

SONAR highlight reel: What's going on in Shanghai

This "SONAR highlight reel" hits data highlights/trends in truckload, intermodal and maritime in 2-3 pages for each mode.

The truckload market (pages 2-6) continues to show signs of easing ahead of the "busy" summer months. The FreightWaves National Truckload Index (NTI) brings a new daily spot rate to the freight market that is backed by the power of FreightWaves Trusted Rate Assessment Consortium (TRAC). The NTI has declined by over 19% from its high earlier this year. As rates have declined, fuel costs are eating further into carriers' bottom lines as market conditions are the most difficult they have been in several years.

Domestic intermodal (pages 7-9) volume continues to show no signs of a ["looming freight recession."](#) In the second week of May, domestic intermodal volumes were 5% higher than year-ago levels. Higher volumes bring higher prices as evident by both FreightWaves data around domestic intermodal contract prices as well as commentary from both publicly traded intermodal companies and intermodal shippers, where double-digit rate increases are in the works.

At FreightWaves' Future of Supply Chain, SONAR Container Atlas (SCA), a new ocean intelligence tool, made its debut. Container Atlas brings the ability to show what is happening in the ocean market, on both the supply and demand side, with the ability to break down data on a port-to-port level.

The lockdown in Shanghai is dramatically impacting the ocean market, driving bookings and volume levels lower, while rejection rates are climbing near the highest levels within the dataset.

Dry van spot all-in rates per mile¹ (w/w chg.)

LAX-DAL	\$2.59 (-\$0.03)
CHI-ATL	\$2.98 (-\$0.06)
PHL-CHI	\$2.43 (-\$0.05)
ATL-PHL	\$3.27 (+\$0.02)
DAL-ATL	\$2.62 (±\$0.00)
DAL-LAX	\$1.89 (+\$0.03)
National²	\$2.87 (-\$0.01)

Freight volume index (weekly change)

Atlanta	498.82 (+3.06%)
Ontario, CA	476.39 (-1.64%)
Dallas	392.63 (+0.76%)
Harrisburg, PA	362.81 (-2.49%)
Los Angeles	337.6 (-2.83%)
Houston	335.72 (+6.56%)
National	12,563.8 (+1.01%)

Tender rejection rates (weekly change)

Atlanta	7.32% (+32 bps)
Ontario	2.6% (+14 bps)
Dallas	6.29% (+3 bps)
Harrisburg	10.02% (-67 bps)
Los Angeles	2.6% (+14 bps)
Houston	7.13% (-22 bps)
National	8.46% (+18 bps)

Mike Baudendistel

Head of Intermodal Solutions

mbaudendistel@freightwaves.com

(773) 991-9534

Tony Mulvey

Senior Analyst

tmulvey@freightwaves.com

(423) 637-1940

Michael Rudolph

Research Analyst

mrudolph@freightwaves.com

(847) 602-3144

¹ FreightWaves TRAC spot rates

² FreightWaves National Truckload Index

Truckload market shows continued signs of easing into the first “busy” season

The SONAR Outbound Tender Volume Index (OTVI) has suffered a significant downturn since the beginning of March, bottoming out in the week following Easter Sunday. Traditionally, the months of April and May herald increased activity in the movement of freight as shoppers and shippers alike prepare for the summer spending season. Not so in 2022; inflationary pressures have squeezed the discretionary budgets of many consumers, while geopolitical instability has rocked global supply chains.

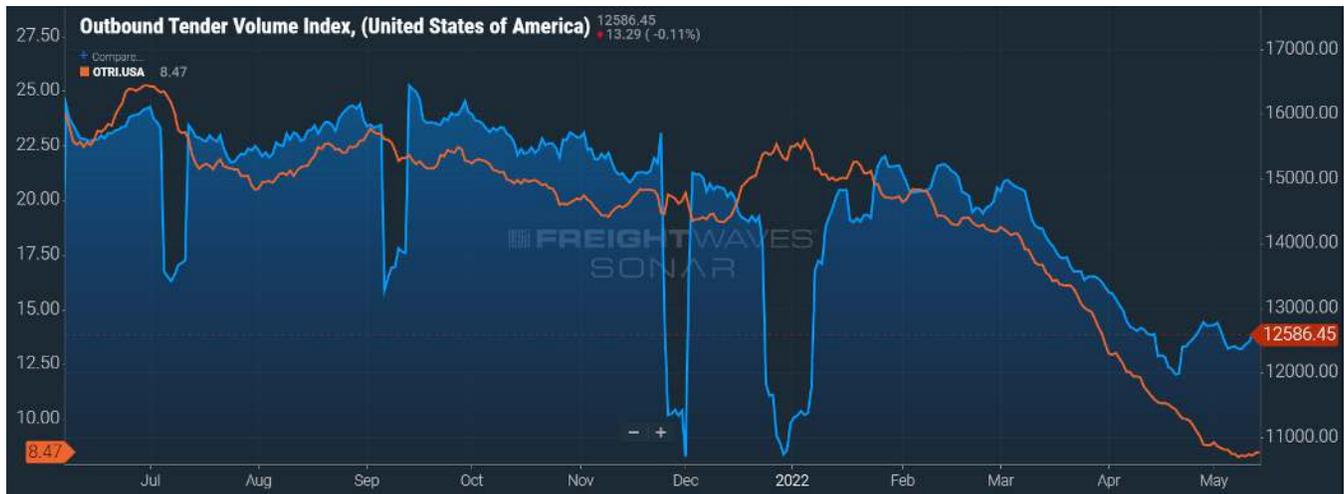


Chart: FreightWaves SONAR. Outbound Tender Volume Index {blue, right axis} and Outbound Tender Reject Index {orange, left axis}

At the end of February, when freight demand was still robust, OTVI outperformed year-ago levels by a year-to-date average of 6.3%. By mid-May, OTVI underperformed by a year-to-date average of 5.6% year-over-year (y/y). In the six weeks since April 1st, OTVI had declined by an average of 17.2% y/y. At the time of writing, OTVI is down 17.6% y/y.

But OTVI includes both accepted and rejected tenders, which means that it can be inflated by a sizable uptick in tender rejections. During the first half of 2021, tender rejections were nearing 30%, which means that carriers were rejecting almost 3-in-10 contracted loads. Since March 2022, however, tender rejections have been on a protracted nosedive and have fallen beneath 9%.

Turning to accepted tender volumes, then, which is OTVI adjusted by the Outbound Tender Reject Index (OTRI), real freight flow is barely trading water on a y/y basis. In mid-April, accepted tenders suffered a y/y contraction across consecutive days – the first time that accepted tenders had underperformed outside of a non-holiday-affected week for multiple days. Thus far into Q2 2022, accepted tenders have been outpaced by an average of 0.6% y/y.

These numbers are helped significantly by declining tender rejection rates. Throughout January and February, OTRI averaged a bit more than 20%. Halfway into Q2, OTRI has averaged a little over 10% – a staggering fall of 1,504 basis points (bps) y/y.

Unfortunately, this marked improvement in carrier compliance has been won at a steep cost.

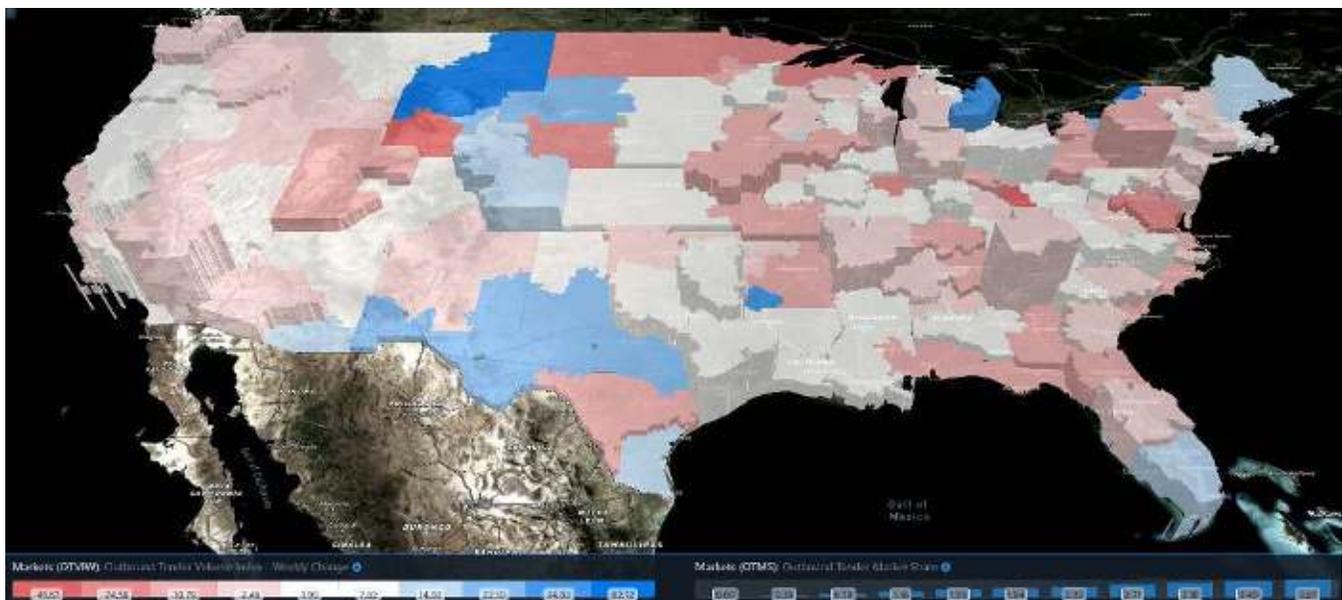
Contract rates, which were fairly slow to catch up to the truckload market in 2021, are now more than 20% higher than they were last year. In the middle of April, contract rates fell into a week-long dip that threatened to disrupt their consistent, week-over-week (w/w) growth. However, contract rates quickly rebounded and have since remained stable at nearly \$3 per mile, a rate that excludes fuel and other surcharges.

Meanwhile, spot rates have plummeted to a degree that is almost unbelievable, given their all-time highs in early 2022 and the record profits shared among many carriers.

FreightWaves has introduced a new metric for tracking spot rates: the National Truckload Index, or NTI. The NTI is a seven-day moving average of national dry van spot rates that uses real-time booking data from FreightWaves' Trusted Rate Assessment Consortium (TRAC), giving users pure insights into the current market.

The Linehaul Only variant of the NTI (NTIL) excludes the cost of fuel from spot rates, which allows for a more direct comparison between contract and spot rates. At the time of writing, contract rates are almost 45% higher than the NTIL – a difference of nearly \$1.00 per mile.

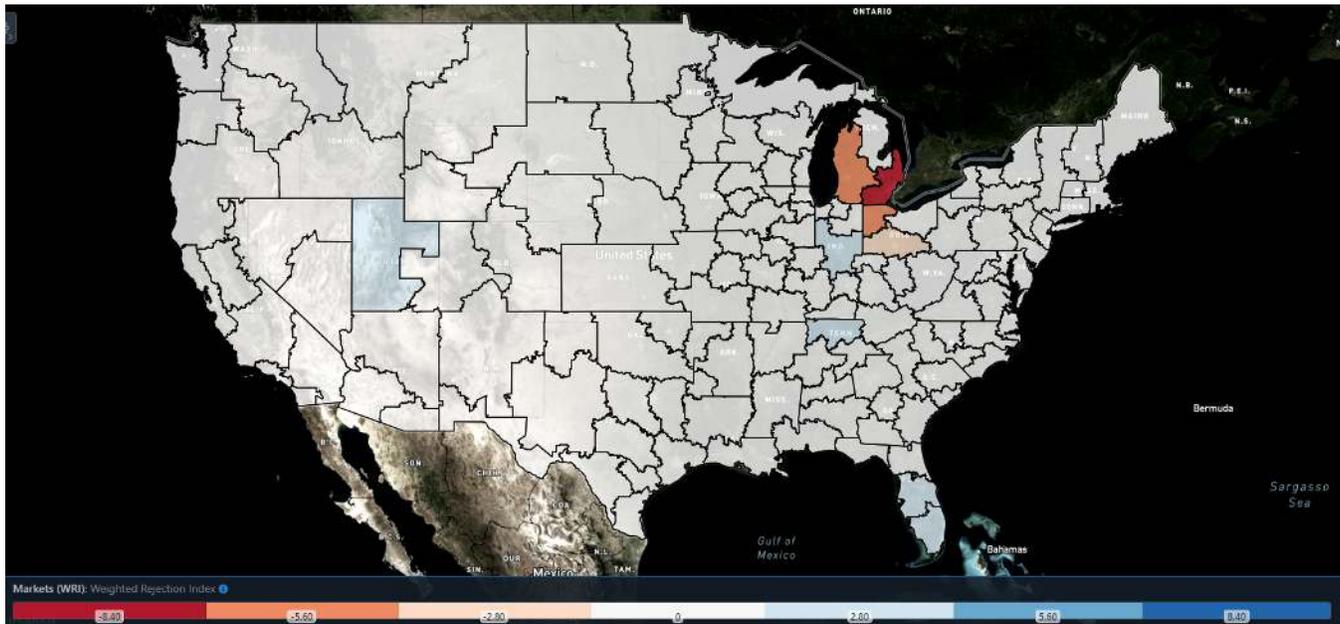
According to a survey conducted by FreightWaves in September 2019, spot rates must fall 10% to 15% below contract rates and remain there for one to three months before the majority of shippers will tap into the spot market. When these conditions are met, the spot mix of freight for shippers generally rises to roughly 30% from a usual average of 20%. Over the past three months, the NTI has tracked about 8.5% higher than contract rates, although the NTI is only \$0.03 higher than contract rates at present.



Map: FreightWaves SONAR. Outbound Tender Volume Index – Weekly Change (color) and Outbound Tender Market Share (height).

Regionally, it was a strong volume week for many markets in the country, though some of the larger markets posted contractions in freight demand. Of the 135 markets, 75 reported weekly increases. The largest market in the country by outbound volume (Ontario, California), posted a 1.8% w/w decline in tender volumes. Atlanta, the second-largest outbound market, saw volumes slide by 0.7% w/w.

Texas, however, saw an uptick in freight demand over the week. Dallas, the third-largest outbound market, had an increase in volumes of 4.6% w/w, while Houston had a gain of 5.4% w/w. Shipment volumes in McAllen, an important cross-border market with Mexico, were up 28% w/w. Florida, another important state during the ongoing produce season, likewise saw volumes rise during the week: Lakeland, which is both Florida's largest outbound market as well as the largest outbound market in the nation for refrigerated goods, reported a healthy 4.5% w/w gain in freight demand.



Capacity tightens in Indianapolis and Nashville. SONAR: WRI (color).

The map above shows the Weighted Rejection Index (WRI), the product of the Outbound Tender Reject Index – Weekly Change and Outbound Tender Market Share, as a way to prioritize rejection rate changes. As capacity is generally finding freight, there are only a handful of blue markets this week, which are the ones to focus on.

Of the 135 markets, 60 reported higher rejection rates over the past week as carriers compete for loads amid quieter freight demand.

Michigan, the only state to post blue markets last week, has seen tender rejections drastically fall from their inflated highs. Meanwhile, rejection rates have risen in Indianapolis, which hosts a substantial manufacturing base for the Midwest. Just south of Indianapolis, Nashville also reported higher rejection rates this week. Diesel prices in Tennessee have risen by an average of \$2.34 per gallon y/y.



Chart: FreightWaves SONAR: National Truckload Index, 7-day average (blue, right axis, includes fuel surcharges) and dry van contract rate (green, left axis, excludes fuel surcharges).

The rate of decline in dry van spot rates has accelerated, which implies that there is no reversing the downward trend in rates that is further exacerbated by the nosedive in tender rejections. Since the beginning of 2022, when spot rates averaged \$3.55 per mile (inclusive of fuel), the NTI has declined 19%. At present, the average dry van spot rate sits at \$2.88 a mile, down \$0.04 from the week prior.

In February 2021, spot rates skyrocketed as snowstorms rocked a fragile supply chain, restraining capacity throughout the country. Rates are currently at the same level as that period of growth; however, since the NTI includes fuel costs, it is worth noting that diesel prices have risen a staggering 95% over that same period.

Contract rates are the base linehaul rate exclusive of fuel and are reported on a two-week delay. Even so, contract rates are neck-and-neck with NTI spot rates from two weeks ago. Contract rates tanked in mid-April and threatened to be a lasting trend, in line with the other declines in freight demand, tender rejections and spot rates. However, contract rates quickly rebounded and have remained stable near \$2.94 per mile, where they were two weeks ago.

The FreightWaves TRAC spot rate from Los Angeles to Dallas, one of the highest-volume lanes in the country, has continued along a downward trend that began at the start of the year. The TRAC rate fell \$0.04 per mile this week to \$2.62, a decline of 35%, or \$1.41 per mile, in 2022 so far. Capacity has loosened significantly in Los Angeles as rejection rates have fallen 1,597 bps since January 1, from 18.17% to 2.2%.



Chart: FreightWaves SONAR. FreightWaves TRAC spot rate from Los Angeles to Dallas.

A similar story is playing out on the East Coast: Rejection rates in Atlanta have fallen 1,209 bps since the start of the year, from 19.4% to 7.3%. Accordingly, the FreightWaves TRAC spot rate from Atlanta to Philadelphia has fallen 15.6%, or \$0.60 per mile, over the same period. Currently, the FreightWaves TRAC spot rate from Atlanta to Philadelphia stands at \$3.24 per mile, with no change from the week prior. Compared to the decline in the overall OTVI, freight demand in Philadelphia is quite robust. Since March 8, when the OTVI began its slide, outbound volume in Philadelphia has declined by only 16.95%, compared to the OTVI's 17.81%.



Chart: FreightWaves SONAR. FreightWaves TRAC spot rate from Atlanta to Philadelphia.

Domestic intermodal volumes have held up while domestic truckload volumes have fallen.

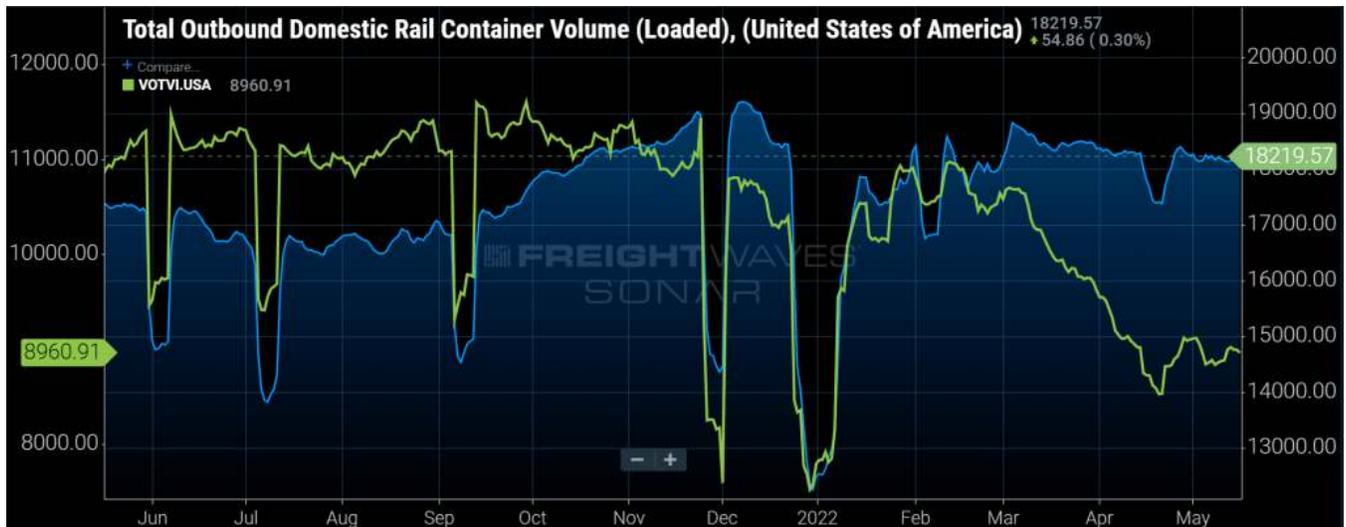


Chart: FreightWaves, SONAR. Loaded domestic intermodal container volume and dry van tender volume are shown in blue and green, respectively.

Looking only at domestic intermodal volumes, one would not see much evidence of a freight recession. Domestic intermodal volume was higher by 6.8% y/y in the first quarter and domestic intermodal volume continues to outpace year-ago levels. In the second week of May, domestic intermodal volume increased 5% y/y.

Domestic intermodal has outperformed both international intermodal (which was down double-digits y/y in the first quarter) and domestic truckload tender volume (shown in the green line in the chart above) which has fallen sharply since early February. There are numerous reasons for that outperformance including: (1) shippers placing less of a premium on speed; (2) high inventory levels for many items (edible items, where inventory levels are still low, are an exception) and the associated high warehousing costs; (3) high diesel prices; and (4) service levels that are not where shippers want, but are at least better than they were for much of last year.

Most publicly traded transportation companies posted strong results when they reported their first quarter financial results, and the public truckload-based domestic intermodal companies were no exception. Statements on earnings calls that stood out to us included Hub Group's contention that there was more interest in truckload to rail conversions than there has been in many years and J.B. Hunt's comment that the contract renewal environment was the best it has been in a long time.

Intermodal contract rates were renegotiated sharply higher in early 2022.

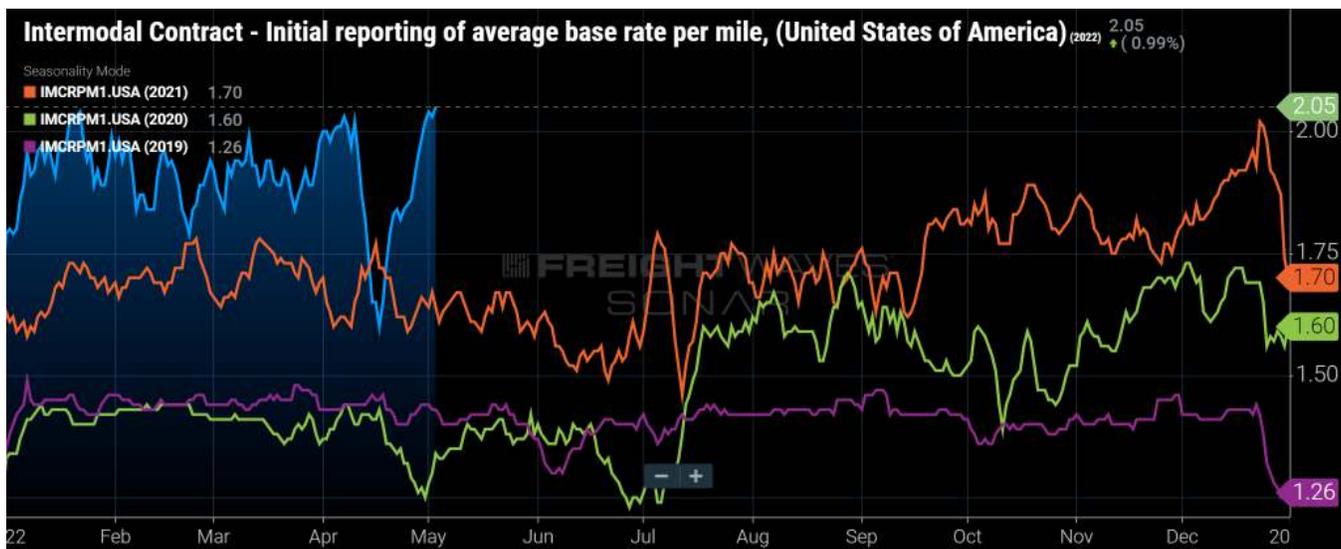


Chart: FreightWaves, SONAR. Intermodal contract rates on a sample of domestic intermodal lanes.

So far, the slowdown in the domestic freight markets has not translated to lower domestic intermodal contract rates. In fact, intermodal shippers we have spoken to, SONAR data and comments from the public domestic intermodal companies point to domestic intermodal contract rates repricing in early 2022 with double-digit rate increases. Those rate increases are on top of the double-digit contract rate increases in 2021. Specifically, average domestic intermodal contracts were 13% higher than the year-ago level in the first quarter of 2022. That y/y comparison will likely decline as 2022 progresses because intermodal contract rates rose steadily throughout last year so those last repriced in early 2021 had more room to rise.

Another way to gauge the relative tightness in domestic intermodal capacity, as it relates to potential changes in contract rates, is comparing the current intermodal spot rates in the densest lanes to year-ago levels. While a small minority of intermodal volume moves on spot rates, we believe they are still useful for assessing whether carriers are protecting capacity for contractual shippers and for finding changes in marketplace conditions in the major lanes.

For most of the past year, the intermodal spot rate chart shown below was entirely green – that is, domestic intermodal spot rates in the densest lanes had been up y/y. Now, domestic intermodal spot rates in the densest lanes have fallen into the pattern of being lower y/y in the outbound Los Angeles lanes and higher y/y in the other major lanes. We interpret that to mean that the railroads have become somewhat less concerned with protecting capacity in the LA market. That said, we found it interesting that the intermodal spot rate in the Dallas to LA lane increased over 100% in the past week to a level that is no longer competitive with dry van truckload. The most likely reason, in our view, is that the railroads want 53' containers back on the West Coast quickly to handle more imported goods that are transloaded from 40' containers into 53' containers.

Intermodal spot rates are lower y/y for LA outbound lanes, higher y/y for the others.

A recent spike in the Dallas to LA spot rate likely means that the railroads are looking for 53' containers to be returned to the West Coast quickly (no time for reloading).

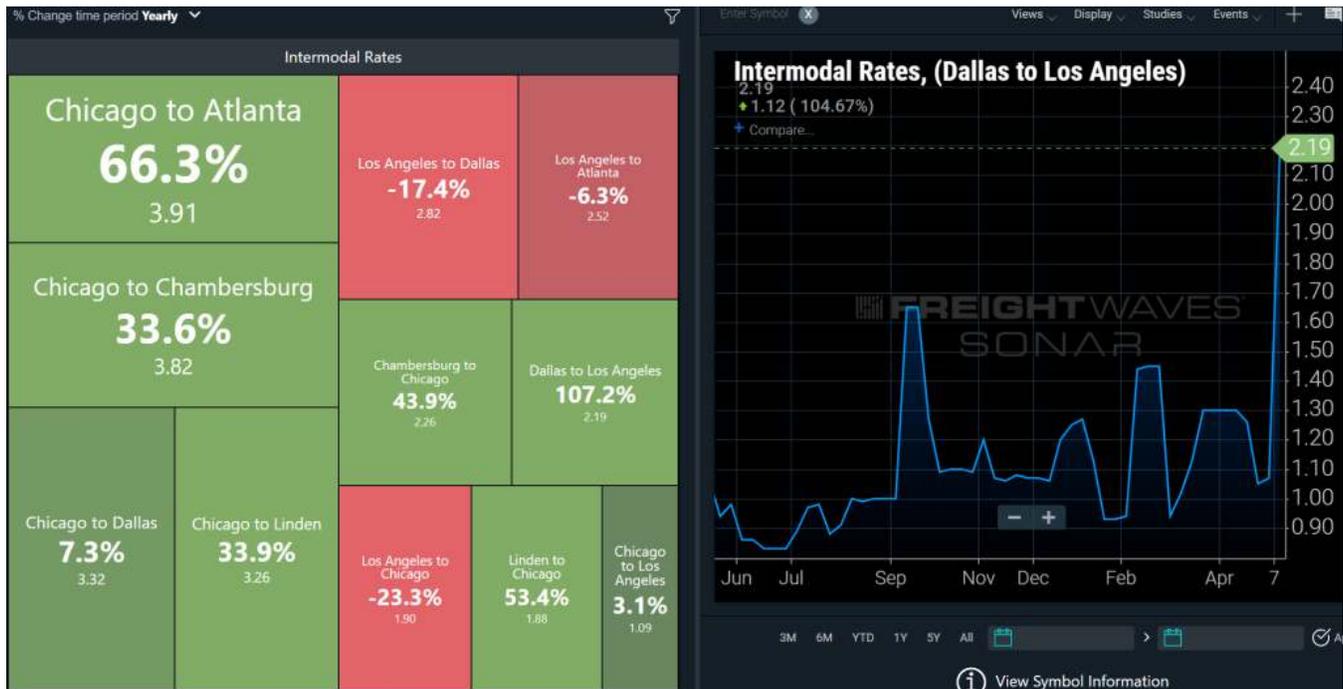


Chart: FreightWaves, SONAR. Tree map showing intermodal spot rates to move 53' containers door-to-door, including fuel surcharges and their respective y/y changes. Those rates are shown on the above-right for Dallas-LA lane, which likely indicates that the railroads want 53' containers to be repositioned to the West Coast quickly.

Evidence of (somewhat) better service: intermodal tender rejection rates on outbound LA and Chicago loads have fallen to normalized levels after being elevated throughout last year.

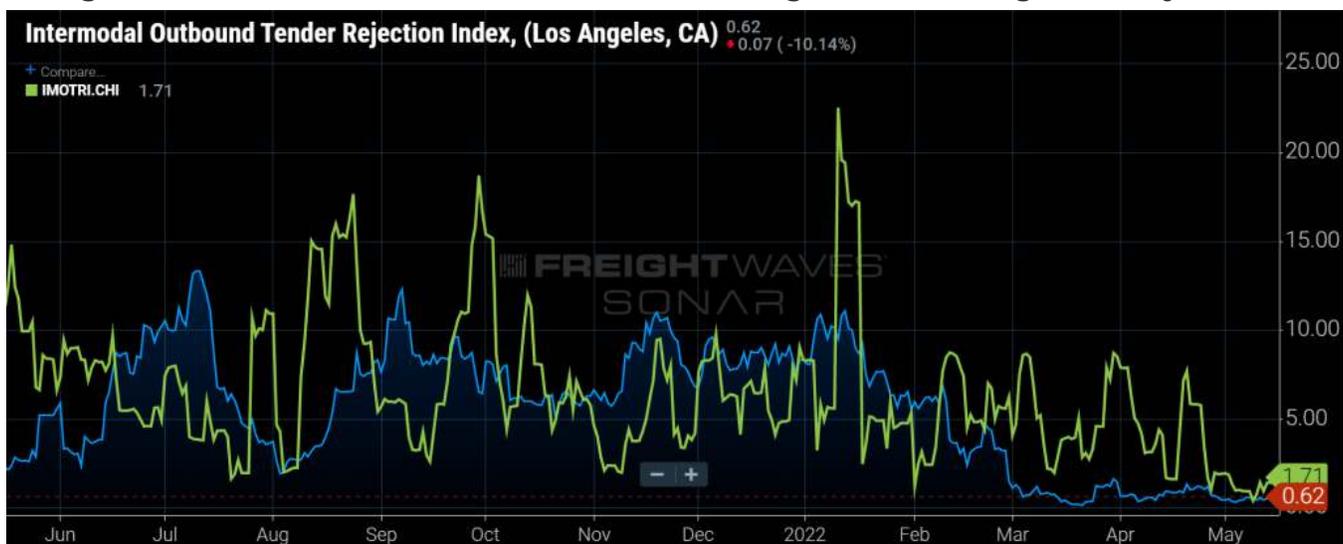


Chart: FreightWaves, SONAR. Domestic intermodal tender rejection rates are shown for outbound Chicago and LA loads in blue and green, respectively.

What's going on in Shanghai?

FreightWaves' new Container Atlas application brings ocean intelligence to the forefront, with the ability to drill down to movements with port-to-port granularity.

The Shanghai lockdown has been the center of discussion since it began in late March and ramifications for the ocean market began almost immediately. The image that has circulated on the internet with all the vessels waiting off the coast of China resembled a more extreme version of what occurred off the U.S. West Coast throughout 2021. As vessels have been unable to call at the Port of Shanghai, the ocean market has experienced a disruption that resembles the pull-forward of volumes ahead of the tariffs that took hold in early 2019.

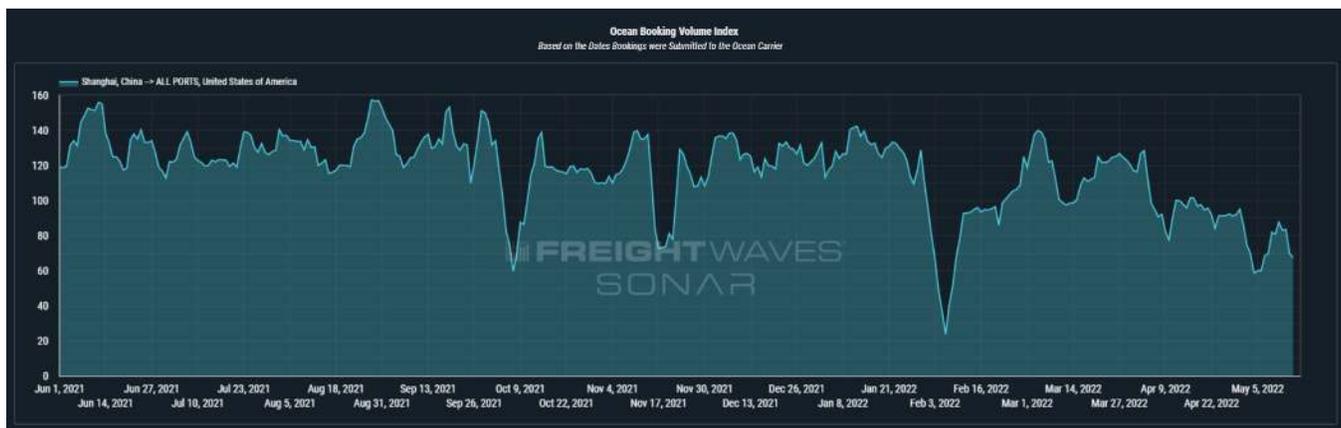


Chart: FreightWaves Container Atlas, Ocean Booking Volume Index, Shanghai to all U.S. ports.

The Ocean Booking Volume Index, which is based on the dates that bookings were submitted to the ocean carriers, from Shanghai to all U.S. ports peaked at 128.46 on April 4. Within a week, booking levels fell by nearly 40% to 77.59 on April 10. As the lockdown has persisted, booking levels have continued their precipitous decline, now 47% below April 4 levels. Compared to a year ago, when the ocean market was arguably at its strongest, booking levels have declined by a resounding 51%.



Chart: FreightWaves Container Atlas, TEU Booking Lead Times, Shanghai to all U.S. ports.

As the number of bookings has declined, lead times have fallen as well. The Ocean TEU Booking Lead Time is the difference between the date of booking and the vessel's departure date. Since the

lockdown in Shanghai, lead times have fallen by over 3 days as shippers jockey for the limited available space on vessels.

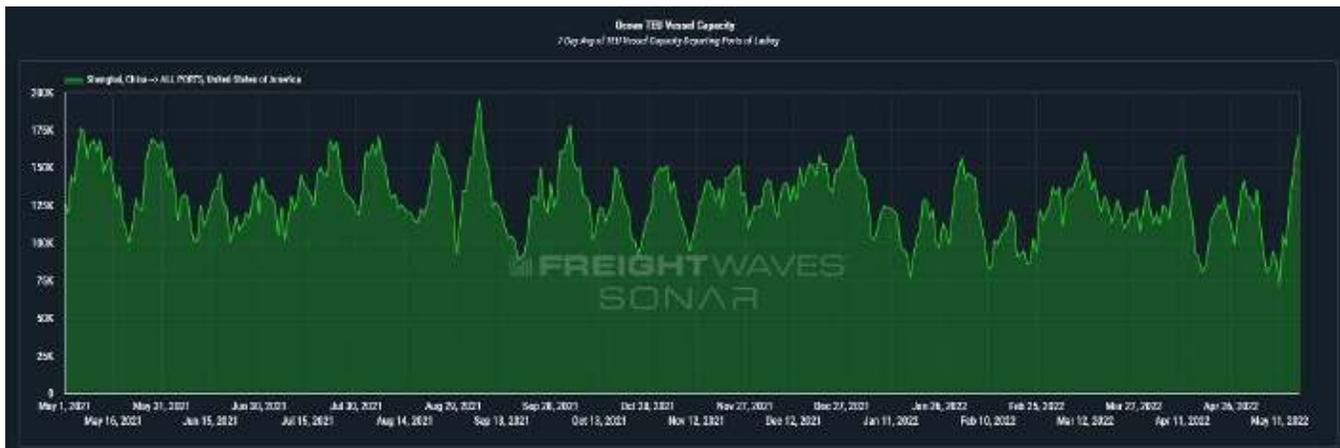


Chart: FreightWaves Container Atlas, Ocean TEU Vessel Capacity: Shanghai to all U.S. ports.

The lockdown has created strains on available capacity calling at the Port of Shanghai, which despite the lockdown has remained operational. However, the lack of equipment and inability for truck drivers to move equipment both to and from the port has hampered the movement of goods. Ocean TEU Vessel Capacity is a moving seven-day average of total capacity on the vessels calling at the Port of Shanghai scheduled to travel to the U.S. The total vessel capacity doesn't account for any bookings that have taken place, or containers that are already on the vessel from previous ports of lading, but rather the total TEU capacity that the vessels account for when empty.

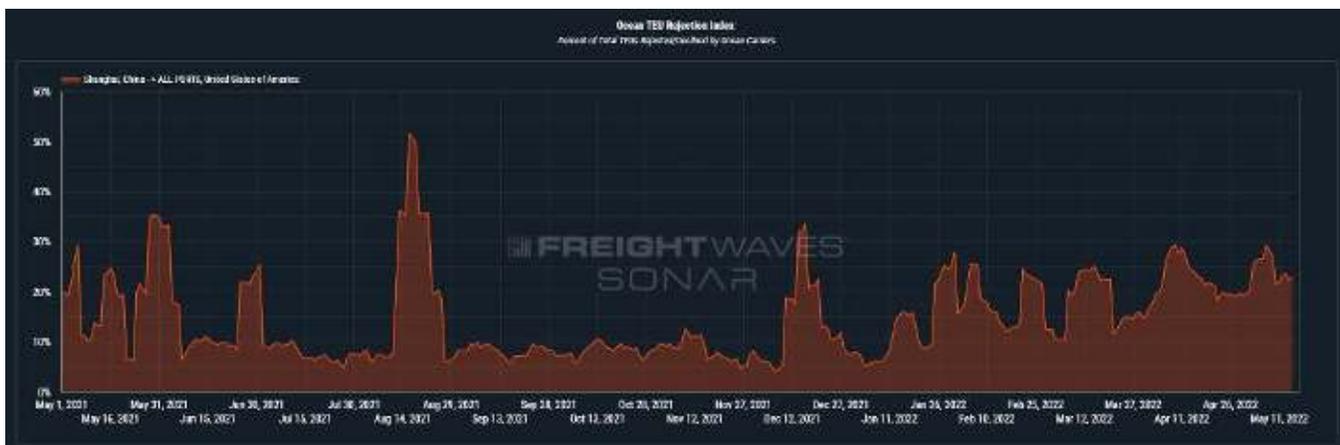


Chart: FreightWaves Container Atlas, Ocean TEU Rejection Index: Shanghai to all U.S. ports.

The result of limited capacity calling at the port (and thus limited equipment availability), is leading to an increase in rejections on the ocean. The Ocean TEU Rejection Index is based on confirmed bookings being rejected by the ocean carrier but doesn't include containers that are rolled from one vessel to another. Throughout the past year, the Ocean TEU Rejection Index was pretty stable at around 9% from Shanghai to the U.S., but since the beginning of 2022, volatility has run rampant. Since the initial stages of the lockdown in Shanghai, rejection rates quickly rose from 15% to upward of 30%. Rejection rates have since retreated slightly, hovering around the 25% mark, but are still historically high.

Why do ocean carriers reject confirmed bookings?

Well, there are two reasons: lack of available space on the vessel and lack of available equipment (namely containers). The latter is likely the reason for the surge in rejection rates out of Shanghai. Though the port has remained operational, the lockdown has impacted drivers' ability to move containers inbound to manufacturing hubs as well as the ability of dockworkers to load and unload vessels.

What are the impacts of this?

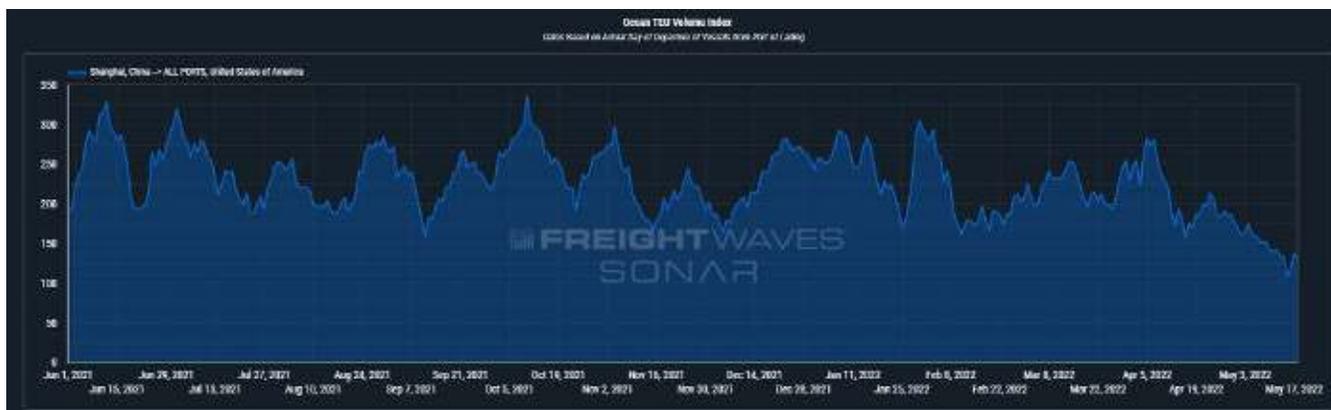


Chart: FreightWaves Container Atlas, Ocean TEU Volume Index: Shanghai to all U.S. ports.

The Ocean TEU Volume Index has plummeted. The Ocean TEU Volume Index is based on the number of TEUs leaving the port of lading on the actual departure date, not based on the schedule like bookings data. Over the past year, volumes have declined by over 45%. Since April 7, the Ocean TEU Volume Index from Shanghai to all U.S. ports has declined by 53%, indicating that demand for surface transportation may further decline in what is typically the second-strongest period for freight, outside of the holiday season.



Chart: FreightWaves Container Atlas, Ocean TEU Transit Times, Shanghai to all U.S. ports.

Not only has volume dried up as a result of the lockdown, but transit times have increased significantly as well. It currently takes three days longer for a TEU to travel from Shanghai to the U.S. than it did a year ago and that is just based on the ocean carriers' schedules, not factoring in delays at ports (both in Shanghai and in U.S. ports).

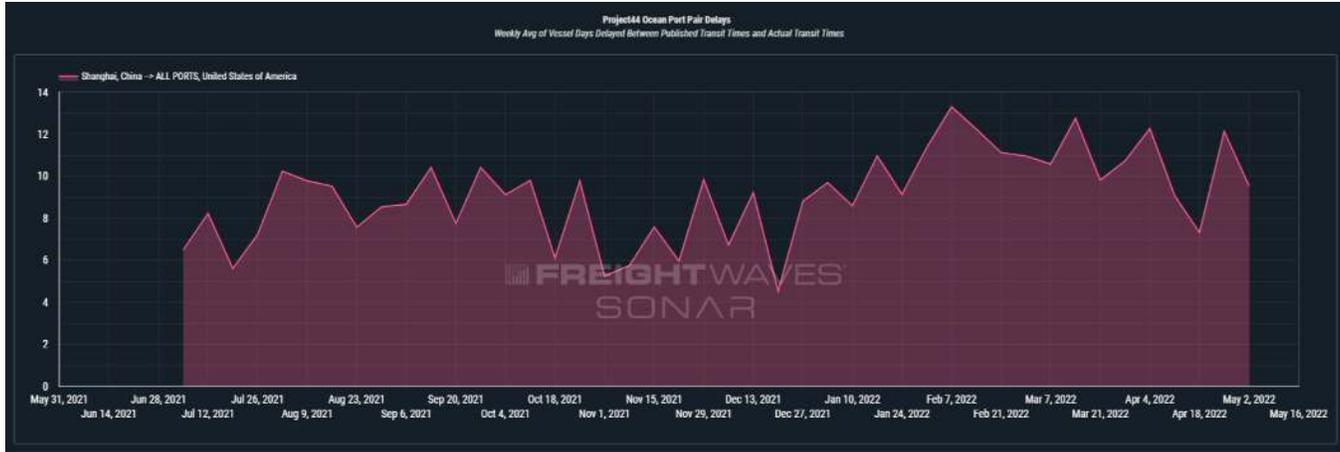


Chart: FreightWaves Container Atlas, project44 Ocean Port Pair Delays: Shanghai to all U.S. ports.

Project44’s Ocean Port Pair Delay is the difference between the published transit time from the ocean carrier and the actual transit time. Currently from Shanghai to the U.S. delays are up to 9.5 days. So while scheduled transit times have increased to 25 days (up from 21 days last year), shippers can add nearly another 10 days to those transit times, bringing the total to 35 days, or five weeks, for containers leaving the Port of Shanghai before they arrive in the U.S.

All of these factors combined indicate that the impacts to U.S. freight demand may be as disrupted as things have been since the onset of the COVID-19 pandemic.

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