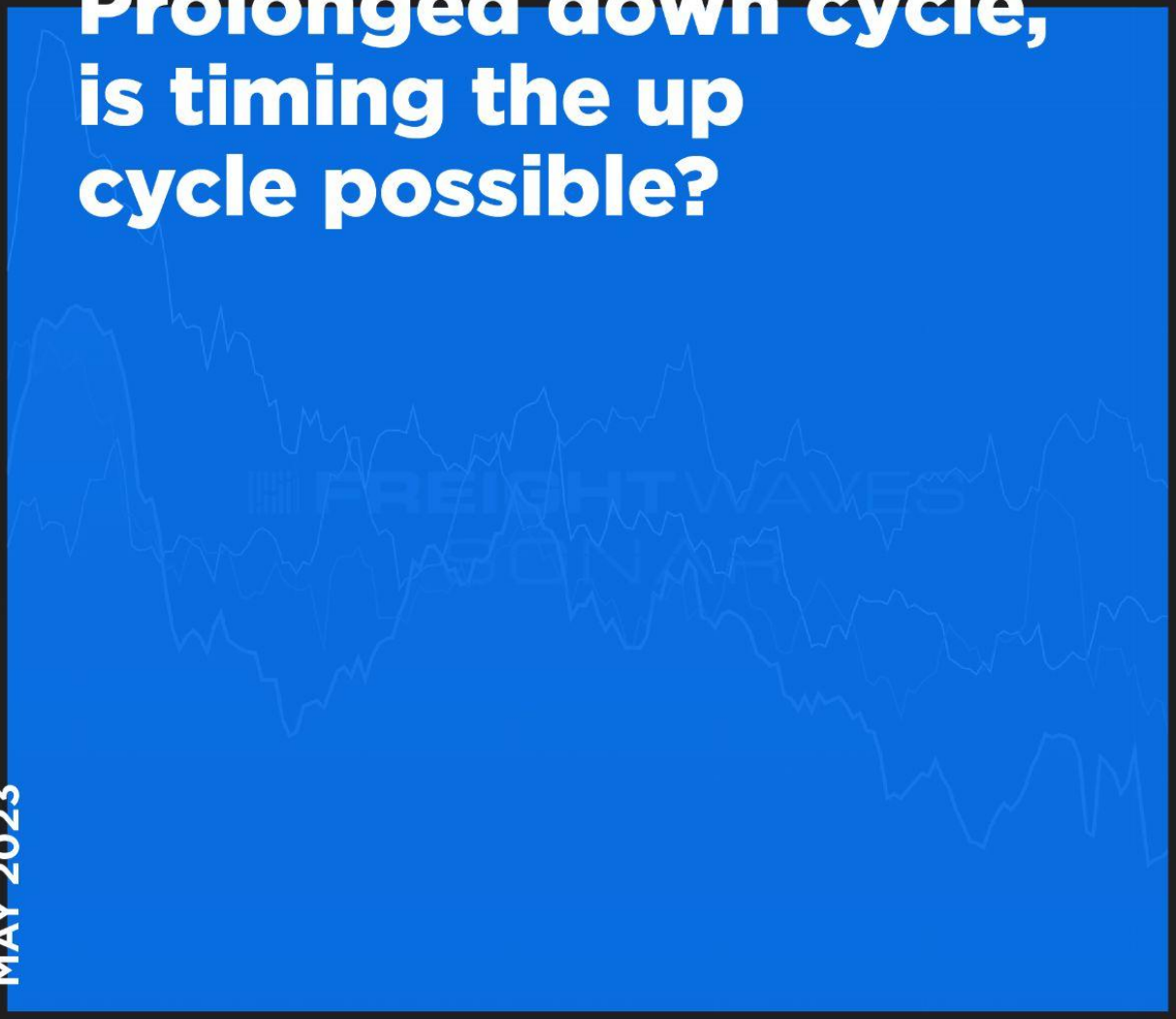
FREIGHTWAVES SONAR

KNOW MORE, FASTER.

Prolonged down cycle, is timing the up cycle possible?



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WHITE PAPER

Table of Contents

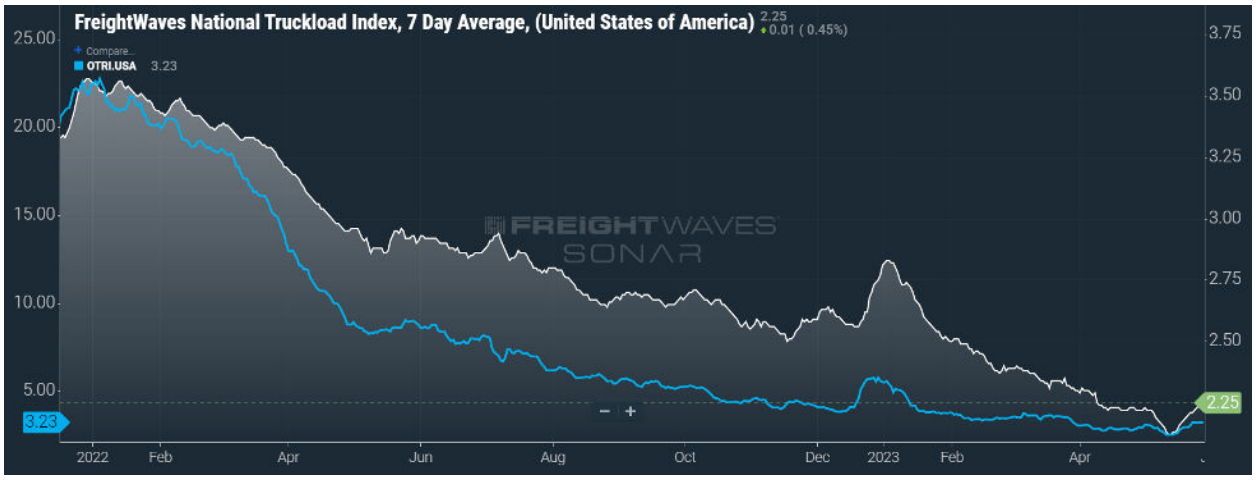
List of Figures

Overview

In a highly cyclical industry like over-the-road freight transportation, market conditions can shift at a moment's notice and shippers often don't have the data to react to changing conditions in real time.

Like in the stock market, timing the market is extremely difficult and hindsight is always 20/20, but hindsight doesn't drive increased efficiency when the freight market inevitably turns, which appears to be a ways down the road. High-frequency freight market data allows for market participants to identify real-time changes to market conditions and act proactively, as opposed to reacting after the market has already changed in a significant manner.

For instance, 2022's freight market recession still plagues the industry: Over the 48-day period between March 23 and May 9, dry van spot rates sank 13%. Tender rejections — a measure of trucking capacity relative to demand — nearly halved during that same period, signaling that pricing power was wrested from carriers and restored to shippers.



Spot market conditions deteriorated quickly in 2022. Source: FreightWaves SONAR. National Truckload Index (white, right axis) and Outbound Tender Reject Index (blue, left axis).

Yet it would have been easy for this sudden reversal to go unnoticed by analysts and market participants alike. Contract freight, which composes roughly 80% of the truckload market, was relatively stable during this period; contract rates would not begin a consistent decline until mid-July. Meanwhile, import volumes at the nation's largest container ports appeared to be strong, despite early warnings from retailers that were amassing a growing glut of inventory. As later became evident, these ports were still subsisting on enormous backlogs built during the unprecedented congestion of the past two years — though new bookings and ocean rates were deteriorating at a whirlwind clip.

If shippers trundle unaware of shifting market conditions during such a meltdown, they risk leaving sizable savings in transportation costs on the table.

But what are the consequences of missing early signs of a "melt-up," when capacity tightens in a flash and shippers face a supply crunch of available trucks?

To put it bluntly, shippers find themselves unable to secure capacity for their loads and have to devote more time and resources in navigating the volatile spot market. Real-time market data is key when negotiating spot rates, as different regions in different stages of the melt-up will prove more or less attractive as destinations to carriers. Yet if shippers fail to seek out this data until rejections and spot rates have skyrocketed, it is already too late: Enterprise software procurement cycles are lengthy and complex, implementation takes valuable time and even the smoothest integrations benefit from change management and training.

While the freight market shows no signs of bottoming in the short term, FreightWaves SONAR provides market participants the ability to identify real-time changes to market dynamics, essentially providing them first-mover advantage when compared to those who rely solely on instincts and historical data. Thus having the data already within the repertoire, it effectively doesn't matter when changes to freight market dynamics happen; those using the data are able to be proactive as opposed to reactive.

2018: Oil booms, tax cuts and capacity shortages

The trucking melt-up of 2018 was driven by two main forces: one of which spurred demand, the other of which limited capacity. Freight demand was abundant since the U.S. economy, stimulated by a $1.5 trillion tax reform bill passed in December 2017, was roaring. The tax cuts — which brought the U.S.' corporate tax rate from being the highest among G7 nations to the lowest — not only allured manufacturers into reshoring their operations but also incentivized them to invest capital into hard assets for productivity's sake.

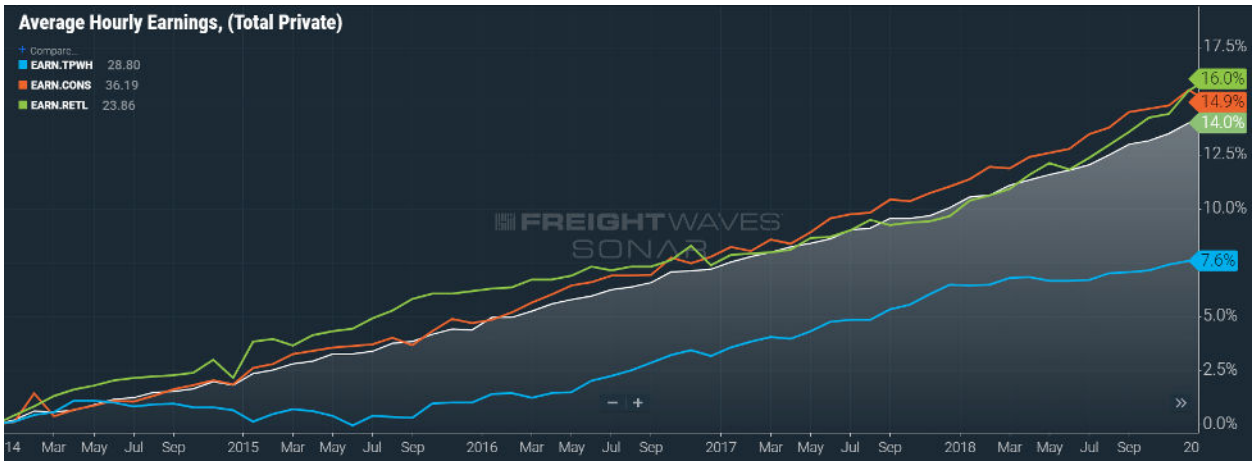
This deluge of investment growth rushed alongside rising tides from the oil and gas sector. In mid-2014, oil prices peaked above $100 per barrel before the market collapsed. By early 2016, oil had fallen below $30 per barrel. The timing of the 2017 tax cuts was well synchronized with the gathering momentum in oil markets since, in October of that same year, oil prices finally broke above $50 per barrel.

The rally ignited the U.S. industrial economy: Texas' Permian and Eagle Ford basins were the first to witness a resurgence, with North Dakota and Montana's Bakken Formation following closely behind. As industrial activity ramped up in these regions, demand for flatbeds hauling heavy machinery to the oil fields was guaranteed. Domestic manufacturing, which was lifted by the tax breaks, focused on producing consumer goods and business equipment — motor vehicles, computers and primary metals all saw notable growth by the end of 2017.

The U.S. industrial economy, rising since 2016, peaked in 2018. Source: FreightWaves SONAR, Institute of Supply Management's. Manufacturers' Purchasing Managers' Index.

Demand-side factors were also at work in the 2018 trucking boom. Consumers were sitting atop the longest bull market in U.S. history, with 2008's Great Recession a seemingly distant memory. E-commerce grew substantially in this period, its sales rising 17% on a yearly basis at the end of 2017. Growth in e-commerce drove import demand: The ports of New York and New Jersey, Los Angeles, Long Beach and Baltimore all handled then-record volumes in 2017, with these imports feeding regional truckload demand.

Consumer health was, at least in the short term, improved by the tax cuts. Income taxes were lowered for every single filer making more than $9,525 per year, the child tax credit was doubled from $1,000 to $2,000 and income tax brackets were shifted to maximize benefits to the middle class. Wages also improved during this period: In 2017, 19 states raised their minimum wage; in 2018, 17 of those raised it again. The overall vigor of the economy made for a tight and competitive labor market across multiple industries.



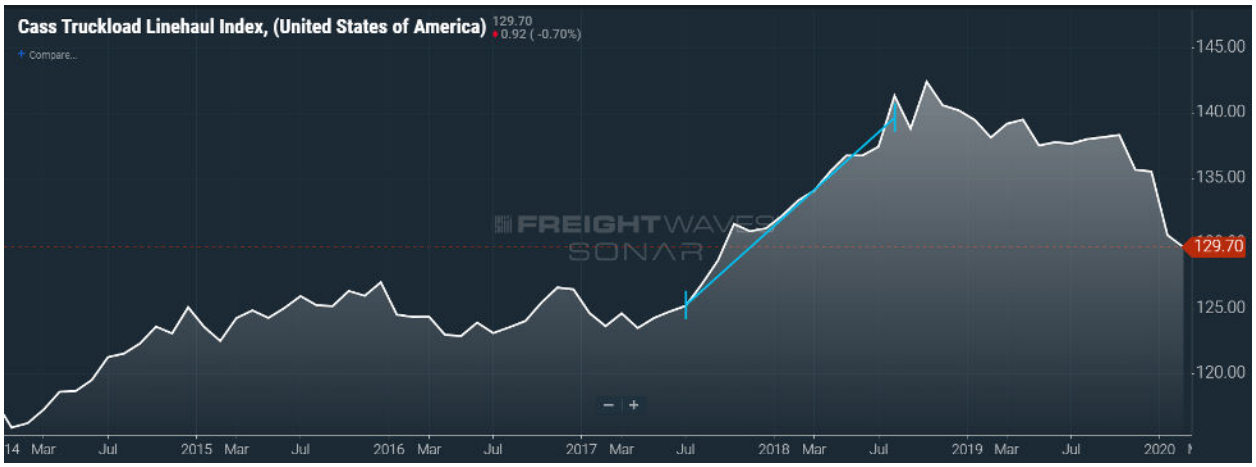
In the five-year period ending Dec. 31, 2018, wages grew more quickly in almost every other sector than in transportation. Source: FreightWaves SONAR, U.S. Bureau of Labor Statistics. Average hourly earnings growth in private sector (white); transportation and warehousing (blue); construction (orange); and retail trade (green).

This high degree of competition for workers gave rise, in part, to the second key force behind 2018's trucking boom: a so-called "driver shortage." In actuality, the labor supply for trucking eroded as construction, maintenance, the energy sector and — after the aforementioned increases to states' minimum wages took effect — even the fast-food industry were all hiring would-be drivers. These alternative employers also offered a greater work-life balance than trucking and, in many cases, a more obvious potential for career advancement.

The most contentious issue behind this labor shortage was the Federal Motor Carrier Safety Administration's mandate on ELDs, or electronic logging devices, which first took effect in December 2017. ELDs integrate with vehicle engines to monitor location, miles driven and hours of service. While acquisition and adoption of ELDs did pose challenges in itself, mostly for smaller carriers, the real friction was sparked by how ELDs enforced HOS rules. In a given workday, drivers can only log 11 on-duty hours in a 14-hour shift, which is then followed by a mandatory 10-hour rest break.

Yet drivers' schedules are not typically as clear-cut as FMCSA rules demand, and the presence of ELDs often enforces rigor where flexibility is needed. For instance, unexpected delays — a traffic jam or bout of disruptive weather — could either compel the driver to recoup that lost productivity by driving unsafely or else saddle the driver with missed appointments and thus a potential loss of future business.

Periods of detention, in which a driver waits to be loaded or unloaded at a facility, balloon during melt-up periods of high freight demand and also eat into a driver's on-duty hours. These unforeseen knock-on effects of the ELD mandate, among others not mentioned, have contributed to a sense of attrition among veteran drivers that still persists to the present day.



Truckload rates skyrocketed in the back half of 2017, hitting their apex in mid-2018. Source: FrieghtWaves SONAR, Cass Information Systems. Cass Truckload Linehaul Index.

This combination of an abraded, shrinking carrier base that could not possibly meet the swell of national freight demand unsurprisingly shot rates skyward. The Cass Truckload Linehaul Index, which measures contract and spot rates for dry van truckloads, averaged 8.5% growth in 2018 over the previous year — nearly double its 4.4% yearly increase in 2011, the year of the

industry's last great melt-up. July 2018 marked 17 consecutive months of year-over-year growth in spot rates: a feat that had not been achieved since the industry was deregulated in 1980. Accordingly, in the first half of 2018, carriers were rejecting roughly 1-in-4 contracted loads for higher-paying opportunities in the spot market.

As a result of spiraling transportation costs, a variety of shippers noted margin compression, causing them to miss previously set targets and temper future outlooks. General Mills CEO Jeff Harmening, in a March 2018 earnings call, noted how the company's exposure to the spot market jumped to roughly 20% of its shipments "versus the historic average of about 5%," a problem worsened by the fact that spot rates were "30% to 60% higher" than contract rates. "Higher freight costs," Harmening stated, "are impacting our raw material prices and the cost to ship materials from our suppliers to our factories has risen significantly."

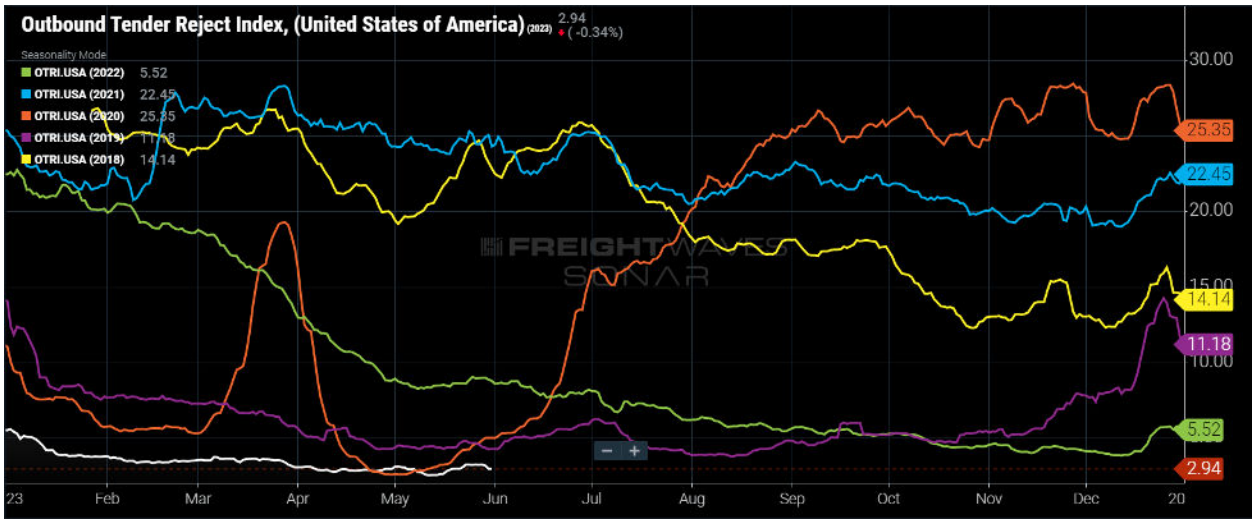
How to identify when the market changes?

While the 2018 trucking melt-up was a result of a unique confluence of government policy, robust consumer health and relatively stagnant wages for truck drivers, the 2020 melt-up was the result of a global pandemic and, overarching government stimulus measures to drive consumer spending.

The current cycle looks to be a prolonged period of excess capacity in the freight market coupled with macroeconomic headwinds, including the resumption of student loan repayments. The resumption of student loan repayments can't be understated as 25 million consumers have had an average monthly payment of $393 paused for more than three years, effectively removing nearly $10 billion per month from discretionary spending.

How can shippers best anticipate a future reversal?

That's where the power of high-frequency data comes into play.



The Outbound Tender Reject Index (OTRI) will highlight the changes that are happening on the supply side of the freight market. During previous melt-ups: In 2018, the pandemic cycle

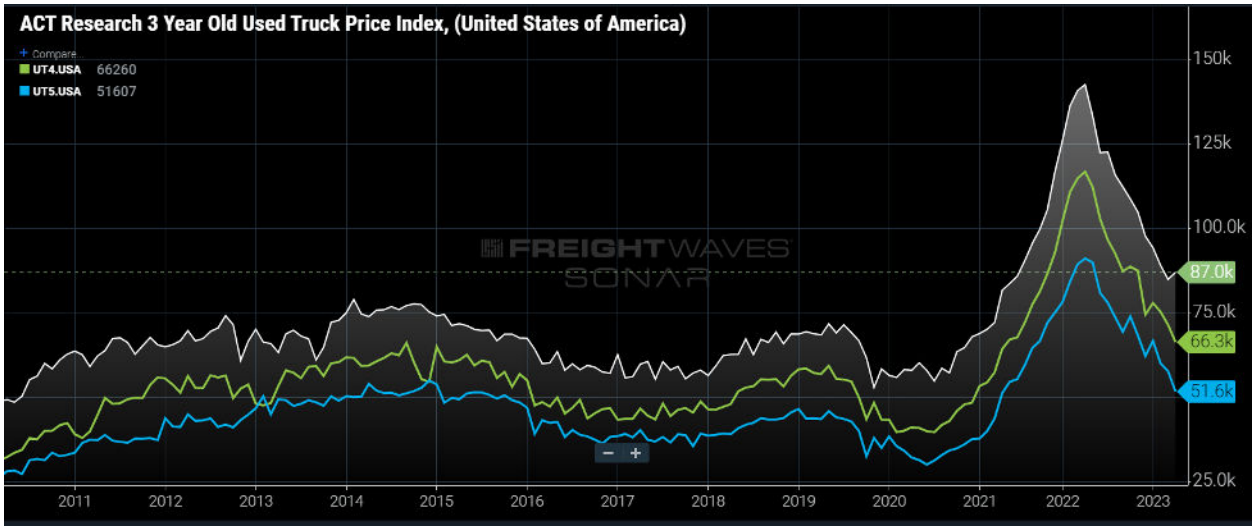
in 2020 and the prolonged freight market boom that lasted nearly 24 months from the back half of 2020 through the first quarter of 2022, OTRI was well into the double digits, at times exceeding 20%. An environment in which capacity is readily available, with OTRI below 5%, to an environment in which capacity is tight, with OTRI above 10%, can change within a matter of weeks.

At the onset of the pandemic, OTRI was 5.3% on March 1, 2020, and more than doubled in the 15 days that followed, eclipsing 10% at 10.69% on March 16, 2020. A similar increase occurred in June. On June 1, 2020, the national Outbound Tender Reject Index was 4.99% and by June 23, 2020, OTRI had risen to 10.23%. What followed June 2020 was a rise in rejection rates that reached highs near 30% in the following 20 months.

What makes the current environment different from past (or normal) freight cycles?

The record-high rates experienced over the past few years have caused multiple things to occur that are going to prolong excess capacity from leaving the market.

The first is that drivers abandoned larger carriers to venture out on their own because the spot market was robust and owner-operators were able to make money hand over fist. Coupling this with the forced narrative of a "driver shortage," new capacity flooded the freight market at a record pace, even as the demand-side indicators showed that volume levels were slowing.



The high rates helped boost balance sheets, allowing for carriers to withstand a downturn, at least for a little longer than they could have previously in past freight market cycles. Additionally, smaller carriers that purchased used equipment over the past few years paid record-high prices for trucks, thus quickly becoming upside down as the used truck market corrected while the freight market cooled.

The freight market continues to battle an oversupplied market. Until enough capacity leaves the market, that will remain the case, which appears to be a significant amount of time

considering OTRI is below 3%, even after a holiday that typically causes a short-term disruption to capacity.

While the current conditions are favorable for a shipper, when the market flips those with high-frequency data in their arsenal will be able to adjust to the changing conditions faster, thus ensuring better compliance as well as the ability to more accurately manage budgets. Couple the data with an army of experts, then changing market conditions will allow for proactive strategies to be formed.