



## National Overview

### Canadian Retail Pump Prices Hover at \$1.25 cents per Litre

After a steady rise over the last six weeks, the average Canadian retail gasoline price remained virtually unchanged at \$1.25 per litre the week of May 6, 2008, compared to the previous week. However, prices are nearly 17 cents per litre higher compared to the same time last year.

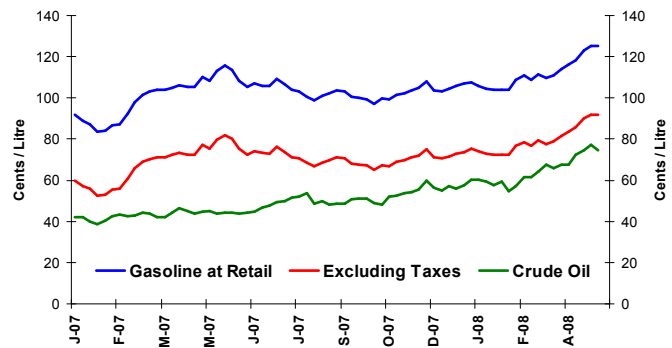
This week's gasoline prices reflect the decline in wholesale gasoline prices which in turn were influenced by the slight downturn in world crude oil prices last week. Gasoline prices remain consistently above last year's level mainly driven by the higher crude oil prices which registered an increase of \$129 per m<sup>3</sup> (\$CA20 per barrel) between January and April 2008, based on the average monthly price of the three benchmark crude oil types in Figure 6.

Diesel fuel prices declined by almost 1 cent per litre to \$1.32 per litre the week of May 6<sup>th</sup>. However, this represents an increase of 33 cents per litre compared to the same period last year.

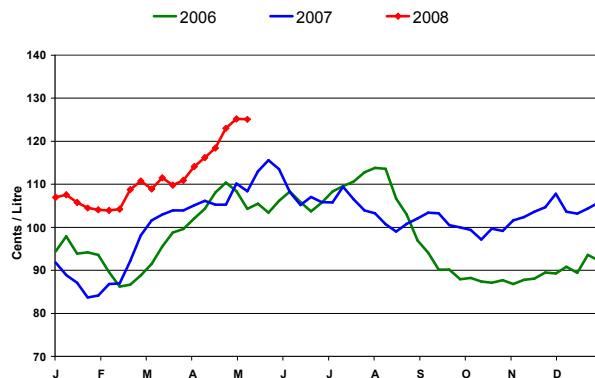
### Recent Developments

- Rise in Gross Domestic Product (GDP):** The GDP growth in five provinces and all three territories, mostly on the strength of natural resources, surpassed the national average of 2.7% in 2007, with Newfoundland and Labrador well ahead of all the other provinces. GDP in Newfoundland and Labrador surged 9.1% in 2007, nearly three times the rate of growth in 2006 due to increased oil and mineral extraction combined with strong world commodity prices. (Statistics Canada, The Daily, <http://www.statcan.ca/Daily/English/080428/do80428a.htm>)
- Study of Plug-in Hybrid Electric Vehicles:** Quebec City, Université Laval, Desjardins and Enersys are jointly working on a study on integrating plug-in hybrid electric vehicles (PHEVs) in an urban environment. If the study is successful, then the next step would be integrating up to 50 PHEVs into the streets of Quebec City. (Octane Week, April 28, 2008).
- Canada's Greenhouse Gas (GHG) Emissions on the Rise:** A Statistics Canada report titled "Human Activity and the Environment," indicate that Canada's GHG emissions rose 25% between 1990 and 2005. Human activities released the equivalent of 747 megatonnes of carbon dioxide into Canada's atmosphere in 2005, up from 596 megatonnes in 1990. Energy production and consumption are by far the largest source of GHG emissions in Canada, accounting for more than 80% of climate-changing emissions in 2005. The report is available at: <http://www.statcan.ca/english/freepub/16-201-XIE/2007000/part1.htm>

**Figure 1: Crude Oil and Regular Gasoline Price Comparison (National Average)**



**Figure 2: Weekly Regular Gasoline Prices**



**Changes in Fuel Prices**

| ¢/L         | Week of:   | Change from:  |           |
|-------------|------------|---------------|-----------|
|             | 2008-05-06 | Previous Week | Last Year |
| Gasoline    | 125.1      | -0.1          | +16.7     |
| Diesel      | 131.5      | -0.6          | +33.1     |
| Furnace Oil | 122.9      | +0.5          | +38.3     |

Source: NRCan

## In this Issue

|                                       | page |
|---------------------------------------|------|
| <i>National Overview</i>              | 1    |
| <i>Recent Developments</i>            | 1    |
| <i>Retail Gasoline Overview</i>       | 2    |
| <i>Wholesale Prices</i>               | 3    |
| <i>Refining and Marketing Margins</i> | 4    |
| <i>Crude Oil Overview</i>             | 5    |
| <i>Supplement</i>                     | 6    |

**Supplement:** How much does it cost to operate a vehicle? This week's Supplement offers a historical comparison of the cost of driving a car.





## Retail Gasoline Overview

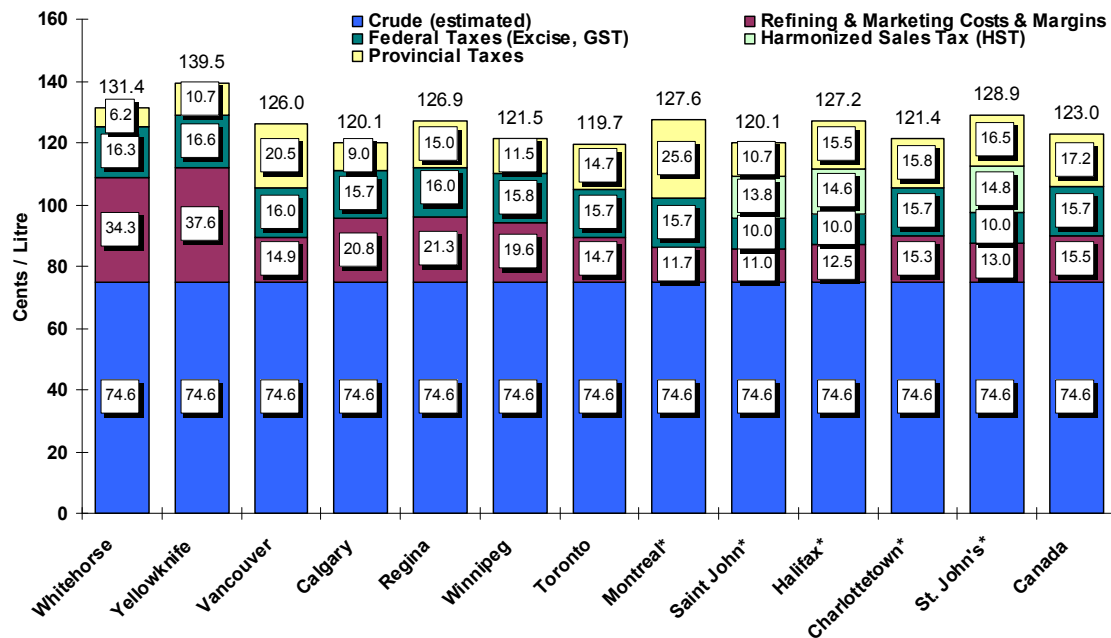
The average Canadian pump price in selected cities for the **four-week average** ending May 6<sup>th</sup> was \$1.23 per litre, an increase of 5 cents per litre from the last report on April 25, 2008. This represents a 16 cents per litre increase compared to the same period in 2007.

The **four-week average** crude oil price increased by 4 cents per litre to 75 cents per litre compared to two weeks ago. Crude oil remains the highest cost component of the total pump price, at 61%.

Retail gasoline prices in most Western centres (Vancouver to Winnipeg) increased about 4 cents per litre when compared to the previous report, ranging from \$1.20 to \$1.27 per litre. Price increases in Eastern cities (Toronto to St. John's) rose 6 cents per litre, and ranged from \$1.20 to \$1.29 cents per litre.

At the national level, refining and marketing costs and margins registered a slight increase of less than 1 cent per litre to 16 cents per litre. However, this represents a significant decline of 15 cents per litre compared to the same time last year.

**Figure 3: Regular Gasoline Pump Prices in Selected Cities  
4-Week Average (April 15 to May 6, 2008)**



Source: NRCan

\* Regulated Markets

### Factors that Could Drive Gasoline Prices Higher this Summer

Retail gasoline prices have increased significantly lately and Canadian consumers can expect to see a continued increase as we move into the traditional summer driving season. Although gasoline prices have been pushed up by higher crude oil prices, they do not yet fully reflect the recent crude oil price increase. Higher U.S. gasoline inventories in the last few months, combined with a softening of demand in the U.S., resulted in diminishing refining margins which, in turn, mitigated the increase in gasoline prices.

However, U.S. gasoline inventories have started to decline, as refiners finalize their refinery turnarounds in preparation for the high summer demand. Turnarounds normally take place as refiners deplete inventories of winter fuel blends and before they begin to produce fuels to meet summer specifications. As inventories decline and the summer demand for gasoline increases, refinery margins will likely increase as seen in the historical graph in Figure 5. A positive factor is that refinery maintenance in early 2008 is more within the normal seasonal pattern, contrary to 2007 when there were several unplanned refinery outages. As inventories start declining this usually pushes wholesale gasoline prices up, even if crude oil prices stabilize or decline. Higher wholesale prices, in turn, lead to higher retail gasoline prices, usually in fairly short order, as service-station operators can not absorb higher wholesale prices and have to pass on these higher prices to the consumer.





## Wholesale Gasoline Prices

Wholesale gasoline prices decreased in most selected centres for the **week of May 1<sup>st</sup>**, compared to the previous week. Overall, price changes ranged from a decline of 4 cents per litre to an increase of 2 cents per litre.

Wholesale gasoline prices in Eastern markets in both Canada and the United States have registered decreases ranging from 4 cents per litre to less than 1 cent per litre, compared to the previous week, ending the period in the 77 to 83 cents per litre range.

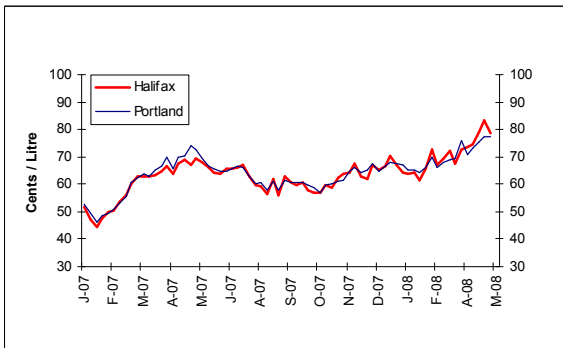
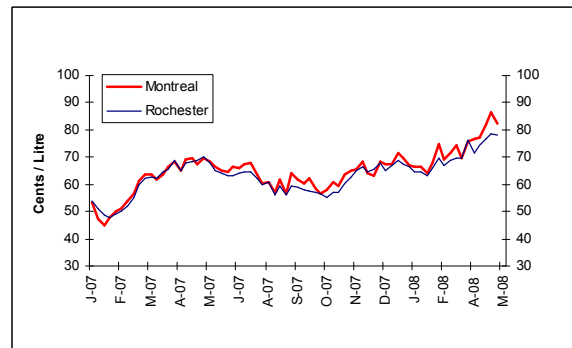
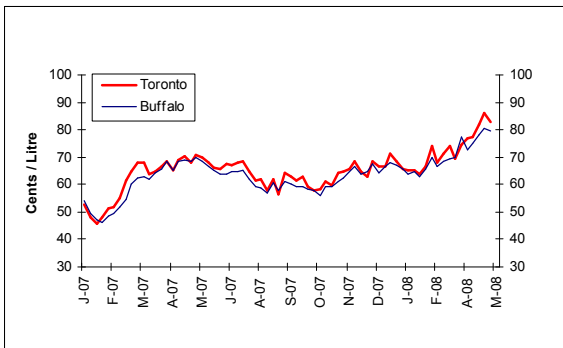
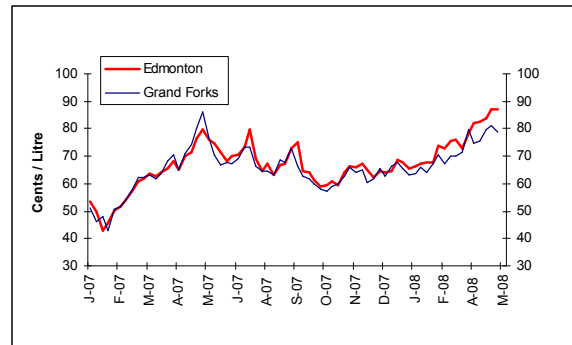
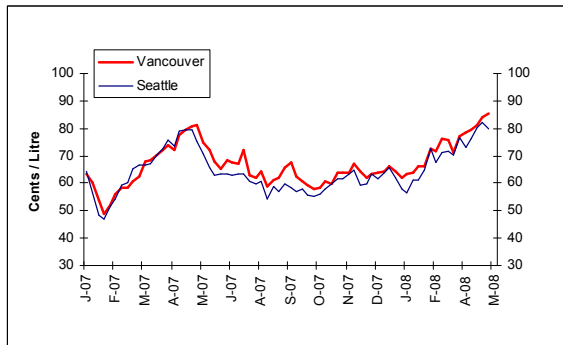
In comparison, Western wholesale gasoline price changes ranged from a drop of 2 cents per litre to an increase of 2 cents per litre ending in the range of 79 to 87 cents per litre. Prices in Western Canadian centres

were relatively higher than their American counterpart due to continuing tight markets in Western Canada.

With the crude oil prices fluctuating significantly in the last two weeks, comparison between wholesale and retail prices are more difficult. The wholesale prices shown here are as of Thursday May 1<sup>st</sup>, when oil prices had dropped to \$US112 per barrel. By Tuesday, May 6<sup>th</sup>, when pump prices were surveyed, crude oil had risen again to nearly \$US120 per barrel and wholesale prices had responded similarly.

Overall, prices in most selected centres are above last year's level with increases ranging from less than 1 cent per litre in Seattle to 16 cents per litre in Edmonton, compared to the same period last year.

**Figure 4: Wholesale Gasoline Prices**  
Rack Terminals Prices for Selected Canadian and American Cities ending May 1, 2008  
(Can ¢/L)



**U.S. Debate on Strategic Petroleum Reserves (SPR) Purchases**

A U.S. House Committee recently held a hearing to explore whether the U.S. should continue its oil purchase for the SPR at a time of high oil prices. Opponents argue that purchasing sends the wrong signals to markets and call to release crude from the reserve in an attempt to mitigate the rise in gasoline prices. Supporters argue that the SPR gives the U.S. added security in the event of a supply disruption. For more information on the SPR, please link to: <http://www.fossil.energy.gov/programs/reserves/>

Sources: NRCan, Bloomberg Oil Buyers Guide





## Refining and Marketing Margins

**Four-week rolling averages** are used to illustrate the refining and marketing margins for gasoline in Figure 5, for the period ending May 6, 2008.

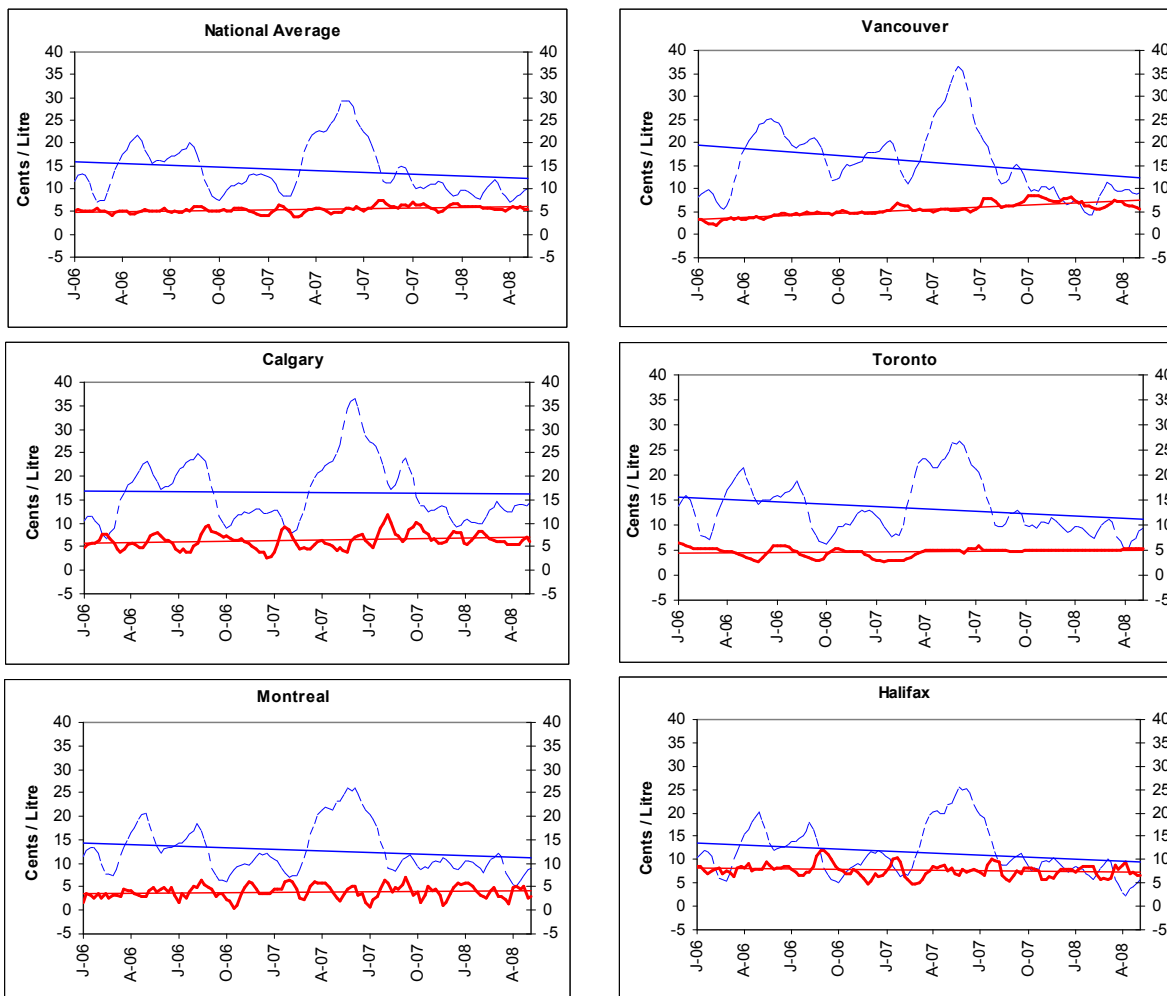
Refining margins for gasoline have started to show a moderate increase. The upward movement is indicative of a tightening in supplies as refiners are turning away from producing distillates, such as heating oil, to producing more gasoline as they increase their inventories to meet the demand of the summer driving season.

Higher than normal U.S. gasoline inventories in the last few months helped to moderate the increase in gasoline prices. However, U.S. inventories are now declining quickly as a result of normal refinery maintenance in anticipation of the high summer demand for gasoline.

Ultimately, this creates a temporary tightening of supply and an upward pressure on refining margins. In turn, the upward pressure is reflected in the wholesale gasoline market and in the retail pump price.

**Figure 5: Refining and Marketing Margins**  
Four-Week Rolling Average Ending May 6, 2008

----- Refining Margin      — Marketing Margin



Source: NRCan





## Crude Oil Overview

### Crude Approaches \$US120 per Barrel

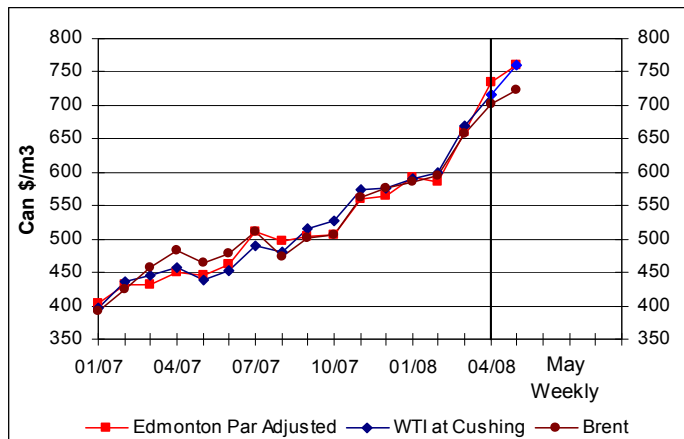
For the week ending May 2<sup>nd</sup>, 2008, crude oil prices averaged between \$720 and \$747/m<sup>3</sup> (\$US113 to \$US119 per barrel). Although crude prices were volatile, compared to the previous week, prices decreased between \$15 and \$22/m<sup>3</sup> (\$US2 to \$US3 per barrel).

With the price of oil approaching \$US120 per barrel, consumers must ask themselves if there is an alternative. Biofuels production and consumption has increased substantially all over the world. Will this trend continue? And if so, will it have any effect on the price of crude oil? In addition to biofuels, most consuming countries have realized that reduced demand is the key to reducing their energy dependence and have developed programs to encourage conservation.

While reduced consumption and alternative energy may affect demand, with prices at current levels, there will likely be increased crude oil production in regions that have not typically had favourable economics, thus adding to supply and possibly leading to decreased prices in the long-term.

Even though long-term relief may be a possibility, a weak US dollar, increasing world demand, weather, geopolitical events and uncertain financial markets, continue to add upward pressure to the international price for crude oil and ultimately affecting the price that Canadians pay for petroleum products.

**Figure 6: Crude Oil Price Comparisons**



### Crude Oil Composition and Refinery Economics

Different types of crude oil yield a different mix of products, depending on the crude oil's natural qualities. Crude oil types are typically differentiated by their density, measured as American Petroleum Institute (API) gravity, and their sulphur content. Crude oil with a low API gravity is considered a heavy crude oil and typically has higher sulphur content and a larger yield of lower-valued products. Therefore, the lower the API of a crude oil, the lower the value it has to a refiner as it will either require more processing or yield a higher percentage of lower-valued products such as heavy fuel oil, which can often sell for less than crude oil.

Using more expensive crude oil (lighter, sweeter) requires less refinery upgrading. However, supplies of light, sweet crude oil are decreasing and the differential between heavier and more sour crudes is increasing. Using cheaper heavier crude oil means more investment in upgrading processes. Costs and payback periods for refinery processing units must be weighed against anticipated crude oil costs and the projected differential between light and heavy crude oil prices.

Crude slates and refinery configurations must take into account the type of products that will ultimately be needed in the marketplace. The quality specifications of the final products are also increasingly important as environmental requirements become more stringent. For more information, consult NRCan's Overview of the Canadian Downstream Petroleum Industry: [http://www.fuefocus.nrcan.gc.ca/reports/2005-07/overview/index\\_e.cfm](http://www.fuefocus.nrcan.gc.ca/reports/2005-07/overview/index_e.cfm)

### Changes in Crude Oil Prices

| Crude Oil Types | Week ending:<br>2008-05-02 |              | Change from:             |              |                          |              |
|-----------------|----------------------------|--------------|--------------------------|--------------|--------------------------|--------------|
|                 |                            |              | Previous Week            |              | Last Year                |              |
|                 | \$Can/<br>m <sup>3</sup>   | \$US/<br>bbl | \$Can/<br>m <sup>3</sup> | \$US/<br>bbl | \$Can/<br>m <sup>3</sup> | \$US/<br>bbl |
| Edmonton Par    | 747.18                     | 117.02       | -21.40                   | -3.31        | +292.88                  | +51.81       |
| WTI             | 736.21                     | 115.30       | -21.57                   | -3.34        | +290.01                  | +51.25       |
| Brent           | 720.58                     | 112.85       | -15.26                   | -2.35        | +236.71                  | +47.27       |

Source: NRCan





## Cost of Operating a Vehicle

Recent increases in gasoline prices do not appear to be having much impact on gasoline demand. One reason is that gasoline demand is relatively unresponsive (inelastic), with much of the consumption considered non-discretionary. Consumers in rural areas, or in communities without public transit, often have little choice in their transportation decisions.

Another reason, however, is that fuel represents a decreasing portion of the total cost of driving a vehicle. According to surveys conducted for the Canadian Automobile Association, the total cost of driving a car has more than doubled in the last 22 years from 20.1 cents per kilometre driven<sup>1</sup> in 1985 to 41.4 cents per kilometre in 2007.

Even with the average price of gasoline going from 54.3 cents per litre in 1985 to 86.9 cents per litre in 2005, the fuel component of the total operating cost dropped from 28% to 19%. Only in recent years when fuel prices moved above \$1.00 per litre did the fuel component increase to 24%; still below the 1985 level.

Variable costs, which include fuel maintenance and tires, still account for about one third of the total operating cost. However, while the fuel portion made up 81% of the variable costs in 1985, fuel was only 72% in 2007 as maintenance and tire costs increased more quickly.

### Cost of Operating a Vehicle (Compact car driven 24,000 km per year)

|  | <u>1985</u> | <u>1995</u> | <u>2005</u>  | <u>2007</u>  |
|--|-------------|-------------|--------------|--------------|
| Average Price of Gasoline (cents per litre)        | 54.3        | 52.4        | 86.9         | 110.1        |
| <b><u>Variable Costs</u></b> (cents per km driven) |             |             |              |              |
| Fuel   | 5.66        | 5.59        | 8.58         | 9.95         |
| Maintenance  | 0.76        | 1.95        | 2.48         | 2.36         |
| Tires  | 0.57        | 0.86        | 1.79         | 1.49         |
| <b>Total</b>                                       | <b>6.99</b> | <b>8.40</b> | <b>12.85</b> | <b>13.80</b> |
| <b><u>Fixed Costs</u></b> (dollars per year)       |             |             |              |              |
| Insurance  | 716         | 1102        | 1777         | 1741         |
| Licence & Registration                             | 52          | 106         | 117          | 118          |
| Depreciation                                       | 1733        | 3287        | 5086         | 3817         |
| Financing  | 643         | 831         | 809          | 942          |
| <b>Total</b>                                       | <b>3144</b> | <b>5326</b> | <b>7789</b>  | <b>6618</b>  |
| <b>Annual Total</b> (cents per km driven)          | <b>20.1</b> | <b>30.6</b> | <b>45.3</b>  | <b>41.4</b>  |
| <b>Fuel as a Percentage of Total</b>               | <b>28%</b>  | <b>18%</b>  | <b>19%</b>   | <b>24%</b>   |

Source: NRCan, and the Canadian Automobile Association, <http://www.caa.ca/publicAffairs/public-affairs-reports-e.cfm>

<sup>1</sup> Based on a compact car driven 24,000 km per year

