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Patten & Patten, Inc.

3Q20 Market Outlook

Market commentary

- At the beginning of the Second Quarter, consensus held that social distancing and travel restrictions were necessary to suppress and eliminate the “novel” coronavirus known as COVID-19. Policy makers confronted a vicious trade-off between the health of their citizens and the health of their economies. Health experts were uncertain as to how and why the disease spread; how the virus attacked the body; why certain demographic groups were more susceptible than others. More important, there were no approved and effective therapies, particularly for the most severe cases.
- As we enter the Third Quarter, the global health care and scientific communities have climbed an exceedingly steep learning curve. The world now knows, for example, that COVID-19 binds to the ACE-2 receptor, which can lead to cardio vascular complications in addition to respiratory problems. Additionally, there are now approved therapies available for severe cases, and there has been encouraging progress toward potential vaccines. Recent studies, moreover, support the view that the virus is less lethal than initially feared. Regardless of possible timelines for a vaccine, there is growing confidence among market participants as to the ability of the health care community to treat the virus.
- The aggressiveness of the Fed’s monetary policy response was a big contributor to the stock market’s recovery during the Second Quarter. Clearly, the size of liquidity injections exceeded market expectations as they dwarfed the aggregate response to the Great Financial Crisis. There are parallels between our monetary policy response in 2008 and the initial health policy response to this virus: a) initial efforts were trial and error; b) skepticism toward the data guiding policy; c) too much reliance on anecdotal information. **Unlike 2008, however, monetary policy programs implemented in response to this crisis had already been tested. In addition, Congress quickly enacted several fiscal support packages that buoyed personal incomes during a period of extreme job insecurity.** Going forward, investors will focus on the rate of economic improvement and passage of the next round of fiscal policy support.

Market commentary (*continued*)

- Based on the rapidity of the stock market's recovery, investors have apparently assumed a sharp but relatively short-term economic disruption related to the virus. The stock market's climb was coincident with progress on "flattening the curve" of new infections, greater testing, and efforts by individual states to "re-open" their economies. The recent surge in daily new confirmed cases suggests premature relaxations of restrictions on gatherings in public. We note, however, that the daily number of COVID-19 related deaths has fallen sharply since the early "surge" in the New York City area. It remains to be seen whether current virus-related concerns will contribute to additional economic volatility during the Third Quarter. It is clear, however, that the duration of economic uncertainty on account of COVID-19 remains the key fundamental risk for investors.
- Just as the global spread of COVID-19 began to reduce demand for oil, Saudi Arabia engaged Russia in a price war. That shock, which was a contributing factor to First Quarter market volatility, has somewhat dissipated, and oil prices are more stable. We continue to expect economic data to reflect an extremely uncertain environment, with a large number of small business failures, particularly as fiscal support packages expire.
- That said, we nevertheless remain optimistic that US economic activity could continue to improve from pent up demand and restoration of shuttered capacity. We note that the Fed pledged unqualified liquidity support and indicated that policy benchmark interest rates will remain near zero through 2022. We also anticipate an eventual shift to direct "capping" of certain Treasury rates, which was last implemented during the post-World War II era. Notwithstanding fiscal and monetary support, it is probable that sustained economic recovery in the US could prove most sensitive to our nation's ability to manage the spread of the virus.

Year to date and historical performance of various asset classes

Asset Class	YTD	1 year	3 Year Annualized	Total Returns since...	
				Trough*	Peak*
Domestic Equities					
S&P 500	7.48	17.28	13.81	54.48	2.28
S&P 500 Equal Weight (RSP)	-2.63	5.63	8.14	55.65	-5.06
Dow Jones Ind. Avg.	0.27	7.52	11.46	52.99	-2.83
NASDAQ Comp	26.91	40.99	22.19	65.58	15.84
Russell 2000 (IWM)	-7.11	3.40	4.52	54.04	-8.62
International Equities					
Shanghai Composite (CIN)	16.30	20.15	4.77	28.43	17.08
Hedged Japan (DXJ)	-7.85	4.55	0.77	25.18	-5.73
Hedged Europe (HEDJ)	-10.50	-4.59	2.05	34.25	-11.59
Asia Pacific ex. Japan (EPP)	-8.67	-4.92	0.32	44.76	-9.18
Emerging Markets (EEM)	-0.60	10.41	1.74	45.70	0.84
Brazil (EWZ)	-33.47	-23.97	-7.11	51.62	-28.11
Canada (EWC)	-4.67	0.85	2.14	61.44	-7.43
India (EPI)	-5.28	2.29	-2.86	65.09	-4.05
Mexico (EWW)	-26.04	-21.26	-14.36	32.59	-29.97
Bonds					
Long Treasuries (TLT)	21.40	13.58	10.48	-1.23	12.83
Inv. Grade Corporates (LQD)	7.52	8.56	7.03	19.40	4.71
High Yield Corporates (HYG)	-0.55	1.95	3.85	26.34	-1.33
Commodities					
Gold (GLD)	27.11	27.99	12.34	24.16	19.67
Silver (SLV)	50.24	48.55	13.59	103.57	45.44

*Stock market trough at 03/23/2020. Stock market peak at 02/19/2020. YTD through 09/07/2020

Source: Thomson Reuters Datastream

Year to date and historical performance equity sectors

Domestic Equity Sectors	YTD	1 year	3 Year Annualized	Total Returns since...	
				Since Trough*	Since Peak*
Domestic Equities					
Consumer Discretionary	21.70	26.87	19.77	73.58	14.95
Retail (XRT)	11.63	26.36	9.77	89.07	14.11
Consumer Staples	3.96	8.42	7.35	37.20	1.57
Energy	-38.56	-34.54	-14.56	53.22	-31.42
Oil & Gas Exploration (XOP)	-46.89	-42.88	-25.12	64.88	-32.25
Financial Services	-16.64	-8.22	3.11	44.21	-18.12
Regional Banks (KRE)	-30.18	-18.43	-4.82	42.86	-26.67
Health Care	6.21	20.61	11.87	44.48	4.09
Industrials	-4.07	2.30	7.45	57.79	-7.27
Materials	3.60	13.57	6.41	71.91	6.40
Technology	30.50	46.35	28.14	68.40	17.61
Telecom	-6.45	-0.79	6.71	21.98	-6.22
Utilities	-7.01	-3.40	5.79	32.98	-15.24
Transportation (IYT)	2.62	8.75	7.03	67.05	2.86
Real Estate	-11.07	-9.38	3.69	46.48	-17.10

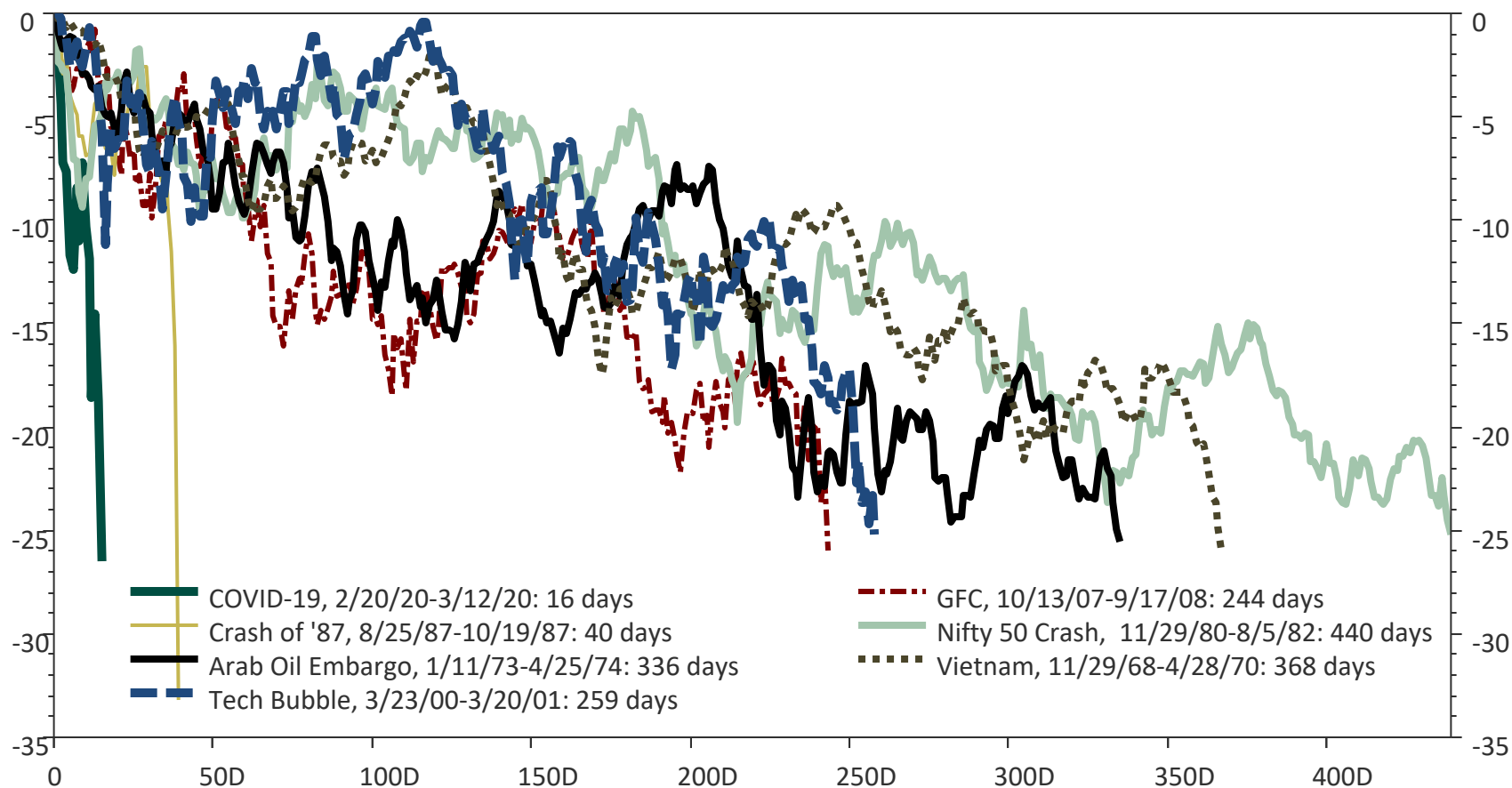
*Stock market trough at 03/23/2020. Stock market peak at 02/18/2020. YTD through 09/07/2020

Source: Thomson Reuters Datastream

Swiftest 25% Drawdown in History

S&P 500

of Days to >25% drawdown



Source: Refinitiv Datastream

Exceptional Volatility

Four of the largest one-day percentage moves in the S&P 500 occurred during March 2020

S&P 500: Largest One-Day Gains

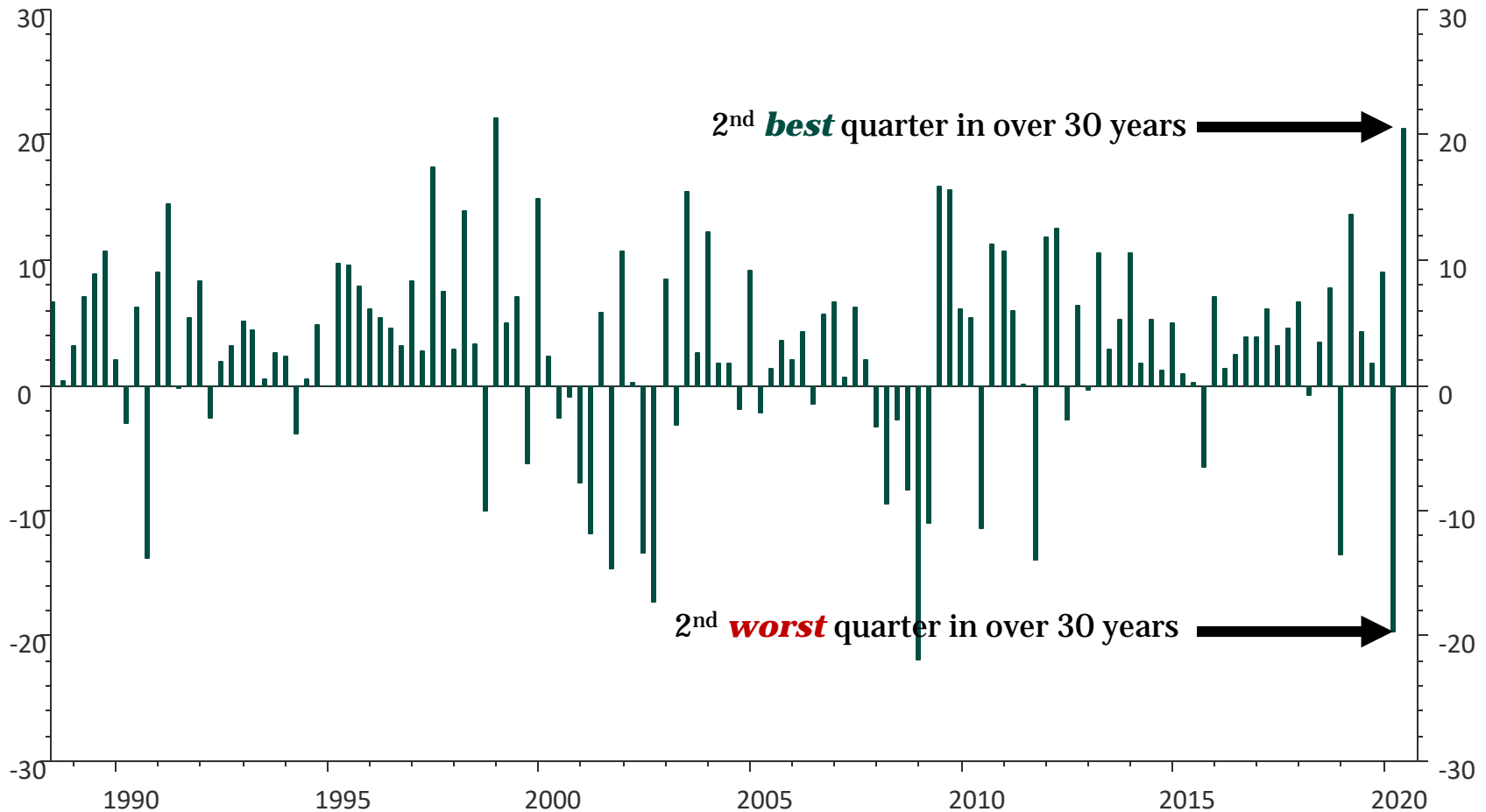
Date	% Change
3/15/1933	16.61
10/30/1929	12.53
10/6/1931	12.36
9/21/1932	11.81
10/13/2008	11.58
10/28/2008	10.79
9/5/1939	9.63
4/20/1933	9.52
3/24/2020	9.38
3/13/2020	9.29

S&P 500: Largest One-Day Losses

Date	% Change
10/19/1987	-20.47
10/28/1929	-12.34
3/16/2020	-11.98
10/29/1929	-10.16
11/6/1929	-9.92
3/12/2020	-9.51
10/18/1937	-9.27
10/15/2008	-9.04
12/1/2008	-8.93
7/20/1933	-8.88

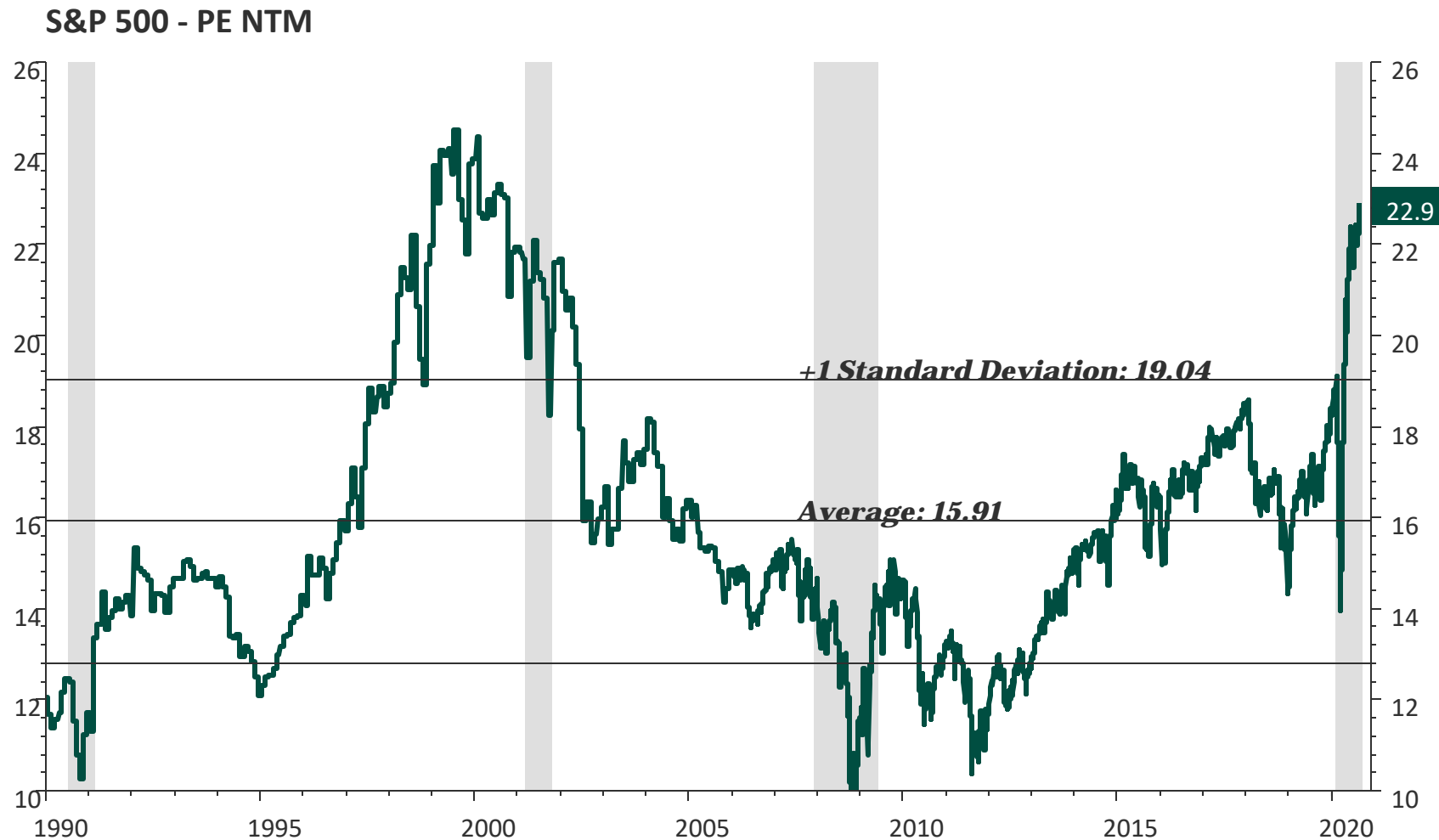
S&P 500 Performance by Quarter

S&P 500 Total Return by Quarter



Source: Refinitiv Datastream

S&P 500 Valuation

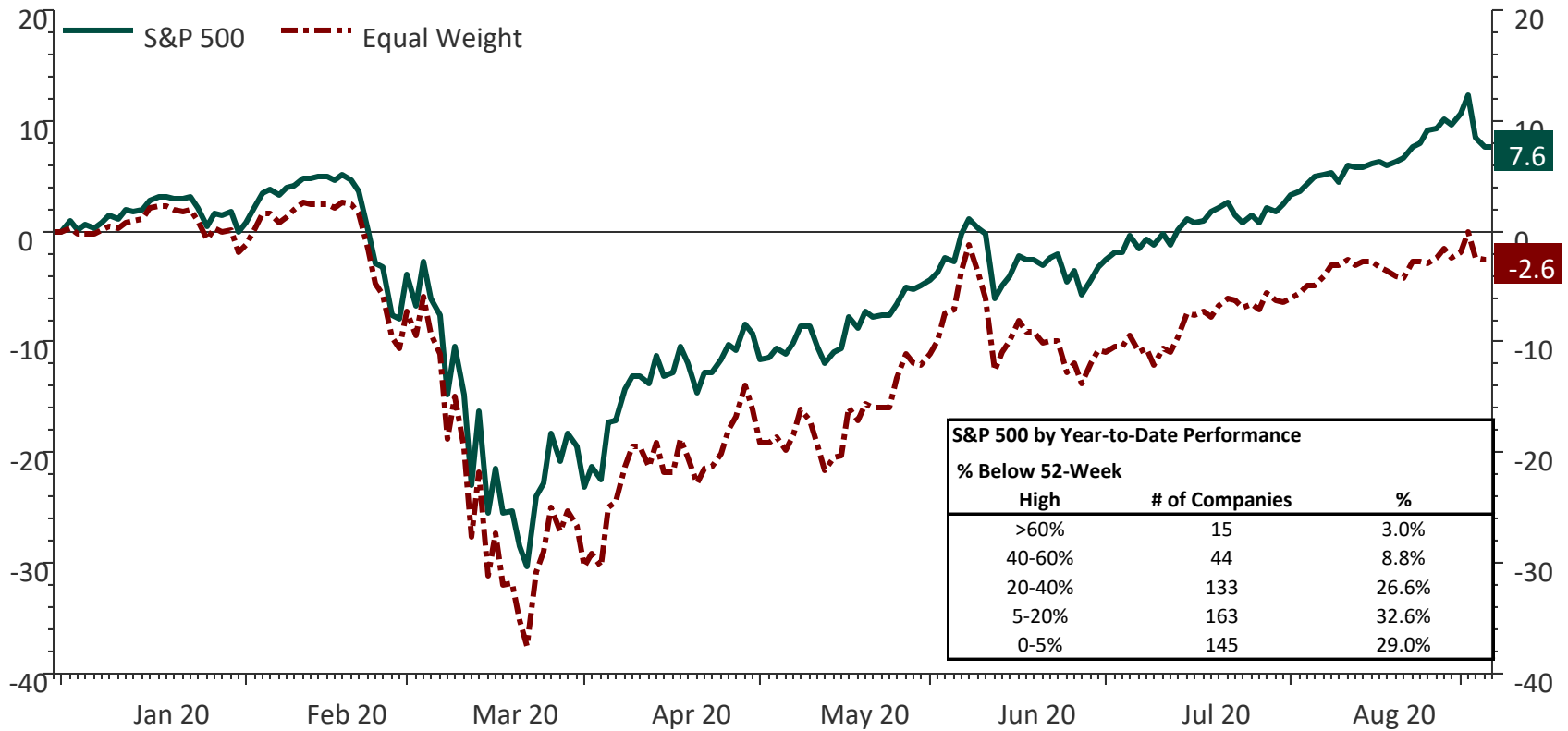


Source: Refinitiv Datastream

Bifurcated Market

S&P 500 vs. Equal Weight S&P 500

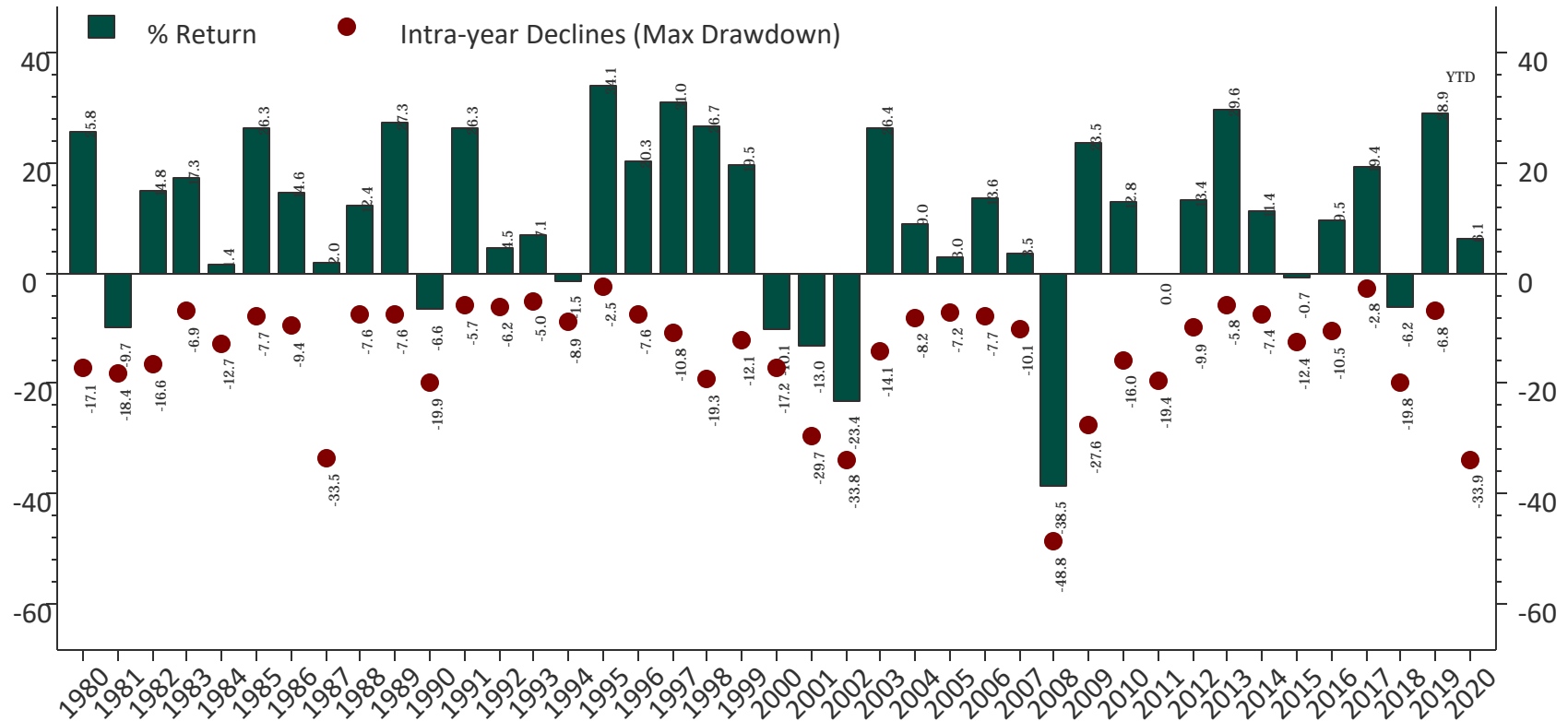
Year-to-Date Percent Change



Source: Refinitiv Datastream

Stock Market Sell-offs are Normal

S&P 500 Intra-year Price Declines (Max Drawdown) vs. Yearly Price Returns



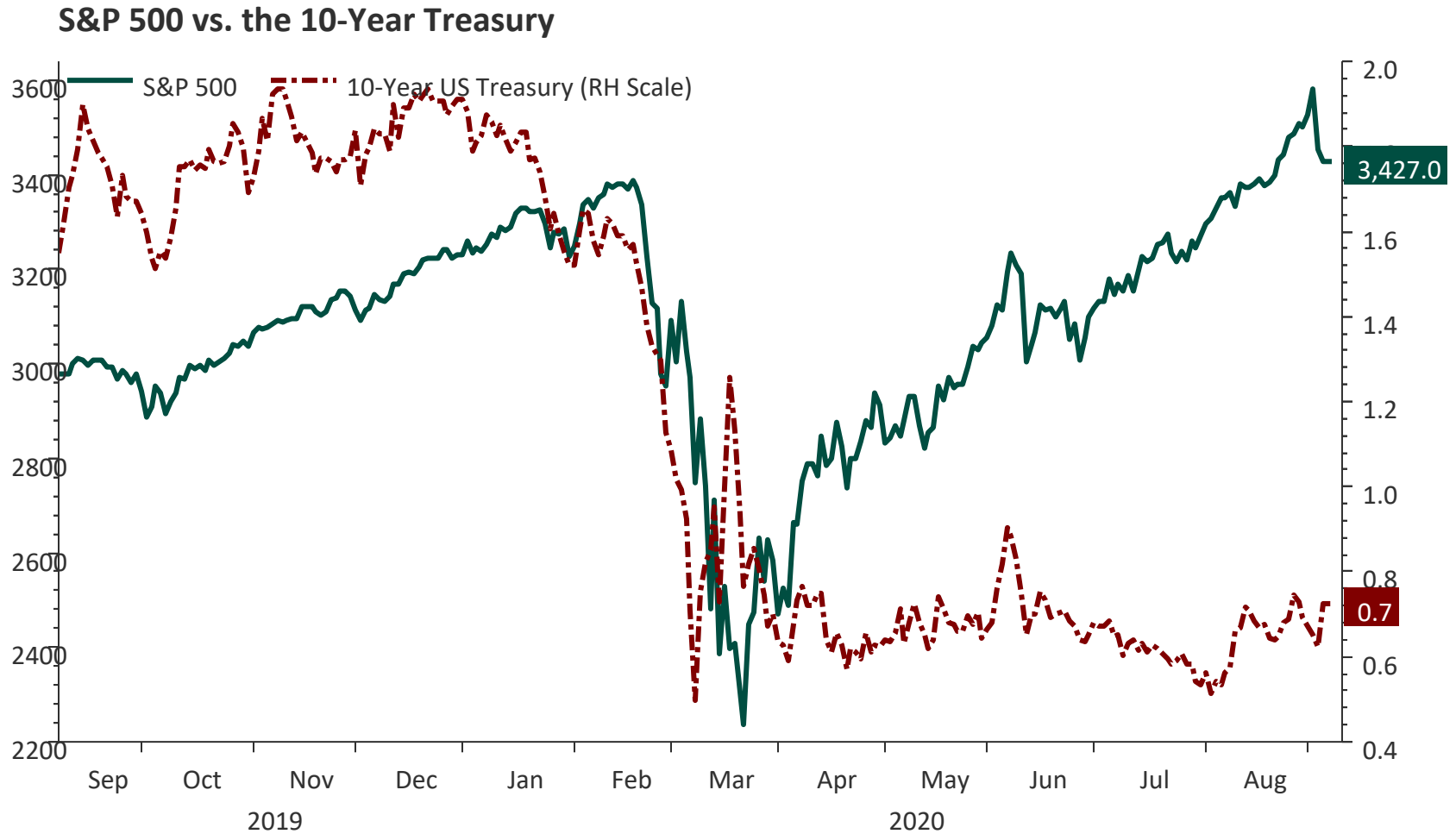
Source: Data provided by Thomson Reuters

S&P 500 vs. the US Dollar



Source: Refinitiv Datastream

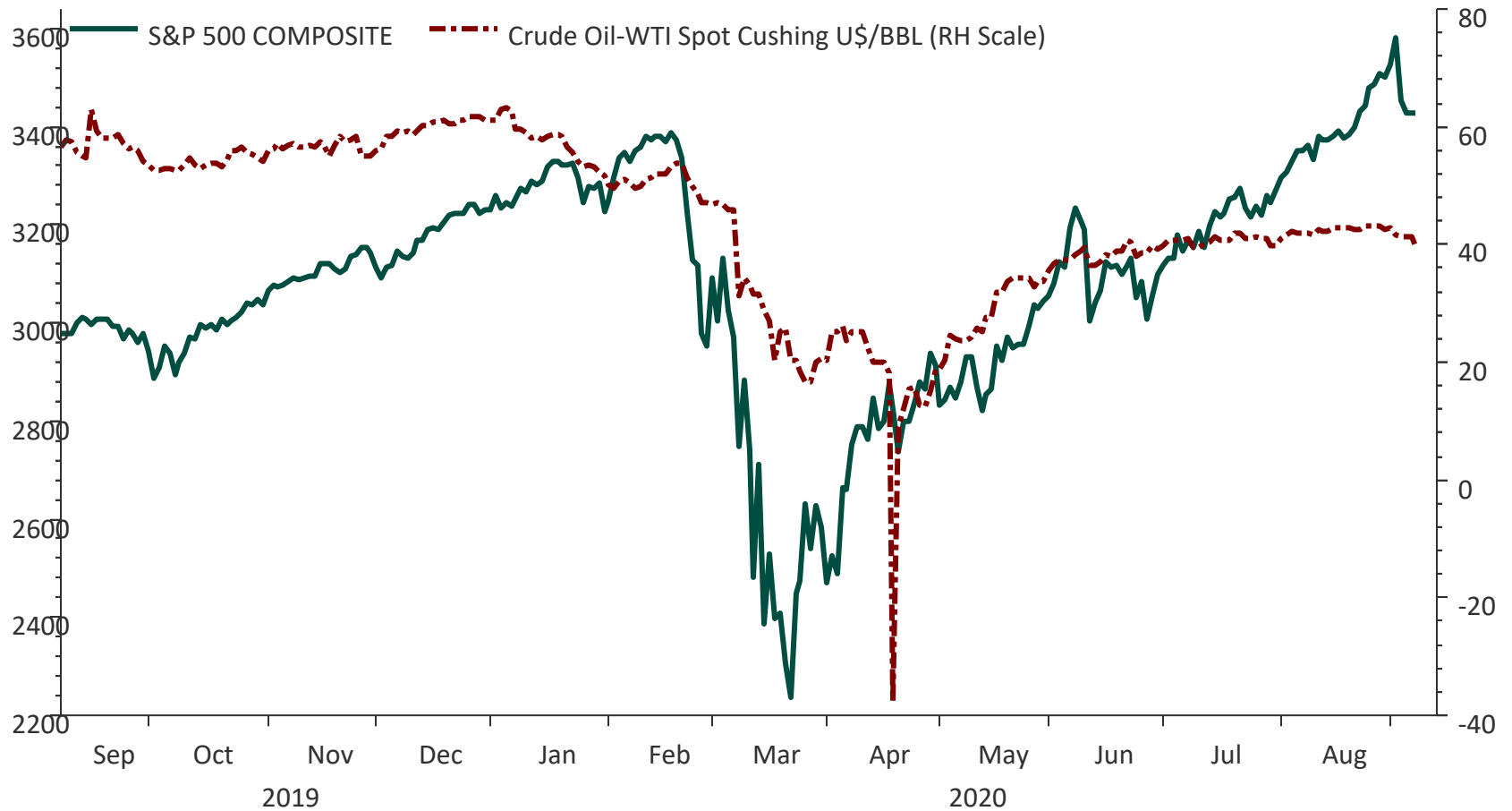
S&P 500 vs. the 10-Year Treasury



Source: Refinitiv Datastream

S&P 500 vs. the price of crude oil

S&P 500 vs. WTI Crude Spot



Source: Refinitiv Datastream

LME Copper Spot Price

\$/MT

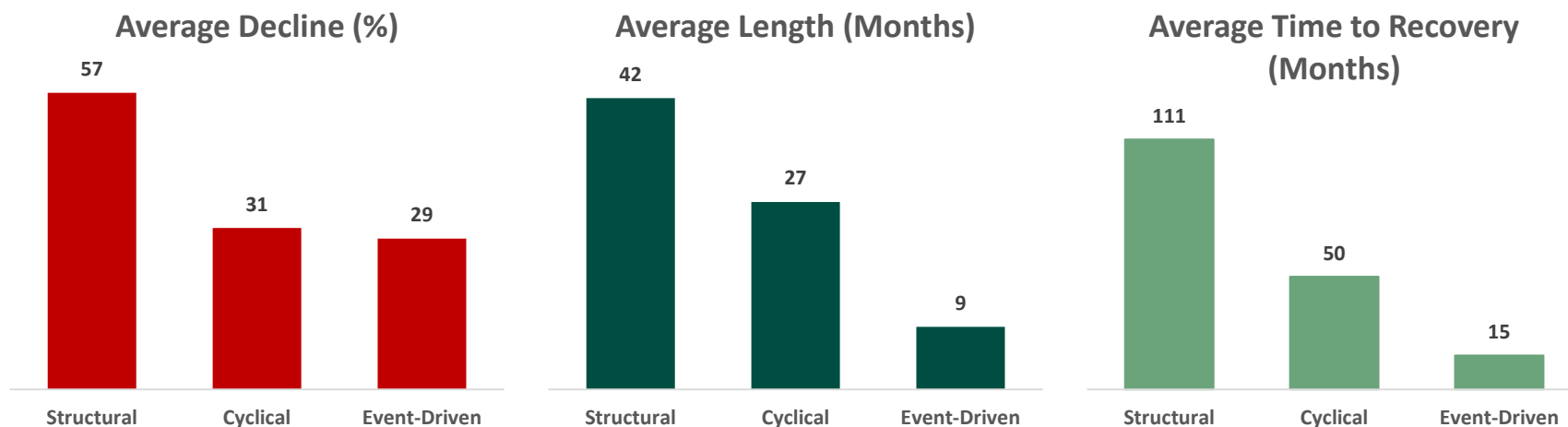


Source: Refinitiv Datastream

Characteristics of a bear market

	Pre-Bear	Structural	Cyclical	Event-Driven
Rising Rates		✓	✓	Maybe
Exogenous Shock		Maybe	Maybe	✓
Speculative Rise in Equity Prices		✓	✗	✗
Economic Imbalances		✓	✗	✗
Rising Productivity		✓	Maybe	✓
Unusual Strength in the Economy		✓	✗	✗
New Era Belief		✓	✗	✗

US Bear Markets & Recoveries



Global Interest Rates

Global Bond Yields on September 8, 2020

Maturity	US	Canada	UK	Germany	Switzerland	Japan	Spain	Italy	Brazil	Greece
2 year	0.137	0.281	-0.134	-0.697	-0.818	-0.130	-0.453	-0.071	3.405	NA
5 year	0.264	0.368	-0.109	-0.706	-0.715	-0.083	-0.255	0.492	5.350	0.273
10 year	0.667	0.555	0.186	-0.494	-0.477	0.042	0.336	1.110	6.725	1.178
30 year	1.397	1.063	0.737	-0.041	-0.284	0.617	1.148	2.046	NA	NA

Change in Global Bond Yields since September 1, 2020

Maturity	US	Canada	UK	Germany	Switzerland	Japan	Spain	Italy	Brazil	Greece
2 year	-0.004	0.005	-0.048	-0.010	-0.054	-0.003	0.005	-0.001	-0.185	NA
5 year	-0.027	-0.018	-0.056	-0.018	-0.015	0.006	-0.007	0.000	-0.210	-0.034
10 year	-0.057	-0.042	-0.063	-0.031	-0.058	0.006	-0.019	-0.008	-0.045	0.006
30 year	-0.084	-0.038	-0.086	-0.038	-0.024	0.002	-0.027	-0.001	NA	NA

Source: Data provided by Thomson Reuters

Forward interest rates

Forward Rate Analysis

US Dollar Swap Curves

Forward Rates

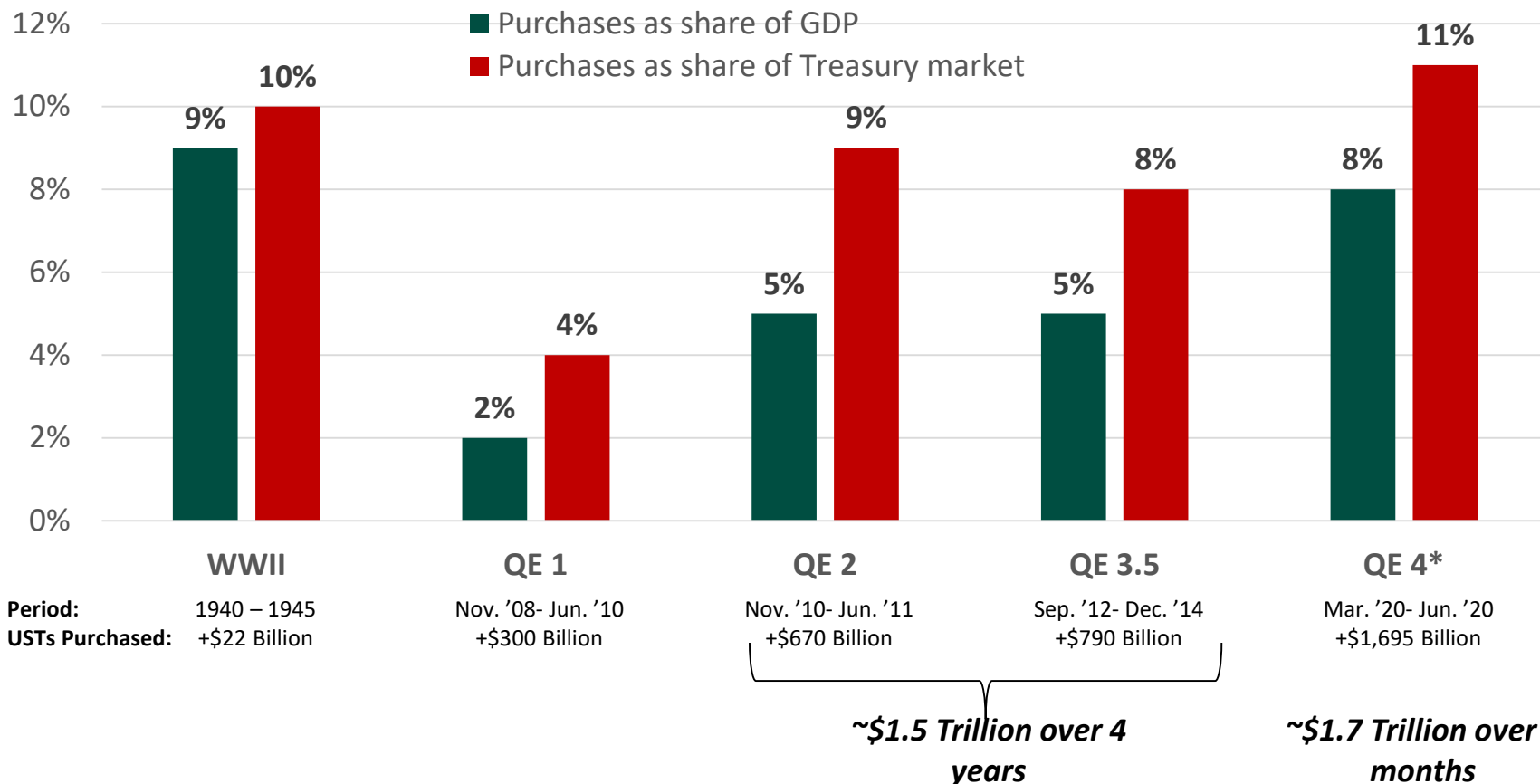
Maturity	Current	6 Mo	1 year	2 year	5 year	10 year	Chg (in bp)
1 year	0.231%	0.209%	0.208%	0.264%	0.748%	1.232%	100
2 year	0.216%	0.219%	0.236%	0.320%	0.835%	1.285%	107
3 year	0.227%	0.252%	0.283%	0.398%	0.907%	1.266%	104
5 year	0.316%	0.371%	0.429%	0.571%	1.020%	1.291%	98
10 year	0.660%	0.716%	0.768%	0.880%	1.152%	1.294%	63
30 year	1.007%	1.032%	1.046%	1.072%	1.131%	1.106%	10
2 - 10 Curve	44	50	53	56	32	1	
1 - 30 Curve	78	82	84	81	38	(13)	

*market rates as of 09/08/2020 and based on 3 month LIBOR.

Source: Data provided by Thomson Reuters

Fed Purchases of Treasuries

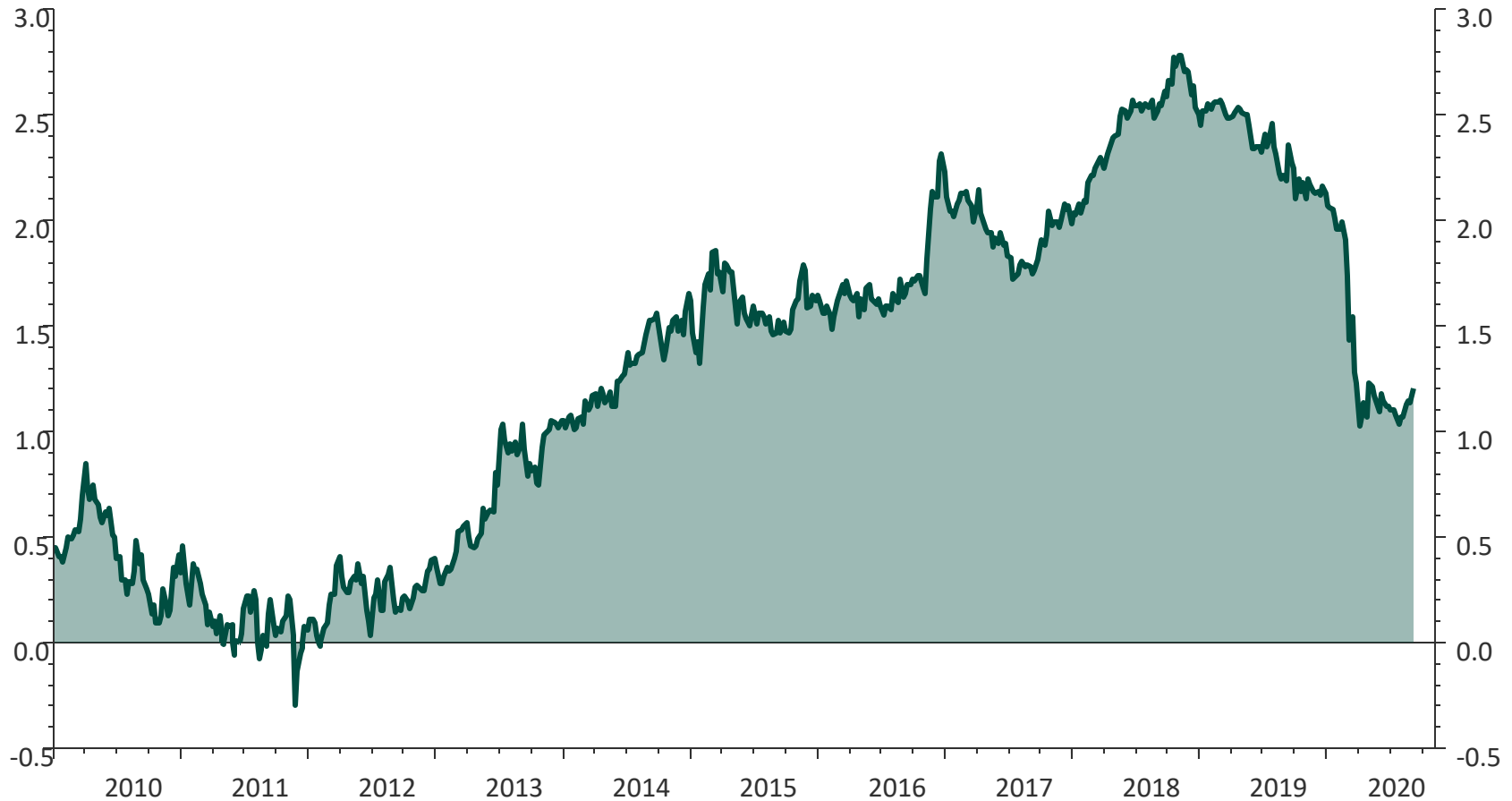
Fed purchases of Treasuries during various QE programs as a share of nominal GDP and public debt outstanding; %



Source: JP Morgan, Patten & Patten

US Treasury – German Bund Spread

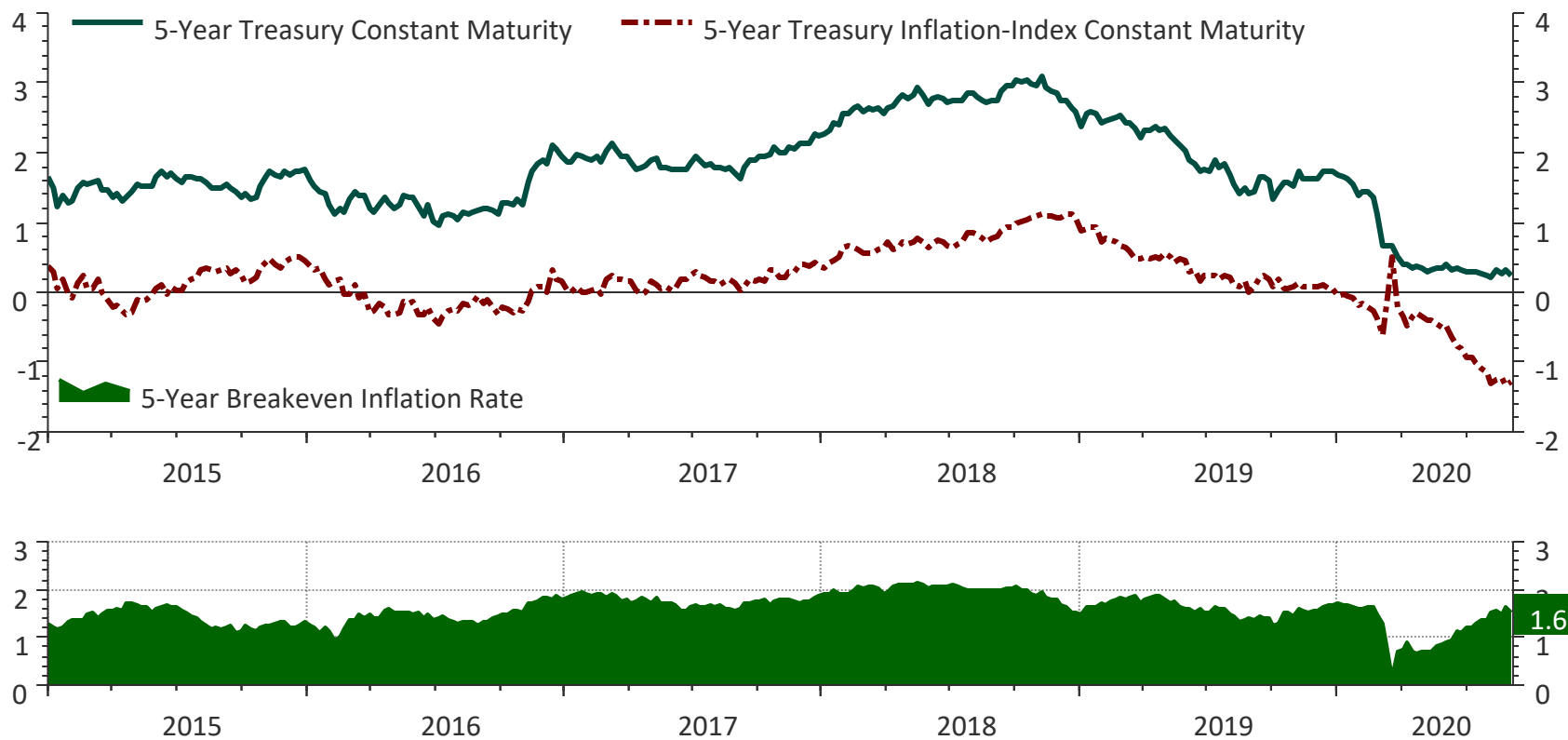
10-Year US Treasury-German Bund Spread



Source: Refinitiv Datastream

Low inflation expectations

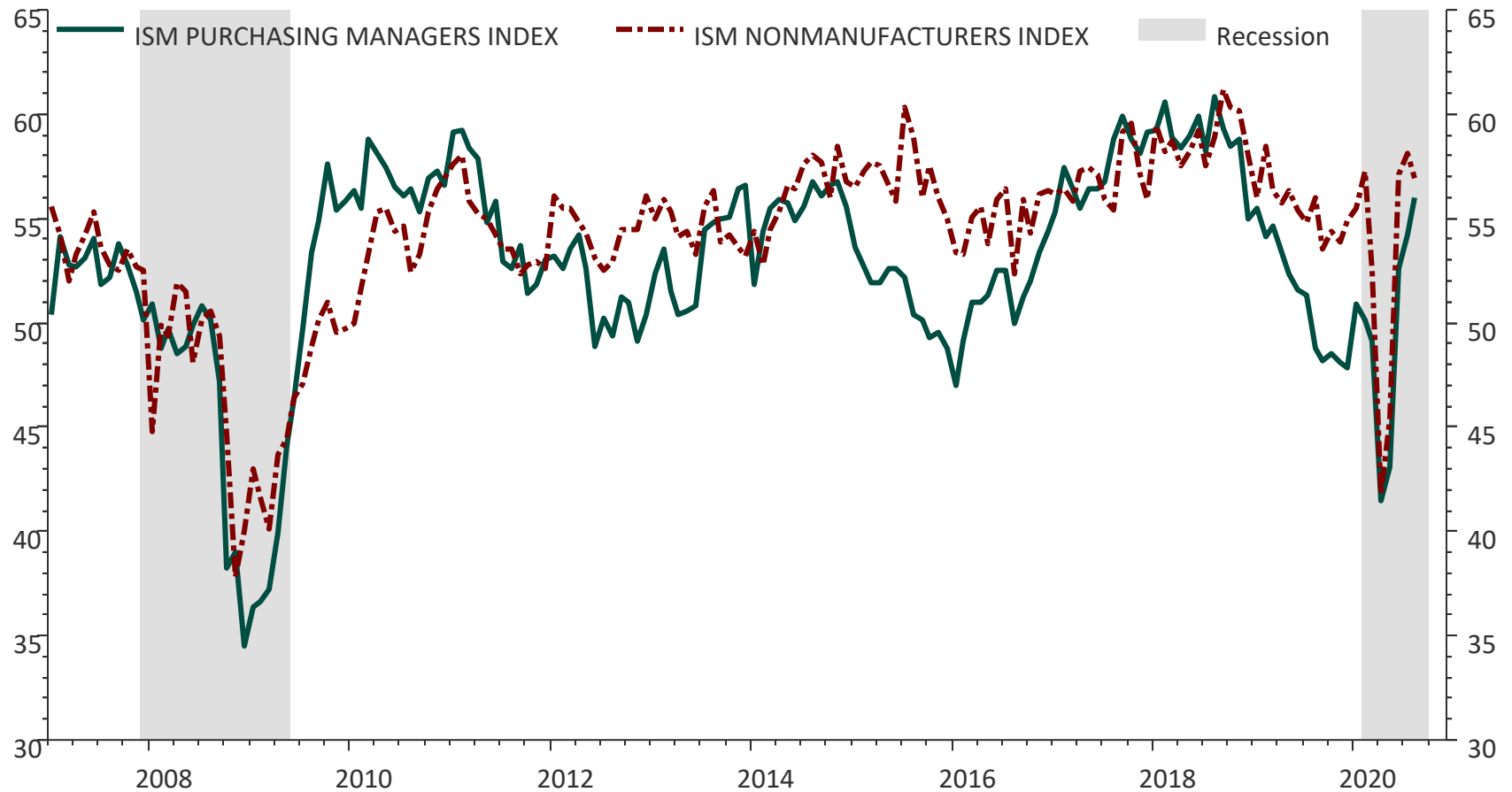
5-Year Breakeven Inflation Rate



Source: Refinitiv Datastream

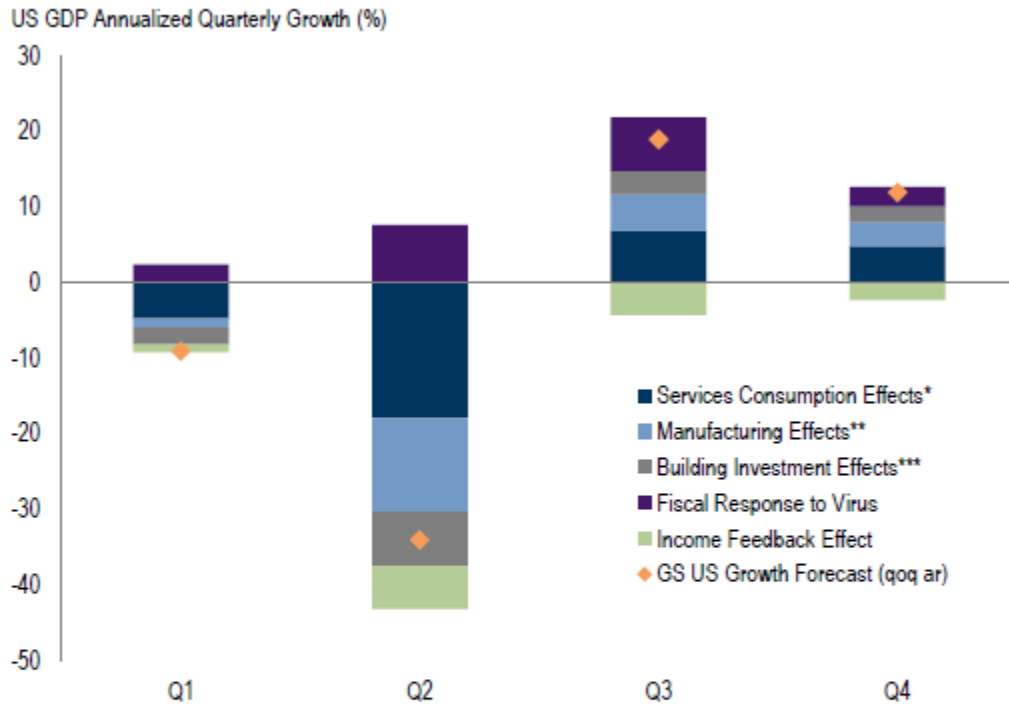
Manufacturing and Services Sectors Expand

ISM Manufacturing PMI and Non-Manufacturing NMI



Source: Refinitiv Datastream

US economic drag from COVID-19 likely concentrated in 1H20

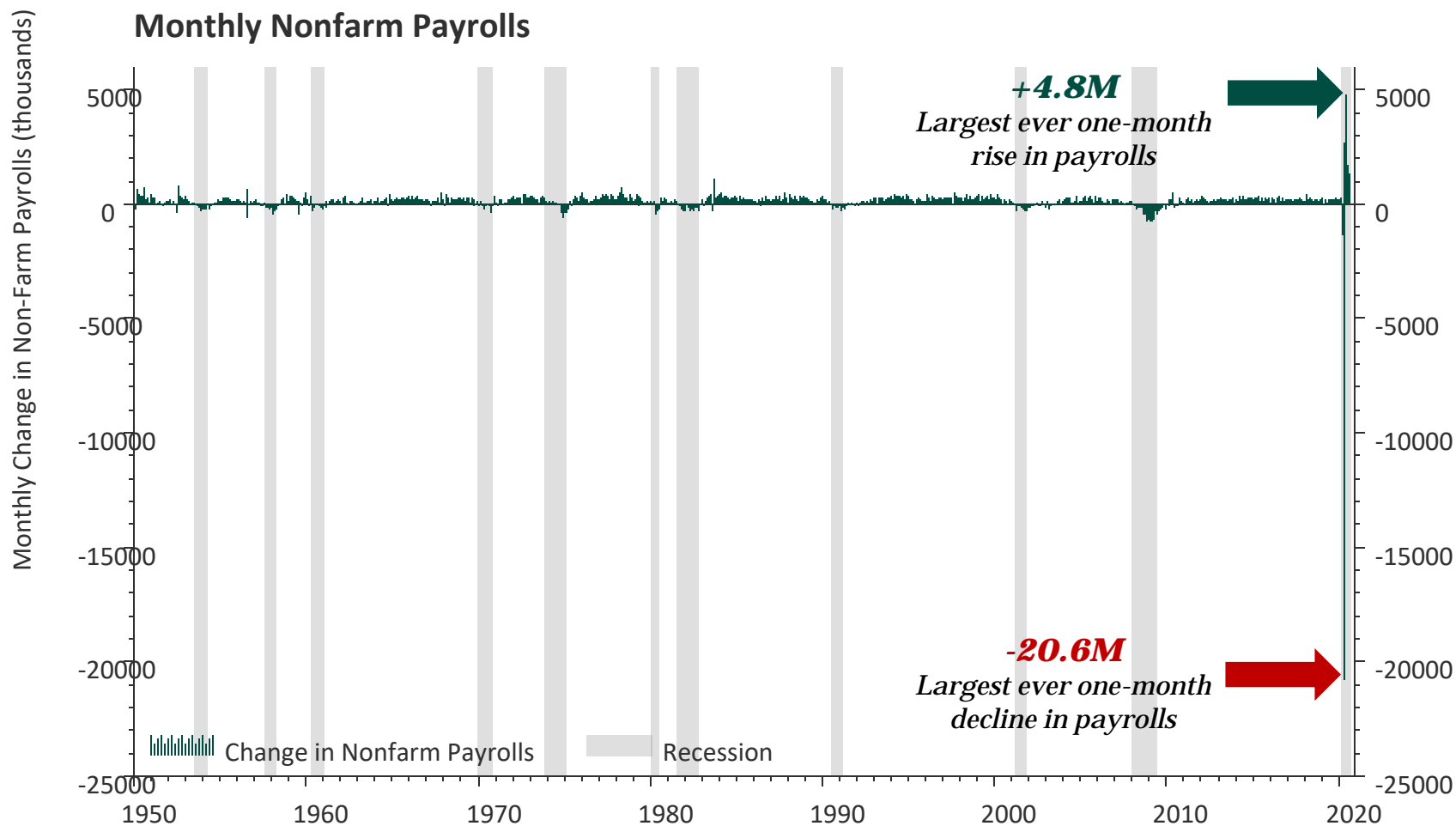


Key Drivers for Lower Growth

- Sharp contraction in March and April
- Consumers and businesses continue to cut back on spending
- Emerging supply chain disruptions
- Tightening in financial conditions

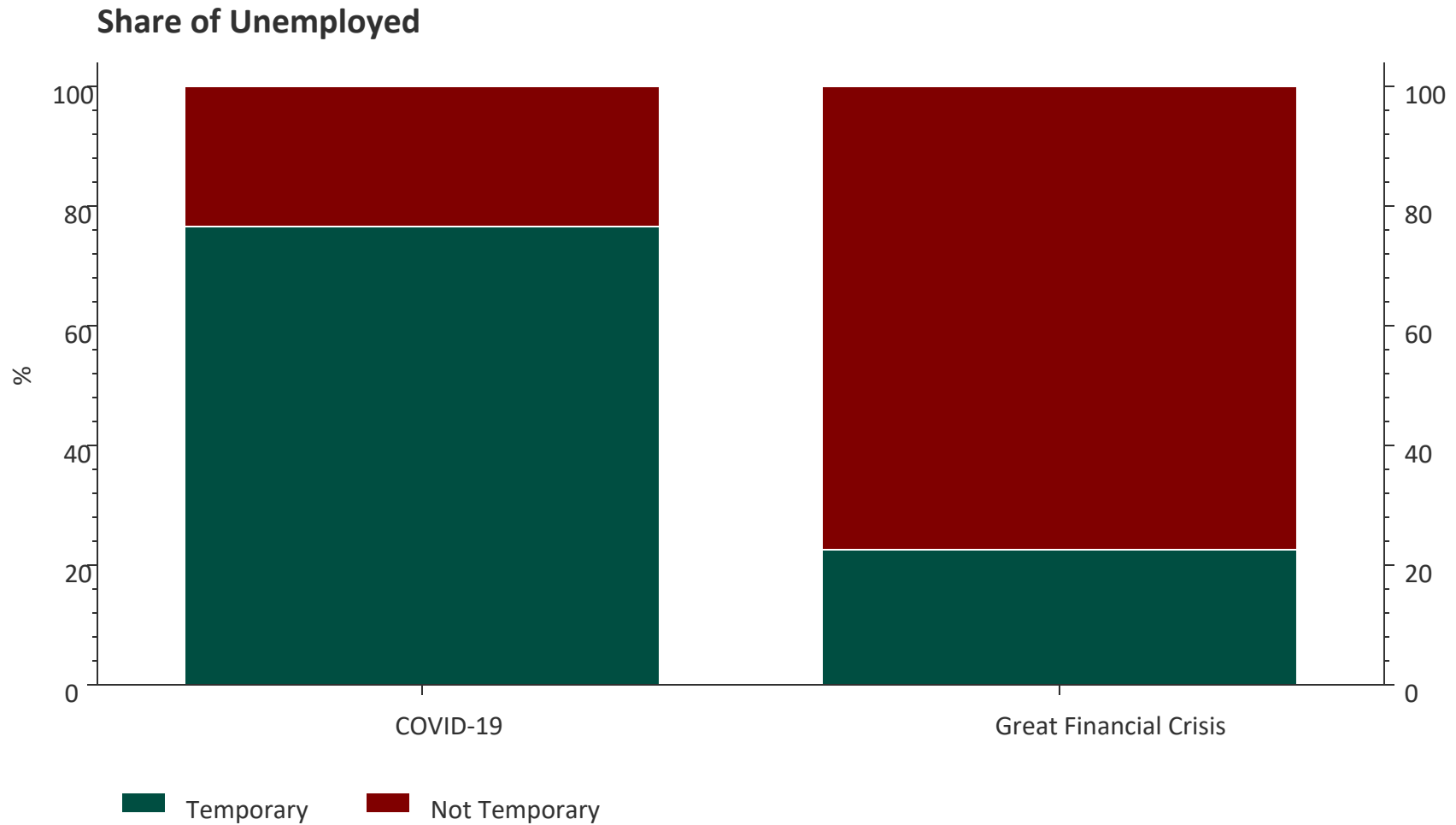
Source: Goldman Sachs Global Investment Research and GSAM. As of March 31, 2020. *Includes cutbacks to consumption categories requiring face-to-face interaction. **Includes reduced domestic and foreign demand for goods, supply chain disruptions, and plant shutdowns. ***Includes cutbacks to structures investment, homebuilding, and home sales. "QOQ AR" refers to quarter over quarter annualized rate.

Labor: Unprecedented moves in employment



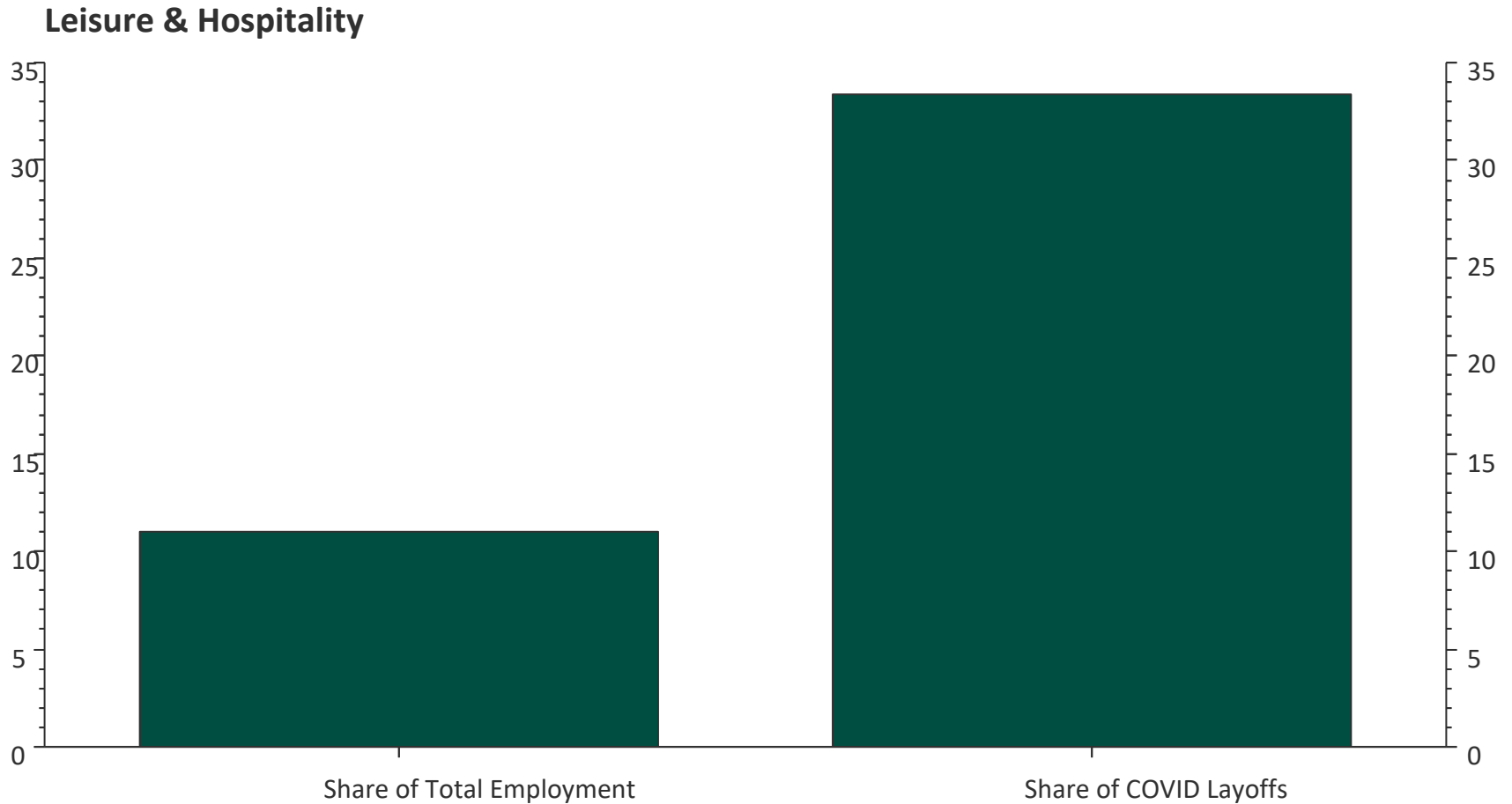
Source: Refinitiv Datastream

Labor: Vast majority of layoffs are temporary



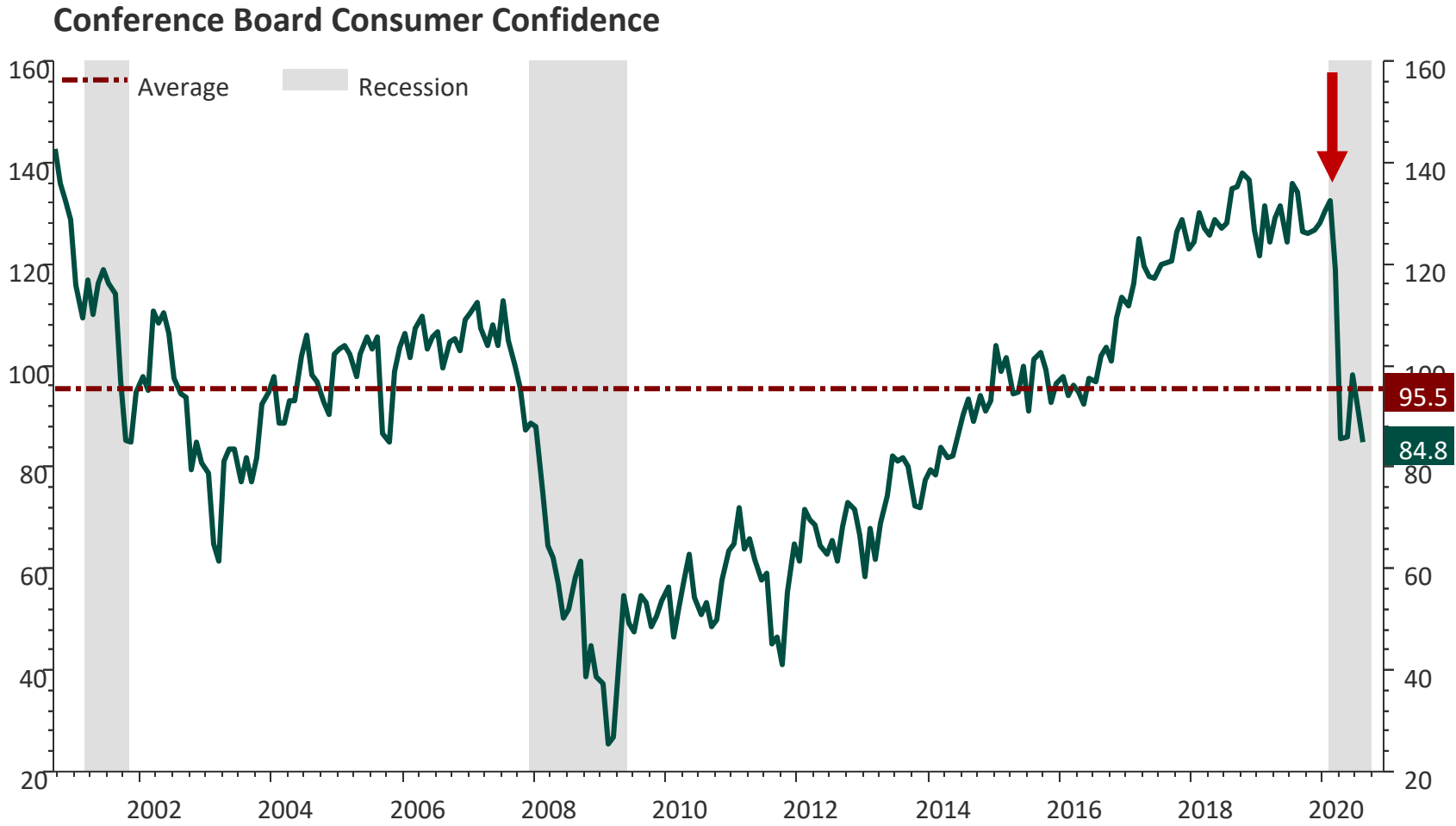
Source: Refinitiv Datastream

Labor: Leisure & Hospitality hit hardest



Source: Refinitiv Datastream

Consumer: Confidence rattled by COVID-19



Source: Refinitiv Datastream

COVID-19 Recovery Heat Map

US Economic Activity Heat Map

Metric	3/15/20	3/22/20	3/29/20	4/5/20	4/12/20	4/19/20	4/26/20	5/3/20	5/10/20	5/17/20	5/24/20	5/31/20	6/7/20	6/14/20	6/21/20	6/28/20	7/5/20	7/12/20	7/19/20	7/26/20	8/2/20	8/9/20	8/16/20	8/23/20	8/30/20	
Business/Labor	Hours Worked	-6.4%	-43.6%	-59.4%	-61.0%	-62.6%	-60.4%	-57.7%	-54.6%	-49.7%	-44.9%	-39.3%	-40.0%	-32.3%	-28.3%	-23.0%	-22.0%	-27.6%	-22.6%	-22.1%	-22.0%	-21.7%				
	Locations Open	-3.9%	-28.9%	-46.0%	-48.6%	-50.9%	-49.0%	-47.1%	-44.6%	-41.0%	-35.4%	-31.6%	-32.3%	-26.3%	-23.7%	-21.1%	-20.0%	-25.0%	-20.0%	-20.0%	-20.0%	-20.0%				
	Employees Working	-4.4%	-42.1%	-58.3%	-60.1%	-61.6%	-59.7%	-57.1%	-54.1%	-49.6%	-43.4%	-40.9%	-38.9%	-31.9%	-28.0%	-23.7%	-20.0%	-27.9%	-23.0%	-22.4%	-22.4%	-22.0%				
	Google Mobility Workplaces	-3.0%	-28.9%	-42.4%	-46.1%	-49.0%	-45.3%	-44.4%	-41.9%	-39.0%	-37.3%	-35.6%	-36.0%	-30.4%	-28.9%	-29.0%	-29.7%	-36.1%	-31.3%	-30.9%	-30.9%	-31.4%	-31.0%	-31.1%	-30.1%	-30.0%
	Google Search: Unemployment	1000.0%	1850.0%	2500.0%	2275.0%	2225.0%	2075.0%	1975.0%	1650.0%	1625.0%	1550.0%	2033.3%	1425.0%	1325.0%	1275.0%	1300.0%	1350.0%	1350.0%	1300.0%	1400.0%	1325.0%	1300.0%	1300.0%	1100.0%	1433.3%	1433.3%
Air Travel	TSA Throughput	70.5%	31.0%	9.8%	5.9%	4.3%	4.2%	4.6%	6.2%	7.4%	8.7%	10.9%	12.6%	14.6%	17.6%	20.0%	22.0%	26.4%	26.9%	25.5%	25.4%	26.5%	27.5%	29.0%	29.4%	29.8%
	Google Search: Flight	84.0%	50.6%	42.5%	39.0%	35.8%	42.3%	46.6%	47.3%	46.2%	43.2%	44.4%	46.3%	44.2%	41.9%	44.4%	45.9%	44.4%	46.5%	48.8%	50.0%	51.9%	51.3%	65.0%	57.9%	57.5%
General Activity	Google Mobility Transit	-6.4%	-33.0%	-48.1%	-50.4%	-52.4%	-50.3%	-48.0%	-43.4%	-41.0%	-40.0%	-36.7%	-35.9%	-32.7%	-29.6%	-28.0%	-27.3%	-27.9%	-27.7%	-28.3%	-28.9%	-28.3%	-27.9%	-28.6%	-28.7%	-29.4%
	Apple Mobility Transit	78.6%	37.2%	26.3%	24.3%	23.4%	23.8%	25.0%	27.3%	29.0%	30.9%	33.3%	36.1%	38.6%	43.6%	45.7%	48.9%	49.1%	50.5%	51.7%	51.6%	52.3%	53.6%	54.3%	56.6%	55.6%
	Apple Mobility Driving	105.2%	69.6%	54.4%	53.4%	54.4%	61.4%	67.3%	75.4%	83.6%	96.7%	105.9%	109.7%	116.6%	126.5%	130.8%	135.7%	133.1%	136.6%	138.5%	138.9%	139.8%	143.0%	143.8%	142.3%	136.3%
	DOE Gasoline Demand	99.3%	101.8%	94.8%	77.1%	68.1%	58.8%	57.8%	58.0%	69.0%	70.8%	74.8%	76.8%	74.6%	77.0%	84.3%	86.8%	86.6%	93.8%	89.2%	90.9%	89.7%	87.7%	90.7%	89.1%	93.6%
	AAR Waste & Scrap Rail Loads	104.6%	95.7%	94.7%	87.7%	76.8%	75.6%	84.8%	87.8%	92.1%	91.9%	91.9%	97.4%	90.6%	91.8%	94.6%	95.8%	103.4%	97.6%	95.3%	105.9%	93.9%	94.2%	89.2%	105.2%	
Restaurants	Open Table Reservations	-48.0%	-99.9%	-100.0%	-100.0%	-100.0%	-100.0%	-100.0%	-99.2%	-96.9%	-93.6%	-87.9%	-83.0%	-74.1%	-78.1%	-41.4%	-60.3%	-59.6%	-59.5%	-60.2%	-57.8%	-56.2%	-51.4%	-50.8%	-47.0%	-51.5%
	Google Search: Restaurant	73.6%	53.4%	55.4%	59.3%	57.1%	61.0%	65.4%	69.7%	72.7%	72.9%	74.7%	71.3%	80.0%	84.0%	86.2%	83.0%	79.3%	77.4%	76.3%	76.3%	79.8%	80.6%	82.2%	82.4%	89.2%
Hotels	STR Hotel Occupancy	-24.4%	-56.4%	-67.5%	-68.5%	-69.8%	-64.4%	-62.2%	-58.5%	-55.9%	-54.1%	-50.2%	-43.2%	-45.3%	-43.4%	-41.8%	-38.7%	-30.2%	-38.0%	-38.9%	-37.9%	-34.5%	-32.6%	-30.0%	-30.30%	-27.70%
	STR Avg. Daily Rate	-10.7%	-30.2%	-39.4%	-41.5%	-45.6%	-42.2%	-42.9%	-44.0%	-42.1%	-42.4%	-39.7%	-33.3%	-35.9%	-33.9%	-31.7%	-29.0%	-20.9%	-26.8%	-28.0%	-27.3%	-25.3%	-24.9%	-23.0%	-22.70%	-23.20%
	STR Rev. per Available Room	-32.5%	-69.5%	-80.3%	-81.6%	-83.6%	-79.4%	-78.4%	-76.8%	-74.4%	-73.6%	-69.9%	-62.1%	-65.0%	-62.6%	-60.3%	-56.5%	-44.8%	-54.6%	-56.0%	-54.8%	-51.1%	-49.4%	-46.1%	-46.10%	-44.50%
	Google Search: Hotel	93.1%	66.2%	55.4%	60.6%	61.8%	60.6%	58.6%	65.2%	69.7%	68.5%	56.0%	68.3%	85.4%	84.3%	83.0%	79.3%	79.1%	83.7%	93.1%	97.6%	96.4%	93.9%	91.0%	92.1%	93.3%
Retail & Recreation	Google Mobility Retail & Rec.	1.9%	-27.7%	-42.0%	-42.3%	-45.7%	-41.7%	-39.7%	-33.9%	-29.6%	-28.9%	-24.3%	-23.1%	-18.6%	-16.0%	-14.4%	-15.3%	-14.4%	-15.0%	-14.7%	-15.3%	-14.4%	-13.7%	-14.9%	-14.1%	-13.7%
	Google Search: Movie Theatre	28.1%	12.9%	10.0%	11.3%	10.7%	8.2%	9.0%	14.5%	19.6%	25.9%	19.7%	18.0%	23.3%	19.4%	18.4%	12.9%	16.4%	15.4%	17.7%	16.7%	19.4%	23.3%	28.8%	35.6%	29.6%
	Bloomberg Consumer Comfort	63.0%	59.7%	56.3%	49.9%	44.5%	41.4%	39.5%	36.9%	35.8%	34.7%	35.5%	37.0%	38.7%	40.2%	41.4%	43.3%	42.9%	44.3%	44.7%	44.3%	44.9%	43.7%	43.5%	44.3%	45.1%
	Redbook Same Store Sales	7.2%	7.9%	7.5%	7.0%	-2.0%	-4.4%	-5.7%	-6.6%	-7.5%	-8.5%	-7.5%	-7.5%	-9.7%	-9.0%	-8.0%	-7.4%	-7.3%	-5.5%	-6.5%	-7.2%	-7.2%	-3.4%	0.00%	-1.90%	
Housing	MBA Mortgage Purchase Apps	112.9%	95.0%	73.6%	65.0%	64.2%	65.0%	74.5%	82.7%	87.9%	94.0%	106.0%	114.0%	124.3%	117.1%	118.4%	119.4%	125.9%	114.1%	121.4%	123.0%	128.9%	123.8%	128.0%	130.9%	133.6%

COVID-19 Progression

Summary Table of COVID-19 Progression, by Month

Month	Tests	Ave Daily	Cases	Ave Daily	Pct Pos	Hosp	Ave Daily	Hosp Rate	Deaths	Ave Daily	CFR
April			880,399	29,347					58,938	1,965	6.7%
May	10,705,709	345,345	720,159	23,231	6.7%	98,128	3,165	13.6%	41,364	1,334	5.7%
June	15,269,354	508,978	846,347	28,212	5.5%	32,325	1,078	3.8%	23,042	768	2.7%
July	23,166,738	747,314	1,925,632	62,117	8.3%	65,680	2,119	3.4%	25,889	835	1.3%
August	22,919,338	739,333	1,469,117	47,391	6.4%	62,292	2,009	4.2%	30,288	977	2.1%
September	5,134,669	733,524	270,164	38,595	5.3%	8,497	1,214	3.1%	5,619	803	2.1%
Cumulative**	83,426,990	474,017	6,301,451	35,804	7.6%	378,877	2,153	6.0%	189,221	1,075	3.0%

Data as of September 7, 2020. Source: JH CSSE.

April test and hospitalization results not included because testing began 4/12/2020.

**Includes testing and hospitalization data from 4/12/2020. Cases and Deaths include March, beginning 3/16/2020.

Favorable Trends

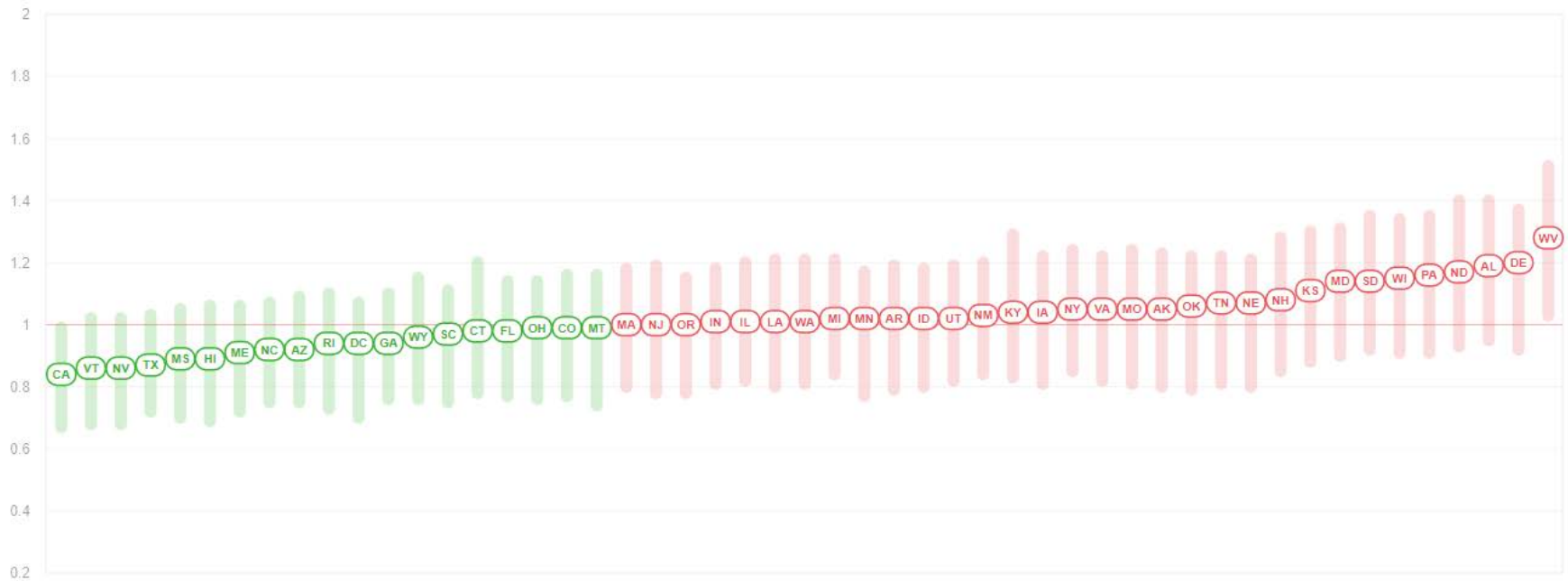
- Doubling Rate of Confirmed Cases approaches 200 days. Confirmed Cases are decelerating nationally.
- Substantial decline in daily Confirmed Cases in August.
- Positivity Rate declined in August. For new tests, positive case rate is now 4.0%.
- Fewer Asymptomatic/Undetected cases—testing appears to be “capturing” 50% of infections. Infections are also decelerating.
- Substantial decline in net, new hospitalizations in August, suggesting case severity has fallen.

Unfavorable Trends:

- The Case Fatality Rate has appeared to plateau around 3.0%.
- There are more “hot spots”, in terms of Effective Reproductive Rate, than there were 1 month ago.
- Confirmed case counts have exhibited a declining pattern in the week prior to a long, national holiday weekend. With a lag of approximately two weeks, national holidays have been associated with a surge in confirmed cases. We should expect daily confirmed case counts to increase following Labor Day through the middle of September.

COVID-19 Hot Spots

R_t – Effective Reproductive Rate: Where are the current Hot Spots?



Calculate R_t

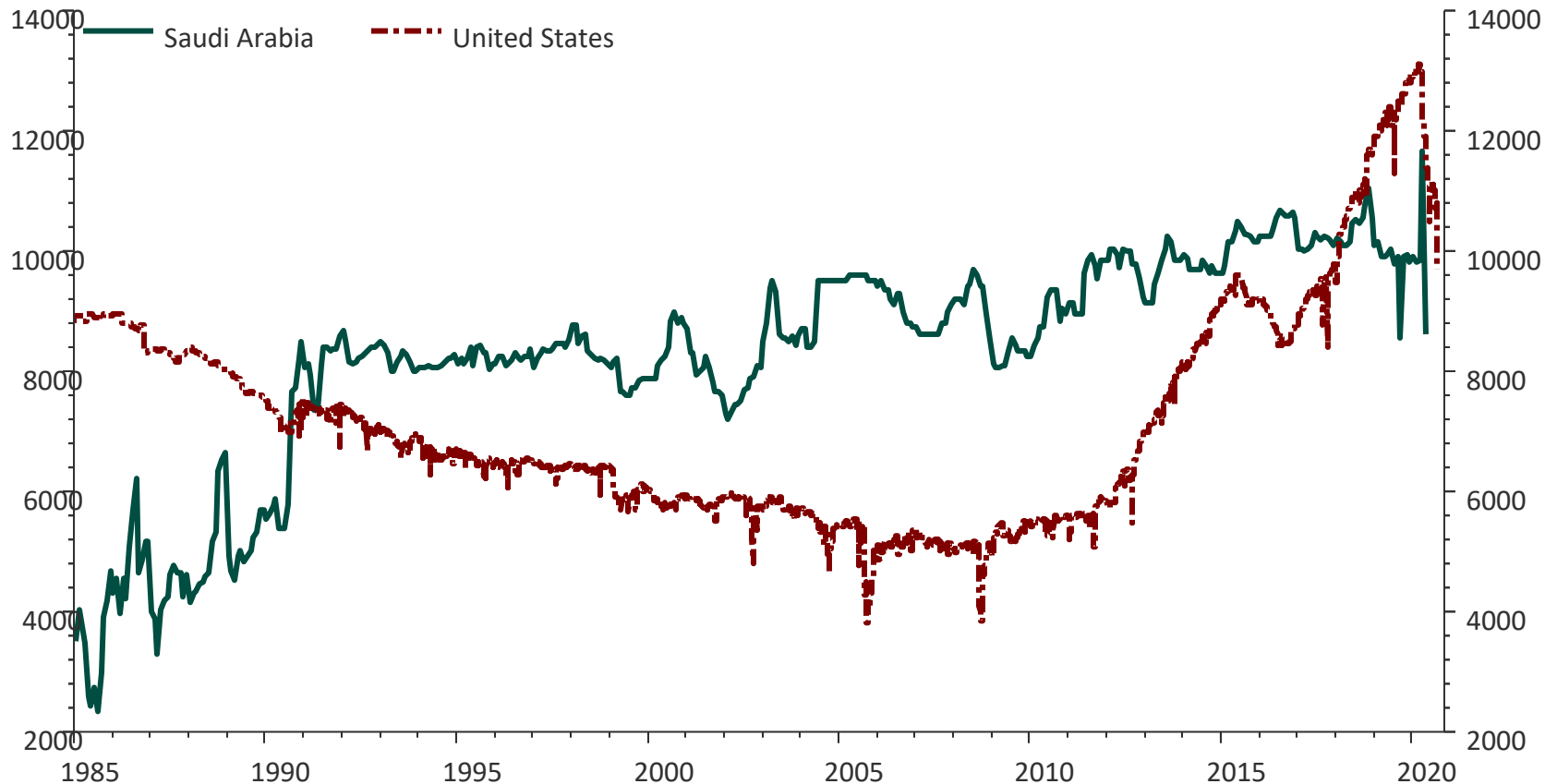
R_t represents the effective reproduction rate of the virus calculated for each locale. It lets us estimate how many secondary infections are likely to occur from a single infection in a specific area. Values over 1.0 mean we should expect more cases in that area, values under 1.0 mean we should expect fewer.

Source: *rt.live*

United States is the new swing oil producer

US vs. Saudi Arabia Crude Production

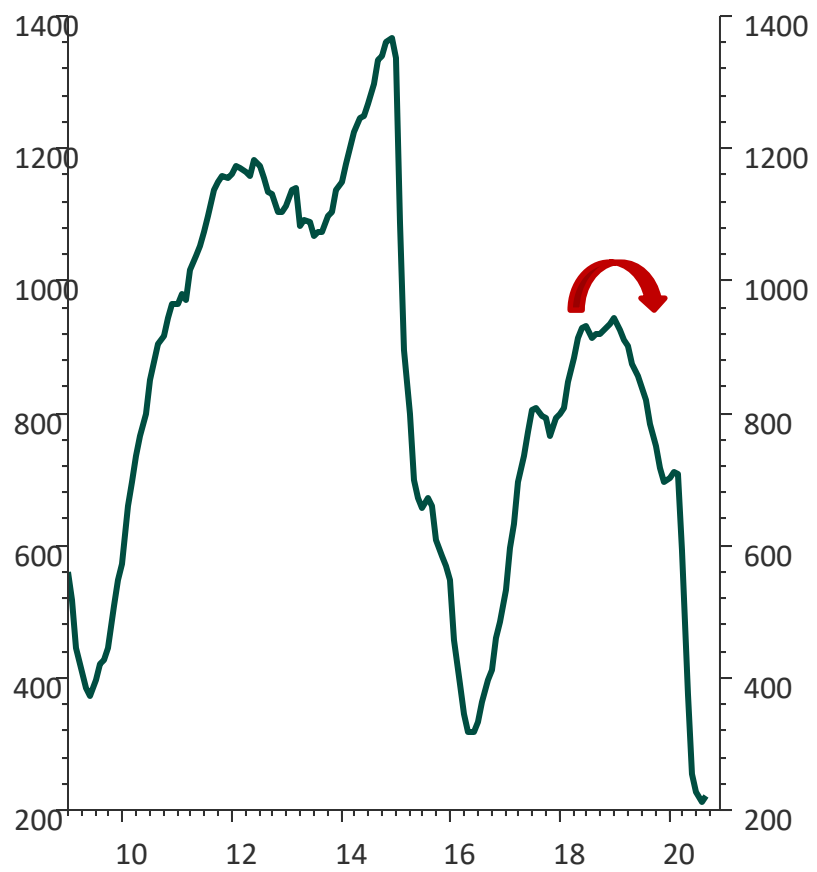
Barrels/Day in Thousands



Source: Refinitiv Datastream

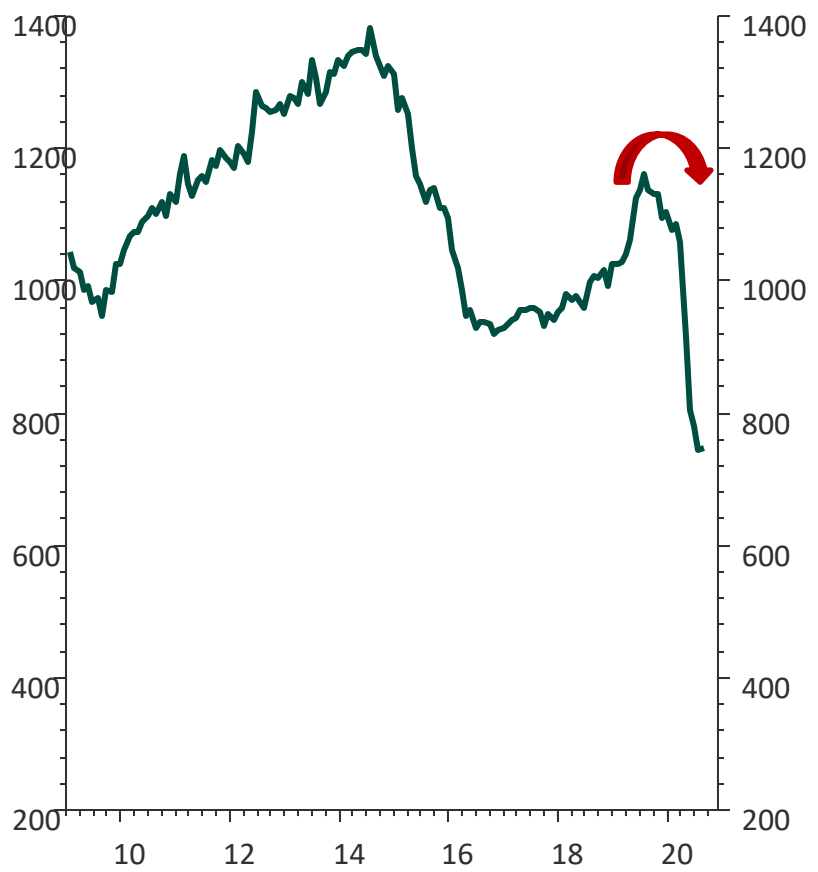
Global Decline in Rig Count

US Horizontal Rotary Rig Count



Source: Refinitiv Datastream

Int'l Crude Oil & Nat. Gas Rig Count



Source: Refinitiv Datastream