



Lease or buy? Evaluating the rising costs of truck fleet ownership

Commercial trucking fleets are contending with rising costs across every budget lever.¹ Wages have increased for drivers, mechanics, and fleet administration.² Supply chain disruptions have escalated purchase prices, and higher interest rates are making borrowing more expensive.³

How can companies cope in the face of margin pressure?^{4,5} A recent study by KPMG LLP (KPMG) and Ryder discovered that fleet owners and managers are better off performing a closer examination of their total cost of ownership (TCO). KPMG found that self-reported fleet costs have increased by at least 14 percent for class 8 tractors since 2016; comparable third-party data show a

While benchmarks show costs have risen an average of 38 percent, our research indicates that fleets vastly underestimate the increase.

nearly 38 percent increase, indicating owners and managers frequently underestimate, or don't fully consider, what they're spending on truck ownership.^{6,7} Our findings also spurred questions: How much of a role do economies of scale play? By how much do fleet managers underestimate their costs? Finally, in the current economic environment, is it better to own or lease a fleet?

The answers aren't so simple. Our research found that a full-service lease could save up to 19 percent when compared to ownership in the examined applications for class 8 tractors, when the lease includes vehicle maintenance, financing, administration, legal fees, taxes, substitutions, roadside assistance, and washes (but excludes all driver, insurance, and fuel costs). In this paper, we explore the budget levers, economies of scale, and size premiums owners and managers should consider when evaluating whether to lease or purchase a fleet.

¹ "Top trucking trends to monitor in 2024," Campbell, TruckingDive.com, Jan. 29, 2024 | ² Employment Cost Index—March 2024, US Bureau of Labor Statistics, April 30, 2024

³ "Fixed cost is a good reason for fleets to lease rather than buy," Clark, FleetOwner.com, May 23, 2024 | ⁴ Ibid. | ⁵ Ibid.

⁶ "Re-evaluating the total cost of truck fleet ownership, KPMG.com, 2016 | ⁷ "An Analysis of the Operational Costs of Trucking: 2024 Update," American Transportation Research Institute, 2024

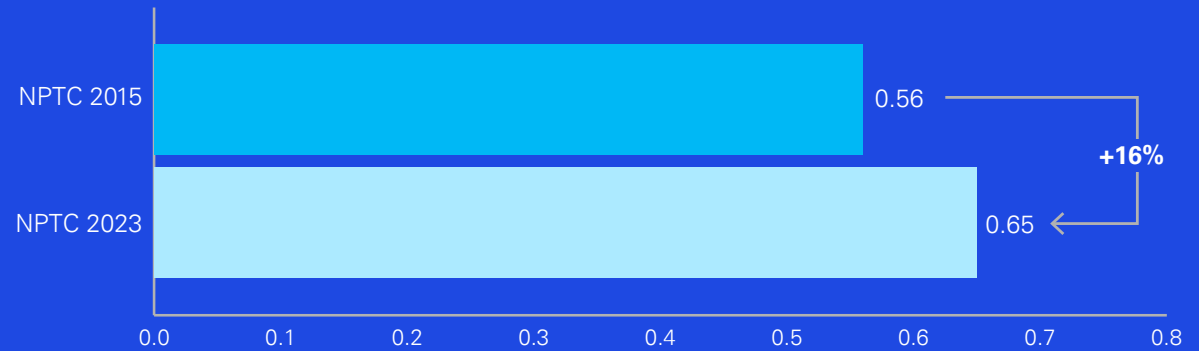
TCO increased across key cost levers for all fleet sizes

In the KPMG study of nearly 2,000 class 8 fleets providing data from 2021 to 2024, TCO per mile grew from \$0.58 in 2016 to \$0.67 in 2024. Similarly, the National Private Truck Council (NPTC) reported an increase from \$0.56 per mile to \$0.65 over a similar time frame. The difference in cost per mile is likely due to fleet size: The typical NPTC survey respondent reported an average of 442 power units versus a median of 1-5 power units in the Ryder/ KPMG data set.

KPMG found that the increase in costs is representative across all cost levers. Financing costs, representing purchase price, resale value, interest expense, and cost of capital, increased 15 percent while maintenance and all other costs each increased 13 percent.



Figure 1: NPTC cost per mile 2015 versus 2023*



*Considers reported van operations, pro-rated to remove trailer costs.

Figure 2: Underlying cost segment growth 2015 versus present for TCO submissions (\$/mi)

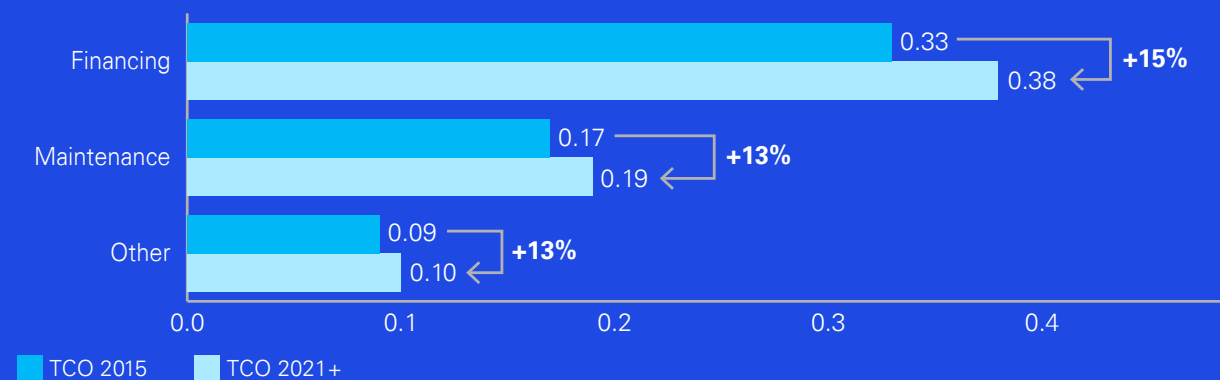
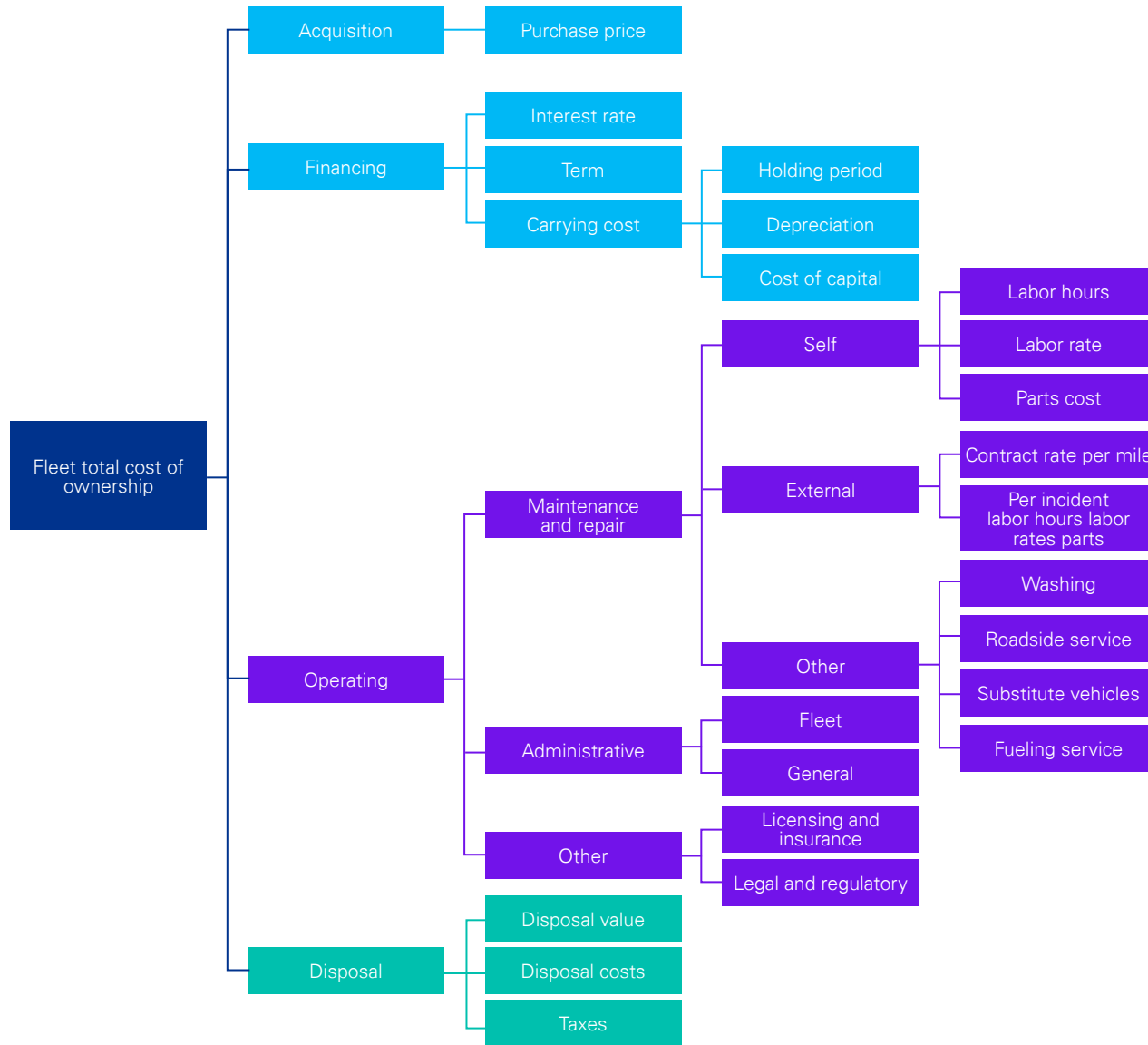


Figure 3: In-scope cost levers*



*For the purposes of the study, the definition of TCO for these traditional internal combustion vehicles includes fleet costs related to maintenance, financing, administration, legal/taxes, and other costs (substitutions, roadside assistance, and washes). It excludes all driver, insurance, and fuel costs. See the cost tree in Figure 1. Not captured in this analysis is the potential advantage of growing on-board technology, such as telematics and cameras, which can help reduce costs, such as insurance premiums.

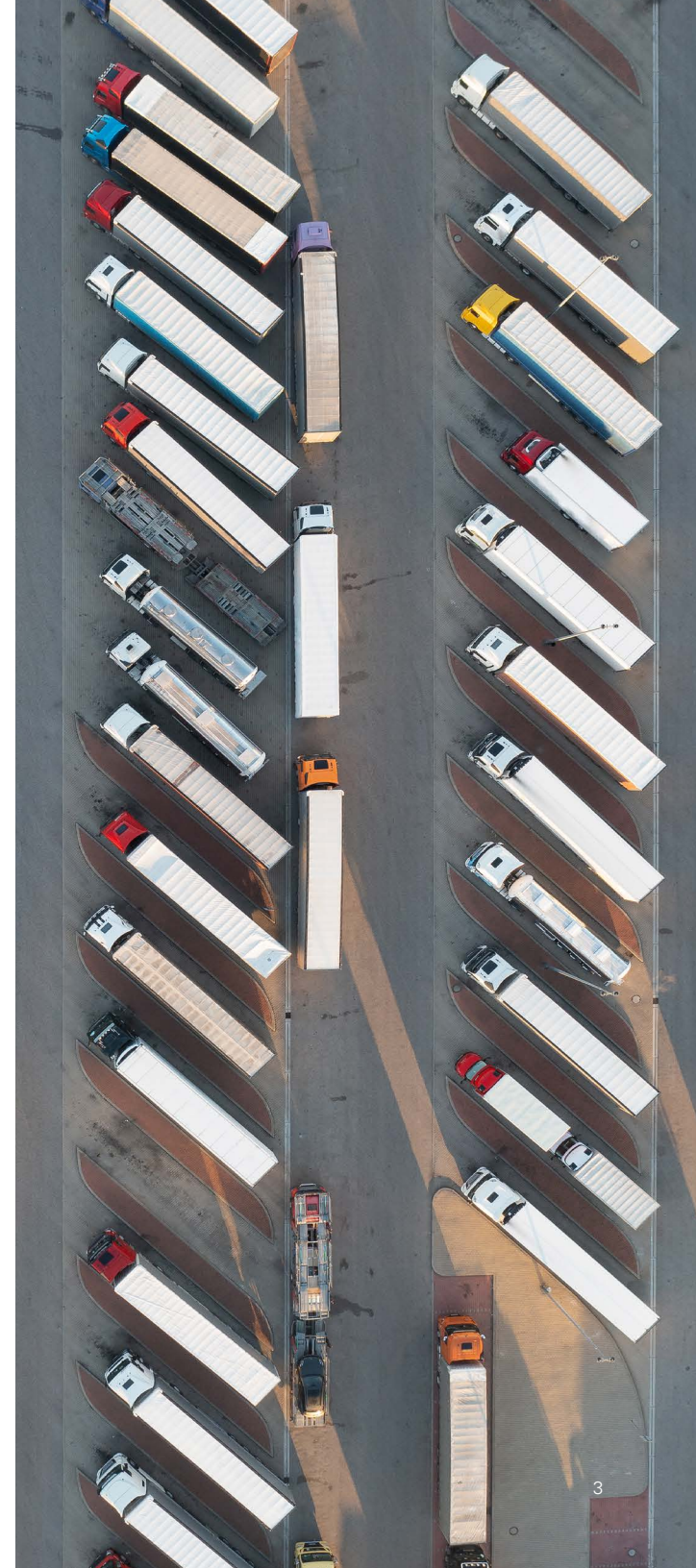
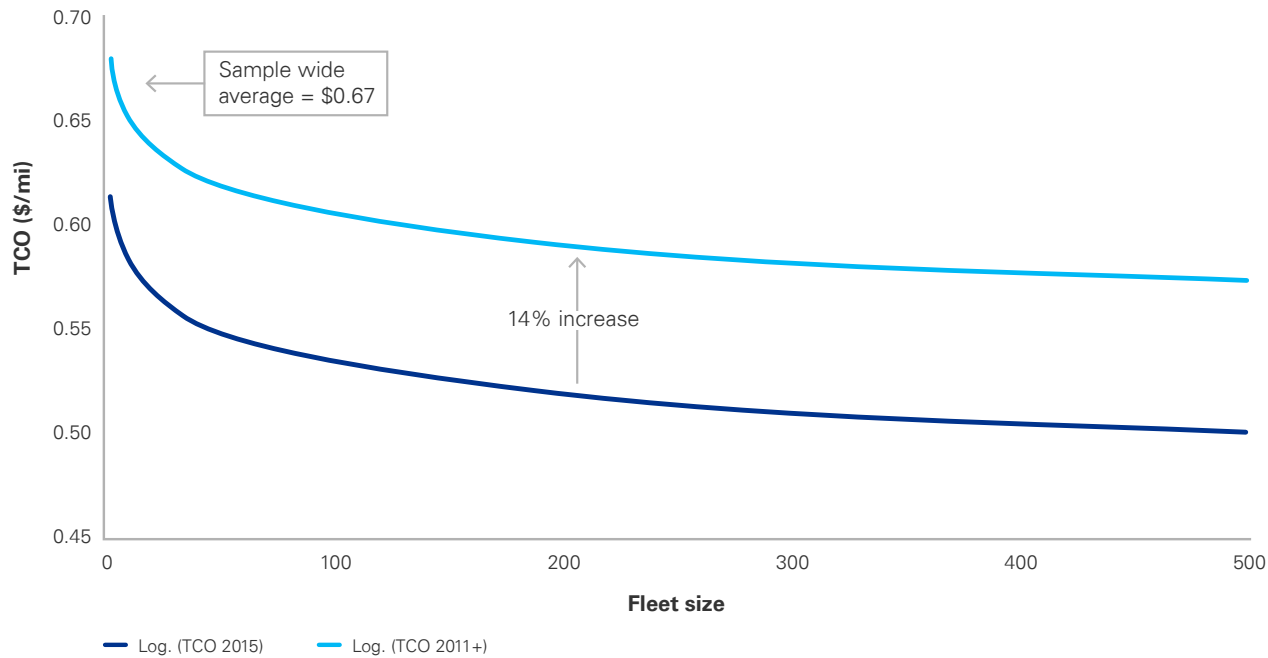


Figure 4: TCO submission cost per mile 2015 versus present by fleet size



As exhibited in Figure 4, fleet owners experience economies of scale, decreasing their per-unit and per-mile costs. Reviewing proprietary data, we determined that maintenance costs, interest rates, cost of capital, purchase price, and resale values benefit from fleet scale. Bigger firms will have access to cheaper capital given their

larger, likely more diversified, revenue base and perceived stability. Bigger fleets can also employ their own mechanics and conduct maintenance and repairs more efficiently and affordably, using their purchasing power to drive down per-unit cost. However, despite the economies of scale enabled by fleet size, costs are rising for all firms.



Understanding the accuracy of self-reported costs

To understand the accuracy of the self-reported costs in our survey responses, we compiled an assortment of third-party data on five key pillars of the TCO calculation: vehicle purchase price, vehicle resale value, maintenance cost per mile, interest rates, and cost of capital. While the first four metrics are relatively intuitive for fleet managers and owners, the cost of capital is frequently misunderstood. For example, managers often do not impute a cost of capital on the down payment for a vehicle. Making matters more complicated is that even when businesses do calculate their cost of capital, it is frequently erroneous, usually

because they don't start with the right figures (Figure 5).

The NYU Stern School of Business publishes an annual cost of capital by industry that is a reasonable starting point for many fleet owners. However, given the large number of small fleets, we believe the NYU guidelines understate the cost of capital for the small firms we analyzed in our data set. To arrive at a more accurate cost of capital for small firms, we created a small-firm benchmark by applying half of the small firm premium calculated by Kroll, formerly Ibbotson, to the NYU Stern data.

To analyze the impact of underestimated, self-reported fleet costs, we applied third-party benchmarks for maintenance, purchase price, resale value, interest rate, and cost of capital to all self-reported data submissions (Figure 5). In instances where the self-reported data was understated versus the benchmark, the revised benchmark replaced the self-reported data point. For example, if a fleet owner reported an interest rate of 3.5 percent while the prime rate was 8.5 percent, then the self-reported figure was replaced with the prime rate. Applying the methodology led to an 18 percent increase in TCO per mile.

Figure 5: Third-party benchmarks

| Benchmark | Benchmark source | Benchmark value |
|-----------------|---|---|
| Maintenance CPM | ATRI ⁷ | 0.268 ¹³ |
| Purchase price | ATD ⁸ | 158,993 |
| Resale value | ACT ⁹ | 42,456 |
| Interest rate | Federal Reserve economic data, prime rate ¹⁰ | 8.5 percent |
| Cost of capital | NYU Stern ¹¹ , Kroll ¹² | Interest rate data table by industry and small firm premium: <ul style="list-style-type: none"> • Fleets <100: 2.4 percent • Fleets >100: 1.05 percent |

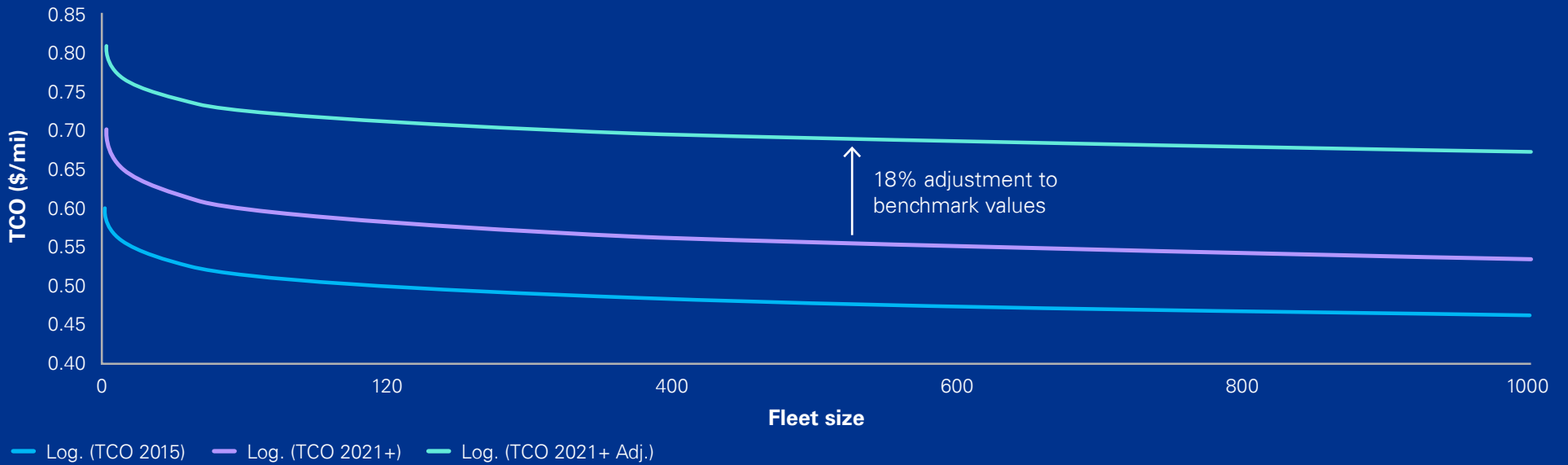
⁷ Ibid. | ⁸ "ATD Data 2023 Annual Report," NADA, 2023 | ⁹ "U.S. Used Trucks Classes 3-8 with forecasted residual value," ACT Research, 2024 | ¹⁰ Bank Prime Loan Rate (DPRIME), FRED, 2024

¹¹ Cost of Equity and Capital, NYU Stern School of Business, January 2024

¹² "Kroll Recommended U.S. Equity Risk Premium and Corresponding Risk-Free Rates to be Used in Computing Cost of Capital: January 2008 – Present," Kroll, June 5, 2024

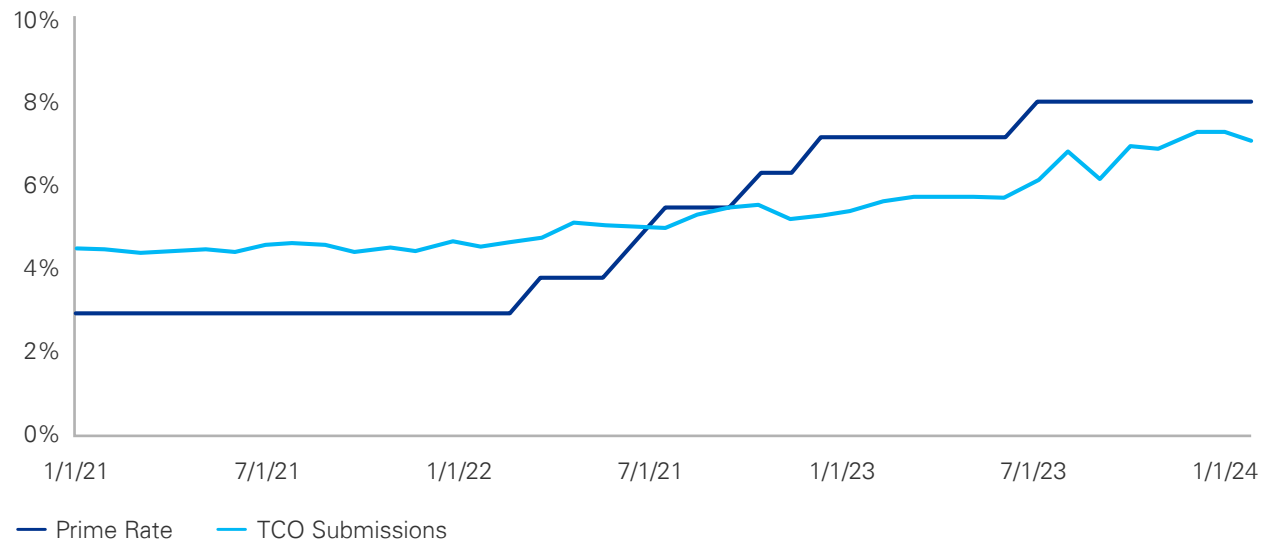
¹³ 2024 ATRI maintenance CPM including tires, grown at 2 percent CAGR for three years, to represent midpoint of truck holding period

Figure 6: TCO submissions adjusted to third-party benchmarks



The underestimation of costs by fleet owners can be attributed to several factors, but the biggest is inflation. Although inflation and interest rates began rising in 2021–2022, many fleet owners continued using actual expenses from earlier years to budget for the future. But in maintenance, for example, third-party mechanics increased their pricing to offset higher wages and parts costs. Similarly, the cost to rent substitute vehicles rose, as did fleet administration costs like time spent scheduling maintenance, acquiring licensing, and getting loan quotes. The data also demonstrated that owners didn’t provide recent information about borrowing expenses, reflective of prime interest rate increases.

Figure 7: Reported loan interest rates vs. prime rate



Even without inflation, it is difficult to capture many of the costs fully and accurately. For example, how much time do firm employees spend scheduling third-party maintenance, and how much does that time cost? Or, how up to date is the latest rental quote when a substitute truck is needed, and does that include fixed and per-mile pricing? To illustrate the difficulty in correctly quantifying these costs, consider the volume of outlier responses within

the dataset. While easy-to-identify costs like purchase price, resale value, and maintenance had a relatively modest number of outlier responses, categories that are more difficult to quantify had a comparatively high rejection rate. (The other category consists of roadside assistance, administrative costs, substitution costs, and cleaning costs.)

Figure 8: Percent of submissions with outlier data



While financing and maintenance costs may be top of mind when thinking about fleet management, there are other factors to consider. To paint a holistic picture, owners should allocate all applicable expenses, even if they are functions that indirectly help fleet management, such as employee support in information technology or human resources. Similarly, when vehicles are

down, analyzing the employee time spent dealing with the issue and the customer impact should be included alongside truck replacement cost. Yet 41 percent of respondents, reporting their own costs, assumed \$0 for items such as administration, substitution, roadside assistance, and truck washing when assessing TCO.



Should I lease or buy?

Given the backdrop of rising ownership costs, we investigated the value proposition of leasing instead of buying. To do this, we leveraged standard pricing from Ryder for its class 8 tractor offerings. This lease pricing is full-service and encompasses all the cost levers outlined in Figure 1. Two calculation methodologies were developed. First, we compared lease pricing to the adjusted TCO

submissions as summarized in Figure 6. Second, we ran the established benchmarks through a discounted cash flow calculation (along with other inputs derived from the TCO submissions) to derive a singular data point comparison of the two options. Although use cases vary, our analysis surfaced up to a 19 percent savings when leasing instead of buying.

Figure 9: Lease versus buy comparison by fleet size

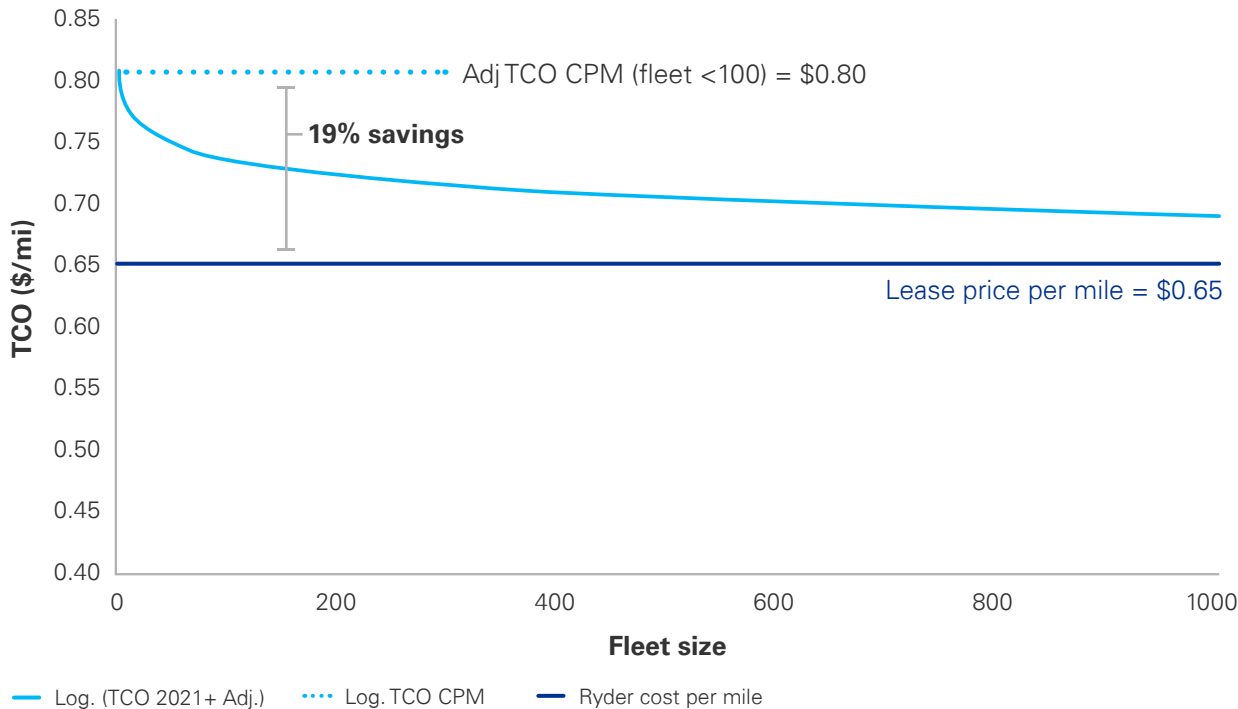
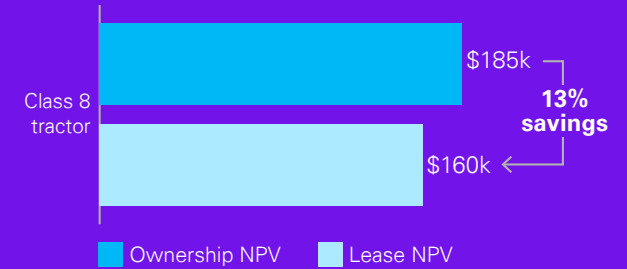


Figure 10: Lease versus buy benchmark discounted cash flow



While many fleet owners may feel more secure owning their own assets, this may not be financially sound—particularly for smaller firms unable to achieve the economies of scale necessary to realize the cost advantages of owning. And while leases may appear expensive, it is important to use recent pricing and interest rate data when evaluating the lease-versus-own proposition, while also including (and correctly analyzing) indirect costs like administrative expenses. Other advantages to leasing include quantitative benefits like debt burden reduction and qualitative aspects like reduced distractions and peace of mind.

TCO may change as powertrains evolve

As powertrains in commercial vehicles evolve and diversify beyond traditional internal combustion engines (ICEs), new studies in TCO are needed. Each powertrain has unique cost levers: While traditional ICE has higher preventative maintenance costs, battery-electric and fuel-cell-electric powertrains have infrastructure costs. Some states

have adoption incentives that could dry up over time and federal incentives hinge on upcoming elections. The lack of a track record for alternative fuels makes holding period assumptions far weaker than mature technologies like ICE, and the resale market, still in its nascent stages, make resale values harder to forecast. If an ICE TCO is hard to

accurately calculate, TCOs for alternate powertrains are even more difficult and will require additional input and expertise for fleet managers and owners to determine. With a deep understanding of TCO, fleet owners and managers can make more educated decisions now and in the future.

How KPMG can help

KPMG can help fleet owners, fleet managers, and original equipment manufacturers (OEMs) optimize their commercial vehicle decision-making process, including:

Quantifying TCO on an individualized basis to inform fleet-wide decisions, such as lease-versus-buy and in-house versus third-party maintenance

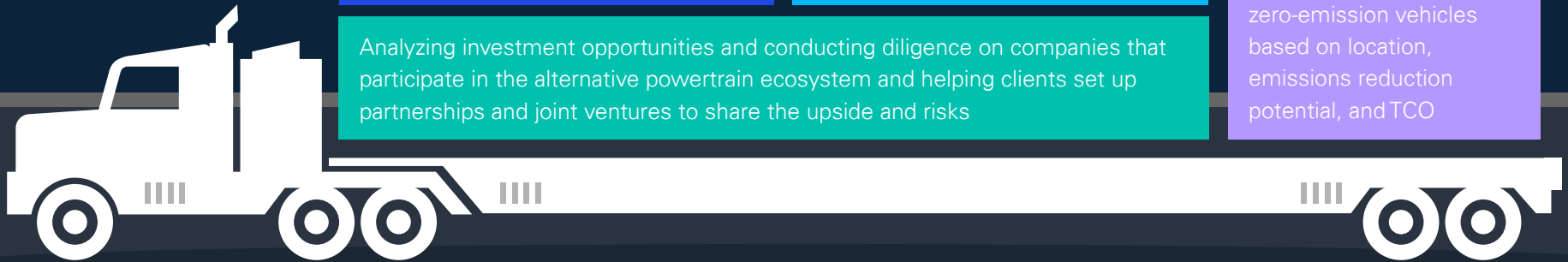
Researching decision-making criteria for fleet stakeholders and analyzing market trends to improve OEM product development approach and go-to-market

Developing detailed TCO comparisons to aid in decision-making between various powertrain options, including identifying federal, state, and local incentives

Analyzing investment opportunities and conducting diligence on companies that participate in the alternative powertrain ecosystem and helping clients set up partnerships and joint ventures to share the upside and risks

Modeling TCO for OEMs for powertrains in development and modeling use cases to assist marketing efforts

Helping clients develop strategies for zero-emission vehicles based on location, emissions reduction potential, and TCO



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