



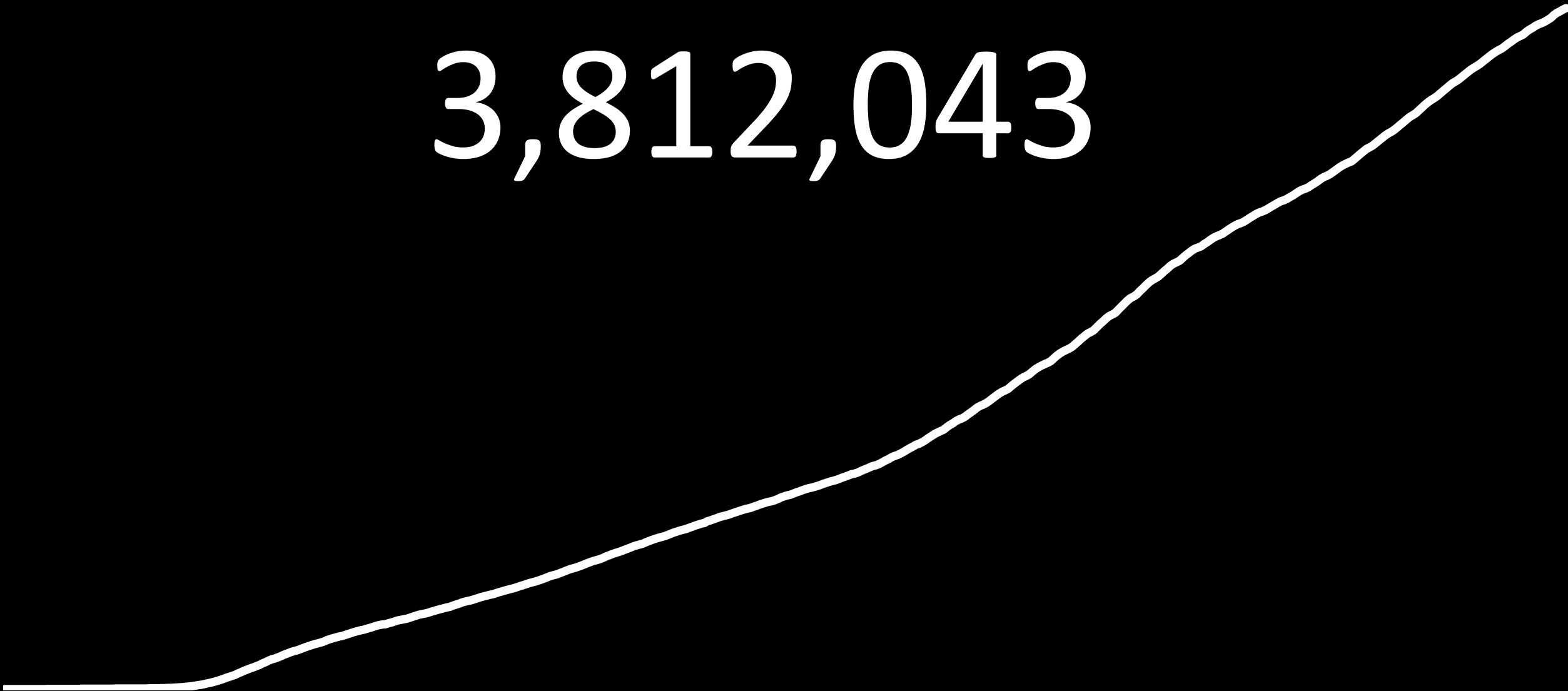
Industry Review

Economics, Transportation
&
Commercial Vehicles

Presented by Penske Transportation Solutions

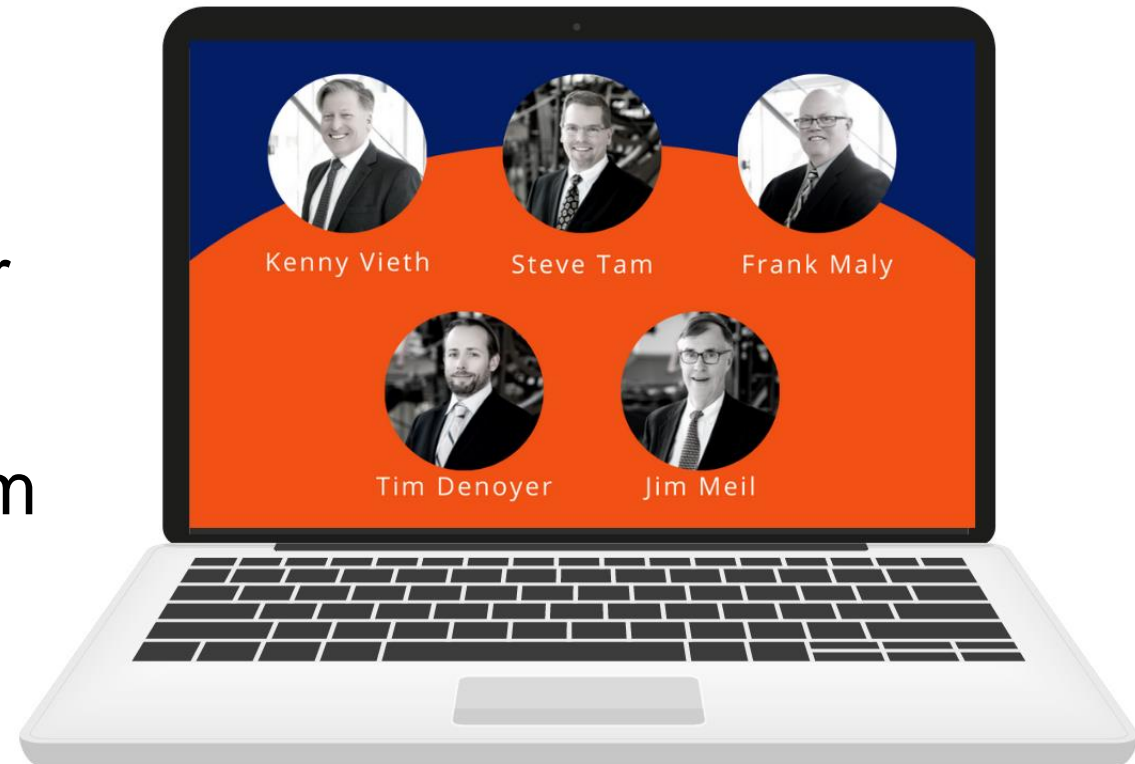


3,812,043



Webinar Overview

- Introduction – Steve Tam
- Economy – Jim Meil
- Freight Transportation – Tim Denoyer
- Class 8 – Kenny Vieth
- Used Trucks/Classes 5-7 – Steve Tam
- Trailers – Frank Maly
- Q&A/Wrap-up – All



OUTLOOK SEMINAR 65 LEVELING UP:



Autonomous Vehicles and the Future of Transportation



REGISTER TODAY

August 24-26, 2021



CHARGING FORWARD

2020 - 2040 BEV & FCEV FORECAST & ANALYSIS

Classes 4-5 Vehicles

14 Market Sub-Segments

23 Application Types

275+ Page Written Analysis Covering:

Infrastructure

Battery Technology

Fuel Cell Technology

Hydrogen Technology

Regulations

and More...

Comprehensive Plug & Play TCO Model

AVAILABLE NOW

Contact Ian McGriff, imcgriff@actresearch.net





WE'RE TAKING ON THE WORLD

In partnership with Knibb, Gormezano & Partners, we're utilizing the foundation of our North American results from CHARGING FORWARD to deliver a global BEV and FCEV forecast.

With a focus on 4 regions and more than 20 countries, this study will work to understand the dynamics of electrification for the global commercial vehicle market.

- Infrastructure
- Battery Technology
- Fuel Cell Technology
- Hydrogen Technology
- Regulations
- Comprehensive TCO Model

Are you interested in participating?
Contact Ian McGriff, imcgriff@actresearch.net



It's as good as it gets – closing out 2021, into 2022

1. Bad news and good news
2. Signs of strength
3. COVID out, inflation in
4. Why trends will continue
5. Signals to watch
6. Eye chart (statistics)



Bad news and good news

Bad News

- Vendor & inventory strain not easing
 - Oil at \$70/bbl
 - Steel, resin, tires, other
- Inflation getting Main Street attention
- Future fiscal burdens of current & proposed federal govt spending
- Faint sniff (maybe more) of a bubble...

Good news

- NA and global data flow very good
- COVID precautions relaxed - gov't & private
- Sugar rush – monetary & fiscal stimulus
- COVID new cases down, vax's up
- Asset & commodity prices high
- Trucking indicators still great
- Double barrel: Goods in, services in too



Super-strong: Global purchasing mgrs. survey

	January 2020 to May 2021 (mid quarter month excluded Q3, Q4, Q1)												
	Feb-20	Mar-20	Apr-20	May-20	Jun-20	Jul-20	Sep-20	Oct-20	Dec-20	Jan-21	Mar-21	Apr-21	May-21
Global	47.2	47.6	39.6	42.4	47.8	50.3	52.3	53.0	53.8	53.5	55.0	55.8	56.0
United States	50.7	48.5	36.1	39.8	49.8	50.9	53.2	53.4	57.1	59.2	59.1	60.6	62.1
Canada	51.8	46.1	33.0	40.6	51.0	52.9	56.0	55.5	57.9	54.4	58.5	57.2	57.0
Mexico	50.0	46.9	35.0	38.3	38.6	40.4	42.1	43.6	42.4	43.0	45.6	48.4	47.6
Eurozone	48.7	44.5	33.4	39.4	47.4	51.8	53.7	54.8	55.2	54.8	62.5	62.9	63.1
Germany	48.0	45.4	34.5	36.6	45.2	51.0	56.4	58.2	58.3	57.1	66.6	66.2	64.4
France	49.8	43.2	31.5	40.6	52.3	52.4	51.2	51.3	51.1	51.6	59.3	58.9	59.4
Italy	48.7	40.3	31.1	45.4	47.5	51.9	53.2	53.8	52.8	55.1	59.8	60.7	62.3
Spain	50.4	45.7	30.8	38.3	49.0	53.5	50.8	52.5	51.0	49.3	56.9	57.7	59.4
UK	51.7	47.8	32.6	40.7	50.1	53.3	54.1	53.7	57.5	54.1	58.9	60.9	65.6
Russia	48.2	47.5	31.3	36.2	49.4	48.4	48.9	46.9	49.7	50.9	51.1	50.4	51.9
Japan	47.0	44.8	41.9	38.4	40.1	45.2	47.7	48.7	50.0	49.8	52.7	53.6	53.0
China	40.3	50.1	49.4	50.7	51.2	52.8	53.0	53.6	53.0	51.5	50.6	51.9	52.0
India	54.5	51.8	27.4	30.8	47.2	46.0	56.8	58.9	56.4	57.7	55.4	55.5	50.8
Brazil	52.3	48.4	36.0	38.3	51.6	58.2	64.9	66.7	61.5	56.5	52.8	52.3	53.7

>54
Above Trend
51-54
Trend
45-51
Flat
<45
Recession

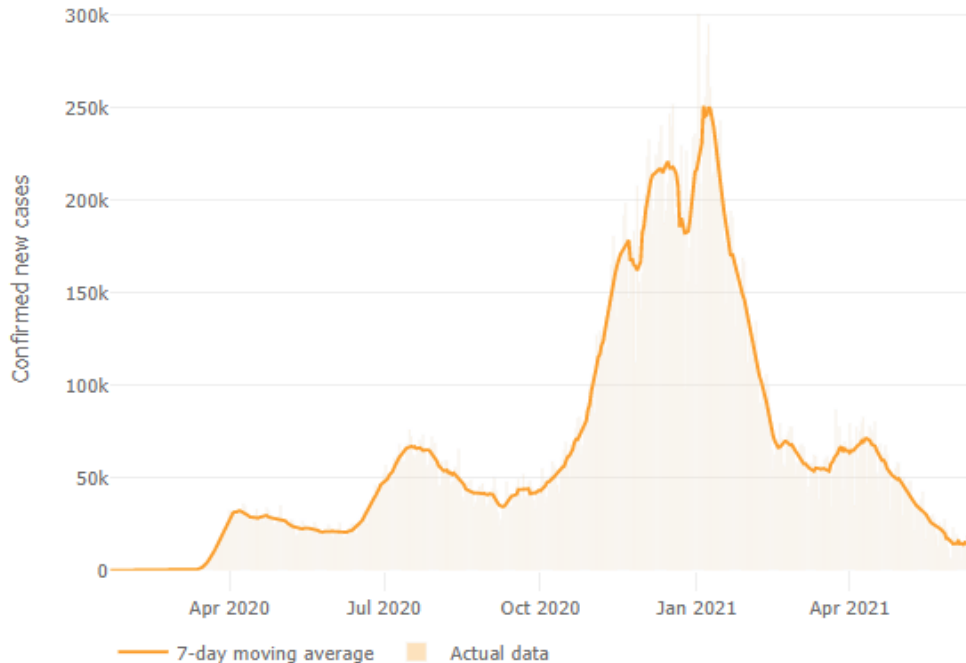
COVID out

UNITED STATES

New cases confirmed
each day (7-day-average)

▼ DOWN

The first case of COVID-19 in United States was reported 508 days ago on 1/21/2020. Since then, the country has reported 33,461,982 cases, and 599,769 deaths.



Daily new cases benchmark:
under 15k new cases now;
over 250k 1st week January

The Latest Numbers

305,687,618 vaccine doses given so far in the U.S.

14,417 new U.S. cases recorded yesterday

379 deaths in the U.S. recorded yesterday

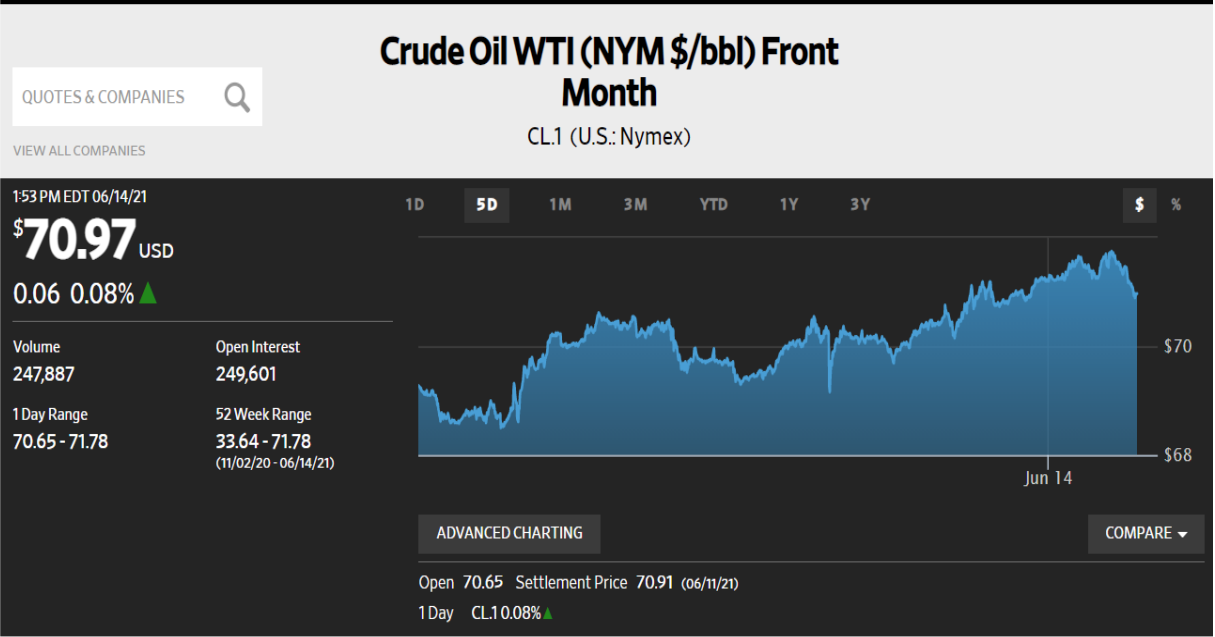
598,748 total U.S. deaths

33,426,425 total confirmed cases in the U.S.

174,893,444 confirmed cases world-wide, and 3,774,138 deaths

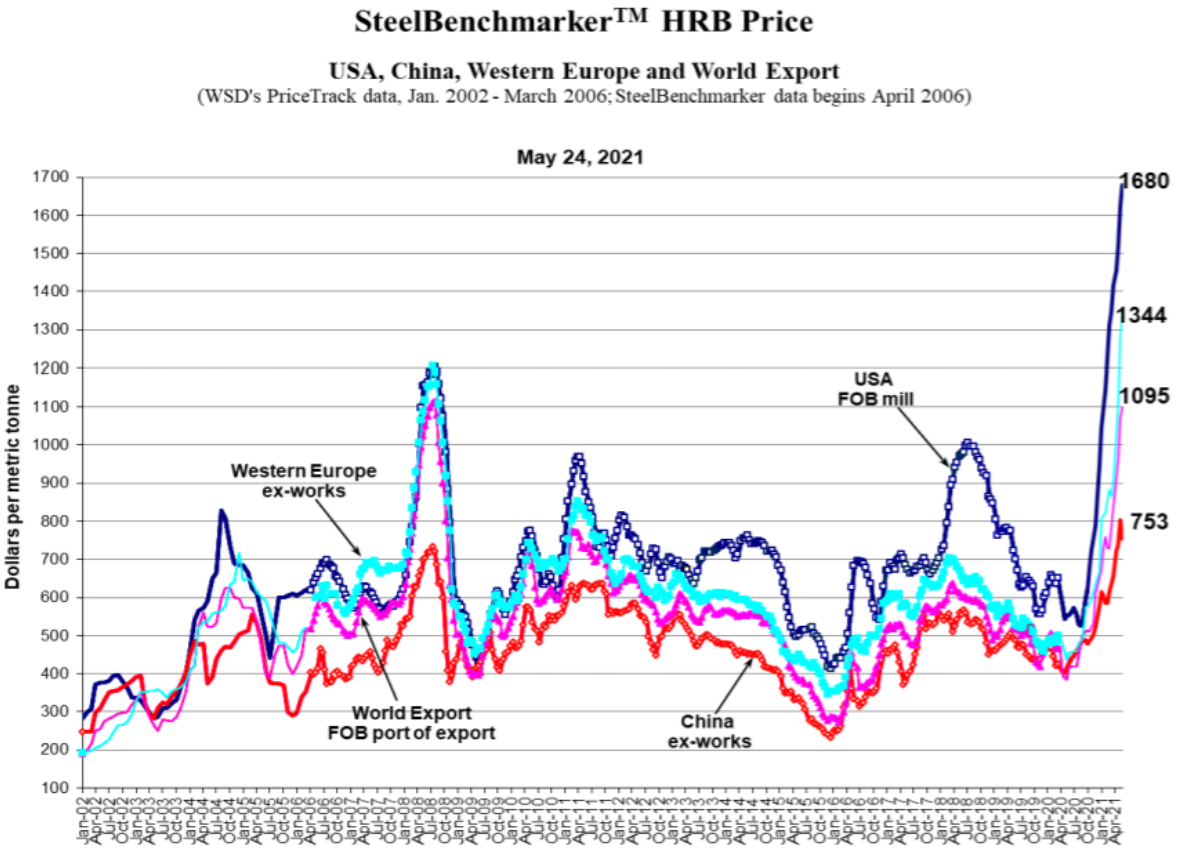
Sources: Johns Hopkins University as of 6:30 a.m. ET; Vaccination figures from the Centers for Disease Control and Prevention.

Inflation in



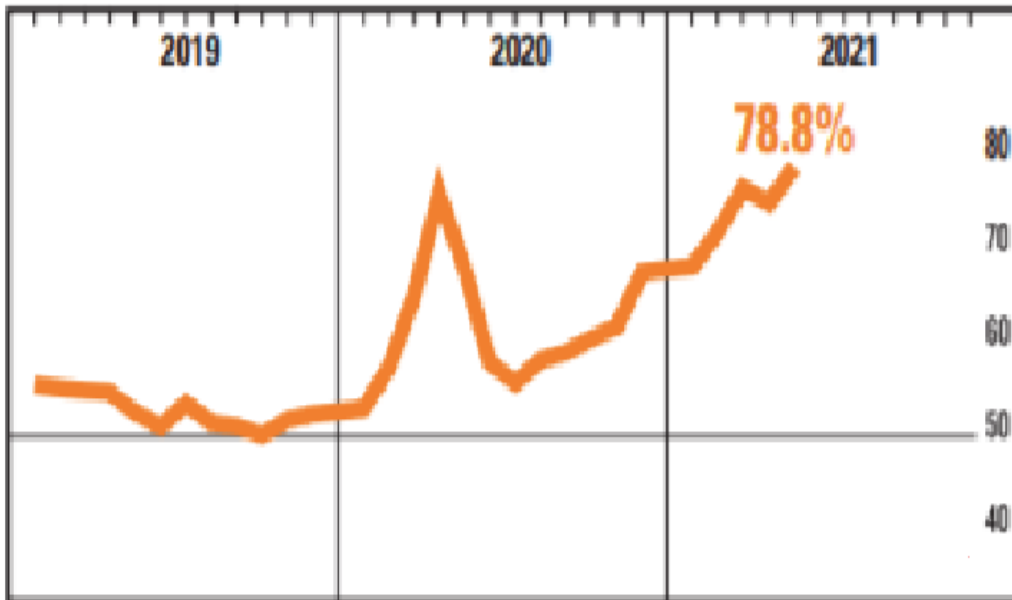
U.S. On-Highway Diesel Fuel Prices*(dollars per gallon) [full history](#)

	05/24/21	05/31/21	06/07/21	Change from week ago	Change from year ago
U.S.	3.253	3.255	3.274	▲ 0.019	▲ 0.878



Why trends will continue - 1

The purchasing managers say so – near-record slow deliveries
Customer inventories at all-time low

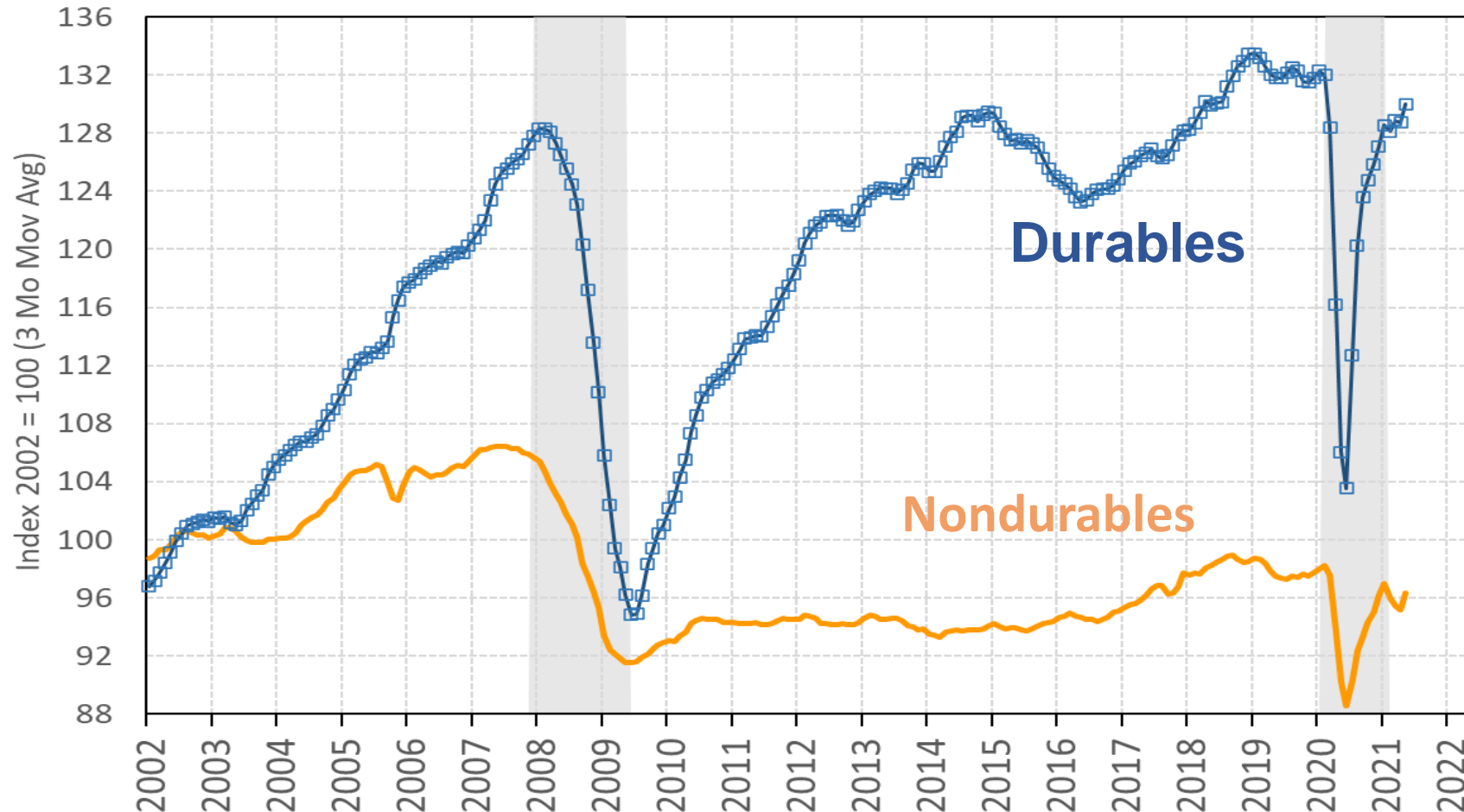


Supplier Deliveries

The delivery performance of suppliers to manufacturing organizations was slower in May, as the Supplier Deliveries Index registered 78.8 percent. Of the 18 industries, 16 reported slower supplier deliveries in May, listed in the following order: Apparel, Leather & Allied Products; Printing & Related Support Activities; Nonmetallic Mineral Products; Computer & Electronic Products; Textile Mills; Food, Beverage & Tobacco Products; Machinery; Fabricated Metal Products; Furniture & Related Products; Paper Products; Plastics & Rubber Products; Miscellaneous Manufacturing[†]; Electrical Equipment, Appliances & Components; Transportation Equipment; Chemical Products; and Primary Metals.

Why trends will continue - 2

Cycle time duration, peak to trough & back, 25% of 2008-2012



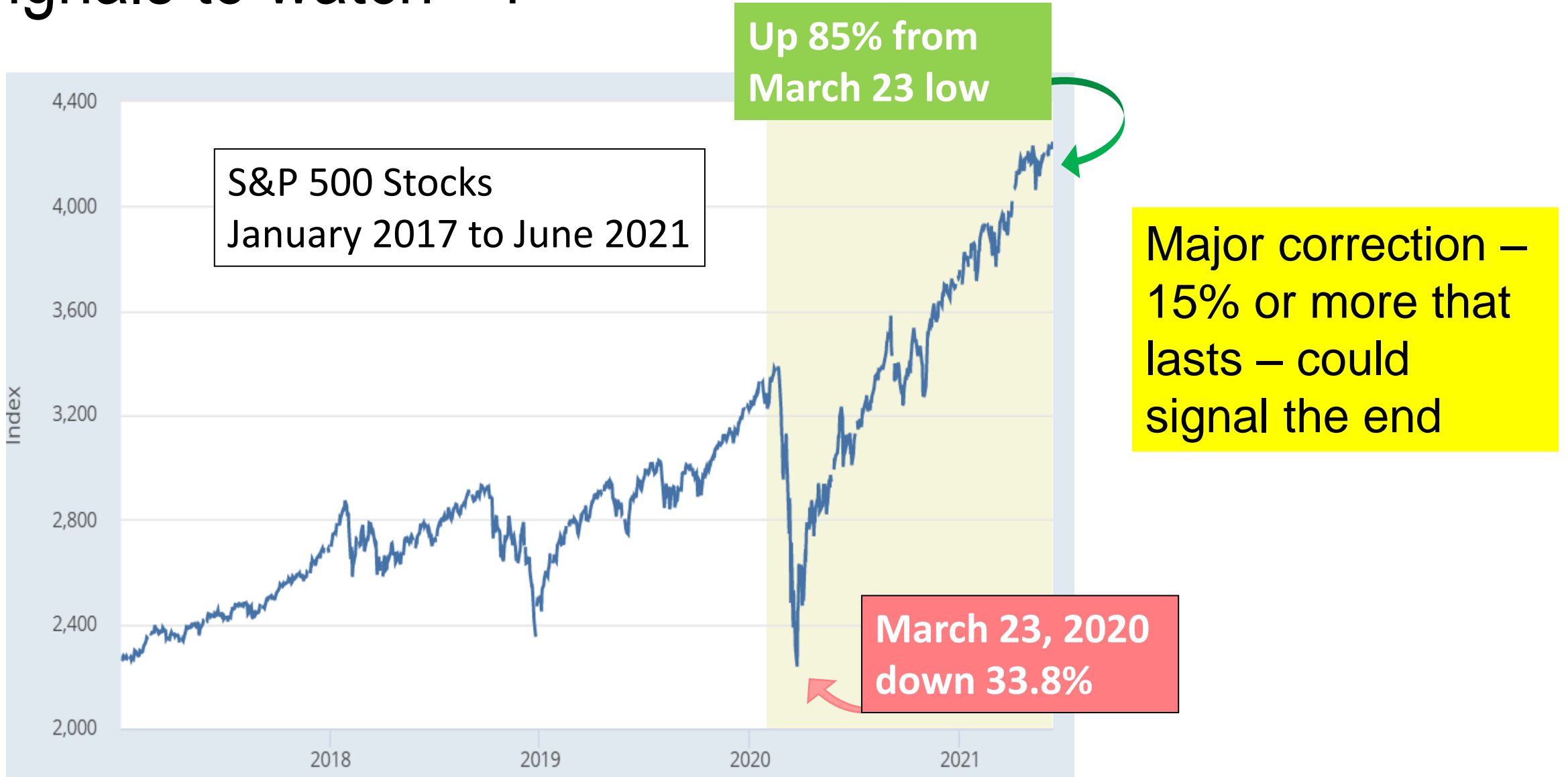
Why supply chain strain?

**SUPER
COMPRESSED
CYCLE**

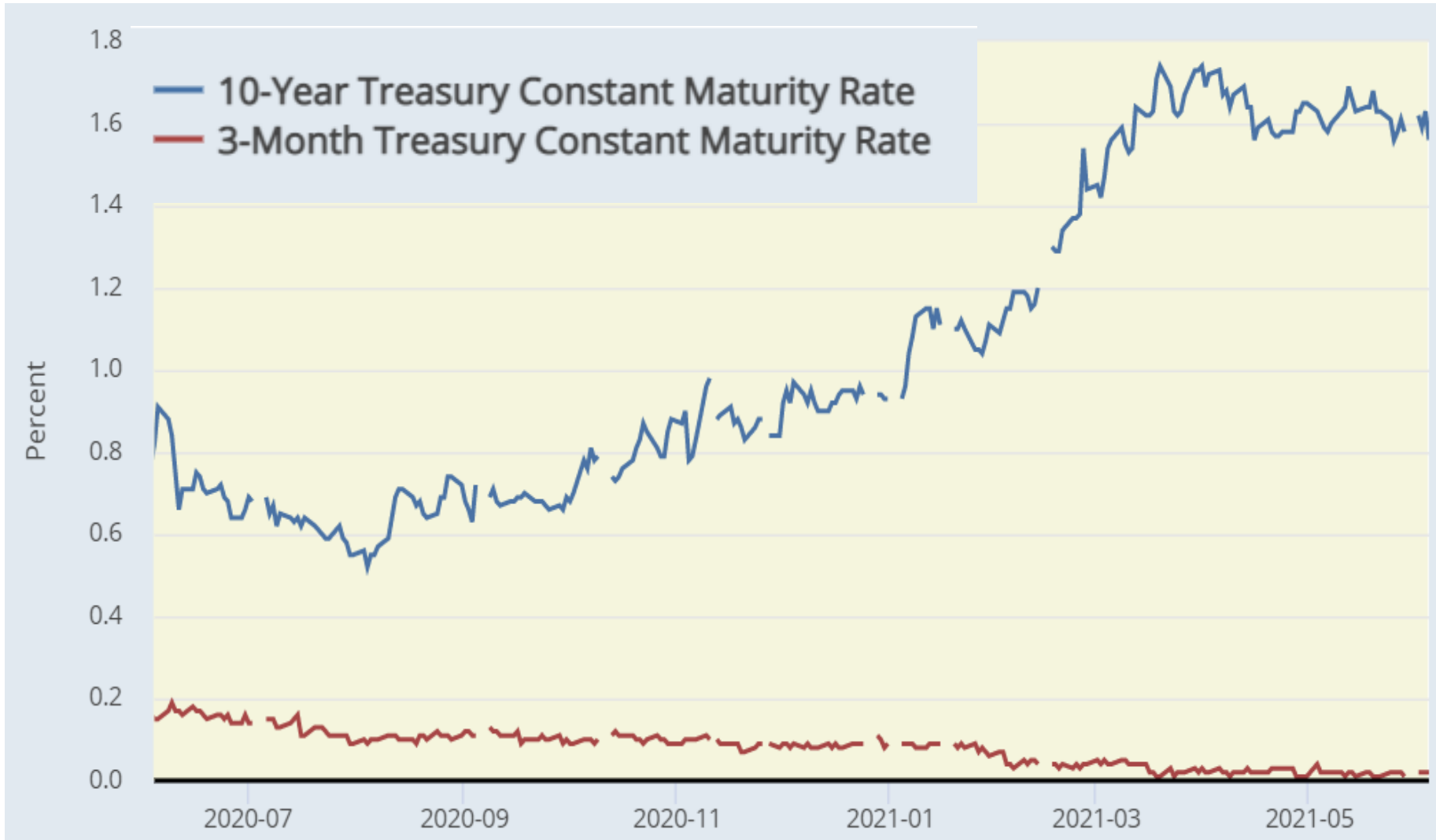
This cycle – 4 mos
down, 9 mos up

2008-09 -- 16 mos
down, 36 months up
to prior peak

Signals to watch - 1



Signals to watch - 2



Rapid rise in
LT Treasury
rates Q4, Q1
stopped in Q2

Will rates rise
again?

The I-chart – the economy in numbers for the record

	2018 Actual	2019 Actual	2020 Actual	FORECAST	
				2021 Forecast	2022 Forecast
Real GDP	3.0	2.2	-3.5	6.8	6.3
Consumer Spending	2.7	2.4	-3.9	8.7	5.8
Capital Spending	6.9	2.9	-4.0	8.4	9.8
Equipment	8.0	2.1	-5.0	11.0	12.0
Structures	3.7	-0.6	-10.5	3.4	5.0
Intellectual Property	7.8	6.4	1.5	9.0	8.5
Residential Investment	-0.6	-1.7	5.9	18.2	7.4
Government Consumption	1.8	2.3	1.1	3.0	2.6
Net Exports (2012 \$B)	-878	-917	-925	-1261	-1313
Mfg Industrial Production	2.7	0.1	-6.3	7.5	6.5
Housing Starts (M)	1.25	1.29	1.38	1.58	1.50
US Light Vehicle Sls (M)	17.2	17.0	14.5	17.0	18.2
NA Lt Veh Production (M)	16.8	16.8	13.0	16.8	18.0
Unemployment Rate (%)	3.9	3.7	8.1	5.4	4.2
90 Day Treasury Yield	1.9	2.1	0.4	0.1	0.1
10 Year Treasury Yield	2.9	2.1	0.9	1.6	2.2
GDP Deflator	2.4	1.8	1.2	3.2	2.4

Percent Changes except where indicated

Updated June 10, 2021

If no COVID
resurgence or
other
surprise...
6 more high
growth
quarters

Freight Market Summary

- As good as it gets
 - Strong retail sales, restock & capex boom support freight demand outlook
 - Longer-term risk remains substitution back to services
- Capacity re-engagement set to pick up
 - Shortages from chips to chassis
 - Extra vacation this summer could tighten market further, but ending UI should loosen it
 - Driver pay increases in the 20%-30% range
- Elevated demand + constrained supply = higher rates
 - Spot rates up about 25% in 2021
 - Contract rate increases to last into 2022
- Leading indicators signal top of rate cycle
 - Driver availability bottoming?



Freight Cycle At Full Steam

North American Class I Rail Volumes by Segment

	y/y % change									
	Q1'19	Q2'19	Q3'19	Q4'19	Q1'20	Q2'20	Q3'20	Q4'20*	Q1'21	Q2'21TD
Intermodal	-1.3%	-4.5%	-4.7%	-7.4%	-7.9%	-12.9%	1.3%	9.7%	13.6%	27.6%
Chemicals	-0.3%	1.1%	-2.3%	-4.8%	2.2%	-11.4%	-4.5%	2.5%	-3.1%	13.7%
Metals	0.7%	-2.1%	-4.6%	-10.5%	0.0%	-23.0%	-15.1%	1.9%	-1.4%	30.2%
Automotive	-1.9%	0.2%	-0.4%	-5.8%	-5.3%	-69.3%	-4.8%	-2.0%	-8.1%	400.2%
Petroleum	18.8%	24.1%	9.8%	2.7%	14.4%	-32.1%	-29.6%	-23.0%	-18.9%	13.9%
Minerals/Sand	-5.8%	-9.8%	-4.4%	-6.5%	-7.5%	-22.0%	-20.6%	-8.8%	-9.0%	12.5%
Paper/Lumber	-0.8%	-4.8%	-8.2%	-7.6%	-3.3%	-11.5%	-6.9%	0.7%	0.9%	10.2%
Grain/Food	-1.7%	-1.0%	-3.4%	-2.8%	-0.5%	-6.1%	4.0%	14.6%	13.2%	12.3%
Coal	-6.4%	-1.0%	-8.7%	-14.8%	-16.7%	-36.3%	-25.9%	-16.5%	-5.3%	33.0%
Total	-1.5%	-2.4%	-4.2%	-7.3%	-5.6%	-19.5%	-6.4%	2.5%	4.5%	26.2%
Carloads, ex-Intermodal	-1.6%	-0.5%	-3.8%	-7.2%	-3.5%	-25.2%	-13.2%	-4.1%	-3.3%	24.7%

Source: Company reports; ACT Research Co. LLC. Copyright 2021

*Excludes unusual 53rd week. Q2'21TD thru week 23.

Shutdown comps, but still good sequential progress

Weekly North American Rail Volumes by Segment

	y/y % change														
Week ending:	3/6/21	3/13/21	3/20/21	3/27/21	4/3/21	4/10/21	4/17/21	4/24/21	5/1/21	5/8/21	5/15/21	5/22/21	5/29/21	6/5/21	6/12/21
Intermodal	20.3%	21.7%	18.9%	23.4%	29.2%	29.8%	33.0%	29.9%	26.9%	26.5%	26.2%	24.1%	31.3%	13.3%	16.1%
Chemicals	-8.3%	-9.0%	-8.1%	-4.9%	0.8%	9.5%	8.2%	19.2%	11.1%	15.8%	18.3%	18.4%	20.2%	20.9%	18.5%
Metals	0.3%	1.2%	1.4%	-8.4%	6.4%	18.2%	21.3%	30.6%	28.1%	51.5%	46.4%	33.2%	53.9%	41.5%	36.0%
Automotive	-14.5%	-20.3%	-12.3%	37.3%	238.4%	434.5%	571.1%	747.9%	751.6%	727.8%	626.6%	326.0%	156.4%	43.0%	12.4%
Petroleum	-14.9%	-11.9%	-9.5%	-8.8%	-0.1%	0.6%	8.1%	16.2%	17.4%	19.6%	20.4%	22.8%	25.2%	30.2%	23.0%
Minerals/Sand	-7.4%	-4.6%	-5.4%	7.5%	4.4%	5.6%	16.1%	9.1%	13.3%	13.4%	11.2%	15.7%	27.2%	8.5%	11.9%
Paper/Lumber	1.1%	2.1%	2.5%	-0.7%	-2.8%	-1.3%	7.2%	11.7%	15.0%	15.7%	12.9%	15.4%	20.2%	16.5%	15.3%
Grain/Food	18.2%	13.3%	11.6%	6.7%	9.1%	6.7%	19.8%	14.6%	21.5%	12.8%	15.3%	9.6%	15.1%	3.0%	5.5%
Coal	8.5%	15.8%	5.3%	7.8%	4.5%	20.3%	23.6%	32.8%	36.2%	36.2%	49.1%	41.9%	42.5%	36.3%	35.8%
Total	8.6%	9.6%	7.9%	12.5%	18.5%	22.6%	28.1%	28.0%	27.9%	27.3%	29.0%	26.7%	31.7%	17.2%	17.2%
Carloads, ex-Intermodal	-1.0%	-0.4%	-1.3%	3.3%	9.1%	16.1%	23.5%	26.2%	28.9%	28.2%	31.8%	29.4%	32.2%	21.3%	18.2%

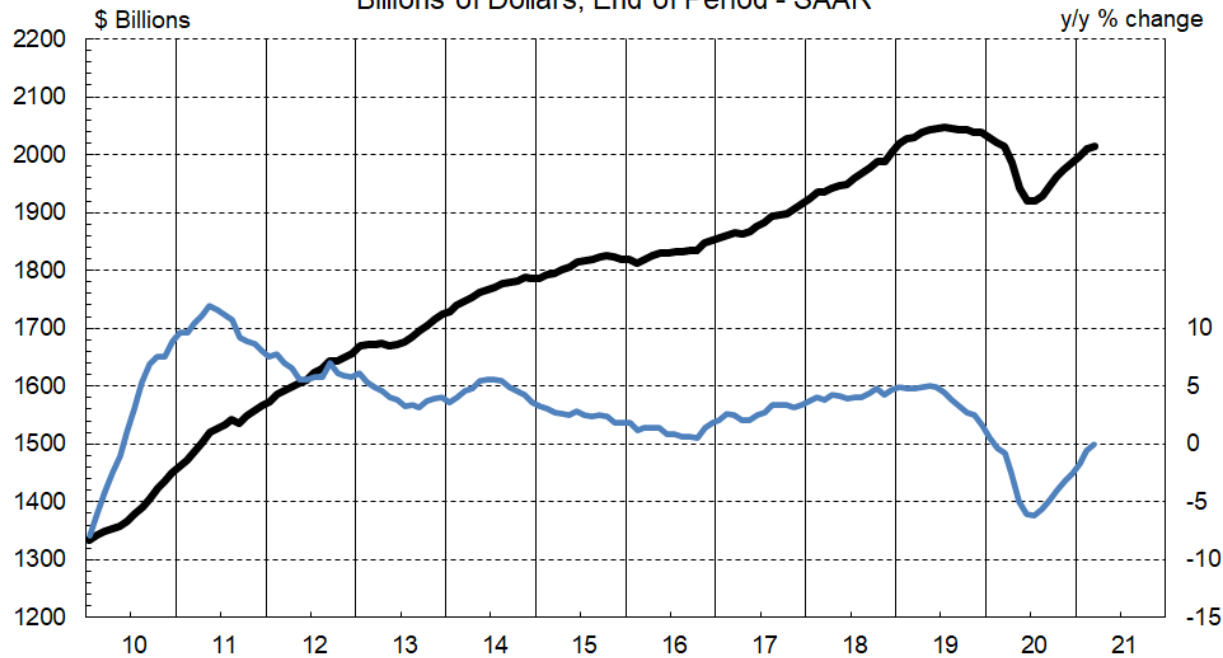
Source: Company reports; ACT Research Co. LLC. Copyright 2021

Inventories Back to Flat but Still Tight

Inventories: Total Business

January 2010 - March 2021

Billions of Dollars, End of Period - SAAR

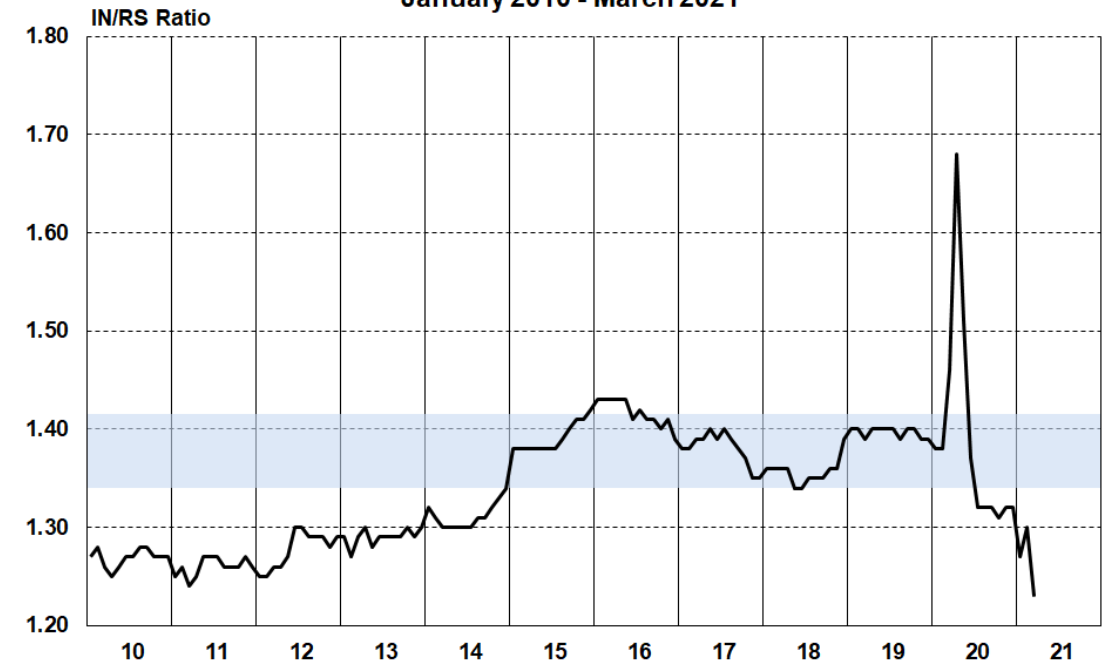


Source: Census Bureau, ACT Research Co., LLC: Copyright 2021

Inventory to Sales Ratio: Total Business

Index - SAAR

January 2010 - March 2021



Source: Census Bureau, ACT Research Co., LLC: Copyright 2021

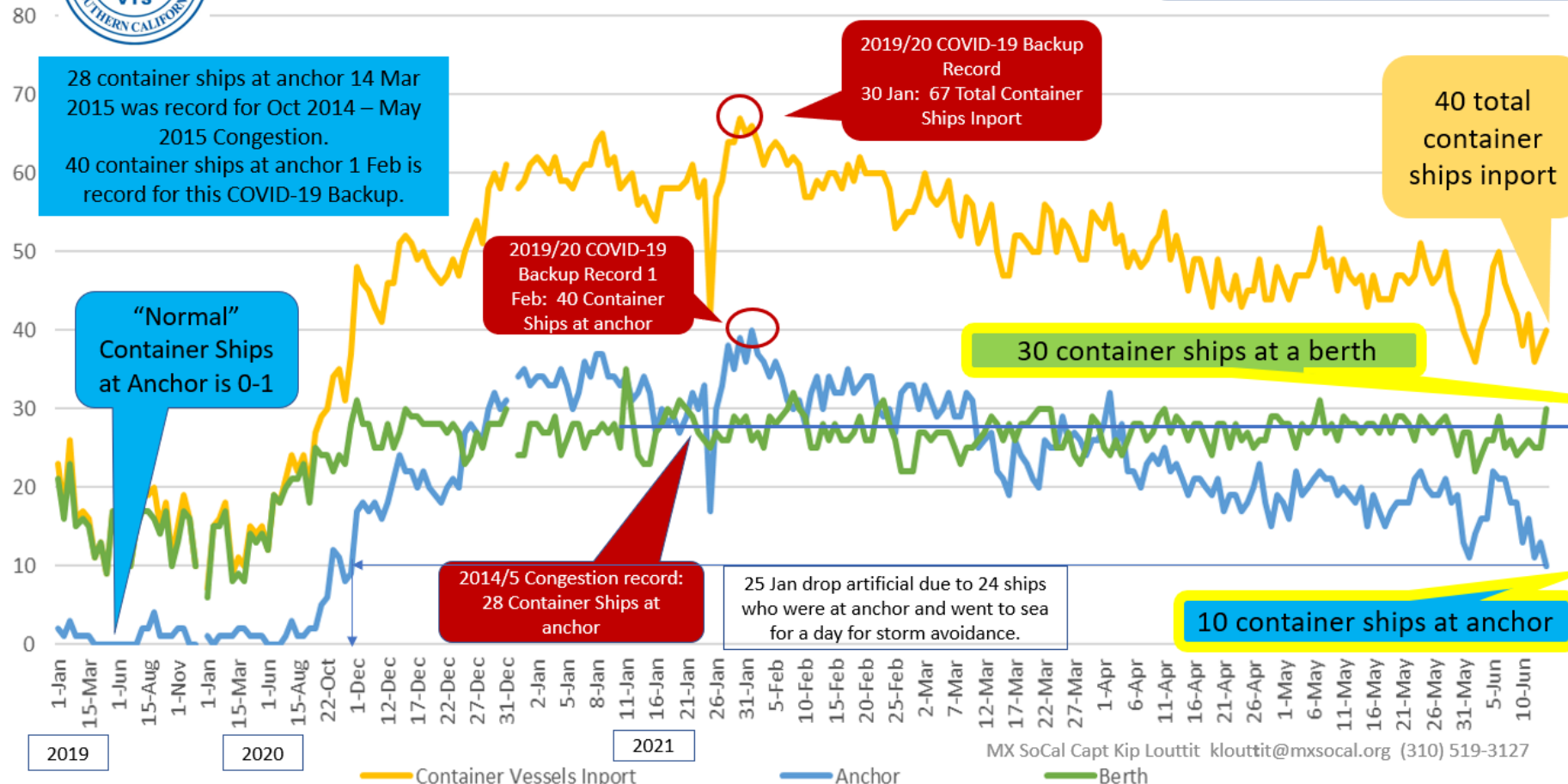


SoCal Backlog Normalizing



Total Container Ships in Los Angeles and Long Beach
1 Jan 2019 through 14 June 2021 per 1200 report

Inverse record &
near record

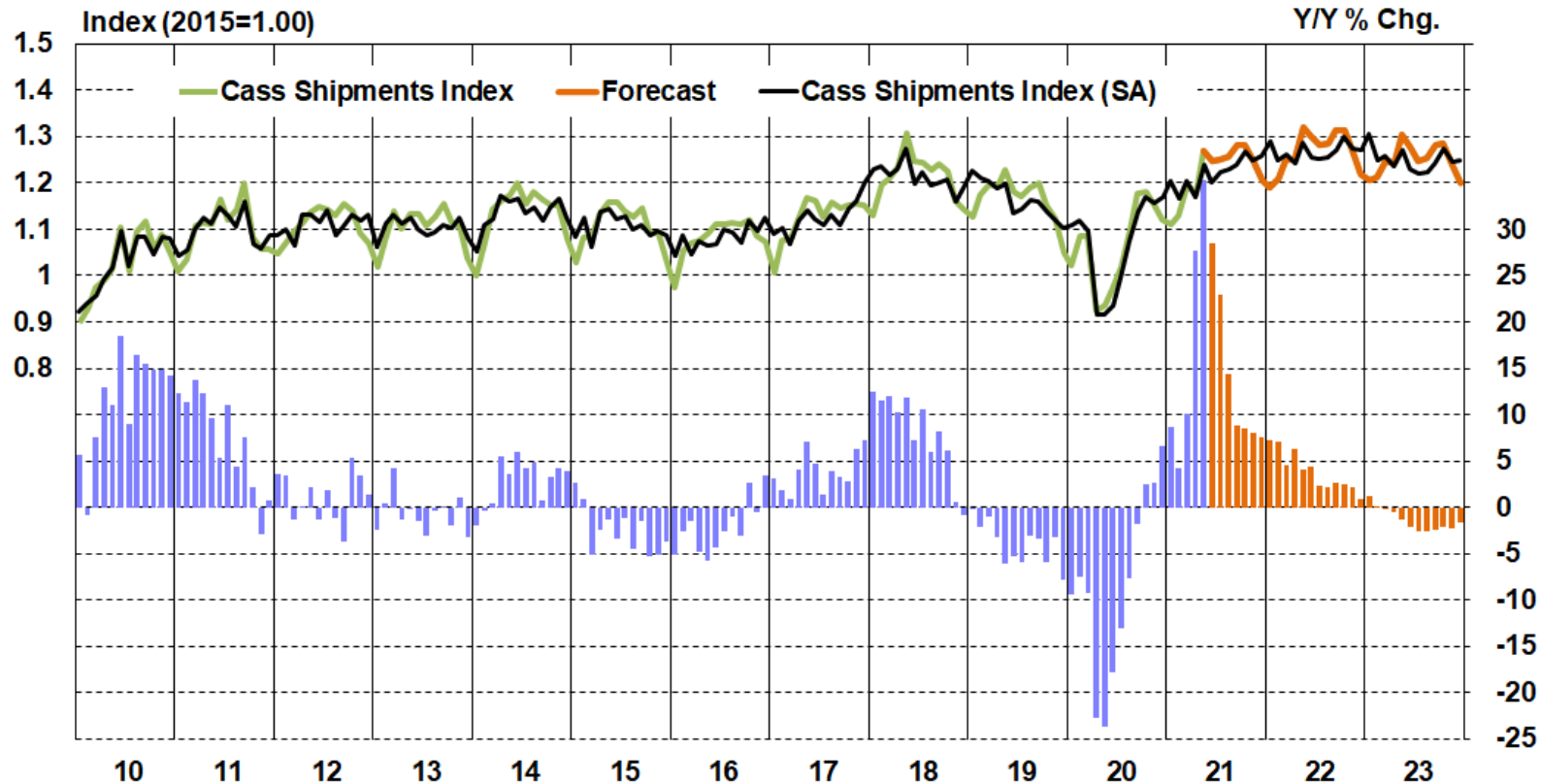


2

Freight Demand Outlook Upbeat

Cass Shipments Index ^(R)

January 2000 - December 2023 Forecast



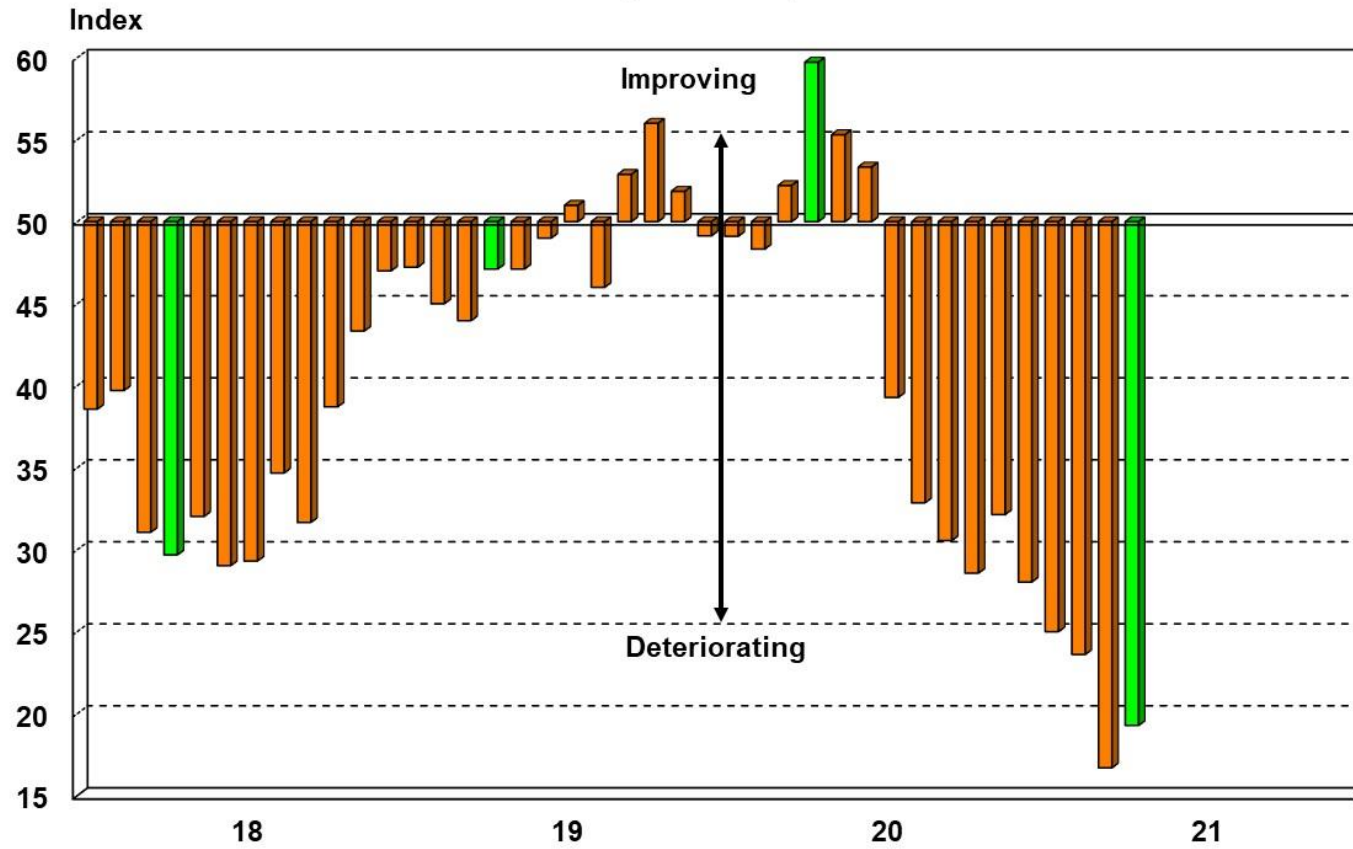
Source: Cass Information Systems, Inc., ACT Research Co., LLC: Copyright 2021

- Inventory and port backlog portend strong near-term volume outlook
- Building pent-up demand and capex boom support stronger-for-longer cycle

Driver Availability Bottoming?

ACT For-Hire Trucking Index: Driver Availability

January 2018 - April 2021



- Secular factors will weigh: demographics, drug testing, e-commerce, autonomous
- But unlikely to outweigh cyclical factors: big driver pay increases and ending unemployment insurance

Source: ACT Research Co., LLC: Copyright 2021

Driver Availability Bottoming?

States opting out of federal unemployment programs

25 Republican-led states are ending their participation early. Most are cutting off all federal benefits, but some are only ending the \$300 weekly payment



- Trucking-heavy states ending unemployment insurance early, pulling drivers back in

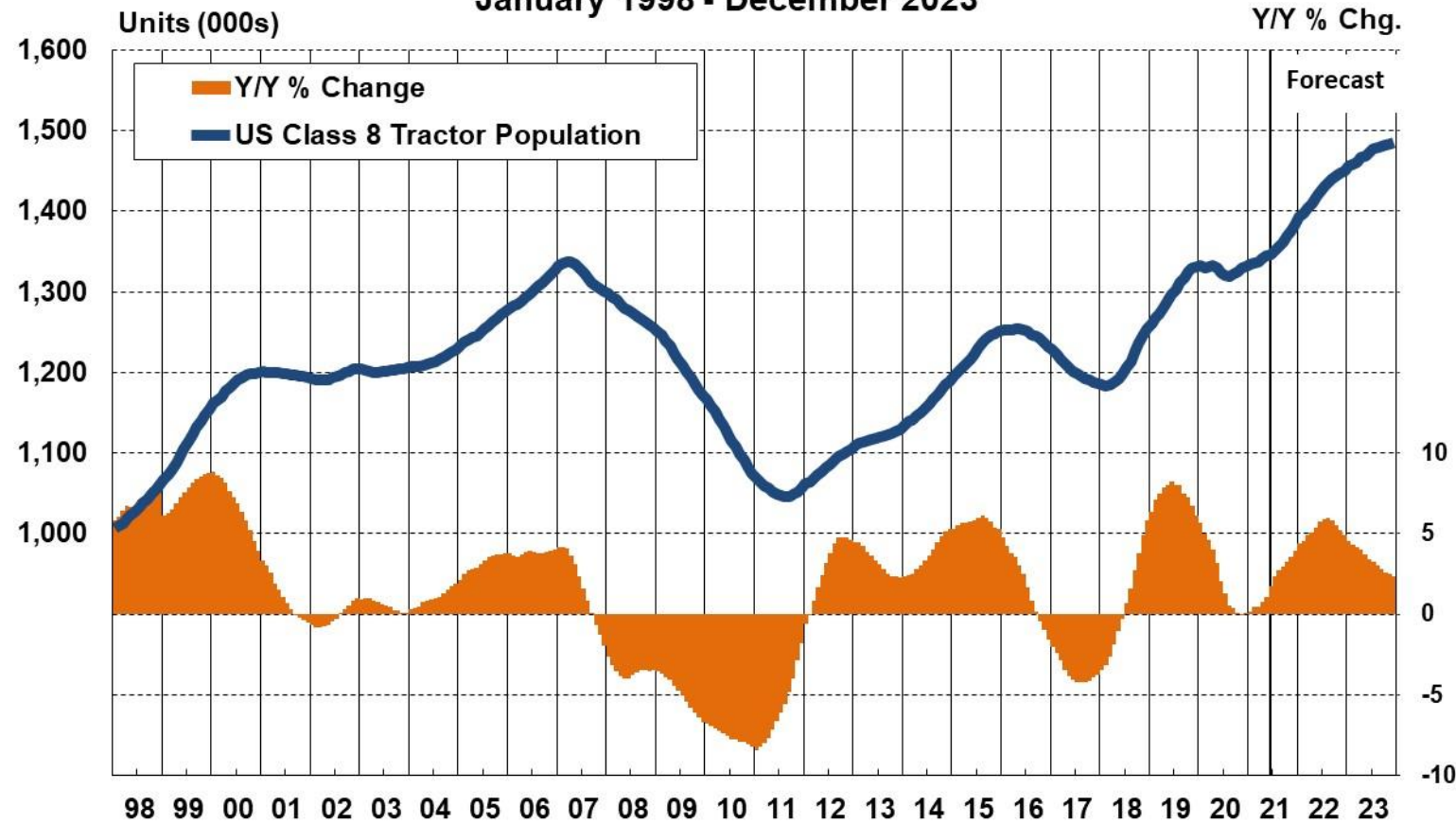
SOURCE: State announcements and websites. Current as of June 7, 2021. Dates in the U.S. map reflect the effective dates of state withdrawals.
NOTE: "All programs" include: Federal Pandemic Unemployment Compensation (the \$300 weekly supplement); Pandemic Unemployment Assistance (for the self-employed, gig workers, freelancers and others who don't qualify for state-level benefits); Pandemic Emergency Unemployment Compensation (for the long-term unemployed who've exhausted their maximum weeks of state benefits); and Mixed Earner Unemployment Compensation (a \$100 weekly supplement for certain self-employed workers). States ending the \$300 weekly supplement are also ending the \$100 weekly Mixed Earner payment.



Tractor Capacity Accelerating

U.S. Class 8 Active TL & LTL Tractor Population

January 1998 - December 2023



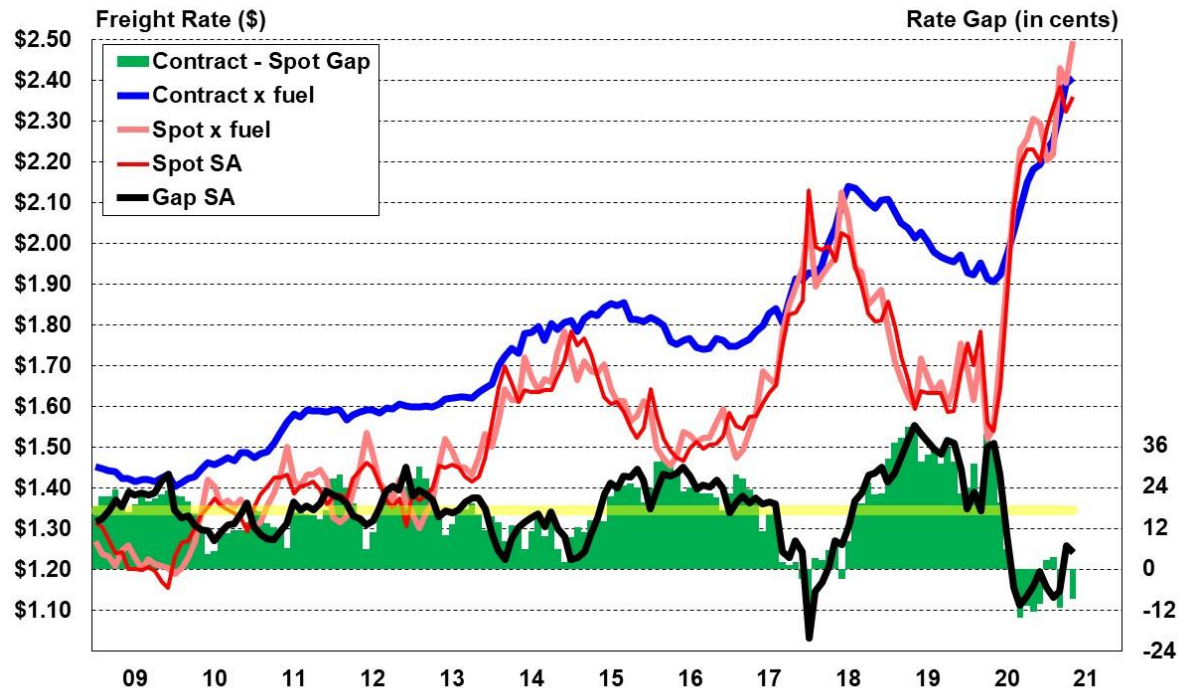
Source: ACT Research Co., LLC: Copyright 2021

Semiconductor shortages
forestalling fleet growth

Second Derivative Turning

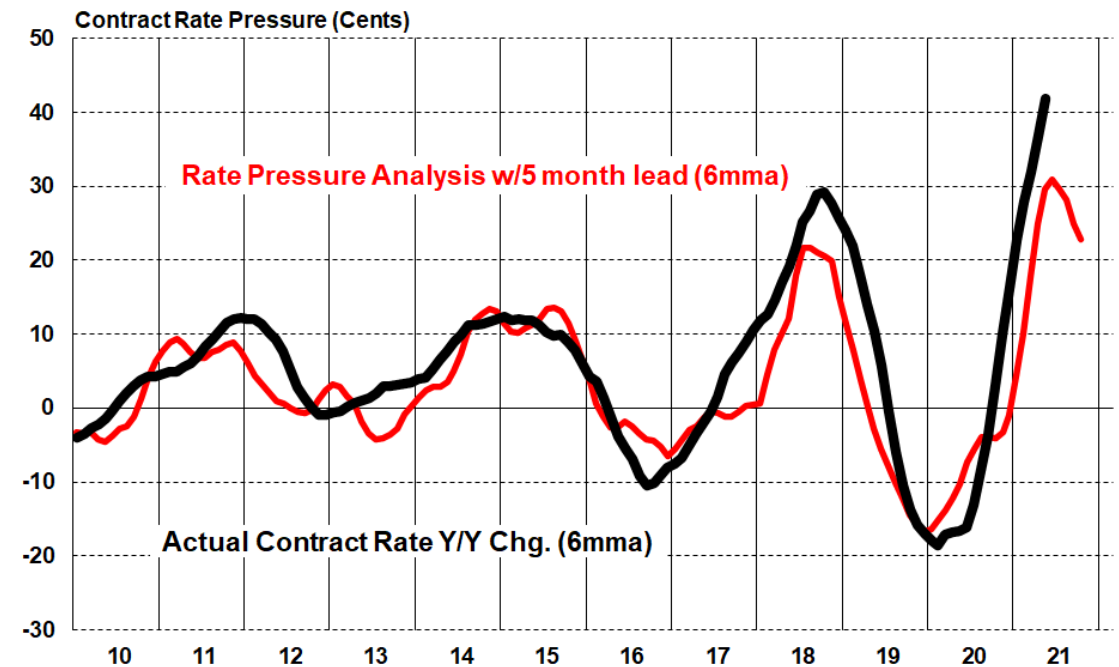
DAT Trendlines: Aggregate Revenue per Mile Rate

January 2009 - May 2021 (2000=100)



Dry Van Rate Pressure Analysis: Contract less SA Spot rate relative to target rate spread

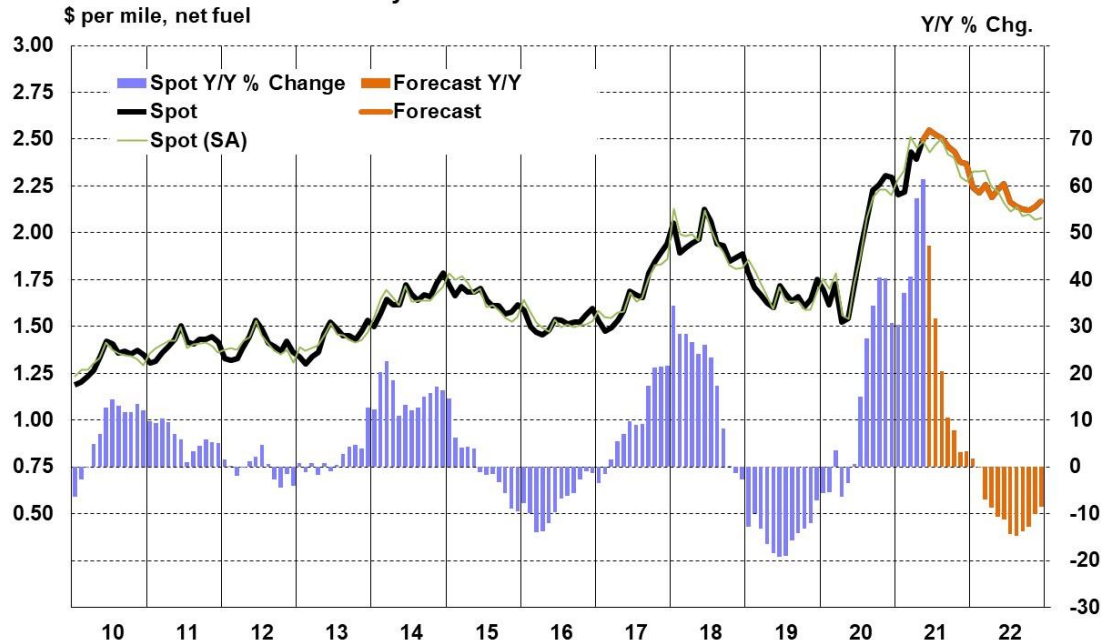
January 2010 - May 2021



Freight Rates Near Peak

DAT Trendlines Spot Rates: Aggregate

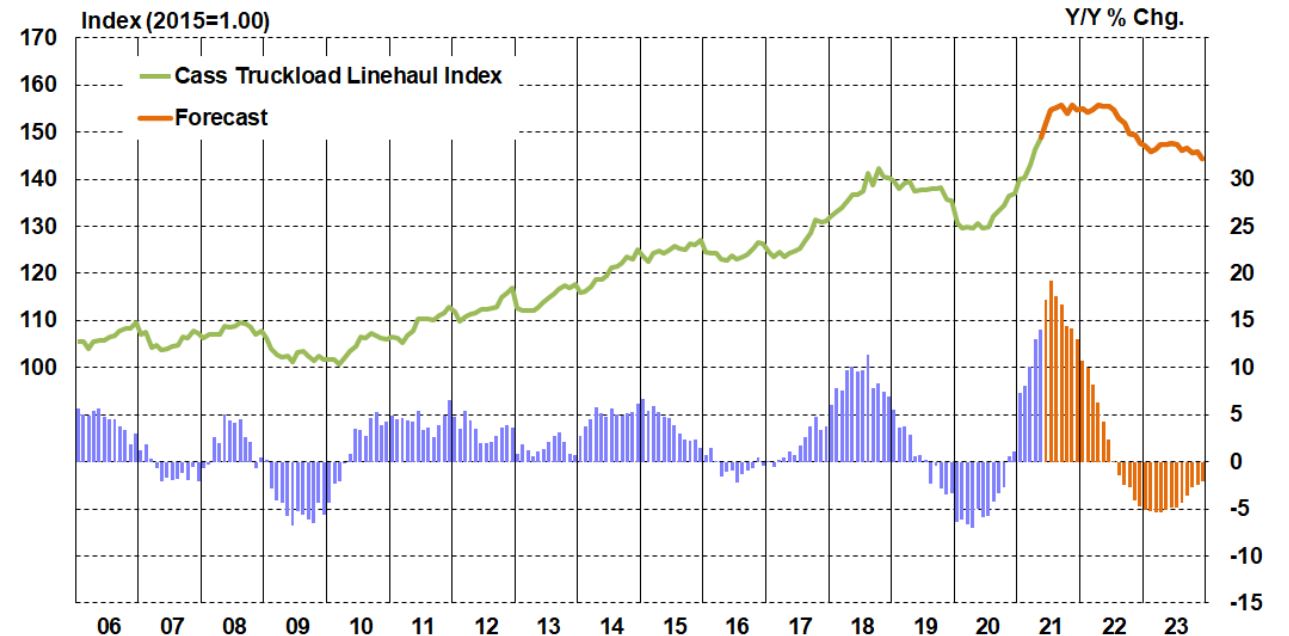
January 2010 - December 2022 Forecast



Source: DAT Solutions, ACT Research Co., LLC: Copyright 2021

Cass Truckload Linehaul Index ^(R)

January 2006 - December 2023 Forecast



Source: Cass Information Systems, Inc., ACT Research Co., LLC: Copyright 2021

- Record rates to drive record carrier profitability and cash generation this year
- Supply response to change the trend, but decline to be moderate on strong economy, capex boom



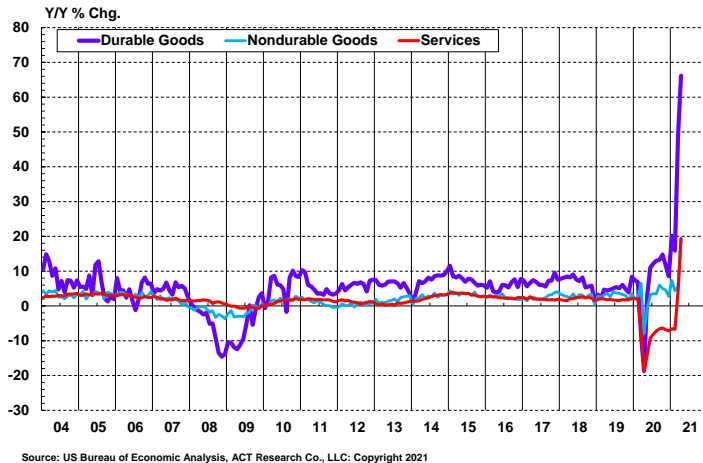
Class 8 Market Conditions

- **Economy growing in all the right places**
 - Stellar performance in goods producing economic sectors
 - Consumers doing their part, manufacturing coming on strong
- **Exogenous factors remain supportive**
 - New “Must-have” specs supporting late-model valuations
 - Driver constraints regulatory & structural exacerbate imbalance
- **Robust freight & rising carrier profits lift demand**
 - Orders booming, 2021 backlogs filled, inventories scraping bottom
- **Supply-chain constraints squeeze ramp velocity & timing**
 - Resins, chips, steel, foams, tires ...

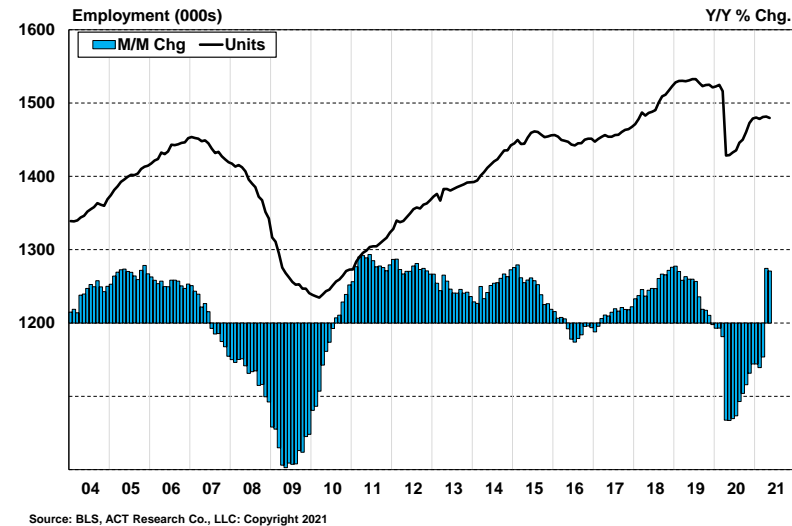


Freight Inflection, Driver Constraints, Record Profits

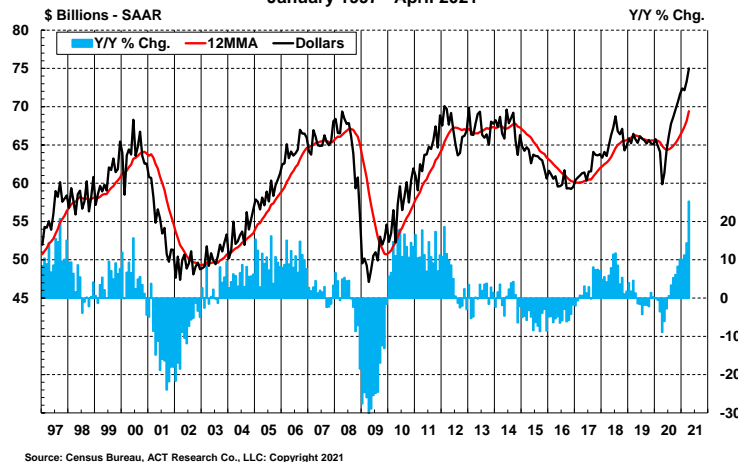
Real Personal Consumption Expenditures
January 2006 - April 2021



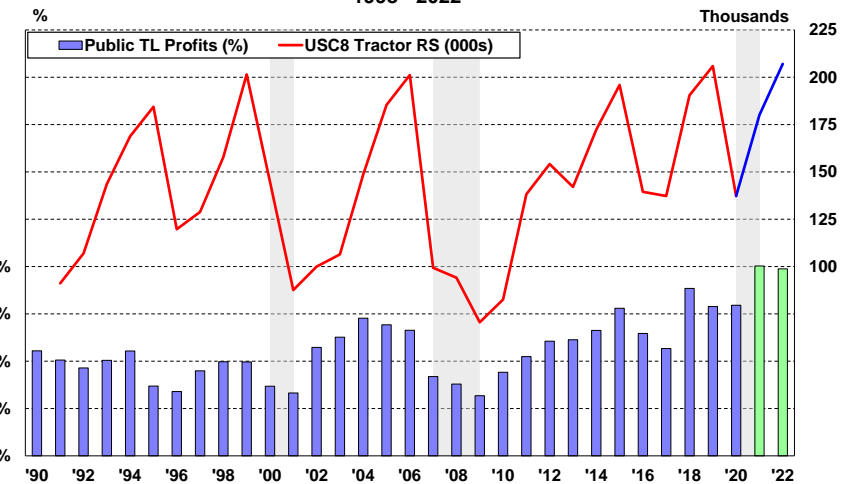
Truck Transportation Employment
January 2004 - May 2021 (SA)



Manufacturers' New Orders: Nondefense
Capital Goods Excluding Aircraft
January 1997 - April 2021



TL Carrier Database: Core Carrier Net Profit Margins & U.S. Class 8 Tractor Retail Sales
1998 - 2022



Tractor Dashboard: Indicator of Indicators

ACT Research Class 8 Tractor Dashboard																	
Category	Metric	Jan-20	Feb-20	Mar-20	Apr-20	May-20	Jun-20	Jul-20	Aug-20	Sep-20	Oct-20	Nov-20	Dec-20	Jan-21	Feb-21	Mar-21	Apr-21
Green Minus Red Tally		-6	-7	-11	-11	-8	-4	0	2	6	6	9	8	12	14	13	15
Positive Indicators (Green)		2	2	1	2	2	3	7	7	9	9	10	11	12	14	13	15
Neutral Indicators		5	4	2	0	3	5	1	3	3	3	4	1	3	1	2	0
Negative Indicators (Red)		8	9	12	13	10	7	7	5	3	3	1	3	0	0	0	0
Macro & Financial	ISM Mfg PMI Index	50.9	50.1	49.1	41.5	43.1	52.6	54.2	56.0	55.4	59.3	57.5	60.7	58.7	60.8	64.7	60.7
	Non-Auto Durables Mfg Output**	-0.1	0.0	-1.8	-9.1	-13.9	-16.0	-16.3	-15.3	-13.4	-10.5	-7.0	-2.7	3.2	8.2	15.0	20.0
	Consumer Spend, Goods only**	3.8	3.2	1.8	-4.2	-4.0	-1.5	1.2	3.9	7.1	9.7	11.3	11.4	14.3	15.1	19.0	16.7
	Residential Const Expend (real) **	9.1	10.8	10.9	8.4	4.4	1.3	-0.1	1.1	2.5	5.4	8.7	13.6	18.0	21.7	25.8	28.6
	Dow Jones Trucking Stock Index	833.1	779.5	766.6	840.2	974.0	963.4	1058.7	1143.3	1069.3	1034.0	1112.6	1102.4	1073.9	1175.9	1293.1	1340.4
Freight	Cass Freight Shipments**	-9.6	-12.7	-13.8	-19.1	-22.3	-22.2	-20.8	-16.4	-8.3	1.1	8.6	14.1	15.7	16.3	22.0	27.9
	DAT Loads/Truck	4.6	3.4	3.9	1.3	2.3	3.6	6.0	7.4	6.7	6.0	6.4	7.3	8.5	14.9	9.7	9.0
	DAT Aggregate Contract/Spot Spread	24	31	23	39	36	19	6	-6	-14	-11	-13	-10	3	3	-9	-2
	DAT Dry Van Spot Rate*	-5.5	-5.4	3.6	-6.4	-3.4	0.7	14.9	27.3	34.4	40.5	40.3	30.8	30.3	37.2	40.3	57.8
	Cass Freight/US C18Tractor Pop Growth Gap	-15.1	-17.2	-17.3	-21.5	-23.5	-22.1	-19.6	-14.4	-5.8	3.7	11.0	16.0	17.1	17.1	22.1	27.1
ACT data	CI 8 Cancellations (SA)	1117	1781	5962	3334	1465	1117	1431	1330	1146	916	2600	4019	1017	1520	2427	1954
	CI 8 I/S ratio (SA)	3.98	3.60	4.19	4.22	4.69	4.12	3.75	2.66	2.78	2.76	2.32	2.83	1.95	2.10	2.21	1.96
	Class 8 Inventory Level (000 SA)	82.4	81.3	78.4	65.7	60.3	61.6	61.5	58.3	57.2	57.2	56.7	57.5	56.0	52.2	51.9	50.2
	Class 8 Net Orders to Build (6mma,SA)	0.61	0.66	0.66	0.65	0.69	0.76	0.92	1.06	1.38	1.42	1.58	1.69	1.70	1.82	1.78	1.81
	ACT For Hire - Volume less Capacity	53.5	48.8	44.9	26.9	50.2	71.1	66.3	69.0	74.1	74.9	67.5	66.6	63.9	60.1	68.1	59.2

All measures are levels, except *=Year/Year %
Change and **=12 month CAGR Rate of Change

Heat Wave!

Orders (000s)	NA C8 Tractor	NA C8 Truck	NA C8 TOTAL
Past 12 Mo.	298k	97	395
Past 6 SAAR	367k	120	488
Past 3 SAAR	363k	131	472
Apr. SAAR	284k	116	400
BL/BU Ratio (SA)	11.6 <i>m</i>	11.5	11.7
IN/RS Ratio (SA)	1.5 <i>m</i>	3.3	1.9

Data through April

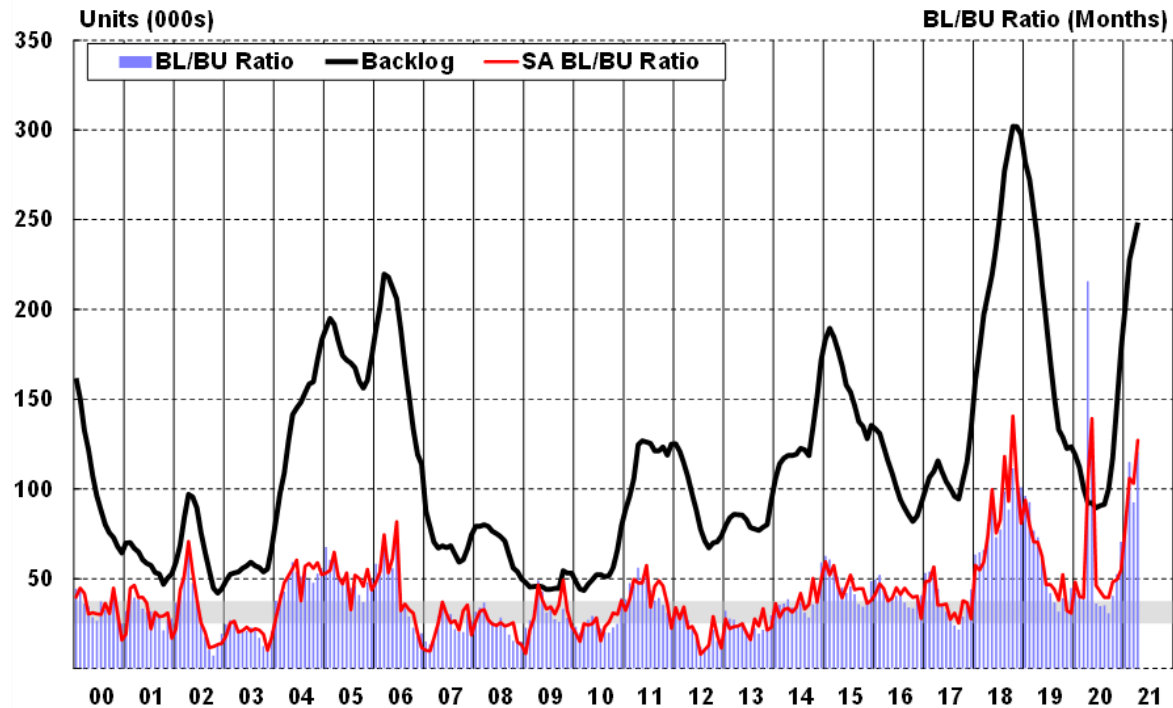
Preliminary May
orders @ 22.9k,
314k SAAR



Build Constraints Elevate Ratios

Total Class 8: N.A. Backlog & BL/BU Ratio

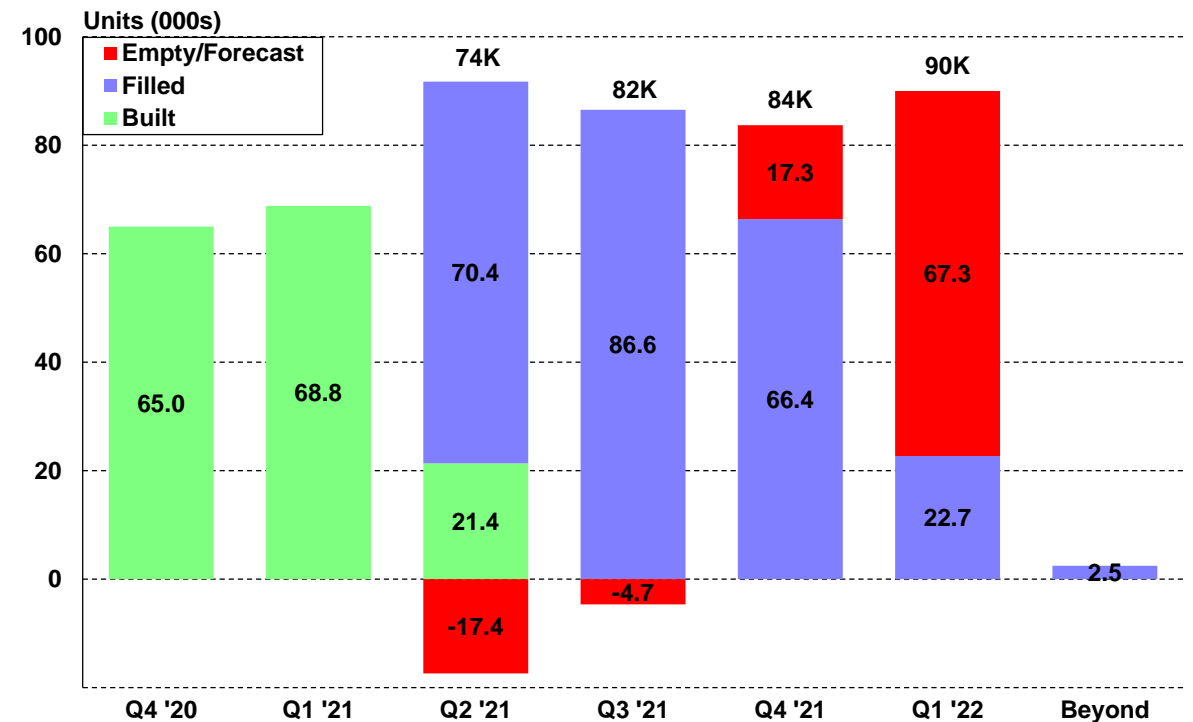
January 2000 - April 2021



Source: ACT Research Co., LLC: Copyright 2021

Class 8 Backlog Fill/May Outlook Forecast

April 2021 Ending



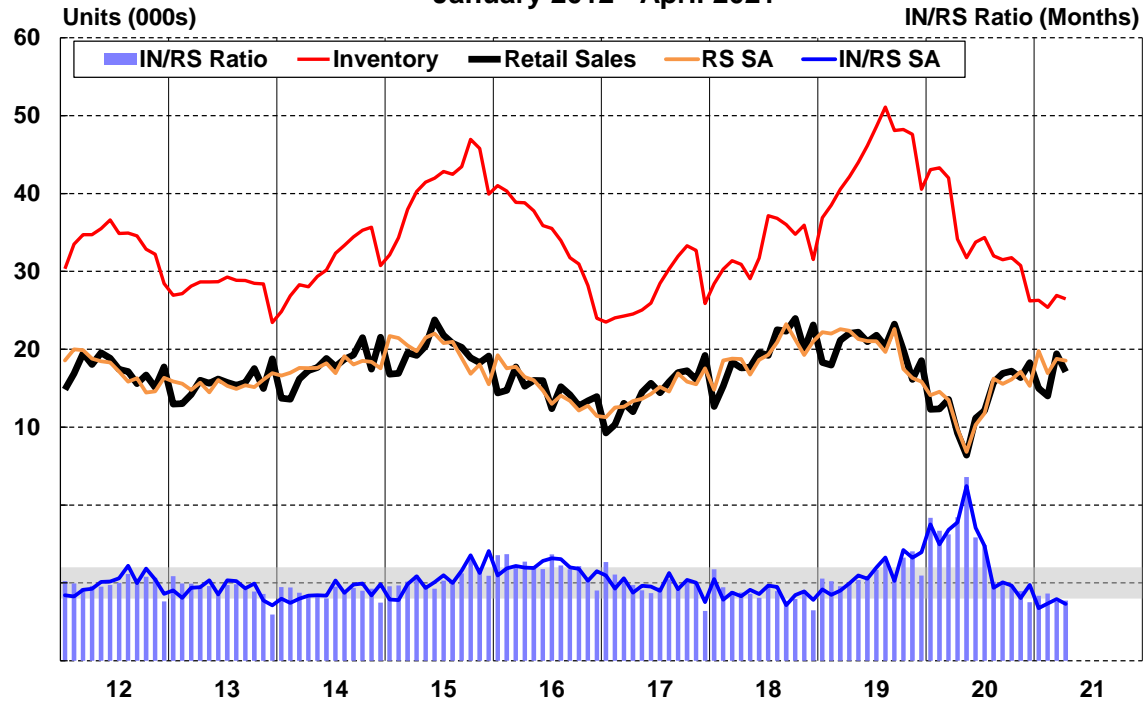
Source: ACT Research Co., LLC: Copyright 2021



From Loose to Lean

Class 8 Tractor: N.A. Inventory/Retail Sales Ratio

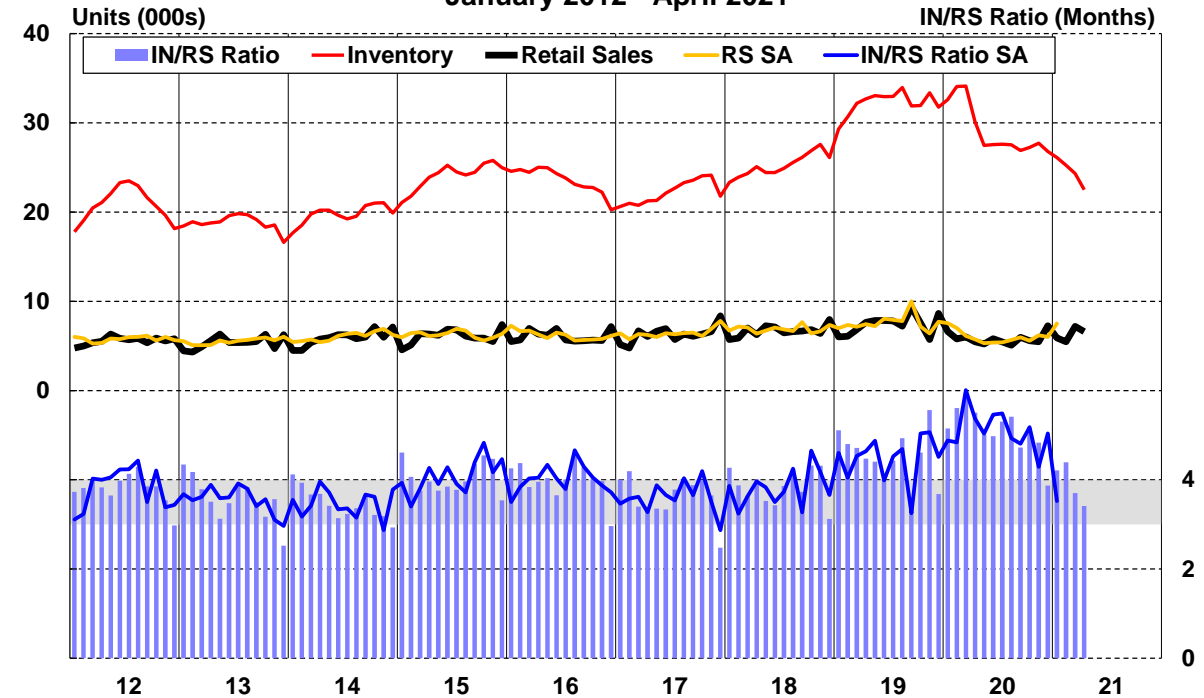
January 2012 - April 2021



Source: ACT Research Co., LLC: Copyright 2021

Class 8 Straight Truck with Day Cab: N.A. Inventory/Retail Sales Ratio

January 2012 - April 2021



Source: ACT Research Co., LLC: Copyright 2021

Known Unknowns

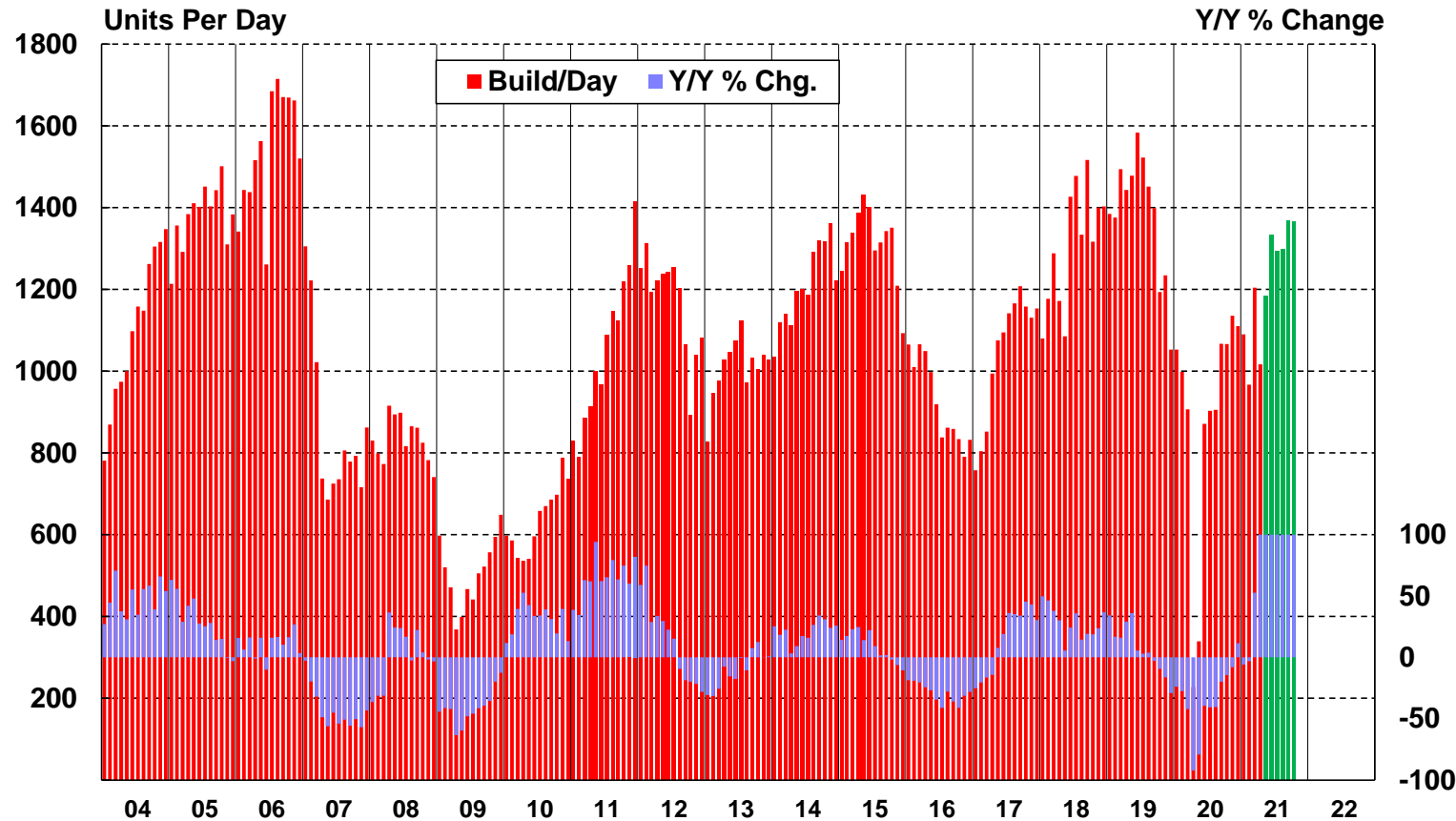
- **Production Ramp Speed & Timing**
 - Chip shortage: Simultaneous improvement and lingering
 - Steel shortage: Synchronized global ramp squeezes capacity
 - India steel production going off-line in May adds to global squeeze
 - Finding workers in a constrained labor market
 - Remember 1H'18: Not just extended unemployment, but structural
- **“Opening” of 2022 order books**
 - Like every cycle prior to 2018: October/Q4
 - Like 2018: June/July/Q3
 - Something approximating an allocation system



Forecast = Days x Rate

Total Class 8: N.A. Build Per Day

January 2004 - October 2021



Source: ACT Research Co., LLC: Copyright 2021

2021 Forecast:

	Units	BUPD	AR
Q1:	68.8k	1,093	270k
Q2:	71.0	1,127	278k
Q3:	82.4	1,329	328k
Q4:	<u>83.7</u>	1,419	350k
CY:	305.9k		

2022 Forecast:

	Units	BUPD	AR
Q1:	90.0k	1,429	353k
Q2:	92.1	1,462	361k
Q3:	91.5	1,476	365k
Q4:	<u>86.3</u>	1,463	361k
CY:	359.9k		

Every 100upd/qtr. = ~6k units
Every 100upd/yr. = 25k units

Used Class 8 Trucks

Average retail at \$57,400 in April (F)

➤ +9% m/m, +50% y/y, +21% ytd

Lack of inventory remains the pacing item for sales

Miles and age generally lower

Demand appears to be following freight markets

Exports reflecting a stronger global market

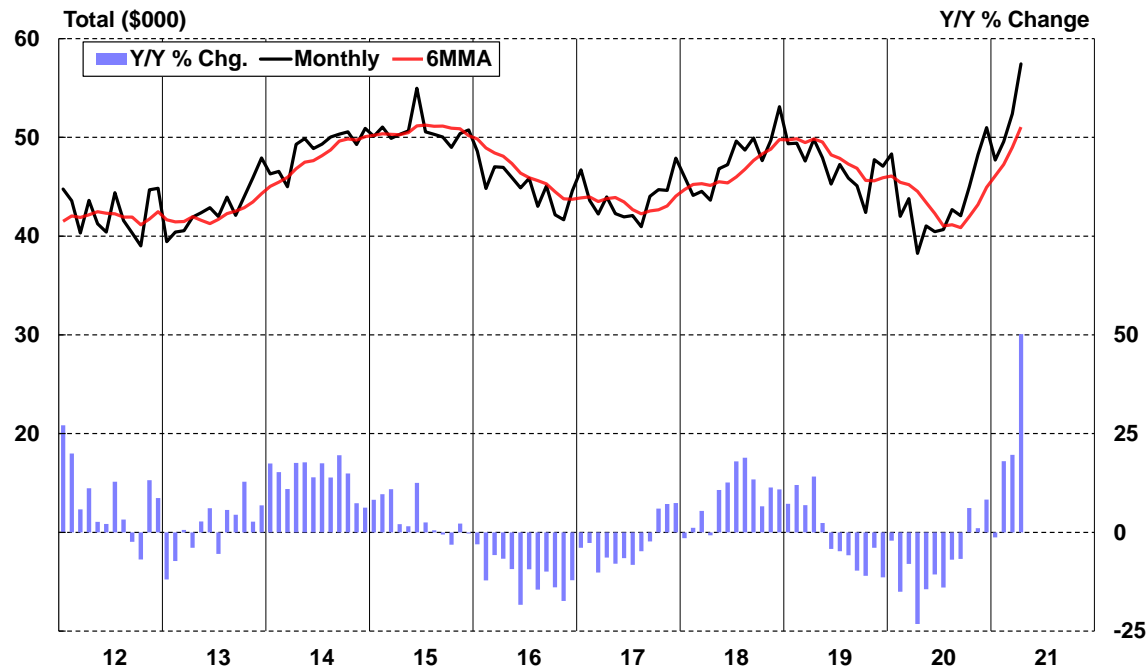
➤ +13% m/m, +252% y/y, +37% ytd



Prices Positive Y/Y

Class 8: U.S. Used Truck Average Sale Price

January 2012 - April 2021

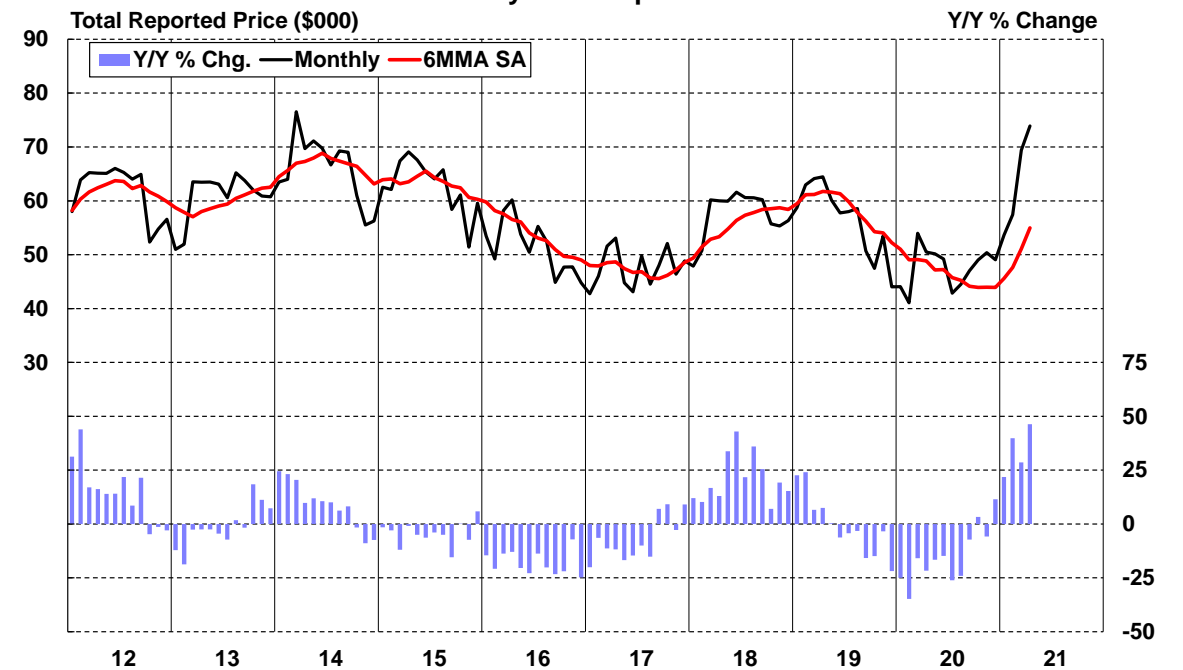


Source: ACT Research Co., LLC: Copyright 2021

Class 8: U.S. 4 to 5 Year Old Used Truck Average Sale Price

4 to 5 year old, 400-500,000 miles legacy

January 2012 - April 2021

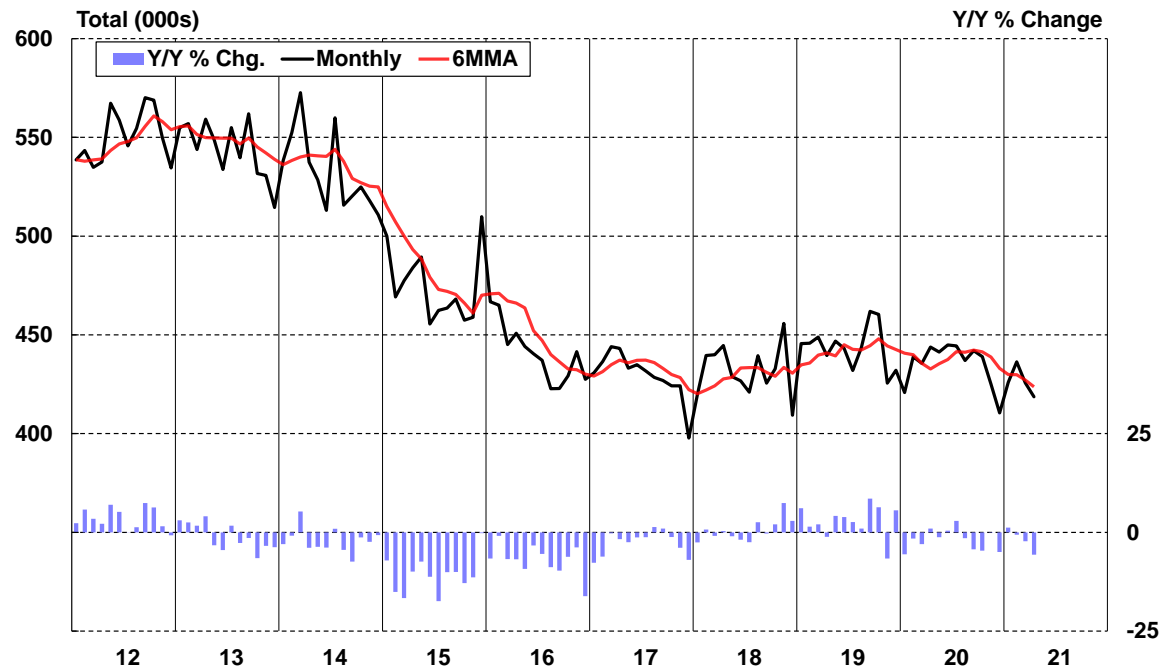


Source: ACT Research Co., LLC: Copyright 2021

Trade Cycles Start to Expand, Or...

Class 8: U.S. Used Truck Average Miles

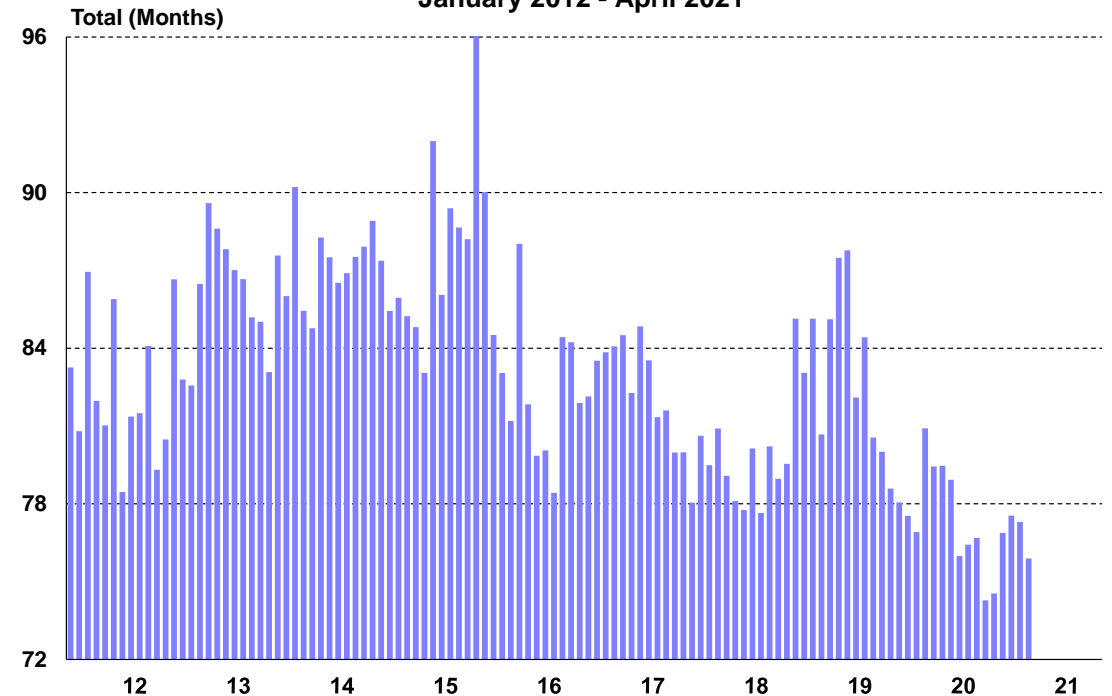
January 2012 - April 2021



Source: ACT Research Co., LLC: Copyright 2021

Class 8: U.S. Used Truck Average Age

January 2012 - April 2021



Source: ACT Research Co., LLC: Copyright 2021

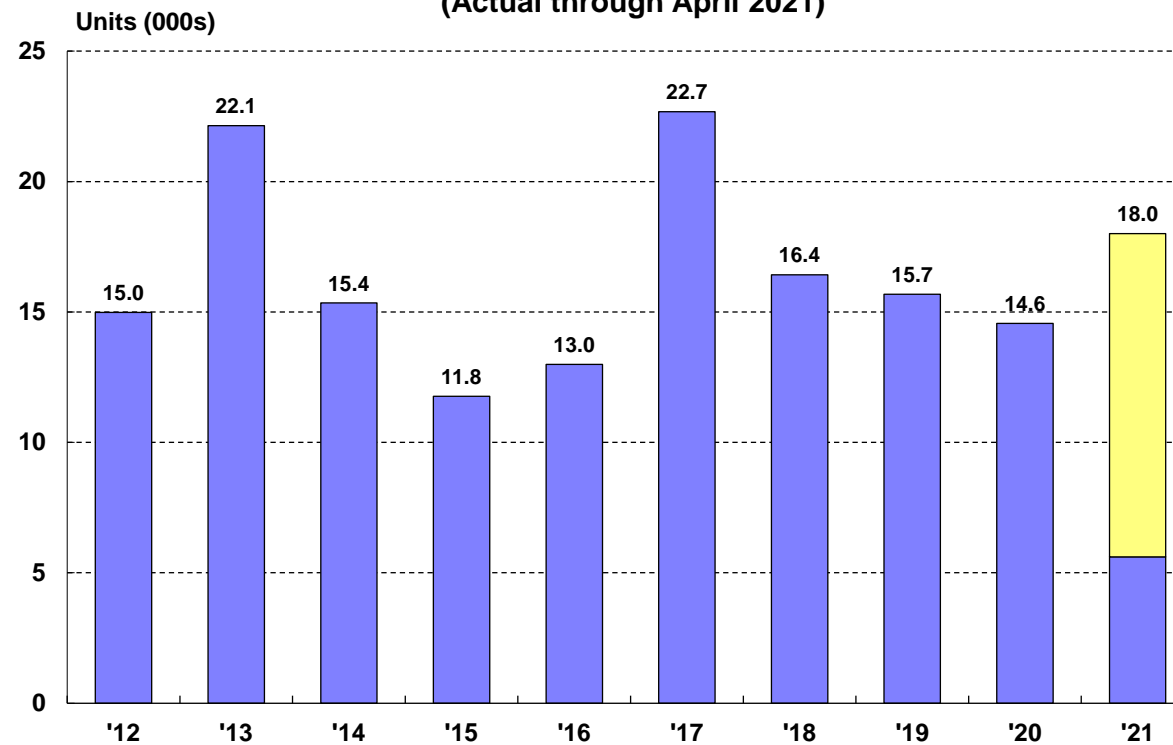


Exports Expected to Increase In 2021

Used Class 8 Tractor Exports

2012 - 2021

(Actual through April 2021)



Source: ITC, ACT Research Co., LLC: Copyright 2021

Medium Duty

- BL/BU ratio signaling upward build pressure
 - Supply chain constraints thwart potential increases
- IN/RS ratio near upper limit of target range
 - Increased since December on soft sales
 - Below replacement build has reduced inventory
- Market will see meaningfully improvement in 2021
 - Build (+12%) and retail sales (+9%)
- Service-centric MD truck demand presumed to be driving improving, but...



Payroll Employment

Total 8.9% higher Y/Y (144.9M)

Goods up 5.5% Y/Y (20.3M)

Services up 11.3% Y/Y (102.9M)

Government up 1.7% Y/Y (21.7M)

Employment will not return to pre-COVID levels until 2023



Consumer Spending

Total 11.3% higher in Q1

Goods up 25.6% (-1% in Q4)

Services up 4.6% (+4% in Q4)

Activity should return to pre-COVID levels Q2 2021

Caveat: inflation



Inflation Transitory?



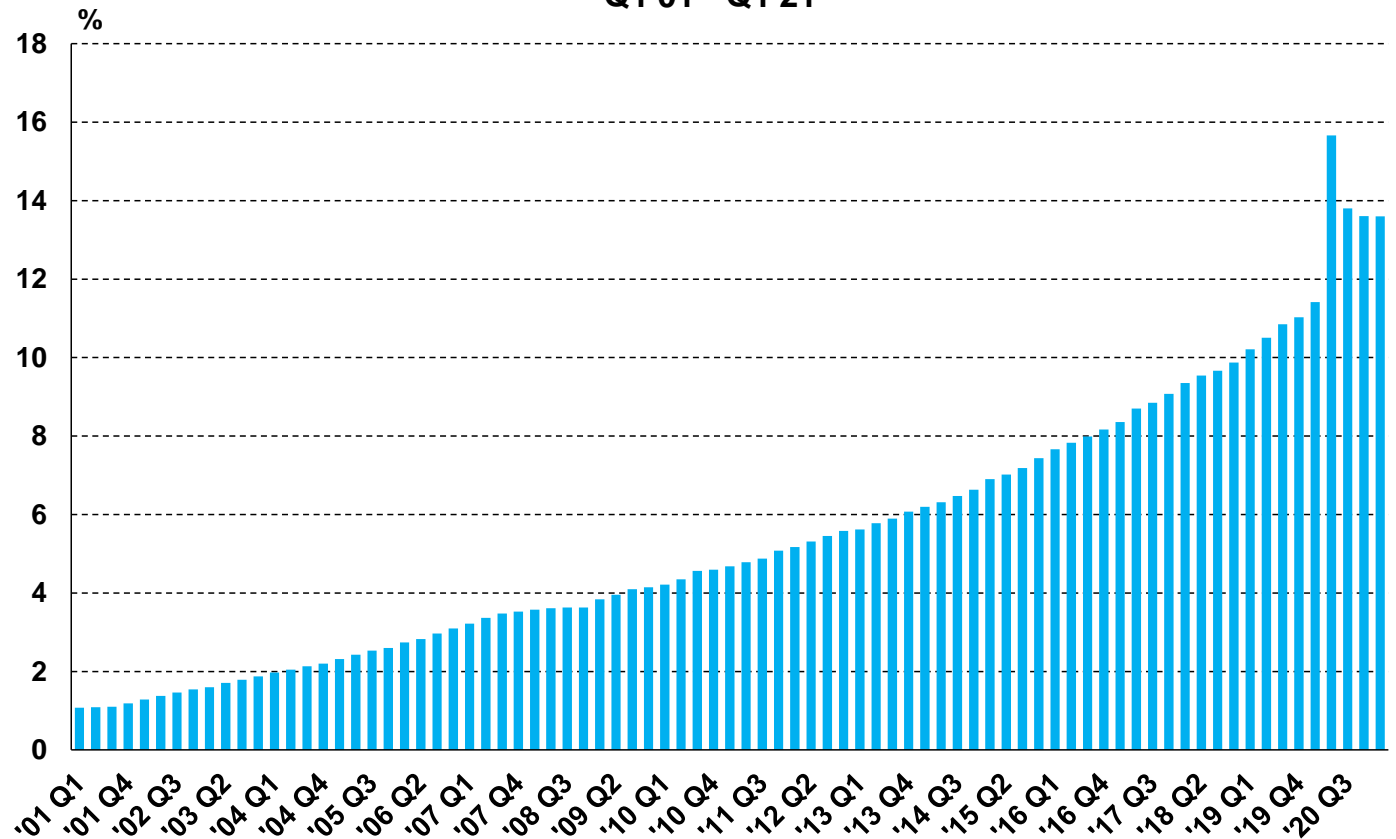
Retail Sales

April retail sales flat sequentially, but well above 2020 level (+51%).

Q1 e-commerce activity slipped lower from Q4, to 13.6% of retail sales as consumers continue to venture out post-pandemic. Despite nominal decline, some degree of behavior changed may be permanent.

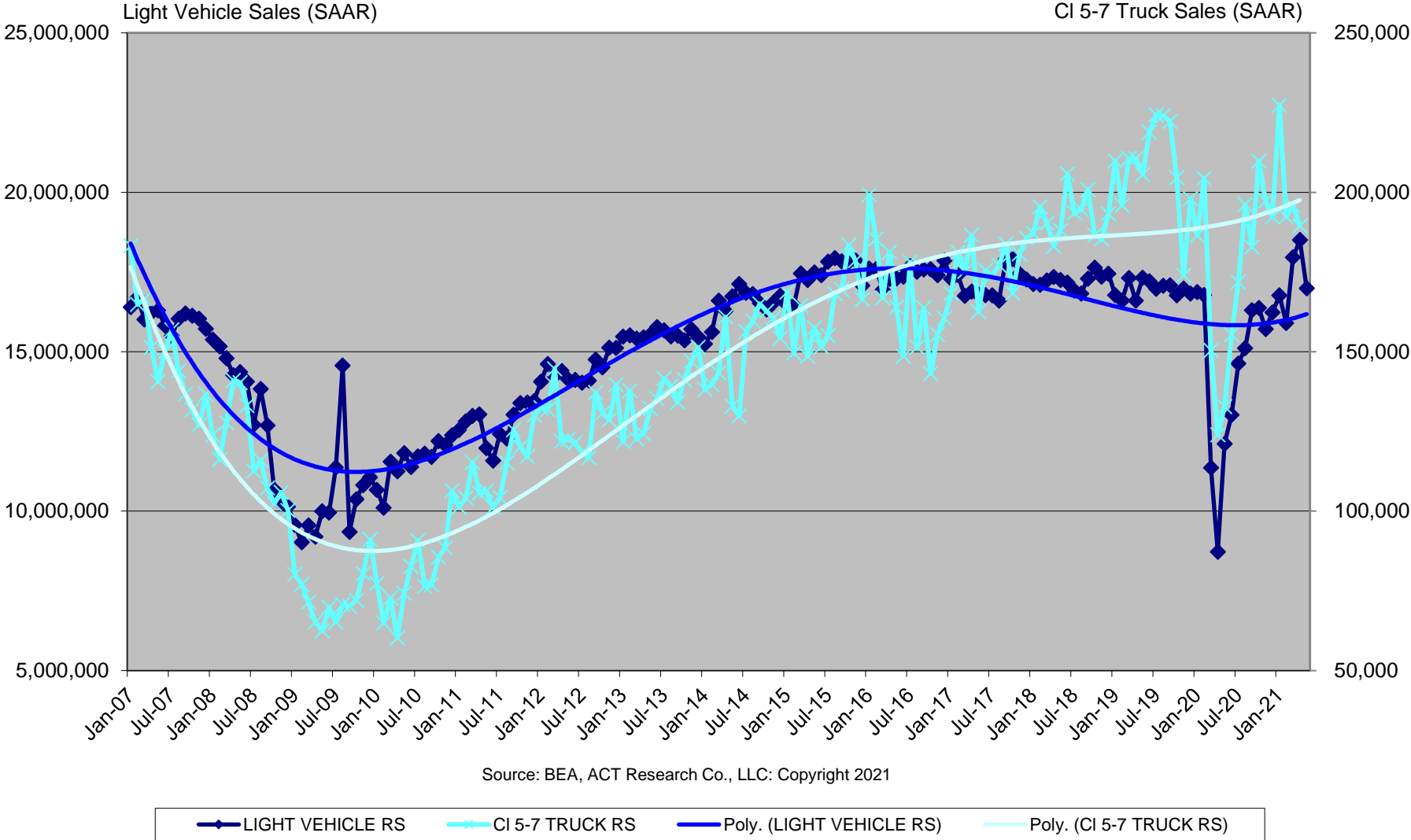
Full-year 2021 growth expectations range from 10.5% to 13.5% - Retail Federation

E-Commerce as a Percentage of Retail Sales
(Excluding Food Service)
Q1'01 - Q1'21



Source: Federal Reserve Board, ACT Research Co., LLC: Copyright 2021

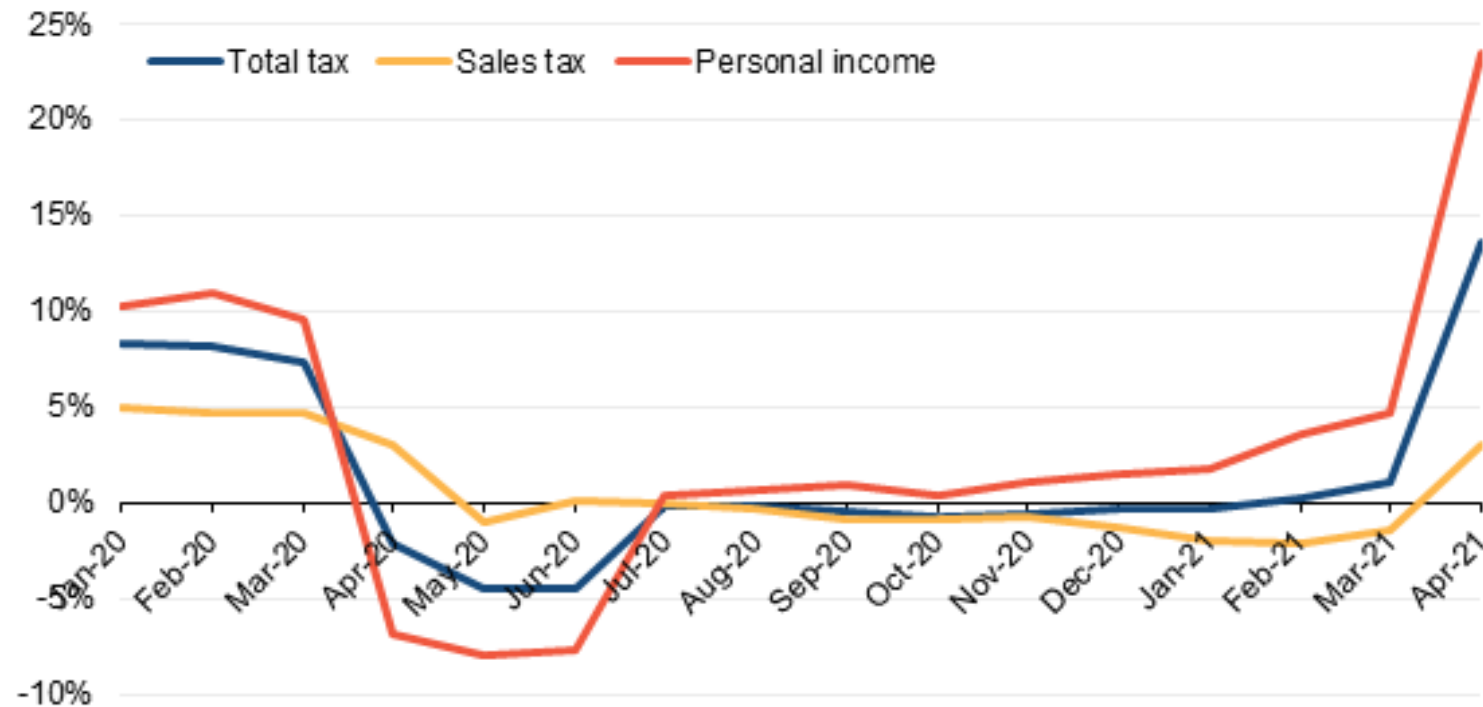
Light Vehicle Sales vs. CI 5-7 Truck Sales



State Tax Revenues On the Rise

Percent change in state tax revenues

Year-over-year percent change, 12-month moving averages

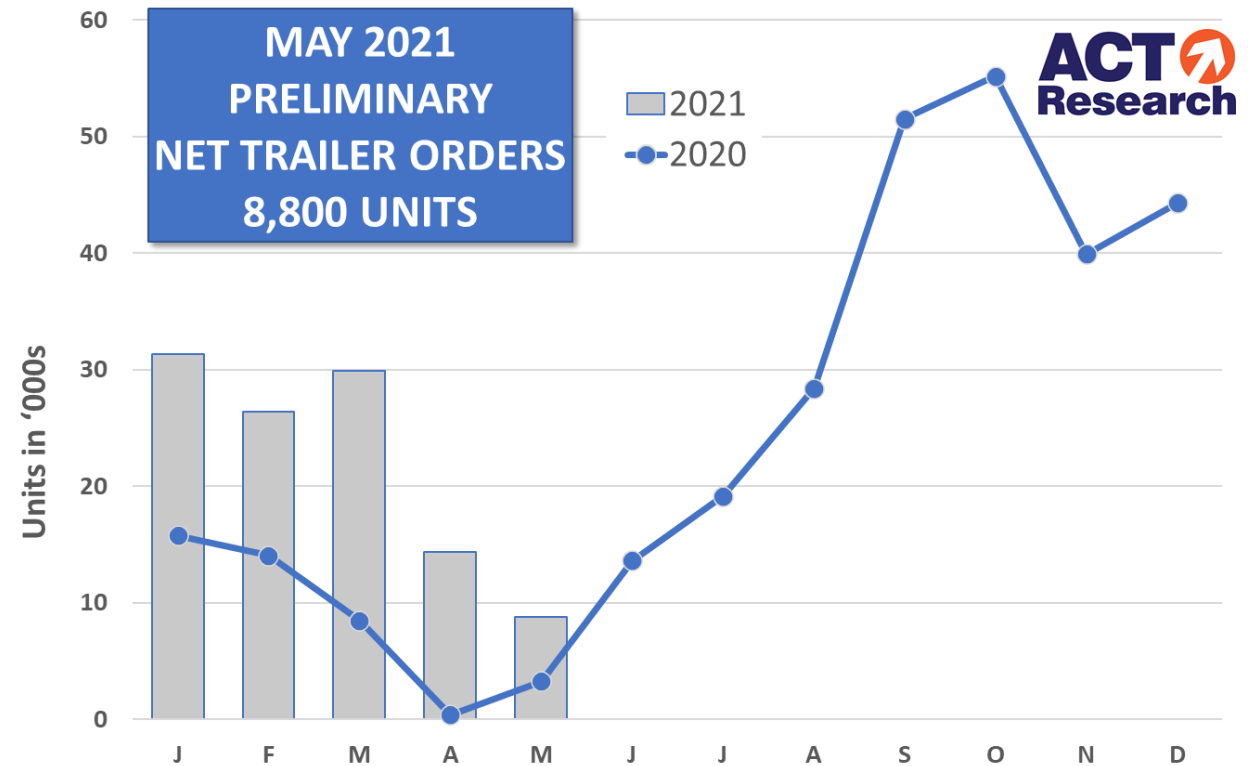


Source: State and Local Finance Initiative, Urban Institute.



Orders Soften While Backlog Extends into '22

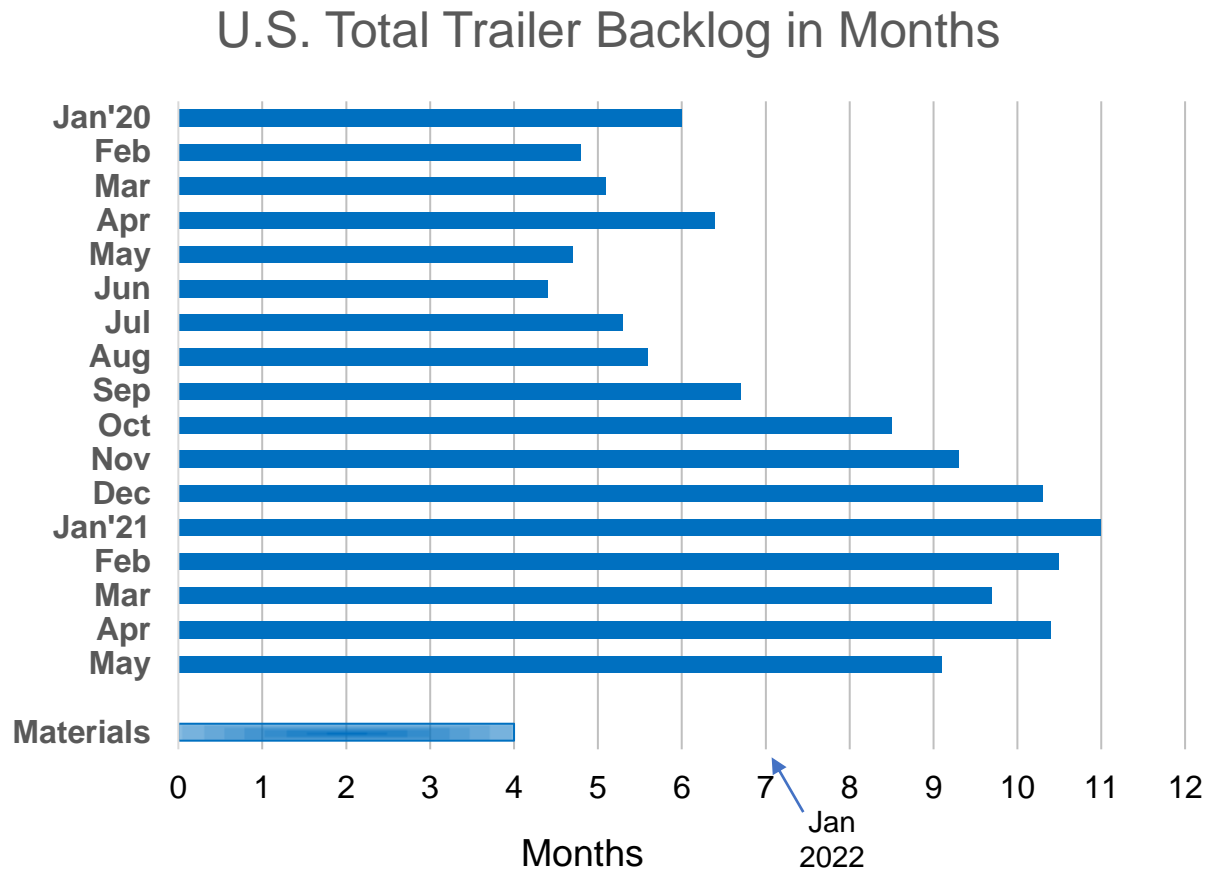
- More than the normal Q2 seasonal impact
- Willingness to book orders?
- Most vocational segments improving
- Production ramp-up challenges
- Component and material price and supply issues



Source: ACT Research Co., LLC Copyright 2021



BL/BU Surge Continues – 2022 Horizon

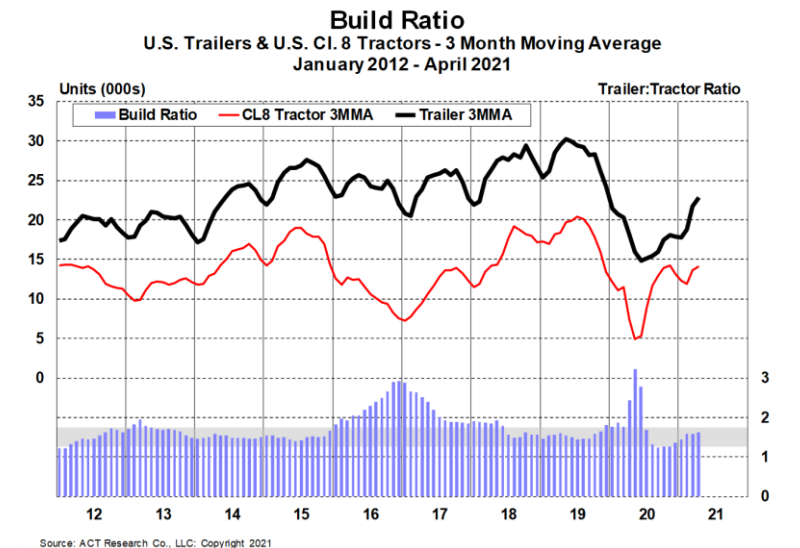
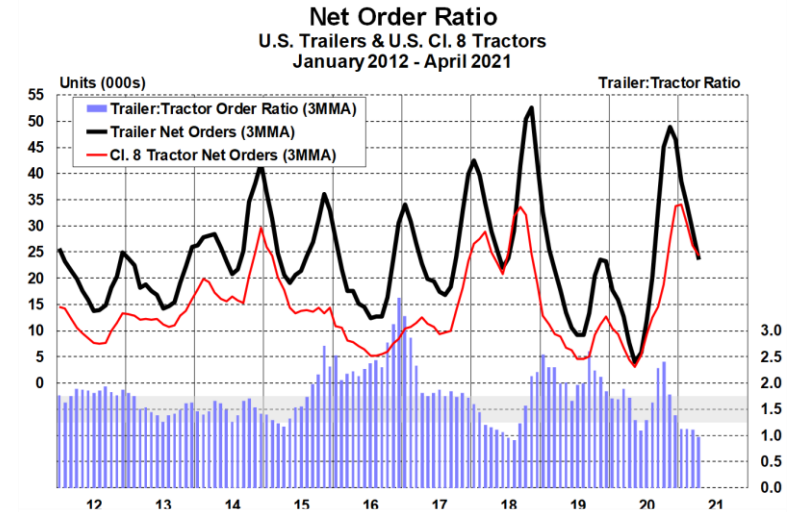


Source: ACT Research Co., LLC: Copyright 2021

- BU rate trough Jul'20
- Order surge started in Q3'20
- Hiring challenges
 - COVID – staff availability and safety
 - Unemployment benefits
 - Many economic sectors
- Component issues
 - Castings, tires, wood, foam
- BL/BU extended for eight months

CV Order/Build Imbalance

- Trailer orders well below normal range
- Build ratio growing
 - Chip impact on Truck OEMs
- Fleet trailer/tractor ratios
- Material/component pricing
 - Renegotiated backlog pricing
- 2022 pricing & production plans

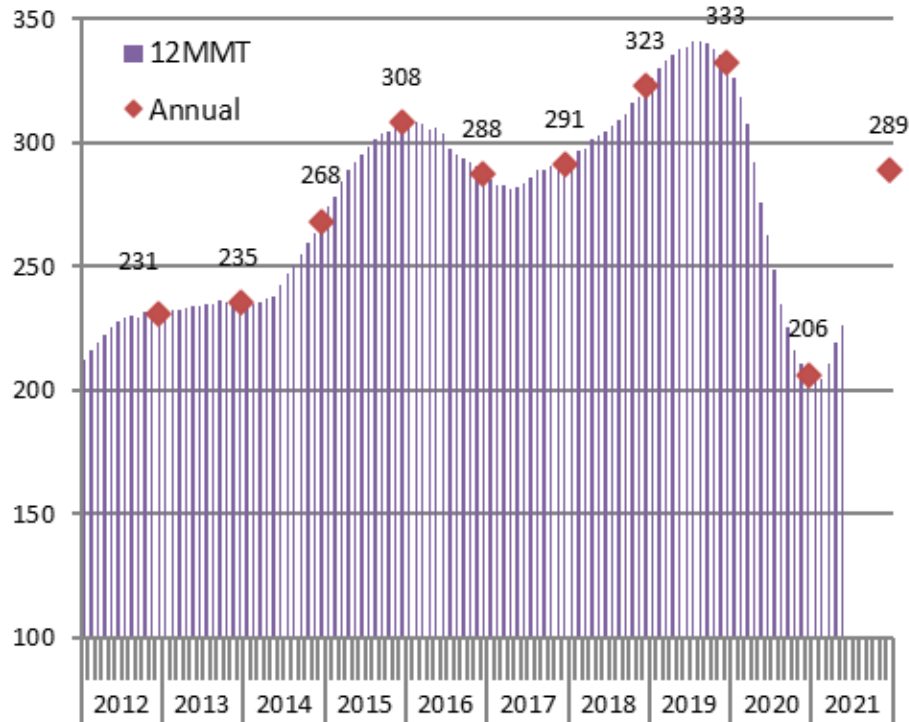


Source: ACT Research Co., LLC. Copyright 2021

The Build Cycle Has Turned

Total Trailer Cycle - BU 12MMT

Units in 000s



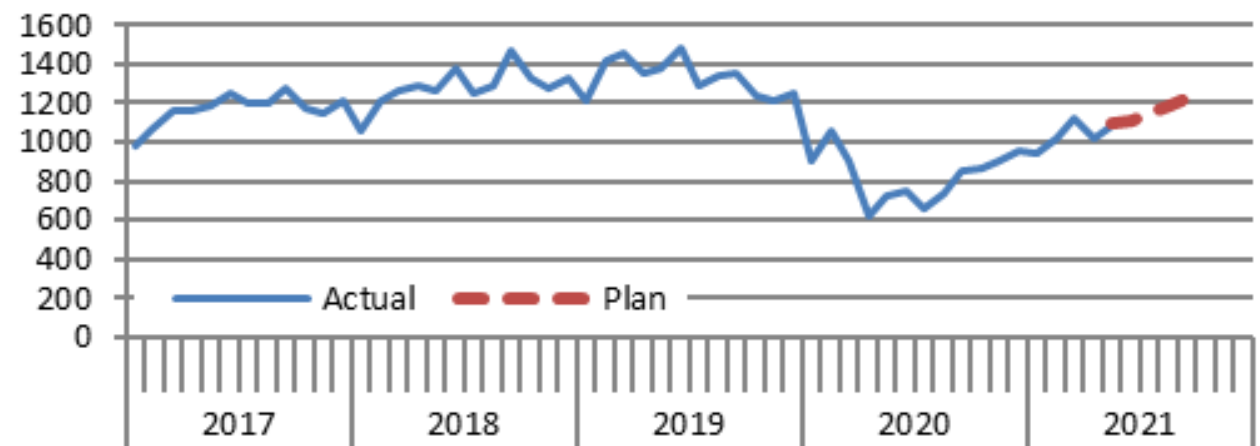
- Bottomed out at 204.6k in Feb'21
- May prelim at 226.6k
- Question...pace of improvement
- Slightly eased forecast with June OUTLOOK
- '21 projected at 2016/2017 level



Build Rate - Growth Continues to Struggle

- Progress in Q1
- Softened into April with May estimated slightly under expectations
- Staffing/Productivity/Shifts
- Compare performance
 - 2017 1,169upd
 - 2018 1,284upd
 - 2019 1,330upd (1,487 peak)
 - 2020 826upd
 - 2021ytd 1,037upd

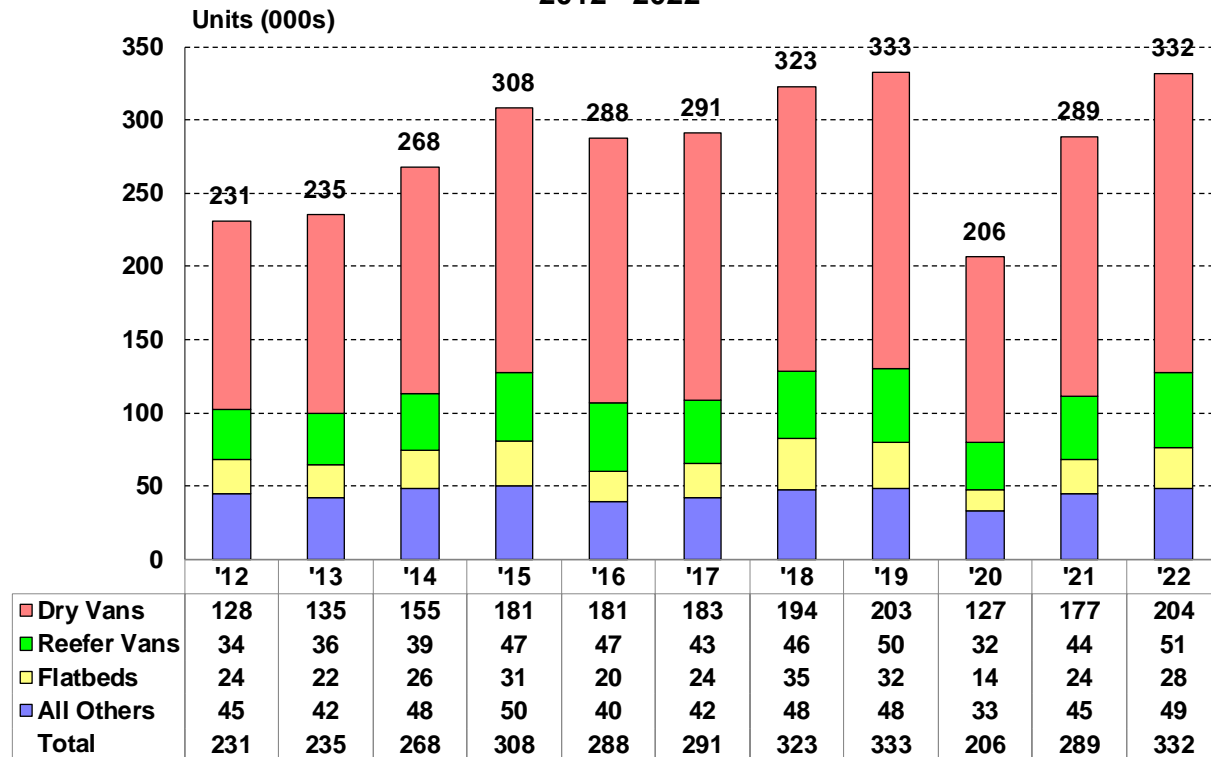
Build - Total Trailer Units per Day



June'21 OUTLOOK Forecast

U.S. Trailer Production

2012 - 2022



Source: ACT Research Co., LLC: Copyright 2021

- 2021 production challenges with last half improvement
- 2022 approaching all-time record
- Cancels churn the orderboard
- Total backlog edges into 2022, very category dependent
- Box trailers order pause self-inflicted
- Vocational segments improving
- Equipment need & ability to buy

Build Forecasts

	2018	2019	2020	2021	2022
NA Class 8 (000s)	324.5	344.6	214.3	305.9	359.9
NA Classes 5-7 (000s)	272.7	281.4	223.7	250.3	261.8
US Trailer Total Trailers (000s)	323.0	332.6	206.3	288.8	331.8



SAVE THE DATE

OUTLOOK WEBINAR

9/14/21

SPONSORED BY
PENSKE
TRANSPORTATION
SOLUTIONS

PENSKE

ACT 
Research



THANK YOU

Presented by Penske Transportation Solutions

