LIGHT-DUTY TRUCKS

FACTORS CONTRIBUTING TO THE TRANSFORMATION OF THE LIGHT-DUTY VEHICLE FLEET

EXECUTIVE SUMMARY

SERIES

THE RISE OF LIGHT-DUTY TRUCKS IN CANADA:
REVERSING THE TREND

POLYTECHNIQUE MONTRÉAL
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This research project examines the causes and consequences of the growing popularity of light-duty trucks in Canada. While part one presented vehicle definitions and classification methods, as well as changes in the supply of vehicles sold in Canada, this second part focuses on consumption choices – specifically the changes in vehicle demand – and on the factors behind the transformation of the vehicle fleet over the past four years.

Analytical Framework

Faced with an increase in the quantity demanded of a good, economic theory suggests three potential explanatory factors: (1) relaxation of budgetary constraints; (2) a change in relative prices (a decline in the price of light-duty trucks, an increase in the price of cars, or both); and (3) an increased willingness to pay for light-duty trucks (change in preferences).

These potential causes were examined across four spheres: (1) economic fundamentals (interest rates, fuel prices, economic growth, exchange rate); (2) industry practice (changes in design methods and financing practices); (3) public policy (vehicle regulations, trade deals and financial support); and (4) psychological and sociological factors capable of influencing consumer preferences.

Our research was also guided by an analysis of turning points, i.e., the drastic changes in vehicle supply or demand over the years. The periods that seem most pivotal in this regard were: (1) the 1970s, coinciding with the first oil shocks and the government measures taken to counter their effects; (2) the mid-1980s, coinciding with the marketing of the minivan and, more generally, the improved energy efficiency of light-duty trucks; (3) the late 1990s, coinciding with the marketing of crossover utility vehicles and the rise in oil prices; and (4) the 2010s, coinciding with the financial crisis of 2008 and the ramping down of interest rates.

Results of Analysis of Vehicles on Quebec Roads

As part of this research project, a detailed data extraction was obtained from the *Société de l'assurance automobile du Québec* (SAAQ). We developed a method to merge this database with those of the US Environmental Protection Agency (EPA) and of Transport Canada's Canadian Vehicle Specifications (CVS). This merged database enabled us to more accurately characterize consumption choices as regards Quebec vehicles. The results indicate:

- A 27.1% overall increase in the average mass of vehicles in circulation between 1990 and 2019.
- A slight decline in average engine capacity (-1.8%) between 2004 and 2019.
- An increase in average length (0.2%), width (2.9%), wheelbase (2.5%) and height (6.9%) of vehicles in circulation.
- A decline in the demand for sedans, sports cars (coupes and convertibles) and minivans in favour of SUVs.
- An increase in driving and an increase in SUV ownership rates among both men and women in all age groups and in all regions.

Results of the Analysis of Explanatory Factors

Judging by the supply and demand trends, the transformation of Canada's vehicle fleet occurred over several decades. The supply analysis indicated a number of factors behind this, including the following:

- Light-duty trucks have existed since the earliest days of automobile design. Their cargo and towing capacities were initially put to use by businesses and public institutions. Relatively more expensive, bulky and difficult to handle than cars, they remained outside the reach of the average household until the mid-1980s.
- Two main factors seem to explain the easier financial access to light-duty trucks:
  - The advent of new technologies and new design methods helping reduce production costs and generating a rebound effect in fuel consumption. These changes themselves seem to have been brought on by the following factors:
    - Heated competition among automakers.
    - Regulations on fuel economy and greenhouse gasses.
    - Stricter regulations on cars than on light-duty trucks, which may have had an impact on relative pricing.
    - Unfavourable cyclical and structural economic conditions (rise in fuel prices and financial crises) forced automakers (especially North American ones specializing in light-duty trucks) to restructure their production to make their products more competitive.
    - Trade deals, aid programs, subsidies and government loans helped automakers recover and reinvent themselves when economic conditions or international competition harmed them.
  - Changes in financing practices, including the introduction of weekly payments and longer-term loans.

The demand analysis seems to indicate that:

- Light-duty trucks attract a more diverse pool of consumers today than in the past. This could be attributable to:
  - An increase in household disposable income and expanded access to credit.
  - Diversification of the physical and mechanical features of light-duty trucks, which today seem to respond to a wider variety of needs and budgets.
  - The automobile industry's advertising campaigns.
  - Auto dealerships' sales strategies, knowing that these vehicles boast a larger profit margin for automakers, dealerships and financial institutions.
  - A change in how society perceives the impacts of light-duty trucks due to their improved energy efficiency (psychosocial rebound effect).
  - Changes in lifestyle or, more generally, preferences, attributable to land use planning.
  - Persistence of consumption habits handed down from one generation to the next.
- The analysis of vehicle demand at various levels (international, Canadian, provincial and regional) also offered clues as to the nature of the factors that could be behind the popularity of light-duty trucks.
  - Since an increase in light-duty trucks' market share is observed at every level (international, national and regional), macroeconomic factors such as a decline in interest rates and the globalization of trade are likely at work.
  - The fact that the transformation has been stronger and faster in North America seems to indicate the presence of regional practices (public policies, the practices of North American automakers, cultural differences).
  - Variations at the provincial level seem to indicate the presence of certain differences of a socioeconomic (e.g. household income), industrial (e.g., economic structure), regional and public policy (e.g., gas prices in Quebec, insurance prices in British Columbia) nature.

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