June 14, 2021 | 3:00 PM ET

# Mo' inflation, mo' problems for CPG companies

Even with inflationary pressures pervading nearly every aspect of the economy, consumer packaged goods (CPG) companies are somewhat uniquely exposed to the current inflationary environment.

Inflation is a greater issue for the CPG industry than many because: 1) corn and other agricultural commodities serve as base ingredients for many food products as well as animal feed, and their prices have risen significantly in the past year; 2) many industries within CPG are labor-intensive amid a severe shortage of blue-collar workers; 3) contract manufacturing costs have risen; 4) packaging costs have risen amid e-commerce growth and rising costs for petroleum-based plastics; and 5) CPG is freight-intensive with transportation costs representing a relatively high percentage of goods' delivered costs.

For many CPG companies, margin pressure appears likely. While most CPG companies are raising prices, it appears that price increases will not fully offset the rising costs in many or most cases. There is elasticity in their prices because consumers typically have lower-priced private label alternatives.

Freight costs stand out among other inflationary pressures in that they cannot be effectively hedged. That stands in contrast to many other CPG cost components, such as energy and agricultural commodities, which can be hedged, at least in the short-term.

Therefore, in the absence of hedging, CPG companies should utilize as much freight-related data as possible to mitigate freight costs more effectively and improve supply chain efficiency. A recent disclosure by the J.M. Smucker Company illustrates what's at stake: freight costs are 8% of the company's cost of sales, which equates to $389 million of annual freight spend for a CPG company of that size. So, a hypothetical 1% improvement in freight spend would yield annual pre-tax savings of nearly $4 million.

Of course, that's easier said than done, but we have a few ideas of how CPG companies could leverage FreightWaves data and the SONAR SaaS freight platform to effectively manage their freight spend. Illustrations of how to do that are found in the following pages.

Those data sets and use cases include:

**Using data from electronic tenders and carrier surveys to assist in negotiations with carriers and 3PLs.** *(Pages 5-8)*

**Using freight rate data from loads moved under contracts to benchmark against industry peers and make adjustments accordingly.** *(Pages 9-10)* If CPG companies are overpaying in certain lanes, they may want to negotiate more aggressively. Conversely, rates well below peers can leave CPG companies exposed to carrier compliance issues.

**Using spot market data to quantify the risks associated with loads falling through the routing guide.** *(Pages 11-13)*

**Using rail intermodal data to find conversion opportunities from truckload.** *(Pages 14-16)* Overlaying intermodal density and rates over existing trucking lanes brings conversion opportunities into focus.

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**CPG companies are facing uncertain demand after a mostly stellar 2020.**

When the COVID shutdowns hit last year, many CPG companies posted stellar performance that persisted for most of the past year. Not only did consumers rush to fill up their refrigerators and pantries in preparation for sheltering at home, but many consumers flocked to well-known national CPG brands that took market share from generally less expensive private label brands.

Perhaps well-known brands that consumers remember from their youth gave them comfort in a time of uncertainty. In some cases, with shelves being cleared, the national brands were some of the only remaining options given many large CPG companies' relatively resilient supply chains. Adding to the market share gain, many consumers "traded up" from private labels to name brand products since the lack of travel and available services left more money available for pricier goods. The pandemic also presented CPG companies with a once-in-a-lifetime opportunity to engage with difficult-to-reach consumers, such as millennials, who spend little time in grocery stores and big-box retailers. The primary exception to CPG companies' strong performance during the past 18 months were those companies and segments that enjoy greater market share in products consumed outside of the home (e.g., Coca-Cola) or whose products are mainly consumed by those leaving their homes (e.g., makeup and energy bars).

With the impact of COVID on U.S. consumers' behavior declining, that leaves many demand-related questions. Each sub-sector within the CPG industry has variations of the question: Will we see a full reversal of COVID-era consumer behavior or only a partial reversal amid hybrid work schedules?

Some examples include:

- Will consumers trade back down to less expensive private label brands as travel and entertainment options become more available and capture more wallet share?
- Will less discretionary products see a drop in demand as consumers on a fixed income lose ground to inflation?
- Will the product categories that showed heighted growth during the pandemic, such as snack foods, continue to grow?
- Will consumers continue to buy large quantities of products for cooking at home, such as raw meat and spices?
- Will consumers continue to flock to e-commerce and direct-to-consumer subscription services at the same rates as they did in 2020?
- Will consumers continue to adopt pets at high rates or was 2020 a pull-forward of numerous years of pet adoption that otherwise would have taken place later?

Clearly, many CPG companies are struggling to forecast demand levels and the consensus outlook seems to be that some habits will stick (such as e-commerce, eating breakfast at home more often, and buying more pet food) while other COVID-era habits will fall by the wayside (such as the lack of makeup purchases and record sales of raw meat). As a result, most publicly traded CPG companies are providing financial commentary relative to 2019, rather than 2020 levels, to illustrate demand relative to more normal levels. It is that uncertain demand backdrop that many CPG companies are still working to rebuild inventories to "right-sized" levels, with a lack of clarity on what those targeted inventory levels should be.

**In addition to uncertain demand, inflation is the other primary issue for CPG companies.**
Inflation is present in seemingly all areas of the economy and is a particular issue for CPG companies. CPG companies are facing rising costs for ingredients, packaging, contracted manufacturing, labor and freight transportation. While FreightWaves focuses most closely on freight costs, it is clear that rising freight costs are just one of many categories of inflationary pressures that CPG companies are experiencing throughout their supply chains. What makes freight transportation different from other cost pressures is that freight costs can be difficult, or impossible, to hedge.

In recent quarters, numerous CPG companies have reported that their overall cost of inflation is in at least the mid-single digits, which is being caused by certain cost components rising near or above 10%. In an effort to preserve margins, most CPG companies have announced price increases that are set for later this year (if they have not gone into effect already). Some CPG companies have increased prices while also warning retailers that further price increases may be forthcoming if current trends persist.

It's unclear how consumers will respond to rising prices. Consumers have become accustomed to very low levels of inflation of less than 2% in recent years and the recent price increases announced by CPG companies, in most cases, were the most significant price increases since at least 2018. In addition to raising prices, some CPG companies are taking actions other than simply adjusting list prices, such as reducing promotional activity or reducing package sizes. Many CPG companies appear to be taking solace in the fact that inflation is so widespread that consumers will ultimately accept higher prices; it is more difficult for a consumer products company to raise prices when its price increases are unique.

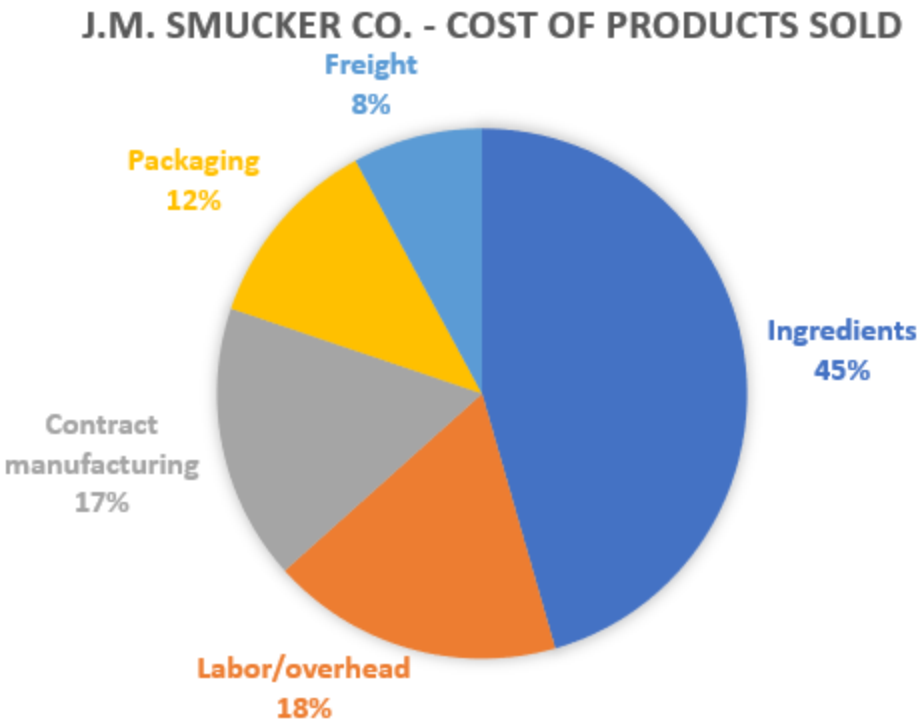
It is not clear that CPG companies' price increases and changes to promotional activity will fully offset rising costs. In fact, some CPG companies have been forthcoming about the fact that they will have to balance preserving margins and market share since there is generally some elasticity to consumer goods when there are lower-priced private label alternatives available. As a result, many CPG companies have guided analysts to gross margin contraction this year.

The strategy among many CPG companies appears to be that they are doing everything they can to avoid alienating the consumers who just started using their products during the pandemic. Consumer habits tend to be sticky, so raising prices only modestly, perhaps less than the rate of inflation, may be a prudent long-term strategy, even at the expense of near-term gross margins.

**With CPG companies' pricing power limited by lower-priced alternatives in most cases, cost efficiency has taken a more prominent role in corporate strategies.** CPG companies are facing rising costs for:

- Ingredients such as corn, soybeans and wheat; corn futures up over 50% in the past year. Rising corn prices are particularly problematic because they cause dramatic downstream increases for other food products, such as raw meat.
- Packaging costs have been rising sharply; there has been higher demand for corrugated cardboard due to e-commerce growth as well as price inflation in petroleum-based plastic packaging products.
- Labor costs are rising for CPG companies, which is also the case for many industries that employ large quantities of blue-collar workers; some food companies have reported greater rates of absenteeism resulting in reduced productivity.
- Contract manufacturing costs have risen for CPG companies. Many CPG companies made greater use of contract manufacturing during the pandemic in response to surging demand. Rather than adding capacity in-house, many CPG companies utilized contract manufacturing as a form of surge capacity given the uncertainty of how long elevated demand levels would persist.
- Freight costs have risen sharply for all transportation modes, as we discuss in the following pages.

**The J.M. Smucker Company segments its cost of products sold on its income statement into five major categories – all of which are seeing major cost pressure this year.**




(Source: company data)

**<u>Use case #1 – use in negotiations:</u> CPG companies can utilize data from electronic tenders and carrier surveys to assist in negotiations with carriers and 3PLs.** Data from electronic tenders show volume, market tightness, lane balance, seasonality, and how carriers and shippers are reacting to the current freight market.

We could use SONAR in any one of a number of markets to illustrate how COVID has disrupted a freight market with important information for shippers. Below, we use Detroit.

In short, the volatility in the auto industry has wreaked havoc on the Detroit freight market, which also impacts the Detroit freight market for shippers moving goods that are far removed from motor vehicles, including packaged goods.

**Demand to move truckloads (which presumably includes many truckloads full of auto parts) into Detroit fell sharply in March 2020 (2020 is shown in green and 2021 is shown in blue) amid plant shutdowns before an acceleration in inbound freight demand as production came back online in the third quarter of 2020.**


(Source: SONAR)

That's important information for all shippers of dry goods (and perhaps not relevant for shippers of goods requiring temperature controls). Detroit is typically a backhaul freight market, but the severity of the freight imbalance changes dramatically with market conditions. There is typically more demand for truckloads inbound into Detroit than outbound truckloads. That is due to the consumption in the area and also because a large volume of auto parts are hauled by truck into Detroit while finished vehicles typically leave in rail carloads (at least those traveling long distances).

While Detroit's status as a backhaul market didn't change during the COVID crisis, the magnitude of its freight imbalance changed dramatically. When auto plants shut down in late March 2020, Detroit's freight market became balanced, with roughly an equal volume of inbound and outbound freight tenders (a measure of freight demand), simply because the region wasn't demanding as many loads of inbound auto parts as it typically does. That's important information for shippers that are moving goods that terminate in Detroit because it means that they have more negotiating leverage with carriers (since carriers can get re-loaded in Detroit more easily).

June 14, 2021 | 3:00 PM ET

Of course, the auto plant shutdowns last year didn't last long and the region became a severe backhaul market by July and August as original equipment manufacturers demanded large volumes of inbound components and production schedules attempted to make up for lost time. During periods with those characteristics, shippers often struggle to secure capacity and it is often a good idea for shippers to make sure routing guides are in order and to extend lead times to help secure capacity.

**Detroit briefly became a balanced market in April 2020 (Detroit Headhaul Index near zero) before returning to its typical backhaul status.**

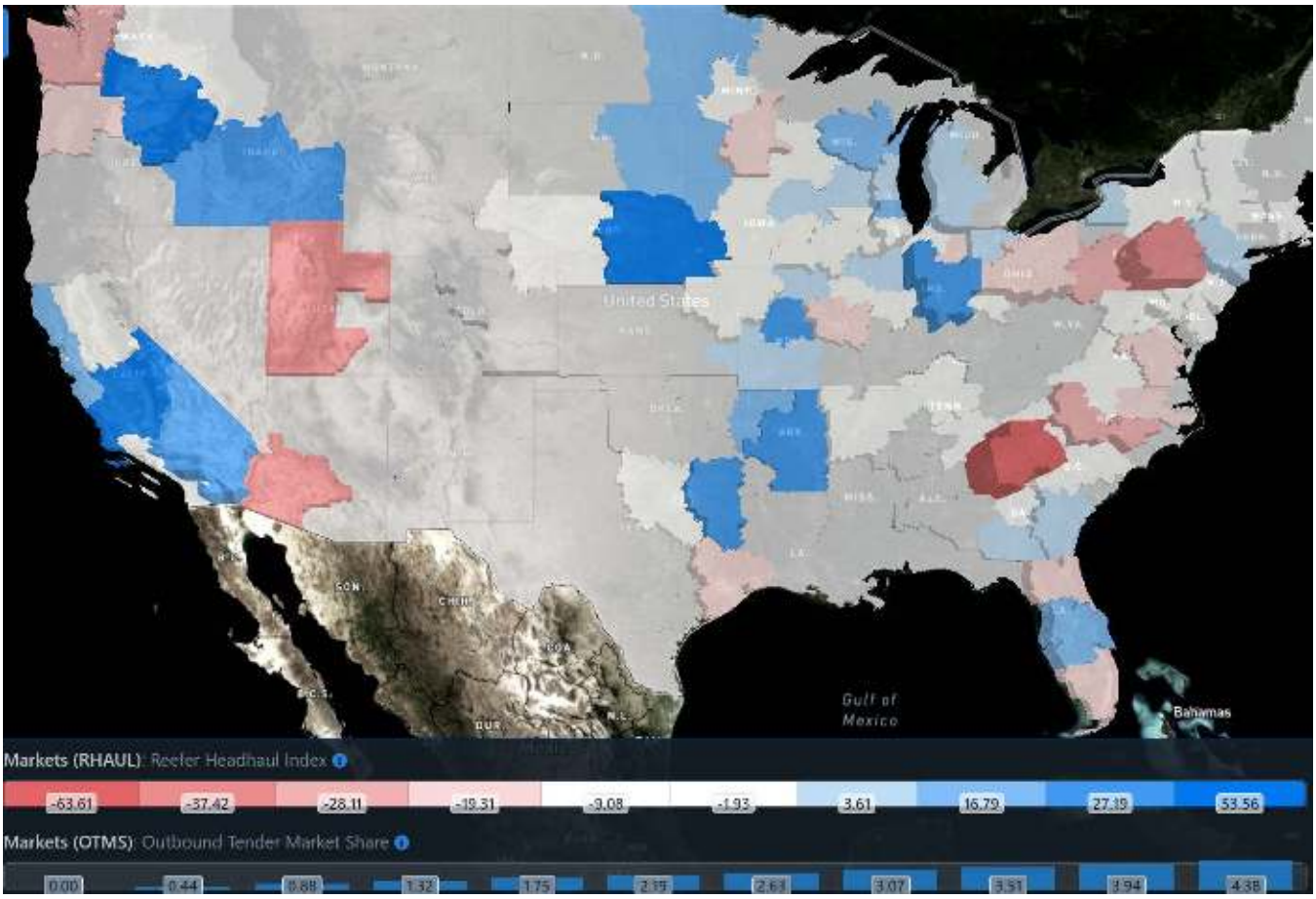

An indicator of balance (or imbalance) in freight demand, the Detroit Headhaul Index subtracts inbound demand from outbound demand. Deeply negative numbers indicate that there is greater inbound truckload demand than outbound truckload demand. (Source: SONAR)

Understanding the current relative tightness of a particular freight market and also understanding the balance of freight in a market gives shippers an idea of how much negotiating leverage they have and can also help with the timing of when to put freight out to bid. It also helps shippers understand the probability that carriers will not cover their freight, which may mean it is prudent for shippers to accept/offer higher rates or have contingency plans in place.

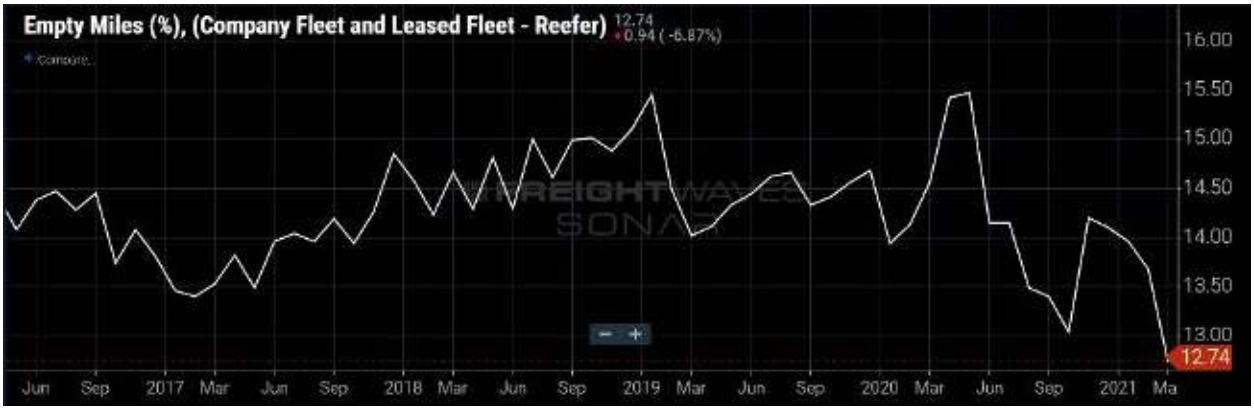
Placing the Headhaul Index on a map helps shippers to visualize the freight balance in their markets quickly. With many CPG companies (particularly in the food, beverage and cosmetics industries) requiring refrigerated transportation, we use the Reefer Headhaul Index in the map below. A freight market with a positive Headhaul Index (shown below in blue) means that carriers will be more willing to head to that market since they know it will be relatively easy to get reloaded. As a result, shippers have more negotiating leverage when the Headhaul Index of the destination of their load is positive and less negotiating leverage when the Headhaul Index of their loads' destination is negative.

**Atlanta is one of the deepest backhaul markets (shown in dark red below) for refrigerated freight in the U.S., which suggests that CPG companies shipping refrigerated goods may struggle to get carriers to take loads to Atlanta.**

June 14, 2021 | 3:00 PM ET



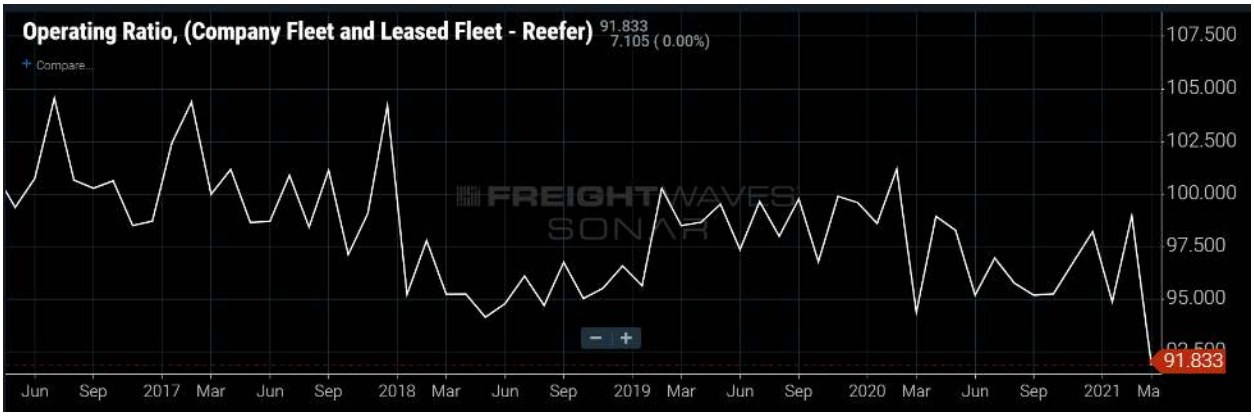

**As a CPG company, are you negotiating with carriers that are crushing it, or struggling to stay profitable?** While a portion of the larger truckload carriers are publicly traded, there is little public visibility into the operating performance and financial health of small and midsize carriers. The carrier survey indices contained in SONAR are from TCA carrier surveys and based on a sample of small and midsize carriers. They show a more complete and accurate picture of the carriers' financial conditions when compared to the data reported by the publicly traded carriers, which are among the largest, the most sophisticated and best-capitalized carriers. In other words, the financial metrics of the publicly traded carriers are not representative of the overall carrier marketplace.



June 14, 2021 | 3:00 PM ET

During periods of plentiful freight demand, carriers tend to upgrade their freight selection and focus on moving freight within their preferred network compared to moving any freight that they are able to secure during a soft freight environment. The empty miles percentage for reefer carriers is currently the lowest percentage since the inception of the index in late 2019. With more than enough freight, carriers are less willing to accept loads that would force them to deadhead.

CPG shippers should monitor the industry's empty miles percentage as a signal for when freight markets tighten or loosen. If carriers are more willing to leave their preferred lanes (and empty miles percentage rises), it shows that the market is loosening.




Additionally, understanding carriers' current business conditions will allow shippers to approach negotiations with a better understanding of what their carrier partners are facing. The operating ratio is a direct measure of truckload carriers' profitability (1 minus the operating margin) and will give shippers the ability to go into discussions more informed.

During periods when the freight market is relatively soft, operating ratios are typically elevated. This was the case during 2019, one of the softest freight environments in the past few years, which also resulted in the highest operating ratio for reefer carriers over a prolonged period. During periods of freight market tightness, carrier operating ratios fall significantly as carriers bring in higher revenue levels while operating expenses typically rise more modestly.

When reviewing bids, shippers should consider average carrier profitability levels in conjunction with other datasets. When operating ratios are at cyclical lows, carriers may have a hard time securing capacity in a tight market, and when operating ratios are at cyclical highs, the freight market may be loose, but carriers will only accept loads if they are at least more than covering their variable (per-mile) costs.

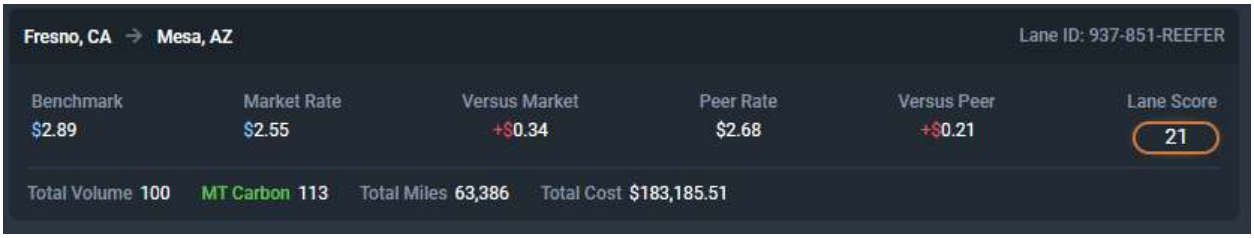
**<u>Use case #2 – benchmark and adjust freight rates:</u> Using freight rate data from loads moved under contracts to benchmark against industry peers and make adjustments accordingly.**

The SONAR Supply Chain Intelligence (SCI) application shows transactional data from completed contracted loads, both for dry van and refrigerated loads. The data is broken down by lane and shipper industry. In short, it allows shippers to see what peers are paying to ship similar loads.

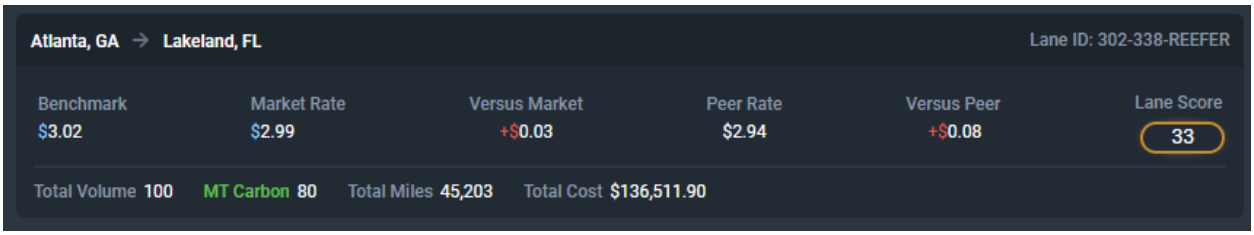
FreightWaves' SCI platform allows shippers to benchmark themselves against the overall freight market as well as members of a shipper's peer group. In this case companies that are shipping packaged food that require temperature controls.

A higher Lane Score (on a scale from 1 to 100) indicates that it is an easier lane for shippers to find and manage transportation capacity and, therefore, typically have more pricing leverage.

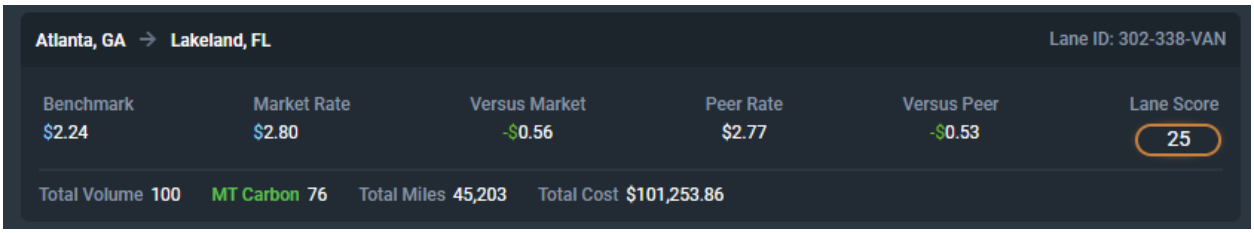

The example above from hypothetical Shipper X shows that a backhaul lane from Seattle to Riverside, California, is relatively easy for a shipper to manage over a long period of time. However, even though the Lane Score is relatively high, the shipper is paying well above both the market and peer-group average rate. Based on historical rejection rates and rate data along the lane, Shipper X may be able to lower its freight spend by lowering its rate in this lane, especially since the lane is naturally an easier lane to cover.




Likewise, Shipper X will have difficulty managing a lane from Fresno, California, to Mesa, Arizona, as Mesa is predominantly a backhaul market, with little outbound freight. This means that Shipper X will often have to pay carriers more to secure regular capacity. Based on the benchmark rate that Shipper X is paying, which exceeds both the overall market rate and Shipper X's peer-group rate, Shipper X is taking the necessary steps to secure capacity on a regular basis, making a difficult lane to cover slightly easier. As a result, a smaller percentage of Shippers X's tenders will likely be rejected by carriers relative to its peers.




FreightWaves SCI allows Shipper X, which also operates facilities on the East Coast, using both dry van and reefer trailers throughout the network, to view how its rates compare to the market in both networks. Shipper X moves both dry van and reefer loads between Atlanta and Lakeland, Florida. The reefer loads are slightly easier to cover, resulting in a higher Lane Score, 35 in this instance, compared to the dry van loads with a Lane Score of 25. Shipper X pays slightly more on the reefer lane compared to both the market and peer group, making it slightly easier to cover. Additionally, understanding that Lakeland has more outbound reefer freight than inbound freight allows Shipper X to be more aggressive with its rates when securing capacity going into the market.

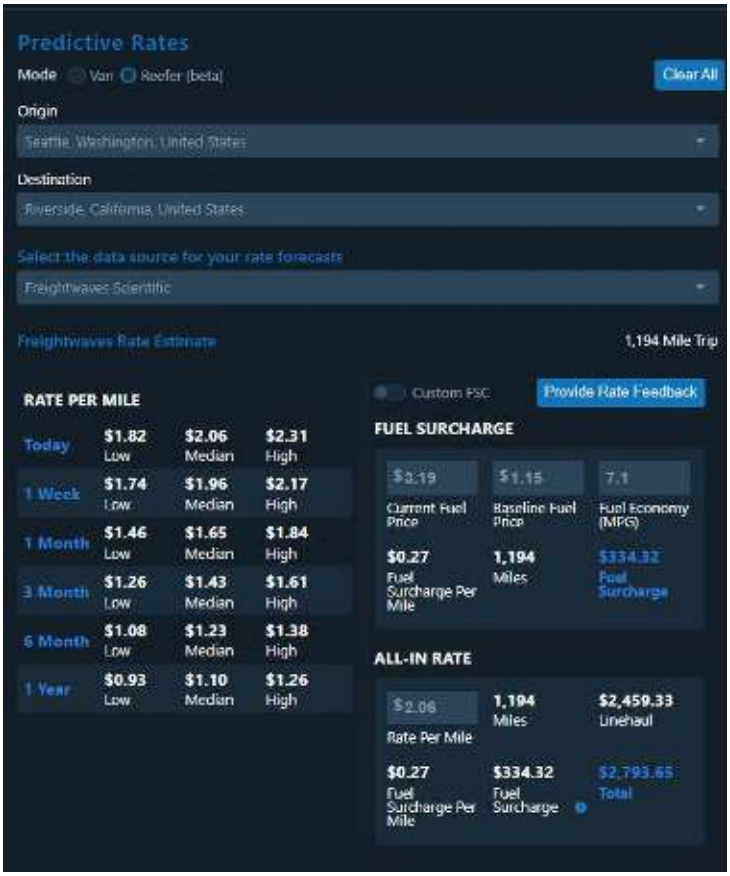



The dry van lane from Atlanta to Lakeland is significantly more difficult for Shipper X to cover as the benchmark rate is significantly below the overall market and peer-group rates. Shipper X may want to mitigate the volatility that is likely to occur in this lane by utilizing a private fleet or a dedicated service (if they have enough capacity) to secure capacity at a predetermined rate, or raise the overall benchmark rate (the rate the shipper is paying) to be closer to market and peer-group rate.

**<u>Use case #3 – quantify risk:</u> Using spot market data to calculate the risks associated with loads falling through the routing guide.**

**The SONAR Predictive Rates App shows forecast spot rates for any refrigerated or dry van lane in the U.S.**

Using the Predictive Rates tool within SONAR, shippers are able to use FreightWaves' Scientific Spot Rate forecast for a specific lane to receive predictive spot rate quotes for today, one week out, one month out, three months out, six months out and one year out. Within the app, predictive spot rates for all lanes longer than 250 miles are available, giving insight into what is expected from a capacity and rate perspective.




Using Seattle to Riverside as an example, a one-off load that needs to be moved outside of current contract agreements, rates are expected to decline over the next year. Spot rates have historically been mean-reverting, which underpins the estimated 46% decline in spot rates over the next year for median-cost carriers.

Each rate is broken down by low-cost, median-cost and high-cost carriers based on the operating expenses of carriers. Carriers' costs range based on their operational efficiency as well as their relative service levels, with expedited carriers generally having higher-cost operations.

Shippers are also able to set a custom fuel surcharge within the Predictive Rates app that is consistent with their loads to obtain more accurate all-in rates.

The predictive rates are based on tender data from electronically tendered loads, so the rates are based on daily data that are tied closely to the volume of freight hitting the spot market as well as the rates the market will bear for those spot loads. If freight volumes are increasing faster than relative capacity, tightening in a given market will put upward pressure on spot rates that shippers will have to navigate.

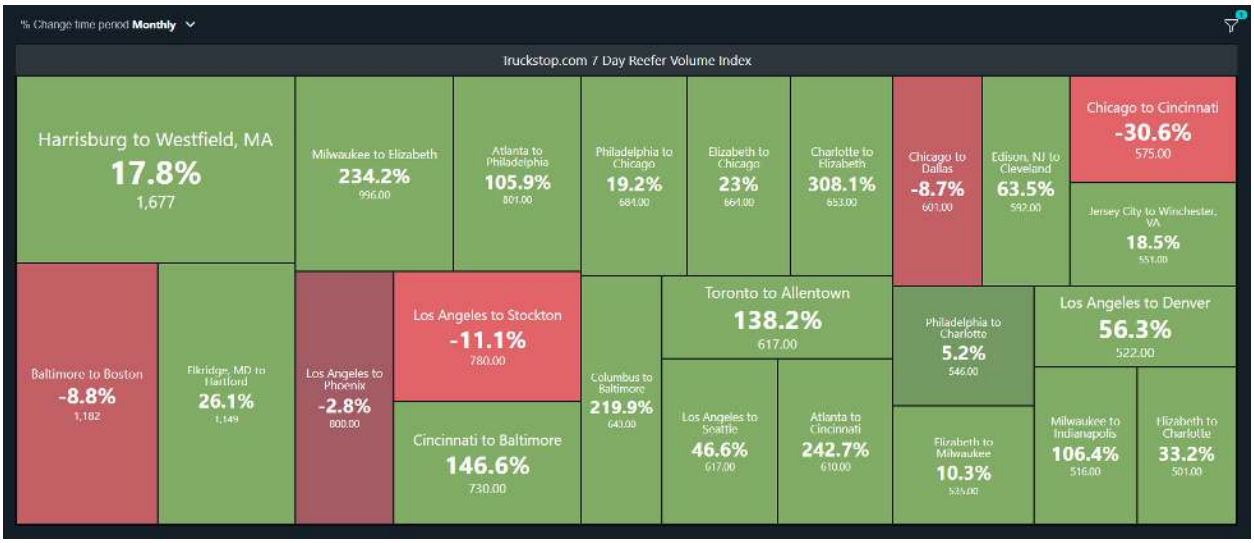
Coupling tender data with the predictive spot rate data will allow Shipper X to make rational and timely decisions about moving freight in the spot market. In other words, tender rejection rates tell shippers what the risk is that their loads will not be accepted by carriers, while predictive spot rate data tells shippers how big of a risk they are taking if loads must be moved on the spot market.

**Data from load boards show the volume of loads that has fallen through routing guides and the rates the market will bear, helping shippers quantify the risks associated with potential carrier compliance issues.**

SONAR offers shippers an aggregated view of 102 different lanes from Truckstop.com's load board, breaking down volumes on the load board as well as the average spot rate (including fuel surcharges and other accessorials) across the lanes. The view into what is happening in the spot market gives shippers valuable information into the risk that their loads might fall into the spot market as well as the likely financial impact of having to pay spot market rates.


The current national average reefer spot rate sits at $3.76/mi, inclusive of fuel surcharge. This is well above where rates have been for much of the past three years. Knowing that spot rates are elevated and putting upward pressure on contracted rates, Shipper X will be able to realize that lanes that are typically difficult to cover might be even harder than normal and contract rates may need to be increased further to avoid freight falling through to the spot market.

Additionally, insight into which lanes are seeing the largest increase in spot volumes, as shown by Truckstop.com's load board on a given week, will allow shippers to understand where routing guides are failing. In the tree map below of Truckstop.com's reefer volumes on lanes with more than 500 loads posted, some of the densest freight lanes are seeing exorbitant growth in spot volumes over the past month.

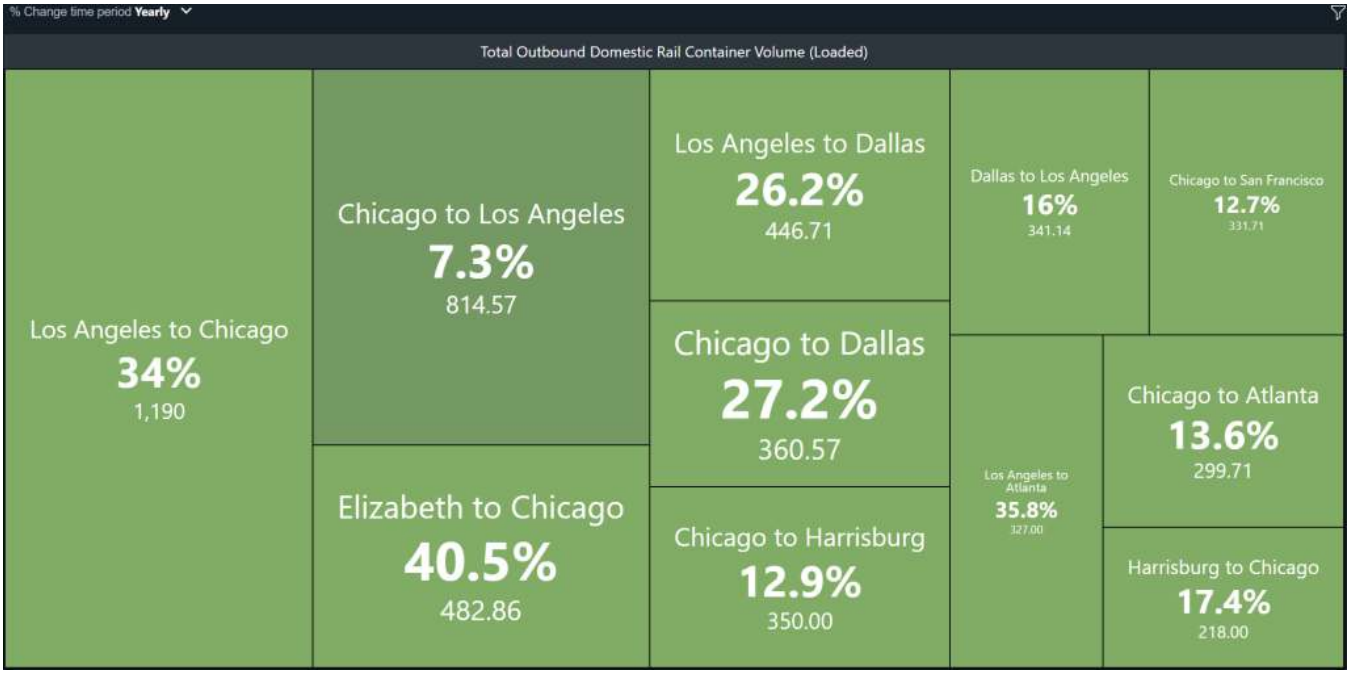



Evaluating multiple data sources on the same lanes gives shippers a tailored picture of the marketplace. In the chart above, outbound Los Angeles and Chicago reefer spot volumes were among the only lanes that experienced any slowdown over the past month. Meanwhile, lanes where freight is flowing westbound into Chicago from markets like Elizabeth, New Jersey, and Philadelphia have grown by over 20% in the past month. The increase of spot volume into the Chicago market signals that carriers are charging more to go into the market as routing guide compliance slips.

**<u>Use case #4 – find modal conversion opportunities:</u> Using rail intermodal volume, rate and service data to find conversion opportunities from truckload.**

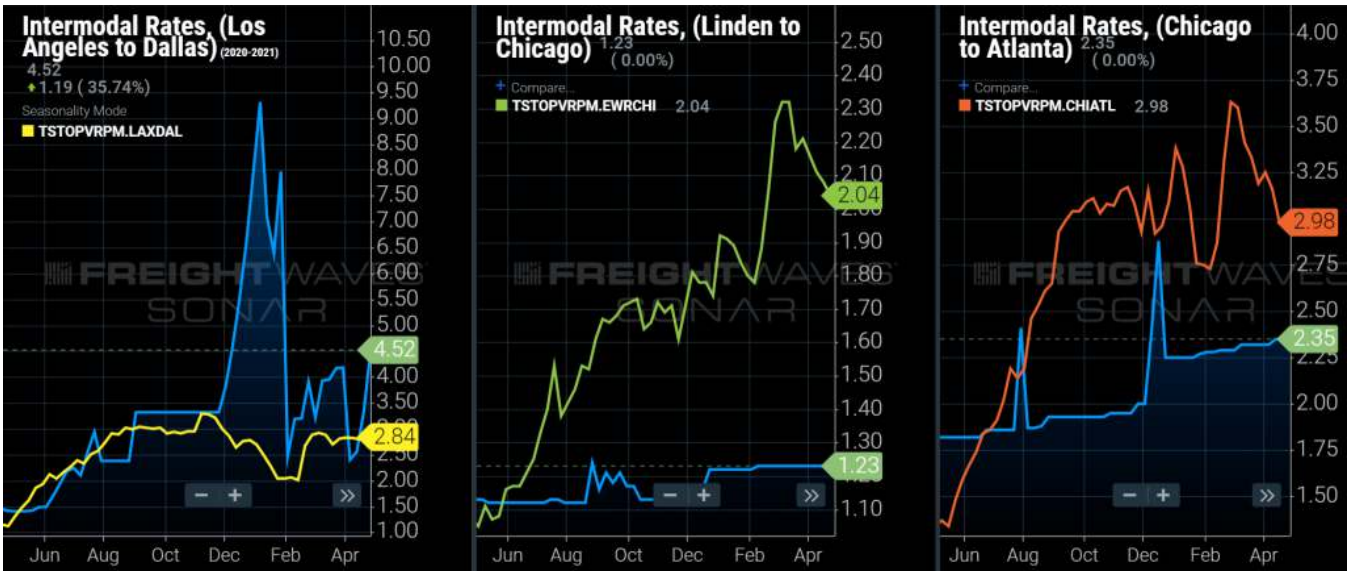
Conversion from truckload to intermodal is about balancing cost and service. Is a potential 10%-15% savings in freight cost worth an extra day in transit? For intermodal to be viable, hauls need to be long, drays need to be short and lanes need density. SONAR has unique volume data for rail intermodal that shows daily intermodal container volume by lane, market container size and loaded status. With intermodal density information in addition to your existing freight flows, conversion opportunities begin to come into focus.

**These are the 11 densest U.S. domestic intermodal lanes.** SONAR shows the intermodal density (broken down by container size and loaded status) for every U.S. intermodal OD pair.




Of all transportation modes, intermodal is among the most imbalanced. As a result, the economics of intermodal shipping vary widely by lane. Comparing rate data across modes reveals where shippers can take advantage of excess capacity. SONAR contains intermodal spot rates for door-to-door movements of 53-foot containers, including fuel and all other surcharges (which is why SONAR intermodal rates can fluctuate wildly during freight surges).

**Comparing intermodal rates (blue) to truckload rates (yellow/green/orange) reveals:** 1) little intermodal capacity in the LA-to-Dallas lane; 2) excess capacity from Newark to Chicago; and 3) a rational market from Chicago to Atlanta.

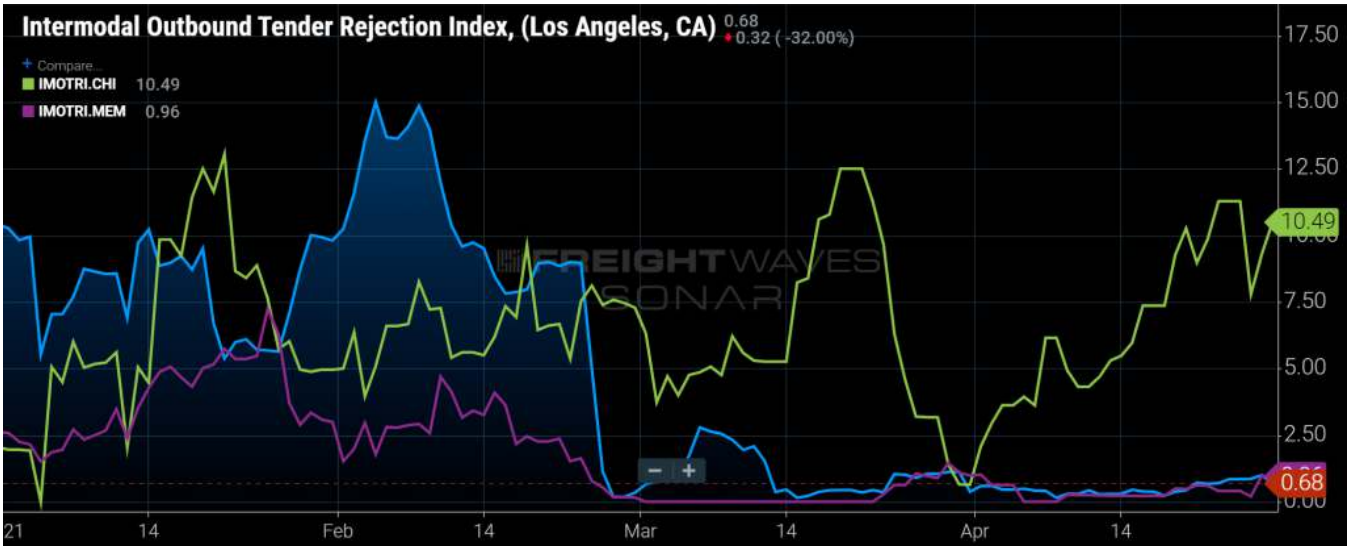



**Intermodal contract data show that Shipper X is paying 30%-40% more than intermodal to move highway loads from metro Atlanta to metro Chicago.** That highlights a tremendous intermodal savings in that lane for contract shippers. Or, it could simply mean those highway loads were expedited.

| ship_da... | shi... | transportation_m... | origin_city | origin_st... | origin_zi... | dest_city | dest_state | dest_zip3 | distance_... | base_rate | amount_... | Shipment... |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2020 | 1146 | INTERMODAL | PEACHTREE ... | GA | 302 | ELK GROVE ... | IL | 600 | 768 | 713.04 | 905.62 | 102 |
| 2020 | 1146 | TRUCKLOAD (DRY VAN) | PEACHTREE ... | GA | 302 | ELK GROVE ... | IL | 600 | 912.19 | 1,184.98 | 1,536.4 | 16 |
| 2020 | 1146 | INTERMODAL | PEACHTREE CI | GA | 302 | ELK GROVE VI | IL | 600 | 768 | 722 | 875.6 | 3 |
| 2020 | 1146 | TRUCKLOAD (DRY VAN) | PEACHTREE ... | GA | 302 | BUFFALO G... | IL | 600 | 784.5 | 1,043.42 | 1,330.99 | 2 |
| 2020 | 1146 | TRUCKLOAD (DRY VAN) | PEACHTREE CI | GA | 302 | ELK GROVE VI | IL | 600 | 768 | 1,124.88 | 1,445.2 | 1 |

Shipping via rail intermodal can be risky because of variability in service levels. One extra day in transit relative to truckload may be acceptable, but a range of one to three extra days in transit is not. Intermodal tenders do not get rejected nearly as often as truckload tenders do, so when they do, it is a sign that intermodal networks are not running smoothly.

**A warning to intermodal shippers in Chicago:** Intermodal tenders outbound from Los Angeles and Memphis are being rejected less than 1% of the time, but in Chicago it's more than 10%.

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