

3. CALIFORNIA AND SOUTH COAST VEHICLE STOCKS IN 1998

The extent to which the VAVR program affects prices and emissions levels in the South Coast depends on various characteristics of the LDV stock in the South Coast and elsewhere in California. In this section we describe data on LDV stocks and their locations.

We obtained data on LDVs registered in California by model year and zip code from the California Energy Commission (CEC), which had obtained and cleaned raw information from the Department of Motor Vehicles (DMV). These data include vehicles on the road in October 1997 that were registered in California at the time or within the following six months.¹

To develop a sense of the sizes of LDV stocks within the South Coast and at various distances from the South Coast, we created counts of LDVs—distinguished by model year—within the South Coast air district and elsewhere in California.² These counts were created using zip codes. LDVs located in zip codes within the South Coast were aggregated. For each zip code outside the South Coast, we calculated its distance from the South Coast as the minimum distance from the center of the zip code to the center of *any* zip code within the South Coast.³ These zip codes were then sorted into various distances from the South Coast.

To make our results more useful to policymakers, we then scaled up our vehicle counts to make them comparable with figures used by CARB to analyze the VAVR program. (CARB uses the LDV stock in the South Coast Air Basin for 1998.) We adjusted the data just described, increasing all counts of vehicles of all vintages for the South Coast and elsewhere in the state proportionately so that our totals for the South Coast match CARB South Coast totals for 1998.⁴

¹Because CEC does not have the information necessary to identify weights for especially old trucks, our data include trucks up to 10,000 pounds of GVWR, while the definition of light-duty trucks used by CARB includes vehicles up to 8,500 pounds only. Given our methods, this discrepancy could substantially affect our results only if the ratio of the number of trucks less than 8,500 pounds to trucks between 8,500 and 10,000 pounds were very different between the South Coast and the rest of California.

²The South Coast Air Basin and the South Coast Air Quality Management District are not the same area; the district includes the basin plus nonurbanized areas in three counties. The VAVR rule adopted by CARB specifies that LDVs operating in the *district* are eligible, so we defined the South Coast as the set of zip codes in the district. This distinction is unlikely to be of substantial importance for our purposes, because the areas that are contained in the district but not the basin contain relatively few LDVs and are relatively far from areas outside the district that contain substantial numbers of LDVs.

³Distances between pairs of zip codes were computed from longitudes and latitudes at the centroid of each zip code. Data linking California zip codes to longitudes and latitudes were obtained from the SAS Institute and CD Light.

⁴This process involved inflating all LDV counts by about 9.5 percent.

Table 3.1 presents basic descriptive information about the sizes and locations of LDVs in California during 1998. Age categories are chosen to distinguish between LDVs that would not be eligible for scrapping in the VAVR program under the rules recently adopted by CARB, namely, LDVs less than 15 years old in 1998 (model years 1984 through 1997) and those that might be eligible depending on their condition and smog-check status. Throughout the report, we refer to LDVs less than 15 years old as *newer* LDVs and those at least 15 years old as *older* or *age-eligible* LDVs.

Table 3.1
Estimated Numbers of Used California LDVs by Age and Location in 1998
(millions of vehicles)

Location	Newer LDVs (Less than 15 years)	Older LDVs (15 or more years)	Total
South Coast	8.05	1.62	9.67
California except South Coast	10.61	3.27	13.89
Within 25 miles of South Coast	0.71	0.14	0.85
25 to 50 miles from South Coast	1.08	0.20	1.29
50 to 75 miles from South Coast	0.84	0.20	1.04
75 to 100 miles from South Coast	0.23	0.07	0.30
Total California	18.66	4.90	23.56

As reported in the table, there were roughly 23.6 million LDVs operating in California in 1998. Of these, about 41 percent were operating in the South Coast and another 15 percent were operating within 100 miles of the South Coast. Of the roughly 9.67 million LDVs operating in the South Coast in 1998, about 17 percent were at least 15 years old.

Figure 3.1 provides more detailed information about the age distribution of LDVs in the South Coast in 1998.⁵ Such age distributions reflect the levels of new LDV sales during past years, which are sensitive to economic conditions at the time; rates at which LDVs of different vintages are removed from the road through aging, accidents, and out-migration; and rates of in-migration. As can be seen from the figure, the number of LDVs of any age on the road is generally lower for higher ages. Moreover, the absolute numbers of LDVs of ages 20 and over are relatively small, specifically, 100,000 or fewer LDVs per model year out of a total in the South Coast of about 9.7 million LDVs.

⁵We do not report figures for model year 1998 because our data are based on DMV records as of October 1997 (rescaled to match 1998 CARB totals), after which time many new 1998 model year LDVs were sold.

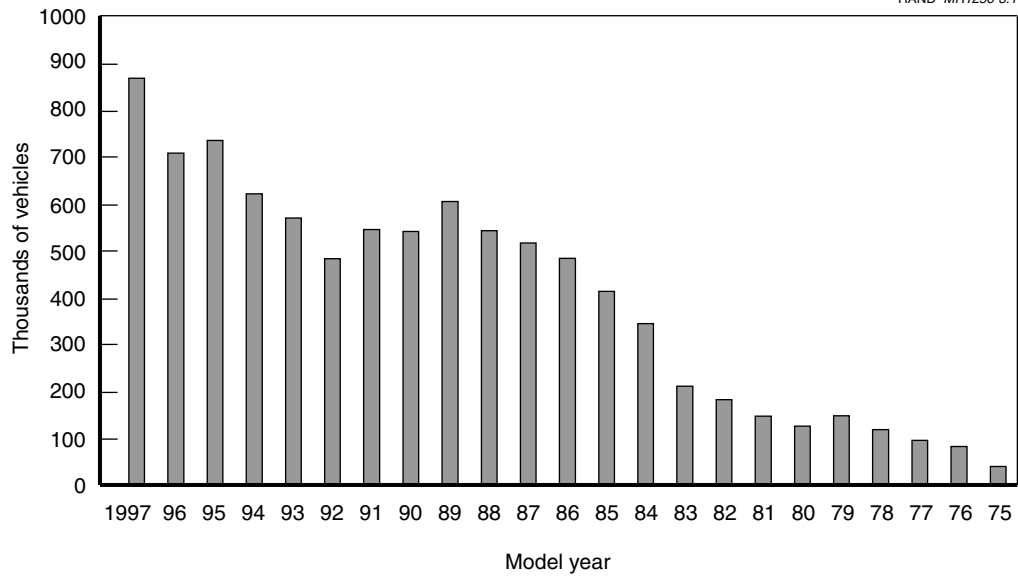


Figure 3.1—Stocks of LDVs in South Coast in 1998