What does transportation spending compete with in the household budget? An analysis of household spending from 1969 to 2004

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Abstract:

When the cost of fuel goes up, what goes down? When households make spending decisions, they make tradeoffs between competing needs for food, shelter, clothing, and other needs such as transportation, which in Canada mostly means private automobiles. Since 1969 Statistics Canada has been tracking household spending through the Family Expenditure Survey (FAMEX) and the Survey of Household Spending (SHS). This paper will use data from these surveys to compare transportation spending over time, across income categories, and geographically by province from 1969 to 2004. It will examine how private households in Canada have changed their spending on transportation when fuel, insurance, interest, and other costs have risen and fallen. The survey data will show that households in Canada spend a remarkably consistent portion of their budgets on transportation as a whole, but they compensate for changes in the cost of one part of their transportation budget by changing their spending for other components.

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Executive summary

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The survey data will show that households in Canada spend a remarkably consistent portion of their budgets on transportation as a whole, but they compensate for changes in the cost of one part of their transportation budget by changing their spending for other components. In particular, increases in operating costs are offset by decreases in spending on purchasing vehicles. Conversely, lower fuel and operating costs are not saves or spent in other areas but translate into more and larger vehicle purchases.

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When the cost of fuel goes up, what goes down? When households make spending decisions, they make tradeoffs between competing needs for food, shelter, clothing, and other needs such as transportation. In Canada, and in this survey data, transportation spending consists largely of spending on private automobiles. However, total transportation spending also includes car rentals, taxis, and public transportation of various sorts, including airlines.

Since 1969 Statistics Canada has been tracking household spending through the Family Expenditure Survey (FAMEX), (1969 to 1996) and the Survey of Household Spending (SHS), (annual since 1997). The data is gathered by a personal interview, where respondants with the aid of whatever records they have to consult, recall their annual expenditures for a detailed list of goods and services, balanced against their income and changes in assets for the year. This paper will use data from these surveys to compare transportation spending over time, across income categories, and geographically by province from 1969 to 2004. It will examine how private households in Canada have changed their spending on transportation when fuel, insurance, interest, and other costs have risen and fallen.

Background

The socialist economist Frederic Engels first suggested that the well-being of a population could be analyzed in terms of the proportion of their household budget devoted to necessities. As incomes rose, the household would unable to continue consuming more and more of any given good in proportion to increasing incomes, and would spend a steadily decreasing proportion of their incomes on these goods. The use of Engels curves is well established as a means of analyzing relative well-being between low income and higher income households, as well as the changing well-being of households over time.

However, Engels did not reckon with the ingenuity of the modern consumer economy. While his theory holds for certain household

expenditures such as food, Statistics Canada's Family Expenditure Survey (FAMEX) and its successor, the Survey of Household Spending (SHS) survey data show that households in Canada spend a remarkably consistent portion of their budgets on transportation. Figure 1 shows average expenditure per household on all goods and services by income quintile, and shows that food is a steadily decreasing share of total spending as incomes rise.

Figure 1. Average total expenditure and food as a share of total expenditure, by income quintile, Canada, 2004 SHS, Statistics Canada

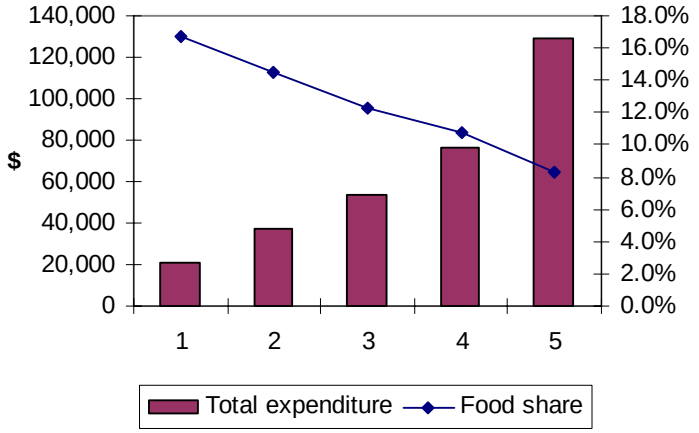
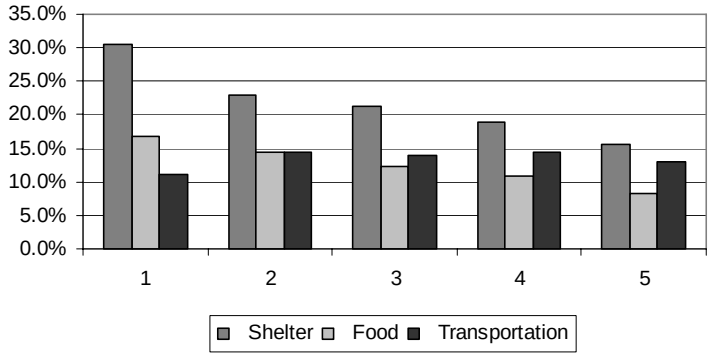


Figure 2. Share of total spending for food, shelter, and transportation, by income quintile, Canada, 2004 SHS, Statistics Canada



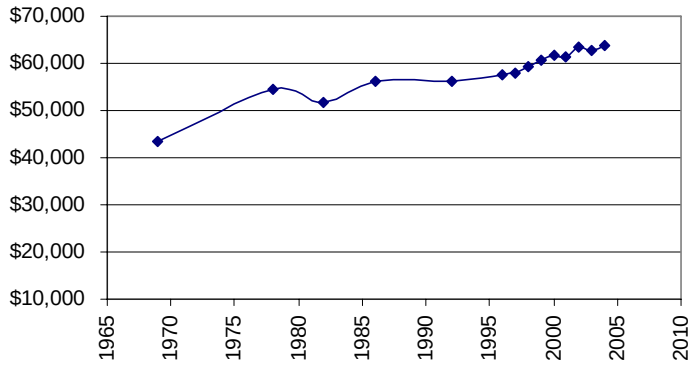
However, Figure 2 shows the 2004 differences between income quintiles for the household spending on food, shelter, and transportation.

Figure 2 shows that the proportion of household budgets devoted to shelter was over 30% of total spending in the lowest income quintile, decreasing to about 16% of spending in the highest income quintile, and the proportion spent on food dropped form 17% in the lowest income group to only 8% in the highest income group. Meanwhile, the portion devoted to transportation stayed the same across income groups, actually increasing slightly from 11% in the lowest income quintile to around 14% in the second, third and fourth quintile, and was about 13% in the highest income households.

What is more remarkable is that this pattern exists not only across income groups at the present time, but has persisted since the first comprehensive Canadian family budget survey (FAMEX) in 1969.

Over this period real incomes have increased after correcting for inflation, which means that income has been freed up for households to spend in new ways. This is reflected in the average total spending, which has increased in 2004 dollars from about $43 thousand in 1969 to almost $64 thousand in 2004.

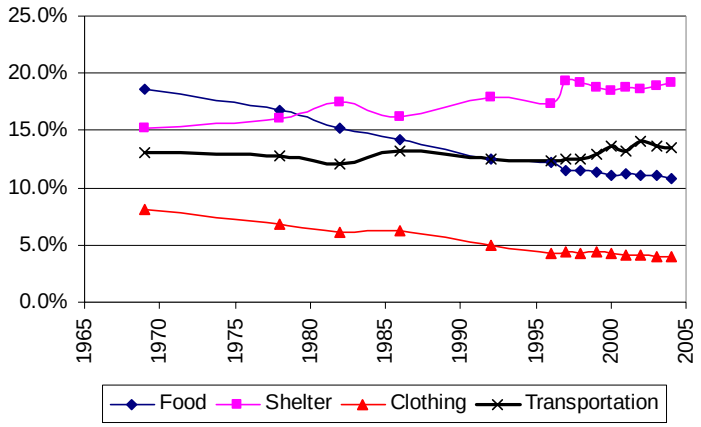
Figure 3. Average total expenditure per household, 2004 constant dollars, FAMEX and SHS , Canada, 1969-2004 ,Statistics Canada



An increase in real income over time should be reflected in a decreased proportion of spending devoted to necessities, just as is seen in cross sectional data within a given year. Figure 4 shows the

proportions of household budgets devoted to food, shelter, clothing and transportation from 1969 to 2004.

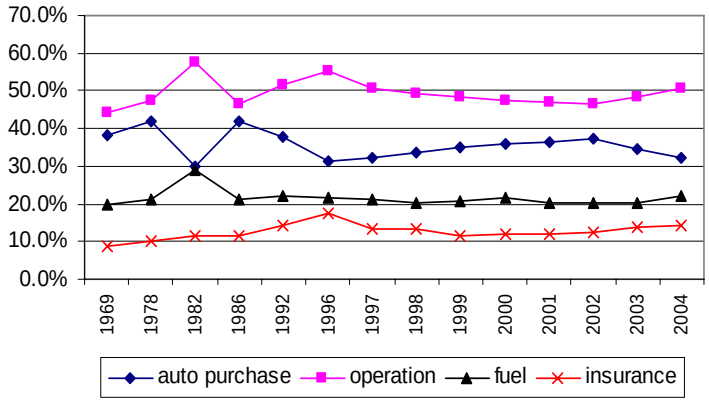
Figure 4. Household budget shares devoted to food, shelter, clothing, and transportation, FAMEX and SHS, Canada, 1969-2004, Statistics Canada



In 1969, the average household spent nearly 19% of its budget on food, but in 2004 this was only 11%. Similarly, clothing spending dropped from 8% to 4%. Interestingly, shelter absorbed the lion's share of increased increase in income, growing from 15% of spending in 1969 to nearly 20% in 2004. Over all of this time, transportation spending rarely varied, accounting for 13.1% of the average budget in 1969 and 13.6% in 2004. So average household spending on transportation is almost exactly proportional to household incomes.

So, to return to the opening question, when the price of gas goes up, what goes down? Given a finite budget, households must make tradeoffs. Given the foregoing data, it is apparent that households do not trade off by buying less food or smaller houses. What changes must be the distribution of the transportation budget within its components. Figure 5 shows the share of transportation budget for the largest components, automobile purchase and operation, with fuel and insurance shares, since 1969.

Figure 5. Share of the average household transportation budget devoted to vehicle purchase and operating costs, fuel, and insurance, FAMEX and SHS, Canada, 1969-2004, Statistics Canada



What this shows is that there is almost a direct tradeoff between automobile operating costs and the amount spent on automobile purchase. The operating costs are sometimes driven by fuel, as in 1982 when fuel prices were at all-time highs in real terms, sometimes by insurance as in 1996, sometimes by both as in 2003 and 2004, but always the increased operating costs are absorbed by delays in purchasing automobiles. Conversely, decreased fuel and other operating expenditures are not saved to be spent on other goods and services but are converted directly into the purchase of newer, larger and more powerful vehicles.

For example, the Natural Resources Canada publication “Energy Efficiency Trends in Canada, 1990-2003” (pp 36-39) says that as fuel prices decreased in real terms over the course of the 1990s, average horsepower has increased 32%, from 118hp in 1990 to 156hp in 2003. “If horsepower in car engines had stayed at 1990 levels, today’s models would be 33% more efficient”. Increased popularity of larger sized vehicles, such as SUVs, almost exactly offset efficiency gains in engine design. (NRC 2005).

However, in 2003 and 2004 both insurance rates and fuel prices began to rise to historic highs, and both years have seen consecutive decreases in the number and value of automobile sold. (Statistics Canada, Retail Trade QRCS). So it would seem that the real competition for the consumer transportation dollar is not just between the auto manufacturers, but rather between the automobile manufacturers and those who provide the services to this sector.

References

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Statistics Canada, Quarterly Retail Commodity Survey, 2000 to 2004