



2020 Economic Outlook: Too Much Supply, Insufficient Demand

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CCJ Solutions Summit
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LEADER IN COMMERCIAL VEHICLE INDUSTRY DATA, MARKET ANALYSIS,
FORECASTING SERVICES FOR THE NORTH AMERICAN MARKETS.

1986

FOUNDED

18

MO./QTR. REPORTS

50+

SPEAKING/YEAR

2

SEMINARS/YEAR

Winners of the 2019 Lawrence R. Klein Award for economic forecasting accuracy



Kenny Vieth, President & Senior Analyst

At ACT since 1991, President since 2010

Tea-leaf reader: Analyst, economist, forecaster

Product developer, model builder, writer

Manager: The downside of success

Favorite saying: *"History doesn't repeat itself, but it often rhymes"*



Presentation Overview

After tax cuts juiced activity in 2018, tariffs accelerate economy's return to trend

Key freight generating sectors of the economy stall-out

A LOT of heavy vehicles were brought to market the past few years

Falling freight demand and rising equipment supply are not conducive to freight/freight rates in 2020

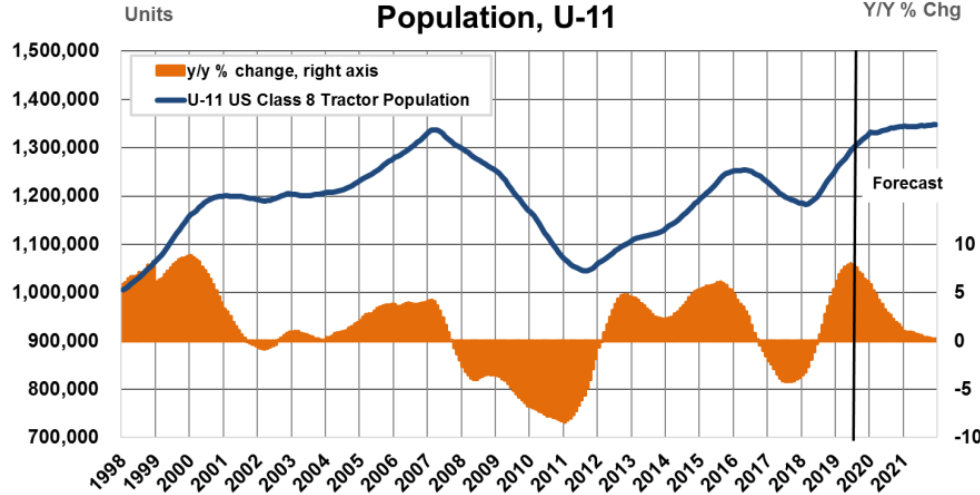
The timing of recovery will largely be determined by the speed at which excess tractor capacity is absorbed by economic growth

Presently, strong sales continue to grow the US tractor fleet



In a Nutshell

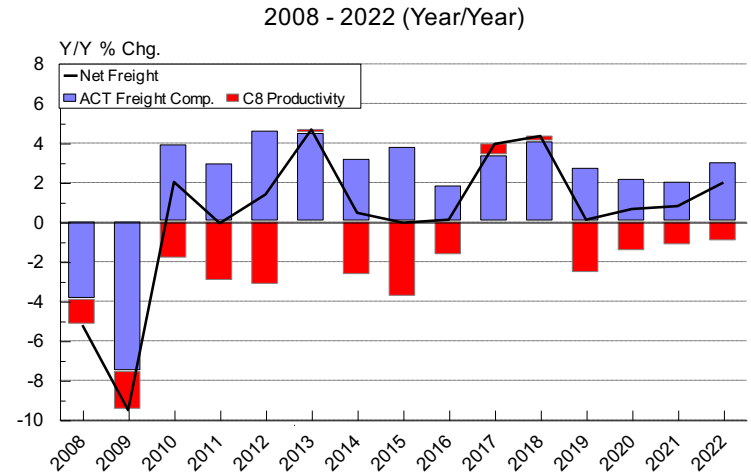
Truckload Equipment Capacity: U.S. Class 8 Tractor Population, U-11



Source: ACT Research Co., LLC. Copyright 2019

Active capacity up 10% from early 2018 – and still growing






NET FREIGHT: ACT Freight Composite less HD Tractor Productivity



Source: ACT Research Co., LLC. Copyright 2019

Reemerging productivity trends negate still-growing economy

Our Favorite Leading Indicators

- Flat yield curve (long - short-term interest rate spread)
Inversion a historically reliable recession predictor (+4 to 8 Qs) 
- Stock market trends
Higher highs, considerable volatility 
- Purchasing Managers' Index (leads industrial prod.)
US stagnating at around 50, global softness 
- Commodity prices:
Global weakness weighs on industrial commodities, ag prices soft 
- Confidence surveys:
Consumer and business generally stable, if off highs 

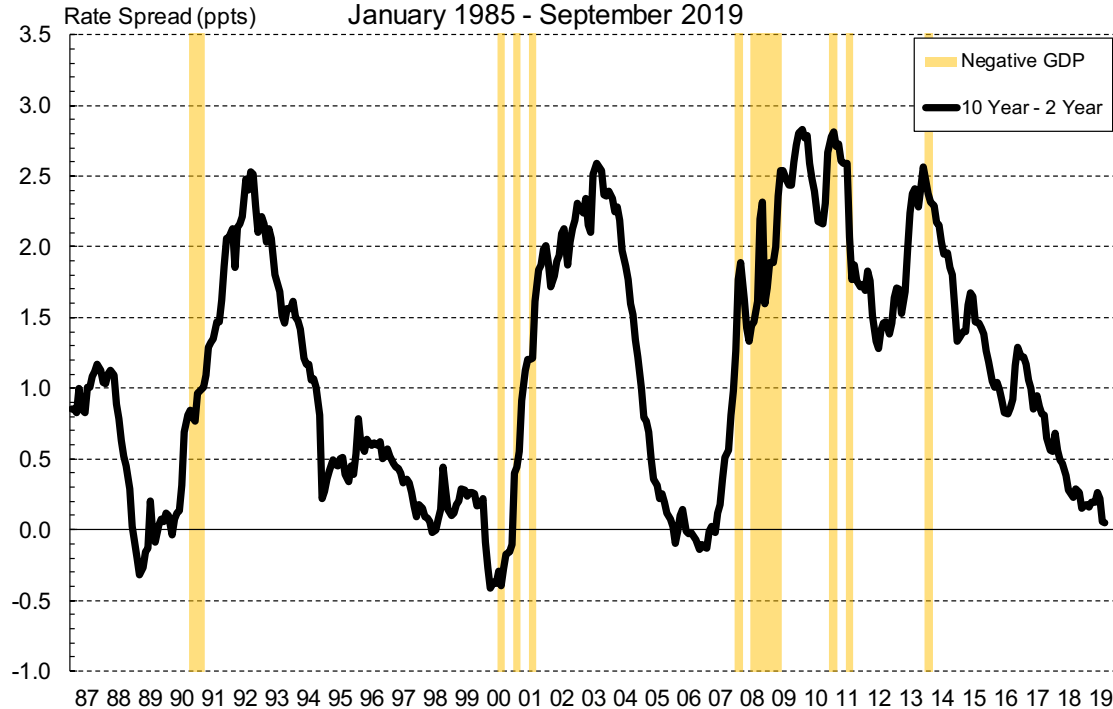


Different This Time?

Yield Curve Spreads

10 year minus 2 year

January 1985 - September 2019



Source: Federal Reserve Board, ACT Research Co., LLC: Copyright 2019

7 of past 7 recession
have been preceded by
yield curve inversion

10y -3mo inverted since
mid-May

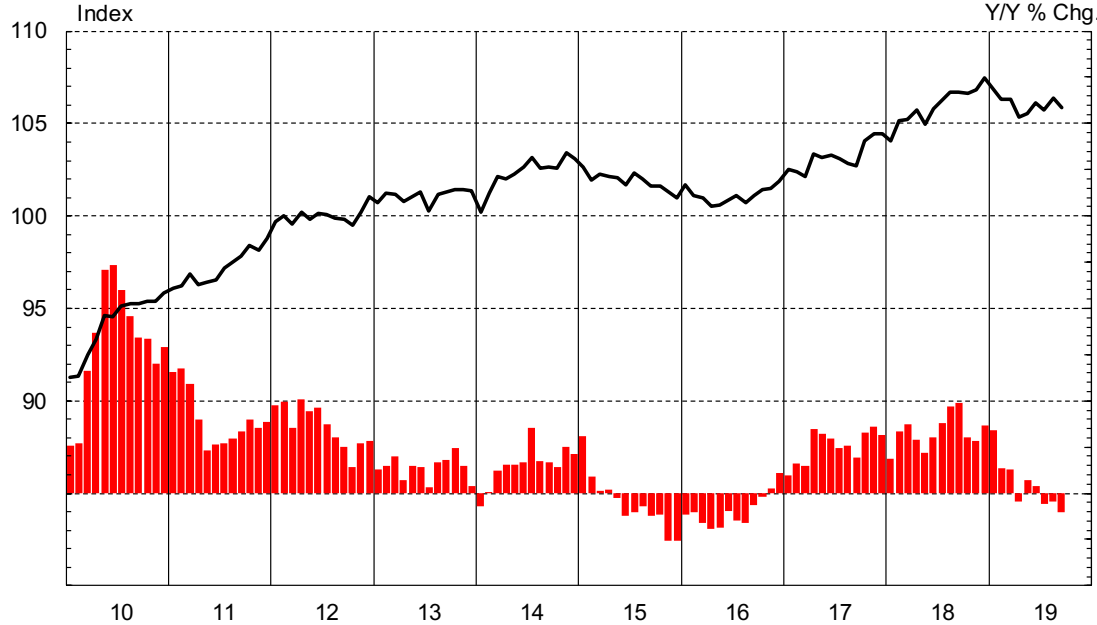
10y-2y inverted 1 day in
mid-August

Tariffs Impact Industrial Economy

Industrial Production Index: Manufacturing

Index 2008 = 100 SA

January 2010 - September 2019

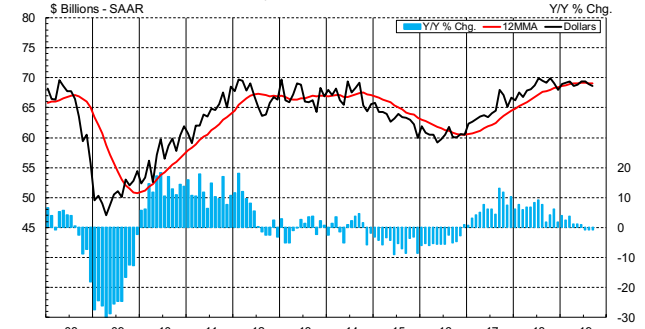


Source: Federal Reserve, ACT Research Co., LLC: Copyright 2019

Manufacturers' New Orders: Nondefense

Capital Goods Excluding Aircraft

January 2008 - September 2019

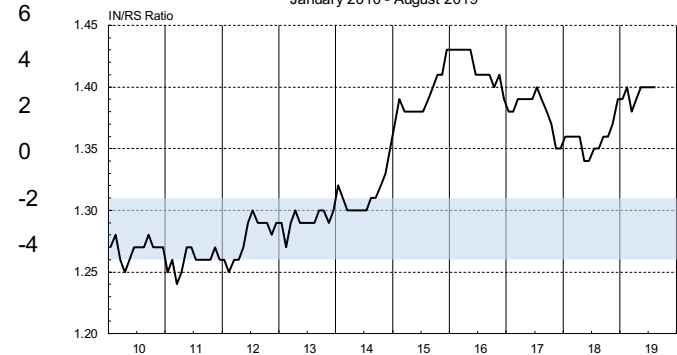


Source: Census Bureau, ACT Research Co., LLC: Copyright 2019

Inventory to Sales Ratio: Total Business

Index - SAAR

January 2010 - August 2019



Source: Census Bureau, ACT Research Co., LLC: Copyright 2019

Tariffs Impacting Global Economy

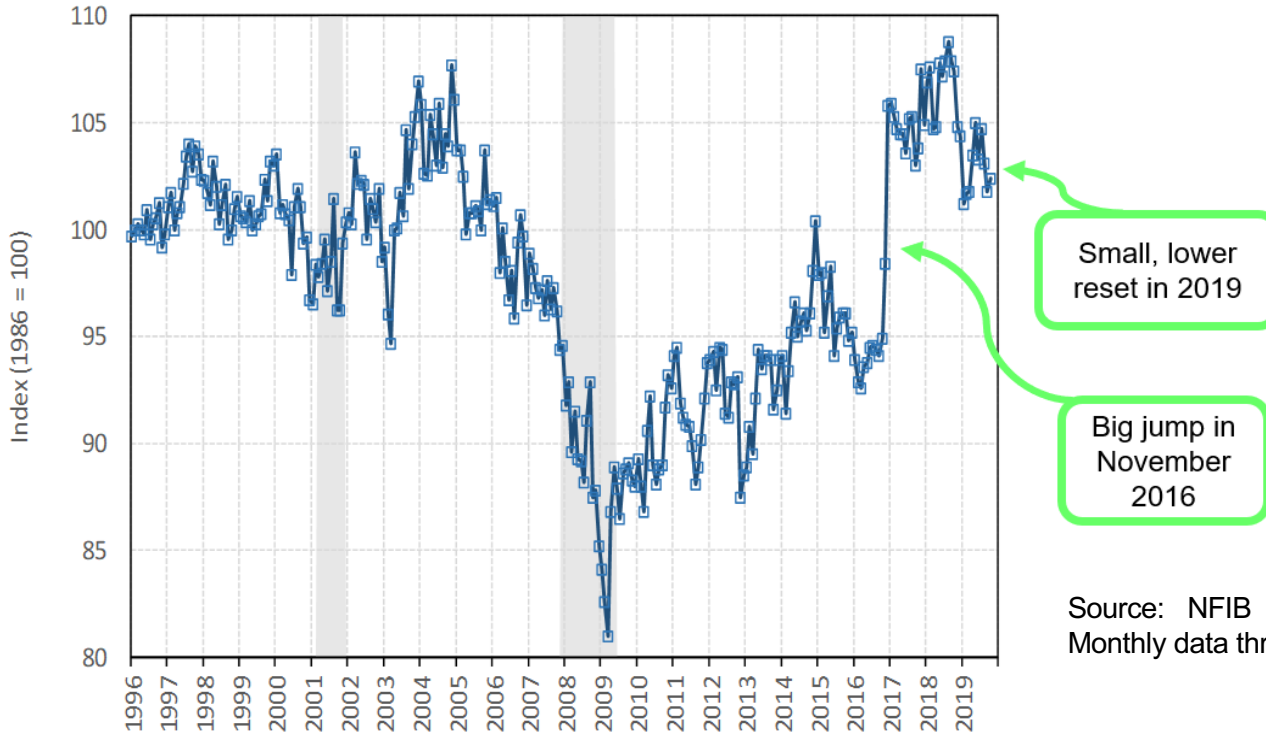
	2018 First Quarter			2019 Year-to-date									
	Jan-18	Feb-18	Mar-18	Jan-19	Feb-19	Mar-19	Apr-19	May-19	Jun-19	Jul-19	Aug-19	Sep-19	Oct-19
Global	54.4	54.2	53.3	50.7	50.6	50.5	50.4	49.8	49.4	49.3	49.5	49.7	49.8
United States	55.5	55.3	55.6	54.9	53.0	52.4	52.6	50.5	50.6	50.4	50.3	51.1	51.3
Canada	55.9	55.6	55.7	53.0	52.6	50.5	49.7	49.1	49.2	50.2	49.1	51.0	51.2
Mexico	52.6	51.6	52.4	50.9	52.6	49.8	50.1	50.0	49.2	49.8	49.0	49.1	50.4
Eurozone	59.6	58.6	56.6	50.5	49.3	47.5	47.9	47.7	47.6	46.5	47.0	45.7	45.9
Germany	61.1	60.6	58.2	49.7	47.6	44.1	44.4	44.3	45.0	43.2	43.5	41.7	42.1
France	58.4	55.9	53.7	51.2	51.5	49.7	50.0	50.6	51.9	49.7	51.1	50.1	50.7
Italy	59.0	56.8	55.1	47.8	47.7	47.4	49.1	49.7	48.4	48.5	48.7	47.8	47.7
Spain	55.2	56.0	54.8	52.4	49.9	50.9	51.8	50.1	47.9	48.2	48.8	47.7	46.8
UK	55.3	55.0	55.1	52.6	52.0	55.1	53.1	49.1	48.0	48.0	47.4	48.3	49.6
Russia	52.1	50.2	50.6	50.9	50.1	52.8	51.8	49.8	48.6	49.3	49.1	46.3	47.2
Japan	54.8	54.1	53.1	50.3	48.9	49.2	50.2	49.8	49.3	49.4	49.3	48.9	48.4
China	51.5	51.6	51.0	48.3	49.9	50.8	50.2	50.2	49.4	49.9	50.4	51.4	51.7
India	52.4	52.1	51.0	53.9	54.3	52.6	51.8	52.7	52.1	52.5	51.4	51.4	50.6
Brazil	51.2	53.2	53.4	52.7	53.4	52.8	51.5	50.2	51.0	49.9	52.5	53.4	52.2

Source: Markit Economics

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

Business Confidence Resets Lower

NFIB Small Business Optimism Index

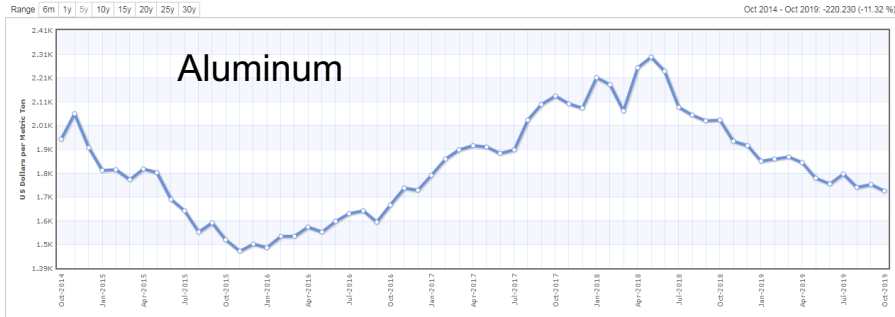


Source: NFIB
Monthly data through October 2019



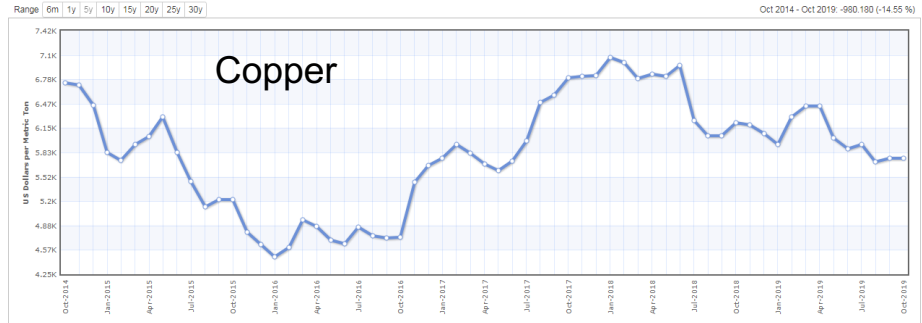
Commodity \$ Lead Machinery

Aluminum Monthly Price - US Dollars per Metric Ton



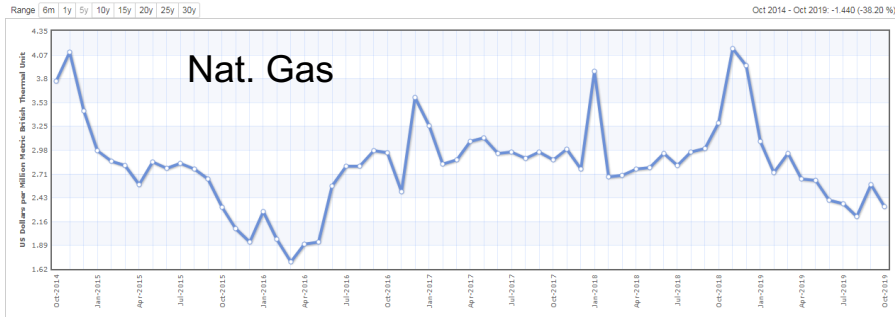
Description: Aluminum (LME) London Metal Exchange, unalloyed primary ingots, high grade, minimum 99.7% purity, settlement price beginning 2005; previously cash price

Copper, grade A cathode Monthly Price - US Dollars per Metric Ton



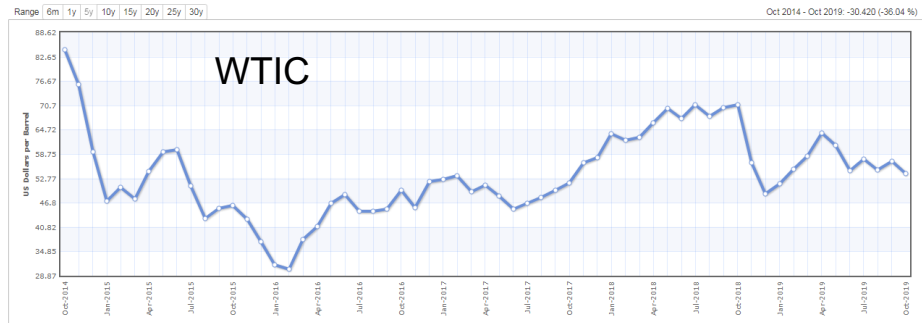
Description: Copper (LME), grade A, minimum 99.9935% purity, cathodes and wire bar shapes, settlement price

Natural Gas Monthly Price - US Dollars per Million Metric British Thermal Unit



Description: Natural Gas (U.S.), spot price at Henry Hub, Louisiana

Crude Oil (petroleum): West Texas Intermediate Monthly Price - US Dollars per Barrel

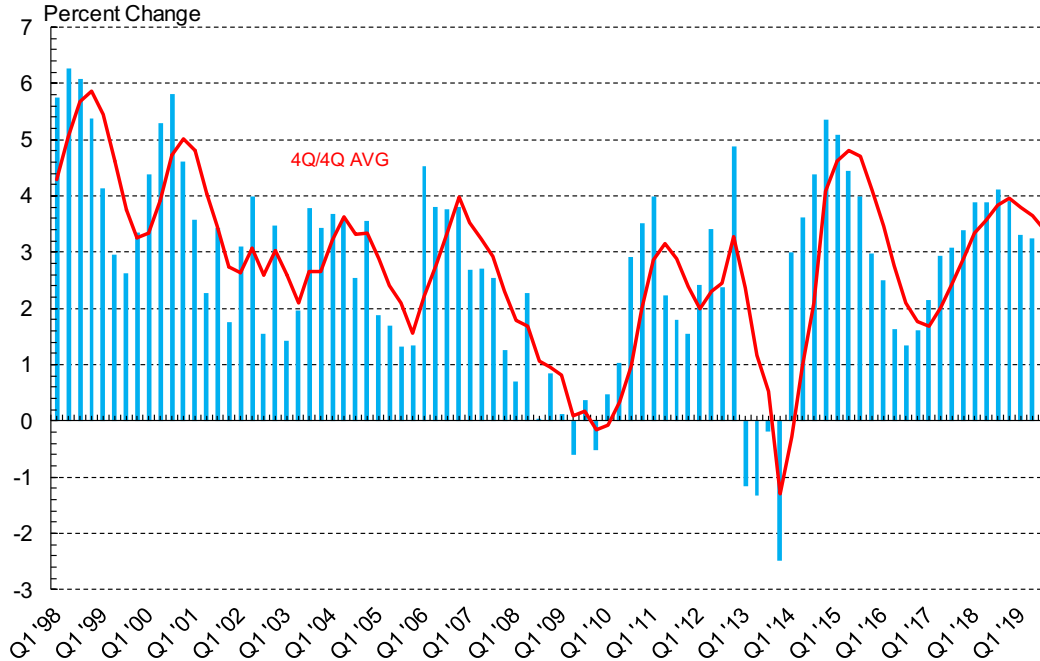


Description: Crude oil, US, West Texas Intermediate (WTI) 40° API.

Charts publicly sourced from Indexmundi.com

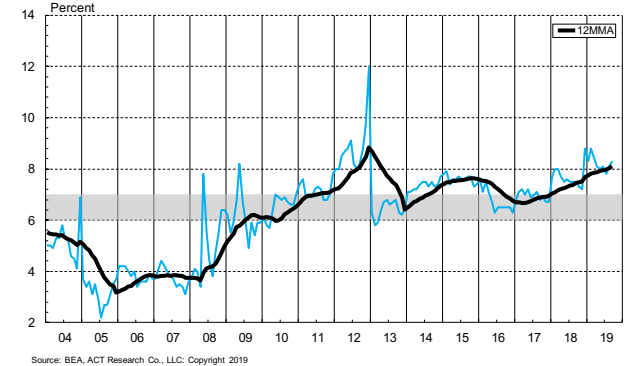
Consumers Remain Healthy

Real PCE: Personal Income 4Q/4Q and Y/Y Q1'98 - Q3'19



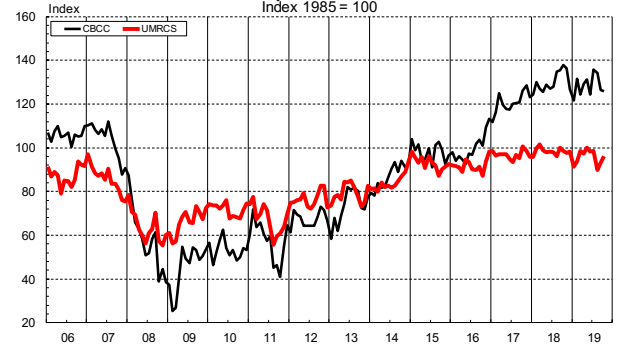
Source: BEA, ACT Research Co., LLC: Copyright 2019

Personal Savings Rate January 2004 - September 2019 Percent - SAAR



Source: BEA, ACT Research Co., LLC: Copyright 2019

Consumer Board: Consumer Confidence & U. of Michigan/Reuters Consumer Sentiment January 2006 - October 2019 Index 1985 = 100

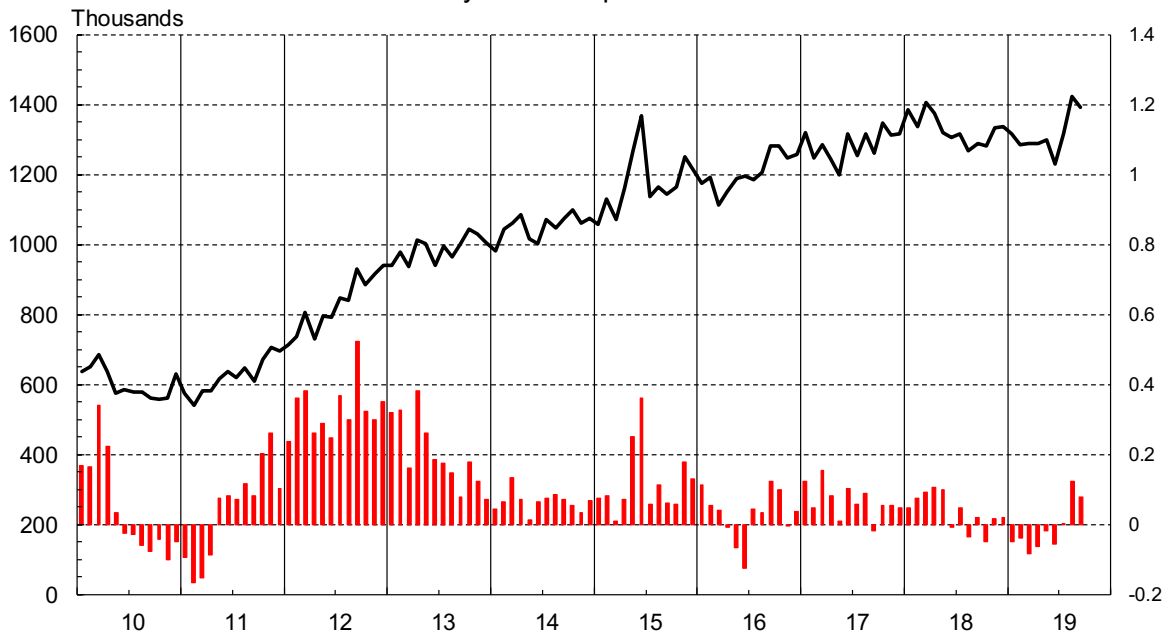


Source: UoM/Reuters, The Conference Board, ACT Research Co., LLC: Copyright 2019

Green Shoots?

Building Permits: New Private Housing Units Authorized

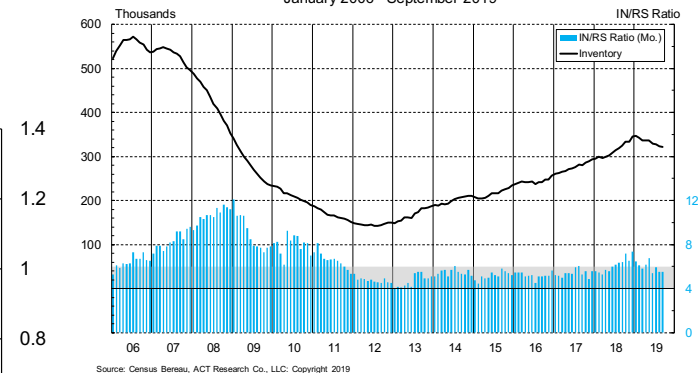
Thousands of Units - SAAR
January 2010 - September 2019



Source: Census Bureau, ACT Research Co., LLC: Copyright 2019

New Home Inventory & IN/RS

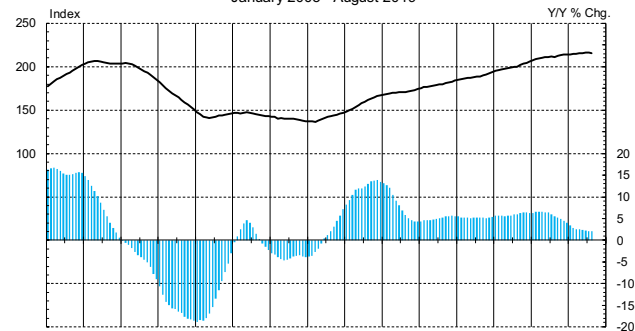
Thousands of Units - SAAR
January 2006 - September 2019



Source: Census Bureau, ACT Research Co., LLC: Copyright 2019

S&P Case-Shiller 20-City Housing Price Index

Index: January 2000=100
January 2005 - August 2019



Source: Federal Reserve Board, ACT Research Co., LLC: Copyright 2019

Recession In the Cards?

- Concede elevated risk:
 - Trade war, threats trigger industrial recession
 - Flat yield curve
 - A few quarters of growth around 1% (GDP saar)
 - More vulnerable to a major shock
 - But:
 - Consumers broadly healthy
 - Consumer & Business confidence holding up
 - Federal Reserve easing puts positive slope back into yield curve
 - 2017 tax cuts provide meaningful stimulus to corporate profits
 - No one likely to rein in Federal deficit
 - Outlook: Economy returns to trend starting in 2H'2020
- Soft landing: 60% to 65%; Recession: 30% to 35%; Faster growth: 5% to 10%



Freight Recession Continues

Freight markets in recession for all of 2019

Loads fell in each key ground mode: TL, LTL, intermodal & carload rail

Key Factors: trade, manufacturing, productivity and private fleet growth

Private fleets take ~4-5ppts of share from for-hire

Productivity trends reemerge in 2019

Near-term outlook soft: **freight down markets tend to last 1-2 years**

This one dates to Q4 2018

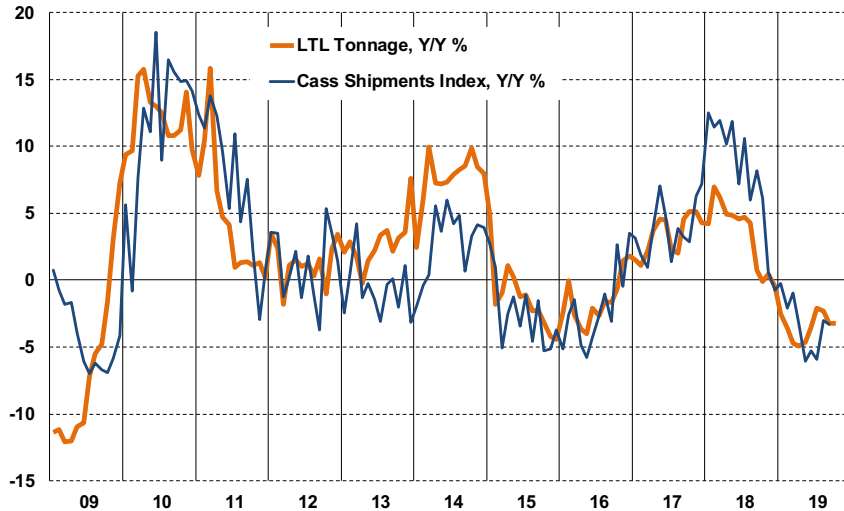
Trade war a key risk to the forecast, raising 2020 recession risk



Freight Recession Still Not Over

LTL Tonnage and Cass Shipments Index

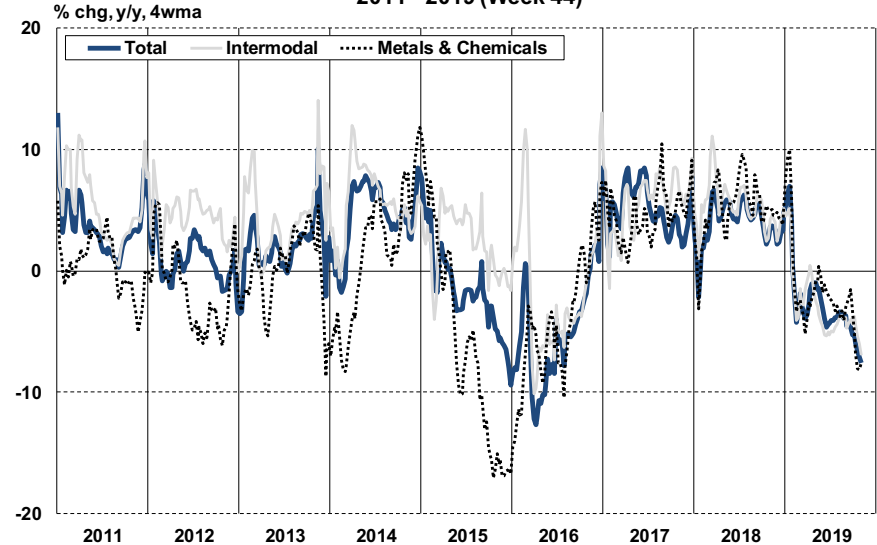
January 2009 - October 2019



Source: Cass Information Systems, Company reports, ACT Research Co., LLC: Copyright 2019

North American Railroad Volumes

2011 - 2019 (Week 44)



Source: Association of American Railroads, ACT Research Co., LLC: Copyright 2019

July/August respite fades in Sept/Oct; partly GM strike



Not Just Trucking

North American Rail Volumes by Segment

	y/y % change											
	1Q17	2Q17	3Q17	4Q17	1Q18	2Q18	3Q18	4Q18	1Q19	2Q19	3Q19	4Q19TD*
Intermodal	2.6%	5.3%	6.2%	6.6%	5.5%	5.3%	4.8%	3.6%	-1.3%	-4.6%	-4.7%	-6.8%
Chemicals	0.6%	4.2%	2.3%	2.3%	1.7%	3.5%	6.1%	4.3%	-0.3%	1.1%	-2.3%	-3.3%
Metals	8.7%	12.0%	9.8%	8.7%	2.8%	5.1%	5.2%	5.4%	0.7%	-2.1%	-4.6%	-12.6%
Automotive	1.1%	-0.5%	-6.4%	-1.7%	-4.6%	0.7%	4.0%	0.1%	-1.9%	0.1%	-0.4%	-12.4%
Petroleum	-7.7%	-6.9%	-6.7%	8.2%	6.4%	16.4%	35.8%	29.0%	18.8%	24.2%	9.8%	1.4%
Minerals/Sand	13.7%	17.1%	14.4%	17.1%	3.4%	6.3%	-1.9%	-11.3%	-5.8%	-9.7%	-4.4%	-5.5%
Paper/Lumber	-3.8%	-0.6%	-0.5%	1.3%	-0.8%	4.5%	5.4%	1.2%	-0.8%	-4.9%	-8.2%	-7.1%
Grain/Food	4.0%	7.5%	-9.3%	-6.9%	-5.3%	3.4%	6.8%	0.2%	-1.7%	-1.0%	-3.4%	-3.2%
Coal	14.3%	17.2%	1.6%	-3.9%	-2.4%	-1.0%	-3.1%	2.0%	-6.4%	-0.9%	-8.7%	-13.3%
Total	4.3%	6.7%	3.0%	3.5%	2.0%	4.2%	4.4%	3.0%	-1.5%	-2.4%	-4.2%	-7.2%
Carloads, ex-Intermodal	5.8%	7.9%	0.3%	0.9%	-1.0%	3.2%	4.0%	2.5%	-1.6%	-0.5%	-3.8%	-7.6%

Source: Company reports; ACT Research Co. LLC. Copyright 2019

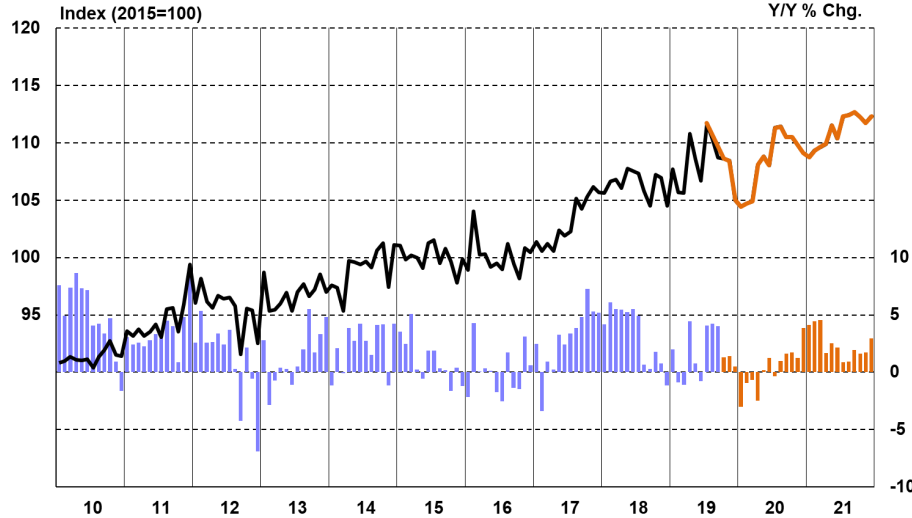
*Through week 44



TL Loads Boosted By Pre-Ship, Low Cost

ATA SA TL Loads Index

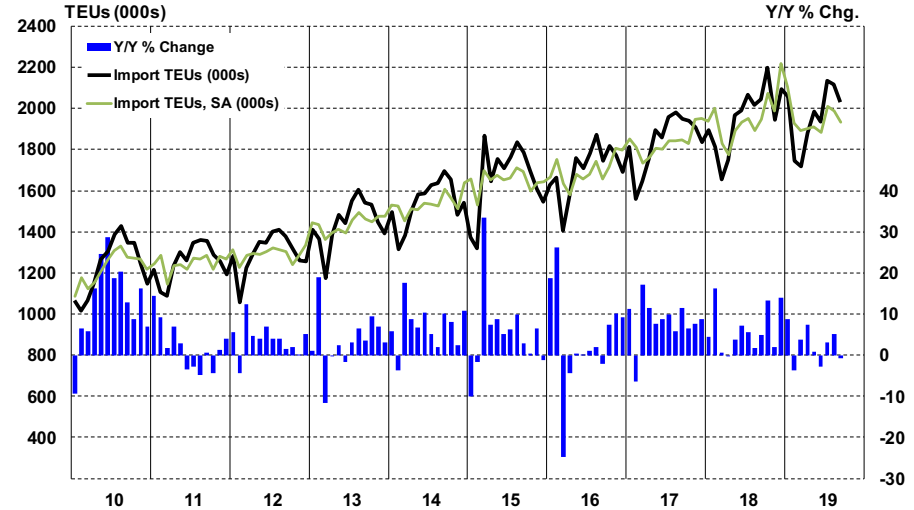
January 2010 - December 2021 Forecast



Source: American Trucking Associations, ACT Research Co., LLC: Copyright 2019

N.A. Ports: Inbound Loaded Containers

January 2010 - September 2019



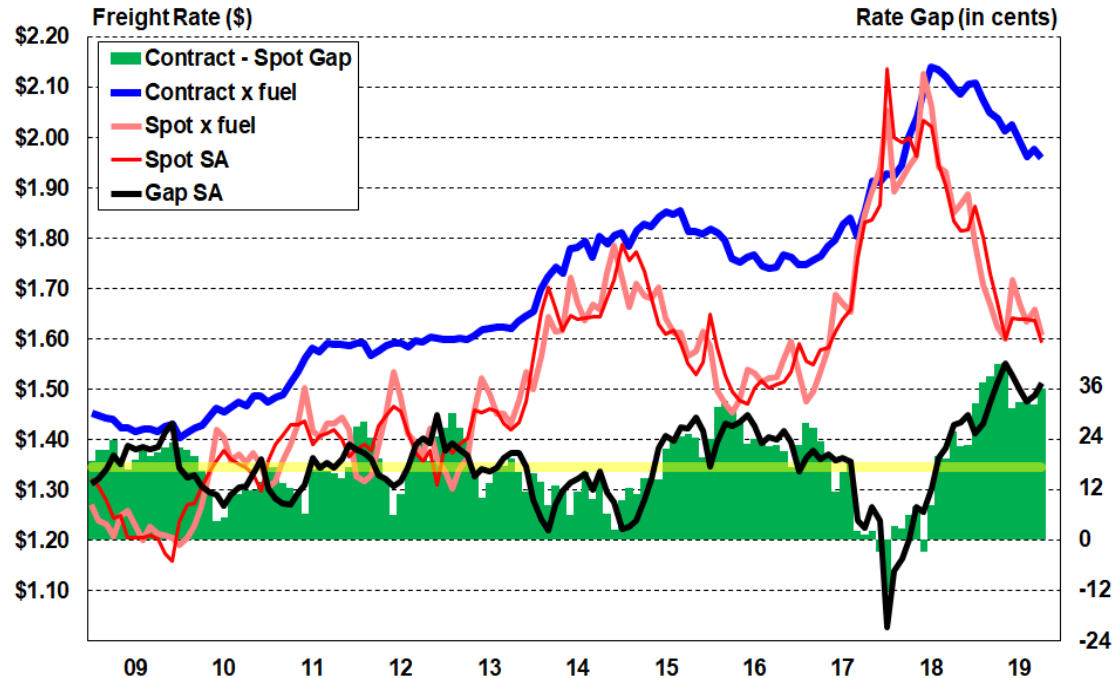
Note: Port of Vancouver added in 2013 and Lazaro Cardenas added in 2015. Y/Y changes are adjusted to normalize.
Source: ACT Research Co., LLC: Copyright 2019

Pre-tariff shipping helped Q3, hangover in early-2020
With big trade caveat, freight should stabilize/grow in 2020/2021

Downwards Contract Rate Pressure

DAT Trendlines: Aggregate Revenue per Mile Rate

January 2009 - October 2019 (2000=100)

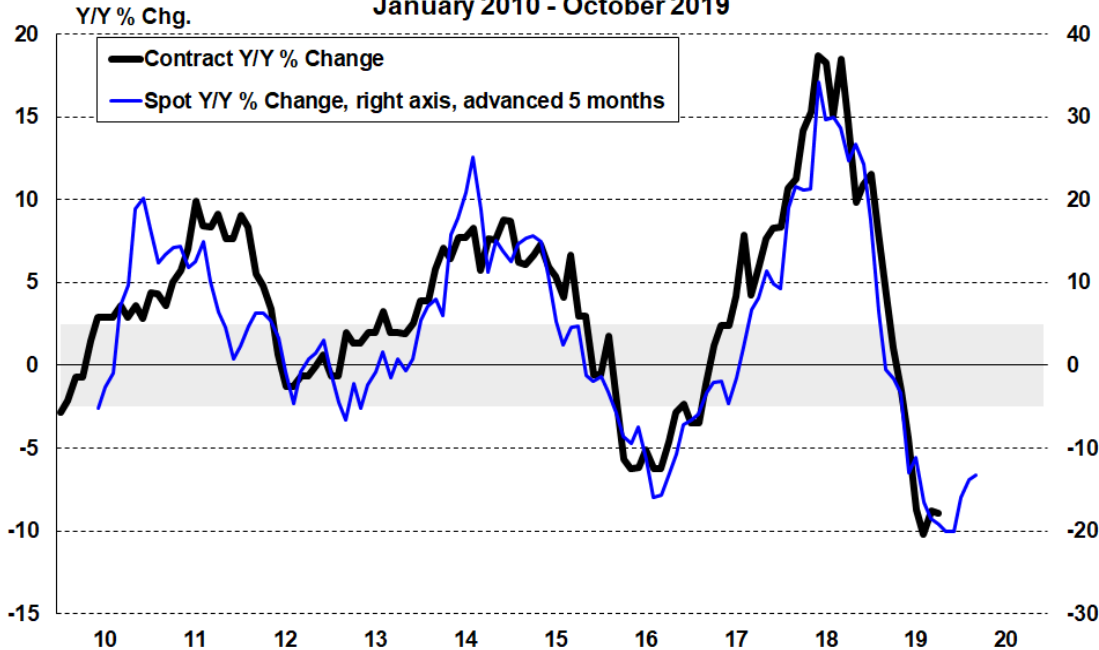


Source: DAT Solutions, ACT Research Co., LLC: Copyright 2019

Across-the-Board Weakness

DAT Trendlines Spot & Contract Rates:
Dry Vans (net fuel)

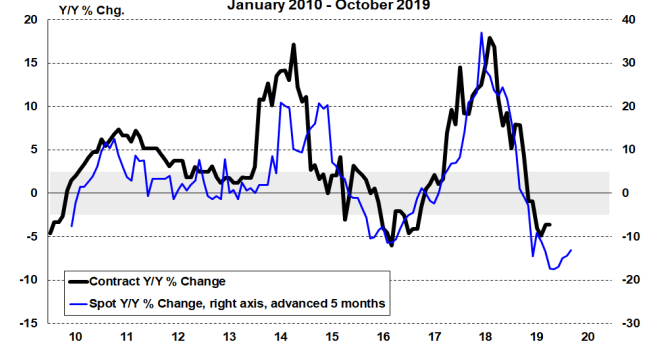
January 2010 - October 2019



Source: DAT Solutions, ACT Research Co., LLC: Copyright 2019

DAT Trendlines Spot & Contract Rates:
Refrigerated (ex FSC)

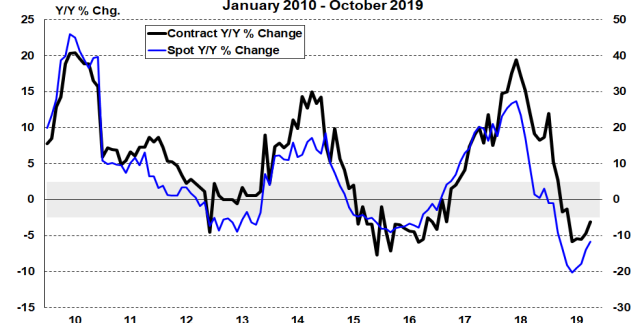
January 2010 - October 2019



Source: DAT Solutions, ACT Research Co., LLC: Copyright 2019

DAT Trendlines Spot & Contract Rates:
Flatbed (ex FSC)

January 2010 - October 2019

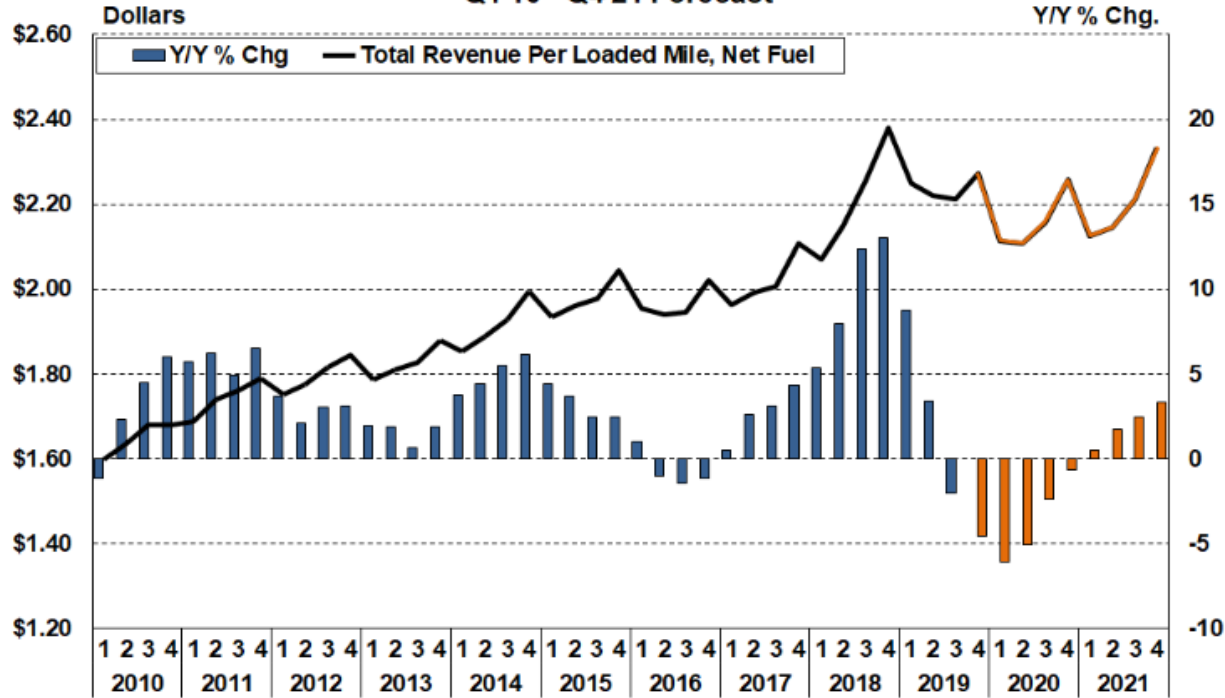


Source: DAT Solutions, ACT Research Co., LLC: Copyright 2019

Public TLs Revenues Drop in Q3

TL Carrier Database: Total Revenue Per Loaded Mile,
Net Fuel

Q1'10 - Q4'21 Forecast



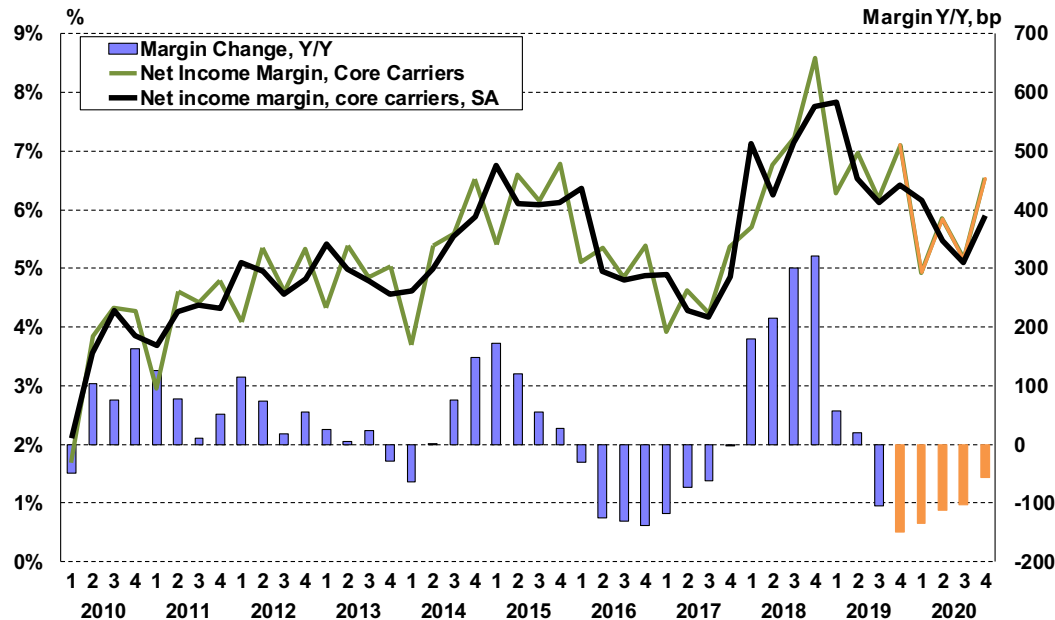
Source: ACT Research Co., LLC: Copyright 2019

**Contract rates
-2% in Q3'19 and
getting worse**

Carrier Margins On the Precipice

TL Carrier Database: Net Income Margin, Core Carriers

Q1'10 - Q4'20



Source: ACT Research Co., LLC: Copyright 2019

Margins still at record levels; drop to 5%-6% range not too shabby

Freight Hauling Supply

US Class 8 tractor sales at record levels in 2019

By January 2020, capacity up 13% from January 2018

Orders down, but production and sales have not yet responded

Capacity rebalancing has not yet begun

Carrier profits under pressure but still elevated

Continued strong tractor buying will weigh on future rates:

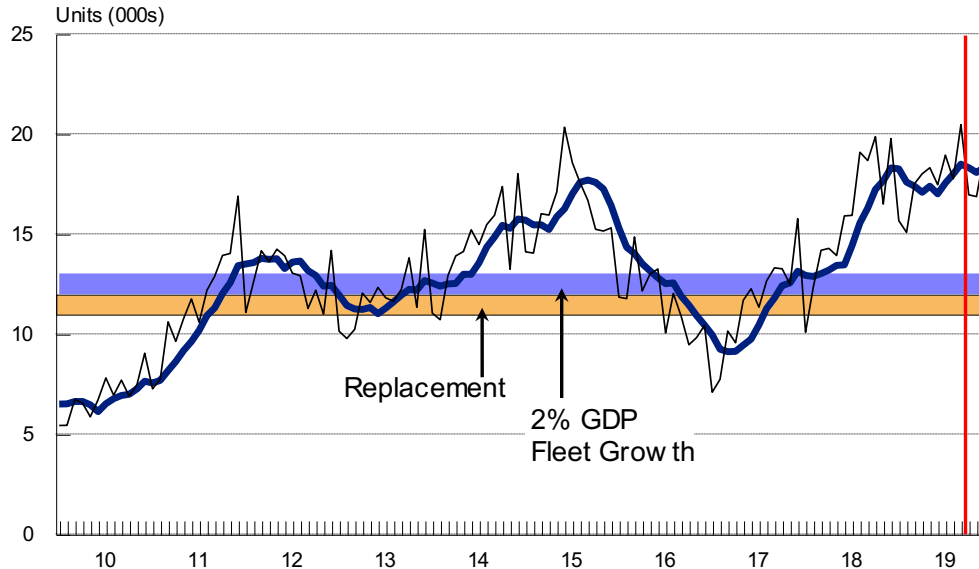
Sharper cuts sooner would pull forward the next freight rate upturn



Too Much Supply and Still Growing

U.S. CLASS 8 TRACTORS Retail Sales

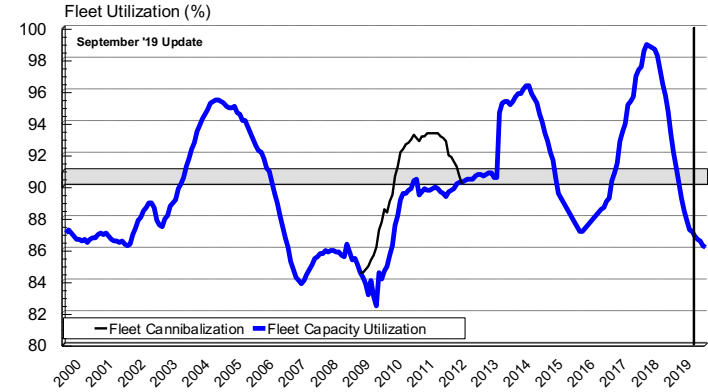
January '10 - December '19f



ACT Research Co., LLC: Copyright 2019

U.S. Class 8 Implied Tractor Fleet Utilization Rate

2000 - 2019F



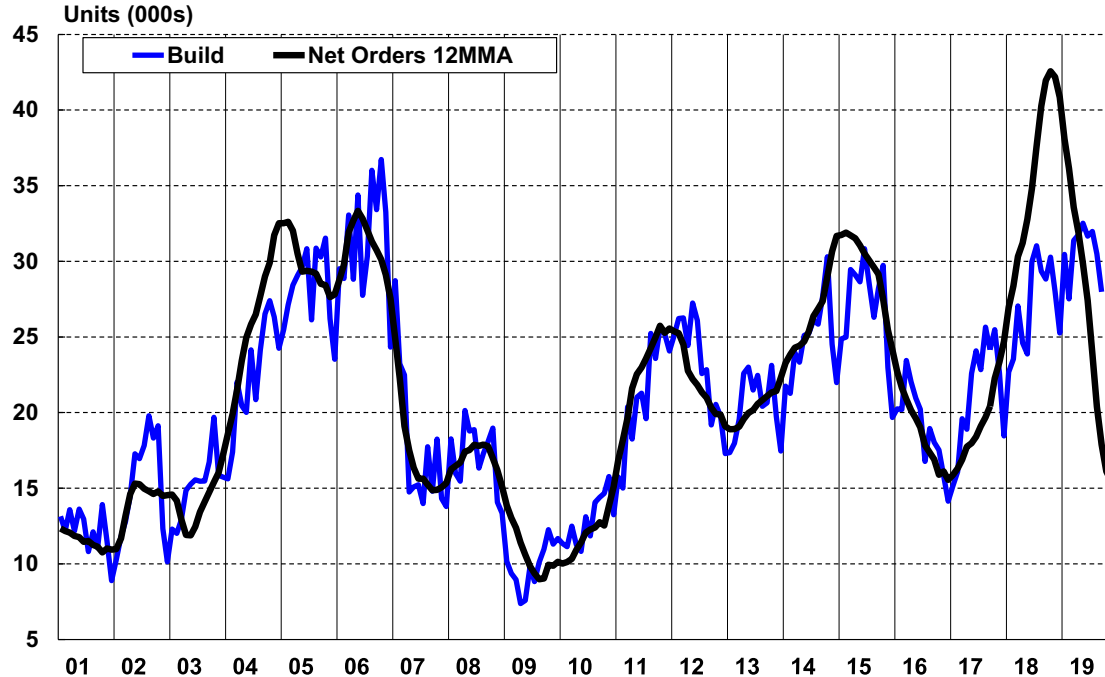
ACT Research Co., LLC: Copyright 2019

Replacement: ~11.5k u/m; New demand: ~600 u/m per GDP %

Where Orders Go, Build Follows

Total Class 8 N.A.: Net Orders 12 Mo. Avg. & Build

January 2001 - October 2019



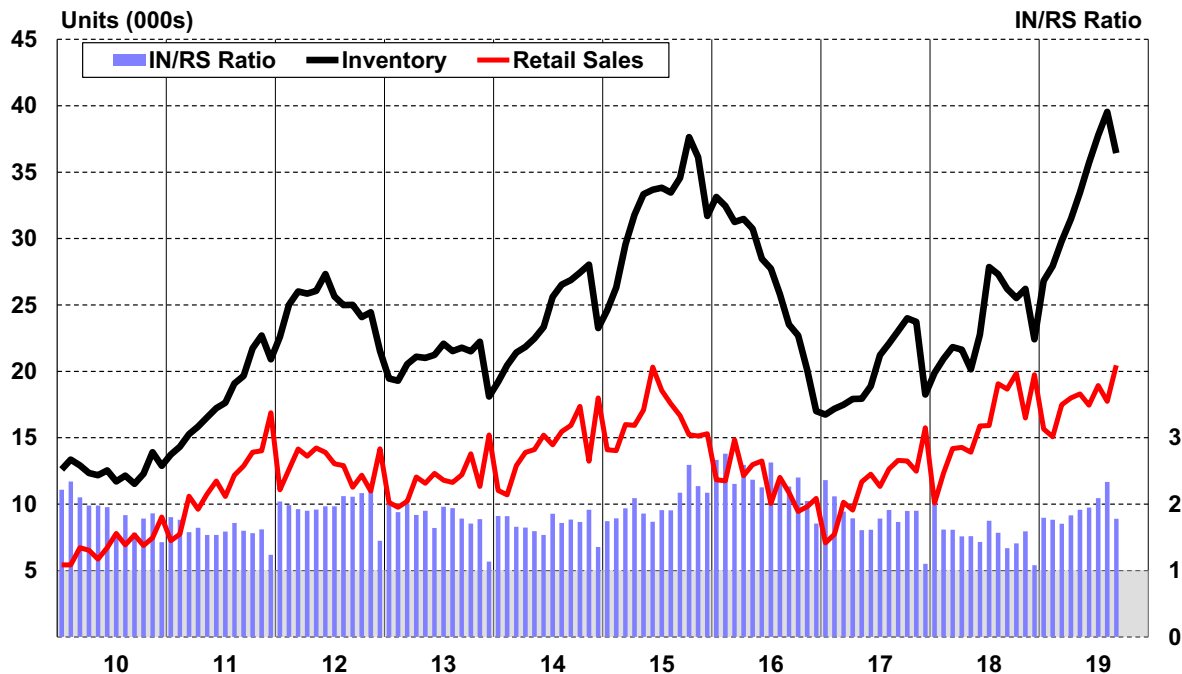
Orders estimated to December

Source: ACT Research Co., LLC: Copyright 2019

Deals On the Horizon?

U.S. Class 8 Tractors: Inventory & Retail Sales Ratio

January 2010 - September 2019



Source: ACT Research Co., LLC: Copyright 2019



Noneconomic For-Hire Rate Headwinds

- Private fleets expand sharply to reduce for-hire exposure
 - A key factor in sharpness of rate downturn
- Regulatory relaxation eases capacity constraints
 - Personal conveyance (2018 06)
 - Split berth (coming)
- Easing of driver shortage lessens capacity constraint
- ELD productivity hit that whacked capacity at the start to 2018 transitory
 - Largely dissipated by late 2018



Driver Shortage: On the back burner for now

Driver shortage is inherent to the business

A sharp shortage at economic inflections represent temporary imbalances between driver supply and freight demand

The economy can't grow if freight doesn't move

Not having drivers is not an option: Someone *will* deliver the freight

It will become even harder to attract drivers

Happily, periods of shortage have historically been accretive to profits margins



Since the Dawn of Trucking

The Traffic World (now part of *Journal of Commerce*)

Dec. 12, 1914

The Truck Driver Problem

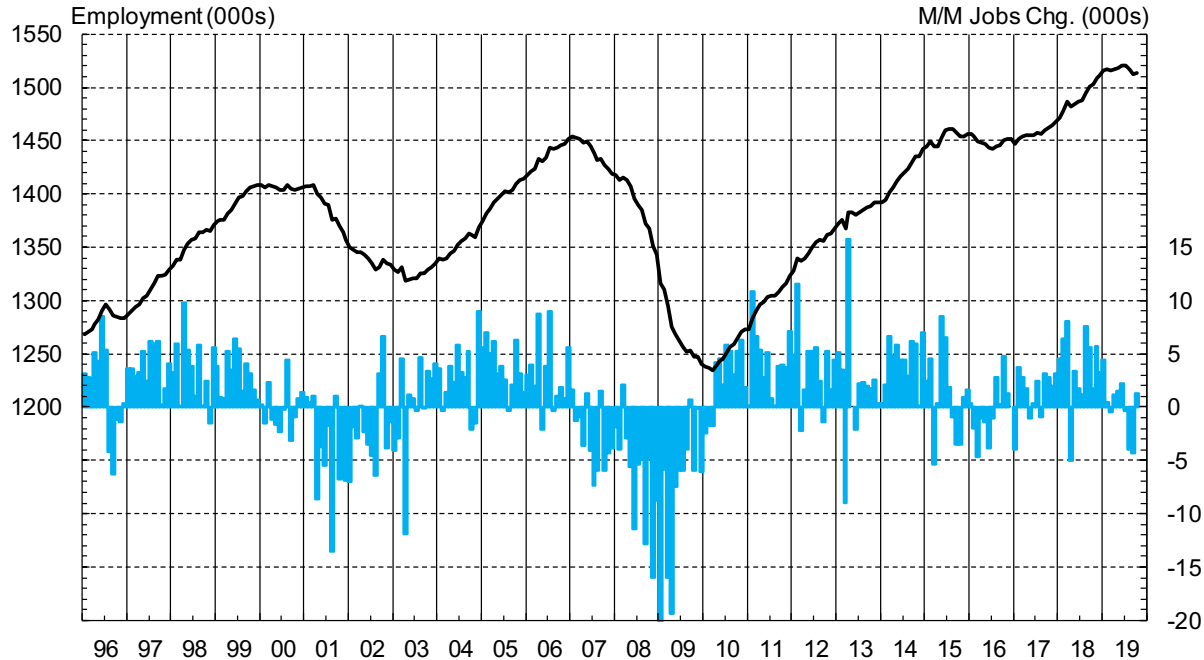
“Practically every truck manufacturer and nearly all employers **complain of the great difficulty of securing drivers who are competent** and who will work handling freight aside from those who drive horses. They are agreed that the profit or loss from truck transportation is largely dependent upon the drivers, **and yet a majority of truck owners will hire the men who will work cheapest,** entrusting valuable property in their keeping...”



Hiring Slows Sharply in 2019

For-Hire Truck Transportation Employment

January 1996 - October 2019 (SA)



CY2018: +44k
YTD'19: + 2k

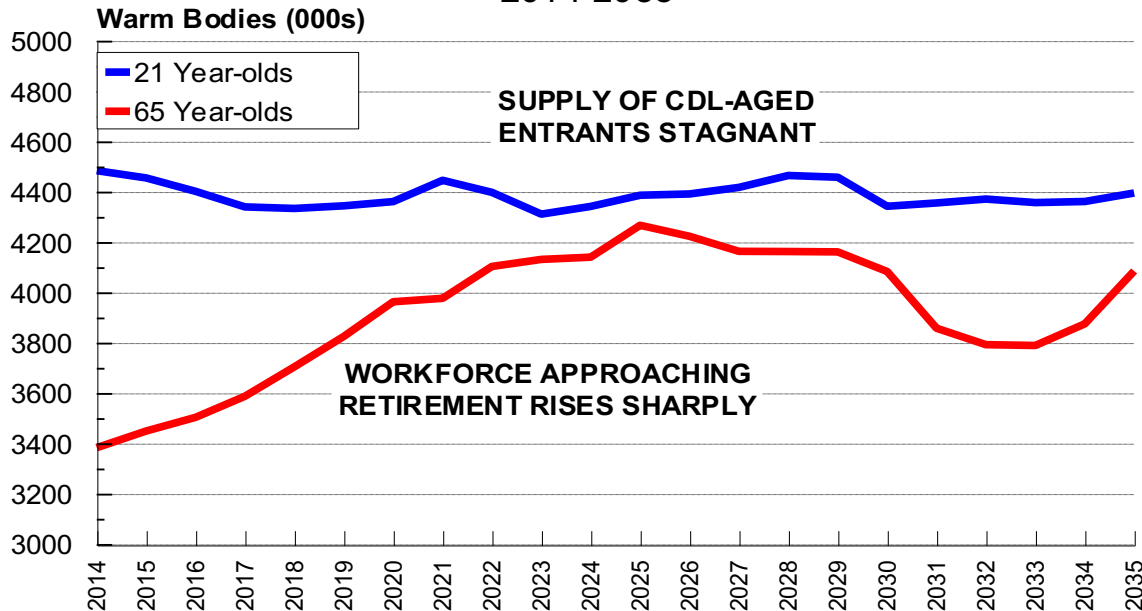
Source: BLS, ACT Research Co., LLC: Copyright 2019



Unfavorable Demographics

U.S. Demographics Potential Hirees & Impending Retirees

2014-2035



US workforce projected to grow at less than 0.5% per year in coming decade

Source: U.S. Census Bureau, ACT Research Co., LLC: Copyright 2019

Pulling the Threads Together

- Economy:
 - **Consumers are healthy**
 - **Key freight-generating sectors remain weak**
 - Long list of known-unknowns
 - Flat/inverted yield curve, China trade war, Brexit, Euro auto tariffs?, Iran Korea, DJT
- Freight & Capacity
 - Volume & profitability indicators down
 - Driver situation has eased
 - Supply is way UP
- Exogenous
 - **Profit trough is at a high level**
 - **New specs/technologies and better FE provide strong TCO**
 - **Newer v Older used price bifurcation**



Key Model Outputs

	2017	2018	2019f	2020f	2021f	2022f
US GDP (%)	2.4	2.9	2.3	1.7	1.7	1.9
Industrial Production	1.4	2.9	0.0	0.3	2.0	2.3
ACT Freight (% chg.)	3.4	3.7	2.7	2.0	2.3	2.4
Productivity (% chg.)	0.5	0.3	-2.6	-1.5	-1.1	-0.9
Net Freight (% chg.)	3.9	4.0	0.1	0.5	1.2	1.5
Public TL Margins %	4.5	7.1	6.7	5.4	6.0	
US C8 Tractor RS	137k	190	210	140	149	160
USC8 U11 (% chg.)	-2.8	6.5	7.6	2.0	1.8	0.9



Where is the forecast wrong?

Downside Surprise: Rates weaker longer

- Fleets continue buying trucks above economically proscribed rates
 - Highly desirable new equipment features (technologies, FE)
 - Secondary market technology pull-through
 - Tax cuts keep carrier profit trough at high ebb
- Easing of regulations favors shippers (personal conveyance, split berth)

Upside surprise: Rates accelerate sooner

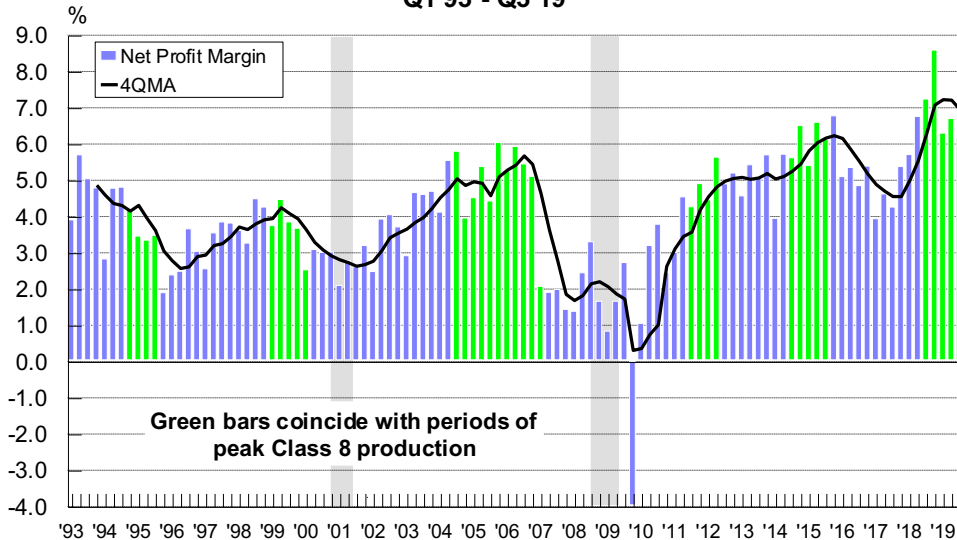
- China trade war resolution accelerates global economy, spurring strong rebound in commodity prices and machinery demand



Profitability Support

TL Carrier Database: Core Carriers Net Profit Margin

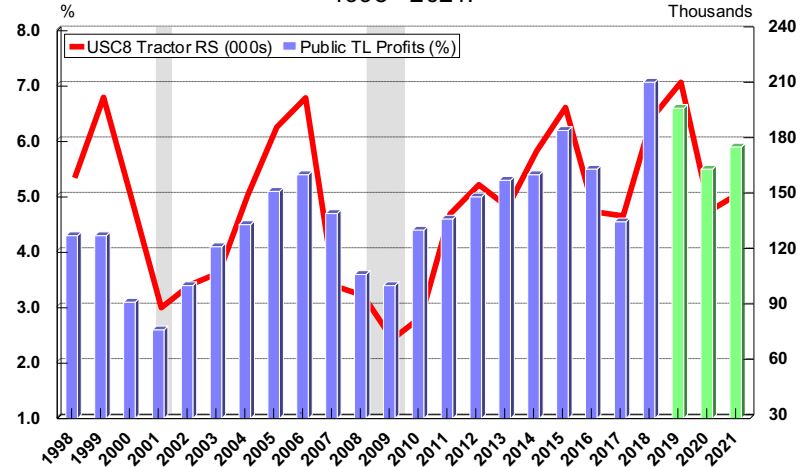
Q1'93 - Q3'19



ACT Research Co., LLC: Copyright 2019

TL Carrier Database: Core Carriers Net Profit Margins & U.S. C8 Tractor RSales

1998 - 2021F



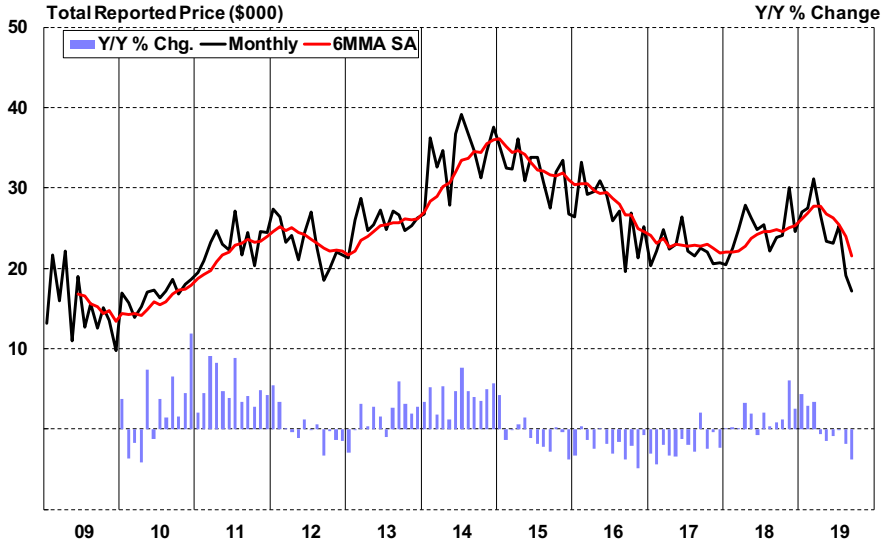
ACT Research Co., LLC: Copyright 2019

Secondary Market Bifurcation

Class 8: U.S. 7 Year Old Used Truck Average Sale Price

7 year old, 700-800,000 miles

January 2009 - September 2019

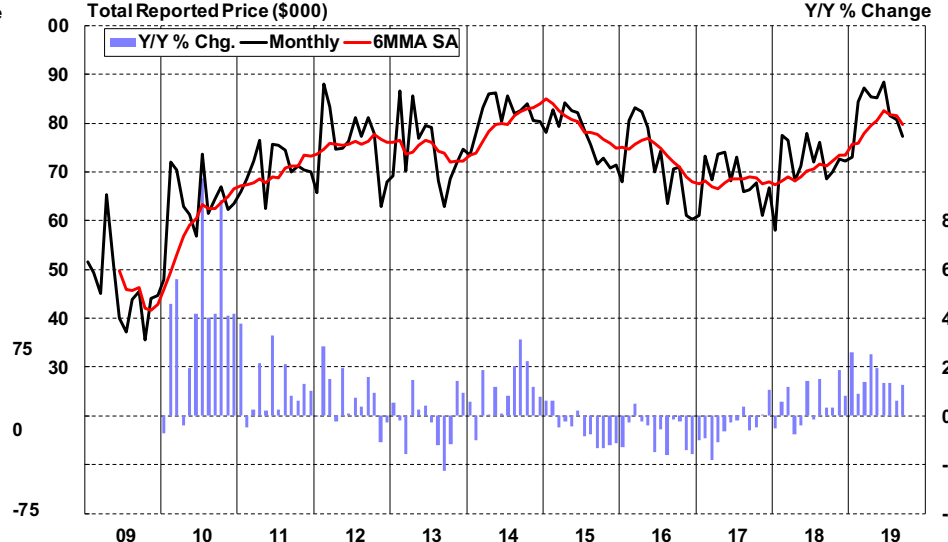


Source: ACT Research Co., LLC: Copyright 2019

Class 8: U.S. 3 Year Old Used Truck Average Sale Price

3 year old, 300-400,000 miles

January 2009 - September 2019



Source: ACT Research Co., LLC: Copyright 2019

Desirable technologies and MPG supporting latest-model valuations

The evidence overwhelmingly suggests 2020 is going to be a tough year.

Freight rate recovery is dependent on the speed at which equipment supply and freight demand are brought back into line

THANK YOU



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