

Own or lease: are you making the right choice for your truck fleet?



Do you know if leasing versus owning your fleet of trucks is the “right choice”? Many fleet owners may answer “yes,” but read on. Our fact-based total cost of ownership study is the first common industry point of reference and could help businesses drive out costs previously overlooked.



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Truck ownership and fleet costs are significant, typically ranging from 0.1% to 5.3% of revenue. Given the scarcity of information on true fleet and leasing costs, business leaders are often forced to make their own lease versus buy decision for truck fleets with incomplete information. In an effort to help business leaders make improved business decisions and optimize limited resources, Ernst & Young conducted the total cost of ownership (TCO) study,¹ which revealed multiple surprising insights that may help many businesses save millions of dollars over time.

The 2012 TCO study was conducted to help build a more complete fact base, differentiating by fleet type, to enable improved and informed business decisions on lease versus buy of truck fleets.

The TCO study revealed that many companies do not have a strong sense of their truck fleet total cost of ownership and actually have systematic biases when evaluating fleet options.

Small-to-medium truck fleet managers do not appear to have a strong sense of their relative cost efficiency.

What should drive your fleet decisions?

As part of the TCO study, we delved deeper into the predominant components of the total cost per mile for fleet maintenance. This breakdown was necessary to adjust and standardize for the different factors that drive cost per mile and which vary by company, industry and fleet sizes.

Table 1 summarizes the total cost of ownership component breakdown for different vehicle types. This enables fleet managers to benchmark fleet costs at the most granular level, comparing by fleet type.

Table 1. Total cost of ownership component summary by vehicle type (US cents per mile)				
Cost category	Class 8 tractors	Class 6 and 7 trucks	Reefer trailers	Dry van trailers
Financing	17.0	28.5	9.1	8.5
Maintenance	16.2	15.5	6.2	10.0
Administration	3.0	2.9	0.6	1.6
Licensing	2.0	2.7	N/A	N/A
Total costs	38.2	49.7	15.9	20.0

Know how you compare

While carrying out our study, we realized that certain biases and lack of awareness exist in the market with regard to cost per mile. While cost per mile is a standard fleet management cost metric, except for large logistics company, most small-to-medium sized fleets did not have this metric readily available and frequently had difficulty gathering the necessary data to calculate it.

During our interviews, we asked study participants to separately rank their procurement pricing and maintenance cost efficiency on a qualitative one-to-five scale with five being the most effective. Participants consistently ranked themselves a four or

1. The 2012 Ernst & Young private fleet total cost of ownership study was conducted for Class 8 tractors, Class 6 and 7 trucks, reefer trailers and dry van trailers and included 22 participants across a range of fleet sizes and industries. The study adjusted and normalized data for differences in: financing, depreciation, fleet age, mileage and administration cost allocation.



five, independent of factors such as whether fleet management is a core competency or their relative economies of scale. Several participants reinforced their self-rating by telling us about their strong relationship with their local trucking dealership.

Evaluate without bias

We also conducted a survey among participants to understand the decision criteria in making the lease versus ownership choice. Participants were asked to rank their top five criteria used when evaluating the choice between purchasing and maintaining vehicles against using a full service lease (FSL). Based on the results, we shortlisted the following drivers and criteria for making such decisions:

- | | |
|---------------------|------------------------------|
| ▶ Customer service | ▶ Maintenance expense |
| ▶ Purchase cost | ▶ Maintenance quality |
| ▶ Tax benefit | ▶ Maintenance predictability |
| ▶ Fleet flexibility | ▶ Financing options |

Interview results suggest that customer service and fleet flexibility are important criteria when evaluating FSL versus private ownership. Interestingly, despite the significant economies of scale of large leasing providers, for criteria such as purchase cost, financing and maintenance expense, interviewees feel that FSL providers have no advantage over ownership.

Do not overlook typically forgotten costs

Smaller participants did not consistently account for capital costs in calculating total cost of ownership. They maintained that because they purchased equipment using cash, they did not need to incorporate any capital cost into their total cost of ownership. However, they ignored the implicitly embedded opportunity cost of capital as they could have potentially invested that cash elsewhere to provide a higher rate of return to their investors.

One interview with a smaller distributor especially highlighted this tendency. When asked about the company's cost of capital,

the CEO told us the company did not have any capital cost as they are a private company and capital investments were made with cash. In this particular instance, the company had previously made a lease versus buy decision using this zero capital cost assumption. We later discussed the dividend and return that the key company investors were expecting. The CEO then acknowledged the company needed to meet a minimum return threshold to satisfy investor requirements; that opportunity cost should be incorporated into the lease versus buy decision process.



To effectively evaluate cost savings opportunities, companies must first clearly understand their existing costs and how they compare to companies with a similar fleet size.

When should you lease versus own the fleet?

During our conversations with fleet managers, one mentioned, “Maintenance costs are on the rise, due to the rising material costs.” Another participant mentioned: “We are now more leaning toward leasing, given we have some cash crunch issues.” The study findings validated our hypothesis that both financing and maintenance costs are highly dependent on fleet size economies of scale. This makes intuitive sense as larger fleets have greater negotiating power with dealers and have greater potential to realize maintenance efficiencies, including through increased shop utilization. However, based on our findings, the greatest decrease in cost per mile existed as fleets moved into the 100-499 fleet size range, which represents approximately the 70th percentile fleet size. While the 500+ fleet size realized additional cost per mile savings, the cost reduction from the 100-499 to the 500+ fleet size was less significant than the reduction from the 25-99 to the 100-499 fleet size.

Table 2. Unit total cost of ownership by fleet size (US cents per mile)

Fleet size	Class 8 tractors	Class 6 and 7 trucks	Reefer trailers	Dry van trailers
1-24	-	-	-	-
25-99	45.7	53.5	-	29.5
100-499	36.6	47.2	16.1	19.0
500+	32.3	-	15.7	12.6
Mean	38.1	49.7	15.9	20.0
Sample size	18	7	9	16

Based on the significant economies of scale observed for larger Class 8 tractors and dry van trailers fleet sizes, we suspect some small-to-medium fleet size companies may benefit from outsourcing their fleet and maintenance to a large fleet leasing provider that has significant economies of scale. While consideration should be given to whether fleet management is a core strategic enabler, based on some initial data, there appears to be outsourcing savings potential for Class 8 tractors and dry van trailers.

How do you reduce costs while meeting your fleet needs?

In the current economic environment, many companies are looking for ways to cut costs and capital expenditures. To effectively evaluate cost-saving opportunities, companies must first clearly understand their existing costs and how they compare to companies with a similar fleet size.

- Conducting a cost benchmarking study is the first step in identifying whether companies are leaving fleet cost savings on the table. How do you know if you are making the “right” choice to lease or own the truck fleet? Ask yourself these five questions. If you answer “no” to any of the following questions, you may be leaving valuable money on the table.
- 1. Do you know the total cost per mile for your trucking fleet?
 - 2. Do you know how your fleet’s total cost per mile compares to other similar fleets? How deep is your visibility into your fleet’s total cost per mile when compared to fleet sizes similar to your own?
 - 3. Are you able to obtain economies of scale from a fleet size of greater than 150?
 - 4. Do you incorporate the cost of capital into your lease versus buy decision calculations?
 - 5. Is fleet management a core business competency?



How should you compare costs?

Trucking fleet managers have historically not considered detailed total cost of ownership benchmarks to measure fleet management cost effectiveness and efficiency. While there are some readily available benchmarking studies for this industry, most of these are not segmented or normalized for differences in fleet size or fleet age. These two factors affect procurement and maintenance economies of scale, as well as the magnitude of vehicle maintenance and expected salvage value.

To make cost-per-mile benchmarking relevant for a broader range of fleet sizes and average fleet ages, we developed a proprietary TCO methodology that accounts for differences in truck fleet demographics. This methodology further normalizes participant differences to allow greater comparability by accounting for differences in mileage, financing, capital cost, depreciation methods and fleet administration cost allocation.

We selected cost per mile as the primary metric for our study methodology, because it is an industry standard measurement that incorporates both cost elements as well as mileage activity rates. We considered other metrics such as net present value (NPV) and life-cycle costs; however, these would not facilitate broad comparability across fleets with different usage rates and life-cycle lengths, and would require more complex normalization adjustments. We also considered operating profit; however, this would not take financing costs into account and would also require normalization for different fleet characteristics.

The cost-per-mile metric incorporates cost categories, including financing (interest expenses, capital cost and depreciation), maintenance, administration and licensing. Cost categories such as drivers, fuel and insurance claims were intentionally excluded, as relevant benchmarks already exist for these components.

Making fleets comparable

Participants used different methods of vehicle financing, had different methods of calculating depreciation schedules and owned vehicles with varying mileage. In addition, participants varied in the level of granularity to which they maintained data. For some, information was maintained at a fleet class level, for others, at an individual vehicle level. For these reasons, we developed five major adjustments to facilitate cost comparability across participating companies. These adjustments included:

1. Financing costs: since companies did not always include cash equipment purchase opportunity costs, we converted such cash equipment acquisition costs to a comparable operating lease. In order to standardize, company weighted average cost of capital (WACC) was used for “cash purchases,” assuming similar risk as the company. While for “financed purchases,” we used the related interest rates. During this exercise, it was found that cost of capital decreased with increase in fleet size.

Table 3. Financing adjustment example

Year	Option 1: cash upfront		Option 2: annual payments with interest	
	Principal	Interest	Principal	Interest
1	US\$80,000	–	US\$20,000	US\$1,000
2	–	–	US\$20,000	US\$1,000
3	–	–	US\$20,000	US\$1,000
4	–	–	US\$20,000	US\$1,000

Figure 1. Standardized asset depreciation costs

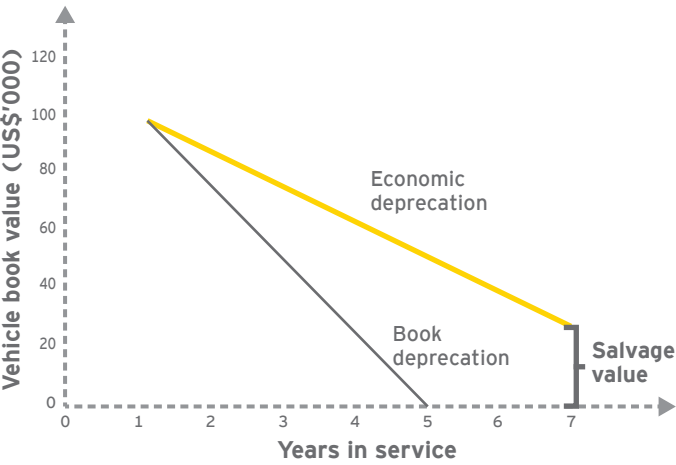
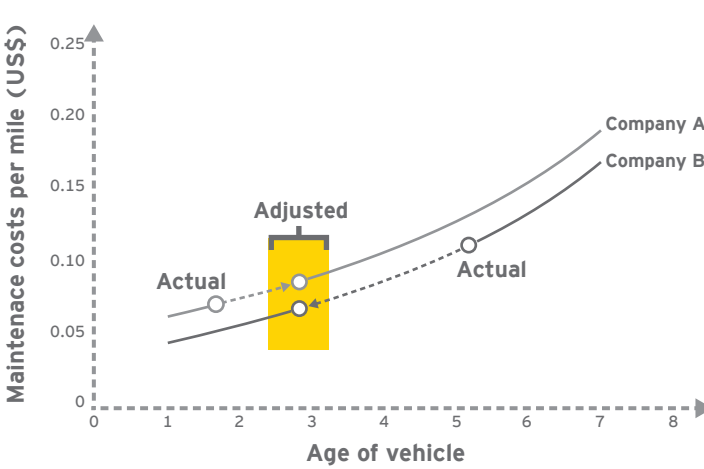


Figure 2. Maintenance costs per mile versus age of vehicle



2. Asset depreciation: many of the participating companies used simple straight line depreciation, assuming the book value of an equipment to be zero at the end of the assumed depreciable life. In reality, it was found that on average, assets could be valued at approximately 20% of their original purchase price after 5-6 years of useful life and less than 10% after 10 years of useful life. Because participating companies differed in the asset depreciation methods and estimated equipment residual value they used:

- ▶ Depreciation costs were standardized using straight line depreciation across the holding period assuming average purchase and disposal prices
- ▶ Residual value was standardized by assuming average asset values decline at 25% each year and calculating the terminal year book value

3. Maintenance costs: our TCO study supports the view that maintenance costs increase as vehicle age increases, thus affecting lifetime costs of ownership. This increase in maintenance costs depends on various factors, especially on the rigor and quality of maintenance on the vehicles.

The TCO study results also confirm that the increase in maintenance costs is exponential. Years one and seven see the highest average increase in maintenance costs, while year six

sees the smallest. Thus, replacing vehicles before they get too old is critical to maintaining low costs, due to the exponential relationship of maintenance cost per mile to vehicle age. Since maintenance costs were not comparable for different fleet ages, they were standardized by calculating the maintenance cost annual aging schedule and comparing maintenance costs for all fleets at year three.

Based on actual data provided, some companies may appear to have extremely high maintenance costs per mile. However, when adjusted for the age of the fleet, we find in some cases that they are actually very effective at maintenance.

4. Vehicle mileage: different equipment annual mileage distorts the fixed component of the calculated cost per mile, therefore the equipment fixed cost-per-mile rates were adjusted by assuming a base of 100,000 miles per tractor, 50,000 miles per truck and, based on industry trailer to tractor ratios, trailer miles of 66,000 miles per reefer trailer and 50,000 miles per dry van trailer.

5. Administrative costs: administrative costs for trailers are usually embedded with those of Class 8 tractors, therefore allocation of administrative costs have been based on non-administrative costs among Class 8 tractors and trailers

Table 4. Maintenance costs fleet age adjustment

Age of vehicle (in years)	Company A (US cents)	Company B (US cents)
1	4.9	2.1
2	6.3	3.1
3	7.8	4.4
4	9.6	6.5
5	12.0	8.8
6	15.3	12.0
7	18.9	16.2

Table 5. Standardized mileage adjustment

Unit type	Actual average mileage	Standardized mileage
Class 8	75,000	100,000
Class 6 and 7	23,000	50,000
Reefer trailer	34,000	66,000
Dry van trailer	31,000	50,000

Replacing vehicles before they get too old is critical to maintaining low costs, due to the exponential relationship of maintenance cost per mile to vehicle age.

Don't fall into the trap!

Key TCO study findings can help you determine whether leasing or owning your truck fleet is better for your company.

Lack of awareness

- ▶ Truck fleet costs are typically not tracked for smaller fleets (a fleet size of 1-24 vehicles) using the industry standard cost per mile on an ongoing basis
- ▶ Small-to-medium (fleet size of 25-99) truck fleet managers do not appear to have a strong sense of their relative fleet cost efficiency, validating the need for customized and targeted fleet total cost of ownership benchmarks

Evaluation biases

- ▶ Companies financing their fleet with cash often do not incorporate opportunity cost of capital into their purchasing decision process, thus underestimating the total cost of ownership
- ▶ Fleet managers often do not perceive potential leasing financial benefit regardless of their relative economies of scale or whether fleet management is a core business capability

Benchmarks

- ▶ Total cost of truck fleet ownership differs significantly between different fleet size segments; economies of scale play a significant role in fleet total cost of ownership
- ▶ Economies of scale differences present a potential savings opportunity because small-to-medium fleets can potentially benefit from large-scale outsourcing to leasing companies with significant economies of scale

