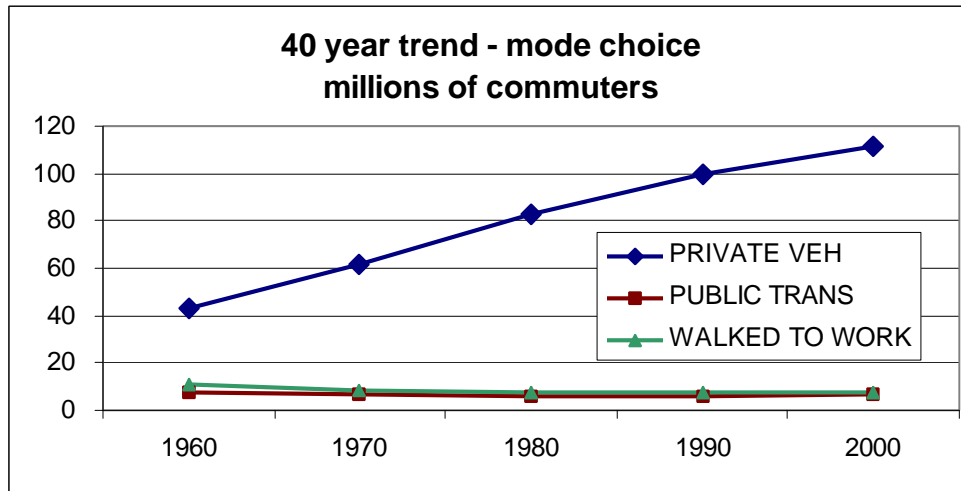
If we consider the shares of households owning vehicles as in the chart below we see illustrated the point made above about saturation. We are approaching relative stability in shares of households by vehicle ownership. Notable again is that for the first time households without vehicles dropped below 10%, down from more than 20% in 1960. The major factor for the future is that the observed saturation is effectively white household saturation. When detailed data are available they will probably show about 6% of White non-Hispanic households without vehicles; whereas such African-American households will certainly be over 20% and Hispanic households somewhere roughly in between. (The 1995 NPTS of FHWA showed African-American households at 24% without vehicles, and Hispanics at half that.). These are the future sources of growth. Overall I see mostly positive trends at work in the vehicle ownership statistics.



source: Commuting in America II

Modal Shares

This figure shows the long term trend in mode choice. In this figure walked to work also includes working at home.

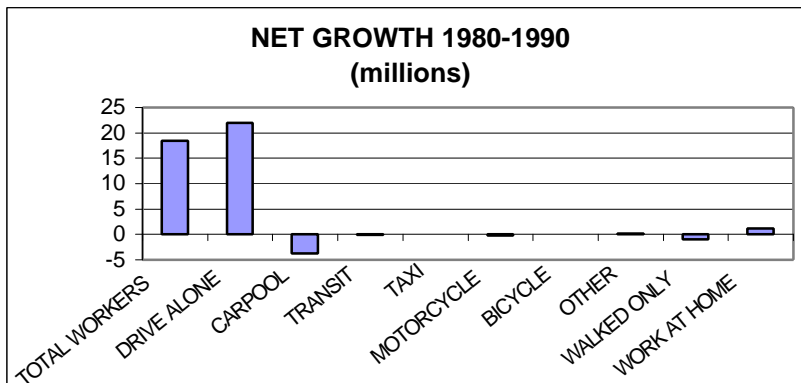
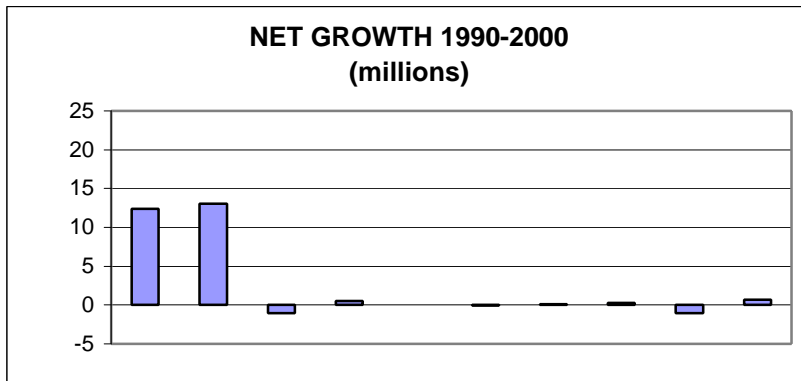


Source: Commuting in America II

Modal share is often seen as key public policy data given the goals in many areas of the country to extricate commuters from their vehicles. I would suggest a less passionate view.

	1990	2000
DRIVE ALONE	73%	76%
CARPOOL	13%	11%
TRANSIT	5%	5%
TAXI	0%	0%
MOTORCYCLE	0%	0%
BICYCLE	0%	0%
OTHER	1%	1%
WALKED ONLY	4%	3%
WORKED AT HOME	3%	3%

The table shows that the single occupant vehicle, (SOV) gained 3 percentage points from 73% in 1990 to 76% in 2000. This is really a surprising increase given the expectation, at least on my part, that most of the opportunities for switching from other modes to the SOV had already been exhausted. But Carpooling continued to decline from 13% to 11% and Walking continued to decline from 4% to 3%. Transit seemed to hold about constant with its share holding at about 5%. Only working at home and the SOV seemed to show real growth. The 1990-2000 pattern in net terms is almost identical with the 1980-1990 pattern as shown below.



source: Commuting in America II

The extraordinary fact continues to be that in the nineties as in the eighties the increase in the number of SOV users was greater than the increase in total workers. In effect all new commuters went to the SOV and additional commuters switched from carpooling, walking etc. The significant difference is that transit did actually gain in numbers of commuters in the nineties, though at a rate less than the growth rate for workers overall thus reducing its overall share, but a positive trend nonetheless.

Beyond the bare trends.

There are a number of reasons to look beyond the simple trend. A number of points are worth identifying:

- The work at home and walk to work shares together seems to remain constant at about 7.5 million commuters, over the last 30 years.
- It is amazing that carpooling and walking continue to decline in numbers and shares, losing about 7 million users between them since 1980. I had expected them to reach something of an irreducible base level by now. The loss exceeds current total transit use.
- Bicycling passed the half million user mark and actually grew the fastest of all modes but at a hard to measure level of less than one half of one percent.
- Transit users rose to 6.4 million gaining about a half million users.

The transit story

A lot of people will see cause for disappointment in the transit share numbers. There are some reasons to be somewhat more sanguine.

- Transit served about 4% of the new commuters, less than its traditional overall share of 5%, but its gain of about a half million users certainly is better than its actual decline of several hundred thousand in the 1980-1990 period.
- There is a view that the trend in transit may have bottomed in the late nineties and is now showing growth. Given that federal government national surveys as late as 1995 and 1997 showed little or no growth, this is certainly possible.
- The decennial census captures one week in April while this survey was spread throughout the entire year in 2000. Given the high fuel prices in April of 2000 this could raise the transit share in the decennial reports when they appear, which would be the fairer comparison to 1990.
- The real key for transit is not in national averages but in metropolitan area statistics, particularly the 50 areas of the country over a million in population. These data will be available from this same survey in the fall.
- There is a broader concern about these data that may affect transit use. The data show a markedly lower level of worker increase than in the eighties; roughly a third of the worker growth of the eighties. (12 million vs 18) Remembering the recession of the early nineties this may be a similar trend pattern to the transit picture. The decennial could observe more transit users given the increases in population uncovered in the census.
- Given all of this it is possible that, although this survey shows slight declines in share the decennial could show stable transit shares or possibly a small increase.

The growth in activity for all modes in the nineties appear in the table below:

	1990-2000	NET CHG (000's)	% chg
TOTAL WORKERS		12367	10.7%
DRIVE ALONE		13032	15.5%
CARPOOL		-1071	-7.0%
TRANSIT		492	8.4%
TAXI		15	8.3%
MOTORCYCLE		-79	-33.3%
BICYCLE		96	20.7%
OTHER		290	35.9%
WALKED ONLY		-1076	-24.0%
WORK AT HOME		669	19.6%

Travel Time trends

The increase in the national average travel time for commuters from 1990 to 2000 is about two minutes as seen at the bottom of the table below. However, adjustments to compensate for two factors that are different between the 1990 and 2000 surveys suggest that the 1990 travel time might have been almost half a minute higher and therefore the actual change is closer to about a minute and a half, or perhaps less.² Even at a minute and a half that is double the increase of roughly 40 seconds from 1980 to 1990.

² Those workers living in group quarters, probably about two million workers, are not included in this survey. Most of these workers are in the military or on college campuses and their typical travel times are under 10 minutes. This would tend to slightly reduce travel times but will be most significant in metropolitan areas and states where military

Some other travel time points:

- 14.6% of commuters now travel over 45 minutes, contrasted to 12.5% in 1990
- Those commuting more than 60 minutes reached about 9 million, about 7% of commuters, compared to 6% in 1990
- Two states saw increases of greater than 4 minutes and three incurred increases of more than three minutes. Several leaders were states without major metropolitan areas such as New Hampshire and West Virginia. No states improved.
- The more significant shifts in travel times will be measurable at the metropolitan level.

The table below shows the work travel time trends for those states with travel times greater than the national average. It is notable that 11 states and the District of Columbia exceeded the national average in 2000 whereas only 9 states and the District were in that category in 1990. Three new states added were Washington, West Virginia and New Hampshire; while Hawaii actually dropped below the national average as the result of only a small increase from 1990.

Of substantial significance, perhaps attributable to the census change in treating maximum travel time, is that two states with no very large metropolitan areas gained substantially in travel times. West Virginia had the greatest increase over 1990, which could be attributable to West Virginia residents traveling across the state border to the growing job centers in the Washington Metropolitan area suburbs and other states. A similar pattern may be happening in New Hampshire and the Boston metropolitan area.

Travel times of States with greater than national average					
Minutes					
	STATE	1980 time	1990 time	2000 time	change 2000
1	NY	29.4	28.6	31.2	2.6
2	MD	26.6	27	29.2	2.2
3	NJ	24.9	25.3	28.7	3.4
4	DC		27.1	28.5	1.4
5	IL	24.4	25.1	27.0	1.9
6	GA	21.9	22.7	26.7	4.0
7	CA	22.4	24.6	26.7	2.1
8	MA	21.4	22.7	26.1	3.4
9	WV		21	25.5	4.5
10	VA	23.3	24	25.4	1.4
11	WA		22	24.9	2.9
12	NH		21.9	24.4	2.5
	NAT. AVG.	21.7	22.4	24.3	1.9

These data certainly indicate that the degradation in travel times is accelerating, but still on average do not seem extreme – only New York State exceeded 30 minutes in average travel time. Perhaps the key to public acceptance is that work trips under twenty minutes dropped from 50% in 1990 to 46% in 2000. The metropolitan statistics, especially for those 50 areas over one million in population, will be more revealing.

installations are major factors, e.g. San Diego and Hawaii. There was also an adjustment in 2000 that expands the difference between the estimates for 1990 and 2000. Also in 1990 the census coded all trips over 100 minutes at 99 minutes; in 2000 they set the limit at 239 minutes (4 hrs). this has apparently added almost half a minute to the average.

Technical Background taken from the Bureau of the Census web site

The Continuous Measurement System is a reengineered method for collecting the housing and socio-economic data traditionally collected by the decennial census long form. It provides data every year instead of once in ten years. It blends the strength of small area estimation from the census with the quality and timeliness of a continuing survey. Continuous Measurement includes a large monthly survey, the American Community Survey, and additional estimates produced by the use of administrative records in statistical models. The American Community Survey is in a developmental period that started in 1996. When fully operational, beginning in 2003, three million different households will be selected in the sample each year.

The American Community Survey will meet the need for up-to-date profiles for states, small areas, and subpopulations. It is a large, monthly demographic survey that will provide information every year for all states, cities, counties, metropolitan areas, and population groups of 65,000 or more people. For smaller areas and population groups, it will be necessary to accumulate or average data over several years to obtain estimates similar in quality and reliability to those currently available from the decennial census. Eventually, communities will have profiles updated every year and will be able to look at changes over time.

The American Community Survey contains questions similar to those of the decennial census long form and the Census Bureau plans that it will replace the long form in the 2010 census. The American Community Survey provides information about subjects such as age, gender, race, family structure, children, income, poverty, education, work and unemployment, commuting patterns and housing.

