

AUTOMOBILE COSTS

**THE COST OF OWNING AND OPERATING
AN AUTOMOBILE, INCLUDING PARKING
IN 61 URBANIZED AREAS**



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**THE COST OF OWNING
AND OPERATING AN
AUTOMOBILE**

by

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This report summarizes the findings of a study that was conducted by Runzheimer and Company, Inc., of Rochester, Wisconsin, and Peat, Marwick, Mitchell and Co., of Washington, D.C. for the Office of Policy and Program Development.

This report details the cost of owning and operating a typical 1978 automobile, including parking, which for this report is an intermediate-size 1978 Ford 8 cylinder (302 CID) LTD II, four door sedan, equipped with standard accessories, automatic transmission, power steering, power disc brakes, radio, tinted glass and air conditioning. The data is presented for 61 urbanized areas ranging from 50,000 to over 1 million population that are geographically distributed across the U.S. and take into account different climatic conditions and driving conditions (urban, suburban and rural). It should be noted that the cost data presented does not necessarily represent the cost of an "average" automobile because it is virtually impossible to define what an "average" automobile is.

The cost of owning and operating a typical 1978 automobile is about 20.3¢ per mile based upon a study of automobile costs in 61 cities. These costs ranged from a low of 17.7¢ per mile in Charlotte, N.C., and Lawton OK., to a high of 25.4¢ per mile in Boston, Mass.

Automobile costs are composed of two components -- fixed and variable costs. Variable costs are dependent upon the mileage driven and include gasoline, oil, tires and maintenance. Fixed costs include insurance premiums, annual license fees, added license taxes, depreciation and finance charges, and these are incurred whether or not the car is operated.

The variable costs usually account from 27% to 40% of the annual costs; the higher percentage is for the California cities in the study -- San Francisco, San Jose, Los Angeles, San Diego and Sacramento -- where strong antipollution requirements result in higher per mile costs for gasoline (due to reduced mileage per gallon). In general, however, variable costs represent only about 1/3 of the total cost.

The fixed costs are generally about two-thirds of the total cost or about 14¢ per mile. In the study fixed costs ranged from 11.2¢ per mile in Charlotte, N.C., to 18.4¢ per mile in Boston, Mass. The principal reason for this large variation is the cost of insurance; insurance costs \$232 in Charlotte, while comparable coverage in Boston costs \$1,106.

Parking costs average \$372 per year or \$1.55 per day for the 61 areas in this study. However, there is tremendous variation in parking charges ranging from \$120 per year (50¢ per day) in Albuquerque, NM, to \$1,272 per year (\$5.30 per day) in New York City. Generally, parking is more expensive in the larger cities and those east of the Mississippi River.

The following tables present these data for four groups of urbanized areas; over 1 million population, 500,000 to 1 million population, 200,000 to 500,000 population, and 50,000 to 200,000 population.

URBANIZED AREAS OVER 1 MILLION POPULATION

	Per Mile Costs ¢			Parking Costs \$	
	<u>Variable</u> ^{1/}	<u>Fixed</u> ^{1/}	<u>Total</u>	<u>Yearly</u>	<u>Per Day</u>
Atlanta, GA	7.00	12.97	19.97	336	1.40
Baltimore, MD	6.95	13.50	20.45	540	2.25
Boston, MA	6.90	18.36	25.36	684	2.85
Buffalo, NY	6.85	14.38	21.23	372	1.55
Chicago, IL	7.30	13.99	21.29	684	2.85
Cincinnati, OH	6.90	13.14	20.04	432	1.80
Cleveland, OH	6.80	16.04	22.84	468	1.95
Dallas, TX	6.60	12.39	18.99	456	1.90
Denver, CO	7.35	13.51	20.86	372	1.55
Detroit, MI	7.15	13.00	20.15	432	1.80
Houston, TX	6.65	13.23	19.88	492	2.05
Kansas City, MO	6.95	14.16	21.11	295	1.25
Los Angeles, CA	8.60	15.64	24.24	360	1.50
Miami, FL	6.90	13.92	20.82	420	1.75
Milwaukee, WI	7.00	13.58	20.58	384	1.60
Minneapolis, MN	7.05	13.01	20.06	396	1.65
New York, NY	7.15	16.35	23.50	1272	5.30
Philadelphia, PA	6.85	15.36	22.21	576	2.40
Pittsburgh, PA	6.70	12.64	19.34	636	2.65
St. Louis, MO	7.05	15.40	22.45	312	1.30
San Diego, CA	8.50	12.84	21.34	336	1.40
San Francisco, CA	8.80	15.77	24.57	648	2.70
San Jose, CA	8.80	13.72	22.52	264	1.10
Seattle, WA	7.40	13.82	21.22	444	1.85
Washington, DC	7.00	13.67	20.67	696	2.90
Highest Cost:			25.26¢	\$1272	\$5.30
			Per Mile	Per Year	Per Day
Average Cost:			21.42¢	\$ 473	\$2.00
			Per Mile	Per Year	Per Day
Lowest Cost:			18.99¢	\$ 264	\$1.10
			Per Mile	Per Year	Per Day

^{1/} See explanations following tables

URBANIZED AREAS 500,000 TO 1 MILLION POPULATION

	Per Mile Costs ¢			Parking Costs \$	
	<u>Variable</u>	<u>Fixed</u>	<u>Total</u>	<u>Yearly</u>	<u>Per Day</u>
Albany, NY	6.35	14.21	20.56	336	1.40
Birmingham, AL	6.25	12.57	18.82	264	1.10
Hartford, CT	6.30	16.43	22.73	454	1.90
Louisville, KY	6.40	12.57	18.97	283	1.20
New Orleans, LA	6.30	14.08	20.38	552	2.30
Norfolk, VA	6.20	12.48	18.69	180	.75
Phoenix, AZ	6.55	13.97	20.52	336	1.40
Portland, OR	6.35	14.46	20.81	312	1.30
Providence, RI	6.20	15.03	21.23	496	1.65
Sacramento, CA	7.55	13.77	21.32	252	1.05
Tampa, FL	6.35	12.46	18.81	372	1.55
Worcester, MA	6.20	15.44	21.64	312	1.30
Highest Cost:			22.73¢ Per Mile	\$552 Per Year	\$2.30 Per Day
Average Cost:			20.37¢ Per Mile	\$336 Per Year	\$1.40 Per Day
Lowest Cost:			18.69¢ Per Mile	\$180 Per Year	\$.75 Per Day

URBANIZED AREAS 200,000 TO 500,000 POPULATION

	Per Mile Costs ¢			Parking Costs \$	
	<u>Variable</u>	<u>Fixed</u>	<u>Total</u>	<u>Yearly</u>	<u>Per Day</u>
Albuquerque, NM	6.86	13.17	20.02	120	.50
Austin, TX	5.55	12.30	17.85	288	1.20
Charlotte, NC	6.45	11.22	17.67	252	1.05
Des Moines, IA	5.90	12.79	18.69	292	1.20
El Paso, TX	6.50	12.56	19.06	252	1.05
Lexington, KY	5.85	11.65	17.50	272	1.15
Nashville, TN	6.50	11.74	18.24	348	1.45
Omaha, NE	5.90	13.30	19.20	336	1.40
Salt Lake City, UT	6.80	14.35	21.15	288	1.20
Toledo, OH	5.85	12.95	18.80	360	1.90
Tucson, AZ	6.70	13.42	20.12	250	1.05
Wichita, KS	5.80	12.32	<u>18.12</u>	<u>276</u>	<u>1.15</u>
Highest Cost:			21.15¢ Per Mile	\$360 Per Year	\$1.90 Per Day
Average Cost:			18.87¢ Per Mile	\$278 Per Year	\$1.15 Per Day
Lowest Cost:			17.50¢ Per Mile	\$120 Per Year	\$.50 Per Day



URBANIZED AREAS 50,000 TO 200,000 POPULATION

	Per Mile Costs ¢			Parking Costs \$	
	<u>Variable</u>	<u>Fixed</u>	<u>Total</u>	<u>Yearly</u>	<u>Per Day</u>
Anchorage, AK	7.65	15.11	22.76	388	1.60
Boise, ID	6.70	13.44	20.14	288	1.20
Charleston, WV	6.45	12.67	19.12	324	1.35
Fort Smith, AR	6.30	13.71	20.01	170	.70
Great Falls, MT	6.90	14.09	20.99	240	1.00
Lawton, OK	5.70	12.02	17.72	154	.65
Manchester, NH	5.80	12.35	18.15	240	1.00
Pueblo, CO	6.75	13.40	20.15	265	1.10
Roanoke, VA	6.40	12.70	19.10	172	.70
Rochester, MN	6.30	12.38	18.68	262	1.10
Sioux Falls, SD	6.20	12.13	18.33	168	.70
Waterloo, IA	5.80	12.33	18.13	260	1.10

Highest Cost:

22.76¢ Per Mile \$388 Per Year \$1.60 Per Day

Average Cost:

19.44¢ Per Mile \$244 Per Year \$1.00 Per Day

Lowest Cost:

18.13¢ Per Mile \$154 Per Year \$.65 Per Day

A. NOTES ON AUTOMOBILE COSTS:

In determining the cost of owning and operating a typical 1978 automobile, the following assumptions have been made:

1. Car cost data are based on the intermediate-size 1978 Ford-8 cylinder (302 CID) LTD II four door sedan equipped with standard accessories, automatic transmission, power steering, power disc brakes, radio, tinted glass and air conditioning;
2. The no-lead variety of regular grade gasoline is used to determine gasoline prices;
3. An oil allowance of .14¢ per mile, in a four quart crankcase, permits the following oil changes with one quart for make-up between changes: 80¢ quart oil every 4,285 miles. Also, \$1.00 quart oil can be changed every 5,000 miles allowing a full two quarts for make-up between changes plus an added quart when changing the oil filter;
4. Maintenance covers washings every 1,500 miles, lubrication in accordance with manufacturer's recommendations, plus all regular maintenance to assure sound and economical operation;
5. Tires cover the cost of all tire replacements, repairs and rotations. It reflects the prices of leading tire manufacturers on their original equipment, radial replacement tires. It is predicated on tire purchases representing a 10% gross profit for the dealer. This tire cost item also takes into account the road surface and terrain conditions predominating in each city.

Items 2, 3, 4, and 5 determine the operating cost per mile.

6. Insurance Premiums reflect coverages of \$100 deductible collision, \$25m/50m bodily injury and \$5m property damage, or state minimums where these are higher.
7. Annual License Fees cover the annual state registration, certificate of title, state inspection, and drivers license fees where incurred.
8. Added License Taxes are imposed annually in the following states:

Alabama:	Automobile "Ad Valorem" Tax
Arizona:	Automobile "In Lieu" Tax
Arkansas:	Personal Property Tax
California:	Vehicle License Fee
Connecticut:	Personal Property Tax
Colorado:	Specific Ownership Tax
Georgia:	Ad Valorem Tax
Indiana:	License Excise Tax
Kansas:	Ad Valorem Tax
Kentucky:	Personal Property Tax



Maine:	Municipal Excise Tax
Massachusetts:	Excise Tax
Minnesota:	Ad Valorem Tax
Mississippi:	Ad Valorem Tax
Missouri:	Personal Property Tax
Montana:	Personal Property Tax
Nebraska:	Personal Property Tax
Nevada:	Privilege Tax
New Hampshire:	Permit Fee
North Carolina:	Ad Valorem Tax
Rhode Island:	Personal Property Tax
South Carolina:	Personal Property Tax
Texas:	Personal Property Tax
Utah:	Ad Valorem Tax
Virginia:	Personal Property Tax
Washington:	Excise Tax
West Virginia:	Personal Property Tax
Wyoming:	County Fee

9. Annual Operation is computed on the basis of car trade-ins at the end of 60,000 total miles, or four years, whichever point is first attained. Fleet performance data shows that this is the approximate duration of the "most economical service period"; that is, the period during which the cars are expected to deliver the greatest overall cost economy.

The annual depreciation reflects the standard delivered price in each home city. This standard delivered price is built up by adding to the dealer base cost (which includes the standard line of accessory equipment), the following cost elements: freight from factory to home city, state use or sales tax where incurred, a \$300 markup for the dealer, and additional cost of accessories.

10. Annual Finance Charge covers the interest expense incurred as a result of financing of the standard car. It is computed using 12% simple interest applied against the unamortized value of the car.

Items 6, 7, 8, 9, and 10 represent the annual fixed costs of owning and operating an automobile. Conversion to a per mile figure is based on annual mileage of 15,000.

B. NOTES ON PARKING COST DATA:

1. Data represents commercial parking rates for both attendant-park and self-park lots, both multi-level indoor garages and outdoor facilities. Only lots offering monthly rates were included in the survey.

2. Data for 1978 are an extrapolation of 1977 data that was gathered by Runzheimer and Company, Inc. in December 1976, except in those instances where more recent and precise survey data were available without re-survey.
3. As a rule of thumb, average daily fees can be estimated by using $1/240$ of the average annual cost.

