"Consumption, Manufacturing & the Supply Chain"

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DFW Association of Business Economics (DABE)
WebEx Meeting
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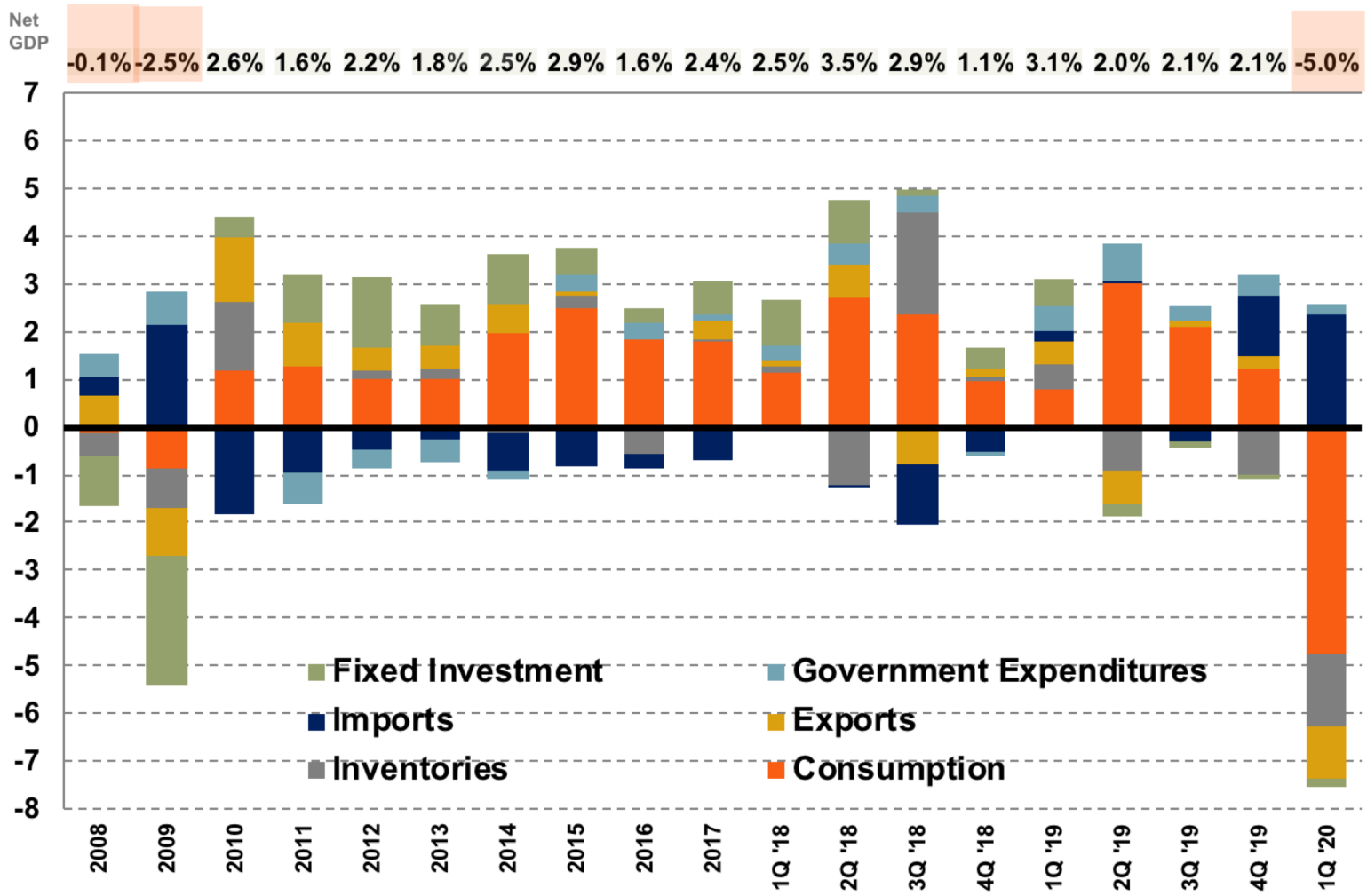# U.S. ECONOMIC GROWTH: "THE GOOD, THE BAD & THE UGLY"

"THE GOOD": The consumer sector; "THE BAD": The manufacturing sector; "THE UGLY": The Supply Chain

U.S. ECONOMIC GROWTH

Q1 real GDP fell 5% q/q, reflecting the response to COVID-19 outbreak, as governments issued "stay-at-home" orders in March

Real GDP Growth and its Contributions

Net GDP: -0.1% -2.5% 2.6% 1.6% 2.2% 1.8% 2.5% 2.9% 1.6% 2.4% 2.5% 3.5% 2.9% 1.1% 3.1% 2.0% 2.1% 2.1% -5.0%

Legend: Fixed Investment, Government Expenditures, Imports, Exports, Inventories, Consumption

Source: U.S. Dept. of Commerce, Bureau of Economic Analysis, June 26, 2020
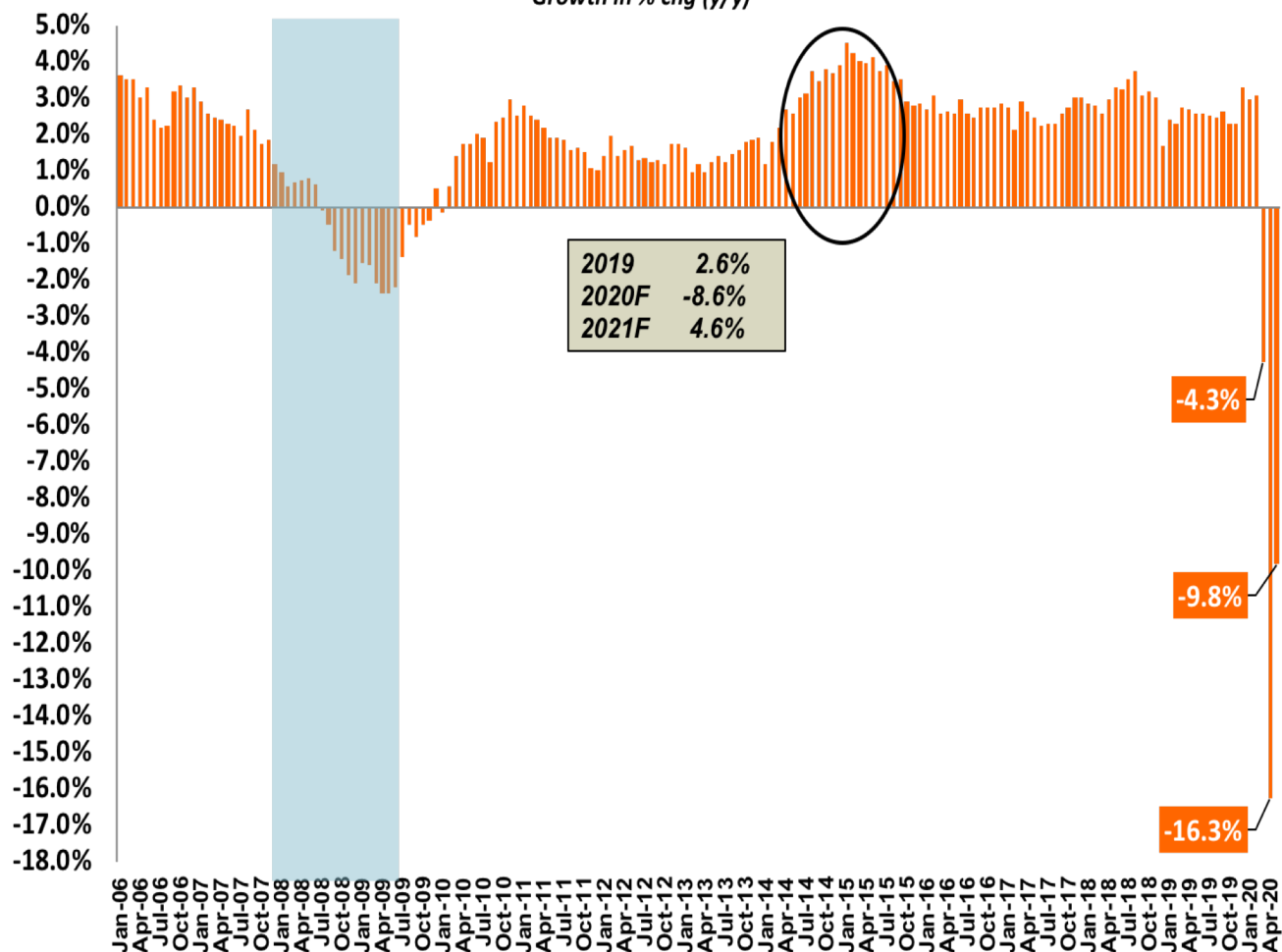
2

THE CONSUMER SECTOR

Consumer spending fell 9.8% y/y in May '20, reflecting outsized impact of pandemic lockdowns on health, airlines, restaurants, etc.
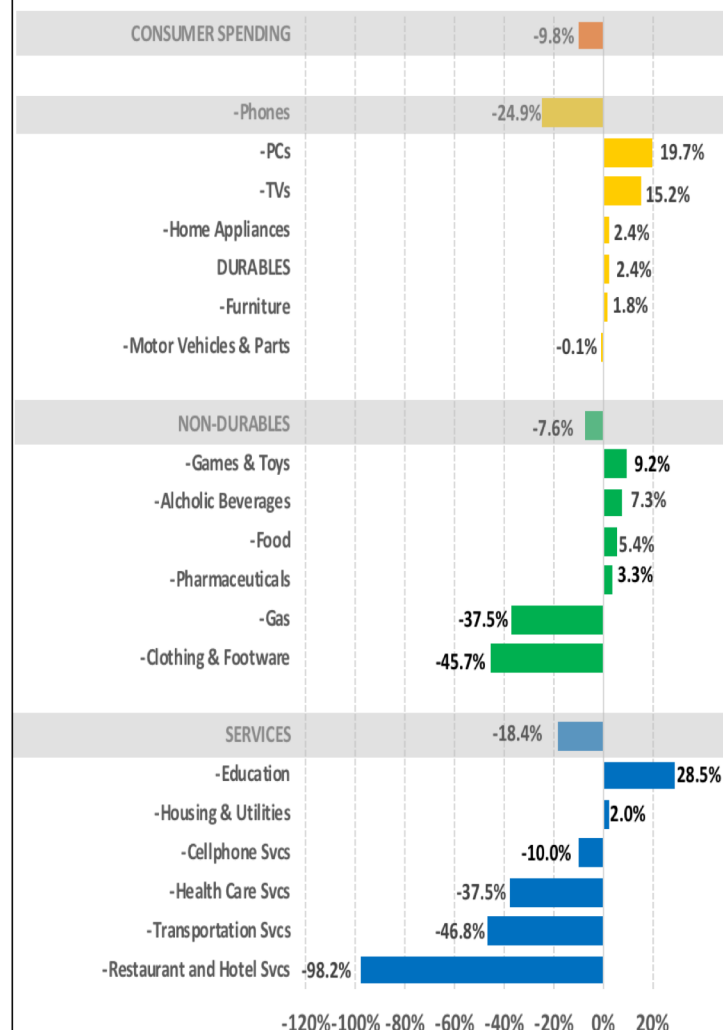
U.S. Consumer Spending
May 2020
Growth in % chg (y/y)

2019	2.6%
2020F	-8.6%
2021F	4.6%

-4.3%

-9.8%

-16.3%

SELECTED CONSUMER ITEMS
May 2020
(% Chg. Y/Y)

Item	% Chg
CONSUMER SPENDING	-9.8%
-Phones	-24.9%
-PCs	19.7%
-TVs	15.2%
-Home Appliances	2.4%
DURABLES	2.4%
-Furniture	1.8%
-Motor Vehicles & Parts	-0.1%
NON-DURABLES	-7.6%
-Games & Toys	9.2%
-Alcholic Beverages	7.3%
-Food	5.4%
-Pharmaceuticals	3.3%
-Gas	-37.5%
-Clothing & Footware	-45.7%
SERVICES	-18.4%
-Education	28.5%
-Housing & Utilities	2.0%
-Cellphone Svcs	-10.0%
-Health Care Svcs	-37.5%
-Transportation Svcs	-46.8%
-Restaurant and Hotel Svcs	-98.2%

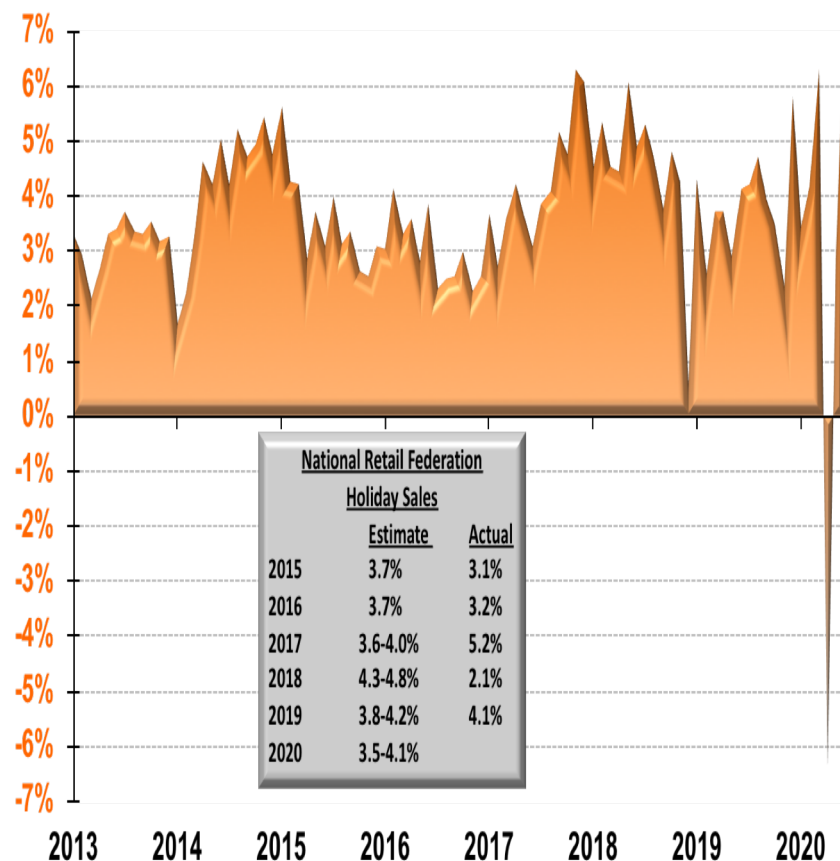*Source: Bureau of Economic Analysis, June 26, 2020*

3

THE CONSUMER SECTOR

June '20 core retail sales rose 7.4% y/y, reflecting strong e-commerce sales, supplied from stockpiles. E-commerce sales rose 24% y/y

Retail Sales (Excludes Food, Gas, Automotive & Parts Dealers)

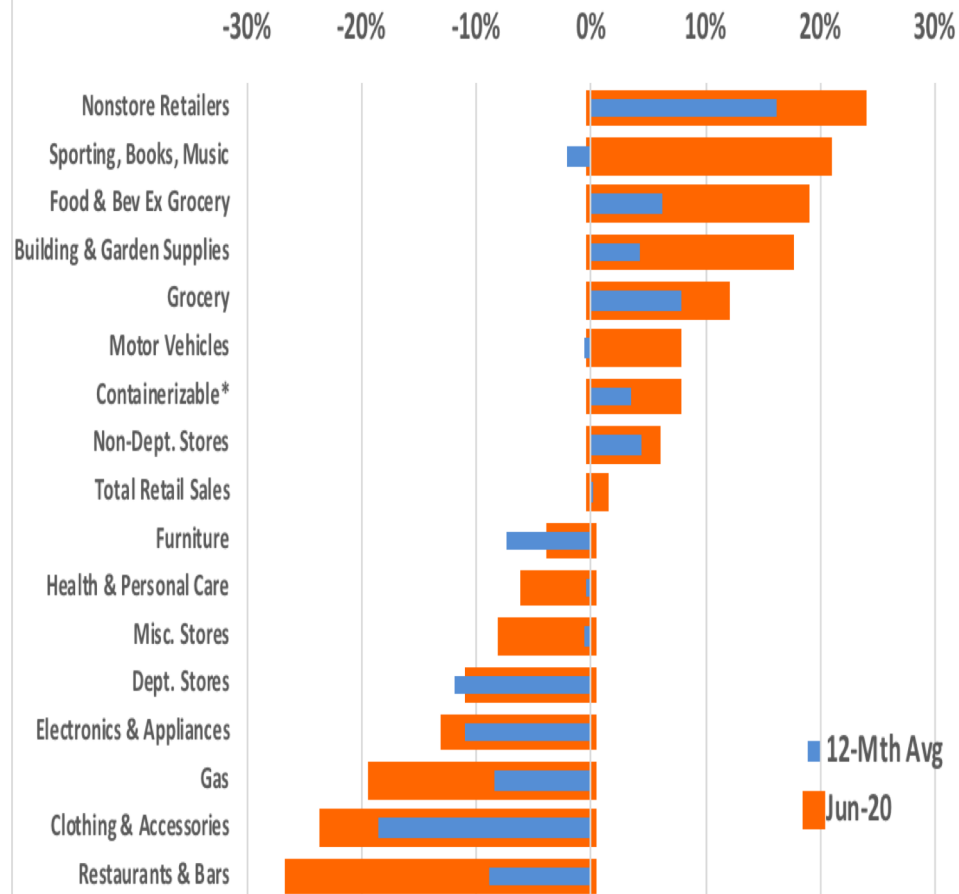Thru JUNE 2020

% Change (y/y)

JUN. 2020

+7.4%

JUN. 2018

+4.1%

National Retail Federation		
Holiday Sales		
	Estimate	**Actual**
2015	3.7%	3.1%
2016	3.7%	3.2%
2017	3.6-4.0%	5.2%
2018	4.3-4.8%	2.1%
2019	3.8-4.2%	4.1%
2020	3.5-4.1%	

Source: U.S. Census Department--Seasonally Adjusted , July 16, 2020, NRF June 14, 2020

RETAIL SALES

%chg y/y

JUNE 2020

Nonstore Retailers
Sporting, Books, Music
Food & Bev Ex Grocery
Building & Garden Supplies
Grocery
Motor Vehicles
Containerizable*
Non-Dept. Stores
Total Retail Sales
Furniture
Health & Personal Care
Misc. Stores
Dept. Stores
Electronics & Appliances
Gas
Clothing & Accessories
Restaurants & Bars

■ 12-Mth Avg
■ Jun-20

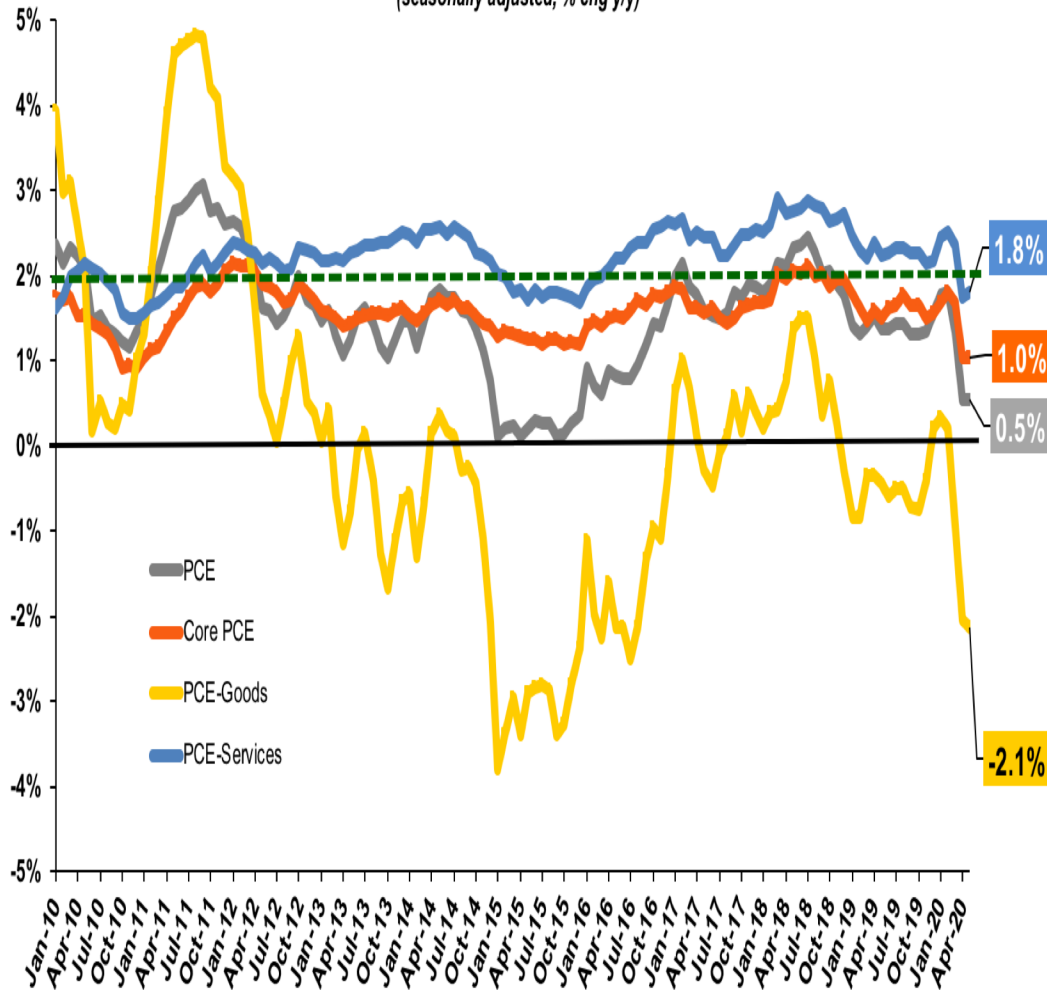*Source: U.S. Census Department, July 16, 2020*

4

THE CONSUMER SECTOR

Consumer inflation was contained at 1.0% y/y, reflecting excess capacity, deflation in "globalization goods" partially offset by services prices

Personal Consumer Expenditure (PCE) Inflation
May 2020
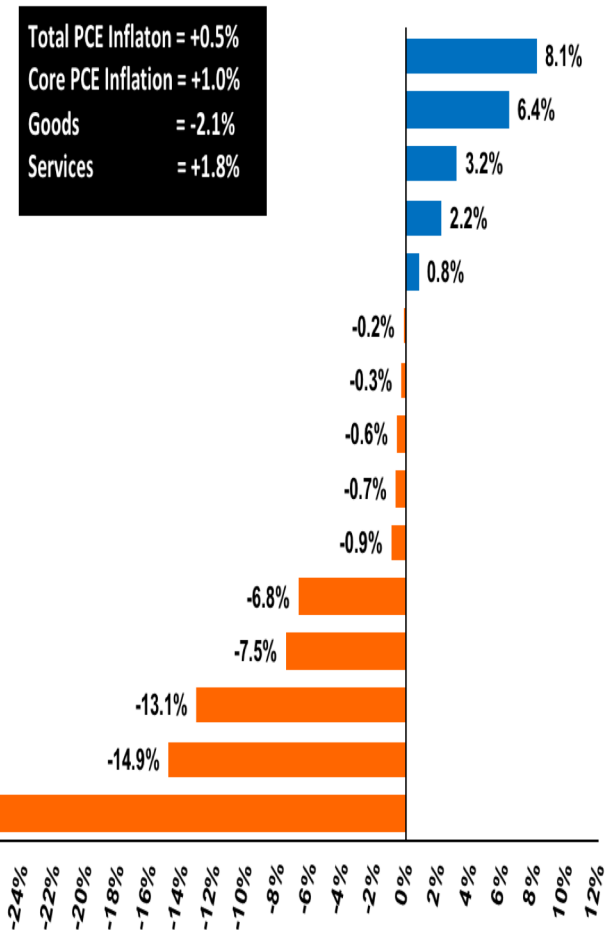*(seasonally adjusted, % chg y/y)*

Legend:
- PCE
- Core PCE
- PCE-Goods
- PCE-Services

Values shown: 1.8%, 1.0%, 0.5%, -2.1%

Source: Bureau of Economic Analysis, June 26, 2020

CONSUMER PRICE INFLATION (PCE)
MAY 2020
Selected Consumer Goods and Services
(% Chg Y/Y)

Total PCE Inflaton	= +0.5%
Core PCE Inflation	= +1.0%
Goods	= -2.1%
Services	= +1.8%

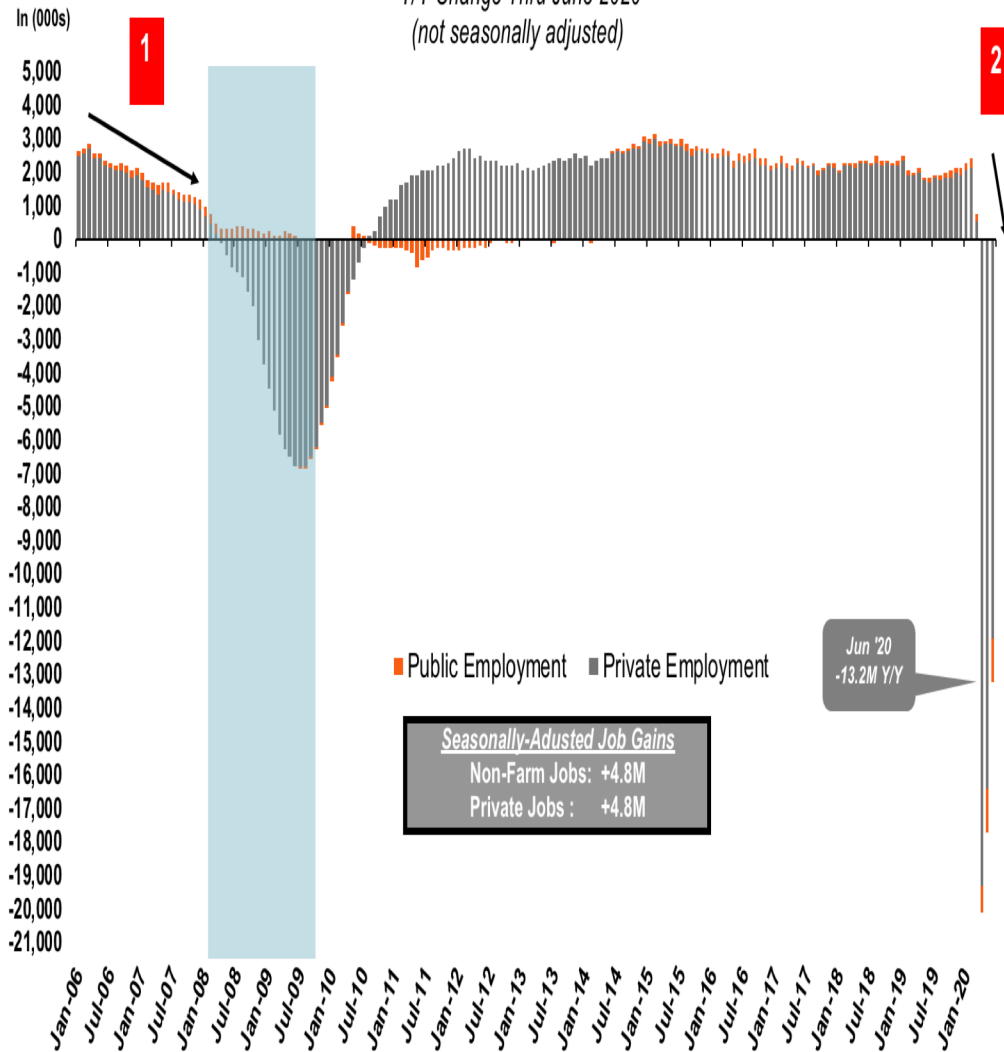| Category	% Chg Y/Y
Cellphone Services	8.1%
Child Care	6.4%
Housing	3.2%
Health Care Svcs	2.2%
Prescription Drugs	0.8%
New Autos	-0.2%
Food & Beverages	-0.3%
PCs	-0.6%
Furniture	-0.7%
College Education	-0.9%
Toys & Games	-6.8%
Clothing	-7.5%
Phones	-13.1%
TV	-14.9%
Gas	-34.7%

Source: Bureau of Economic Analysis, June 26, 2020

THE LABOR MARKET

The labor market added 4.8M more jobs in Jun. '20, after 22M job losses due to a pandemic lockdown. The recovery rate by June was 34%
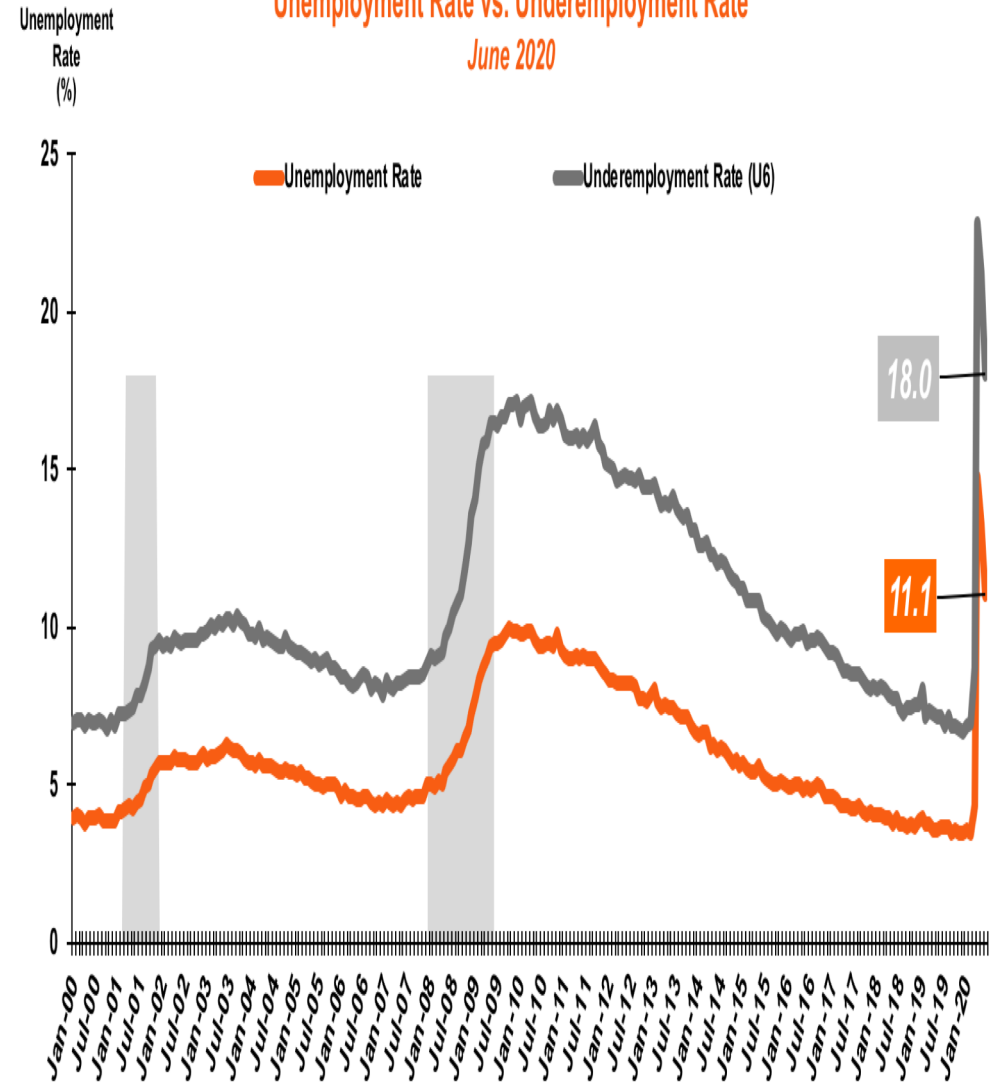

Private and Public Sector Payroll Employment
Y/Y Change Thru June 2020
(not seasonally adjusted)

In (000s)
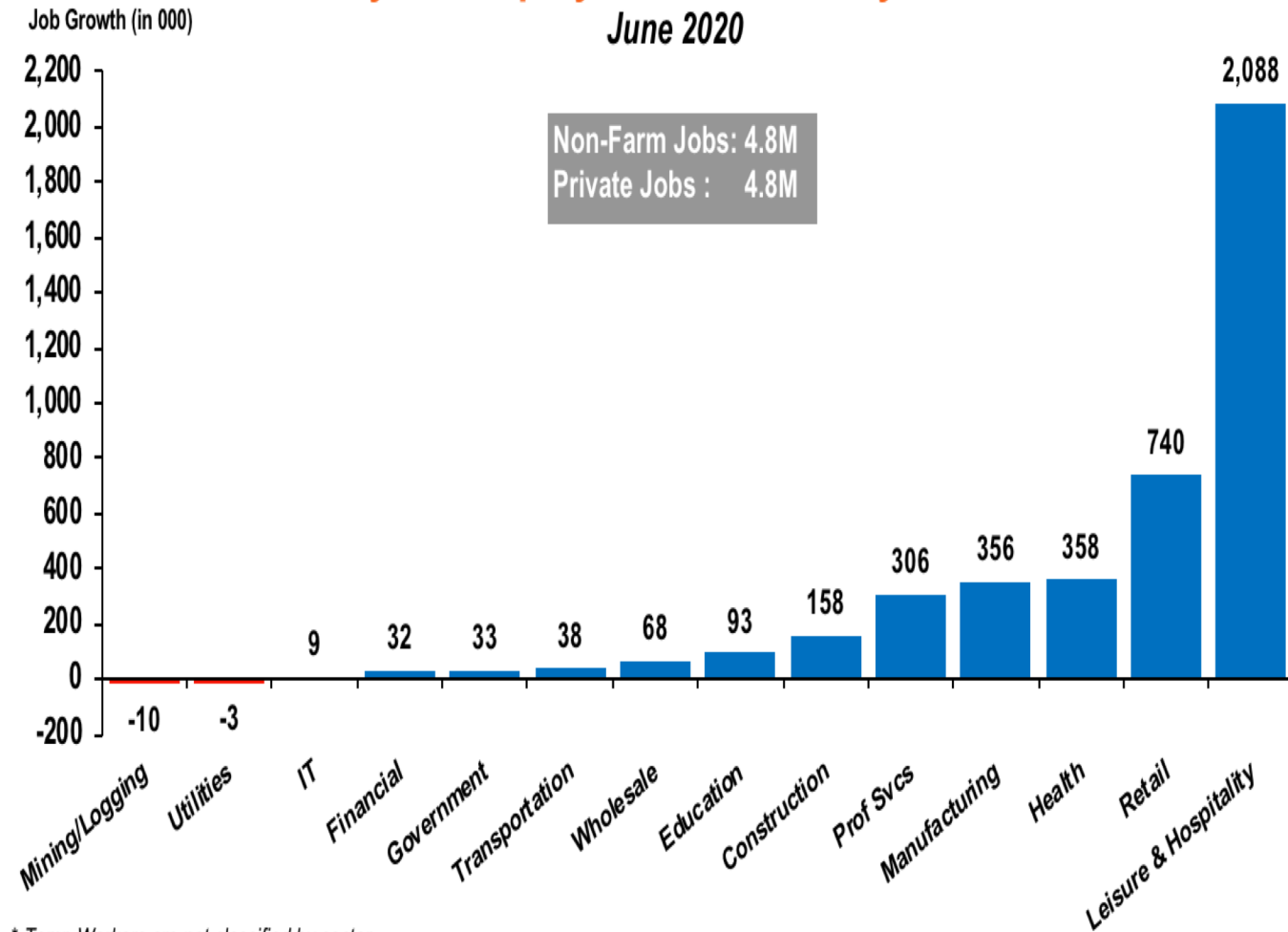
Public Employment   Private Employment

Jun '20
-13.2M Y/Y

Seasonally-Adusted Job Gains
Non-Farm Jobs: +4.8M
Private Jobs :   +4.8M

Source: U.S. Dept. of Labor, Bureau of Labor Statistics, July 2, 2020

Unemployment Rate vs. Underemployment Rate
June 2020

Unemployment Rate (%)

Unemployment Rate   Underemployment Rate (U6)

18.0

11.1

Source: U.S. Dept. of Labor, Bureau of Labor Statistics, July 2, 2020

6

The sectors in the labor market that lost the most jobs due to Covid-19 include leisure and hospitality, restaurants, hotels, retail, etc.

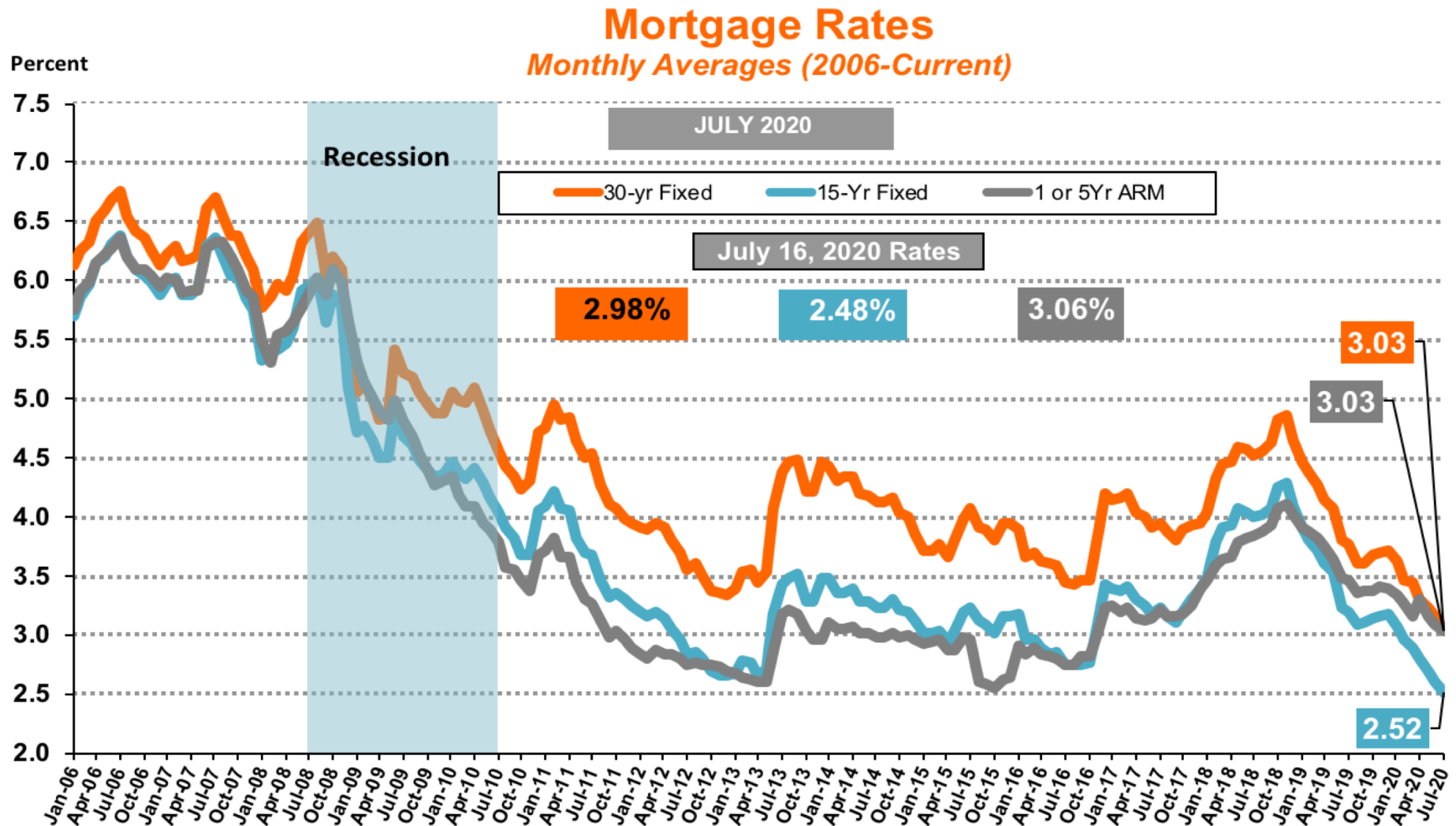## Payroll Employment Growth- By Sector
June 2020

Job Growth (in 000)

Non-Farm Jobs: 4.8M
Private Jobs : 4.8M

Chart values (left to right):
- Mining/Logging: -10
- Utilities: -3
- IT: 9
- Financial: 32
- Government: 33
- Transportation: 38
- Wholesale: 68
- Education: 93
- Construction: 158
- Prof Svcs: 306
- Manufacturing: 356
- Health: 358
- Retail: 740
- Leisure & Hospitality: 2,088

* Temp Workers are not classified by sector

Source: U.S. Dept. of Labor, Bureau of Labor Statistics, July 2, 2020

Sector	Loss (Mar-Apr)	Gain (May-Jun)	Recovery%
Leisure & Hospitality	8,318	3,491	42%
Retail	2,384	1,111	47%
Prof Svcs	2,296	466	20%
Health	1,578	674	43%
Manufacturing	1,363	606	44%
Construction	1,083	611	56%
Education	511	123	24%
Wholesale	397	80	20%
IT	285	(30)	-11%
Financial	279	42	15%
State/Local Govt.	206	(492)	-239%
Transit & Passenger	191	(3)	-2%
Trucks	97	10	10%
Airlines	78	(54)	-69%
Mining/Logging	61	(29)	-48%
Barges	6	(1)	-10%
Railroads	6	(9)	-156%
Utilities	4	(5)	-126%
Pipelines	0	(0)	0%
Federal Govt.	(26)	(8)	31%

HOUSING SECTOR

Mortgage rates have fallen by almost 200 basis points since the Nov '18, due to trade tensions, lower interest rates and the pandemic
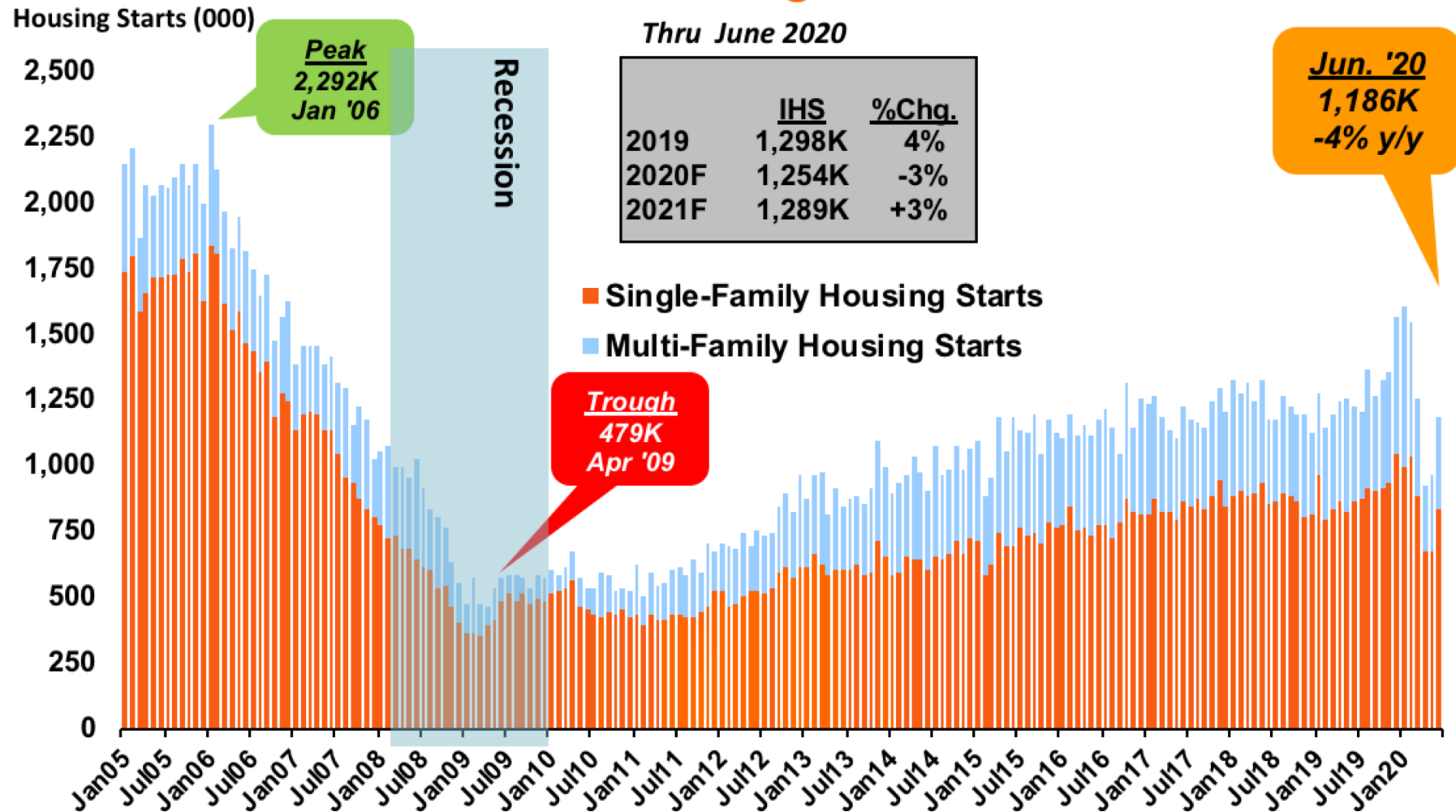
Mortgage Rates
Monthly Averages (2006-Current)

JULY 2020

Legend: 30-yr Fixed, 15-Yr Fixed, 1 or 5Yr ARM

July 16, 2020 Rates

2.98%   2.48%   3.06%

3.03
3.03
2.52

Source: Freddie Mac, Primary Mortgage Market Survey, July 16, 2020

HOUSING SECTOR

Home price gain was +4.7% y/y in Apr. '20. A year earlier, price growth was higher at about 3.7%. Price growth has slowed in many markets

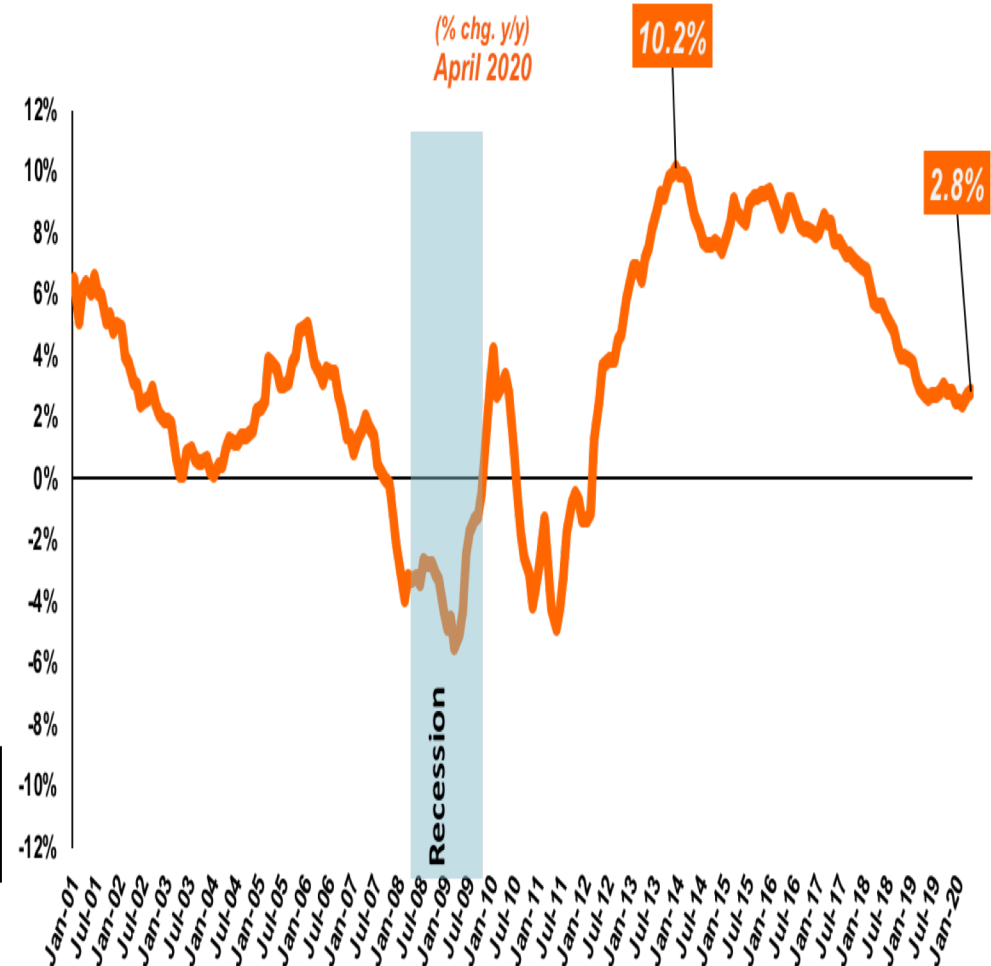## Case-Shiller Home Price Index
April 2020
(% chg y/y)

Metro	%
Phoenix, AZ	8.8%
Seattle, WA	7.3%
Minneapolis, MN	6.3%
Cleveland, OH	6.0%
San Diego, CA	5.8%
Tampa, FL	5.8%
Charlotte, NC	~ 5.6%
Las Vegas, NV	4.6%
Atlanta, GA	4.5%
Portland, OR	4.3%
Boston, MA	4.2%
Los Angeles, CA	4.1%
Denver, CO	3.9%
Miami, FL	3.9%
Washington, DC	3.8%
San Francisco, CA	2.9%
Dallas, TX	2.8%
New York, NY	2.5%
Detroit, MI	2.3%
Chicago, IL	1.4%

Top 10 U.S. Metro Composite 3.4%
Top 20 U.S. Metro Composite 4.0%
NATIONAL 4.7%
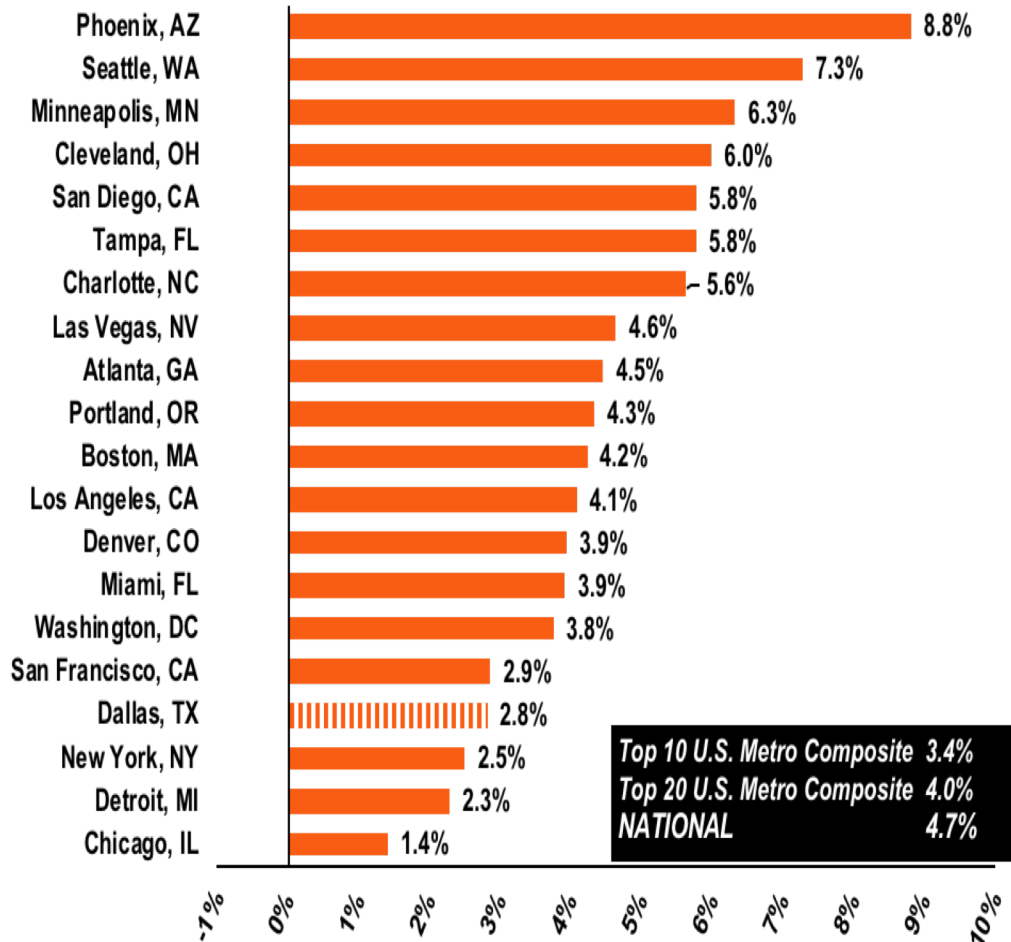
Source: S&P Corelogic Case Shiller Home Price Index, June 30, 2020

U.S. Average Home Price Growth (Case-Shiller)
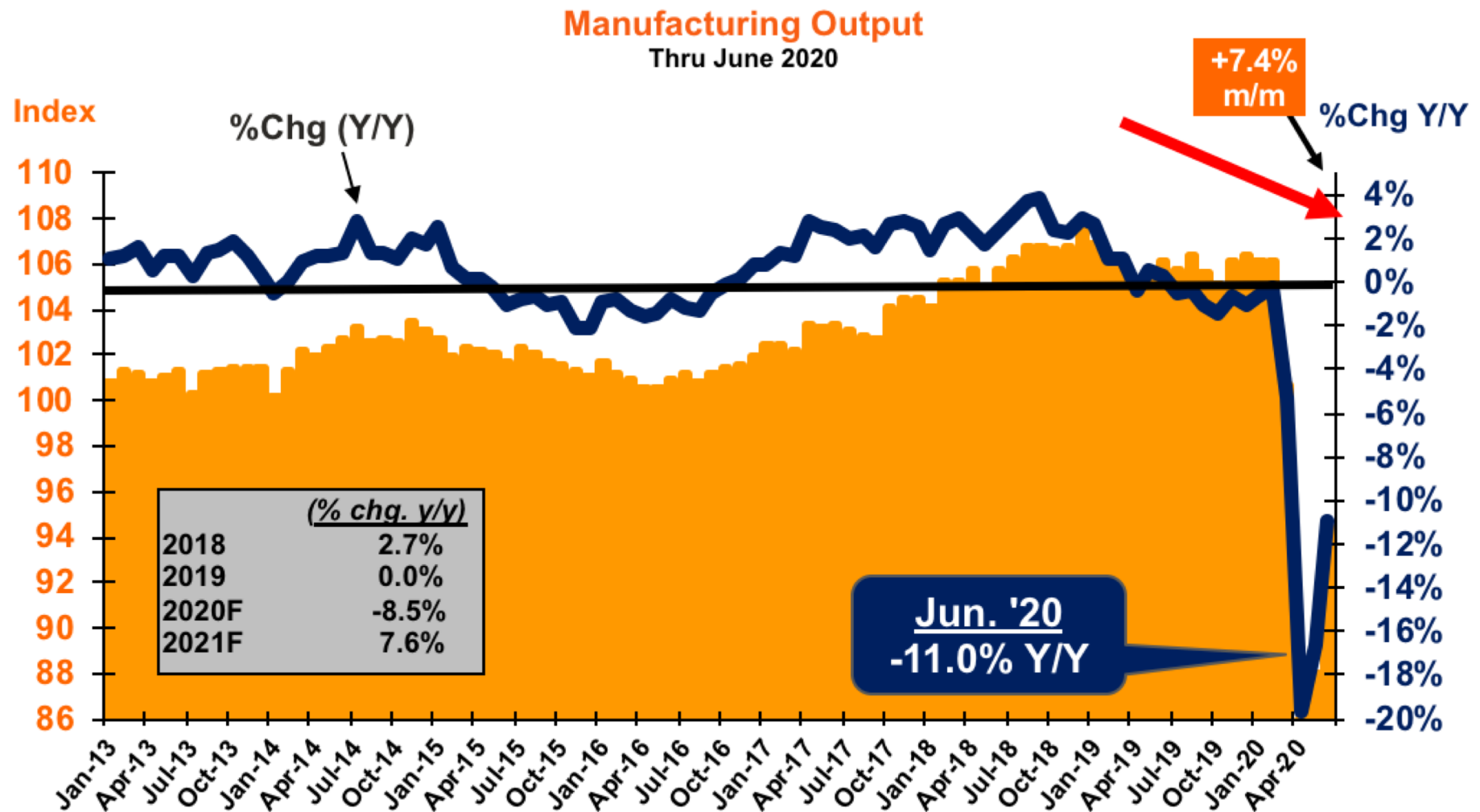### Dallas
(% chg. y/y)
April 2020

10.2%

2.8%

Recession

Source: S&P Corelogic Case Shiller Home Price Index, June 30, 2020

10

THE U.S. MANUFACTURING SECTOR

Recession started a year earlier for US factories due to tariffs. The pandemic added a steep 20% y/y decline in Apr '20.

Manufacturing Output
Thru June 2020

+7.4% m/m

%Chg (Y/Y)

%Chg Y/Y

Index

	(% chg. y/y)
2018	2.7%
2019	0.0%
2020F	-8.5%
2021F	7.6%

Jun. '20
-11.0% Y/Y

Source: Federal Reserve Board, July 15, 2020
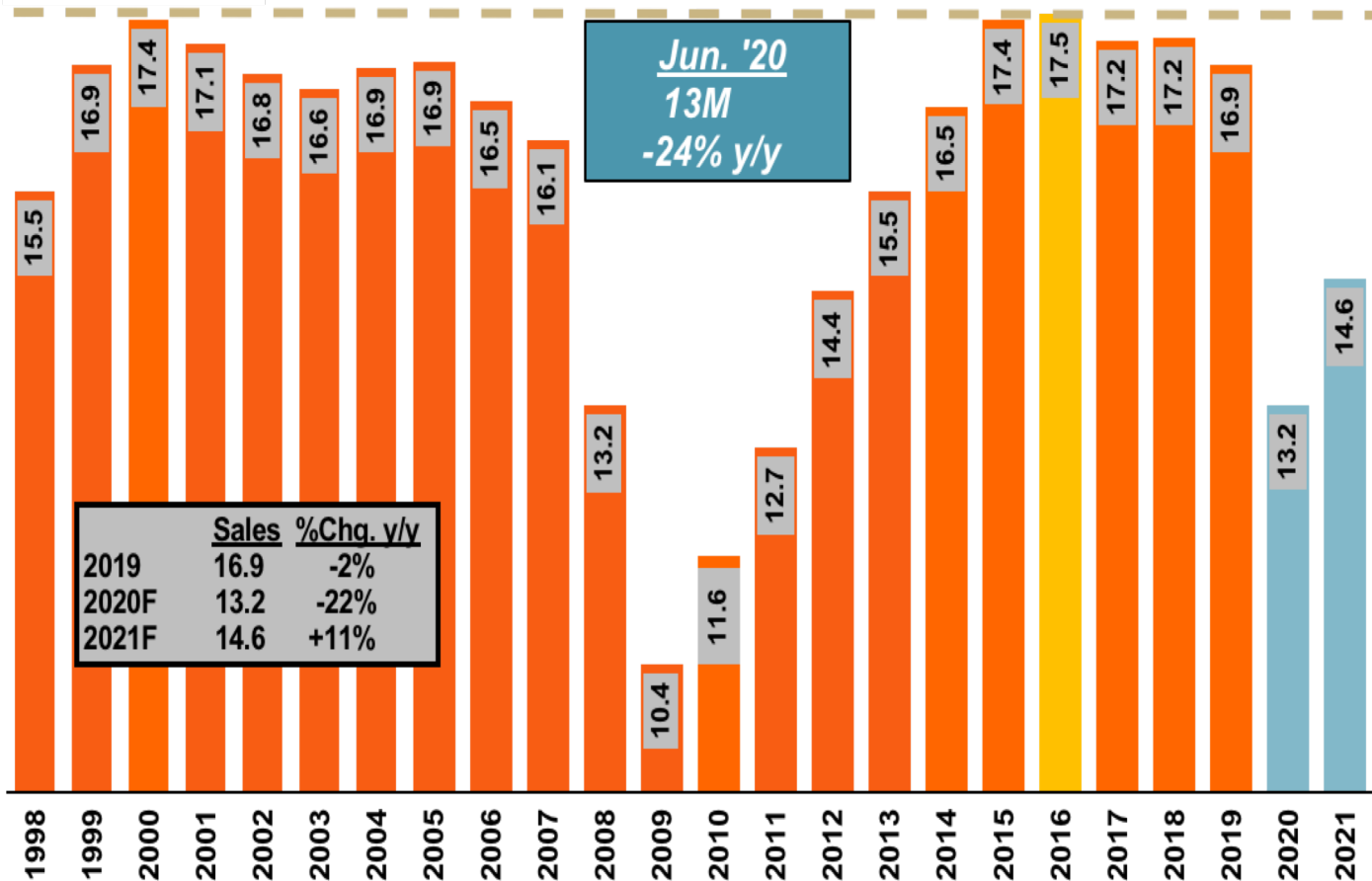
11

THE AUTO SECTOR

Like the housing market, the auto sector weakened with initial Fed tightening and trade policy. But, auto faces additional structural issues
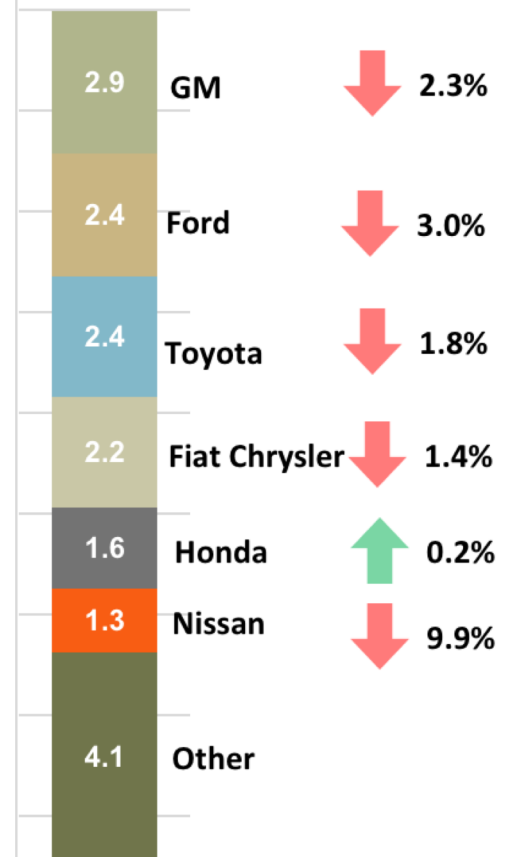
Annual Light Vehicle Sales
Actuals Thru June 2020
(in 000,000)

Peak Annual Sales

Jun. '20
13M
-24% y/y

	Sales	%Chg. y/y
2019	16.9	-2%
2020F	13.2	-22%
2021F	14.6	+11%

Bar values by year: 1998: 15.5, 1999: 16.9, 2000: 17.4, 2001: 17.1, 2002: 16.8, 2003: 16.6, 2004: 16.9, 2005: 16.9, 2006: 16.5, 2007: 16.1, 2008: 13.2, 2009: 10.4, 2010: 11.6, 2011: 12.7, 2012: 14.4, 2013: 15.5, 2014: 16.5, 2015: 17.4, 2016: 17.5, 2017: 17.2, 2018: 17.2, 2019: 16.9, 2020: 13.2, 2021: 14.6

Source: BEA, Jul. 2, 2020; IHS Markit, June 2020

2019 Sales By Company & %Chg Y/Y

Sales	Company	%Chg Y/Y
2.9	GM	↓ 2.3%
2.4	Ford	↓ 3.0%
2.4	Toyota	↓ 1.8%
2.2	Fiat Chrysler	↓ 1.4%
1.6	Honda	↑ 0.2%
1.3	Nissan	↓ 9.9%
4.1	Other	

Structural Headwinds
1. "Peak Car"
2. Ride Sharing
3. Rising Trade Barriers
4. Stricter Emissions Controls
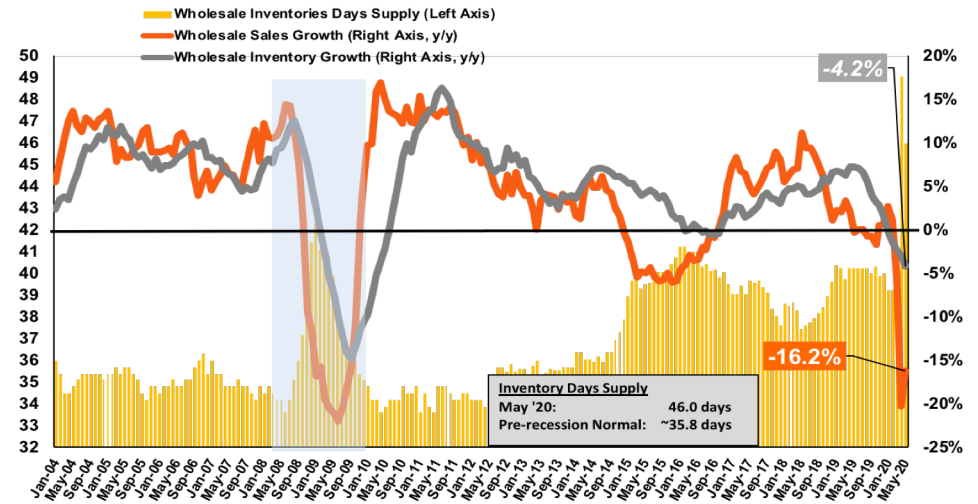
INVENTORIES

Due to pandemic lockdowns US businesses saw a record inventory overhang in Apr-May period in addition tariff front-loading of shipments

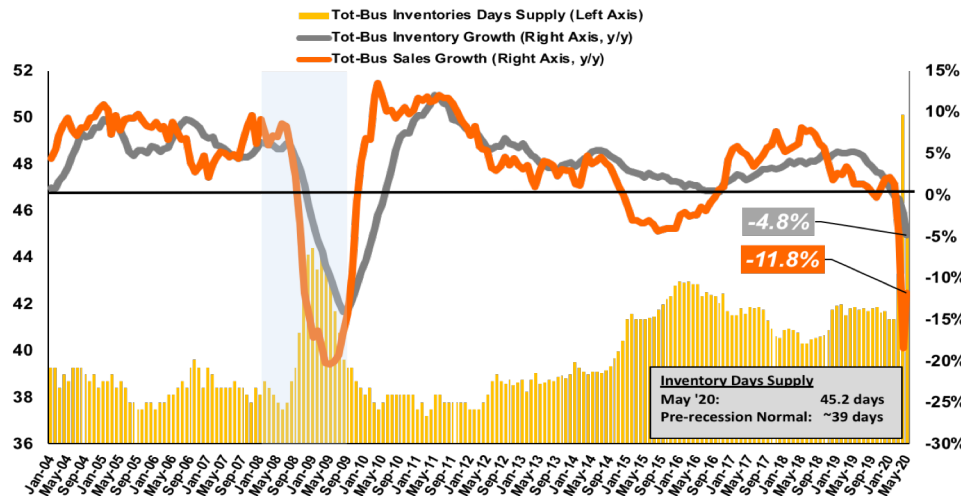### Manufacturing Inventories vs. Sales
May 2020

- Mfg Inventories Days Supply (Left Axis)
- Mfg. Sales Growth (Right Axis, y/y)
- Mfg Inventory Growth (Right Axis, y/y)

-0.7%
-17.0%

Inventory Days Supply
May '20: 49.4 days
Pre-recession Normal: ~37 days
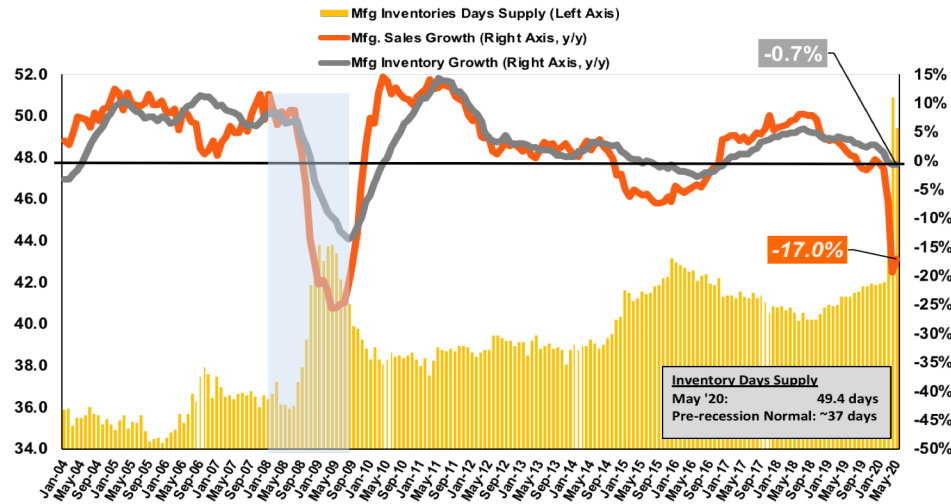
Source: U.S. Census Bureau, July 16, 2020

Wholesalers Inventories vs. Sales
May 2020

- Wholesale Inventories Days Supply (Left Axis)
- Wholesale Sales Growth (Right Axis, y/y)
- Wholesale Inventory Growth (Right Axis, y/y)

-4.2%
-16.2%

Inventory Days Supply
May '20: 46.0 days
Pre-recession Normal: ~35.8 days

Source: U.S. Census Bureau, July 16, 2020

Total Business Inventories vs. Sales
May 2020

- Tot-Bus Inventories Days Supply (Left Axis)
- Tot-Bus Inventory Growth (Right Axis, y/y)
- Tot-Bus Sales Growth (Right Axis, y/y)

-4.8%
-11.8%

Inventory Days Supply
May '20: 45.2 days
Pre-recession Normal: ~39 days

Source: U.S. Census Bureau, July 16, 2020

Retailers Inventories vs. Sales
May 2020

- Retail Inventories Days Supply (Left Axis)
- Retail. Sales Growth (Right Axis, y/y)
- Retail Inventory Growth (Right Axis, y/y)

-1.1%
-9.6%

Inventory Days Supply
May '20: 40.2 days
Post-recession Normal (06/09-12/14): ~41 days
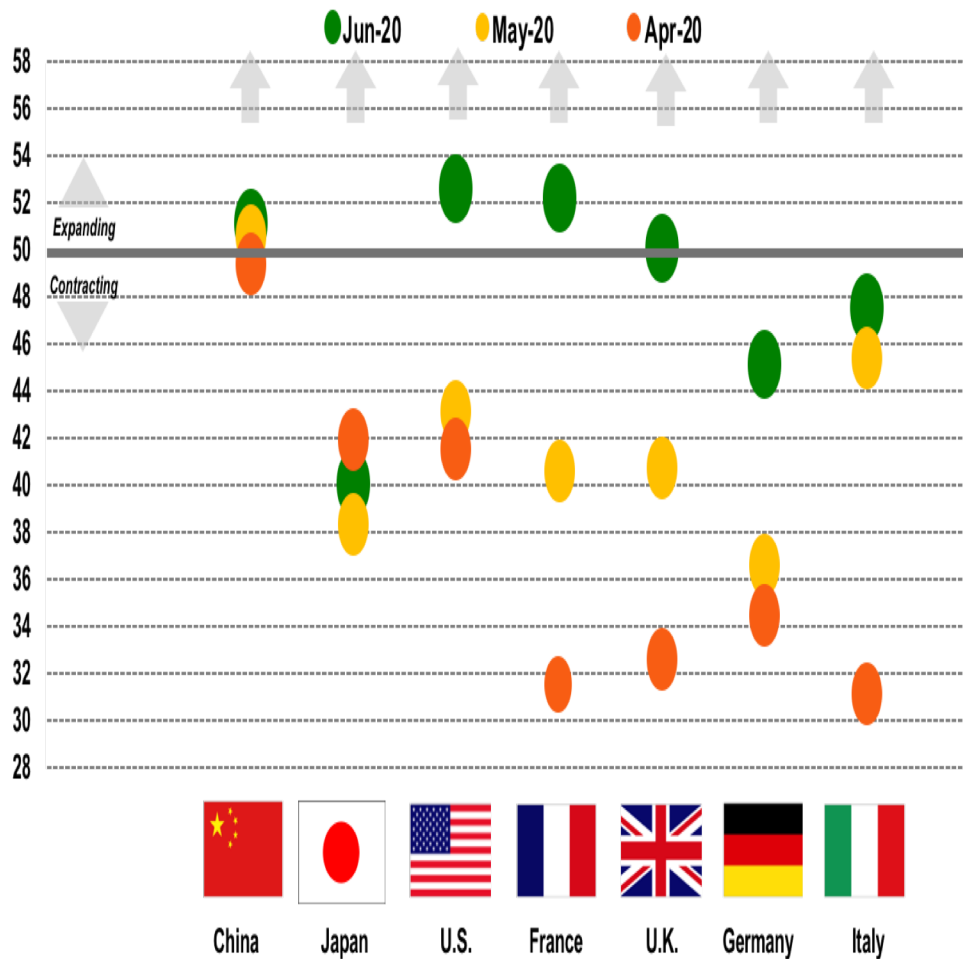Post-recession Normal (01/15-06/16): ~45 days
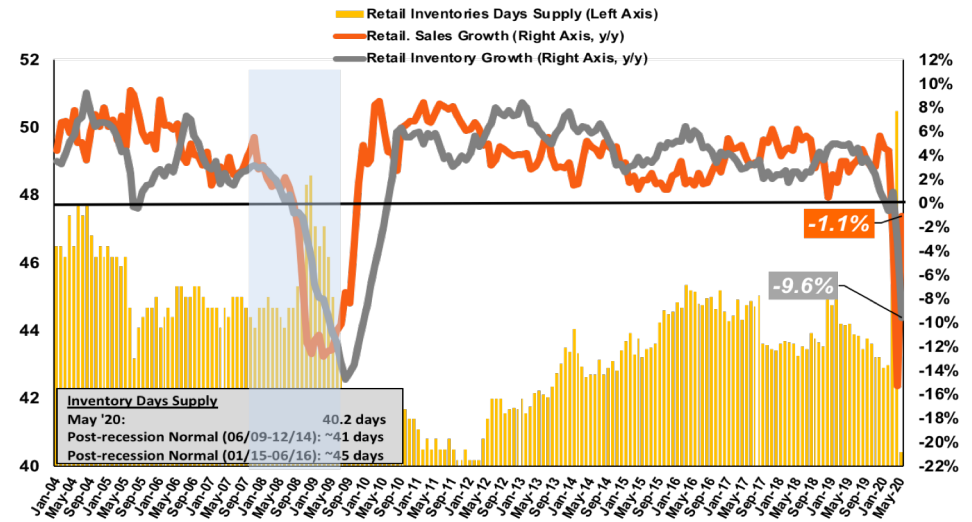
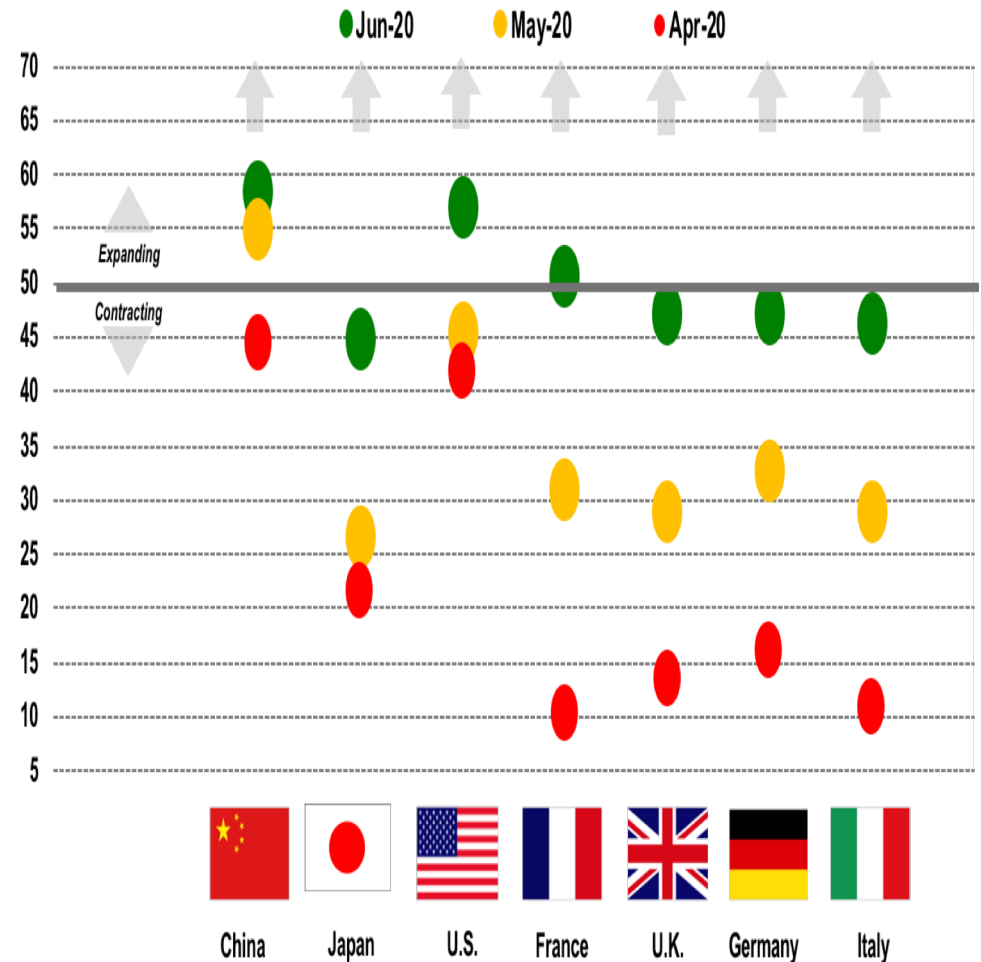*Source: U.S. Census Bureau, June 16, 2020*

THE GLOBAL ECONOMY

The global economy found the bottom of the recession in Apr '20. Since Apr '20 there has been sequential improvements in both sectors

Manufacturing Purchasing Managers' Index - By Country

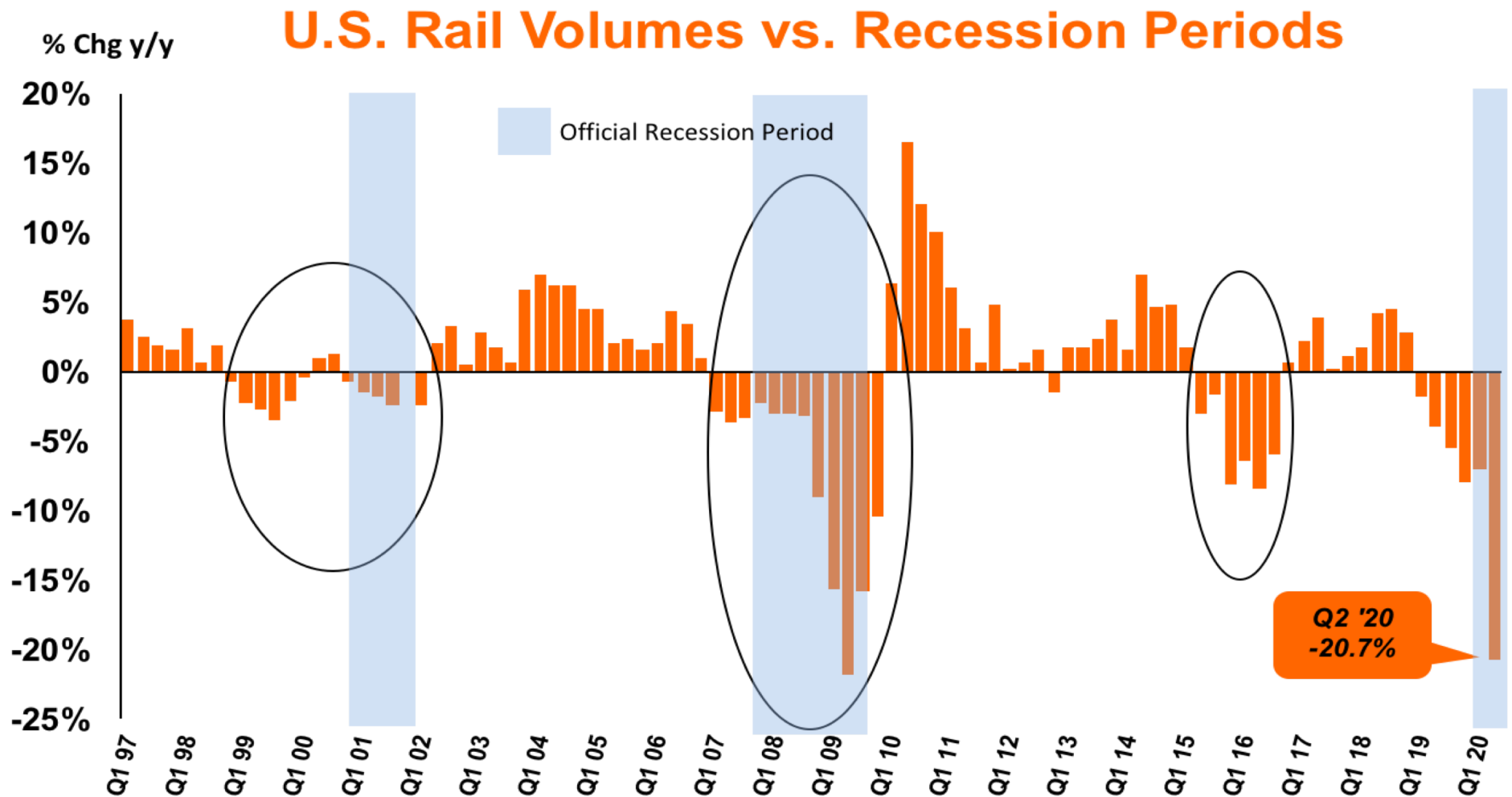Non-Manufacturing (or Service) Purchasing Managers' Index - By Country

China Japan U.S. France U.K. Germany Italy

Rail sector volume growth is a leading indicator of recessions. But, Q2 growth of -20.7% y/y largely reflects the pandemic lockdowns

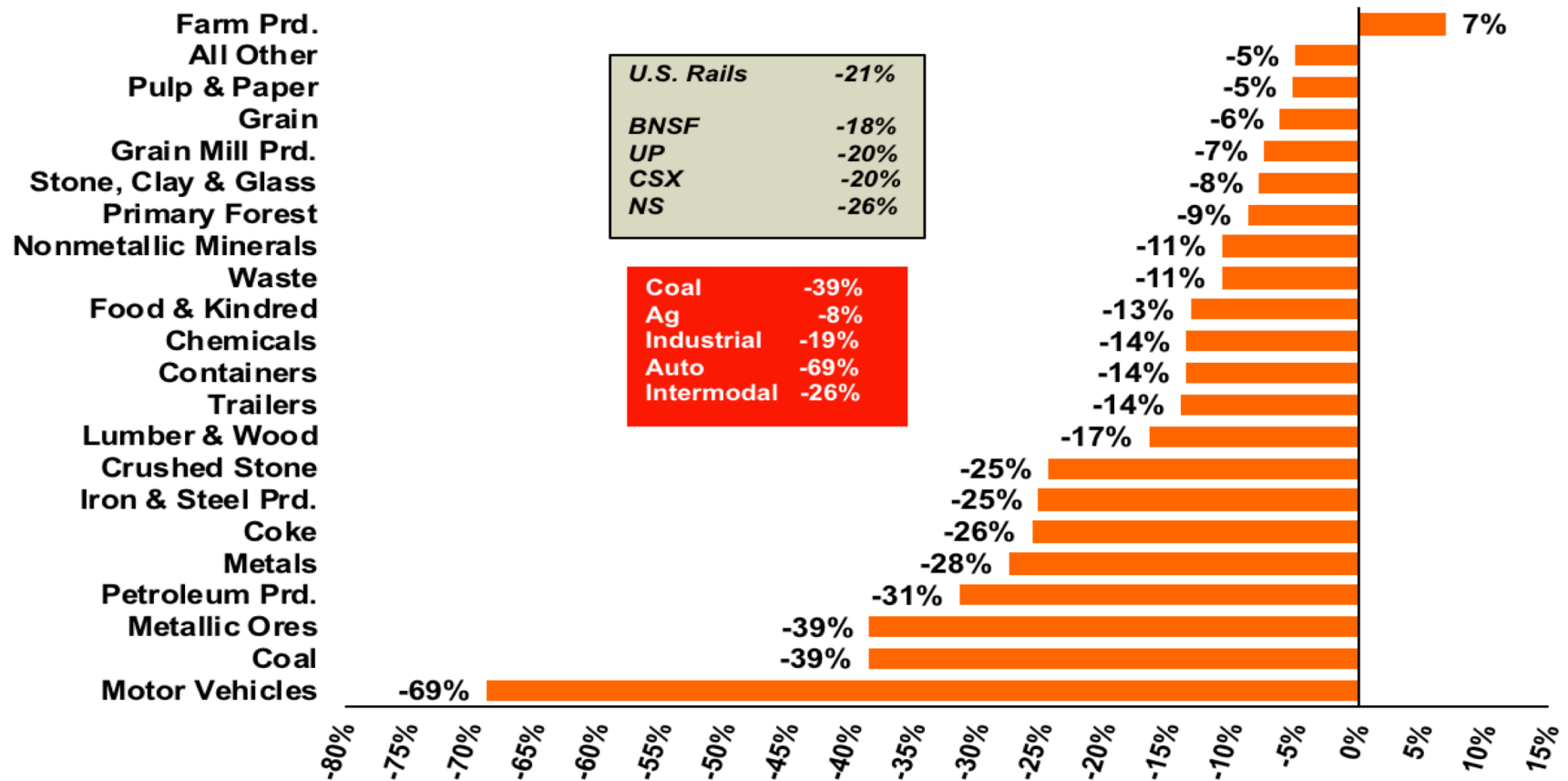## U.S. Rail Volumes vs. Recession Periods

Source: Association of American Railroads, June 27, 2020

U.S. RAILROADS
(CS54 Groups, % Change in Units Handled)
2020 Q1
Weeks 14 through 26 2020 vs. 2019
April 4, 2020 through June 27, 2020

U.S. Rails	-21%
BNSF	-18%
UP	-20%
CSX	-20%
NS	-26%

Coal	-39%
Ag	-8%
Industrial	-19%
Auto	-69%
Intermodal	-26%

| Sector	% Change
Farm Prd.	7%
All Other	-5%
Pulp & Paper	-5%
Grain	-6%
Grain Mill Prd.	-7%
Stone, Clay & Glass	-8%
Primary Forest	-9%
Nonmetallic Minerals	-11%
Waste	-11%
Food & Kindred	-13%
Chemicals	-14%
Containers	-14%
Trailers	-14%
Lumber & Wood	-17%
Crushed Stone	-25%
Iron & Steel Prd.	-25%
Coke	-26%
Metals	-28%
Petroleum Prd.	-31%
Metallic Ores	-39%
Coal	-39%
Motor Vehicles	-69%

Source: Association of American Railroads, June 27, 2020

THE RAIL SECTOR

In May '20 the rail sector had 118K employees, -30K vs. Fall '18 and -9K since Feb. '20. UP lost 46% of the jobs

Class I Railroad Employment: Jan. 2013 - May. 2020

174,122

118,880
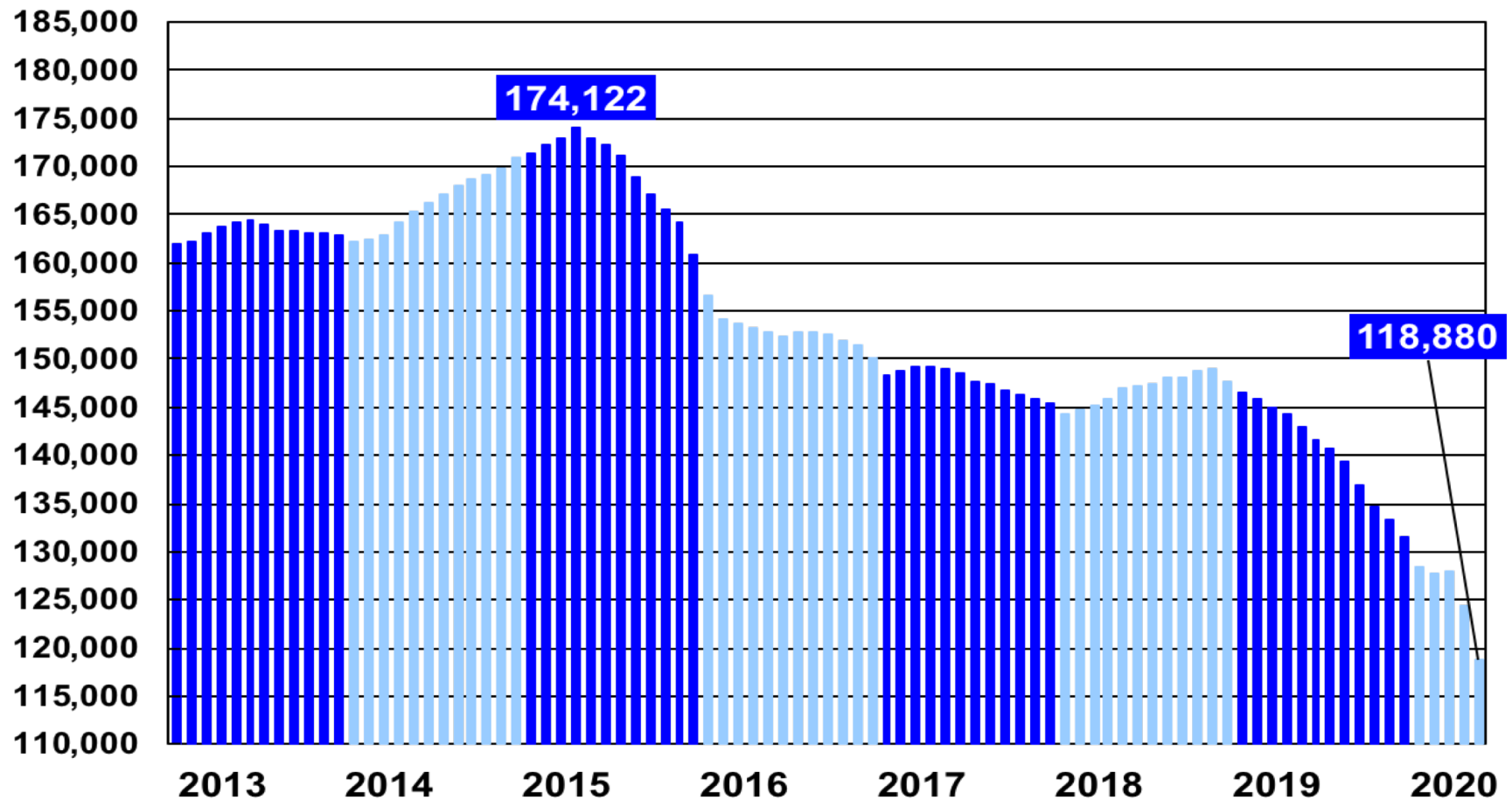
Data are not seasonally adjusted.   Source: STB

THE RAIL SECTOR

Most car types have about over a third of their respective fleet stored. Covered hoppers, tanks and gondolas are about 75% of the stored cars

Car Storage By Car Type
July 1, 2020

North American Rail Cars in Storage - Past 60 Days
July 2020

Car Count (in 000)

← Recession

- Cars Stored
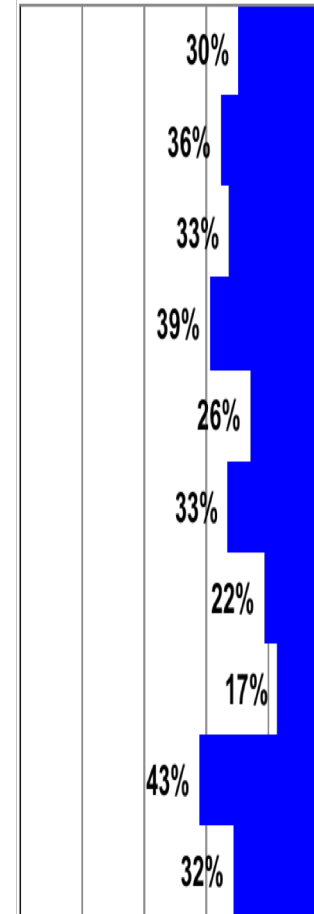- Estimated Miles of Storage*

Est. Storage Miles
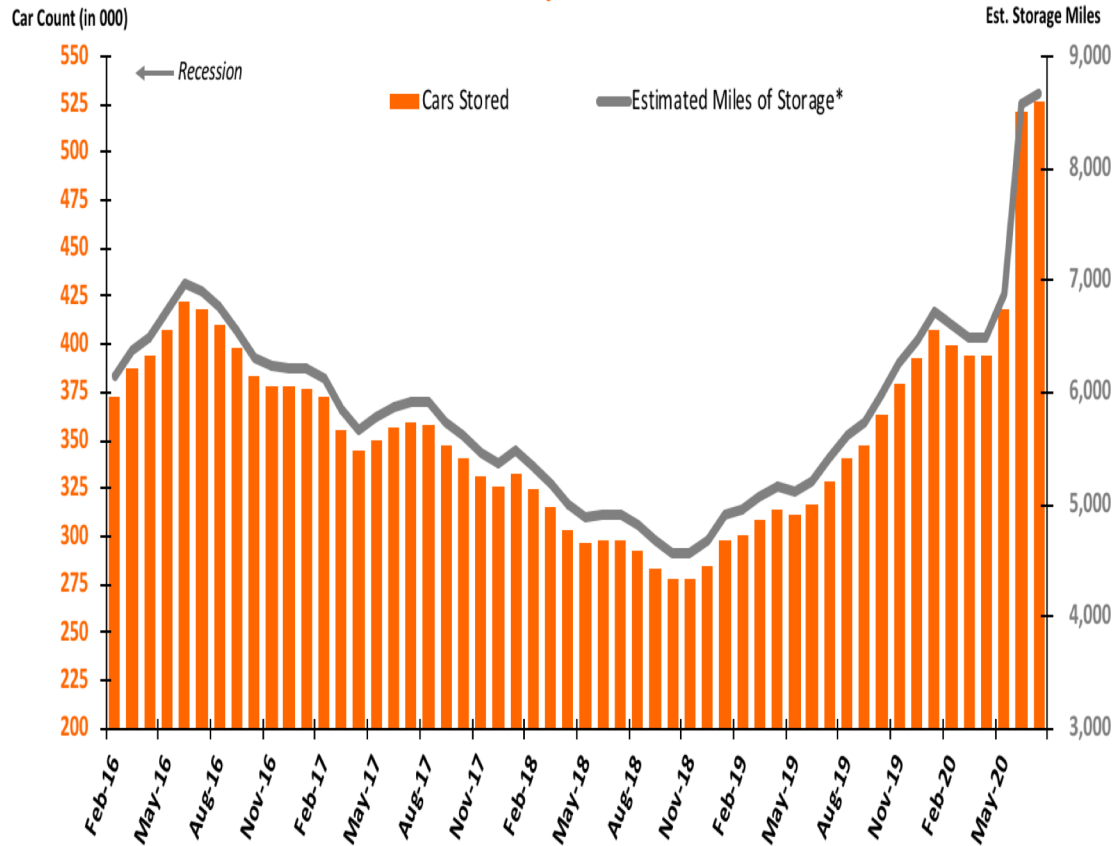
* Assumes BNSF Railway system average equipment length

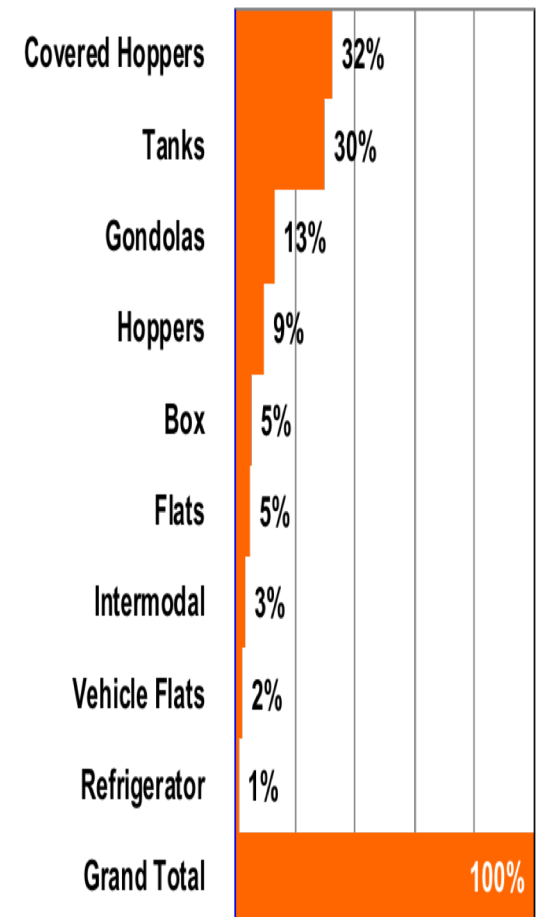Source: American Association of Railroads, Policy & Economic Dept, July 1, 2020

Percent of Each Fleet

Car Type	Percent of Each Fleet	Percent of Total Fleet
Covered Hoppers	30%	32%
Tanks	36%	30%
Gondolas	33%	13%
Hoppers	39%	9%
Box	26%	5%
Flats	33%	5%
Intermodal	22%	3%
Vehicle Flats	17%	2%
Refrigerator	43%	1%
Grand Total	32%	100%

Percent of Total Fleet

THE RAIL SECTOR

Precision Scheduled Railroading: Most North American Class 1 Railroads are implementing the PSR model. Matt Rose: "Less is NOT better"

What is Precision Scheduled Railroading?

Freight railroad operating plan that precisely schedules car shipments on fixed point to point schedules with the goal of minimizing in-transit work events and achieving low operating ratios. It reflects the airline model and is opposed to the gathering and distribution freight rail model.
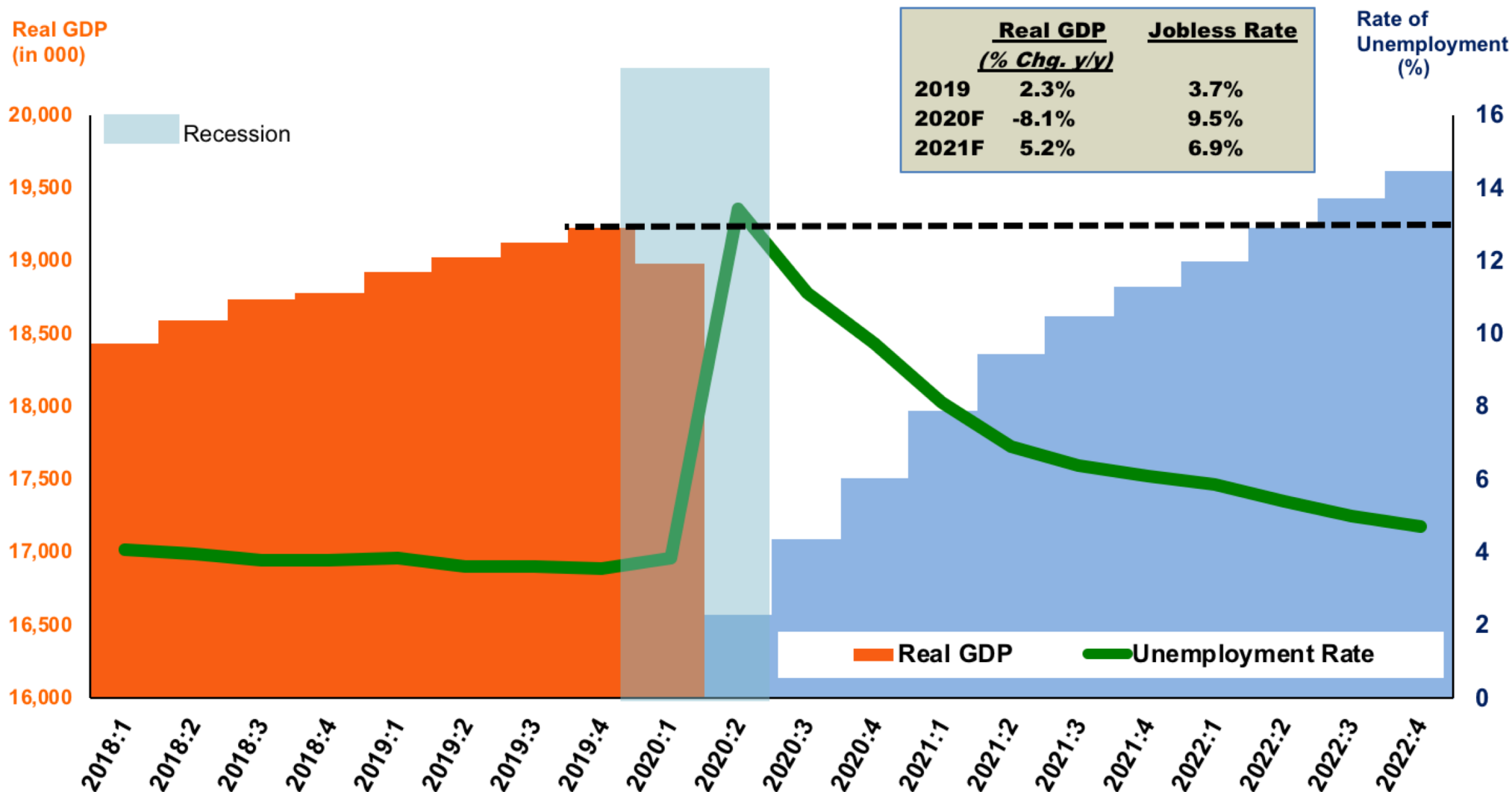
Key Performance Measures and Financials
Q1 2020 Results

	TRAIN SPEEDS (mph)	%Chg	TERMINAL DWELL (hrs)	%Chg	OPERATING INCOME ($000)	%Chg	VOLUME (UNITS) (000)	%Chg	OPERATING RATIO (%)	Chg
BNSF					$ 1,823	2%	2,336	-5%	65.2%	-3%
UP	25.4	9%	23.8	-11%	$ 2,143	9%	1,940	-7%	59.0%	-5%
NS	23.8	10%	18.6	-16%	$ 953	-1%	1,688	-11%	63.7%	-2%
CSX	21.2	4%	8.3	-7%	$ 1,178	-3%	1,514	-1%	58.7%	-1%

Real GDP vs. Rate of Unemployment

	Real GDP (% Chg. y/y)	Jobless Rate
2019	2.3%	3.7%
2020F	-8.1%	9.5%
2021F	5.2%	6.9%

Legend: Real GDP, Unemployment Rate, Recession

X-axis: 2018:1, 2018:2, 2018:3, 2018:4, 2019:1, 2019:2, 2019:3, 2019:4, 2020:1, 2020:2, 2020:3, 2020:4, 2021:1, 2021:2, 2021:3, 2021:4, 2022:1, 2022:2, 2022:3, 2022:4

Source: BEA, June 26, 2020, IHS Markit June 2020

Macro Economic BASE CASE Assumptions

(July 2020 Forecast)		
% Chg Y/Y Unless Stated	2020	2021
Real GDP	-6.1%	3.7%
Unemployment Rate	8.6%	6.3%
EIA- Western Coal Production	-27.1%	16.3%
EIA- App Coal Production	-31.8%	4.5%
Coal Share of Electriicity Generation	17.6%	21.2%
Natural Gas Share of Electriicity Generation	40.6%	35.6%
Natural Gas Price (Henry Hub)	$1.93	$3.10
Grains Useage (Bushels, Billions)	20.1	21.5
Industrial Production	-8.6%	6.4%
Manufacturing	-8.5%	7.6%
Housing Starts (Thousands)	1.254	1.289
Housing Starts (% Chg.Y/Y)	-3.2%	2.8%
Lt Veh - Sales (Millions)	13.2	14.6
Lt Veh - Sales (% Chg.Y/Y)	-21.8%	10.3%
Goods Imports	-17.7%	12.3%
Goods Exports	-20.0%	21.7%
Consumer Expenditures	-5.8%	3.2%
WTI Crude Oil ($/Barrel)	37.6	45.7
Brent Crude Oil ($/Barrel)	40.5	49.7
Brent-WTI Spread ($/Barrel)	3.0	4.0

Source: IHS Markit (Jul. 2020); EIA and USDA WASDE (July 2020), SAK Economics LLC
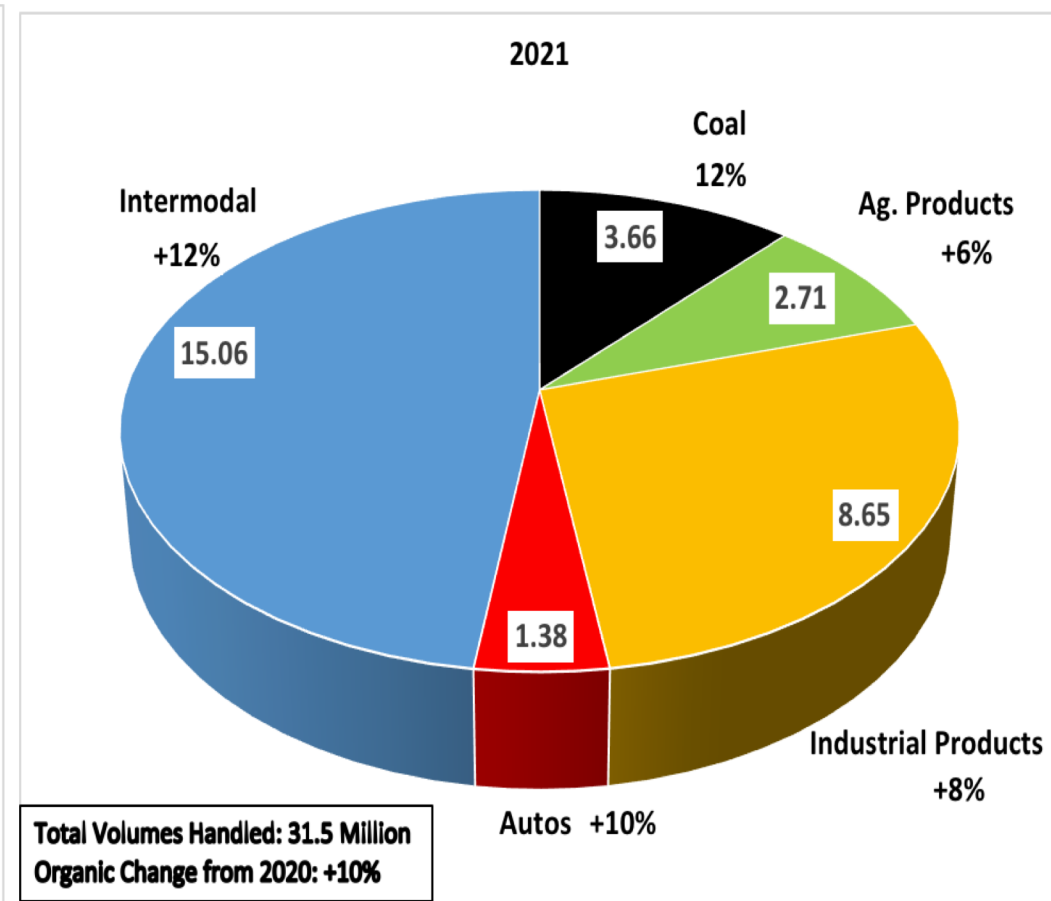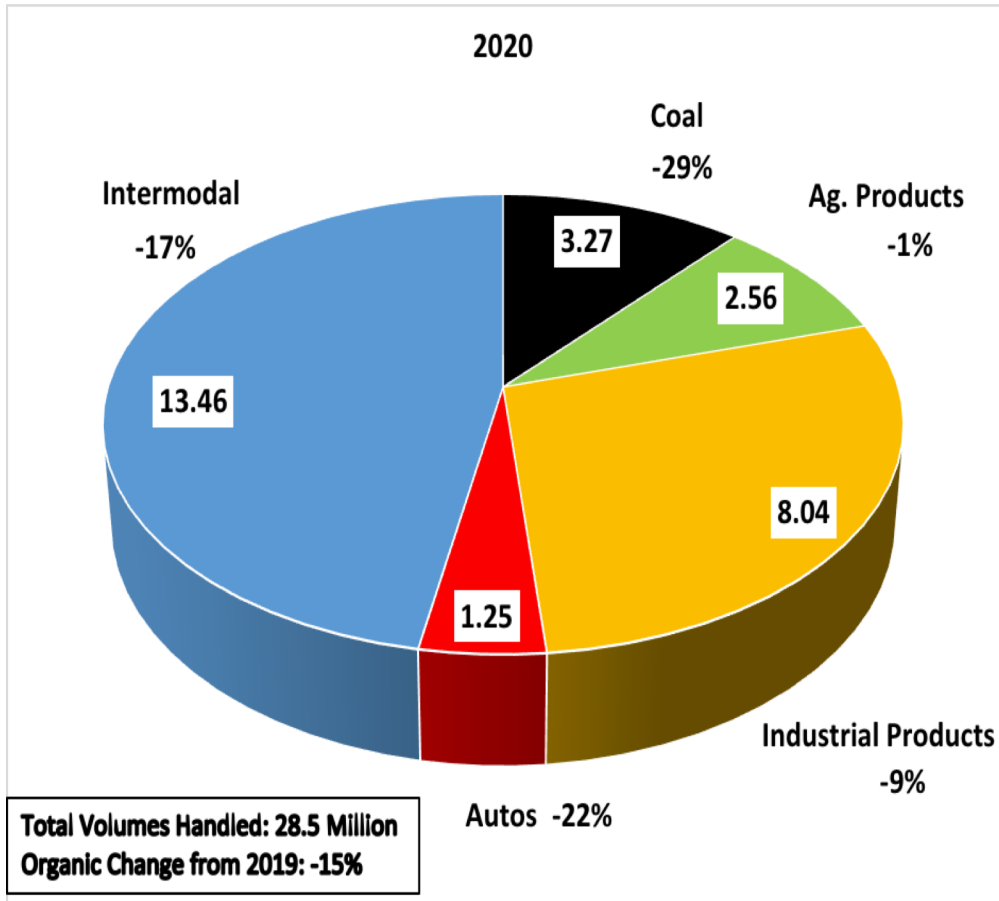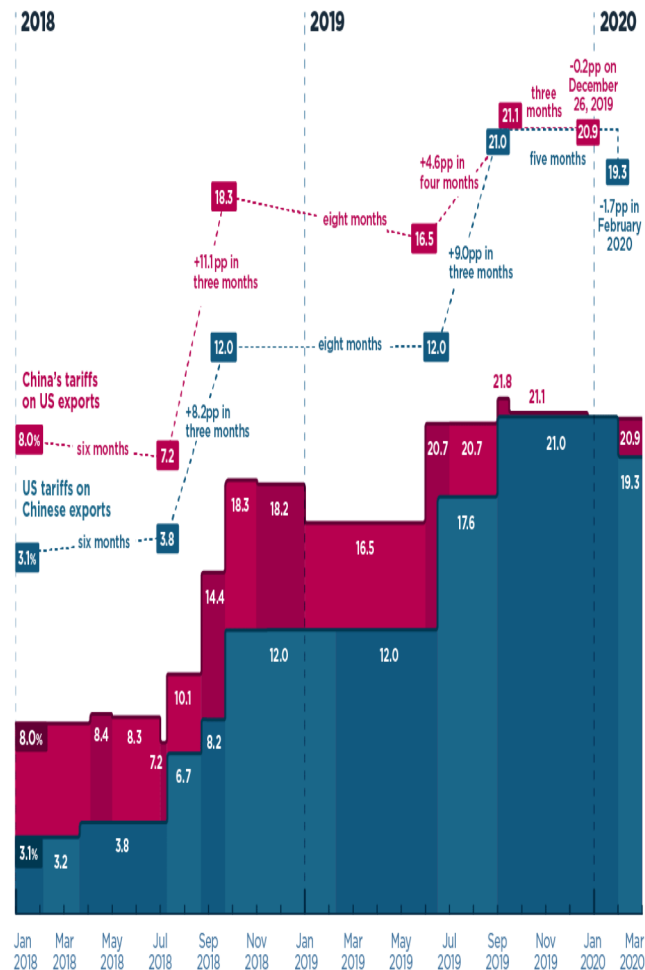
RISKS – PANDEMIC, RACISM, TRADE POLICY & GEOPOLITICS

A second coronavirus wave during the Fall, trade, currency, race and geopolitical tensions could spell trouble for global growth

US-China Trade War Tariffs: An Up-to-Date Chart

Average tariff rate, percent

Source: Chad Brown, Petersen Institute, Feb. 12, 2020

Wall Street Journal US Dollar Index
(Jan. 1, 2013 - Jul. 15, 2020)

		15-Jul-20	USD % Chg Y/Y	USD % Chg YTD
		(1)	(2)	(3)
Argentina		71.4	70%	19%
Australia		0.70	0%	0%
Brazil		5.37	43%	33%
Canada		1.35	4%	4%
China		6.99	2%	0%
Euro		1.14	-1%	-2%
India		75.1	10%	5%
Japan		107	-1%	-2%
Mexico		22.35	18%	18%
Russia		70.9	13%	14%

Jul. 15, 2020
90.57
+0.7% y/y
+1.2% YTD
+24.8% vs. Jul

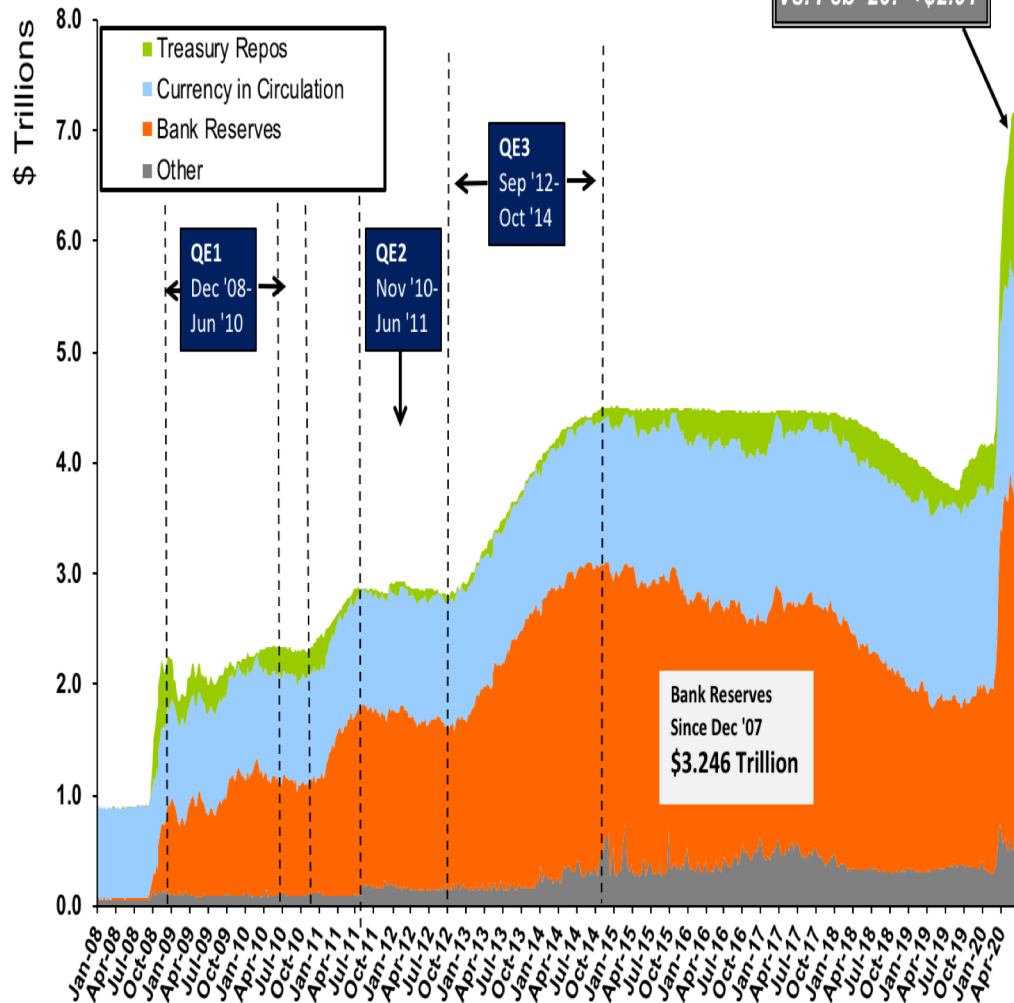Source: Wall Street Journal, BUXX; July 15, 2020, XE.com, July 15, 2020

OPPORTUNITIES – MONETARY & FISCAL POLICY

The Fed's balance sheet has expanded by $3 trillion to $7.1 trillion. Congress has spent over $2.2 trillion stimulus on CARES Act

Federal Reserve - Balance Sheet

Total Liabilities (in $ Millions)
As of June 24, 2020

Liabilities: $7.1T
Vs. Dec '07: +$6.2T
Vs. Feb '20: +$2.9T

$ Trillions

- Treasury Repos
- Currency in Circulation
- Bank Reserves
- Other

QE1 Dec '08-Jun '10
QE2 Nov '10-Jun '11
QE3 Sep '12-Oct '14

Bank Reserves Since Dec '07 $3.246 Trillion

Source: Federal Reserve Board, June 24, 2020

Coronavirus Aid, Relief, and Economic Security Act

Worth: $2.2 trillion

The CARES Act

- Cash payments to many Americans
- $200 billion for hospitals and health care workers
- $375+ billion in small business relief
- Prohibits landlords from initiating legal action for 120 days
- Loans employers funds to maintain their payroll. If payroll is maintained, loan is forgiven
- Defers student loan payments, principal, and interest for 6 months
- Provides additional $600 per week to each recipient of Pandemic Unemployment Assistance
- Waves the 10% early withdrawal penalty for retirement accounts for individuals or a spouse diagnosed with COVID-19

CHRISSY

STIMULUS #2: THE HEROES ACT

Worth: $3 trillion