



Consumer Federation of America

**THE IMPACT OF RISING PRICES
ON HOUSEHOLD GASOLINE EXPENDITURES**

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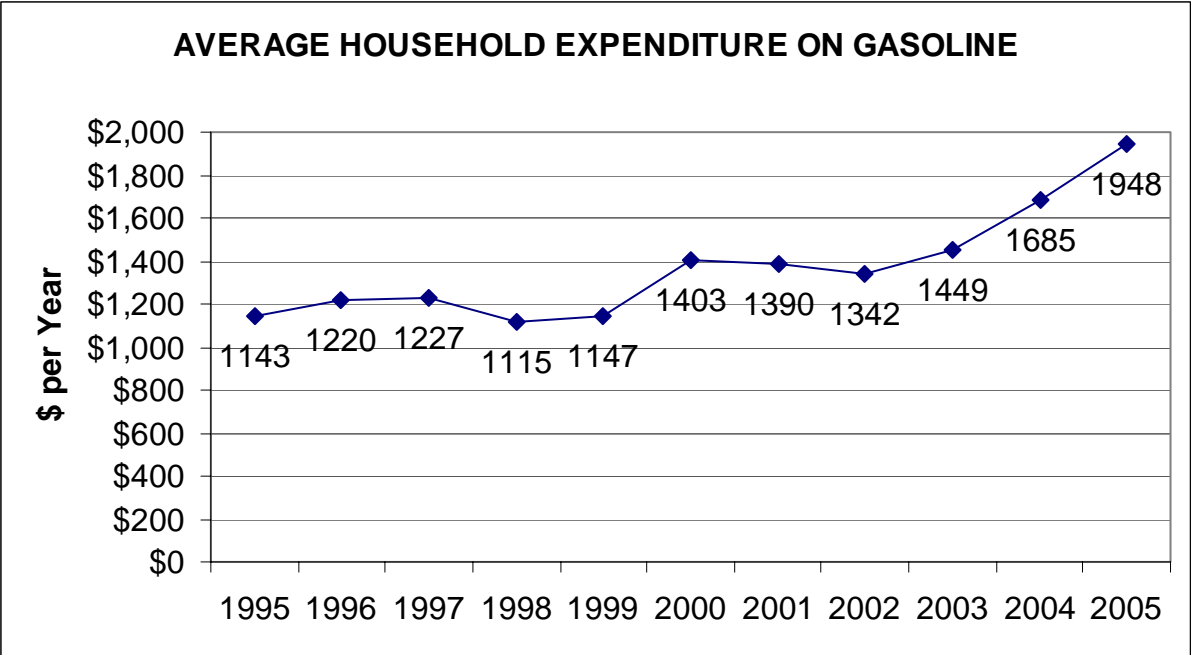
SEPTEMBER 2005

CONSUMPTION AND NATIONAL AVERAGE HOUSEHOLD EXPENDITURE

American households who own automobiles are expected to consume 100 billion gallons of gasoline this year,¹ which will cost them over \$200 billion at the pump.² That is an average of almost \$2,000 for households that drive cars, which represents an increase of over \$600 since 2001-2002, and \$800 since 1995-1999.

1/ The Energy Information Administration, *Household Energy Use: Latest Data & Trends*, September 2005, table A-2, which places consumption in 2001 at 1143 gallons per households and total households with automobiles at 98.9 million. The average household expenditure was about \$1,520. A similar estimate can be derived from household vehicle miles traveled [P. S. Hu and T. R. Reuscher, *Summary of Travel Trends: 2001 National Household Travel Survey* (Federal Highway Administration) U.S. Department of Transportation, December 2004), p. 9], and average fuel efficiency for cars and trucks [Energy Information Administration, *Monthly Energy Review* (U.S. Department of Energy, July 2005)]. The Bureau of Labor Statistics, *Consumer Expenditure Survey* reports an average household expenditure of \$1279, for all households, which translates to about \$1390 for households with automobiles. Thus, the *Consumer Expenditure Survey* reports expenditures that are about 10 percent lower. This might reflect differences in the rigor of reporting, as well as the fact that over 15 percent of the vehicle miles traveled by households are for work and work-related. To the extent these are compensated, they might not appear in the *Consumer Expenditure Survey*. If household gasoline consumption is assumed to represent the same share of total gasoline consumption in 2005 as in 2001, the growth in total gasoline consumption from 2001 to mid-year 2005 is just over 6 percent (on an annualized basis). This would put consumer use at almost 120 billion gallons. For purposes of this analysis, we use the lower figure derived from the *Consumer Expenditure Survey*.

2/ Based on an average price of \$2.25 for 2005 and total household consumption of 100 billion gallons. If the higher figure for consumption were used, the total would be over \$250 billion.

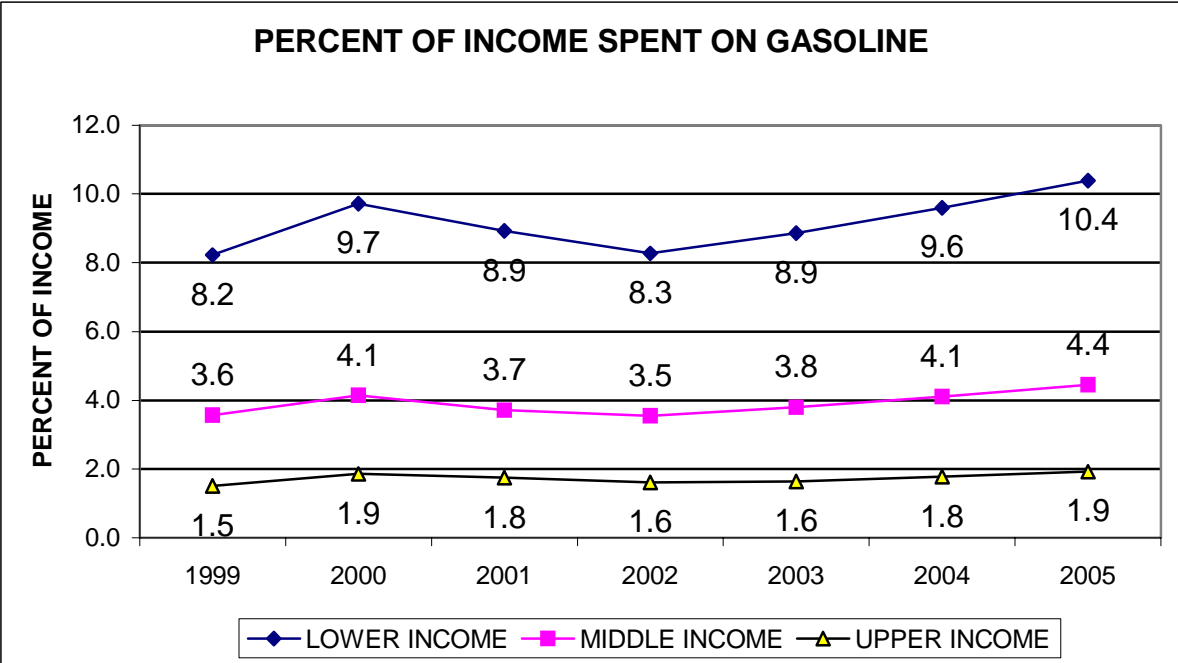
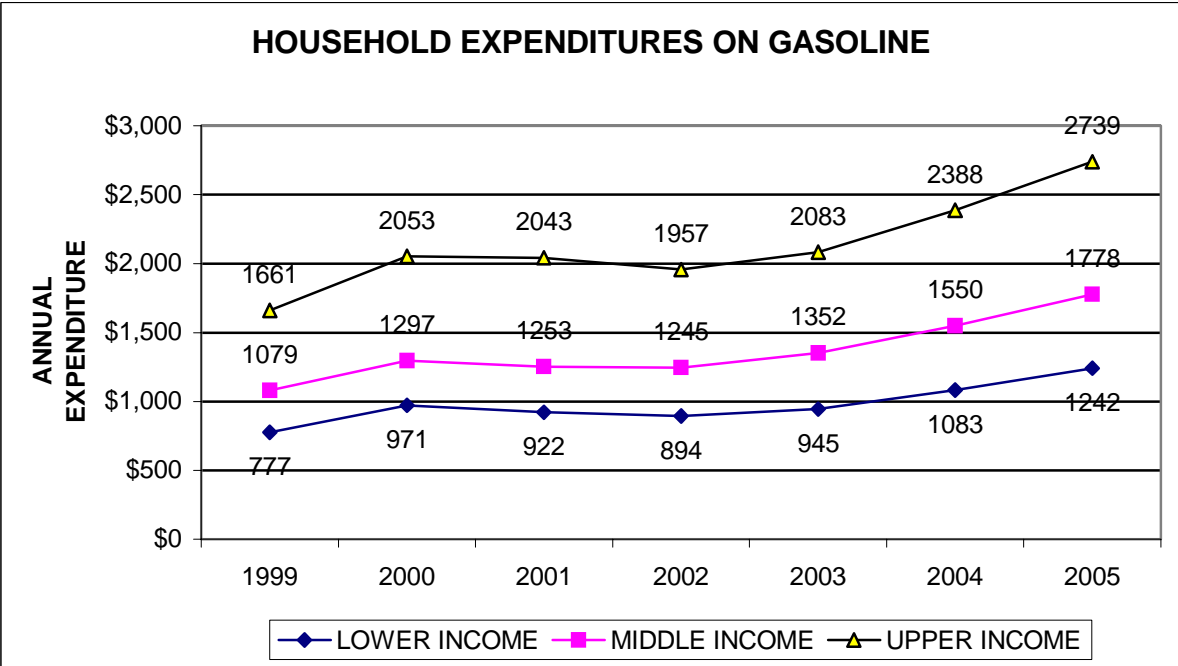


Sources: Annual Expenditures and income, 1995-2003, from Bureaus of Labor Statistics, *Consumer Expenditure Survey*, 1995-2003. Annual expenditures, 2004 and 2005, based on gasoline price increases and estimates from Energy Information Administration, *Monthly Energy Review* (July 2005) and Short Term Outlook (August 2005). Income growth based on Bureau of Economic Analysis, *Personal Income*, various issues. Consumption is adjusted to households with automobiles assuming 88 percent in 1995 increasing linearly to 92 percent through 2001 and then held constant at 92 percent. (Energy Information Administration, *Household Vehicles Energy Consumption: 1994* (Department of Energy, July 1997, p. 1; P. S. Hu and T. R. Reuscher, *Summary of Travel Trends: 2001 National Household Travel Survey* (Federal Highway Administration) U.S. Department of Transportation, December 2004), p. 36).

EXPENDITURE BY DIFFERENT INCOME GROUPS

The average American household that has an automobile will spend about 5 percent of annual income (before taxes) on gasoline. But the burden will be much heavier on lower income households. The bottom one-fifth of households, with income below approximately \$15,000 will spend over 10 percent of their income on gasoline.¹ Although upper income households (the top one-fifth of earners with incomes above about \$80,000) spend a larger amount, they spend a much smaller percentage of their income on gasoline - about 2 percent.

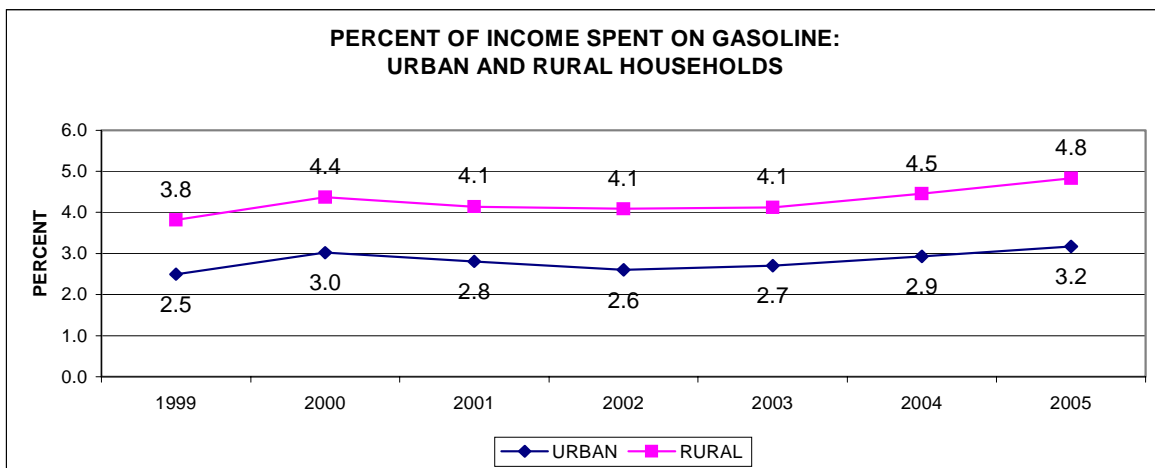
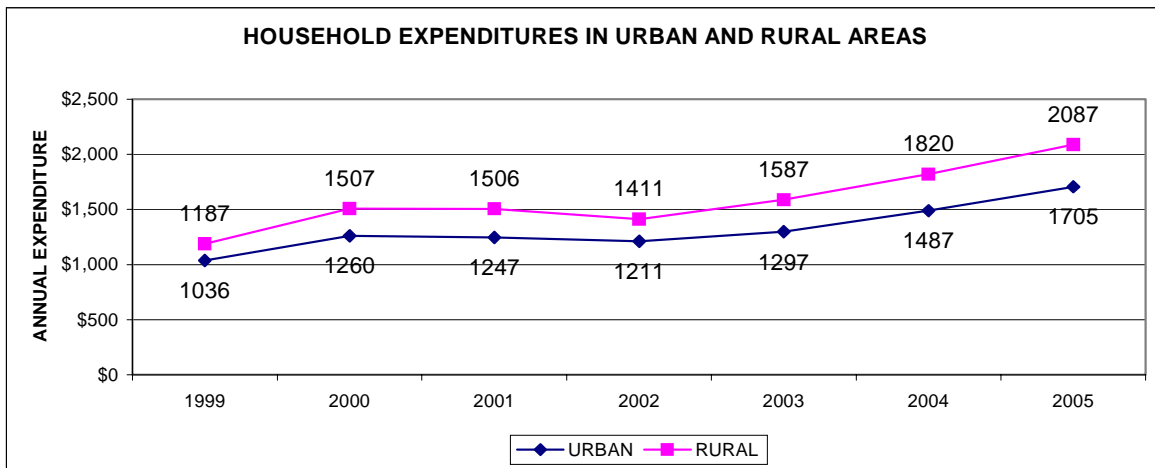
1/ Bureau of Transportation Statistics, *Highlights of the 2001 National Household Travel Survey* (U.S. Department of Transportation, N.D.), p. 7 and P. S. Hu and T. R. Reuscher, *Summary of Travel Trends: 2001 National Household Travel Survey* (Federal Highway Administration) U.S. Department of Transportation, December 2004), p. 33) show that 80 percent of households with incomes below \$25,000 have automobiles. Energy Information Administration, *Household Energy Use: Latest Data & Trends*, September 2005, table A-2, gives a count of households with automobiles for households with incomes below \$5,000, between \$5,000 and \$10,000 and between \$10,000 and \$15,000. These three groups constitute the bottom quintile of the income distribution since the Bureaus of Labor Statistics, *Consumer Expenditure Survey*, 2003, shows there are 19,455 million households in the bottom quintile and 19,698 households in these three income categories. Also, the upper limit of income for the bottom quintile is \$14,762. Comparing these counts to the counts for similar income groups in the EIA data, we conclude that only 65 percent of households with income below \$15,000 have automobiles. However, the lower income households with automobiles tend to have somewhat higher incomes within these categories and to be concentrated more in the higher of the three categories. A weighted average of the income for households with automobiles is 30% above the mean income for the bottom quintile. The estimate of the percent of income is based on the assumption of 65 percent automobile ownership and income 30% above the average for the bottom quintile.



Sources: Annual Expenditures and income, 1999-2003, from Bureau of Labor Statistics, *Consumer Expenditure Survey*, 1999-2003. Annual expenditures, 2004 and 2005, based on gasoline price increases and estimates from Energy Information Administration, *Monthly Energy Review* (July 2005) and *Short Term Outlook* (August 2005). Income growth based on Bureau of Economic Analysis, *Personal Income*, various issues.

EXPENDITURE IN RURAL v. URBAN AREAS

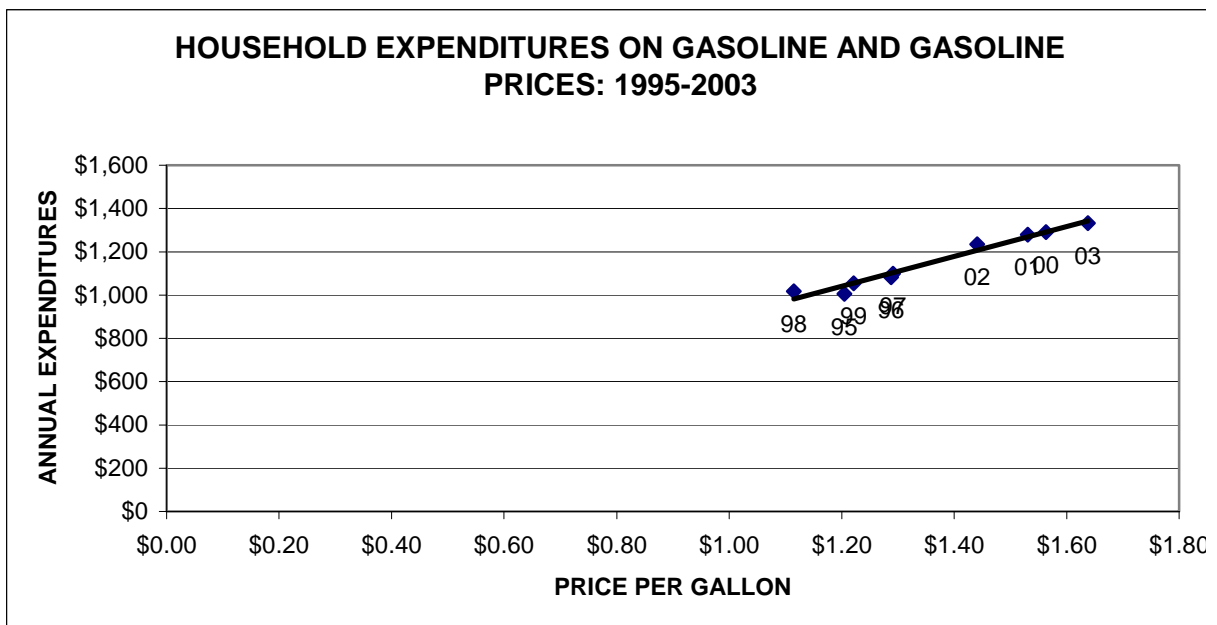
Rural households are also especially hard hit by rising gasoline prices. In 2005 they will spend close to \$2100 per year for gasoline, compared to urban household that spend around \$1700. Because household income in rural area is about 25 percent lower than urban areas, the impact of this difference is magnified. Households in rural areas will spend close to five percent of their income on gasoline, compared to about 3 percent for households in urban areas.



Sources: Annual Expenditures and income, 1999-2003, from Bureau of Labor Statistics, *Consumer Expenditure Survey*, 1999-2003. Annual expenditures, 2004 and 2005, based on gasoline price increases and estimates from Energy Information Administration, *Monthly Energy Review* (July 2005) and *Short Term Outlook* (August 2005). Income growth based on Bureau of Economic Analysis, *Personal Income*, various issues. Adjusted to reflect 94 percent of households in rural areas (not in an SMSA or less than 250,000) with a vehicle and 91 percent in urban areas.

INCREASES IN GASOLINE EXPENDITURES

In order to project household expenditures for 2004 and 2005 from the Consumer Expenditure Survey, we had to use gasoline price increases to inflate 2003 expenditures. To test the validity of that assumption we examined the correlation between gasoline prices and household gasoline expenditures for the 1995-2003 period and found a near perfect correlation. Therefore, it is reasonable to project expenditures on the basis of gasoline prices.

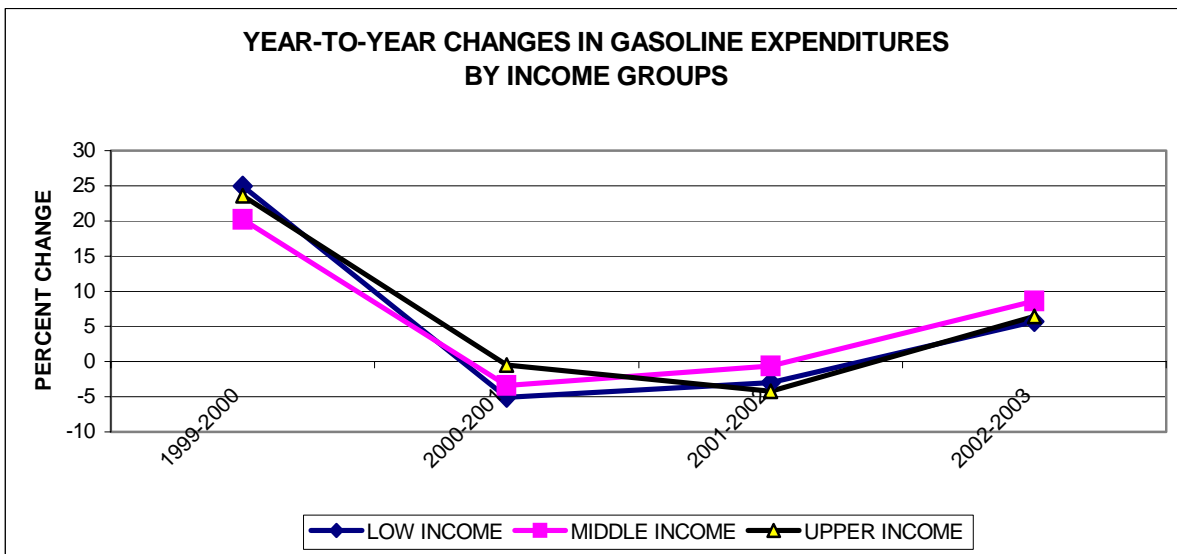


Sources: Annual Expenditures and income, 1999-2003, from Bureaus of Labor Statistics, *Consumer Expenditure Survey*, 1999-2003. Gasoline price increases and estimates from Energy Information Administration, *Monthly Energy Review* (July 2005) and Short Term Outlook (August 2005). The regression line is:

$$\text{Expenditure} = \$211 + 6.9 * \text{Gasoline Price}$$

$$R^2 = .97, F = 210, p < .00001$$

Because we are also projecting household expenditures across income categories, we examined the year-to-year expenditure increases in the income categories we were utilizing. If the changes in the expenditure of one income group deviated widely from that of the others, our projection of uniform changes would be dubious. Such deviations might occur if there are large differences in the price elasticity between the groups or they face different price changes (e.g. as result of being concentrated in different geographic areas). Close examination of the data indicates that this is not a problem.

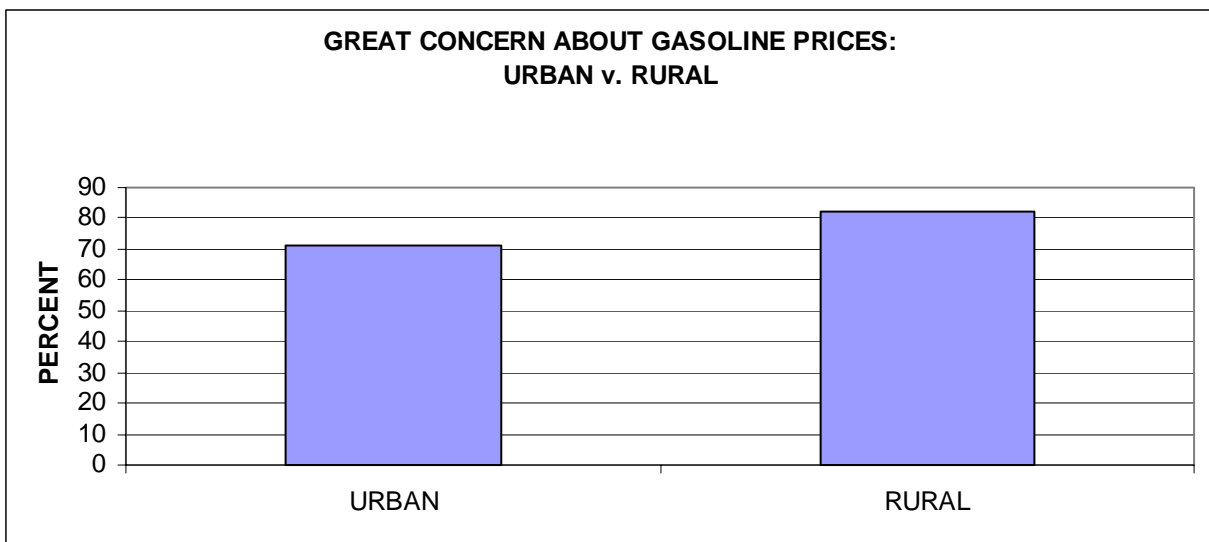
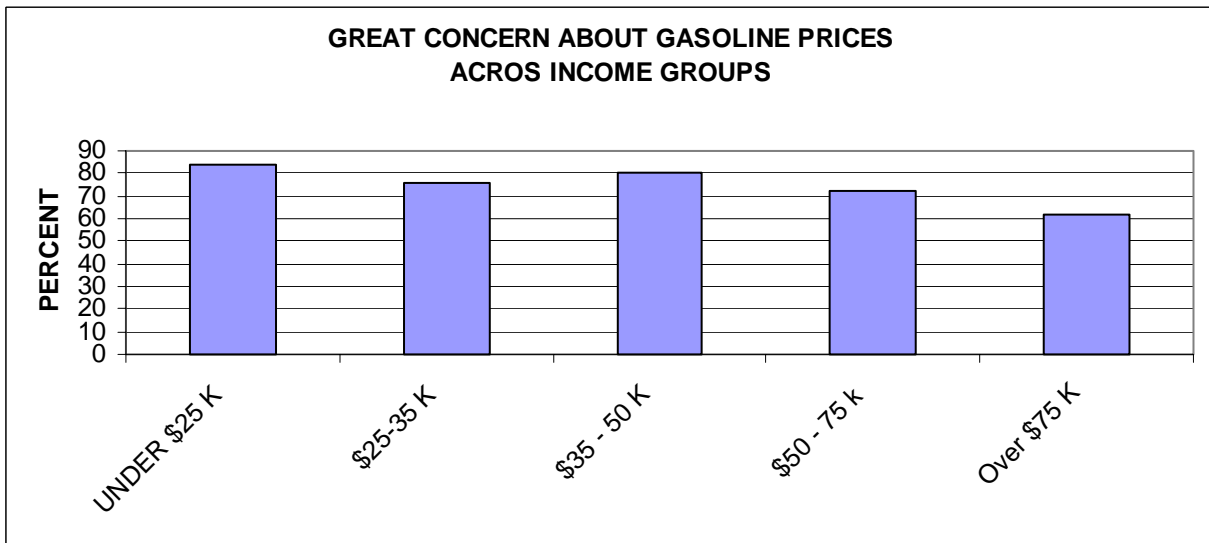


Source: Annual Expenditures and income, 1999-2003, from Bureaus of Labor Statistics, *Consumer Expenditure Survey*, 1999-2003.

Based on these observations, we conclude that a uniform projection of increases in household expenditures based on gasoline prices for each income group is reasonable.

CONSUMER CONCERNS ABOUT RISING GASOLINE PRICES

The large size and substantial increases in consumer expenditures for gasoline were certain to capture the attention of consumers. Not only has the expression of concern about gasoline prices risen as prices have increased, but the groups most impacted express the greatest concern. Lower income respondents to our national survey are much more likely to express great concern than upper income households (84% to 62%). Rural respondents are more likely see gasoline prices as a great concern than urban households (82% to 71%).



Source: National public opinion survey conducted for the Consumer Federation of America, August 25, 2005, by Opinion Research Corporation.