

The Costs of Operating a Vehicle in Canada

Hopefully most in our industry understand that Canadian vehicle buying patterns are less aggressive than those of Americans. This trend is obvious in our market segmentation, where less-expensive compacts routinely outsell the mid-priced intermediates that lead in the U.S. It is in the number of vehicles per driving-age population, however, that the Canadian approach to vehicle ownership is unmistakable. Whereas only 69.3 percent of driving-age Canadians own a vehicle, American ownership sits slightly above 100 percent of their driving-age population! Clearly there's more transit ridership and ride pooling north of the border, but it's unrealistic to explain this difference through the always-reliable standby, "cultural differences." This *Observation* will offer a clearer view of the costs associated with operating a vehicle, which I believe more adequately explains a lot of the differences.

Over the lifetime of a typical vehicle (approximately 15 years in Canada), a number of 'cost of ownership' variables augment the initial capital cost of a vehicle. The interaction of the capital cost with these variables helps determine the vehicle's total cost of ownership (TCO). Every TCO variable has a cost curve tied to it, each one representing an average range (though the edges of these ranges should not be taken as definite endpoints for the cost curves). Obviously, factors associated with consumers' personal habits, as well as the extreme length of the time period, hinder my ability to cite precise figures. Keep in mind that the average transaction price for a new vehicle in Canada is in the mid-\$20,000 range for a passenger car and the mid-\$30,000 range for a

light truck. Actual prices (excluding exotic vehicles) range from \$15,000 to \$150,000. The following data is meant to represent the average vehicle in Canada. In order of importance, the cost of ownership variables rank as follows over the life of a vehicle:

1. Depreciation -- \$25,000 for a car, \$35,000 for a light truck
2. Regulation (fees, licensing, parking, inspections, policing, etc.) -- \$20,000 to \$25,000
3. Insurance -- \$18,000 to \$22,000 (higher for new drivers)
4. Fuel -- \$15,000 to \$18,000 (last 15 years, NOT the next 15 years)
5. Repair and Maintenance -- \$10,000 to \$15,000
6. Finance -- \$5,000 to \$8,000 (over 4 owners)

Even at the most conservative end of the spectrum, the average vehicle costs over \$100,000 to own and operate over its lifespan. The expected life of a vehicle in Canada is 250 to 300,000 kilometres, so the cost per kilometre would be 40 to 50 cents. The astonishing result of this analysis is that the cost of ownership over the life of a vehicle is more than twice the capital cost of the vehicle. This explains why many dealers in Canada say that they make most of their money on the history of a vehicle (used trade, finance, maintenance & repair, warranty, etc.) rather than on its initial sale. Not only is there more potential revenue for the dealer over the fifteen-year life of a vehicle, but profit margins in these 'operating cost' areas are significantly higher than with the sale itself.

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I have provided a scale of importance for the TCO variables, ranking each factor on a scale of 1 (low) to 5 (high). Additionally, each area has been examined from five different perspectives:

- Availability of information;
- Consumer awareness;
- Importance to the new vehicle purchaser;
- Importance to the used vehicle purchaser;
- The variable's actual importance in the vehicle purchase equation.

Most consumers focus on the capital cost when researching a vehicle purchase, especially in the current incentive-heavy sales climate. This is understandable in that it is certainly the most visible component of the TCO, as well as the only one that can be readily calculated at the beginning of one's financial relationship with a vehicle. In addition, there is no shortage of information available to evaluate and compare capital costs. Taken in aggregate, however, the other variables represent a much greater proportion of the TCO. The logical consumer should examine the wider TCO when contemplating a vehicle purchase,

although inconsistent and difficult-to-source information generally discourages such thorough research.

Typically - and as a principle of Murphy's Law - the areas of greatest importance are those for which the least information is easily accessible. The high levels of governmental regulation that exist in Canada are well-known but seldom documented in a serious fashion, while insurance costs remain much-talked-about but essentially opaque due to the level of individual variation that exists among different policies and insurance groups. Indeed, the insurance industry does not make cross shopping easy. Organizations like insurancehotline.com do an excellent job helping consumers and more consumers should use their services.

The cost of fuel and its effect on vehicle purchasing decisions is highly topical and deserving of its own *Observation*, so I will say only this: all data available to us - present and historical sales numbers, pre-and-post purchase surveys, foreign market experience - indicate that the cost of fuel would have to rise far

higher than its current level in order to affect purchasing decisions. At present it is a factor of low importance, undeserving of the media attention it garners. In the final analysis, substantially higher gas prices may add \$2,000 - \$5,000 to a vehicle's TCO, pushing the above-mentioned conservative estimate up slightly - perhaps two percent. Two percent over fifteen years is not overly significant.

High gas prices are slowly changing buying patterns - but very slowly and for good reasons. About 45 percent of consumers already buy entry-level vehicles, so they have already "maxed out" their options for better fuel economy. Another 30 percent buy mid-sized vehicles because they need the extra size, so they can't easily transition downwards to a smaller model. The large/luxury market is price-inelastic, so these vehicle consumers don't change segments easily. Commercial-use buyers have fixed requirements.

Depreciation is naturally the elephant in the room. A vehicle loses about 20 percent of its value the moment it is driven from the dealer's lot, and about 10 percent of the remaining value per year

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Cost of Ownership Variables

	Consumer Perception of Importance in New Vehicle Purchase Decision	Consumer Perception of Importance in Used Vehicle Purchase Decision	Availability of Information For New Vehicle Purchase Decisions	Availability of Information For Used Vehicle Purchase Decisions	Consumer Awareness of Cost Variables	Actual Importance of Each Variable
1. Capital Cost	4 - 5	4 - 5	4 - 5	2 - 3	4 - 5	4 - 5
2. Depreciation	3 - 4	1 - 2	1 - 2	1 - 2	1 - 2	4 - 5
3. Regulation	1 - 2	1 - 2	1 - 2	1 - 2	1 - 2	3 - 4
4. Insurance	2 - 3	2 - 3	2 - 3	2 - 3	4 - 5	2 - 3
5. Fuel	3 - 4	2 - 3	3 - 4	1 - 2	4 - 5	2 - 3
6. Repair and Maintenance	1 - 2	3 - 4	1 - 2	1 - 2	1 - 2	1 - 2

Note: The number scale is rated with 5 being the highest and 1 being the lowest.

The above chart is not to be used for advertising or sales purposes

Source: DesRosiers Automotive Consultants Inc.

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over the life of the vehicle. Over an average 15-year lifespan, a vehicle is expected to lose nearly 100 percent of its value - despite the fact that its essential utility remains unchanged. There are, however, many differences by make and model through the first five years of ownership that are worthy of discussion and many factors pushing re-sale value up and down. For instance, one of the problems with the current incentive programs is their impact on used vehicle values - an impact that is not fully appreciated. Virtually overnight, heavy new vehicle discounts have pushed down used vehicle pricing. If you needed to use a trade-in to buy a new incentive-laden vehicle, you likely lost most of the added incentive with the lower value of your trade. Also, remember that the currently-incentivized vehicles are 2005 models at the end of the selling period, so within a month these end-of-year models will have two years of depreciation (30%+) rather than one year. If the consumer sells the vehicle within two to four years, the added depreciation will completely wipe out the value of the incentive. The highly publicized 'employee discount' could actually cost money rather than save money for the consumer if TCO is taken into account.

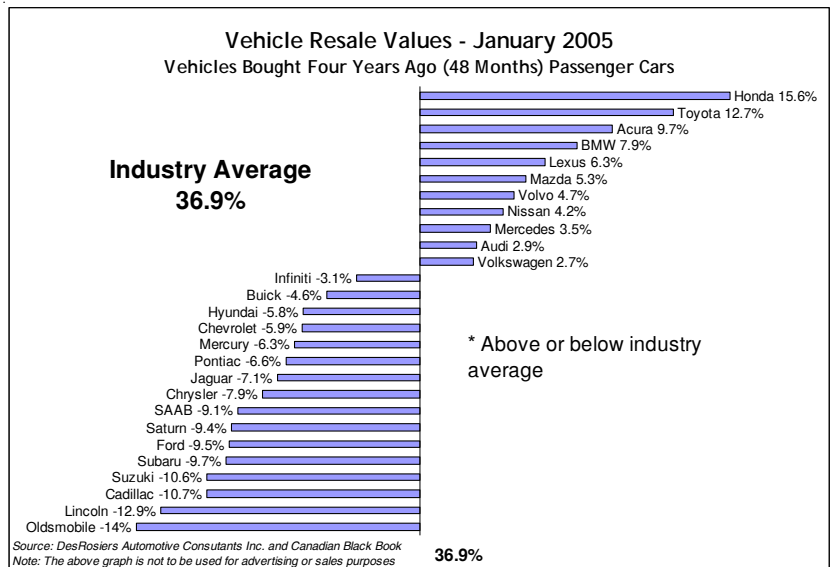
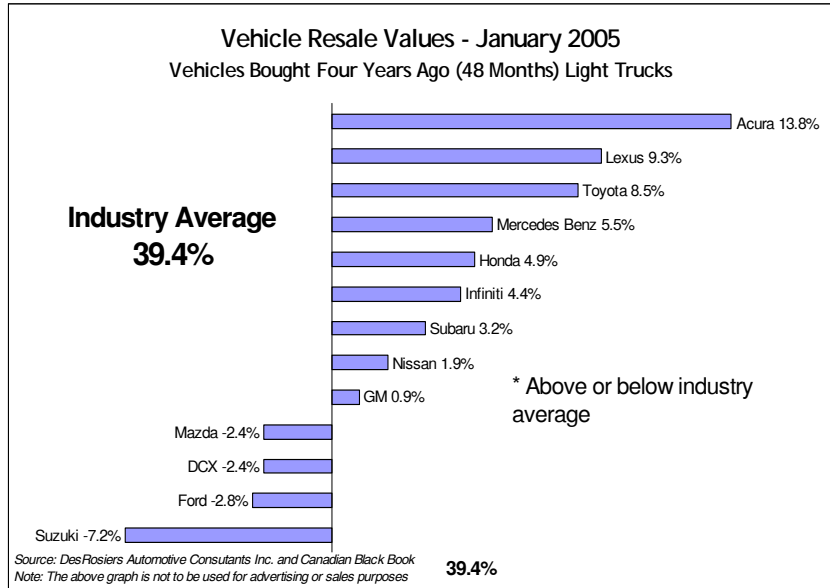
A residual value analysis is a useful assessment of a vehicle company's performance in the marketplace. It informs our understanding of the strength of a company's branding, its sales efforts, and - most importantly - its product. Using data from Canadian Black Book, we track used vehicle residuals

up to five years from the time of sale. Since the majority of new vehicle leases are written for the period of 48 months, we use that point for our major analytical work. The Black Book figures are actual wholesale prices achieved at auction, so market values are somewhat higher. Residual values are all relative, however, and our analysis remains relevant from all perspectives.

The average passenger car residual value has dropped in recent years, with 48-month

residuals for 2001 models sitting at an average of 36.9 percent in our 2005 analysis. This is down from 44.6 percent in the 2002 analysis (reflecting the retained-value of 1999 models), indicating the negative effect that years of record-setting incentives have had on the used vehicle fleet's market valuation.

Broken down by nameplate, some disturbing-but-expected trends become clear. Among passenger cars, GM, Ford, and DCX have no nameplates with above-average passenger car



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residual values (with the sole exception of Volvo, a captive import). All of the Detroit-based brands are clustered below the 36.9 percent mean, while every company averaging above that number (with the exception of Volvo) is either Japanese or German.

A similar story plays out on the light truck side. DCX and Ford sit below the 39.4 percent industry average, while GM tracks at 0.9 percent above average for 48-month light truck residuals. All other above-average brands are Japanese or European, with the top three spots held by Acura (+13.8%), Lexus (+9.3%), and Toyota (+8.5%).

There are exceptions to these numbers. An excellent example exists in Subaru, which scored 6.5 percent above average in our 2002 passenger car residual value analysis but plummeted to negative 9.7 percent in 2005, fifth from the bottom. While no single explanation can account for such a drop, the market success of Subaru's current-generation Impreza and Legacy appears to have lessened the appeal of the older product. The same appears true of Cadillac: current-generation CTS and STS models have improved a great deal relative to older Cateras and Seviles, so the latter cars' residuals have remained low. This is simple supply-and-demand; the used models are not seen as credible alternatives to the new ones. Contrast this with Honda, Toyota, or BMW - all with above-average residuals, all with used product that is just as desirable as the new.

LIGHT TRUCK - INDUSTRY ACTUAL WHOLESALE PRICES

MODEL YR	24 MTH	36 MTH	48 MTH	60 MTH
1991 MY	62.4%	57.1%	55.3%	50.4%
1992 MY	63.6%	62.2%	57.8%	50.4%
1993 MY	72.1%	64.6%	57.3%	48.4%
1994 MY	73.0%	65.7%	56.4%	42.6%
1995 MY	70.6%	62.4%	50.3%	39.6%
1996 MY	67.0%	56.2%	45.3%	36.2%
1997 MY	64.4%	53.2%	44.8%	39.4%
1998 MY	62.1%	54.1%	48.9%	40.0%
1999 MY	62.8%	57.5%	48.8%	33.8%
2000 MY	66.2%	56.7%	40.2%	33.2%
2001 MY	69.5%	49.5%	39.4%	N.A.
2002 MY	60.8%	48.1%	N.A.	N.A.
2003 MY	58.5%	N.A.	N.A.	N.A.

Note: The above chart is not to be used for advertising or sales purposes
Source: DesRosiers Automotive Consultants Inc. and Canadian Black Book

PASSENGER CAR - INDUSTRY ACTUAL WHOLESALE PRICES

MODEL YR	24 MTH	36 MTH	48 MTH	60 MTH
1991 MY	50.5%	45.6%	42.3%	37.5%
1992 MY	58.8%	54.6%	48.7%	44.0%
1993 MY	63.3%	55.6%	50.7%	43.2%
1994 MY	62.7%	58.0%	49.5%	39.5%
1995 MY	66.3%	56.7%	46.7%	38.3%
1996 MY	62.9%	53.0%	44.0%	37.4%
1997 MY	60.9%	52.1%	44.6%	36.8%
1998 MY	61.4%	53.3%	44.4%	35.8%
1999 MY	60.3%	52.2%	44.6%	31.8%
2000 MY	60.5%	50.5%	38.1%	30.0%
2001 MY	59.3%	46.8%	36.9%	N.A.
2002 MY	55.4%	44.3%	N.A.	N.A.
2003 MY	53.4%	N.A.	N.A.	N.A.

Note: The above chart is not to be used for advertising or sales purposes
Source: DesRosiers Automotive Consultants Inc. and Canadian Black Book

This is a good example of why you need to be cautious when interpreting these numbers. Any individual brand has the potential to post low residual values for any number of reasons. As with Subaru, those reasons may be entirely positive. With GM, Ford, and DCX, poor residual value performance is related to a long list of issues including overdependence on fleet sales, quality and branding issues, and heavy discounting, to name a few. I have written extensively on why residuals go up and down and I

will not repeat those reasons in this *Observation*.

In addition, current residuals may not be predictive of future residuals since, in practice, there is quite a bit of volatility within some brands. In spite of this caution, however, Honda and Toyota have consistently had high residual values while GM, Ford, and DCX had consistently below-average residual values, so it would not be unrealistic to imagine those trends continuing. **DAR**