



Re-evaluating the total cost of truck fleet ownership





Do you have a comprehensive view of all of your costs?

Fleet management costs are on the rise

Fleet owners and managers are watching costs go up. New regulations and advanced safety technologies are two of the drivers of these rising costs. As the Environmental Protection Agency (EPA) and other agencies issue more stringent emission mandates, adhering to these regulations means more administrative and maintenance costs. In June 2015, the EPA and the National Highway Traffic Safety Administration (NHTSA) proposed new standards to further reduce carbon emissions and increase fuel economy for medium and heavy-duty vehicles. These new standards will continue to add cost and complexity for fleet owners as vehicle manufacturers consider strategies and technologies to meet the new standards.

In addition, advancing technology is causing maintenance costs to rise. From onboard computers and cameras, to collision avoidance and other sensor-based systems, to remote diagnostics, equipment will become safer, but also more complex and more expensive to maintain.

When it comes to new engine technologies, not only does the complicated engine infrastructure required by new emissions mandates require additional service attention, but it also requires new technical expertise, meaning potential increases in administrative costs as well.

“As Commercial Vehicles become more sophisticated and automated, maintenance is shifting rapidly from traditional tools to advanced data analytics, digitized diagnostics, and telematics.”

**– Todd Dubner, KPMG LLP
Transportation Industry Specialist**

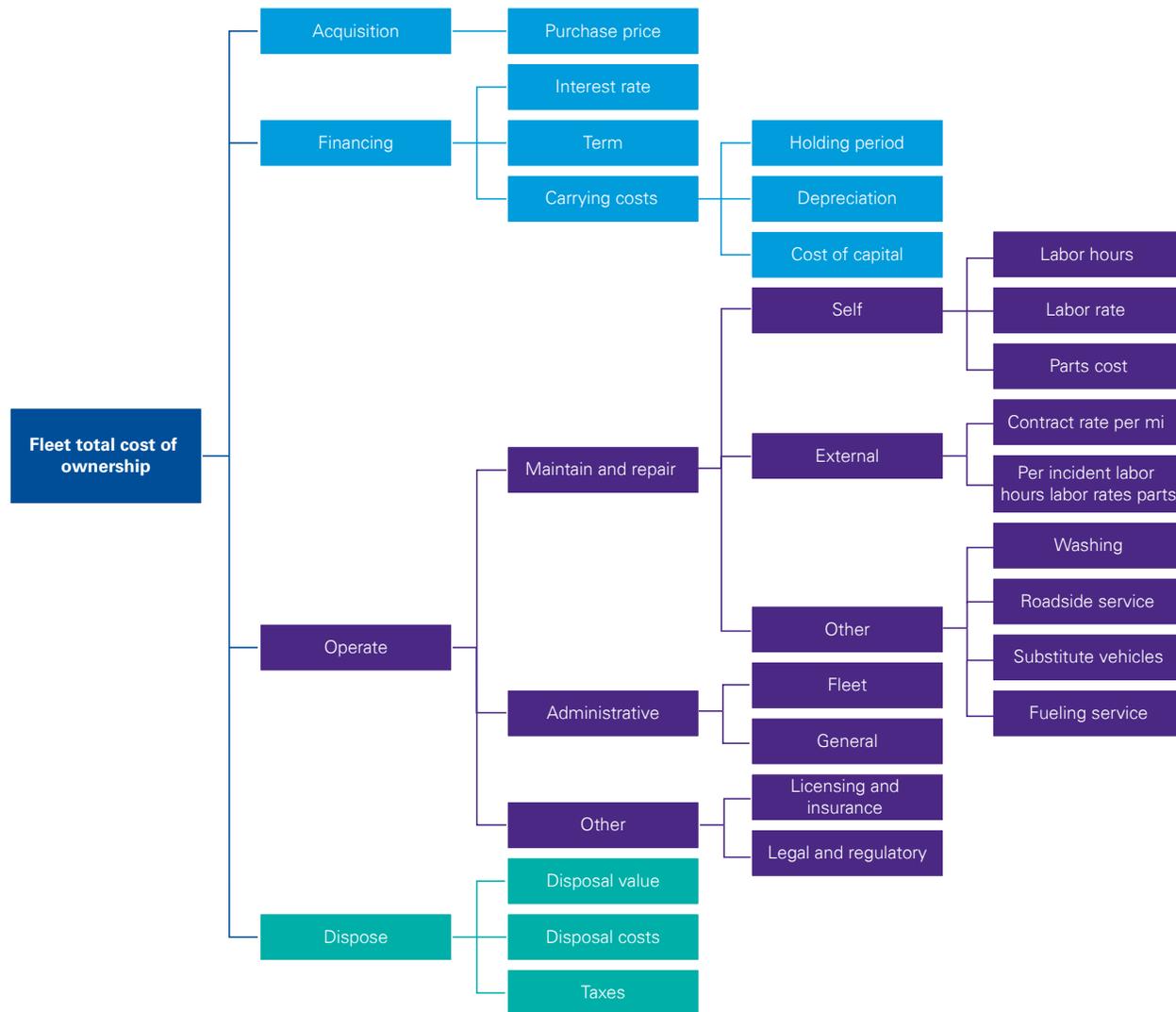
Longer holding periods mean more spending on unscheduled repairs, preventive maintenance, tires, and substitute rentals. One breakdown on the road can cost as much as \$3,000. One food and beverage fleet manager said “Our trucks are duct taped with BAND-AID® bandages, so costs are not consistent.”

These escalating costs are causing fleet owners to take a closer look at their total cost of ownership (TCO).

New TCO study

A 2016 KPMG LLP (KPMG) study—using customer fleet data provided by Ryder Fleet Management Solutions division of Ryder Systems, Inc., from a sample of over 3,000 fleet owners—confirms that costs are increasing. For the purposes of the study, the definition of TCO includes fleet costs related to maintenance, financing, administration, legal/taxes, and other costs (substitutions, roadside assistance, and washes). It excludes all driver and fuel costs. See the cost tree in Figure 1.

Figure 1



The average cost per mile for Class 8 tractors covered by the study was \$0.58, in line with the \$0.56 found in the National Private Truck Council’s 2015 benchmarking study.¹ The following graph compares TCO for fleet owners in 2012 with TCO submissions from 2015. The costs from 2012 were adjusted for inflation, and when results were normalized for fleet size variations, the increase in cost for Class 8 vehicles over the three-year period is approximately 23 percent, and 30 percent for Class 6/7 trucks (see Figure 2). For smaller fleet sizes, the increase in TCO could potentially be even more dramatic.

¹ National Private Truck Council, Benchmarking Survey 2015

Figure 2

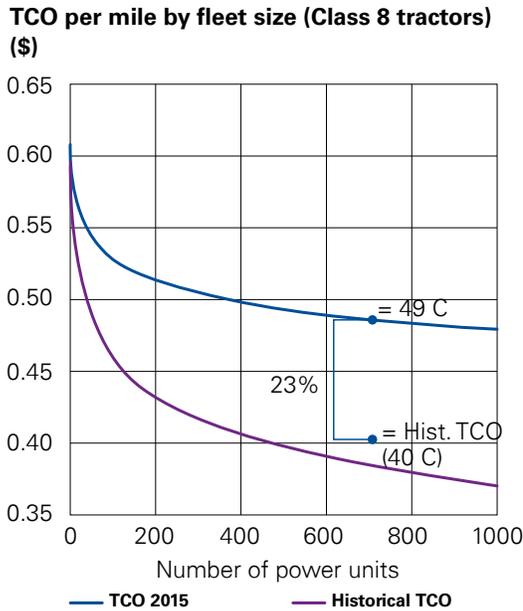


Table 1: TCO BY FLEET SIZE (\$ per mile)

| Fleet size | Class 8 tractors | Class 6/7 trucks | Reefer trailers | Dry van trailers |
|------------------------|------------------|------------------|-----------------|------------------|
| 1-24 | 0.58 | 0.78 | 0.35 | 0.26 |
| 25-99 | 0.54* | 0.76 | -- | 0.15 |
| 100-499 | 0.50 | 0.65* | -- | -- |
| 500+ | 0.47 | 0.63 | -- | -- |
| Average Annual Mileage | 78,000 | 36,000 | 72,000 | 61,000 |
| Mean | 0.58 | 0.79 | 0.38 | 0.24 |

*manually adjusted to reflect cost curve

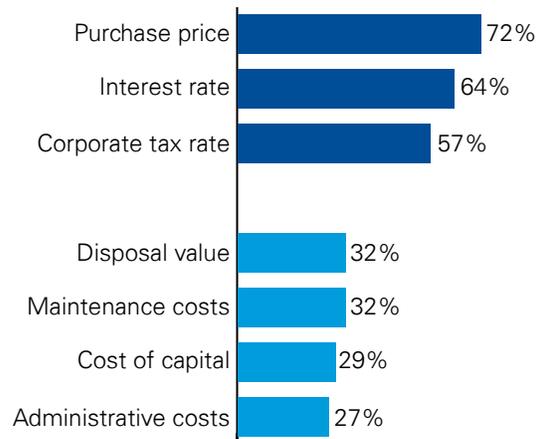
Note: Only showing results where sample sizes were 20 or more; average annual mileage rounded to nearest 1,000

A complete view of costs is often elusive

One challenge with evaluating TCO is that, often, fleet managers simply do not know their costs. While companies with large fleets may have a detailed view of their true expenses, small fleet owners frequently have little confidence when estimating their costs. It may be pretty easy to get an accurate estimate for purchase price or tax rate, but other costs are much less clear. Our study found that, on average, small fleet managers can accurately provide purchase price, interest rate, and corporate tax rate more than half of the time, but can only provide maintenance cost, disposal value, and other administrative costs about 30 percent of the time.

Figure 3

Fleet Owner Data Accuracy: What percentage of fleet owners can accurately provide the following costs? (Average % across all responses)



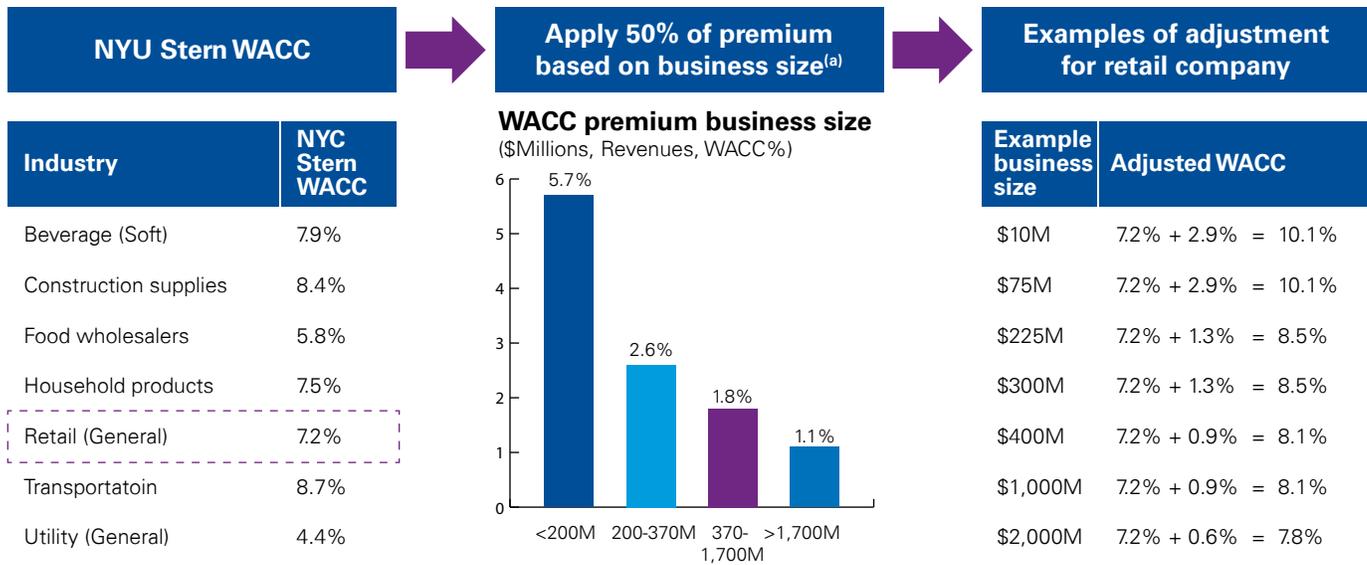
There are many pitfalls when it comes to developing an all-inclusive vehicle TCO. As mentioned above, it may be pretty easy to get an accurate estimate for certain pieces of the puzzle, but other costs are harder to pinpoint. And some costs may not be considered at all. Our interviews with fleet owners and managers confirmed that professionals often have a fuzzy view of their comprehensive costs, and/or are overlooking some “hidden” costs. Or, worse yet, some managers are making fleet decisions based largely on gut feeling, without meticulously considering all fleet management expenses. Without a detailed evaluation process, these decisions are being made with multiple blind spots.

Financing

Estimating purchase price might not be very challenging, since information is readily available in the market, but there are other financing components that are much less clear-cut. Cost of capital is often elusive and misunderstood. Managers often do not impute a cost of capital on the down payment for a vehicle. And even when businesses do consider their cost of capital, it is likely significantly underestimated. In our study, the average self-reported cost of capital was 6.67 percent, yet the average for all publicly traded U.S. companies is 6.29 percent.² Since the majority of fleets in our study were small (92 percent with under 25 vehicles) and not multibillion-dollar publicly traded entities, there is a clear misalignment between self-reported data and reality. Using KPMG internal data and industry guidance, we corrected for this discrepancy, and applied a conservative premium to the self-reported cost of capital, using 50 percent of the small-business premium recommended³. After the adjustment, the average financing cost per mile for Class 8 tractors went up approximately 3 percent. Not insignificant considering that this is an approximate \$5,000 annual increase for a fleet of 10 Class 8 tractors.

² NYU Stern – http://people.stern.nyu.edu/adamodar/New_Home_Page/datafile/wacc.htm

Figure 4



Administration/Other

While financing and maintenance costs may be top of mind when thinking about fleet management, there are other costs that must be considered to compose a holistic picture of expenses. You must allocate all applicable expenses, even if they are through functions that only indirectly support fleet management, such as IT and HR support. When vehicles are down, are you considering employee’s time spent

dealing with the issue and the customer impact, not just the replacement cost? Our interviews with fleet management professionals revealed that they often do not analyze key drivers such as substitution, roadside assistance, and washing costs when assessing their TCO. This can be a noteworthy oversight; according to our submissions, for a fleet with fewer than 25 Class 8 tractors, these costs average \$2,700 per vehicle per year (see Table 2 below).

Table 2

| Fleet size | Weight % | Ave annual mileage | Substitution | Roadside assistance | Washes | Total | Annual per vehicle total |
|------------|----------|--------------------|--------------|---------------------|---------|---------|--------------------------|
| 1–5 | 0.693 | 74,000 | \$0.012 | \$0.014 | \$0.010 | | |
| 6–24 | 0.307 | 86,000 | \$0.011 | \$0.012 | \$0.009 | | |
| Weighted | | 78,000 | \$0.012 | \$0.013 | \$0.010 | \$0.035 | \$2715 |

Note: Dollar amounts rounded to three decimals

It’s not all about bottom line

When it comes to fleet management, certain financial savings thresholds have to be met to justify decisions to management, but our interviews of small-fleet managers told us that the bottom line was not the only factor that these professionals consider.

Location of repair facilities was a common theme that

“In the trucking business, time is money... an extra 10 miles makes a huge difference.”
– Small-fleet manager, Transportation & Utilities

was echoed time and time again. As stated above, this travel-time consideration ultimately translates into money, but it shows that the fleet management decisions are not always exclusively about direct monthly costs for vehicles. While a CFO may focus on bottom line, fleet managers also consider perceived risks such as the unknowns of maintaining old vehicles, the time spent worrying about substitute vehicles, or increasing complexity of working on new engines in more than just dollars and cents.

³ 2015 Ibbotson SBBI Market Report

Benchmarking – How do I determine how my TCO compares?

When performing a TCO analysis, it is important that companies compare themselves against the appropriate profile. Adjustments for fleet size, industry, composition, and age are critical to getting an accurate comparison. Averages across multiple industries or across multiple fleet sizes can be misleading. While some distinctions may seem obvious—for example, smaller companies are likely to have higher financing costs than large ones with more buying power—some dimensions may be overlooked when doing these evaluations.

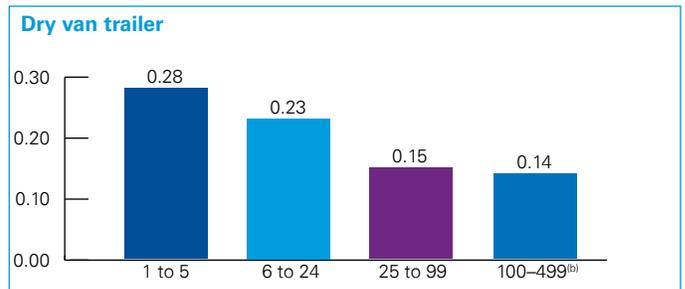
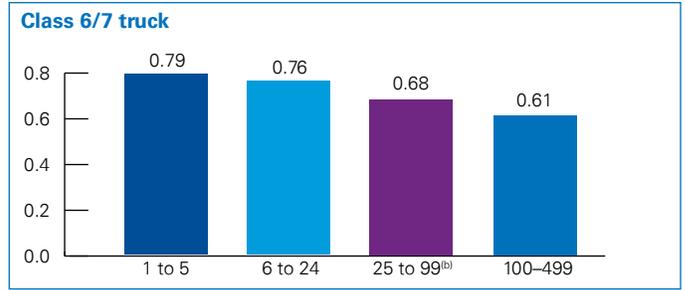
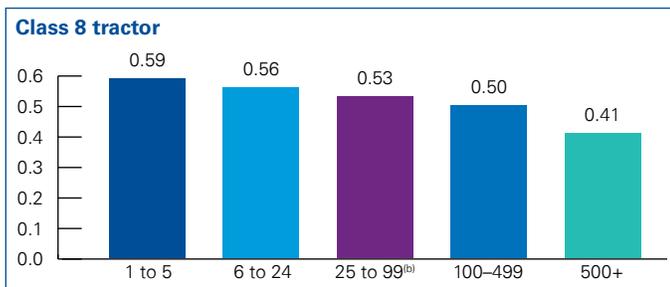
For instance, you could determine that your maintenance costs are 20 percent lower than one of your peers, but if you have not standardized for fleet age, you would gain unwarranted confidence in your fleet management abilities. A second look might show you that your average fleet age is several years less than that of the peer you are comparing against, and when standardized for age, your maintenance costs are actually higher.

In addition, different industries may have varying cost profiles, and industry can often serve as a proxy for application. A trucking company is likely doing more long-haul highway driving, versus a retail company that may be doing more starting and stopping within a smaller radius. These different applications can significantly impact maintenance costs. Additionally, for the trucking company, fleet management is paramount for their business, so they are likely more efficient and achieving better costs.

Also, costs differ by fleet size. There are substantial economies of scale in fleet TCO. The graphs in Figure 5 show that for Class 8 tractors and Class 6/7 trucks, the economies of scale are significant. If you return to the cost curves in Figure 2, you can see that these economies are particularly pronounced as you move from 1 to 50 vehicles. When looking at our data, it may seem strange that the financing costs for Retail, on average, were almost 40 percent higher than Transportation & Utilities (T&U). However, this is likely explained by the fact that the average fleet size for T&U was 29, versus 8 for Retail.

Figure 5

Cost-per-mile breakout by fleet size^(a) (\$)



How should I be thinking about my TCO?

What we know

- Fleet operations are becoming more expensive
- Substantial economies of scale can be achieved as fleet size increases
- New regulations will likely continue to impact maintenance and administrative costs
- New technologies will likely continue to impact maintenance costs

Looking to the future, the TCO landscape is dynamic and will continue to change as new technologies and regulations emerge. The phase 2 greenhouse gas emissions standards and fuel efficiency standards for medium- and heavy-duty engines and vehicles proposed by the EPA and NHTSA will continue to change the complexity of trucks. And as stated above, administrative and maintenance costs will rise as companies try to comply with these new regulations and maintain these more complex vehicles.

Additionally, trucking patterns are expected to shift. For example, the widening of the Panama Canal will likely lead to less long haul (from Port of Los Angeles) and more regional and short haul (from East Coast ports) for some goods. This will change driving patterns and locations for maintenance facilities and create more short-haul driving, with a different cost-per-mile maintenance perspective (typically higher cost per mile on shorter routes).

Furthermore, fleet owners are facing increasing driver turnover rates and shortages, which can lead to higher maintenance costs—less trained drivers tend to make more mistakes—and higher administrative costs—new drivers have to be screened, hired, trained, etc. According to the American Trucking Association, if the current trend holds, the shortage may balloon to almost 175,000 drivers by 2024, up from 38,000 in 2014.⁴

Finally, shorter and shorter technology innovation cycles on everything from tires to sophisticated collision avoidance systems and autonomous vehicle technologies will make it harder for fleet managers to keep up with these changes and efficiently maintain vehicles. Fleet management is clearly becoming a scale business along all dimensions of the TCO life cycle—procurement, maintenance, and disposal. As these costs rise and innovation accelerates, fleet owners will have to determine the optimal operating model and evaluate alternative approaches for each phase of the life cycle.

“These rules are exacerbating the current driver shortage, making equipment costs significantly more expensive, and increasing the financial risks that smaller, less well-capitalized fleets are facing.”

– Dr. Mary Holcomb, professor of supply chain management at University of Tennessee

– John Schultz, Trucking Regulations: Caught in a Web.

Logistics Management, October 1, 2015, Web

Understand your costs today, control your costs tomorrow

Costs are rising, and if you are assessing your TCO, you need to have a comprehensive view of ALL expenses to make thoughtful decisions. Fleet managers can begin by using the cost tree presented in Figure 1, then adding

cost elements specific to your operations. As mentioned earlier in the article, it is important to remember not to underestimate the cost of capital.

Once you have developed a comprehensive view of costs, benchmarking your costs against similar companies at the most detailed level possible will allow you to identify specific areas of cost disadvantage to focus on. Based on our research, fleet managers should pay particular attention to four cost drivers: vehicle acquisition, vehicle maintenance, compliance regulation, and vehicle disposal.

Some fleets may find that they are only cost disadvantaged in select cost drivers, like fuel or tire costs. For those fleets, consider targeted cost reduction activities such as tire retreading, vehicle tracking, and driver training to improve vehicle use habits. As new, complex technologies emerge to assist drivers and increase efficiency, fleet managers should remember that while complex technologies can be beneficial, they may also increase maintenance costs.

Fleets that discover cost disadvantages across a number of vehicle maintenance categories should assess whether a service contract might lower TCO. Additionally, service contracts may allow fleet managers to focus on their core business, instead of vehicle maintenance. When considering service contracts, fleet managers should weigh the impact of maintenance availability, service locations, and additional spares that may be required with a service contract.

Others may see more drastic cost disadvantage, which is only expected to worsen as costs increase. For those, analysis of whether fleet management should remain a core activity may be required. A small medical waste company with 22 aged trucks in fleet found their maintenance, compliance, and spares/rental costs to be above benchmarks. For example, they spent \$15k/year to simply park their spare trucks. By switching to full service leasing of half of the fleet, they were able to save \$860/month.

As all fleets face rising costs, those that are able to assess their TCO and respond through cost saving measures will remain most competitive in the future.

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- Develop a complete picture of TCO costs
 - Benchmark against similar profiles
 - Do not underestimate your cost of capital
 - Determine if fleet management is part of your core competency
 - Stay focused on the changing environment
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⁴ Costello, Bob, and Rod Suarez. American Trucking Associations – Truck Driver Shortage Analysis 2015. October 2015.

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