

## Cost Analysis – Rental vs. Owned Car Over Weekend



### Summary

- The decision to rent a vehicle vs. using the one in your garage for a weekend getaway is often shaped by such factors as the need for a different size or a more attractive appearance. But when cost factors such as depreciation and maintenance are considered, renting frequently proves to be the more economical choice, as well.
- **Brett Smith, co-director, Manufacturing, Engineering and Technology for the Center for Automotive Research**, performed a cost analysis of driving one's own vehicle versus driving a rental vehicle.
- His analysis showed that, through reduced depreciation and maintenance costs, renting a car can deliver savings that more than offset the cost of the rented vehicle. And it can do that while providing the driver with the vehicle he or she needs for a weekend getaway, transporting a soccer team to a tournament or other special need.
- Especially as our vehicles age, the fear of breakdown or other mechanical issues may lead us to forgo weekend or holiday trips. Renting a car provides an alternative that can reduce the strain, not only on the car and the driver, but also on the driver's budget.

### Cost Analysis – Understanding Variable and Fixed Costs

The intent of this paper is to investigate the circumstances under which a leisure rental—that is, renting a vehicle for a short non-business trip—might be an economically wise alternative to driving your own vehicle. The starting point for our analysis is an understanding of the major costs associated with operating a vehicle.

In general, these costs fall into two categories: variable costs and fixed costs. Variable costs are the direct costs that flow from the number of miles a car is driven – the cost of oil, maintenance, repair and tire wear. Fixed costs are not connected – or have only a marginal connection – to accumulating mileage. Key fixed-cost components include insurance, registration, licenses, taxes, depreciation, gas and finance charges.

A motor vehicle is one of the biggest purchases most consumers will make in their lifetimes—often second only to a home. And operating and maintaining a car can be an expensive proposition. According to Ward's Motor Vehicle Facts and Figures, the cost to drive a model year 2010 passenger car for 10,000 miles a year can be as high as \$7,392. About 77 percent (\$5,719) of that amount is considered fixed cost. Given that fact, it's reasonable to assume that a driver might want to drive his or her own car as often as possible, in order to lower the fixed cost per mile. From that perspective, renting a car for a few days while your own sits in the garage may not seem to be the best economic choice.

Upon closer analysis, however, there are circumstances when renting a car instead of driving your own may indeed be the economically wise choice.

Table A characterizes the fixed and variable costs of operating an owned vehicle and a discretionary rental (not including the cost of renting). As summarized in the bottom row of the chart, the total operating cost per mile for an owner to drive his or her own vehicle is about 63 cents, compared with approximately 39 cents when driving a rental vehicle—a difference of about 24 cents per mile.



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	Fixed/ Variable	Owned Vehicle <sup>1</sup>	Discretionary Rental	Cost Differential
Gas <sup>2</sup>	Fixed	\$0.1729	\$0.1729 <sup>3</sup>	\$0.00
Oil <sup>4</sup>	Variable	0.0067	0.00	0.0067
Maintenance and repairs	Variable	0.0454	0.00	0.0454
Tires	Variable	0.0083	0.00	0.0083
Insurance (of owned vehicle)	Fixed	0.0687	0.0687 <sup>3</sup>	0.00
Registration, licenses, and taxes*	Fixed	0.0390	0.0390 <sup>3</sup>	0.00
Depreciation	Fixed <sup>5</sup>	0.2369	0.0602 <sup>3</sup>	0.1767
Finance charge (of owned vehicle)	Fixed	0.0537	0.0537 <sup>3</sup>	0.00
<b>TOTAL cost per mile (dollars)</b>		<b><u>\$0.6317</u></b>	<b><u>\$0.3917</u></b>	<b><u>\$0.2371</u></b>

1. AAA; Ward's Motor Vehicle Facts & Figures 2010, 15,000 miles per year

2. \$4.15 per gallon, 24 "real world" m.p.g.

3. Even though these costs appear in the rental column, they are associated with the vehicle that the consumer owns. Even though the owned car is not being used when the consumer is renting a car, these costs of the owned car are being incurred.

4. \$25 per oil change, 4 times a year

5. The average depreciation rate per mile from 2000-2010 was 17.63 cents, according to IRSi. Thus the cost of leaving a vehicle at home (and not accruing mileage) is the "fixed" portion of the depreciation (\$0.0602 per mile)

This data suggests that a vehicle owner who owned a vehicle for five years and drove 15,000 miles per year could save approximately 24 cents (\$0.2371) per mile when driving a rental car (not including the cost of rental). From there, we can factor in the cost of renting the car and the number of miles a driver wishes to travel.

But before we move on to that, it's important to expand on a couple of points in the above data. First, this analysis treats a portion of depreciation as a variable cost. All things being equal, a vehicle with fewer miles is more highly valued in the used car market. Thus, by providing the opportunity to put fewer miles on an older vehicle, renting can further reduce that vehicle's rate of depreciation.



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Second, the maintenance costs noted above are those associated with the first five years of vehicle ownership. According to R. L. Polk, the average age of passenger vehicles is nearly 11 years. Further, according to one study, the average U.S. household's automobile expenditures rise with age, peaking around age five, dropping in year seven, steadily rising until year 10, and then dropping again<sup>i</sup>. This data points to an important issue that all vehicle owners face: as vehicles age, maintenance and repair costs increase.

By focusing on the average vehicle's first five years, therefore, the maintenance and repair cost used in the above cost analysis may be underestimated. If you own a vehicle that's more than five years old, these costs most certainly are higher – making the leisure rental option even more financially enticing.

### Rental vs. Owned Car for a Weekend Getaway

For this analysis, we will use the weekend rates often offered by Enterprise (\$9.99 per day for compact, \$19.99 per day for full size). The rental is for three days (4:00 pm Friday – 8:30 am Monday)<sup>ii</sup> and assumes the maximum 300 miles included in the weekend rates. Because there are so many variable costs when renting (licensing, excise taxes, etc.), we have included an added cost of 15 percent (\$4.50 for a compact, and \$9.00 for a full size car). We have not included the cost of optional collision damage waiver or insurance coverage.

	Rental Fee Three days	(+)Added Costs <sup>6</sup> (taxes, licensing fee, excise taxes, etc.)	(=)Total Cost of Rental	Cost per mile (300 miles)
Compact car	\$29.97	\$ 4.50	\$34.47	\$0.12
Full size car	\$59.97	\$9.00	\$68.97	\$0.23

6. Added costs are assumed to be 15 percent of rental fees.

When we use the rental costs in Table B and the operating costs per mile from Table A to make our comparison, the data indicates that renting a car may actually be the economically smart move. The results are shown in Table C.

	(+)Cost per mile of personal vehicle	(+)Cost per mile of Rental	(=)Total Cost for Vehicle
Driving own car	\$0.63	\$0.00	\$0.63
Rental car (Compact)	\$0.39	\$0.12	\$0.51
Rental car (Full Size)	\$0.39	\$0.23	\$0.62



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According to the data, based on a 300-mile trip, it would cost \$0.63 per mile to drive a personal vehicle, \$0.51 per mile to drive a compact rental car, and \$0.62 per mile to drive a full-size rental car. Thus, the cost of renting a car is offset by the savings in depreciation and variable costs such as maintenance. And, if you rent a compact car, the savings per mile can be significant.

This analysis could be also applied to weekend trips of greater distances. The weekend rate includes a daily maximum mileage of 100 miles (3 day rental times 100 miles per day equals 300 miles). However, the renter can purchase the unlimited mileage option for an additional \$10.00 per day. Table D shows the additional costs of a higher mileage rental. Given the additional charges for excess mileage, the cost-benefit analysis becomes even more inviting. A weekend trip of 700 miles would (again) cost \$0.63 per mile to drive a personal vehicle. The longer trip would result in cost of \$0.49 per mile to drive a compact rental car, and \$0.54 per mile to drive a full-size rental car. The table shows that both rentals become much more enticing at the higher mileage rates.

Table D: Comparison of Driving Owned Car and Rental Car Per Mile (700 Mile Trip)

	Cost of Rental (base fee plus 15% taxes)	(+)\$10 per day mileage overage charge (plus 15% taxes)	(=)Total Cost of rental	Cost per mile of Rental Vehicle (700 miles) <sup>7</sup>	(+) Cost per mile of personal vehicle	(=)Total per mile Cost for Vehicle
Driving own car	Not applicable	Not applicable	Not applicable	Not applicable	\$0.63	\$0.63
Rental car (Compact)	\$34.97	\$34.50	\$69.47	\$0.10	0.39	0.49
Rental car (Full Size)	68.97	34.50	103.47	0.15	0.39	0.54

7. Although mileage overage is for miles above 300, the added cost was treated as a portion of the overall rental price, and allocated evenly to all miles driven.

A final thought on this exercise: As gasoline prices continue to rise, it can make a significant difference for a driver who chooses to rent a compact car. Current compacts get a real-world average fuel economy of about 26 mpg. In the case of a renter who has an older, larger vehicle, with a real-world fuel economy of 18 mpg, the fuel savings could be more than \$20.00 per 300 miles at a higher price of \$4.15 per gallon.



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### Beyond Cost: Qualitative Factors

To this point, this paper has focused on the quantitative factors involved in renting a vehicle for a weekend getaway. We will now address the qualitative factors that may influence the decision to rent vs. driving your own car. These factors include:

- a. The ability to rent “task-appropriate” vehicles (e.g., fuel economy, more space, etc.)
- b. Security of driving a newer vehicle
- c. Rental car roadside support system
- d. Location of rental store
- e. The ability to make a “prestige” statement

The leisure rental has become an increasingly common consumer practice in recent years. It offers renters the opportunity to minimize the cost of ownership by owning the vehicle that is most effective for them day to day, and renting other more task-appropriate vehicles when the need arises. This flexible concept offers vehicle owners the ability to get a smaller, more fuel-efficient vehicle, or a larger vehicle when they need to transport more people and cargo. Either way, it can present the chance to keep your own car longer by putting fewer miles on it.

As noted above, the average vehicle on the road today is approaching 11 years old. Many are driving vehicles that, while safe and reliable, are aging. As their vehicles age, many owners become less comfortable driving them longer distances. Fear of breakdown or other mechanical issues may lead to forgoing weekend trips. Renting a car provides an alternative that can reduce the strain on both the car and the driver.

Not only does renting a car offer the opportunity to use a newer, more reliable vehicle, it also adds the benefit of knowing that a major rental company is there to provide roadside support in the unlikely event the rental vehicle experiences mechanical troubles. So, renters are not only driving newer, more mechanically sound vehicles, but they also have a safety net if they need it.

Certainly there is an opportunity cost (i.e. the value of the time lost) in taking the time to go to the rental location and secure the rental. However, in most instances, because of the option for the rental company to pick you up, this is a relatively small cost.

Finally – and this is perhaps the least quantifiable factor of all – a rental car can offer the ability to make a “prestige” statement while traveling. Most people will attribute some positive value to driving a newer, more expensive and prestigious vehicle, but just how much value depends entirely on the driver and the situation.

### Conclusion

The decision to rent a vehicle vs. using the one in your garage is often shaped by such factors as the need for a different size or a more attractive appearance. But when cost factors such as depreciation and maintenance are considered, renting frequently proves to be the more economical choice, as well.



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<sup>i</sup> According to R. L. Polk, the average age of passenger vehicles is nearly 11 years. Without a doubt, older vehicles depreciate more slowly than new cars. While depreciation is often considered a fixed cost, a portion of depreciation is in reality variable. Vehicle depreciation is generally driven by two factors: age and mileage. One way to isolate the impact of mileage on depreciation is to consider the IRS average depreciation rate per mile from 2000 to 2010. This depreciation rate per mile is typically used for calculating the residual value of business vehicles. It includes only mileage driven—the age of the vehicle is not considered. Because the rate changes over time, the average rate from 2000 to 2010 is calculated and the result (17.63 cent/mile) is deducted from the general depreciation. This method suggests that up to 74 percent of vehicle depreciation may come from the usage of the vehicle, and the remaining decline is due to the vehicle age. While far from perfect, this method provides some insight into the role mileage plays in depreciation and can offer a measure of the value saved by not driving a vehicle.

<sup>ii</sup> The three-day rental was chosen due to the fact that most neighborhood locations have limited hours on Sunday. It also allowed for a higher mileage rental of 100 miles per day. Alternatively, a two day rental would limit the driver to 200 miles. With a \$0.20 per mile fee for more than 100 miles per day (or a \$10 per day unlimited mileage option), the three-day rental becomes economically reasonable for a weekend getaway of any significant distance. Further, timing becomes an issue. A two day rental (48 hours) limits the ability to take full advantage of the weekend, while a three day rental (72 hours) allows the vacation to begin Friday afternoon, and return Sunday evening.

