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America's Aging Vehicles Delay Rate Of Fleet Turnover

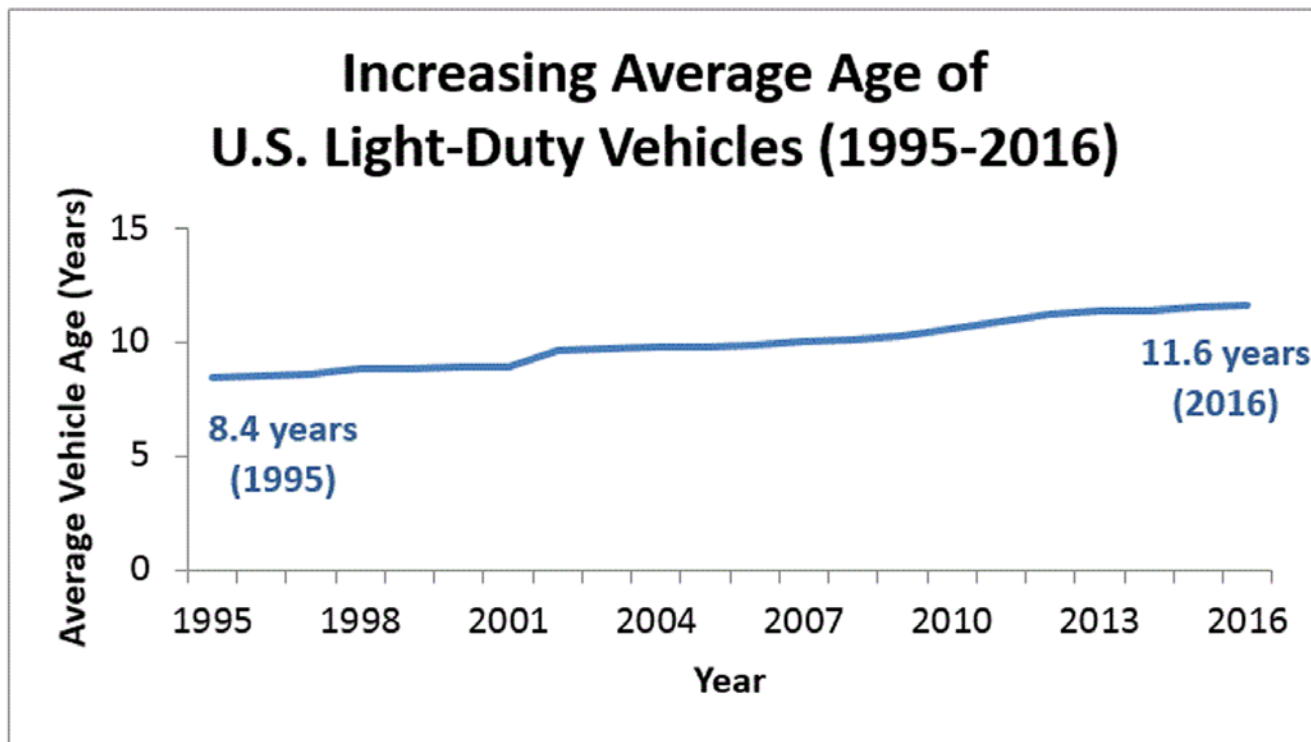
by Hart Schwartz | January 23, 2018

With consumers holding onto cars longer than before, new vehicles as a proportion of the overall fleet have fallen steadily over time.

The average age of motor vehicles on the road in the United States has been steadily increasing, delaying the rate of fleet turnover. The most obvious implication of this trend is slower introduction of newer, more fuel-efficient vehicles, and, in turn, fleetwide reductions in fuel consumption will be deferred. While generally true, this finding is qualified by the fact that older vehicles are driven less, so even if older vehicles are less fuel efficient, they do not contribute as much to fuel consumption as newer, more frequently driven vehicles. This article will explore the data behind these trends.

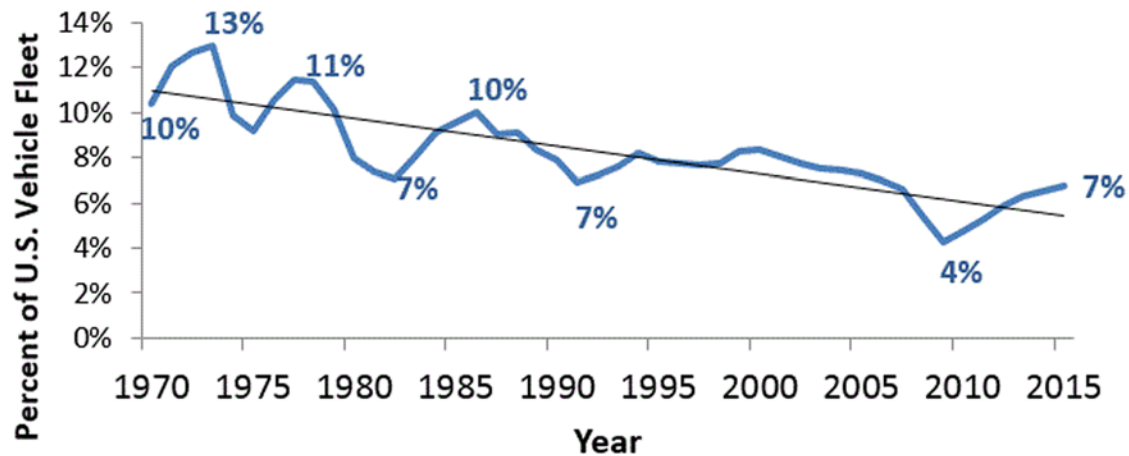
Aging light-duty vehicles

From 1995 to 2016, light-duty vehicles have been retired later and later. The average light-duty vehicle now remains in service for over three years longer than it did two decades ago. With vehicles “living” longer, the fleet will take longer to replace itself.

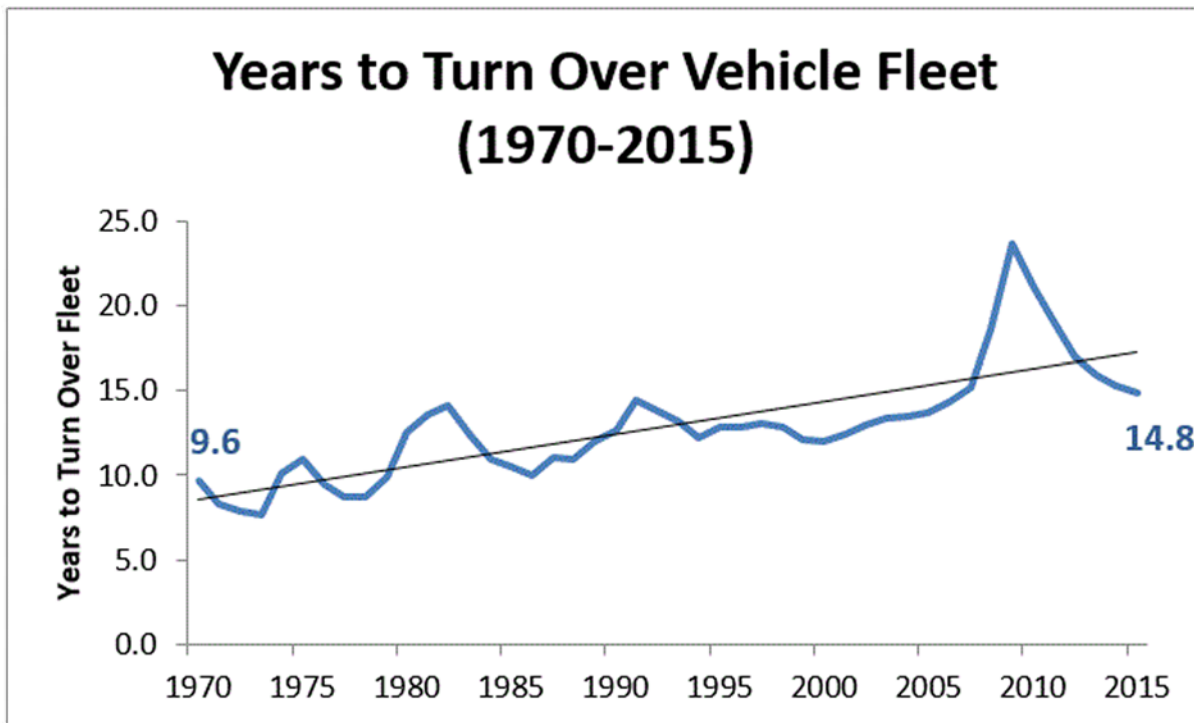


Source: Transportation Energy Data Book, Oak Ridge National Laboratory

New Vehicles as Proportion of U.S. Vehicle Fleet (1970-2015)



With consumers holding onto cars longer than before, new vehicles as a proportion of the overall fleet have fallen steadily over time, even taking economic cyclicalities of booms and recessions into account. The inverse of the above graph, shown below, depicts the number of years it would take to replace the entire fleet, at any given year's proportion of new retail sales.



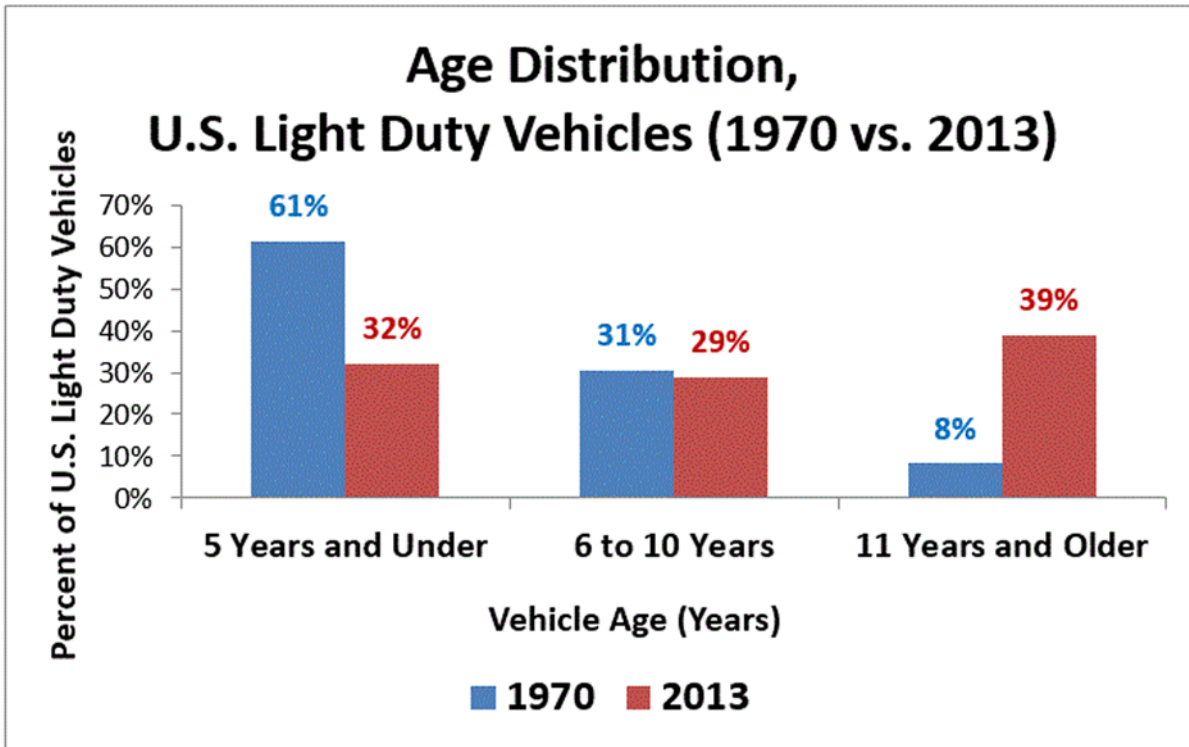
Source: Transportation Energy Data Book, Oak Ridge National Laboratory

At the current rate, it would take approximately fifteen years to turn over the entire fleet, assuming no major changes in average vehicle age, general economic conditions, or other factors. Given the long timeframe, it makes the task of significantly reducing dependence on petroleum in the transportation sector that much more daunting.

Age Distribution of U.S. Light-Duty Vehicles

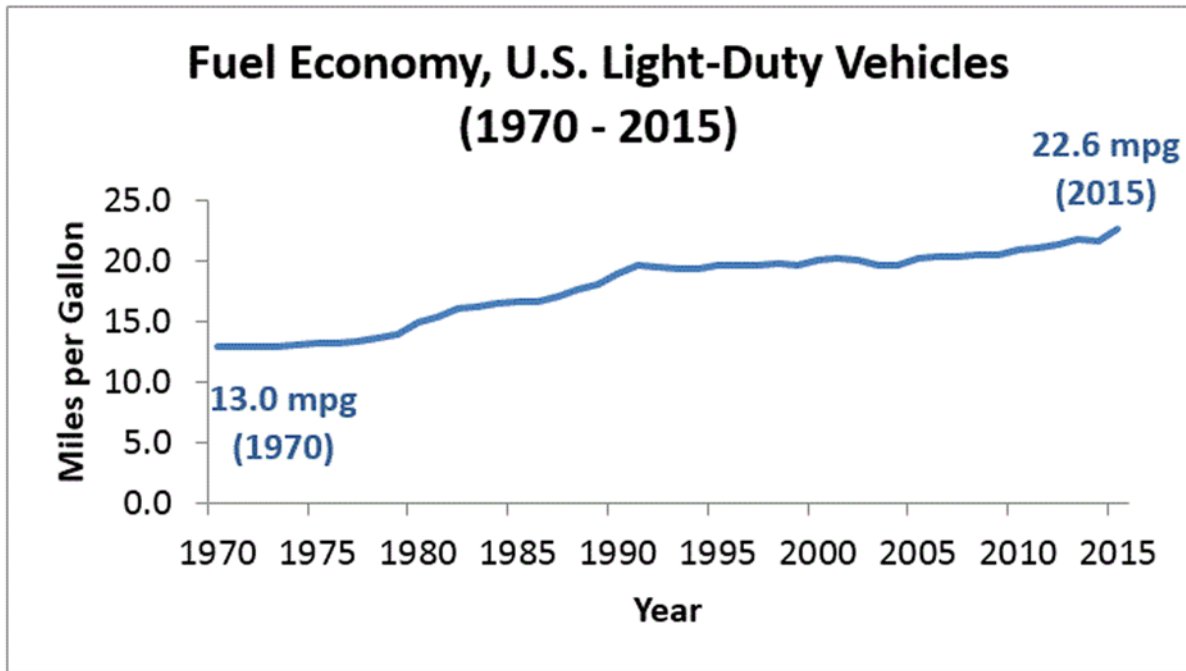
A slower turnover rate translates into a greater proportion of older vehicles on American roads.

A slower turnover rate translates into a greater proportion of older vehicles on American roads. In 1970, over 60 percent of the vehicle fleet was younger than five years, and only 8 percent was 11 years or older. By 2013, only 32 percent of the fleet was younger than five years, whereas some 39 percent of vehicles were now aged eleven years or older.



Delayed Fleet Turnover Means Fuel-Efficiency Gains Take Longer to Have Effect

The delay in fleet turnover, and increasing numbers of older vehicles on the roads, means that sharp gains in fuel economy in recent years will take effect over a longer period of time. Data available for the period from 1970 through 2015 shows major fuel-efficiency gains between 1970 and 1990, followed by steady but more gradual increases between 1990 and 2010, and then another sharp increase beginning in the early 2010s. If the recent steep upward trajectory of fuel efficiency continues, then all the more possible that every older vehicle that stays on the road longer—instead of being replaced by a newer, presumably much more efficient one—will delay a fleet-wide reduction, *per-mile-driven*, in fuel consumption.

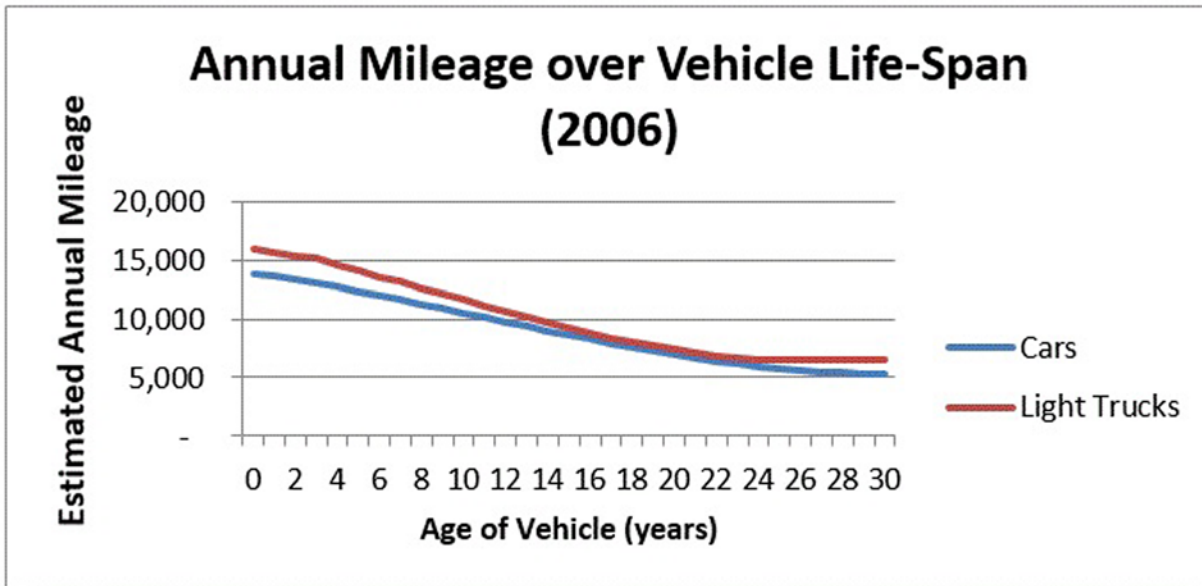


Source: Transportation Energy Data Book, Oak Ridge National Laboratory

Qualifier: Older Vehicles Are Less Fuel-Efficient but Driven Less Often

Even though motorists continue to hold onto their old vehicles, they use them less.

The effect on fuel-efficiency of delayed fleet turnover is tempered by the usage pattern of older vehicles. Even though motorists continue to hold onto their old vehicles, they use them less. Light-duty vehicles aged 11 years and older travel, on average, under 10,000 miles annually, according to a 2006 study. As shown in the below graph, there is a very steady and steep drop over time in the amount of driving per-year, according to the age of the vehicle.



Source: Transportation Energy Data Book, Oak Ridge National Laboratory

Bottom-line for reducing oil dependence

The aging vehicle fleet leads to delayed purchase of newer, higher fuel-efficiency vehicles, a factor that will play an ongoing role in the challenge of reducing oil dependence. The effect of the aging fleet on fuel consumption is modified somewhat by the reality that older vehicles are driven less distance per year, thus somewhat offsetting their impact on fuel consumption.

Delayed purchases of newer, higher fuel-efficiency vehicles can be identified as an additional background factor that will play a long-term, ongoing role in underpinning fuel consumption.

Is the glass half-empty, or half-full when it comes to reducing fuel consumption and cutting dependence on oil? Fuel consumption remains high for a variety of reasons—strong economic growth, relatively low pump prices, and higher VMT. But delayed purchases of newer, higher fuel-efficiency vehicles can be identified as an additional background factor that will play a long-term, ongoing role. The data presented in this article emphasizes that the turnover of the vehicle fleet will be a slow process, heightening the challenge of reducing petroleum dependence.

