

The Cost of Buying New versus Used

One of the most common questions I get from consumers is, "How much more expensive is it to buy a new vehicle than a used vehicle?". Well, it depends on how old a used vehicle the consumer purchases and how long the consumer owns their vehicle. It is also important to analyze the passenger car buyer separate from the light truck buyer. There

are five primary costs of vehicle ownership that can be easily quantified: (1) Capital cost of the vehicle, (2) Cost of depreciation, (3) Cost of repair, (4) Cost of fuel, and (5) Cost of insurance.

There are a number of other costs of ownership that are more difficult to quantify, so I left them out of this analysis. The most significant of these is the cost of financing the vehicle. During the last few years the vehicle companies have gotten into a heated battle of incentives on new products with zero percent financing now being the norm. These

incentive deals make a new vehicle less expensive than a used vehicle because financing on a used vehicle is usually

at prime plus two percent to prime plus five percent. Most consumers finance their new vehicles (over 85 percent) while only about 50 percent of used vehicle buyers finance their vehicles. The percent of consumers financing their used vehicles is lower for four reasons. First, these higher rates turn off many

consumers. Second, the availability of financing is lower for used vehicles. Third, the credit ratings of used vehicle buyers are lower and therefore fewer are accepted. And fourth, the prices of used vehicles are a lot lower than new, so there is less need for financing. All these issues make it difficult to factor the cost of financing into this analysis. There are other costs of ownership such as parking, car washes, accessorization and so forth, but these costs are individualistic which makes factoring them virtually impossible. Let's review each of the five main cost factors one at a time.

Capital cost of the vehicle
The average price of a new passenger car is tracking at \$24,756 plus tax to the end of October 2002. The average price of a light truck is tracking at \$36,111 for the same period — about

\$11,000 higher per vehicle. Obviously the cost of ownership for a light truck would be higher than a

Average Transaction Prices in Canada - 2002 (excludes Sales Tax)

	Passenger Car		Average Price
	Value \$ millions	Units	
Newfoundland	259	12,007	\$21,571
PEI	50	2,263	\$22,095
Nova Scotia	507	22,401	\$22,633
New Brunswick	388	17,037	\$22,774
Quebec	5,018	220,804	\$22,726
Ontario	7,453	284,123	\$26,232
Manitoba	427	17,236	\$24,774
Saskatchewan	318	12,915	\$24,623
Alberta	1,588	61,231	\$25,935
British Columbia	1,935	74,763	\$25,882
Canada	17,943	724,780	\$24,756

Source: DesRosiers Automotive Consultants Inc.

Average Transaction Prices in Canada - 2002 (excludes Sales Tax)

	Truck Including Heavy-Duty Truck		Average Price
	Value \$ millions	Units	
Newfoundland	274	8,593	\$31,886
PEI	52	1,620	\$32,099
Nova Scotia	489	14,743	\$33,168
New Brunswick	529	15,302	\$34,571
Quebec	4,134	116,493	\$35,487
Ontario	8,510	238,080	\$35,744
Manitoba	763	20,024	\$38,104
Saskatchewan	676	18,148	\$37,249
Alberta	3,492	92,524	\$37,742
British Columbia	2,749	74,504	\$36,897
Canada	21,668	600,031	\$36,111

Source: DesRosiers Automotive Consultants Inc.

(continued on next page)

Observations - "The Cost of Buying New versus Used"

(continued from previous page)

passenger car for a number of reasons. First, light trucks tend to be bigger and more powerful than passenger cars and this adds cost. Second, light trucks are hot in the market and so less discounting is available to consumers thus pushing up their average cost. Third, it is difficult to buy a low-end light truck whereas subcompact and compact cars are very popular. And fourth, the most popular segment in Canada is

the compact car segment, which, when weighted into the calculation, forces down the price of passenger cars. We can calculate the average cost of a used vehicle by using depreciation schedules as discussed below.

Cost of depreciation

We measure depreciation as a percentage of the original MSRP of the vehicle when purchased new.

Depreciation for passenger cars is faster than for light trucks over the first five years of ownership. In addition, a car loses almost all of its value by the end of its fifteenth year while a light truck holds a little more value in its later years — about 10 percent more. Thus, the price of a used passenger car declines quite rapidly making the capital cost lower in its early years. The capital cost of

(continued on next page)

Cost of Vehicle Ownership - New vs Used by age of vehicle - as of Fall 2002 Per 1,000 Kilometre Driven - Passenger Car

Capital Cost New Passenger Car All Canada \$24,756	Cost of Repairs Per 1,000 Kilo Passenger Car	Cost of Fuel Annual Per 1,000 Kilo Passenger Car	Cost of Insurance Per 1,000 Kilo Passenger Car	Depreciation Per Year of Ownership Per 1,000 Kilo New Vehicle	Depreciation Per Year of Ownership Per 1,000 Kilo Used Vehicle	Things Gone Wrong Jobs Per Vehicle Passenger Car	Satisfaction with Vehicle Out of Ten Passenger Car	Average Kilometres Driven Passenger Car	Average Transaction Price of a Used Passenger Car
1 year old	\$9.68	\$67.84	\$51.23	\$286.95	\$163.39	0.52	8.88	22,000	\$20,288
2 year old	\$14.70	\$67.11	\$48.04	\$144.28	\$109.16	0.77	8.60	22,650	\$16,693
3 year old	\$22.34	\$74.74	\$53.15	\$104.97	\$110.43	1.14	8.42	20,282	\$14,221
4 year old	\$32.25	\$73.33	\$48.69	\$99.65	\$104.69	1.42	8.22	20,621	\$11,981
5 year old	\$37.20	\$74.93	\$49.82	\$98.38	\$84.96	1.77	8.26	20,132	\$9,822
6 year old	\$38.67	\$67.18	\$42.91	\$68.61	\$42.02	2.15	8.23	22,371	\$8,112
7 year old	\$40.10	\$66.61	\$42.45	\$38.43	\$38.13	2.46	8.14	22,544	\$7,172
8 year old	\$46.87	\$67.10	\$42.96	\$36.88	\$38.69	2.92	8.04	21,483	\$6,312
9 year old	\$49.34	\$64.08	\$40.54	\$34.22	\$35.72	3.09	8.23	21,706	\$5,481
10 year old	\$54.61	\$69.60	\$42.12	\$37.06	\$28.98	3.02	8.03	19,374	\$4,706
11 year old	\$49.85	\$69.02	\$40.19	\$26.55	\$29.02	3.06	8.19	19,580	\$4,144
12 year old	\$49.10	\$66.34	\$39.88	\$24.53	\$22.46	3.16	8.34	20,184	\$3,576
13 year old	\$53.76	\$75.58	\$43.54	\$22.00	\$30.51	3.28	8.26	18,005	\$3,123
14 year old	\$49.22	\$66.78	\$40.45	\$24.54	\$15.25	3.51	8.03	20,175	\$2,573
15+ year old	\$52.90	\$74.35	\$42.91	\$15.29	\$26.15	3.35	8.08	17,806	\$2,266

Source: DesRosiers Automotive Consultants Inc.

Cost of Vehicle Ownership - New vs Used per 1,000 Kilometre of Usage - Passenger Car

	New Vehicle	One Year Old Used	Two Year Old Used	Three Year Old Used	Four Year Old Used	Five Year Old Used	Six Year Old Used	Seven Year Old Used
First Year of Usage	\$415.70	\$239.00	\$260.65	\$258.96	\$246.92	\$190.78	\$187.29	\$195.63
Second Year of Usage	\$274.12	\$260.65	\$258.96	\$246.92	\$190.78	\$187.29	\$195.63	\$189.69
Third Year of Usage	\$255.19	\$258.96	\$246.92	\$190.78	\$187.29	\$195.63	\$189.69	\$195.30
Fourth Year of Usage	\$253.91	\$246.92	\$190.78	\$187.29	\$195.63	\$189.69	\$195.30	\$188.08
Fifth Year of Usage	\$260.33	\$190.78	\$187.29	\$195.63	\$189.69	\$195.30	\$188.08	\$177.78
Sixth Year of Usage	\$217.37	\$187.29	\$195.63	\$189.69	\$195.30	\$188.08	\$177.78	\$203.40
Seventh Year of Usage	\$187.60	\$195.63	\$189.69	\$195.30	\$188.08	\$177.78	\$203.40	\$171.70
Eighth Year of Usage	\$193.81	\$189.69	\$195.30	\$188.08	\$177.78	\$203.40	\$171.70	\$196.32
Ninth Year of Usage	\$188.18	\$195.30	\$188.08	\$177.78	\$203.40	\$171.70	\$196.32	
Tenth Year of Usage	\$203.38	\$188.08	\$177.78	\$203.40	\$171.70	\$196.32		
Eleventh Year of Usage	\$185.62	\$177.78	\$203.40	\$171.70	\$196.32			
Twelfth Year of Usage	\$179.85	\$203.40	\$171.70	\$196.32				
Thirteenth Year of Usage	\$194.89	\$171.70	\$196.32					
Fourteenth Year of Usage	\$180.99	\$196.32						
Fifteen Year of Usage	\$185.46							

Source: DesRosiers Automotive Consultants Inc.

Cost of Vehicle Ownership - New vs Used per 1,000 Kilometre of Usage - Passenger Car

	Eight Year Old Used	Nine Year Old Used	Ten Year Old Used	Eleven Year Old Used	Twelve Year Old Used	Thirteen Year Old Used	Fourteen Year Old Used
First Year of Usage	\$189.69	\$195.30	\$188.08	\$177.78	\$203.40	\$171.70	\$196.32
Second Year of Usage	\$195.30	\$188.08	\$177.78	\$203.40	\$171.70	\$196.32	
Third Year of Usage	\$188.08	\$177.78	\$203.40	\$171.70	\$196.32		
Fourth Year of Usage	\$177.78	\$203.40	\$171.70	\$196.32			
Fifth Year of Usage	\$203.40	\$171.70	\$196.32				
Sixth Year of Usage	\$171.70	\$196.32					
Seventh Year of Usage	\$196.32						

Source: DesRosiers Automotive Consultants Inc.

Observations - "The Cost of Buying New versus Used"

(continued from previous page)

a used light truck is much higher through the life of the product.

Cost of repair

The cost of repair increases through the first seven to eight years of vehicle ownership and then stabilizes over the remaining life of the product. The cost of repair for a light

truck per 1,000 kilometres of usage is only about \$5 to \$10 more expensive than a passenger car. Light trucks are driven a little more than passenger cars (about 3-4,000 kilometres more per year) but that is the choice of the consumer. Taking the higher mileage of light truck owners into account just about

neutralizes the increased cost of repair, or at least makes it negligible.

Cost of fuel

The cost of fuel for a vehicle is fairly stable over the life of the product. Vehicles have been made very fuel efficient for well over 10 years, so the average fuel economy of a new

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Cost of Vehicle Ownership - New vs Used by age of vehicle - as of Fall 2002 Per 1,000 Kilometre Driven - Light Truck

Capital Cost	Cost of Repairs	Cost of Fuel	Cost of Insurance	Depreciation Dollars	Depreciation Dollars	Things Gone	Satisfaction	Average	Average
All Canada	Per 1,000 Kilo	Annual	Per 1,000 Kilo	Per Year of	Per Year of	Wrong	with Vehicle	Kilometres	Transaction
\$36,111	Light Truck	Per 1,000 Kilo	Light Truck	Ownership	Ownership	Jobs Per Vehicle	Out of Ten	Driven	Price of a Used
		Light Truck	Light Truck	Per 1,000 Kilo	Per 1,000 Kilo	Light Truck	Light Truck	Light Truck	Light Truck
				New Vehicle	Used Vehicle				Light Truck
1 year old	\$11.23	\$98.84	\$50.43	\$322.70	\$220.73	0.57	8.77	23,500	\$30,810
2 year old	\$17.01	\$90.52	\$45.55	\$191.75	\$127.68	1.02	8.39	25,047	\$25,623
3 year old	\$22.70	\$93.66	\$48.51	\$124.70	\$141.25	1.43	8.29	23,746	\$22,425
4 year old	\$42.14	\$100.34	\$46.47	\$134.24	\$141.61	2.28	7.68	23,135	\$19,071
5 year old	\$39.90	\$92.54	\$43.42	\$128.62	\$84.34	2.21	8.02	23,583	\$15,795
6 year old	\$46.22	\$91.65	\$46.68	\$84.29	\$87.46	2.41	8.11	21,850	\$13,806
7 year old	\$53.37	\$92.86	\$39.59	\$75.98	\$55.26	2.83	7.88	23,290	\$11,895
8 year old	\$52.10	\$85.06	\$36.93	\$48.62	\$39.78	3.24	7.94	24,509	\$10,608
9 year old	\$51.75	\$89.36	\$36.74	\$37.35	\$40.34	3.29	8.11	24,172	\$9,633
10 year old	\$59.33	\$96.89	\$39.45	\$40.61	\$43.86	3.53	8.02	22,230	\$8,658
11 year old	\$65.97	\$104.55	\$48.80	\$47.53	\$51.33	3.66	7.94	18,994	\$7,683
12 year old	\$55.03	\$89.99	\$39.23	\$43.24	\$46.70	3.42	7.78	20,878	\$6,708
13 year old	\$52.97	\$87.31	\$36.91	\$39.29	\$42.43	3.40	8.48	22,977	\$5,733
14 year old	\$62.77	\$96.52	\$36.74	\$39.16	\$11.84	4.00	7.90	23,053	\$4,758
15+ year old	\$55.95	\$91.80	\$34.32	\$11.61	\$45.94	3.94	7.65	21,768	\$4,485

Source: DesRosiers Automotive Consultants Inc.

Cost of Vehicle Ownership - New vs Used per 1,000 Kilometre of Usage - Light Truck

	New Vehicle	One Year Old	Two Year Old	Three Year Old	Four Year Old	Five Year Old	Six Year Old	Seven Year Old
		Used	Used	Used	Used	Used	Used	Used
First Year of Usage	\$483.20	\$280.76	\$306.12	\$330.55	\$260.21	\$272.02	\$241.08	\$213.87
Second Year of Usage	\$344.83	\$306.12	\$330.55	\$260.21	\$272.02	\$241.08	\$213.87	\$218.19
Third Year of Usage	\$289.57	\$330.55	\$260.21	\$272.02	\$241.08	\$213.87	\$218.19	\$239.53
Fourth Year of Usage	\$323.18	\$260.21	\$272.02	\$241.08	\$213.87	\$218.19	\$239.53	\$270.66
Fifth Year of Usage	\$304.49	\$272.02	\$241.08	\$213.87	\$218.19	\$239.53	\$270.66	\$230.95
Sixth Year of Usage	\$268.84	\$241.08	\$213.87	\$218.19	\$239.53	\$270.66	\$230.95	\$219.62
Seventh Year of Usage	\$261.79	\$213.87	\$218.19	\$239.53	\$270.66	\$230.95	\$219.62	\$207.87
Eight Year of Usage	\$222.71	\$218.19	\$239.53	\$270.66	\$230.95	\$219.62	\$207.87	\$228.01
Ninth Year of Usage	\$215.20	\$239.53	\$270.66	\$230.95	\$219.62	\$207.87	\$228.01	
Tenth Year of Usage	\$236.29	\$270.66	\$230.95	\$219.62	\$207.87	\$228.01		
Eleventh Year of Usage	\$266.86	\$230.95	\$219.62	\$207.87	\$228.01			
Twelfth Year of Usage	\$227.49	\$219.62	\$207.87	\$228.01				
Thirteenth Year of Usage	\$216.48	\$207.87	\$228.01					
Fourteenth Year of Usage	\$235.19	\$228.01						
Fifteenth Year of Usage	\$193.69							

Source: DesRosiers Automotive Consultants Inc.

Cost of Vehicle Ownership - New vs Used per 1,000 Kilometre of Usage - Light Truck

	Eight Year Old	Nine Year Old	Ten Year Old	Eleven Year Old	Twelve Year Old	Thirteen Year Old	Fourteen Year Old
	Used	Used	Used	Used	Used	Used	Used
First Year of Usage	\$218.19	\$239.53	\$270.66	\$230.95	\$219.62	\$207.87	\$228.01
Second Year of Usage	\$239.53	\$270.66	\$230.95	\$219.62	\$207.87	\$228.01	
Third Year of Usage	\$270.66	\$230.95	\$219.62	\$207.87	\$228.01		
Fourth Year of Usage	\$230.95	\$219.62	\$207.87	\$228.01			
Fifth Year of Usage	\$219.62	\$207.87	\$228.01				
Sixth Year of Usage	\$207.87	\$228.01					
Seventh Year of Usage	\$228.01						

Source: DesRosiers Automotive Consultants Inc.

Observations - "The Cost of Buying New versus Used"

(continued from previous page)

vehicle is not that much different than the average fuel economy of a used vehicle, no matter what the age. For a passenger car it is about \$65 per 1,000 kilometres at the low end and about \$75 per 1,000 kilometres at the high end. Light trucks are much less fuel-efficient than passenger cars so the cost of fuel is much higher. At the low end it is about \$90 per 1,000 kilometres and at the high end it is about \$100 per 1,000 kilometres of usage. Because light trucks are driven about 3 to 4,000 more kilometres per year, this difference really adds up over twelve months of usage.

Cost of insurance

The cost of insurance declines over the life of the vehicle primarily because consumers take less coverage as a vehicle ages and insurance rates drop for older vehicles due to the depreciation of the vehicle. Light truck insurance per 1,000 kilometres is actually a little lower than passenger car insurance, especially as a vehicle ages. I suspect that consumers don't take out as much collision insurance for their light trucks as they age whereas passenger cars remain better insured.

Conclusions

The tables in this issue of *Observations* examine the cost of ownership for a new versus a used passenger car separate from a light truck. The data is presented per 1,000 kilometres of usage in order to neutralize the different driving habits of passenger car owners compared with light truck owners. A new light truck is about \$50 to \$75 per 1,000 kilometres more expensive to own than a new passenger car. This gap

remains fairly stable throughout the life of the vehicle.

The largest depreciation hit for a new vehicle buyer is during the first year of ownership, so the cost of owning a one-year-old used vehicle is substantially lower than owning a new vehicle. It is about \$200 per 1,000 kilometres of usage cheaper to buy a one-year-old used vehicle and this difference is about the same for passenger cars and light trucks. The new vehicle buyer pays dearly for the thrill of buying a new product.

Interestingly, the price difference between used vehicles is fairly stable through the rest of their useful life although there are some slight differences between passenger cars and light trucks. There appears to be three demarcation points for passenger cars – one-year-old, five-years-old and ten-year-old. The cost of ownership (about \$250 per 1,000 kilometres of usage) is very similar for a one- to four-year-old used passenger car. Similarly, the cost of ownership (about \$195 per 1,000 kilometres of usage) is very similar for a five- to nine-year-old passenger car. Finally, there is very little difference between the cost of ownership (about \$175 per 1,000 kilometres of usage) of a 10-to-14 year-old passenger car.

Other than the ability to finance a higher priced used vehicle, it would appear a consumer is better off buying a one-year-old used passenger car than a four-year-old used vehicle. Why buy a four-year-old when a one-year-old costs the same to own? The same would be true for a five-year-old used passenger car and a nine-year-old used passenger car. And the

same holds true for a 10-year-old passenger car and a fourteen-year-old passenger car. There are a lot of great 10-year-old passenger cars for sale in the market and with the same cost of ownership as a 14-year-old product, why would anyone buy the older vehicle?

There are four demarcation points for used light trucks – one-year-old, four-years-old, seven-years-old and 12-years-old. The cost of a used light truck is about \$300 per 1,000 kilometres of usage during the first three years of ownership. The cost of a used light truck drops to about \$260 per 1,000 kilometres of usage during the next three years of ownership. The cost of a seven to eleven-year-old light truck drops to about \$220 per 1,000 kilometres of usage and during the last years of a light truck's life the cost per 1,000 kilometres of usage is about \$200. Just as with passenger cars, consumers would be wiser to buy the younger vehicle in each age grouping. They would get a better quality vehicle with fewer things likely to go wrong and still maintain a similar cost of ownership.

This analysis does dispel one of the more common beliefs in the vehicle industry – that the cost of repairs makes a vehicle much more expensive to own as a vehicle ages. The cost of repair per 1,000 kilometres of usage is actually very stable as a vehicle ages and any increase is more than offset with the lower cost of insurance and depreciation.

This analysis also confirms the high price of buying a new vehicle compared with a used vehicle. Almost all the differential is the cost of depreciation. The best consumer deal would appear to be a one-year-old used vehicle. You get as close as possible to a new vehicle and you avoid the big depreciation hit of a new vehicle. **DAR**