



Truckload: Linchpin in Your Supply Chain

By Mark Montague, Industry Pricing Analyst, DAT

Truckload is the Linchpin in Your Supply Chain

Truckload transportation may seem like a relatively small part of the logistics mix, but it is a bellwether for changing patterns that can dictate supply chain design. Timely data on truckload demand, capacity and rates can act as a barometer to predict broader trends in transportation and the overall economy.

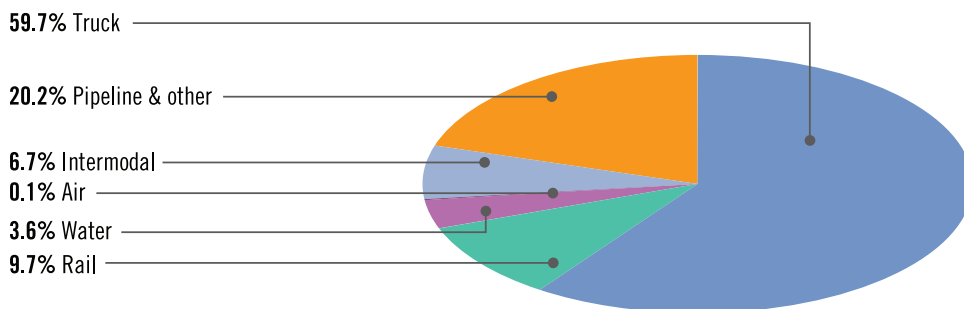
1. Key Role of Truckload Transportation

Whether your company's primary mode of transportation is by ship, rail or air, some portion of your inbound or outbound logistics continues to move on a truck, and at least a portion of it likely moves as full truckloads.

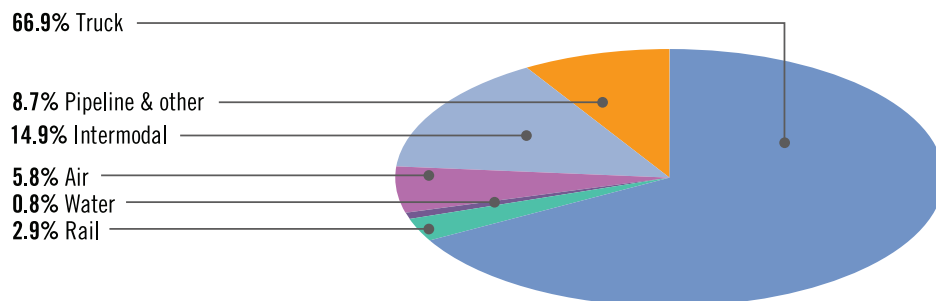


US Freight Transportations Modes - Figure 1

U.S. Freight Transportation Modes By Tonnage



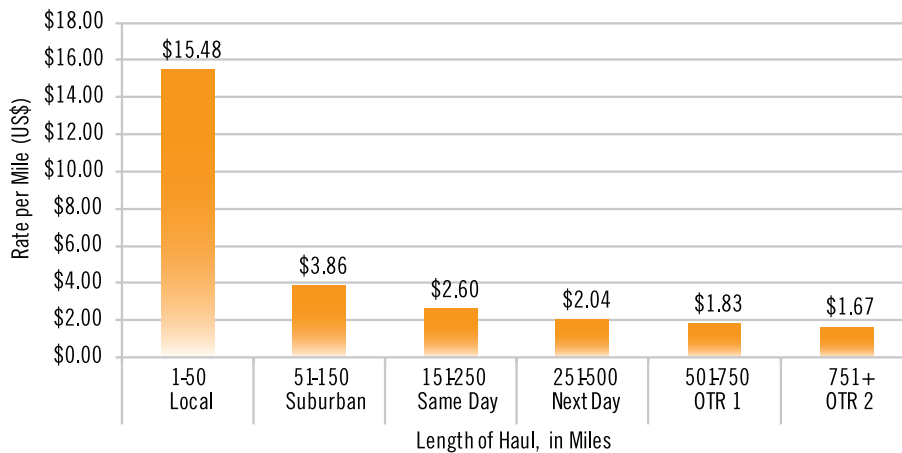
U.S. Freight Transportation Modes By Value of Cargo



Trucks haul nearly 60% of domestic freight by tonnage, but nearly 67% of cargo by value. Air and rail intermodal are also deployed disproportionately for higher-value cargo, while pipeline, water and rail carry heavier cargo that has proportionately lower value.

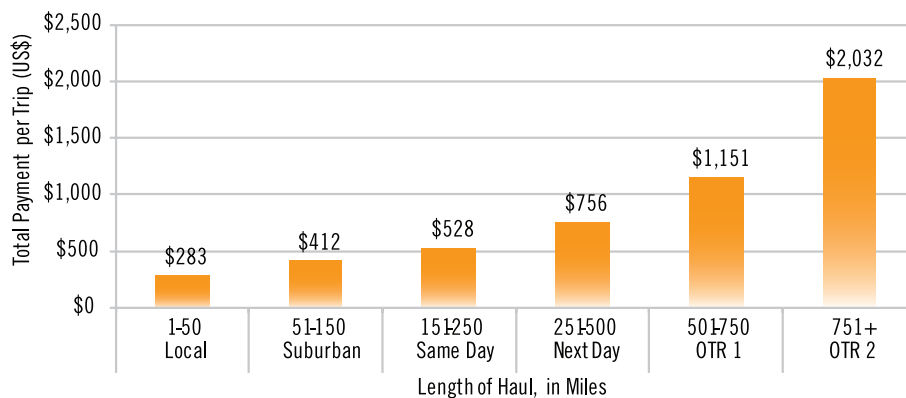
Source: U.S. Federal Highway Administration, 2007

Truckload Rate per Mile, by Type of Freight Move - Figure 2



Rates per mile tend to decline as length of haul increases for truckload moves, as shown in the graph of average van rates over twelve months. Rates are derived from the DAT RateView™ database of spot market rates paid by freight brokers and 3PLs to carriers.

Average Total Payment by Type of Move - Figure 3

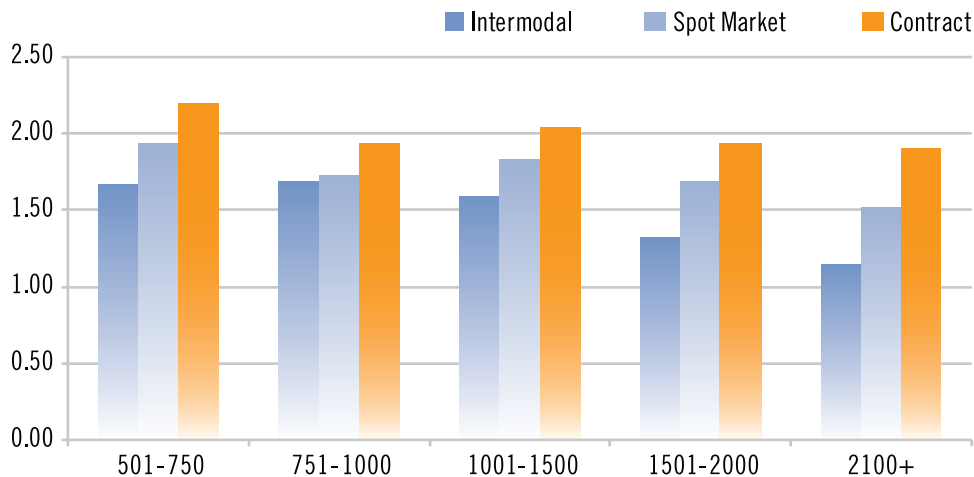


When sorted by the total payment for each freight move, long haul is the largest budget item in transportation. Shippers are increasingly shifting the longest moves to rail intermodal, which can cover distances of 700 miles and above at a lower rate per mile, providing terminals are conveniently located.

The same factors that determine demand, capacity and rates in the full truckload segment have an equal impact on other transportation segments that involve trucks, including rail intermodal, less-than-truckload (LTL) and parcel delivery. In the truckload segment, however, these factors are more easily observed, analyzed and modeled, to predict future trends with a high degree of accuracy.

On a per-mile basis, there is a strong relationship between the truckload rate and the length of haul. As shown in Figure X below, the average rate for the last twelve months is \$15.48 for a local move of up to 50 miles, but as the distance increases, the rate per mile declines. Over-the-road (OTR) truckload rates for vans average \$1.83 per mile for distances of 501 to 750 miles, and 9.5% less for distances of 751 miles or more.

Rate per Mile Comparison for Various Hauls - Figure 4



Shippers may realize savings of 15% to 18% when moving freight via rail intermodal (green) when compared to contract rates (blue) for truckload freight movements. The advantage of intermodal is greatest in hauls of more than 2,000 miles, when the gap in rates is largest and delivery times are comparable for both transportation modes.

2. Alternative Transportation Modes

In addition to truckload, many shippers deploy rail intermodal, less-than truckload (LTL) and LTL consolidation, as well as some combination of package, air freight and expedited, depending on industry and urgency. Each company is mindful of trade-offs, to balance transportation cost and timing with other aspects of supply chain management, such as time to market, inventory carrying costs and cash flow, among other variables.

Rail intermodal has gradually increased its presence for long-distance transportation. In recent years, the shift of long-haul freight from truck to rail intermodal has led to a reduction in the average length of haul for truckload shipments. Rail intermodal does not compete effectively with truckload for hauls of less than 700 miles.

The trade-offs favor truckload when speed, convenience, flexibility and accountability are critical. For example, high-value cargo and perishable goods are more likely to go by truck, where the same driver picks up and delivers the load, and both the cargo and the driver can be tracked effectively over long distances.

Less-than-Truckload (LTL) freight rates are typically about three times higher than truckload rates, but the trade-off for convenience and inventory management can make the extra cost worthwhile. For example, if a manufacturer needs only one truckload of raw material per month, it might be more expedient to order a smaller amount per week, thereby maintaining inventory at a lower but more consistent level. In addition to inventory management, this type of arrangement can also preserve cash flow and reduce risk associated with missing the scheduled delivery of a larger shipment.

Managing Truckload Capacity

Truckload is highly sensitive to many factors that can cause capacity constraints. Transportation manager must develop contingency plans and budgets to account for unexpected shortages and to prevent supply chain disruptions.

Regulations, including California Air Resources Board (CARB) requirements for emission reductions, hours of service and other safety rules included in the Compliance Safety Accountability (CSA) program, as well as fees and taxes assessed at the state and Federal levels, can all have an outsized impact on rates:

- **CARB TRU** – The California Air Resources Board requires that not all transport refrigeration units (TRU) on trucks and rail cars comply with emissions standards. A new twist is that the shipper will be held liable if a non-compliant trailer hauls the company's freight within California's borders. Additional CARB rules, with rolling deadlines, also restrict emissions for all power units and require special tires and aerodynamic devices for all "box" trailers, including refrigerated ("reefer") trailers. CARB rules are expected to increase the cost of all shipments in and out of the Golden State, particularly for temperature-sensitive cargo.
- **Hours of Service** – Beginning July 1, new hours of service (HOS) regulations went into effect. The new HOS rules are expected to constrain truckload capacity by about 3%, with the biggest impact on hauls where a delay of only a few hours might add an entire day to the round-trip. For example, a 500-mile trip that is ordinarily accomplished in a single day may be held over to a second day due to a missed connection or bad traffic that causes the driver to take his mandatory breaks at an unfavorable time.
- **\$75,000 Broker Bond** – As of October 1, the Federal mandated surety bond for freight brokers will increase from \$10,000 to \$75,000, and the same bond will also be required for freight forwarders and the in-house brokerage departments of for-hire carriers. Most brokers with established businesses have already secured a bond at the higher amount, or they have plans to do so, but there may be some upheaval among smaller companies and carriers who may broker freight only occasionally. This change is expected to have only a minimal, indirect impact on capacity and rates for most shippers.

Uncontrollable events, including extreme weather, may cause truck shortages in key locations. While Hurricane Katrina disrupted trucking throughout the Southeast and South Central regions in 2005, Mega-Storm Sandy had a more limited impact on transportation, and for a much shorter duration. Even localized events, such as the catastrophic tornado that leveled homes, schools and businesses in Moore, OK on May 20 of this year, can affect truckload capacity and freight rates due to intense, short-term demand for disaster relief.

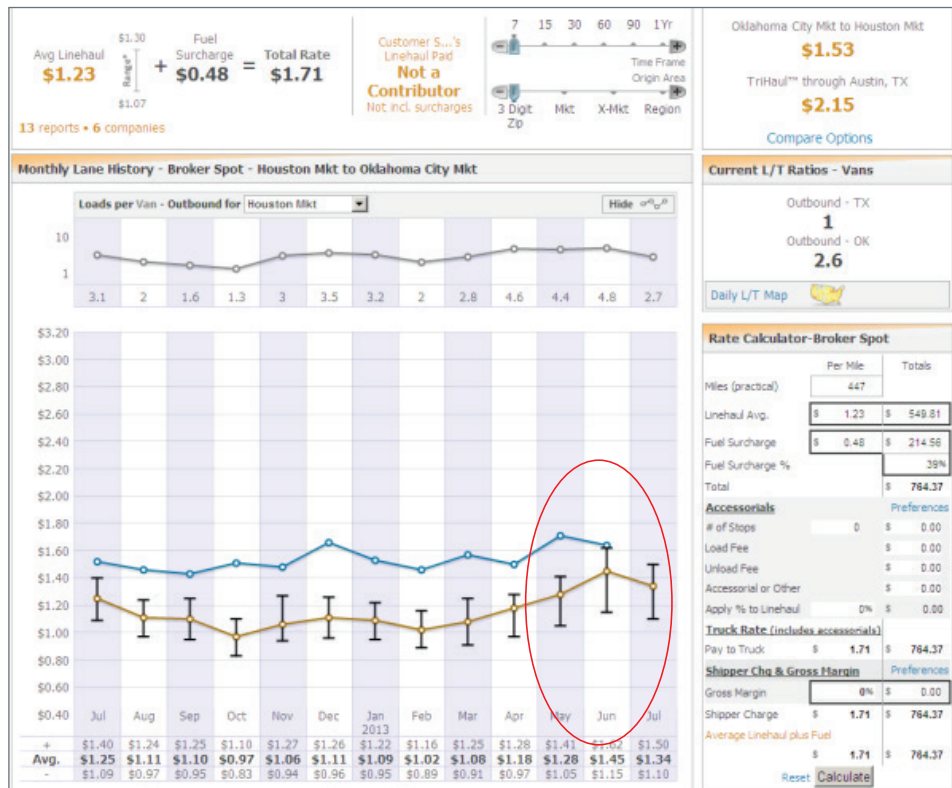


Figure 5: Following a massive tornado in Moore, OK on May 20 of this year, spot market rates (brown) spiked for vans and reefers for two to three weeks on the lane from Houston to Oklahoma City. Contract rates did not rise in June, however, because the increase was a temporary result of moving disaster relief supplies to Moore from the FEMA staging area in Houston.

Economic trends can also affect trucking, as the price of fuel, labor agreements and interest rates have a huge impact on the fleet's return on assets, and trucking companies may reserve capacity for higher-paying opportunities at a time of intense demand.

These and other issues that affect capacity in the truckload segment can cause bottlenecks elsewhere in the supply chain, as well. In addition to the impact on transportation budgets, a capacity shortfall can impede the smooth flow of materials and finished goods. Perishable items and seasonal merchandise are the most vulnerable, but any delay, especially in a lean or just-in-time environment, can cause inventory headaches that incur real costs as well as opportunity costs.

3. Forecasting Truckload Rates

Changes in the U.S. economy have led to a recent shift away from the import-based growth model that includes heavy freight at the ports. Manufacturing is on the rise, energy exploration is booming, and construction activity is on the rebound from recession-era doldrums. Even if your company is not directly involved in any of those industries, the repercussions will affect your ability to purchase transportation services under desirable terms and conditions.

Your transportation budgeting process already underway for next year or next quarter, based on your company's history with its core carriers, 3PLs and other

logistics partners. You can further refine your models and improve the accuracy of your forecasts by comparing your own rates with market-based rate data, including today's prevailing rates and historical trends.

Rate Data for Analytics - Market-based rate models can be developed by consultants, or by your in-house supply chain managers, using one or both of the distinct rate databases in DAT® RateView™, one for the spot market rates that freight brokers pay to carriers for one-time hauls, and one for the contract rates paid by shippers to their core carriers under the terms of an ongoing agreement.

Spot Market as Bellwether - Spot market demand, capacity and rate trends predict rate changes in the contract market for truckload freight movements. A strategic pricing model, based on a better understanding of seasonal and regional freight trends on the spot market, can lead to a win-win with your preferred transportation vendors.

Four Steps to Better Forecasting – A four-step process can help you to anticipate changes in truckload rates, on a lane-by-lane, regional or national basis, so you can negotiate proactively and lock in capacity at the right price. The highest level of detail, geographically and by equipment type, will yield the most accurate results. For example, a benchmark based on the specific matrix of lanes that corresponds to your RFQ will be a more effective budgeting and forecasting tool than the regional or national average rate from a more generic industry index. With that in mind, here are four steps to better forecasting:

1. Recognize normal, seasonal demand and capacity patterns in your lanes and markets.
2. Verify the impact of changes in demand and capacity on spot market rates.
3. Identify sustained changes in spot market rates, as opposed to seasonal fluctuations.
4. Anticipate the impact on contract rates, and proactively lock in or re-negotiate capacity.

4. Truckload Data and Supply Chain Models

With access to DAT RateView's historical demand, capacity and rate trend data along with today's market-based truckload rates, the logistics manager can analyze a broad spectrum of supply chain choices, and model future costs with a high degree of accuracy. Truckload data contributes to a range of critical decision-making processes for supply chain managers:

- Locating distribution centers, based on capacity and rates in inbound and outbound lanes.
- Modeling a specific matrix of lanes, to build RFQs and evaluate bids from core carriers.

- Evaluating new and existing transportation vendors, and negotiate based on prevailing rates.
- Ensuring that contract terms and rates support reliable truck capacity year-round, at the right price.
- Understanding trade-offs when adding or switching lanes, regions, modes or locations.
- Negotiating with rail intermodal, ship and air carriers against a backdrop of secure truckload capacity.

DAT® Capabilities

In 1978, DAT began with a simple idea: provide loads for carriers who were riding empty. The industry's first load boards began and spread from Portland, Oregon, across the United States, thanks to the inspired vision of the Jubitz family. Since then, DAT has grown to operate the largest spot marketplace in the world. In 2012, more than 68 million loads and 19 million trucks were posted on the DAT Load Boards.

DAT provides advanced technology for covering the 15% to 20% of all U.S. freight not moved under contract. The DAT Extended Network operates 24/7, with access points in trucks stops around the country and virtually anywhere there is an Internet or phone connection.

Since 2008, DAT has also provided DAT RateView™ (formerly DAT Truckload Rate Index) with accurate, real-time rate information on virtually every lane in the United States, as well as point-to-point and market-to-market rate histories that are vital to understanding and predicting rate changes and opportunities.

In addition to rate analytics, DAT also offers the following:

- Carrier qualification, including CSA scores and insurance certificate provisioning and monitoring
- Rapid Carrier onboarding, including electronic signatures and digital document storage (digital lockers)
- Tools and assistance to prevent fraud, identity theft and double-brokering
- Credit information on freight brokers and 3PLs, including days to pay

Find more tips and tools to make your business run more efficiently. Call **800.252.7634** or visit www.DAT.com.

