Chapter 6

Highway Vehicles and Characteristics

Summary Statistics from Tables in this Chapter

Source		
Table 6.1	U.S. share of world automobile registrations, 1996	26.7%
Table 6.2	U.S. share of world truck & bus registrations, 1996	41.3%
Table 6.3	Number of automobiles, 1997 (Polk - in thousands)	124,673
Table 6.3	Number of trucks, 1997 (Polk - in thousands)	76,398
Table 6.5	Vehicle miles traveled, 1997	(million miles)
	Automobiles	*1,501,820*
	Motorcycles	*10,076*
	Two-axle, four-tire trucks	850,296
	Other single-unit trucks	66,845
	Combination truck-s	*124,500*
	Buses	6,836
Table 6.8	Average age of vehicles, 1997	(years)
	Automobiles	8.7
	Trucks	8.3
	Average lifetime of vehicles	(years)
Table 6.9	*Automobiles, 1990 model year*	*13.7*
Table 6.10	*Trucks, 1979-89 model years*	16.0

Table 6.1
Automobile Registrations for Selected Countries, 1950–96
(thousands)

Year	China	India	Japan	France	United Kingdom	Germany[a]	Canada[b]	United States[c]	U.S. percentage of world[a]	World total[d]
1950	[e]	[e]	43	[e]	2,307	[e]	1,913	*40,339*	76.0%	53,051
1955	[e]	[e]	153	[e]	360	[e]	2,961	52,145	71.4%	73,036
1960	[e]	[e]	457	4,950	5,650	4,856	4,104	61,671	62.7%	98,305
1965	[e]	[e]	2,181	8,320	9,131	9,719	5,279	75,258	53.8%	139,776
1970	[e]	[e]	8,779	11,860	11,802	14,376	6,602	89,244	46.1%	193,479
1975	[e]	[e]	17,236	15,180	14,061	18,161	8,870	106,706	41.0%	260,201
1980	351	[e]	23,660	18,440	15,438	23,236	10,256	121,601	38.0%	320,390
1985	795	1,607	27,845	20,800	18,953	26,099	11,118	127,885	34.5%	370,504
1986	966	1,780	28,654	21,090	19,415	27,224	11,586	130,004	34.1%	380,923
1987	1,112	2,007	29,478	21,500	20,108	28,304	11,686	131,482	33.9%	388,188
1988	1,304	2,295	30,776	21,970	20,977	29,190	12,086	133,836	33.0%	405,491
1989	1,464	2,486	32,621	22,520	21,919	30,152	12,380	*134,559*	32.4%	415,844
1990	1,622	2,694	34,924	23,010	22,528	30,695	12,622	133,700	30.7%	435,050
1991	1,852	2,954	37,076	23,550	22,744	31,309	12,578	128,300	29.1%	441,377
1992	2,262	3,205	38,963	24,020	23,008	37,579	12,781	126,581	28.0%	452,311
1993	2,860	3,361	40,772	24,385	23,402	39,202	12,927	127,327	28.3%	450,473
1994	3,497	3,569	42,678	24,900	23,832	39,918	13,122	127,883	27.0%	473,487
1995	4,179	3,837	44,680	25,100	24,307	40,499	13,183	128,387	26.9%	477,010
1996	4,700	4,246	46,868	25,500	24,864	41,045	13,300	129,728	26.7%	485,954
					Average annual percentage change					
1950–96	[e]	[e]	16.4%	[e]	5.3%	[e]	[e]	[e]		*4.9%*
1970-96	[e]	[e]	6.7%	3.0%	2.9%	[e]	[e]	[e]		3.6%
1986-96	17.1%	9.1%	5.0%	1.9%	2.5%	[e]	[e]	0.0%		2.5%

Source:
Motor Vehicle Manufacturers Association, *World Motor Vehicle Data,* 1998 Edition, Detroit, MI, 1998, pp. 8, 23, 28, 42, 85, 98, 169, 206, 230 and annual.
(Additional resources: http://www.aama.com)

[a] Data for 1991 and prior include West Germany only. Kraftwagen are included with automobiles.
[b] Data from 199 1 and later are not comparable to prior data.
[c] Data from 1985 and later are not comparable to prior data.
[d] World totals were recalculated from 1985-94 based on change in U.S. data.
[e] Data are not available.

Table 6.2
Truck and Bus Registrations for Selected Countries, 1950–96
(thousands)

Year	China	India	Japan	France	United Kingdom	Germany[a]	Canada[b]	United States[c]	U.S. percentage of world[c]	World total[d]
1950	[e]	[e]	183		1,060	[e]	643	8,823	*50.9%*	*17,349*
1955	[e]	[e]	318		1,244	[e]	952	10,544	46.1%	22,860
1960	[e]	[e]	896	1,540	1,534	786	1,056	12,186	42.6%	28,583
1965	[e]	[e]	4,119	1,770	1,748	1,021	1,232	15,100	39.6%	38,118
1970	[e]	[e]	8,803	1,850	1,769	1,228	1,481	19,175	36.2%	52,899
1975	811	[e]	10,854	2,210	1,934	1,337	2,158	26,243	38.8%	67,698
1980	1,480	[e]	14,197	2,550	1,920	1,617	2,955	34,195	37.7%	90,592
1985	2,402	1,045	18,313	3,310	3,278	1,723	3,149	43,804	37.4%	117,038
1986	2,884	1,090	19,319	3,980	3,336	1,760	3,213	45,697	38.6%	118,373
1987	3,247	1,229	20,424	4,200	3,452	1,801	3,576	47,428	37.4%	126,890
1988	3,716	1,383	21,674	4,370	3,621	1,846	3,766	50,557	37.6%	134,294
1989	4,118	1,457	22,472	4,570	3,754	1,914	3,889	52,797	37.4%	141,184
1990	4,496	1,536	22,773	4,748	3,774	1,989	3,931	55,097	37.2%	148,073
1991	4,721	1,687	22,839	4,910	3,685	2,114	3,402	59,837	38.9%	153,695
1992	5,177	1,872	22,694	5,040	3,643	2,672	3,413	63,781	39.6%	161,219
1993	5,316	1,967	22,490	5,065	3,604	2,842	3,409	66,736	40.1%	166,614
1994	5,922	2,083	22,333	5,140	3,605	2,960	3,466	70,162	45.1%	155,591
1995	6,221	2,221	22,173	5,195	3,635	3,062	3,485	73,143	43.1%	169,749
1996	6,750	2,506	21,933	5,255	3,621	3,122	3,515	76,637	41.3%	185,404
					Average annual percentage change					
1950-96	[e]	[e]	11.0%	[e]	2.7%	[e]	[e]	[e]		5.3%
1970-96	[e]	[e]	3.6%	4.1%	2.8%	[e]	[e]	[e]		4.9%
1986-96	8.9%	8.7%	1.3%	2.8%	0.8%	[e]	[e]	5.3%		4.6%

Source:
Motor Vehicle Manufacturers Association, *World Motor Vehicle Data,* 1998 Edition, Detroit, MI, 1998, pp. 8, 23, 28, 42, 85, 98, 169, 206, 230 and annual. (Additional resources: http://www.aama.com)

[a] Data for 1991 and prior include West Germany only. Kraftwagen are included with automobiles (Table 1.1).
[b] Data from 1991 and later are not comparable to prior data.
[c] Data from 1985 and later are not comparable to prior data.
[d] World totals were recalculated from 1985-94 based on change in U.S. data.
[e] Data are not available.

VEHICLES IN USE

Both the Federal Highway Administration (FHWA) and The Polk Company report figures on the automobile and truck population each year. The two estimates, however, differ by as much as 25.6% for trucks (1992). The differences can be attributed to several factors:

- The FHWA data include all vehicles which have been registered at any time throughout the calendar year. Therefore, the data include vehicles which were retired during the year and may double count vehicles which have been registered in different states or the same states to different owners. The Polk Company data include only those vehicles which are registered on July 1 of the given year.
- The classification of mini-vans, station wagons on truck chasses, and utility vehicles as passenger cars or trucks causes important differences in the two estimates. The Polk Company data included passenger vans in the automobile count until 1980; since 1980 all vans have been counted as trucks. Recently, the Federal Highway Administration adjusted their definition of automobiles and trucks. Starting in 1993, some minivans and sport utility vehicles that were previously included with automobiles were included with trucks. This change produced a dramatic change in the individual percentage differences of cars and trucks. The difference in total vehicles has been less than 5 % each year since 1990 and does not appear to be significantly affected by the FHWA reclassifications.
- The FHWA data include all non-military Federal vehicles, while The Polk Company data include only those Federal vehicles which are registered within a state. Federal vehicles are not required to have State registrations, and, according to the General Services Administration, most Federal Vehicles are not registered.

According to The Polk Company statistics, the number of passenger cars in use in the U.S. declined from 1991 to 1992. This is the first decline in vehicle stock since the figures were first reported in 1924. However, the data should be viewed with caution. A redesign of Polk's approach in 1992 allowed a national check for duplicate registrations, which was not possible in earlier years. Polk estimates that, due to processing limitations, its vehicle population counts may have been inflated by as much as 1 ½ percent. Assuming that percentage is correct, the number of passenger cars in use would have declined from 1991 to 1992 under the previous Polk method. The growing popularity of light trucks being used as passenger vehicles could also have had an impact on these figures.

Table 6.3
Automobiles and Trucks in Use, 1970–97
(thousands)

	Automobiles			Trucks			Total		
Year	FHWA	The Polk Company	Percentage difference	FHWA	The Polk Company	Percentage difference	FHWA	The Polk Company	Percentage difference
1970	89,243	80,448	10.9%	18,797	17,688	6.3%	108,040	98,136	10.1%
1971	92,718	83,138	11.5%	19,871	18,462	7.6%	112,589	101,600	10.8%
1972	97,082	86,439	12.3%	21,308	19,773	7.8%	118,390	106,212	11.5%
1973	101,985	89,805	13.6%	23,244	21,412	8.6%	125,229	111,217	12.6%
1974	104,856	92,608	13.2%	24,630	23,312	5.7%	129,487	115,920	11.7%
1975	106,706	95,241	12.0%	25,781	24,813	3.9%	132,487	120,054	10.4%
1976	110,189	97,818	12.6%	27,876	26,560	5.0%	138,065	124,378	11.0%
1977	112,288	99,904	12.4%	29,314	28,222	3.9%	141,602	128,126	10.5%
1978	116,573	102,957	13.2%	31,336	30,565	2.5%	147,909	133,522	10.8%
1979	118,429	104,677	13.1%	32,914	32,583	1.0%	151,343	137,260	10.3%
1980	121,601	104,564	16.3%	33,667	35,268	-4.5%	155,267	139,832	11.0%
1981	123,098	105,839	16.3%	34,644	36,069	-4.0%	157,743	141,908	11.2%
1982	123,702	106,867	15.8%	35,382	36,987	-4.3%	159,084	143,854	10.6%
1983	126,444	108,961	16.0%	36,723	38,143	-3.7%	163,166	147,104	10.9%
1984	128,158	112,019	14.4%	37,507	40,143	-6.6%	165,665	152,162	8.9%
1985	127,885	114,662	11.5%	43,210	42,387	1.9%	171,095	157,049	8.9%
1986	130,004	117,268	10.9%	45,103	44,826	0.6%	175,106	162,094	8.0%
1987	131,482	119,849	9.7%	46,826	47,344	-1.1%	178,308	167,193	6.6%
1988	133,836	121,519	10.1%	49,941	50,221	-0.6%	183,777	171,740	7.0%
1989	134,559	122,758	9.6%	52,172	53,202	-1.9%	186,731	175,960	6.1%
1990	133,700	123,276	8.5%	54,470	56,023	-2.8%	188,171	179,299	4.9%
1991	128,300	123,268	4.1%	59,206	58,179	1.8%	187,505	181,447	3.3%
1992	126,581	120,347	5.2%	63,136	61,172	3.2%	189,717	181,519	4.5%
1993	127,327	121,055	5.2%	66,082	65,260	1.3%	193,409	186,315	3.8%
1994	127,883	121,997	4.8%	69,491	66,717	4.2%	197,375	188,714	4.6%
1995	128,387	123,242	4.2%	72,458	70,199	3.2%	200,845	193,441	3.8%
1996	129,728	124,613	4.1%	75,940	73,681	3.1%	205,669	198,294	3.7%
1997	129.749	124.673	4.1%	77.307	76.398	1.2%	207.056	701.071	3.0%

Source:

FHWA - U.S. Department of Transportation, Federal Highway Administration, *Highway Statistics 1997*, Washington, DC, 1998, Table VM-1, p. V-89, and annual. (Additional resources: http://www.fhwa.dot.gov)

Polk - The Polk Company, Detroit, Michigan. FURTHER REPRODUCTION PROHIBITED. (Additional resources: http://www.polk.com)

The data on automobile stock by size class are estimations based on historical sales data. This method assumes a constant scrappage rate for all size classes. The data on trucks by weight class are based on estimates from the 1992 Truck Inventory and Use Survey (latest available survey).

Table 6.4
Vehicle Stock and New Sales in United States, 1997 Calendar Year

	Vehicle stock		New sales		
	Thousands	Percentage	Domestic (thousands)	Import[b] (thousands)	Total (thousands)
Autos	**124,673**	**100.0%**	**6,917 (83.6%)**	**1,355 (16.4%)**	**8,272 (100.0%)**
Two seaters	2,241	1.8%	37 (45.2%)	45 (54.8%)	82 (100.0%)
Minicompact	1,240	1.0%	0 (0.0%)	41 (100.0%)	41 (100.0%)
Subcompact	27,544	22.1%	1,217 (80.4%)	296 (19.6%)	1,514 (100.0%)
Compact	40,690	32.6%	2,463 (83.7%)	478 (16.3%)	2,941 (100.0%)
Midsize	35,566	28.5%	2,072 (8 1.7%)	464 (18.3%)	2,536 (100.0%)
Large	17,392	14.0%	1,127 (97.3%)	32 (2.7%)	1,159 (100.0%)
Autos	**124,673**	**100.0%**	[c]	[c]	[c]
Business fleet autos[d]	9,225	7.4%	[c]	[c]	[c]
Personal autos	115.448	92.6%	[c]	[c]	[c]
Motorcycles	3,826"	**100.0%**	[c]	[c]	[c]
Recreational vehicles	[c]	[c]	438 **(100.0%)**	**0 (0.0%)**	438 **(100.0%)**
Trucks	**76,398**	**100.0%**	6,633 **(91.8%)**	593 (8.2%)	7,227 **(100.0%)**
Light (O-10,000 Ibs)	71,279	93.3%	6,226 (91.6%)	571 (8.4%)	6,798 (100.0%)
Medium (lO,OOl-26,000 lbs)	2,521	3.3%	116 (84.7%)	21 (15.3%)	137 (100.0%)
Heavy-heavy (26,001 Ibs and over)	2,598	3.4%	29 1 (99.7%)	1 (0.3%)	292 (100.0%)
Trucks	**76,398**	**100.0%**	[c]	[c]	[c]
Business fleet trucks≤ 19,500 lbs[d]	6,644	8.7%	[c]	[c]	[c]
Personal trucks ≤ 19,500 lbs	66,240	86.7%	[c]	[c]	[c]
Trucks > 19,500 lbs.	3,314	4.6%	[c]	[c]	[c]

Source:
See Appendix A for Table 6.4. (Additional resources: http://www.aama.com, http://www.polk.com)

[a] Total auto and truck vehicle stock as of July 1 from The Polk Company (FURTHER REPRODUCTION PROHIBITED).
[b] Includes domestic-sponsored imports.
[c] Data are not available.
[d] In fleets of four or more vehicles.
[e] Includes mostly on-highway motorcycles. Many states do not require registration for off-highway vehicles.

Table 6.5
Highway Vehicle Miles Traveled by Vehicle Type, 1970-97
(million miles)

Year	Automobiles	Motorcycles	Two-axle, four-tire trucks	Other single-unit trucks	Combination trucks	Buses[a]	Total
1970	916,700	2,979	123,286	27,081	35,134	4,544	1,109,724
1971	966,330	3,607	137,870	28,985	37,217	4,802	1,178,811
1972	1,021,365	4,331	156,622	31,414	40,706	5,348	1,259,786
1973	1,045,981	5,194	176,833	33,661	45,649	5,792	1,313,110
1974	1,007,251	5,445	182,757	33,441	45,966	5,684	1,280,544
1975	1,033,950	5,629	200,700	34,606	46,724	6,055	1,327,664
1976	1,078,215	6,003	225,834	36,390	49,680	6,258	1,402,380
1977	1,109,243	6,349	250,591	39,339	55,682	5,823	1,467,027
1978	1,146,508	7,158	279,414	42,747	62,992	5,885	1,544,704
1979	1,113,640	8,637	291,905	42,012	66,992	5,947	1,529,133
1980	1,111,596	10,214	290,935	39,813	68,678	6,059	1,527,295
1981	1,133,332	10,690	296,343	39,568	69,134	6,241	1,555,308
1982	1,161,713	9,910	306,141	40,658	70,765	5,823	1,595,010
1983	1,195,054	8,760	327,643	42,546	73,586	5,199	1,652,788
1984	1,227,043	8,784	358,006	44,419	77,377	4,640	1,720,269
1985	1,246,798	9,086	390,961	45,441	78,063	4,478	1,774,826
1986	1,270,167	9,397	423,915	45,637	81,038	4,717	1,834,872
1987	1,315,982	9,506	456,870	48,022	85,495	5,330	1,921,204
1988	1,370,271	10,024	502,207	49,434	88,551	5,475	2,025,962
1989	1,401,221	10,371	536,475	50,870	91,879	5,670	2,096,487
1990	1,408,266	9,557	574,571	51,901	94,341	5,726	2,144,362
1991	1,358,185	9,178	649,394	52,898	96,645	5,750	2,172,050
1992	1,371,569	9,557	706,863	53,874	99,510	5,778	2,247,151
1993	1,374,709	9,906	745,750	56,772	103,116	6,125	2,296,378
1994	1,406,089	10,240	764,634	61,284	108,932	6,409	2,357,588
1995	1,438,294	9,797	790,029	62,705	115,451	6,420	2,422,696
1996	1,469,854	9,920	816,540	64,072	118,899	6,563	2,485,848
1997	1,501,820	10,076	850,296	66,845	124,500	6,836	2,560,373
			Average annualpercentage change				
1970-97	1.8%	4.6%	7.4%	3.4%	4.8%	1.5%	3.1%
1987-97	1.3%	0.6%	6.4%	3.4%	3.8%	2.5%	2.9%

Source:
U.S. Department of Transportation, Federal Highway Administration, *Highway Statistics 1997,* Washington, DC, 1998, Table VM-1, p. V-89, and annual.
(Additional resources: http://www.fhwa.dot.gov)

[a]The data do not correspond with vehicle-miles of travel presented in the "Bus" section of this chapter due to differing data sources.

Table 6.6
Automobiles in Operation and Vehicle Travel by Age, 1970 and 1997

Age (years)	1970 Vehicles (thousands)	1970 Percentage	1970 Cumulative percentage	1997 Vehicles (thousands)	1997 Percentage	1997 Cumulative percentage	1997 Estimated vehicle travel Percentage	1997 Estimated vehicle travel Cumulative percentage	Average annual miles per vehicle
Under 1[a]	6,288	7.8%	7.8%	5,622	4.5%	4.5%	6.1%	6.1%	15,600
1	9,299	11.6%	19.4%	7,696	6.2%	10.7%	6.0%	12.1%	11,200
2	8,816	11.0%	30.3%	8,968	7.2%	17.9%	7.1%	19.2%	11,300
3	7,878	9.8%	40.1%	7,938	6.4%	24.2%	6.4%	25.6%	11,600
4	8,538	10.6%	50.8%	8,013	6.4%	30.7%	6.9%	32.5%	12,400
5	8,506	10.6%	61.3%	7,430	6.0%	36.6%	6.6%	39.1%	12,700
6	7,116	8.8%	70.2%	7,665	6.1%	42.8%	6.9%	46.0%	12,900
7	6,268	7.8%	78.0%	7,821	6.3%	49.1%	7.5%	53.5%	13,800
8	5,058	6.3%	84.3%	8,479	6.8%	55.9%	8.7%	62.2%	14,800
9	3,267	4.1%	88.3%	8,463	6.8%	62.6%	8.5%	70.8%	14,500
10	2,776	3.5%	91.8%	7,944	6.4%	69.0%	5.0%	75.8%	9,000
11	1,692	2.1%	93.9%	7,504	6.0%	75.0%	4.7%	80.5%	9,000
12	799	1.0%	94.9%	6,469	5.2%	80.2%	4.1%	84.5%	9,000
13	996	1.2%	96.1%	5,342	4.3%	84.5%	3.3%	87.9%	9,000
14	794	1.0%	97.1%	3,365	2.7%	87.2%	2.1%	90.0%	9,000
15 and older	2,336	2.9%	100.0%	15,954	12.8%	100.0%	10.0%	100.0%	9,000
Subtotal	80,427	**100.0%**		**124,673**	**100.0%**		**100.0%**		
Age not given	22			0					
Total	80,449			124,673					
Average age		5.6			8.7				
Median age		4.9			8.1				

Source:
The Polk Company, Detroit, MI. FURTHER REPRODUCTION PROHIBITED.
Vehicle travel - Average annual miles per auto by age were multiplied by the number of vehicles in operation by age to estimate the vehicle travel. Average annual miles per auto by age - generated by *ORNL.* from *the Nationwide Personal Transportation* Survey web site: http://www-cta.ornl.gov/npts. (Additional resources: http://www.polk.com, http://www-cta.ornl.gov/npts)

[a]Automobiles sold as of July 1 of each year.

Table 6.7
Trucks in Operation and Vehicle Travel by Age, 1970 and 1997

Age (years)	1970 Vehicles (thousands)	1970 Percentage	1970 Cumulative percentage	1997 Vehicles (thousands)	1997 Percentage	1997 Cumulative percentage	1997 Estimated vehicle travel Percentage	1997 Estimated vehicle travel Cumulative percentage	Average annual miles per vehicle
Under 1"	1,262	7.1%	7.1%	4,624	6.1%	6.1%	6.7%	6.7%	14,288
1	1,881	10.6%	17.8%	5,828	7.6%	13.7%	9.8%	16.5%	16,439
2	1,536	8.7%	26.5%	6,362	8.3%	22.0%	11.9%	28.5%	18,388
3	1,428	8.1%	34.6%	5,733	7.5%	29.5%	10.3%	38.8%	17,601
4	1,483	8.4%	43.0%	4,838	6.3%	35.8%	8.3%	47.0%	16,775
5	1,339	7.6%	50.5%	4,015	5.3%	41.1%	6.6%	53.6%	16,020
6	1,154	6.5%	57.1%	3,912	5.1%	46.2%	5.8%	59.4%	14,574
7	975	5.5%	62.6%	3,802	5.0%	51.2%	5.3%	64.8%	13,710
8	826	4.7%	67.3%	4,340	5.7%	56.9%	5.9%	70.6%	13,255
9	621	3.5%	70.8%	4,203	5.5%	62.4%	5.2%	75.9%	12,237
10	658	3.7%	74.5%	3,633	4.8%	67.1%	3.0%	78.9%	8,224
11	583	3.3%	77.8%	3,741	4.9%	72.0%	3.1%	82.1%	8,224
12	383	2.2%	80.0%	3,111	4.1%	76.1%	2.6%	84.7%	8,224
13	417	2.4%	82.3%	2,624	3.4%	79.5%	2.2%	86.9%	8,224
14	414	2.3%	84.7%	-1,596	2.1%	81.6%	1.3%	88.2%	8,224
15 and older	2,710	15.3%	100.0%	14,036	18.4%	100.0%	11.8%	100.0%	8,224
Subtotal	**17,670**	**100.0%**		76,398	**100.0%**		**100.0%**		
Age not given	15			0					
Total	17,685			76,398					
Average age		7.3			8.3				
Median age		5.9			7.8				

Source:
The Polk Company, Detroit, MI. **FURTHER REPRODUCTION PROHIBITED.**
Vehicle travel-The average annual vehicle-miles per truck by age were multiplied by the number of trucks in operation by age to estimate the vehicle travel. Average annual miles per truck by age were generated by ORNL from *the 1992 Truck Inventory and Use Survey* public use tape provided by U.S. Department of Commerce, Bureau of the Census, Washington, DC, 1995. (Additional resources: http://www.polk.com, http://www.census.gov)

"Trucks sold as of July 1 of each year.

The average age of automobiles was lower than the average age of trucks until 1995. Since then, the average automobile age continues to grow, while the average truck age has held about the same. The increasingpopularity of light trucks aspersonalpassenger vehicles may have had an influence on the average age of trucks.

Table 6.8
Average Age of Automobiles and Trucks in Use, 1970-97
(years)

Calendar year	Automobiles		Trucks	
	Mean[a]	Median[b]	Mean[a]	Median[b]
1970	5.6	4.9	7.3	5.9
1971	5.7	5.1	7.4	6.1
1972	5.7	5.1	7.2	6.0
1973	5.7	5.1	6.9	5.8
1974	5.7	5.2	7.0	5.6
1975	6.0	5.4	6.9	5.8
1976	6.2	5.5	7.0	5.8
1977	6.2	5.6	6.9	5.7
1978	6.3	5.7	6.9	5.8
1979	6.4	5.9	6.9	5.9
1980	6.6	6.0	7.1	6.3
1981	6.9	6.0	7.5	6.5
1982	7.2	6.2	7.8	6.8
1983	7.4	6.5	8.1	7.2
1984	7.5	6.7	8.2	7.4
1985	7.6	6.9	8.1	7.6
1986	7.6	7.0	8.0	7.7
1987	7.6	6.9	8.0	7.8
1988	7.6	6.8	7.9	7.1
1989	7.6	6.5	7.9	6.7
1990	7.8	6.5	8.0	6.5
1991	7.9	6.7	8.1	6.8
1992	8.1	7.0	8.4	7.2
1993	8.3	7.3	8.6	7.5
1994	8.4	7.5	8.4	7.5
1995	8.5	7.7	8.4	7.6
1996	8.6	7.9	8.3	7.7
1997	8.7	8.1	8.3	7.8

Source:
The Polk Company, Detroit, MI. **FURTHER REPRODUCTION PROHIBITED.**
(Additional resources: http://www.polk.com)

[a]Mean is the sum of the products of units multiplied by age, divided by the total units.
[b]Median is a value in an ordered set of values below and above which there are an equal number of values.

1990 model year (MY) automobiles will be in service an average of three years longer than their 1970 counterparts. The average lifetime of autos increased by 1.4 years from MY 1970 to MY 1980, then rose another 1.6 years by MY 1990.

Table 6.9
Scrappage and Survival Rates for Automobiles
1970, 1980 and 1990 Model Years

Vehicle age (years)	1970 model year		1980 model year		1990 model year	
	Scrappage rate[a]	Survival rate[b]	Scrappage rate[a]	Survival rate[b]	Scrappage rate[a]	Survival rate[b]
0	*0.000000*	1 .000000	*0.000000*	1 .000000	*0.000000*	1 .000000
1	0.006050	0.993950	0.005553	0.994447	0.005255	0.994745
2	0.009650	0.984359	0.007636	0.986854	0.007538	0.987246
3	0.014590	0.969997	0.011011	0.975988	0.010522	0.976858
4	0.022892	0.947792	0.013567	0.962746	0.014414	0.962778
5	0.030522	0.918864	0.020498	0.943011	0.019623	0.943885
6	0.040956	0.881231	0.034718	0.910272	0.025096	0.920197
7	0.057029	0.830975	0.047366	0.867156	0.032690	0.890116
8	0.084560	0.760708	0.055299	0.819204	0.042014	0.852719
9	0.118527	0.670543	0.071153	0.760915	0.053468	0.807126
10	0.151858	0.568716	0.09293 1	0.690202	0.066230	0.753669
11	0.166996	0.473743	0.117300	0.609241	0.081338	0.692367
12	0.171955	0.392280	0.158696	0.5 12557	0.096959	0.625236
13	0.201774	0.313128	0.187663	0.416369	0.114297	0.553773
14	0.198887	0.25085 1	0.208822	0.329422	0.131169	0.481135
15	0.233611	0.192250	0.228359	0.254196	0.149005	0.409444
16	0.271810	0.139994	0.238412	0.193592	0.166710	0.341186
17	0.283363	0.100325	0.250547	0.145088	0.183826	0.278467
18	0.283078	0.071925	0.261438	0.107157	0.199477	0.222919
19	0.287708	0.05 1232	0.270527	0.078168	0.211449	0.175783
20	0.292908	0.036226	0.277234	0.056497	0.223461	0.136502
Average lifetime	10.7 years		12.1 years		13.7 years	

Source:
Miaou, Shaw-Pin, "Factors Associated with Aggregated Car Scrappage Rate in the United States: 1966-1992," Oak Ridge National Laboratory, Oak Ridge, TN, January 1995.
(Additional resources: http://www-cta.ornl.gov)

[a]The probability that a 1970/80/90 model year automobile will be retired from use within a given year.
[b]The probability that a 1970/80/90 model year automobile will be in use at the end of a given year.

Table 6.10
Scrappage and Survival Rates for Trucks

	All trucks						Light trucks	
	(1966-73)		(1973-78)		(1978-89)		(1978-89)"	
Vehicle age (years)	Scrappage rate	Survival rate	Scrappage rate	Survival rate	Scrappage rate	Survival rate	Scrappage rate	Survival rate
0	**0.00000**	1 .00000	**0.00000**	1 .00000	**0.00000**	1 .00000	**0.00000**	1 .00000
1	0.00582	0.99418	0.00505	0.99495	0.003 12	0.99688	**0.00249**	0.99751
2	0.00814	0.98608	0.00698	0.98801	0.00461	0.99228	0.00383	0.99369
3	0.01129	0.97495	0.00958	0.97854	0.00676	0.98557	0.00583	0.98790
4	0.01550	0.95983	0.01306	0.96576	0.00980	0.97591	0.00877	0.97923
5	0.02101	0.93967	0.01762	0.94873	0.01399	0.96226	0.01296	0.96654
6	0.02798	0.91337	0.02347	0.92647	0.01957	0.94343	0.01869	0.94848
7	0.03649	0.88005	0.03073	0.89800	0.02663	0.91830	0.02606	0.92376
8	0.04638	0.83923	0.03943	0.86260	0.03507	0.88609	0.03488	0.89154
9	0.05730	0.79114	0.04940	0.81999	0.04445	0.84671	0.04454	0.85182
10	0.06863	0.73685	0.06026	0.77058	0.05408	0.80092	0.05416	0.80569
11	0.07970	0.67812	0.07147	0.71551	0.06320	0.75030	0.06285	0.75505
12	0.08987	0.61718	0.08239	0.65656	0.07121	0.69687	0.07006	0.70215
13	0.09872	0.55625	0.09247	0.59585	0.07776	0.64268	0.07562	0.64905
14	0.10605	0.49726	0.10130	0.53548	0.08285	0.58944	0.07967	0.59734
15	0.11189	0.44162	0.10871	0.47727	0.08662	0.53838	0.0825 1	0.54805
16	0.11638	0.39023	0.11468	0.42254	0.08932	0.49029	0.08443	0.50178
17	0.11976	0.34349	0.11936	0.37210	0.09122	0.44557	0.08571	0.45877
18	0.12225	0.30150	0.12294	0.32636	0.09253	0.40434	0.08655	0.41907
19	0.12406	0.26410	0.12562	0.28536	0.09343	0.36656	0.08710	0.38257
20	0.12536	0.23099	0.12761	0.24894	0.09403	0.33209	0.08745	0.34911
21	0.12629	0.20182	0.12906	0.21681	0.09444	0.30073	0.08768	0.31850
22	0.12696	0.17620	0.13012	0.18860	0.09471	0.27225	0.08783	0.29052
23	0.12743	0.15374	0.13089	0.16392	0.09490	0.24641	0.08793	0.26498
24	0.12776	0.13410	0.13144	0.14237	0.09502	0.22300	0.08799	0.24166
25	0.12799	0.11694	0.13183	0.12360	0.09510	0.20179	0.08803	0.22039
Average lifetime	14.0 years		14.6 years		15.8 years		16.0 years	

Source:

Miaou, Shaw-Pin, "Study of Vehicle Scrappage Rates," Oak Ridge National Laboratory, Oak Ridge, TN, August 1990.
(Additional resources: http://www-cta.ornl.gov)

"Average scrappage and survival rates for all vehicles registered within this time period.