



Topical Research:

Coronavirus Report

As of 12/01/21

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Enormous cross-currents, winners and losers as parts of the economy have roared back, others slower to respond; Omicron currently an unknown

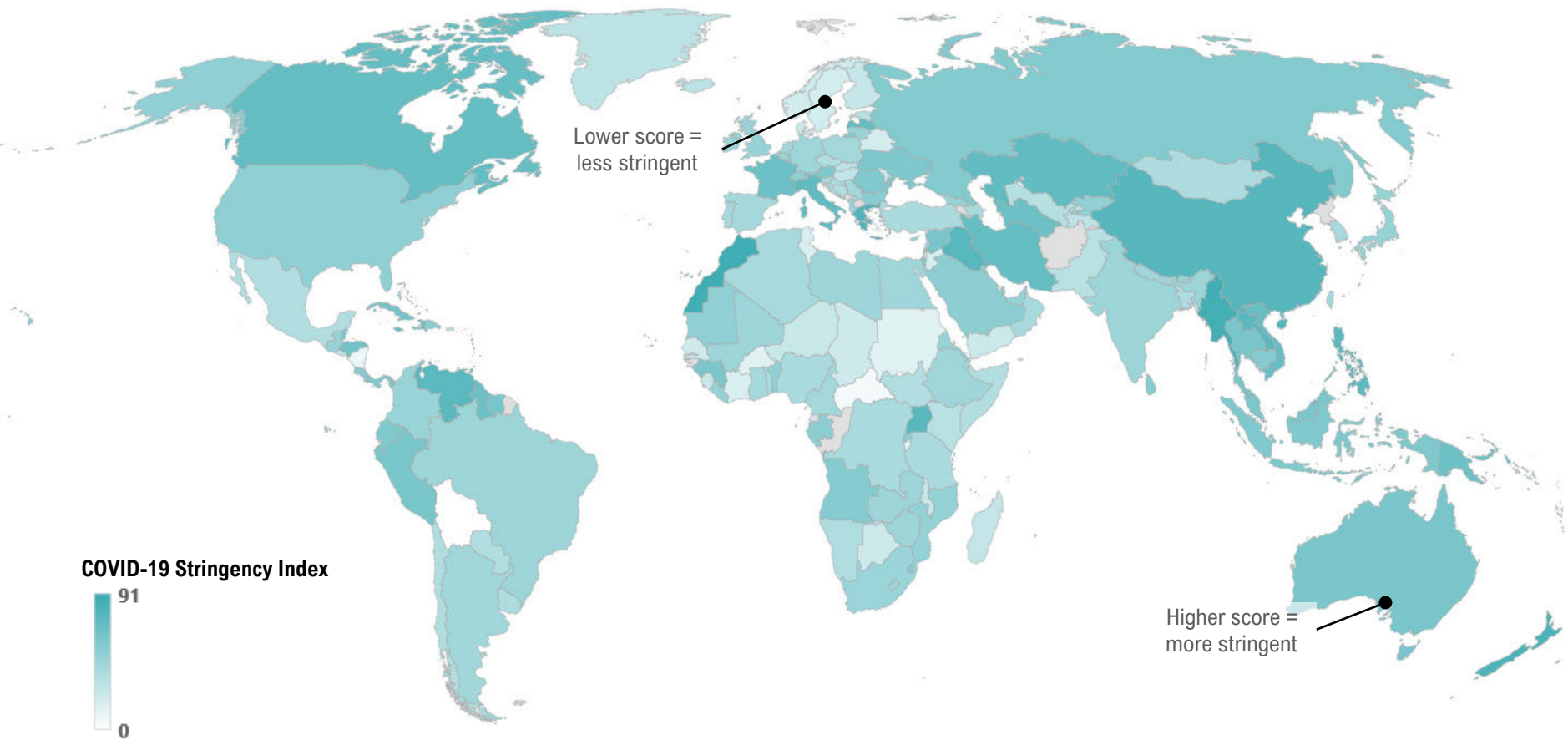
	7/2	7/9	7/16	7/23	7/30	8/6	8/13	8/20	8/27	9/3	9/10	9/17	9/24	10/1	10/8	10/15	10/22	10/29	11/5	11/12	11/19	11/26
Virus																						
New Covid-19 Cases (U.S.)	92,354	136,196	226,012	363,836	559,598	760,384	916,926	1,031,314	1,089,484	1,146,647	1,011,038	1,128,215	843,922	751,694	657,135	594,174	509,903	526,525	517,006	586,289	656,511	498,619
New Covid-19 Fatalities (U.S.)	1,628	1,626	1,833	1,866	2,544	3,547	4,540	7,078	9,022	10,942	11,503	13,793	15,316	13,115	11,385	11,149	11,213	9,891	8,597	8,663	8,026	5,521
Lockdown Index (0-100)	68	60	60	60	58	58	62	62	62	60	60	62	62	62	62	62	62	58	58	55	55	55
Economy																						
Jobless Claims (000) ¹	363	383	392	411	344	326	323	310	299	292	286	266	307	301	262	281	257	247	242	257	240	259
Gasoline Inventories (Mn Barrels) ¹	242	235	237	236	234	229	227	228	226	227	220	218	222	222	225	223	218	216	214	213	212	211
New York Fed Economic Index	10	8	9	9	9	8	8	8	9	8	8	8	8	8	8	8	7	7	7	7	7	7
Mortgage Applications (%) ²	-10	-11	-4	-10	-11	-13	-11	-12	-9	-9	-9	-2	0	-1	-3	-1	-6	-3	-4	-2	0	4
Consumer Comfort ¹	53	52	52	53	53	55	57	57	58	58	58	56	55	53	51	50	48	49	50	51	52	52
Same Store Sales (YoY%) ¹	18	19	14	15	16	17	16	15	17	19	17	15	17	17	17	15	15	16	17	16	15	15
Restaurant Booking (YoY%)	-4	-4	-3	-5	-4	-6	-9	-6	-4	0	-10	-8	-5	-5	-5	-3	-1	-9	-6	-2	-3	-5
Active Oil Rigs (%) ²	-43	-43	-43	-42	-42	-42	-40	-39	-38	-41	-40	-38	-37	-36	-35	-33	-33	-33	-32	-32	-31	-30
Steel Production (%) ²	-4	-4	-3	-3	-2	-2	-2	-2	-2	-2	-2	-1	-2	-2	-2	-3	-1	-2	-3	-4	-3	-3
Financial Markets																						
S&P 500 (%) ²	34	34	33	36	35	37	37	37	39	40	37	36	37	34	35	38	40	42	45	44	45	41
Russell 2000 (%) ²	39	37	30	33	34	35	34	31	37	38	34	35	35	35	35	37	38	38	47	45	41	35
Russell Microcap (%) ²	54	52	44	46	47	49	47	42	51	52	49	48	49	49	48	49	50	50	59	58	52	46
Financial Conditions	1.4	1.4	1.2	1.2	1.2	1.3	1.3	1.1	1.3	1.3	1.3	1.2	1.2	1.0	1.2	1.3	1.3	1.3	1.3	1.2	1.1	0.5
Bbg U.S. Corp HY Spread (Bps)	267	269	282	289	294	301	309	312	294	279	279	274	277	293	295	289	285	287	284	284	301	341
NYSE % above 200-day MA	81	76	74	71	72	69	69	60	63	66	57	57	57	52	58	60	62	58	64	63	58	56
VIX	15	16	18	17	18	16	15	19	16	16	21	21	18	21	19	16	15	16	16	16	18	29

Source: Bloomberg, Oxford Government Response Tracker, Moovit and OpenTable.

1 Data references release date, not measurement period, which is lagged by one week.

2 Data represents the percent change from the average of the first two weeks in January 2020.

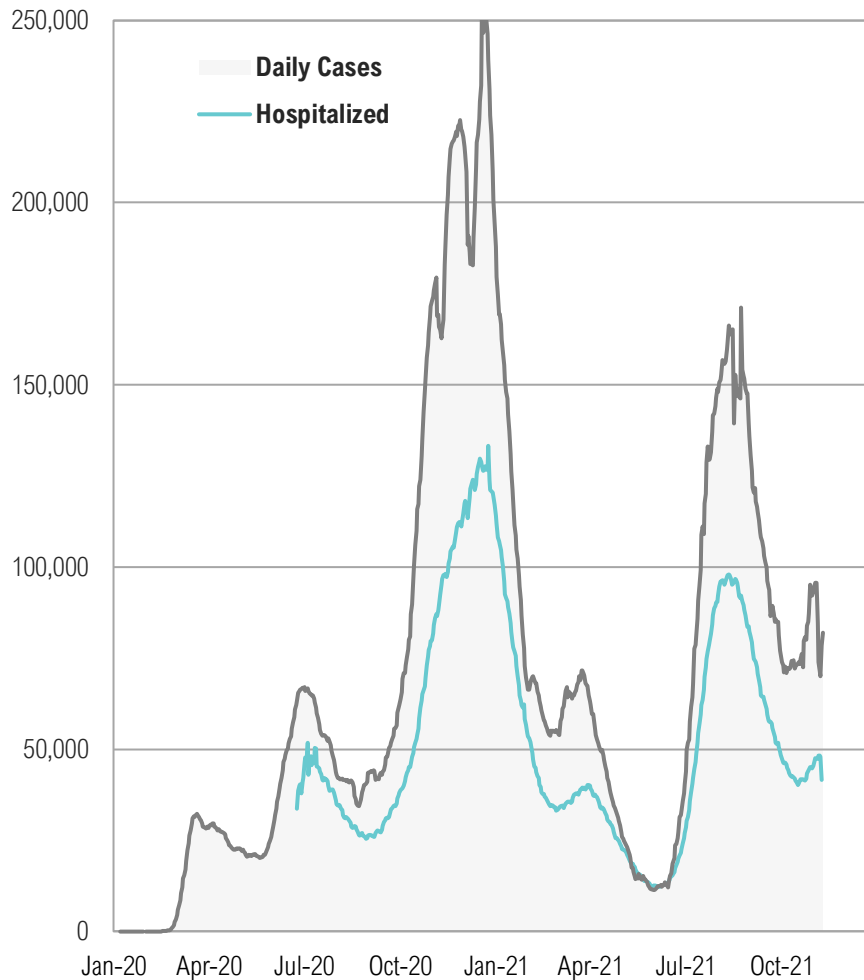
➤ While we still know little about the Omicron variant, we know that the reaction function and policy response to the pandemic remains significant and unpredictable



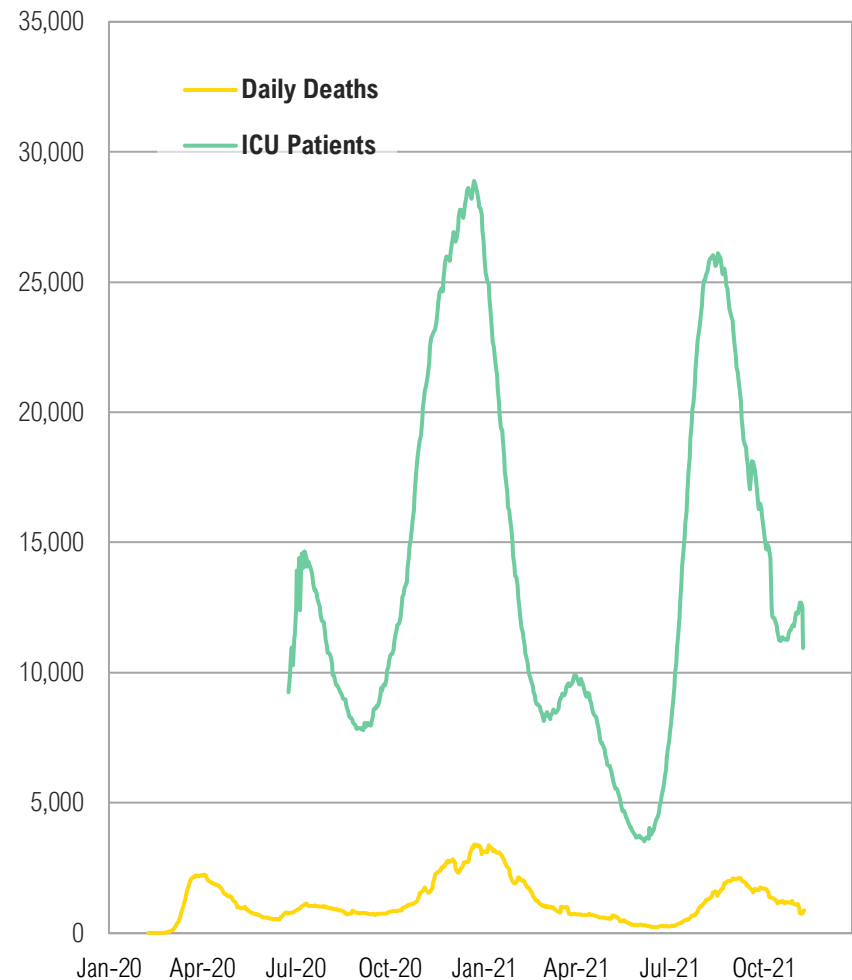
Source: ourworldindata.org. Data as of 11/1/2021. The Oxford Coronavirus Government Response Tracker (OxCGRT) project calculate a Stringency Index, a composite measure of nine of the response metrics. The nine metrics used to calculate the Stringency Index are: school closures; workplace closures; cancellation of public events; restrictions on public gatherings; closures of public transport; stay-at-home requirements; public information campaigns; restrictions on internal movements; and international travel controls.

COVID-19 delta variant wave spread faster but was less severe than winter 2020 wave; Omicron variant may follow same pattern based on early data

DAILY CASES & HOSPITALIZATIONS



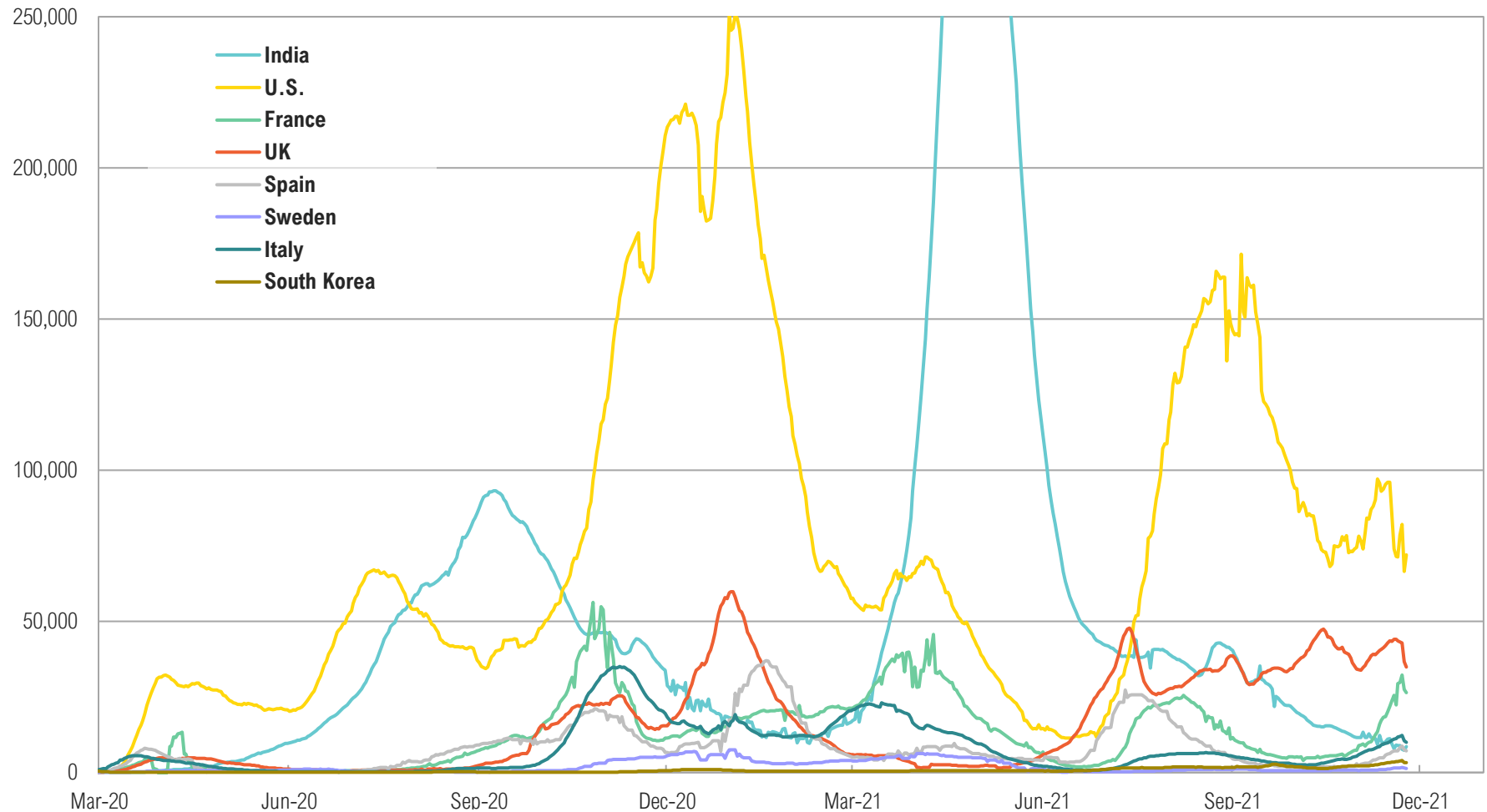
ICU PATIENTS, DEATHS



Source: ourworldindata.org

Trends in daily new cases are mixed but with most countries below 2021 peak; notwithstanding Omicron, endemicity may be within sight

NEW CASES, 7-DAY MOVING AVERAGE



Source: Bloomberg

Global daily new cases have been trending upwards since late October, but cases are a narrow measure with limited usefulness

	10/31	11/1	11/2	11/3	11/4	11/5	11/6	11/7	11/8	11/9	11/10	11/11	11/12	11/13	11/14	11/15	11/16	11/17	11/18	11/19	11/20	11/21	11/22	11/23	11/24	11/25	11/26	11/27	11/28	11/29	11/30
Global	437,239	439,238	425,570	441,178	443,980	445,437	452,595	454,437	463,493	483,633	477,947	480,062	488,154	492,966	495,954	502,987	507,791	514,810	525,970	533,837	536,521	540,118	553,116	566,985	574,077	570,312	565,535	558,295	564,061	570,565	572,136
Developed																															
U.S.	75,218	78,049	76,788	78,398	72,680	73,155	73,101	73,858	74,460	78,080	76,612	73,917	79,334	84,113	83,756	86,915	87,987	90,155	97,006	95,582	93,053	93,787	95,225	95,967	95,975	85,009	73,933	71,513	71,231	78,547	82,016
Canada	2,333	2,314	2,277	2,242	2,240	2,229	2,262	2,296	2,568	2,751	2,506	2,337	2,540	2,546	2,558	2,498	2,419	2,401	2,595	2,436	2,487	2,501	2,514	2,572	2,594	2,797	2,829	2,868	2,904	2,871	2,889
Japan	264	254	242	235	219	209	201	191	194	190	180	187	183	177	173	169	162	163	154	148	135	137	132	127	109	104	98	101	90	94	91
UK	40,815	41,334	39,891	39,445	39,172	37,845	36,337	35,217	34,121	34,015	33,829	34,678	35,418	36,468	37,372	38,564	39,168	38,962	39,611	40,423	40,758	41,234	41,947	42,788	43,459	43,349	44,063	44,017	43,595	43,198	42,838
Germany	18,840	19,119	16,969	19,828	24,051	23,518	26,517	26,358	28,129	31,691	32,011	33,610	35,263	36,766	37,683	39,289	41,052	43,522	44,941	46,648	48,201	49,206	51,053	53,114	54,640	56,899	58,082	58,053	57,636	58,044	58,134
France	5,936	6,011	5,345	5,806	6,276	6,646	6,970	7,286	7,337	8,831	9,065	9,529	8,786	9,502	10,066	10,218	11,264	12,467	13,574	16,058	17,204	18,240	18,530	20,048	21,800	23,674	25,560	22,321	29,338	29,763	32,152
Italy	4,397	4,438	4,263	4,348	4,496	4,700	4,969	5,155	5,402	5,870	6,277	6,676	6,927	7,182	7,431	7,524	7,767	8,072	8,350	8,641	9,069	9,375	9,547	9,866	10,192	10,636	11,083	11,273	11,733	11,957	12,345
Spain	1,917	1,276	1,832	1,797	1,951	2,070	2,070	2,070	2,987	2,155	2,752	2,894	3,074	3,074	3,074	3,557	4,141	4,171	4,461	4,787	4,787	4,787	5,655	6,039	6,304	6,725	7,193	7,193	7,193	8,198	8,696
Netherlands	7,106	7,451	7,726	7,986	8,353	8,858	9,430	9,885	10,472	10,979	11,494	12,362	13,116	13,388	13,485	14,541	15,815	16,969	18,010	18,702	19,839	21,073	21,615	22,020	22,445	22,245	22,283	22,313	22,526	22,306	22,187
Australia	1,675	1,591	1,328	1,416	1,372	1,364	1,393	1,364	1,386	1,558	1,402	1,378	1,367	1,328	1,289	1,250	1,253	1,212	1,225	1,212	1,262	1,292	1,291	1,324	1,361	1,379	1,396	1,363	1,356	1,370	1,363
Switzerland	1,450	1,627	1,906	1,802	1,966	2,127	2,127	2,127	2,428	2,575	2,795	2,931	3,085	3,085	3,522	3,710	3,972	4,276	4,597	4,597	4,597	5,294	5,588	5,960	6,251	6,517	6,517	6,517	7,204	7,500	
Sweden	788	788	857	842	835	797	797	797	797	703	728	752	768	768	768	768	843	838	868	895	895	895	895	1,067	1,178	1,297	1,445	1,445	1,445	1,445	1,757
Greece	3,687	3,900	4,269	4,626	5,173	5,641	5,882	6,105	6,378	6,680	6,815	6,813	6,805	6,773	6,710	6,655	6,569	6,506	6,578	6,710	6,683	6,721	6,769	6,767	6,831	6,729	6,565	6,553	6,512	6,425	6,335
Emerging																															
China	67	71	63	87	89	86	87	86	85	92	71	73	76	77	72	67	64	60	49	42	32	30	29	29	27	25	26	27	28	30	43
Indonesia	620	612	612	624	610	586	555	544	521	496	450	422	405	399	384	381	369	375	370	364	369	365	360	367	357	353	366	368	367	359	345
Korea	1,900	1,946	2,048	2,201	2,133	2,153	2,176	2,187	2,205	2,170	2,176	2,179	2,218	2,253	2,312	2,421	2,531	2,626	2,753	2,852	2,969	3,051	3,184	3,277	3,400	3,522	3,639	3,707	3,754	3,898	
Taiwan	6	6	6	6	5	5	5	4	4	4	4	5	5	6	6	7	7	7	6	6	6	5	6	6	7	7	8	8	8	9	9
Brazil	11,585	11,305	10,306	9,945	9,672	9,865	10,033	9,941	10,198	10,843	10,502	10,780	10,963	11,359	11,075	10,670	9,808	9,766	9,338	9,160	8,330	8,473	8,521	9,214	9,350	9,325	9,188	9,245	9,090	9,191	9,182
Mexico	3,650	3,252	3,394	3,258	2,953	2,847	2,792	2,796	2,796	3,293	2,781	3,408	2,870	2,833	2,572	2,707	2,178	2,831	2,384	2,384	2,453	2,478	2,649	2,539	2,414	3,057	3,549	3,001	2,951	2,898	2,898
Russia	37,855	38,194	38,547	39,088	39,094	39,210	39,354	39,082	38,930	38,941	38,589	38,656	38,559	38,253	38,195	38,045	37,704	37,493	37,003	36,574	36,263	35,996	35,614	35,226	34,817	34,348	34,046	33,649	33,226	33,031	32,901
South Africa	355	349	326	308	277	258	266	263	264	275	270	275	283	275	246	286	290	327	277	417	500	598	586	3,202	3,303	3,655	3,459	4,196	4,506	4,786	2,756
Iran	9,113	9,448	9,592	9,552	9,331	9,151	9,150	9,025	8,809	8,552	8,207	7,875	7,687	7,331	7,129	7,008	6,740	6,498	6,261	6,041	5,932	5,674	5,379	5,195	4,990	4,842	4,642	4,572	4,492	4,332	4,205
India	13,976	13,720	13,434	13,212	12,745	12,514	12,030	11,744	11,596	11,554	11,491	13,309	11,490	11,622	12,880	11,507	11,327	11,146	9,190	12,248	10,556	9,250	10,195	11,102	11,183	9,481	7,929	9,118	8,873	8,847	7,672

Source: Bloomberg, WHO
Cases are shown as a 7-day average.

Coronavirus Trends

SEE IMPORTANT DISCLOSURES AT THE END OF THIS PRESENTATION

Mortality data, while imperfect, is unfortunately also trending higher

	10/31	11/1	11/2	11/3	11/4	11/5	11/6	11/7	11/8	11/9	11/10	11/11	11/12	11/13	11/14	11/15	11/16	11/17	11/18	11/19	11/20	11/21	11/22	11/23	11/24	11/25	11/26	11/27	11/28	11/29	11/30
Global	4,972	5,937	6,580	9,279	7,829	8,631	6,147	4,995	6,605	8,260	8,232	7,886	8,452	7,122	4,781	6,542	7,686	8,957	8,213	8,769	5,642	4,465	7,243	8,240	8,553	7,294	6,988	5,580	5,068	7,812	7,894
Developed																															
U.S.	167	1,201	1,254	2,123	1,145	2,359	364	151	1,207	1,655	1,625	760	2,844	452	120	1,271	1,448	1,620	1,264	1,996	322	105	1,225	1,427	1,627	388	564	187	103	1,962	1,539
Canada	6	30	20	77	20	16	7	11	43	27	30	14	45	14	9	50	23	27	31	17	10	7	29	29	27	20	16	10	5	36	17
Japan	7	7	7	8	6	1	2	0	3	3	3	4	1	1	2	1	4	5	5	0	5	0	2	2	2	2	2	1	0	1	2
UK	74	43	292	217	219	193	155	62	57	263	216	199	145	158	63	47	214	201	200	159	150	61	45	165	149	148	160	131	51	35	161
Germany	31	32	120	309	155	141	37	34	168	237	235	191	229	54	43	266	292	266	207	242	74	63	307	336	350	357	303	104	73	390	444
France	13	7	88	38	46	26	25	11	58	46	33	18	48	16	17	75	48	56	52	50	24	17	97	84	81	72	60	0	57	122	115
Italy	26	20	41	63	59	51	31	26	32	68	60	67	68	53	36	44	74	72	69	48	49	46	70	83	85	71	51	90	47	65	89
Spain	0	0	55	39	15	27	0	0	54	0	59	30	26	0	0	43	29	30	29	6	0	0	22	34	38	27	24	0	0	53	44
Netherlands	14	12	19	33	23	21	37	8	22	29	25	27	32	33	6	16	35	45	34	37	56	11	30	54	51	61	59	55	45	32	65
Australia	8	13	0	25	14	10	10	12	14	17	4	11	4	5	6	10	9	15	11	5	6	4	20	5	5	7	5	4	3	9	5
Switzerland	1	8	17	2	4	8	1	0	8	13	11	3	16	0	1	21	6	3	8	13	5	0	25	9	19	20	15	0	1	29	22
Sweden	0	0	15	3	7	7	0	0	0	8	11	2	4	0	0	0	12	13	2	1	0	0	0	16	16	0	3	0	0	0	6
Greece	44	52	60	59	42	49	43	52	66	53	79	67	56	70	80	72	85	89	63	93	69	76	112	92	95	81	86	82	98	108	90
Emerging																															
China	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Indonesia	17	18	34	24	19	19	15	11	12	21	14	16	20	16	15	11	15	13	11	5	14	11	5	9	13	16	14	11	1	11	11
Korea	9	16	0	42	20	20	11	13	18	14	21	18	32	20	12	22	21	29	28	29	30	24	30	35	38	39	52	56	32	44	35
Taiwan	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Brazil	130	98	149	164	436	389	328	59	126	183	280	188	267	731	61	63	132	373	293	226	217	72	123	284	273	303	315	229	92	98	305
Mexico	414	0	99	269	154	244	283	320	0	376	0	520	0	242	217	58	57	369	356	0	216	227	152	0	326	599	165	0	245	91	0
Russia	1,131	1,124	1,144	1,157	1,165	1,159	1,152	1,146	1,164	1,183	1,206	1,206	1,203	1,212	1,194	1,187	1,213	1,220	1,219	1,221	1,222	1,216	1,212	1,207	1,207	1,201	1,200	1,203	1,190	1,178	1,195
South Africa	14	2	18	23	31	44	24	13	20	35	48	17	17	277	0	-257	15	11	0	47	10	2	10	51	22	114	0	20	6	25	21
Iran	177	153	160	147	158	132	120	126	140	112	135	123	109	124	125	105	134	125	103	100	118	104	97	124	103	96	86	87	80	82	119
India	446	251	443	311	461	221	392	526	266	332	460	841	0	555	391	19	197	301	470	726	0	313	249	646	423	0	488	465	621	236	190

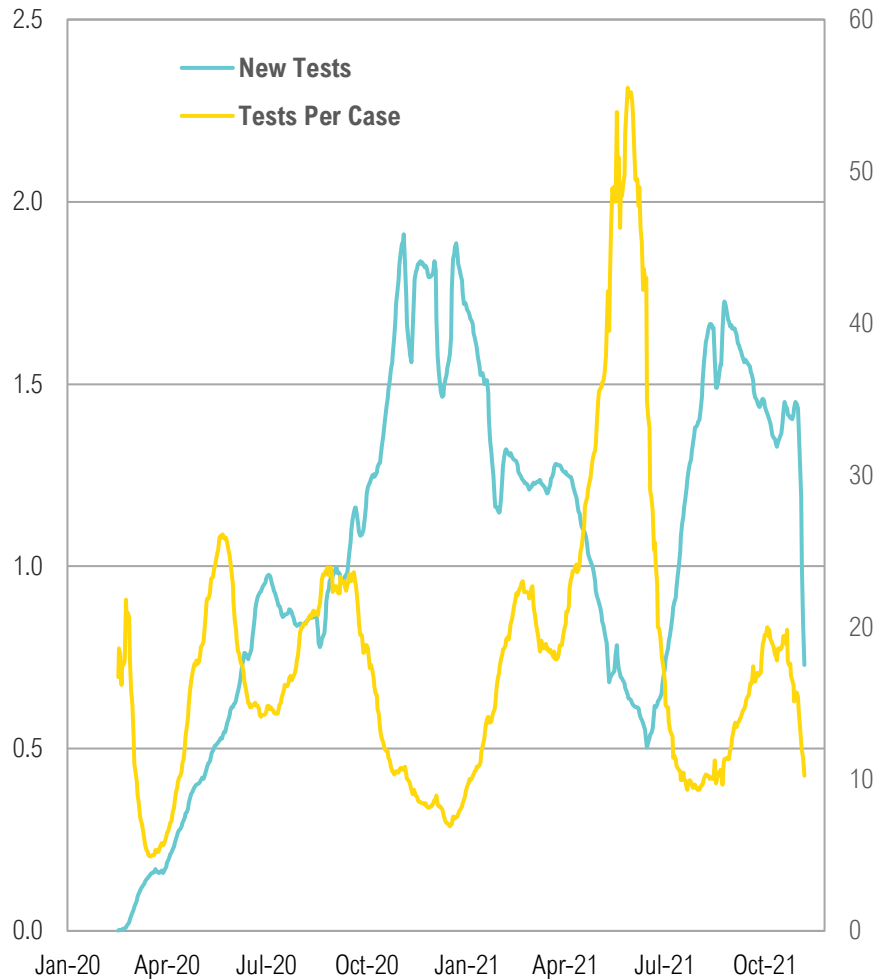
Source: Bloomberg, WHO
Deaths are shown as a 7-day average.

Coronavirus Trends

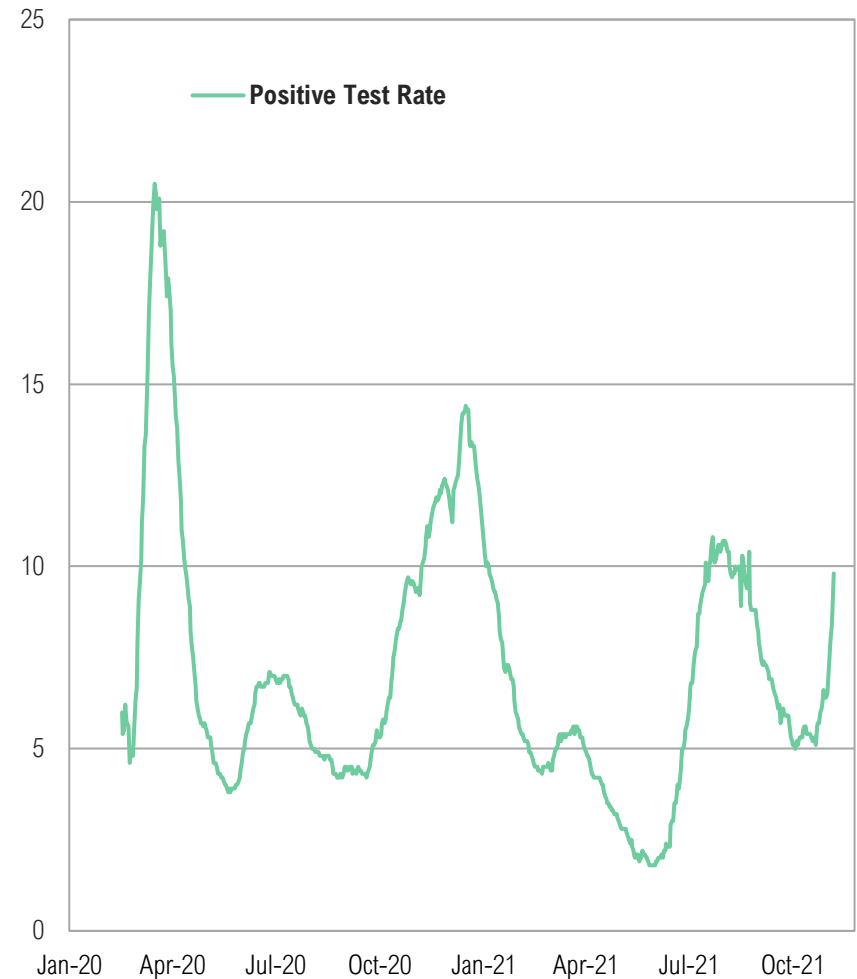
SEE IMPORTANT DISCLOSURES AT THE END OF THIS PRESENTATION

U.S. positive test rate at 9.8%; less testing being done but fewer tests per case suggests the virus is still prevalent

NEW TESTS, MILLIONS



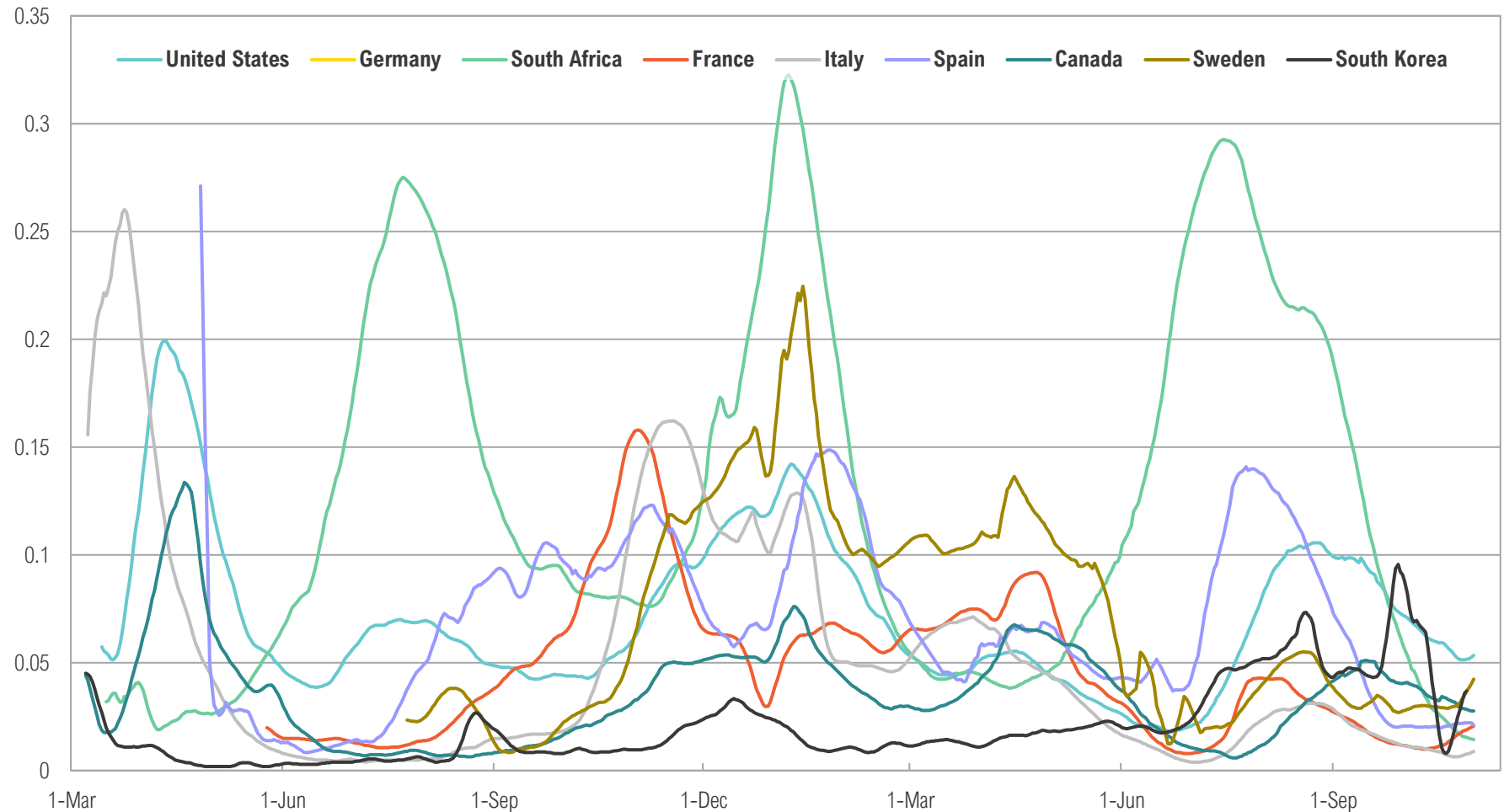
POSITIVE TEST RATE



Source: ourworldindata.org

U.S., Canada positivity rate has seemingly peaked, many countries continue to see promising declines in positive test rates

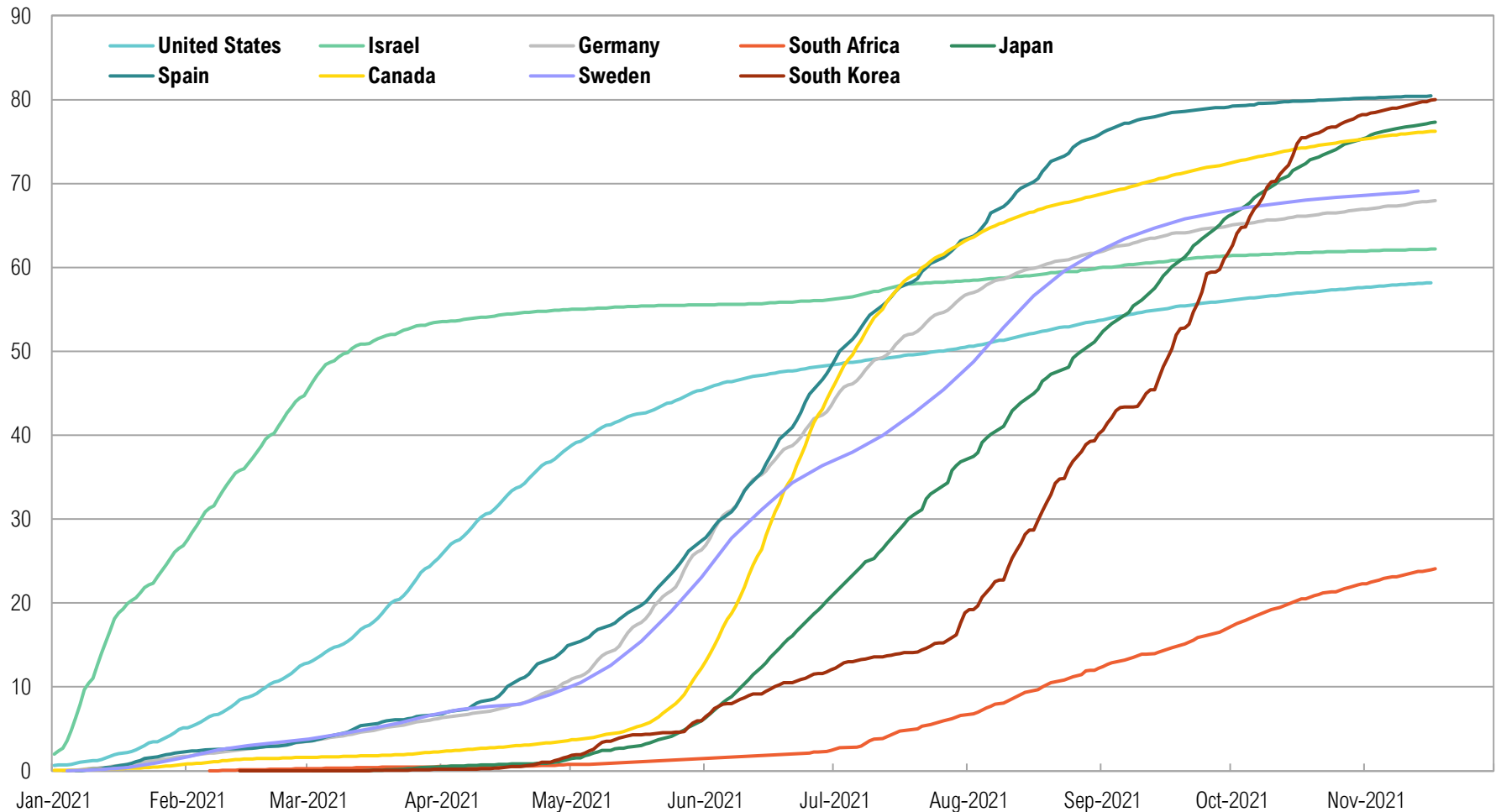
POSITIVE TEST RATE, 7-DAY AVERAGE, %



Source: ourworldindata.org.
Data shown as a 7-day average. Some countries' reporting is delayed.

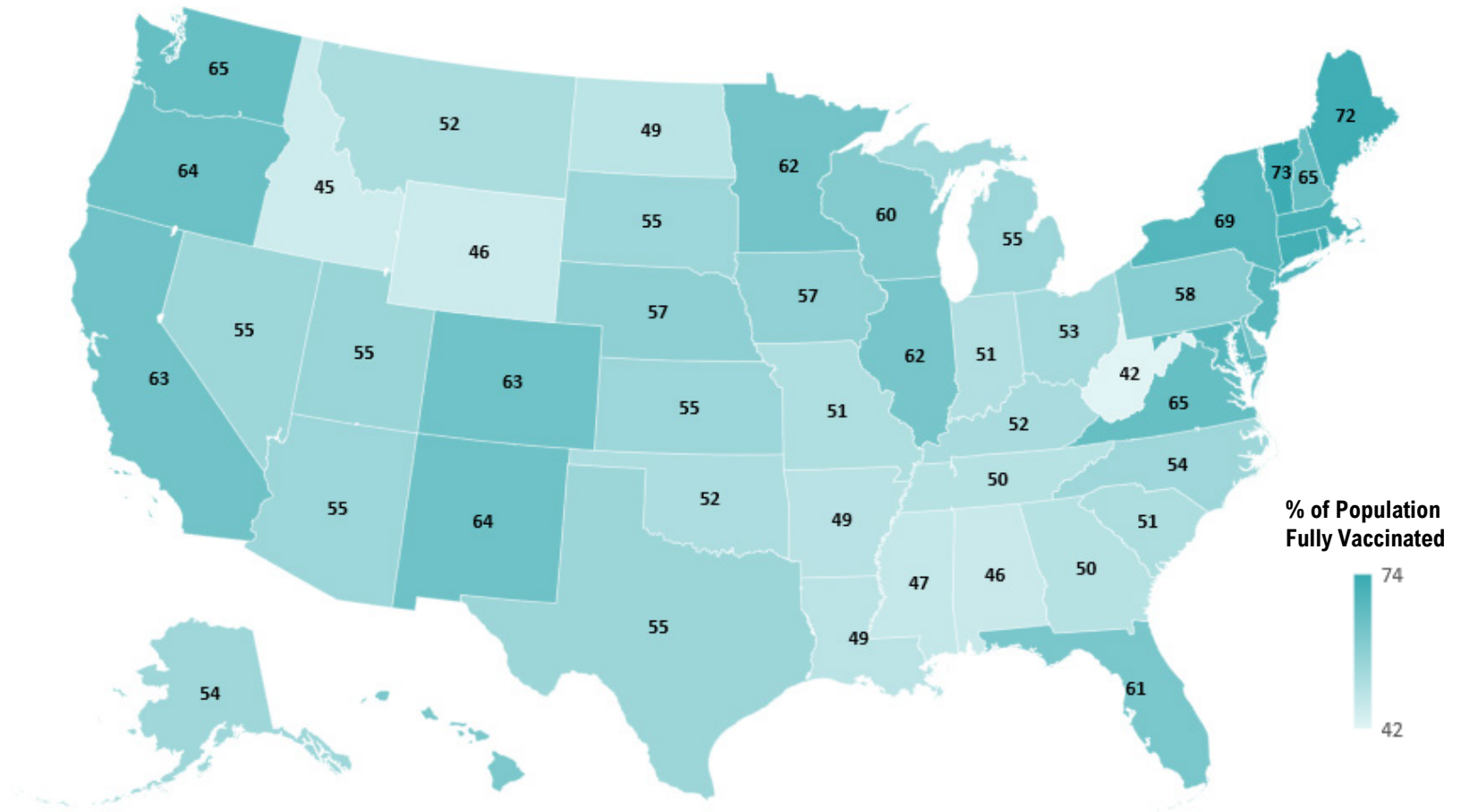
Vaccination rates continue to rise globally, albeit at a slowing rate, with 3.3 billion people fully vaccinated globally

PEOPLE FULLY VACCINATED PER 100



Source: Bloomberg, ourworldindata.org

➤ 59% of the U.S. population is fully vaccinated

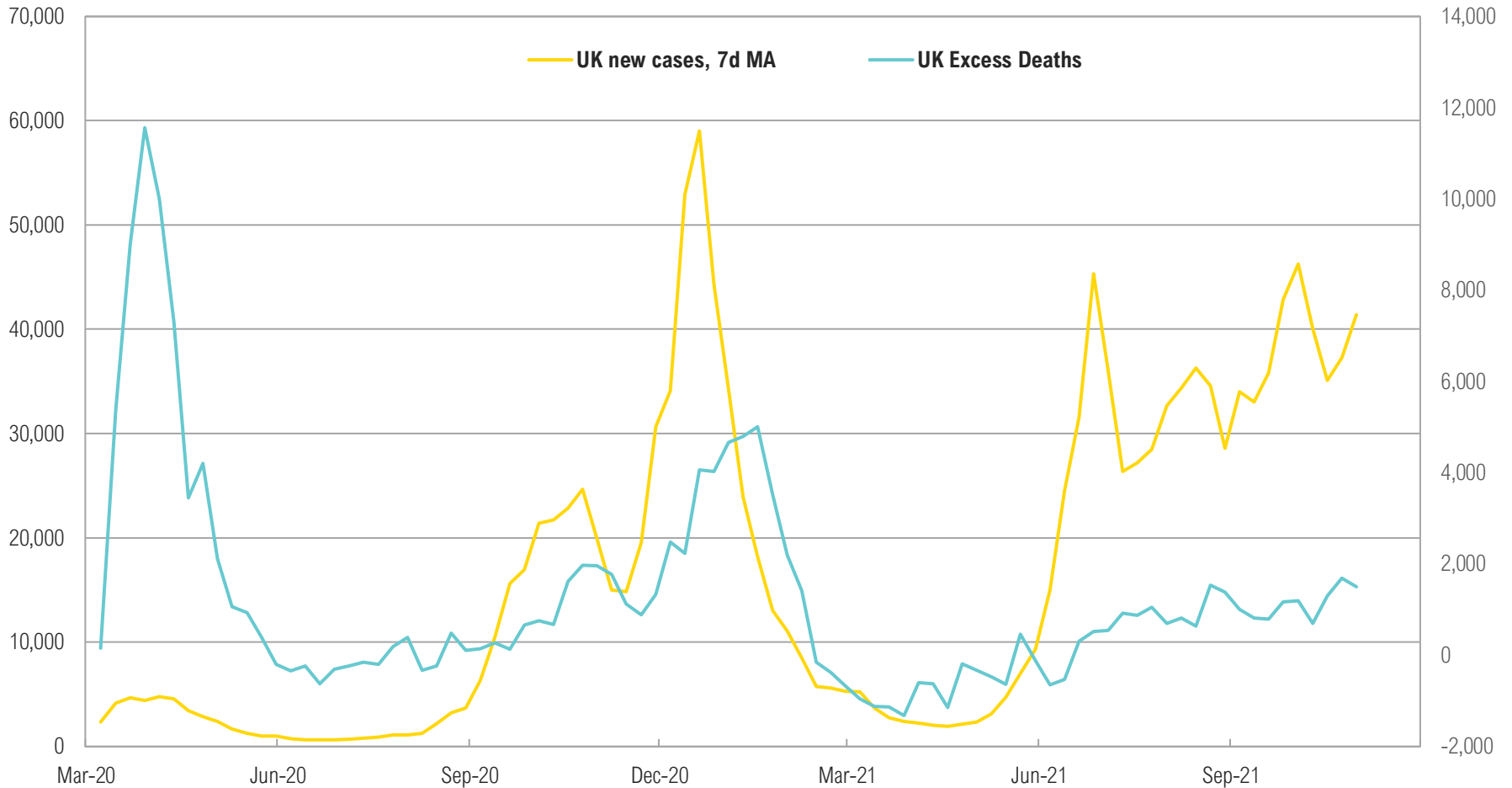


Source: ourworldindata.org

Vaccines have helped break the link between excess deaths and new cases

NEW CASES (UK), 7-DAY AVERAGE

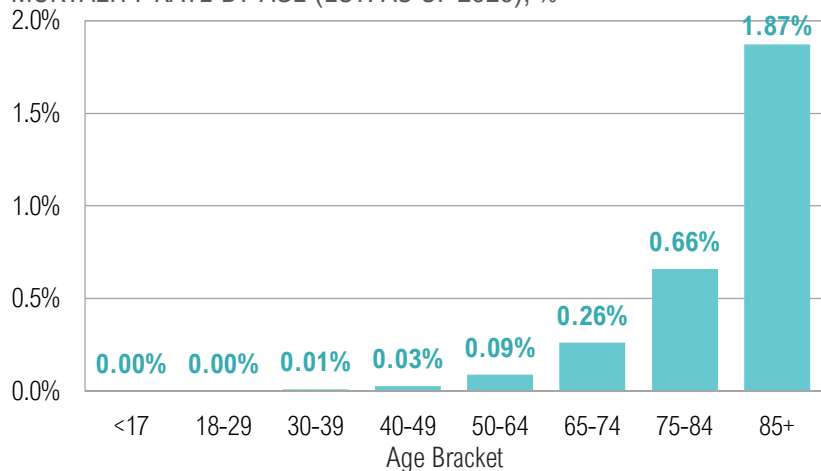
EXCESS DEATHS (UK)



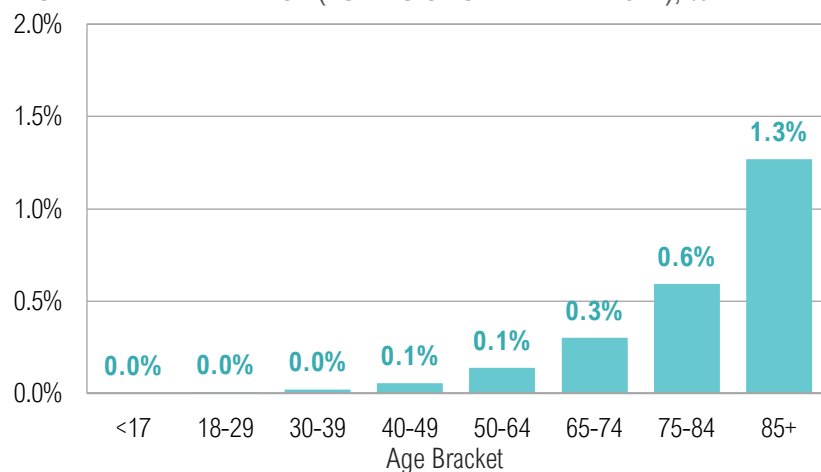
Source: Bloomberg, ourworldindata.org

Mortality rates much higher for elderly and pre-existing conditions; mortality rates for healthy kids, teenagers roughly in line with seasonal flu

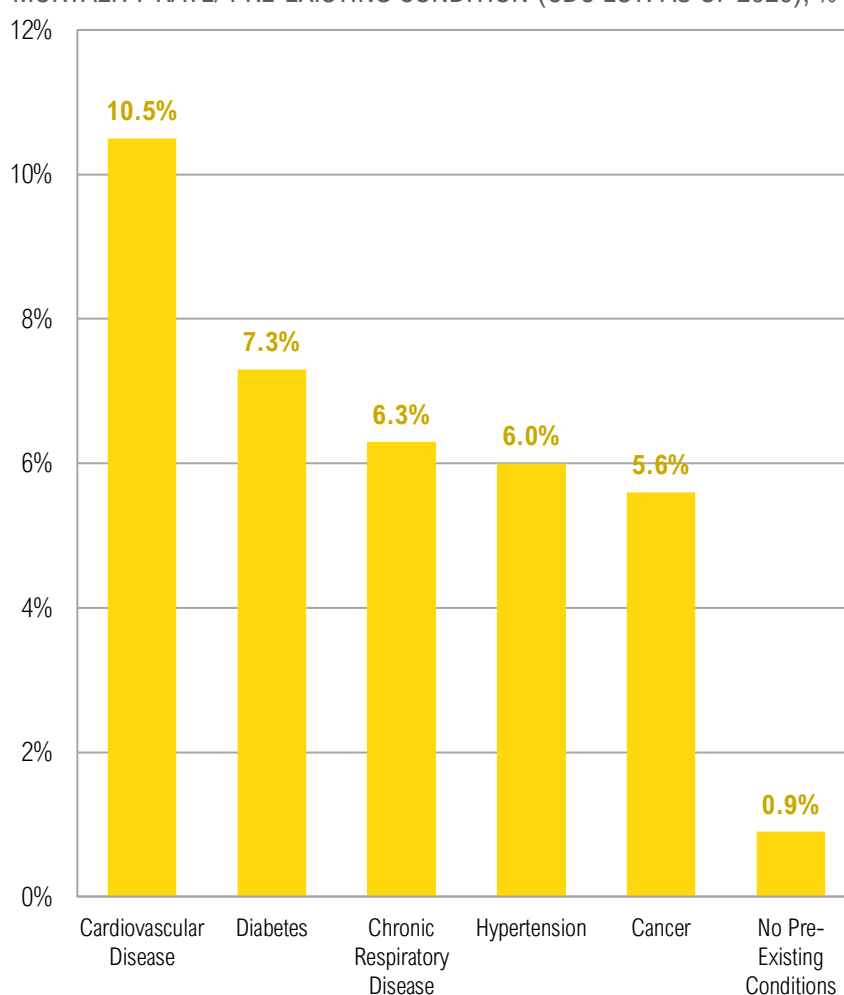
MORTALITY RATE BY AGE (EST. AS OF 2020), %



MORTALITY RATE BY AGE (EST. AS OF SEPTEMBER 2021), %



MORTALITY RATE/ PRE-EXISTING CONDITION (CDC EST. AS OF 2020), %

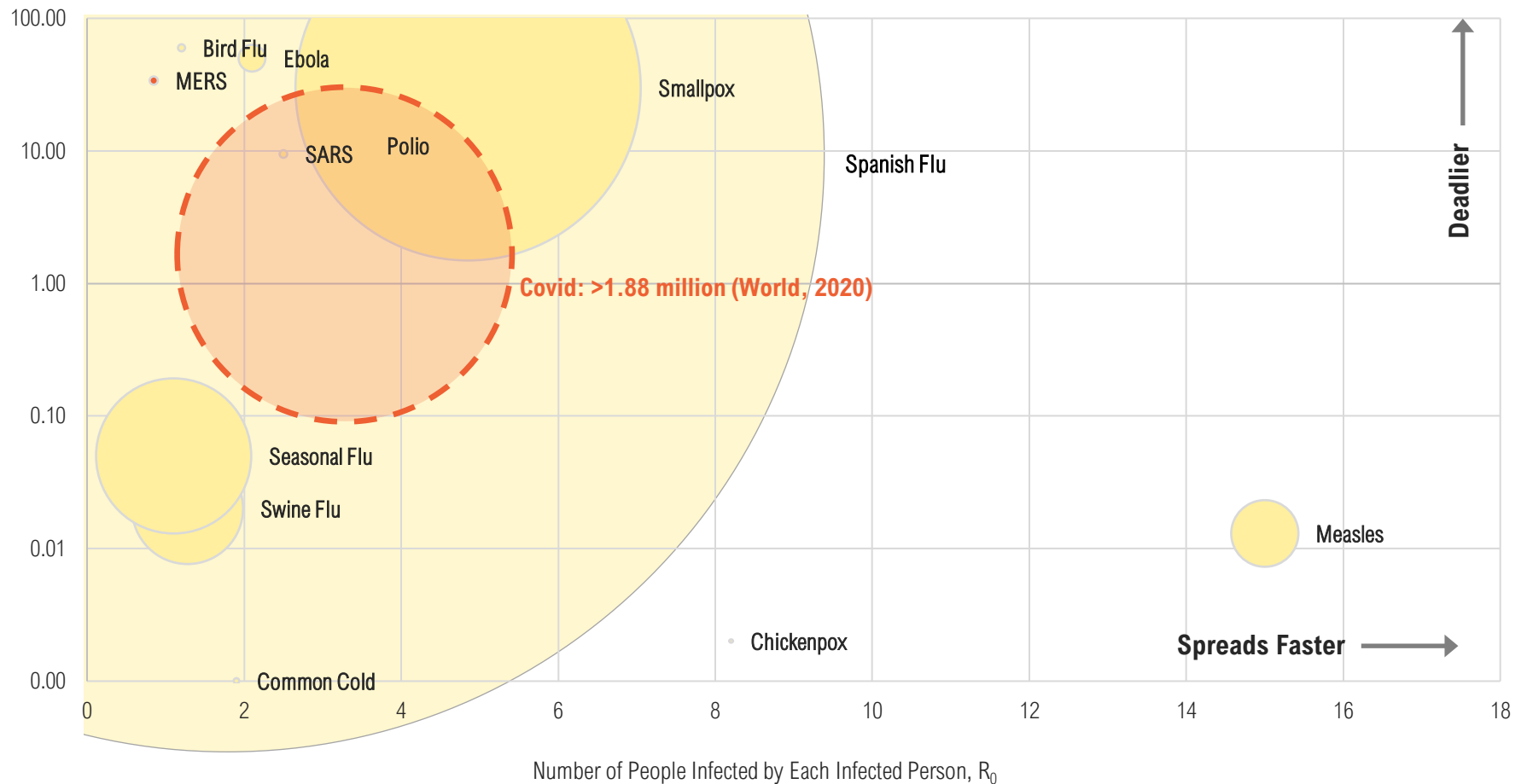


Source: CDC

Mortality rate calculated as the number of Covid-related deaths per age group divided by population in age group. Mortality rate by pre-existing condition as of 12/31/2020.

➤ Measured in terms of total mortality, Covid has been more than 4x worse than bad flu season

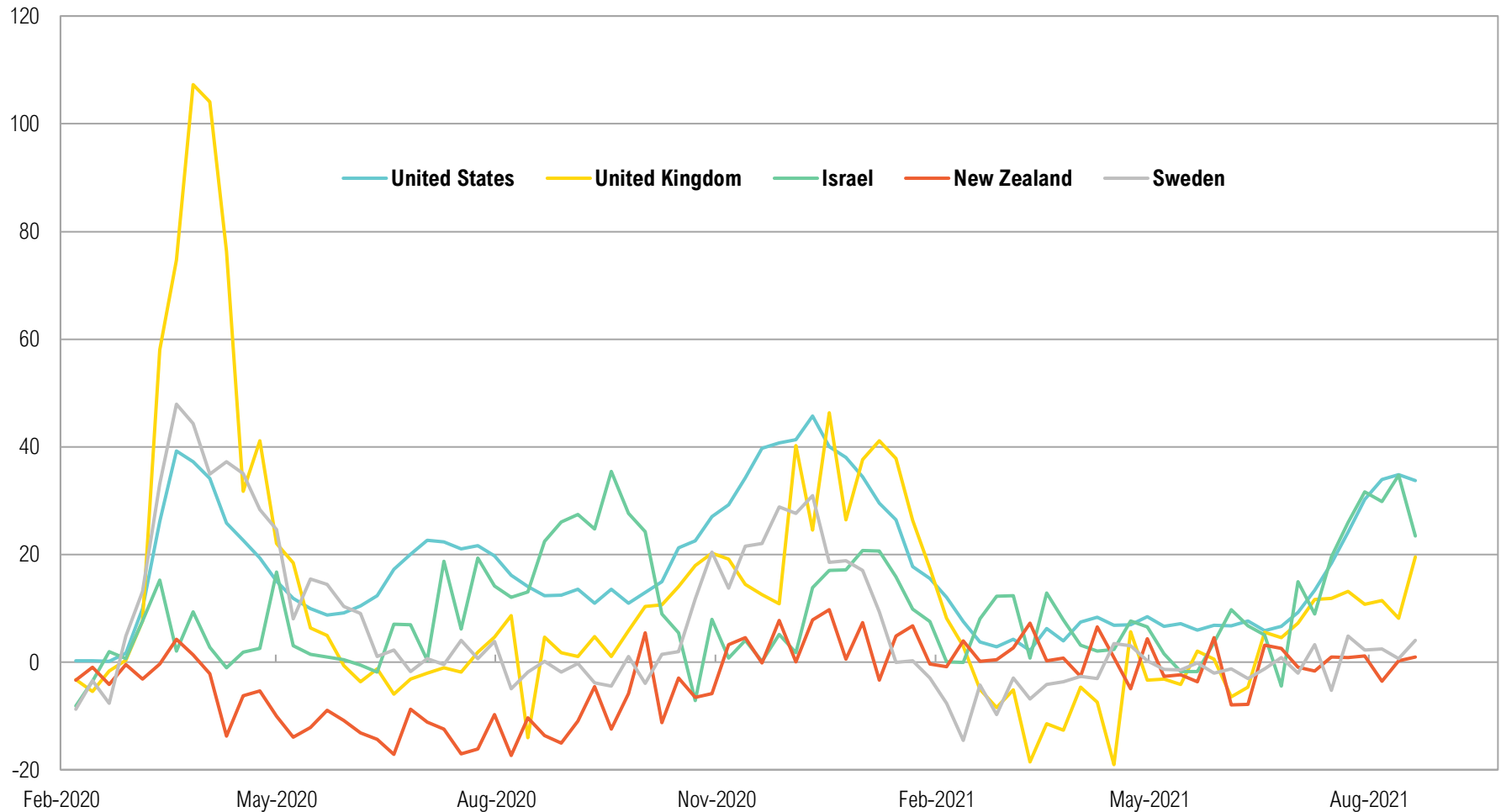
CASE FATALITY RATE, % LOG SCALE



Sources: CDC, WHO, NCBI, Our World in Data. Covid-19 deaths annualized. Spanish flu estimated deaths of 50 million (1918) per WHO; smallpox estimated deaths of 2 million (1967) per WHO; measles deaths of 73,000 (2014) per PMC; Polio estimated deaths of 3,000 (1952) per NPR; seasonal flu estimated deaths of 400,000 (2007-2017 average) per WHO; Ebola estimated deaths of 11,310 (2014-2016 West Africa outbreak); all other estimates per WHO.

➤ Stripping out challenges and inconsistencies in reporting of Covid-specific data, excess mortality numbers appear to be trending lower

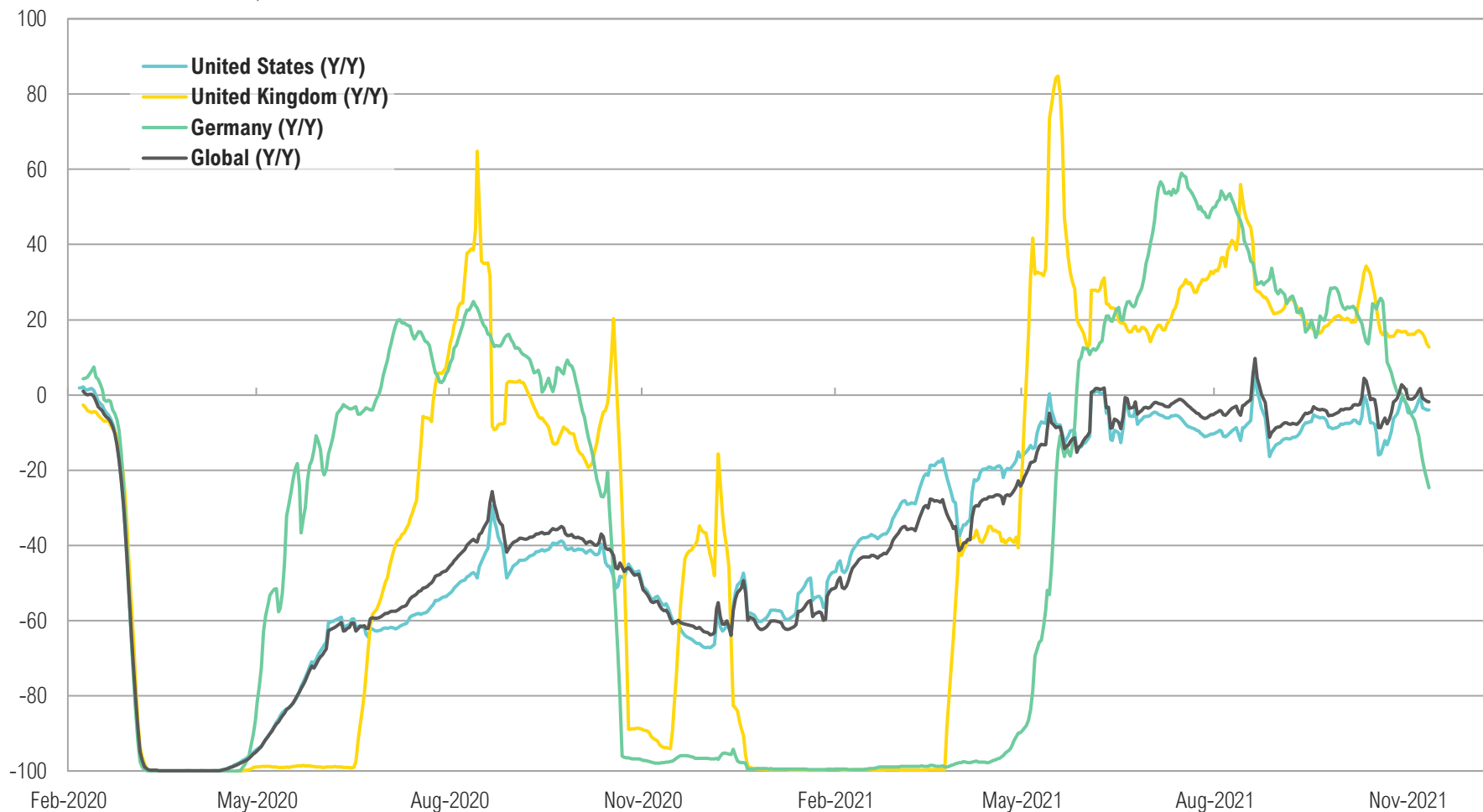
EXCESS MORTALITY RATE, %



Source: ourworldindata.org. Excess mortality defined as total deaths from all causes relative to average historical population-adjusted total deaths from all causes by country. Ourworldindata.org occasionally revises its data; data in chart reflects most recent revisions.

➤ In the U.S. and globally restaurant activity fully recovered to pre-pandemic levels; activity in UK, Germany declining as Covid cases rise

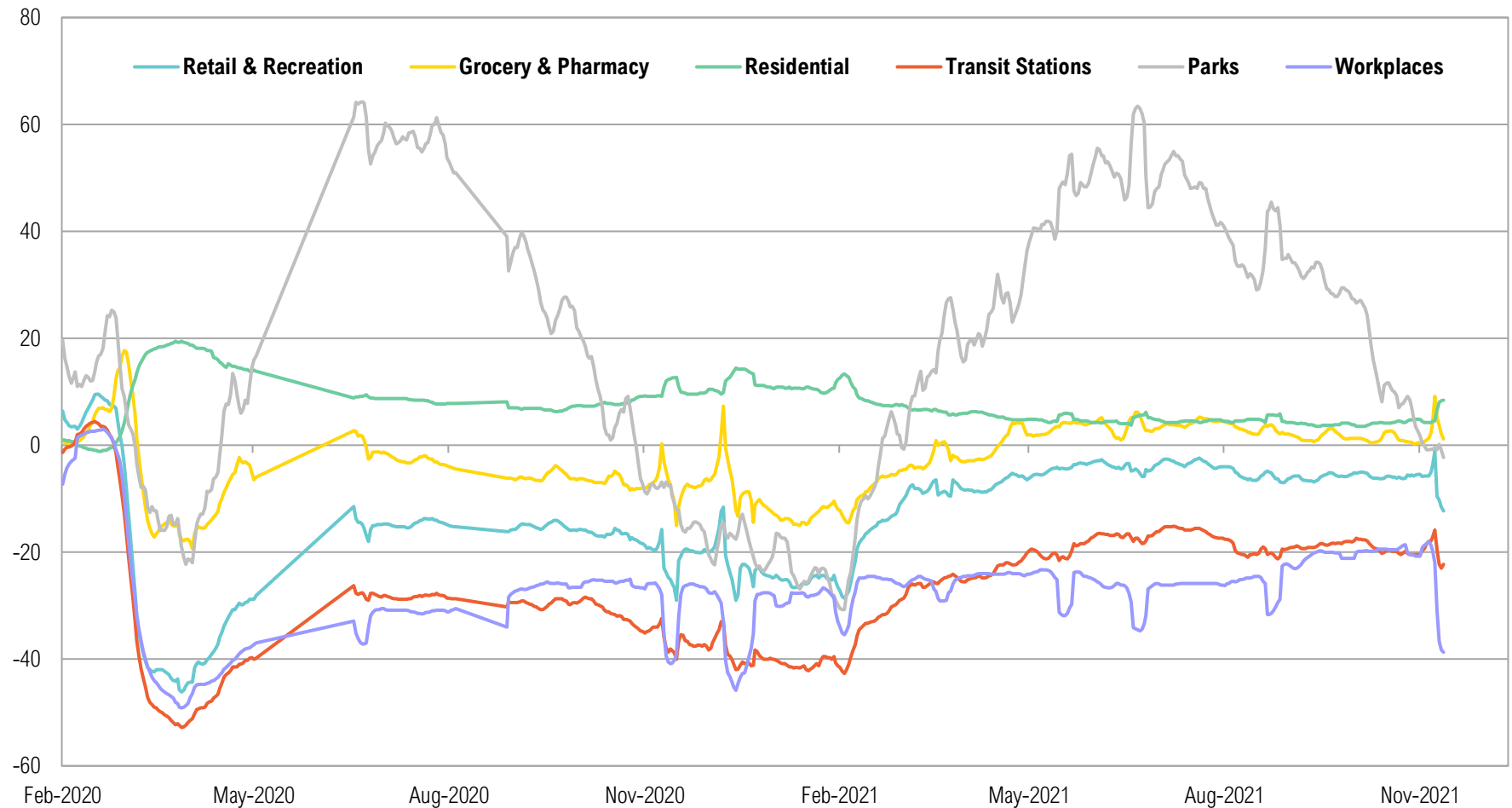
SEATED DINERS VS. 2019, %



Source: OpenTable, Bloomberg

Retail, recreation and workplace visits in the U.S. fell sharply after the announcement of the Omicron variant

CHANGE VS. PERIOD PRIOR TO PANDEMIC, %



Source: OpenTable, Bloomberg

Manufacturing in developed markets improved at a slower pace in October, emerging markets are expanding at a greater pace

	2018						2019												2020												2021											
	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O		
Global	52.8	52.6	52.2	52.1	52.0	51.5	50.7	50.6	50.6	50.5	49.8	49.4	49.3	49.5	49.7	49.8	50.3	50.1	50.3	47.1	47.3	50.0	42.4	48.0	50.6	51.8	52.4	53.1	53.8	53.8	53.6	54.0	55.0	55.8	56.0	55.5	55.4	54.1	54.1	54.3		
Developed	54.0	53.8	53.6	53.2	52.8	52.3	51.8	50.4	49.9	50.3	49.2	48.9	48.7	48.7	48.6	48.6	49.5	49.1	49.8	49.6	45.9	35.8	39.5	46.4	49.8	51.2	52.1	52.8	53.8	54.8	55.2	56.5	58.5	59.3	59.8	59.5	59.8	58.3	57.1	56.6		
Emerging	51.0	50.8	50.3	50.5	50.8	50.3	49.5	50.6	51.6	50.5	50.4	49.9	50.1	50.4	51.0	51.0	51.0	51.0	44.6	49.1	42.7	45.4	49.6	51.4	52.5	52.8	53.4	53.9	52.8	52.1	51.6	51.3	52.2	52.0	51.2	50.6	49.6	50.8	51.6			
Developed																																										
U.S.	55.3	54.7	55.6	55.7	55.3	53.8	54.9	53.0	52.4	52.6	50.5	50.6	50.4	50.3	51.1	51.3	52.6	52.4	51.9	50.7	48.5	36.1	39.8	49.8	50.9	53.1	53.2	53.4	56.7	57.1	59.2	58.6	59.1	60.5	62.1	62.1	63.4	61.1	60.7	58.4		
Canada	56.9	56.8	54.8	53.9	54.9	53.6	53.0	52.6	50.5	49.7	49.1	49.2	50.2	49.1	51.0	51.2	51.4	50.4	50.6	51.8	46.1	33.0	40.6	47.8	52.9	55.1	56.0	55.5	55.8	57.9	54.4	54.8	58.5	57.2	57.0	56.5	56.2	57.2	57.0	57.7		
Japan	52.3	52.5	52.5	52.9	52.2	52.6	50.3	48.9	49.2	50.2	49.8	49.3	49.4	49.3	48.9	48.4	48.9	48.4	48.8	47.8	44.8	41.9	38.4	40.1	45.2	47.2	47.7	48.7	49.0	50.0	49.8	51.4	52.7	53.6	53.0	52.4	53.0	52.7	51.5	53.2		
UK	53.9	53.0	53.8	51.1	53.6	54.2	52.8	52.0	55.1	53.1	49.4	48.0	48.0	47.4	48.3	49.6	48.9	47.5	50.0	51.7	47.8	32.6	40.7	50.1	53.3	55.2	54.1	53.7	55.6	57.5	54.1	55.1	58.9	60.9	65.6	63.9	60.4	60.3	57.1	57.8		
Eurozone	55.1	54.6	53.2	52.0	51.8	51.4	50.5	49.3	47.6	47.9	47.7	47.6	46.5	47.0	45.7	45.9	46.9	46.3	47.9	49.2	44.5	33.4	39.4	47.4	51.8	51.7	53.7	54.8	53.8	55.2	54.8	57.9	62.5	62.9	63.1	63.4	62.8	61.4	58.6	58.3		
Germany	56.9	55.9	53.7	52.2	51.8	51.5	49.9	47.6	44.7	44.4	44.3	45.0	43.2	43.5	41.7	42.1	44.1	43.7	45.3	48.0	45.4	34.5	36.6	45.2	51.0	52.2	56.4	58.2	57.8	58.3	57.1	60.7	66.6	66.2	64.4	65.1	65.9	62.6	58.4	57.8		
France	53.3	53.5	52.5	51.2	50.8	49.7	51.2	51.5	49.8	50.0	50.6	51.9	49.7	51.1	50.1	50.7	51.7	50.4	51.1	49.8	43.2	31.5	40.6	52.3	52.4	49.8	51.2	51.3	49.6	51.1	51.6	56.1	59.3	58.9	59.4	59.0	58.0	57.5	55.0	53.6		
Italy	51.5	50.1	50.0	49.2	48.6	49.2	47.8	47.7	47.4	49.1	49.7	48.4	48.5	48.7	47.8	47.7	47.6	46.2	48.9	48.7	40.3	31.1	45.4	47.5	51.9	53.1	53.2	53.8	51.5	52.8	55.1	56.9	59.8	60.7	62.3	62.2	60.3	60.9	59.7	61.1		
Spain	52.9	53.0	51.4	51.8	52.6	51.1	52.4	49.9	50.9	51.8	50.1	47.9	48.2	48.8	47.7	46.8	47.5	47.4	48.5	50.4	45.7	30.8	38.3	49.0	53.5	49.9	50.8	52.5	49.8	51.0	49.3	52.9	56.9	57.7	59.4	60.4	59.0	59.5	58.1	57.4		
Netherlands	58.0	59.1	59.8	57.1	56.1	57.2	55.1	52.7	52.5	52.0	52.2	50.7	50.7	51.6	51.6	50.3	49.6	48.3	49.9	52.9	50.5	41.3	40.5	45.2	47.9	52.3	52.5	50.4	54.4	58.2	58.8	59.6	64.7	67.2	69.4	68.8	67.4	65.8	62.0	62.5		
Australia	52.4	53.2	54.0	54.5	54.6	54.0	53.9	53.1	52.0	50.9	51.0	52.0	51.6	50.9	50.3	50.0	49.9	49.2	49.6	50.2	49.7	44.1	44.0	51.2	54.0	53.6	55.4	54.2	55.8	55.7	57.2	56.9	56.8	59.7	60.4	58.6	56.9	52.0	56.8	58.2		
Greece	53.5	53.9	53.6	53.1	54.0	53.8	53.7	54.2	54.7	56.6	54.2	52.4	54.6	54.9	53.6	53.5	54.1	53.9	54.4	56.2	42.5	29.5	41.1	49.4	48.6	49.4	50.0	48.7	42.3	46.9	50.0	49.4	51.8	54.4	58.0	58.6	57.4	59.3	58.4	58.9		
Emerging																																										
China	50.8	50.6	50.0	50.1	50.2	49.7	48.3	49.9	50.8	50.2	50.2	49.4	49.9	50.4	51.4	51.7	51.8	51.5	51.1	40.3	50.1	49.4	50.7	51.2	52.8	53.1	53.0	53.6	54.9	53.0	51.5	50.9	50.6	51.9	52.0	51.3	50.3	49.2	50.0	50.6		
Indonesia	50.5	51.9	50.7	50.5	50.4	51.2	49.9	50.1	51.2	50.4	51.6	50.6	49.6	49.0	49.1	47.7	48.2	49.5	49.3	51.9	45.3	27.5	28.6	39.1	46.9	50.8	47.2	47.8	50.6	51.3	52.2	50.9	53.2	54.6	55.3	53.5	40.1	43.7	52.2	57.2		
Korea	48.3	49.9	51.3	51.0	48.6	49.8	48.3	47.2	48.8	50.2	48.4	47.5	47.3	49.0	48.0	48.4	49.4	50.1	49.8	48.7	44.2	41.6	41.3	43.4	46.9	48.5	49.8	51.2	52.9	52.9	53.2	55.3	55.3	54.6	53.7	53.9	53.0	51.2	52.4	50.2		
Taiwan	53.1	53.0	50.8	48.7	48.4	47.7	47.5	46.3	49.0	48.2	48.4	45.5	48.1	47.9	50.0	49.8	49.8	50.8	51.8	49.9	50.4	42.2	41.9	46.2	50.6	52.2	55.2	55.1	56.9	59.4	60.2	60.4	60.8	62.4	62.0	57.6	59.7	58.5	54.7	55.2		
Brazil	50.5	51.1	50.9	51.1	52.7	52.6	52.7	53.4	52.8	51.5	50.2	51.0	49.9	52.5	53.4	52.2	52.9	50.2	51.0	52.3	48.4	36.0	38.3	51.6	58.2	64.7	64.9	66.7	64.0	61.5	56.5	58.4	52.8	52.3	53.7	56.4	56.7	53.6	54.4	51.7		
Mexico	52.1	50.7	51.7	50.7	49.7	49.7	50.9	52.6	49.8	50.1	50.0	49.2	49.8	49.0	49.1	50.4	48.0	47.1	49.0	50.0	47.9	35.0	38.3	38.6	40.4	41.3	42.1	43.6	43.7	42.4	43.0	44.2	45.6	48.4	47.6	48.8	49.6	47.1	48.6	49.3		
Russia	48.1	48.9	50.0	51.3	52.6	51.7	50.9	50.1	52.8	51.8	49.8	48.6	49.3	49.1	46.3	47.2	45.6	47.5	47.9	48.2	47.5	31.3	36.2	49.4	48.4	51.1	48.9	46.9	46.3	49.7	50.9	51.5	51.1	50.4	51.9	49.2	47.5	46.5	49.8	51.6		
South Africa	49.3	47.2	48.0	46.9	48.2	49.0	49.6	50.2	48.8	50.3	49.3	49.7	48.4	49.7	49.2	49.4	48.6	47.6	48.3	48.4	44.5	35.1	32.5	42.5	44.9	45.3	49.4	51.0	50.3	50.2	50.8	50.2	50.3	53.7	53.2	51.0	46.1	49.9	50.7			
India	52.3	51.7	52.2	53.1	54.0	53.2	53.9	54.3	52.6	51.8	52.7	52.1	52.5	51.4	51.4	50.6	51.2	52.7	55.3	54.5	51.8	27.4	30.8	47.2	46.0	52.0	56.8	58.9	56.3	56.4	57.7	57.5	55.4	55.5	50.8	48.1	55.3	52.3	53.7	55.9		

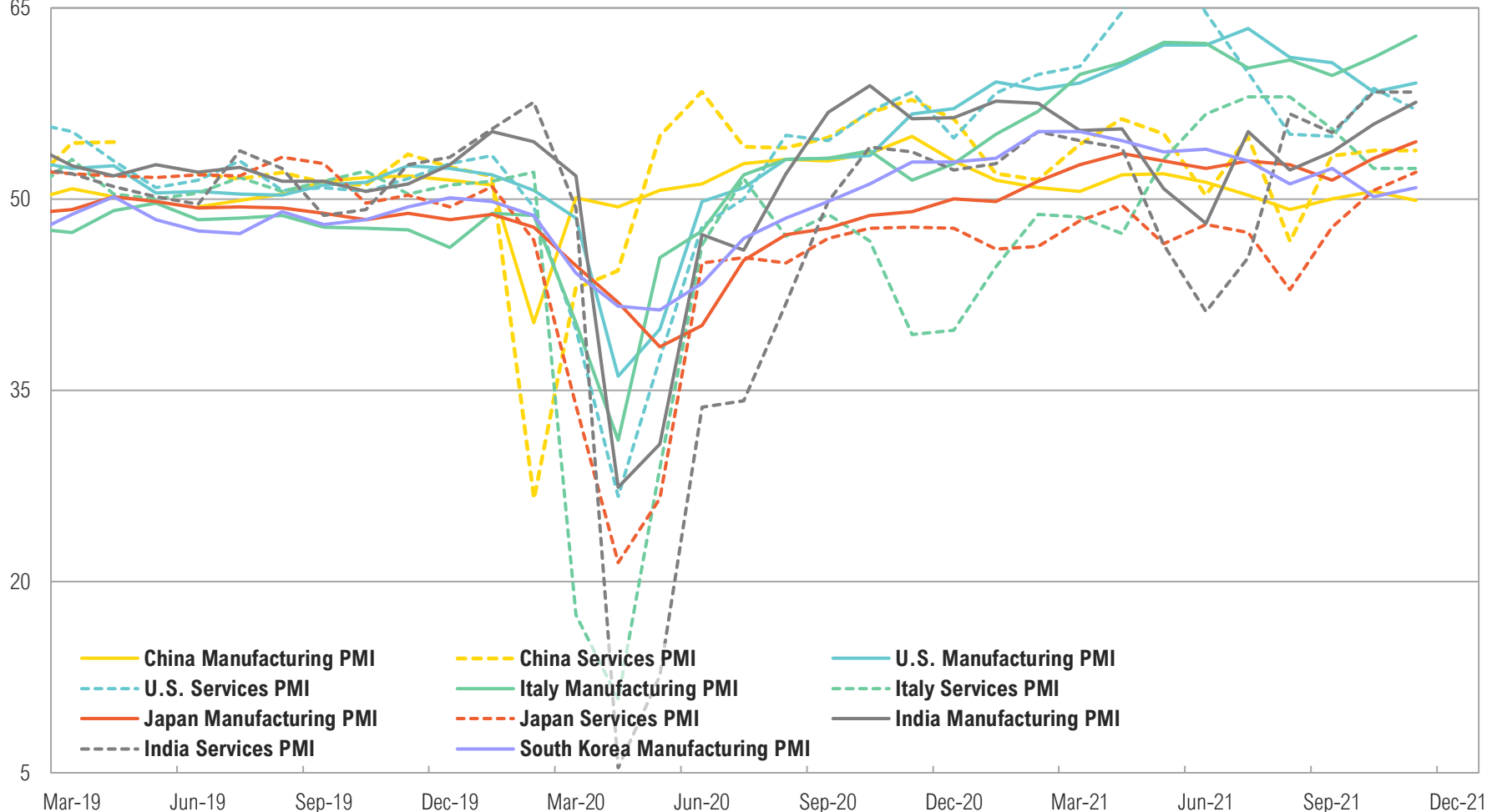
LOWER  HIGHER

Source: Bloomberg, Markit

Select manufacturing & services PMIs point to global expansion with the exception of China manufacturing

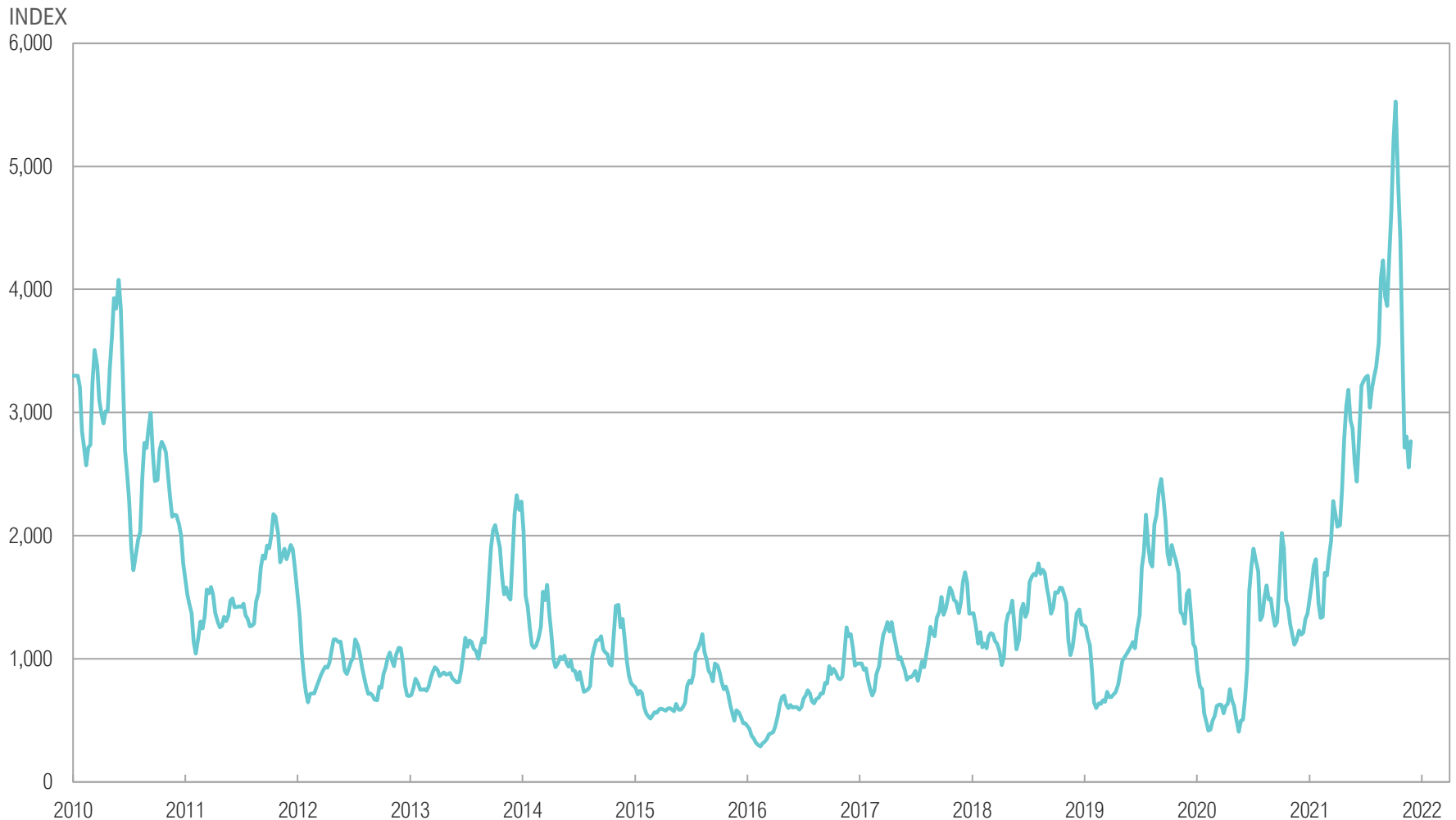
MANUFACTURING & SERVICES PMI

65



Source: Bloomberg, Markit

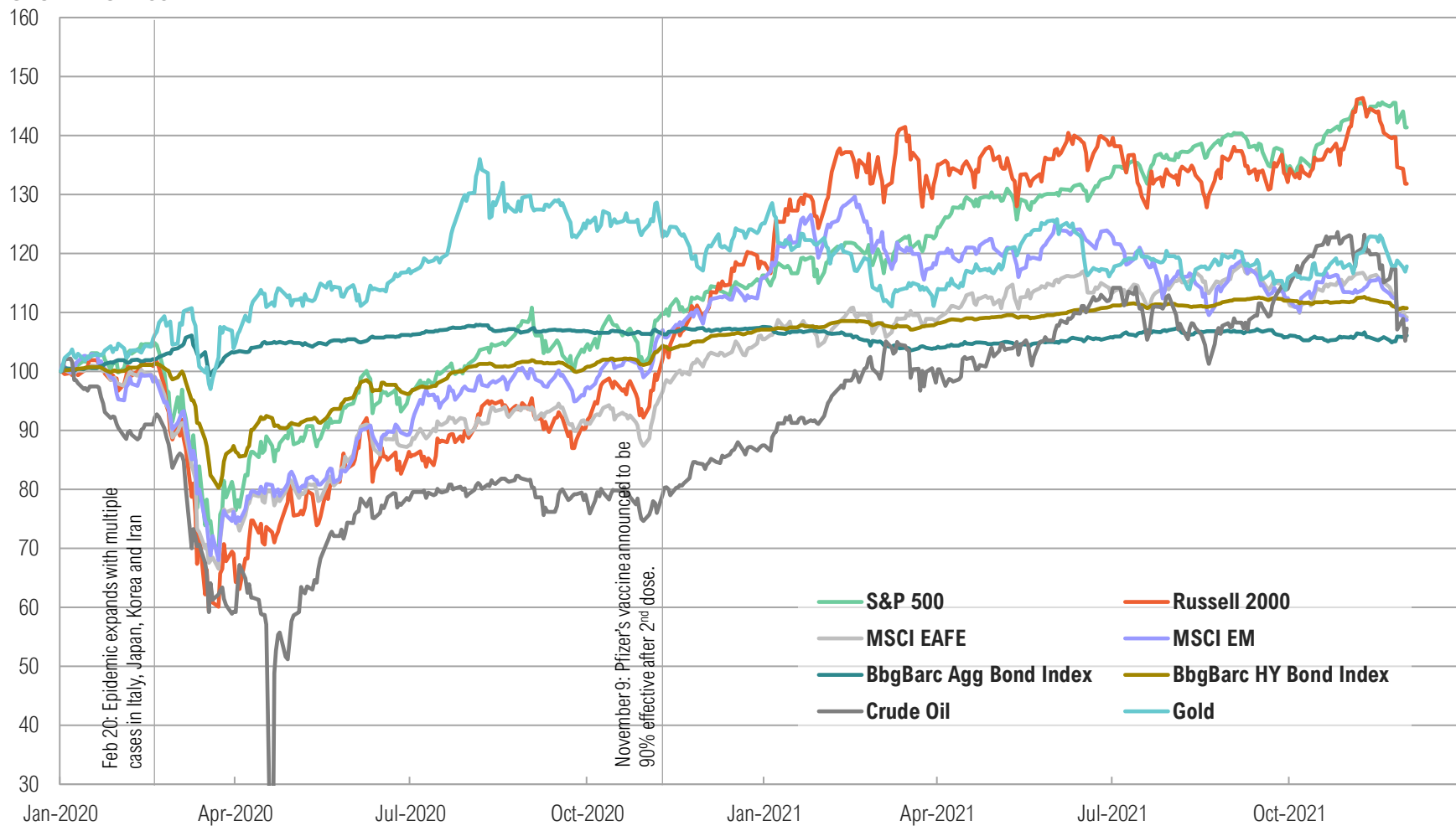
➤ Dry bulk shipping rates have pulled back sharply from October peak



Source: Bloomberg

U.S. large cap stocks have outperformed most asset classes through the crisis, U.S. small cap flat since February, WTI Crude down 23% from peak

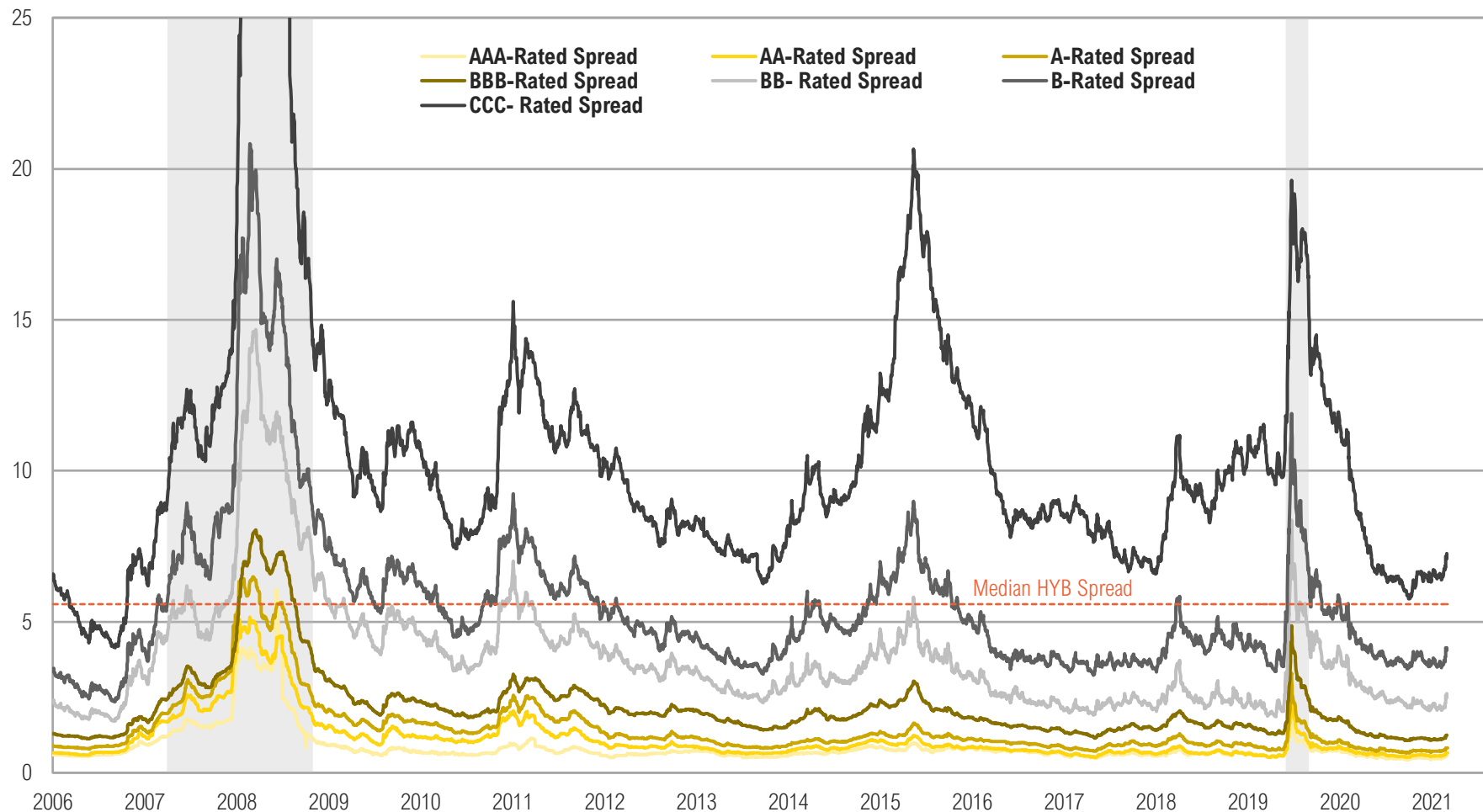
GROWTH OF 100



Source: Bloomberg

Credit spreads have recently widened from July lows

SPREAD, %



Source: Bloomberg

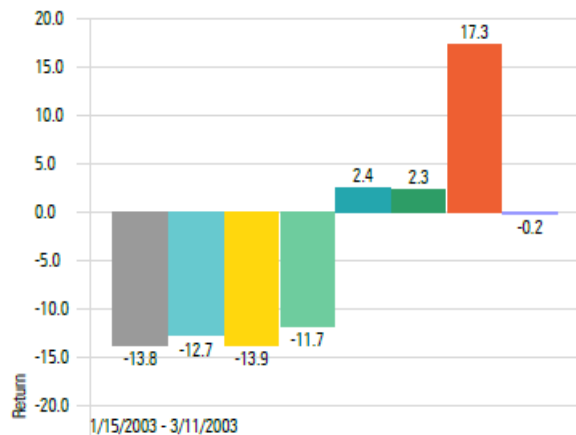
Crypto, midstream energy and micro cap stocks have outperformed since the vaccine rollout began, safe-havens have lagged

Asset Class	Benchmark	3/10/00 (Tech Bubble peak)	10/9/02 (Tech Bubble low)	10/9/07 (Housing Bubble high)	3/9/09 (GFC low)	11/8/16 (Trump election)	1/26/18 (Jan high)	3/21/18 (start of Trade War)	9/21/18 (Sep 2018 high)	12/24/18 (Dec low)	8/1/19 (Trade War escalation)	2/20/20 (Covid-19 escalation)	11/9/20 (Covid-19 Vaccine)
■ Cryptocurrencies	MVIS CryptoCompare Digital Top 25 In	-	-	-	-	178.2	23.3	43.6	91.2	143.4	139.9	202.2	484.9
■ Bitcoin	MVIS CryptoCompare Bitcoin Index	-	-	-	-	144.1	51.7	63.4	95.1	147.9	106.6	156.6	229.9
■ Midstream Energy	Alerian MLP Index	3.0	8.4	3.9	8.3	-0.6	-3.9	1.4	-4.0	4.3	-3.4	4.4	73.3
■ US Micro Cap Stocks	Russell Micro Cap Index	12.4	11.3	7.9	17.4	15.5	11.0	11.7	10.7	24.7	22.2	24.2	45.4
■ US REITs	MSCI US REIT Index	11.5	11.0	6.7	18.4	10.1	11.7	13.9	11.8	17.7	11.8	9.5	43.5
■ US Small Cap Stocks	Russell 2000 Index	12.4	11.8	8.7	17.3	14.8	10.6	11.6	10.1	23.2	17.9	18.7	35.8
■ Commodity Futures	Bloomberg Commodity Index	-1.9	1.0	-3.2	0.1	4.7	3.9	5.1	6.8	10.2	11.3	16.4	35.3
■ US Large Cap Stocks	S&P 500 Index	14.9	11.8	10.2	18.5	18.6	15.4	17.4	17.2	28.0	22.5	20.7	31.0
■ Global Real Estate Sec's	S&P Global Property Index	8.5	9.6	3.7	14.3	7.8	5.4	7.2	7.5	11.5	6.8	3.8	27.2
■ Closed-End Funds	S-Network Composite CEF Index	7.8	-	6.8	12.9	9.8	7.9	9.1	9.5	15.8	10.2	8.3	23.0
■ Intl Dev Ex-US Stocks	MSCI EAFE Index	6.6	8.5	3.1	10.8	9.7	4.0	6.2	7.3	13.9	10.7	9.6	19.5
■ Intl Dev Ex-US Real Est.	S&P Global Ex US Property Index	6.4	9.1	1.9	11.8	5.9	0.4	2.1	3.9	6.6	2.5	-1.3	13.7
■ Municipal High Yield Bonds	Bloomberg US HY Muni Index	6.8	6.3	5.4	8.3	6.4	7.4	7.6	7.4	7.8	6.6	5.1	10.6
■ Emerging Market Stocks	MSCI EM Index	4.7	11.3	2.6	10.4	9.2	1.9	3.1	8.0	11.9	9.9	8.7	6.2
■ US High Yield Bonds	Bloomberg US Corporate HY Index	7.0	8.6	7.1	10.7	6.2	5.4	6.1	6.1	8.5	5.9	5.0	6.6
■ US Leveraged Loans	S&P/LSTA Leveraged Loan Index	4.7	5.0	4.6	7.5	4.5	4.2	4.2	4.1	5.5	4.2	4.1	7.3
■ Emerging Market Bonds	JPM EMBI Global Diversified Index	5.7	7.9	6.1	7.8	3.7	3.0	3.9	5.0	5.6	1.7	-0.3	0.1
■ US Inter-Term Muni Bonds	Bloomberg Municipal Bond 1-10Y Inde	2.9	3.4	3.5	3.2	2.5	3.1	3.4	3.7	3.5	2.3	1.7	1.1
■ Cash	Bloomberg 1-3 Mth Treasury Index	0.5	1.2	0.6	0.5	1.1	1.2	1.2	1.1	1.0	0.6	0.2	0.0
■ Short-Term Bonds	Bloomberg 1-3 Year Treasury Index	1.2	2.0	1.8	1.3	1.6	2.1	2.2	2.4	2.2	1.7	1.3	-0.2
■ US Inter-Term Bonds	Bloomberg U.S. Agg Bond Index	3.5	4.1	4.1	3.9	3.1	3.9	4.5	5.1	5.0	3.5	2.1	-0.8
■ Gold	LBMA Gold Price PM	4.2	9.5	6.6	5.3	6.9	7.7	9.0	13.3	13.0	10.5	6.7	-6.9
■ Developed Ex-US Bonds	S&P International Sov Ex-US Bond Inde	1.4	4.1	2.4	2.3	1.5	-0.1	0.1	1.7	2.1	0.5	1.5	-6.4

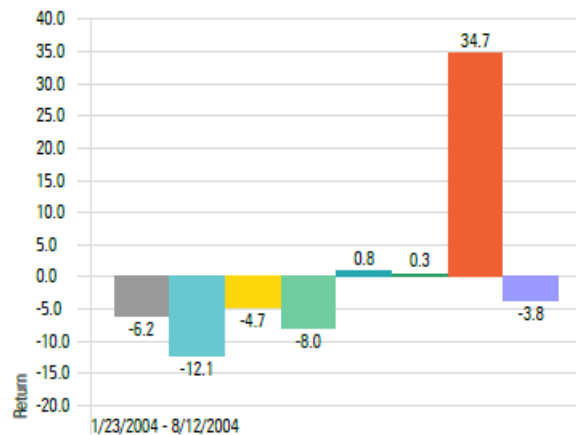
Source: Bloomberg. Returns for periods greater than 1 year are annualized.

The COVID-19 pandemic's booming asset prices was at odds with past epidemics

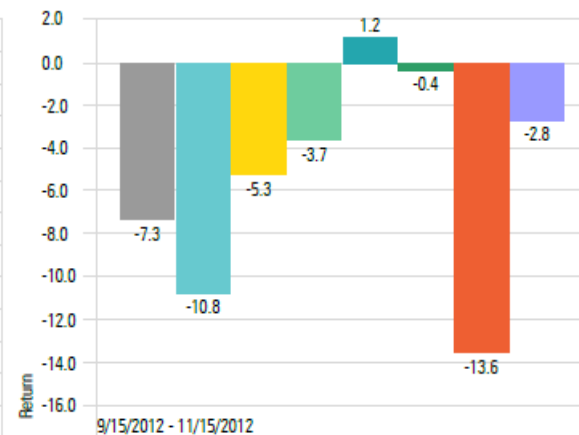
SARS



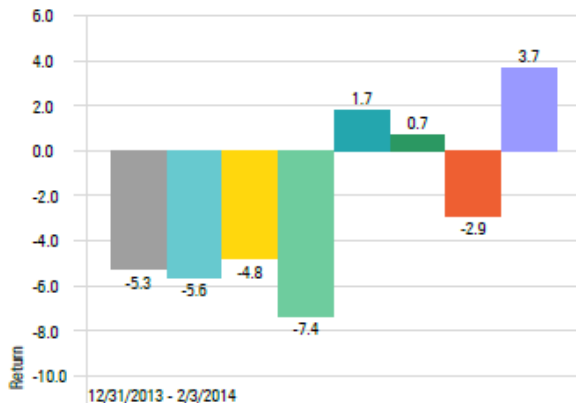
Avian Influenza



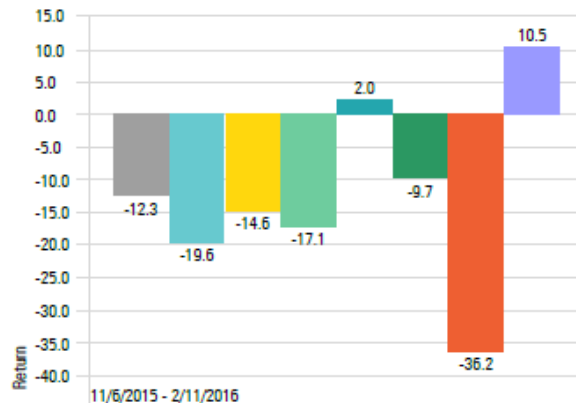
MERS



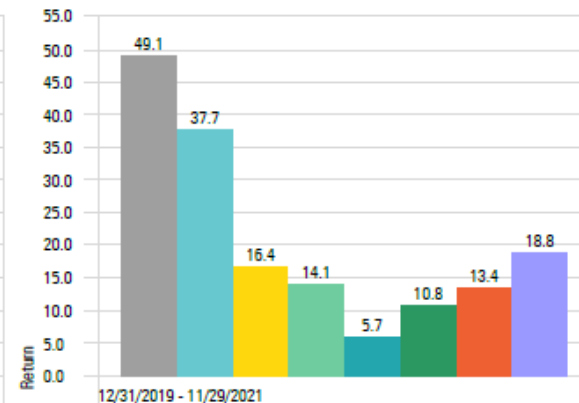
Ebola



Zika



Covid-19



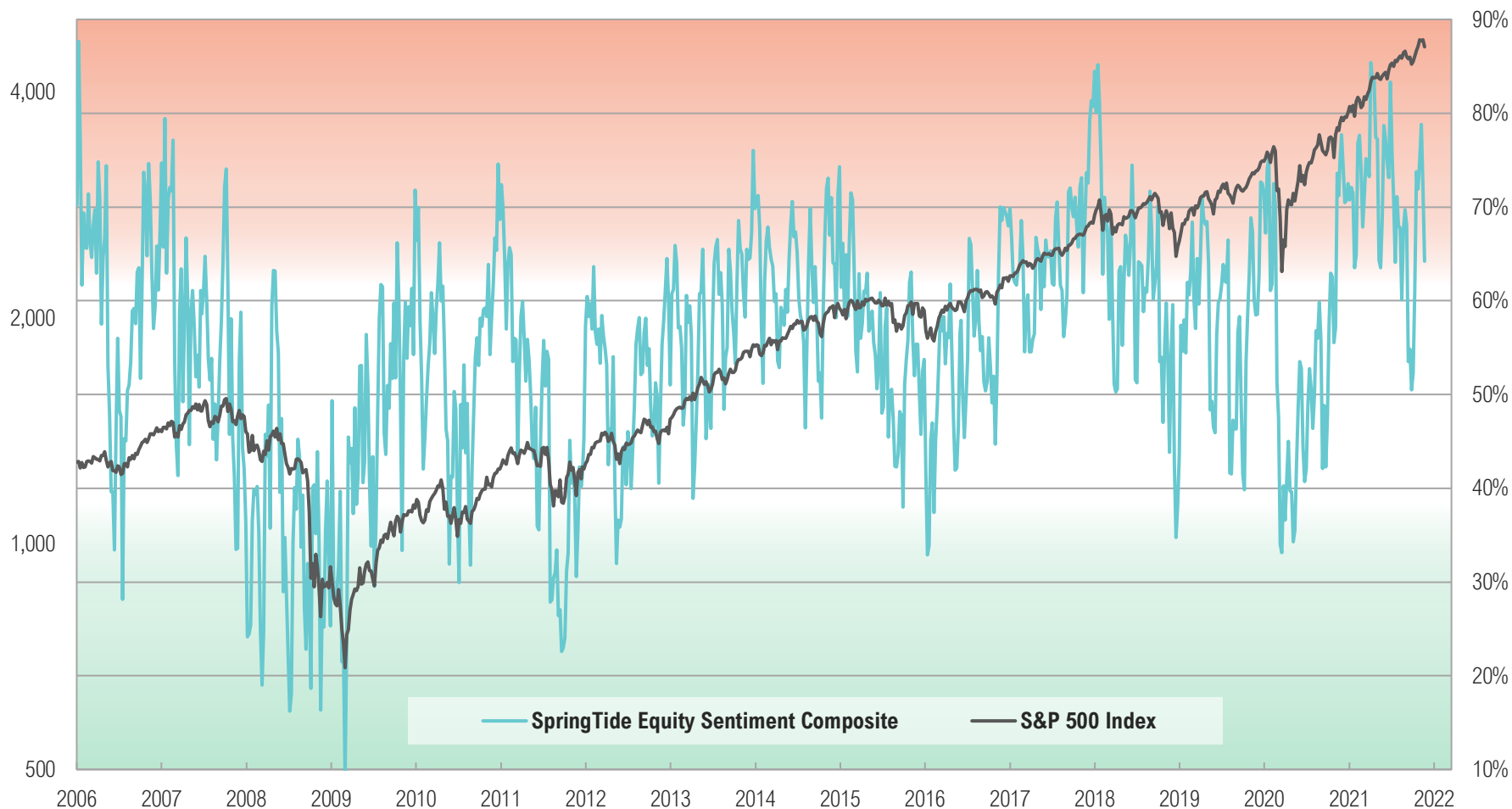
■ S&P 500 Index ■ Russell 2000 Index ■ MSCI EAFE Index ■ MSCI EM Index ■ Bbg U.S. Agg Bond Index ■ Bbg U.S. HY Bond Index ■ S&P GSCI Crude Oil ■ Gold

Source: Morningstar

U.S. equity sentiment fell sharply after news of Omicron variant (exacerbated by Powell's comments), S&P 500 had its worst week since September

S&P 500 INDEX

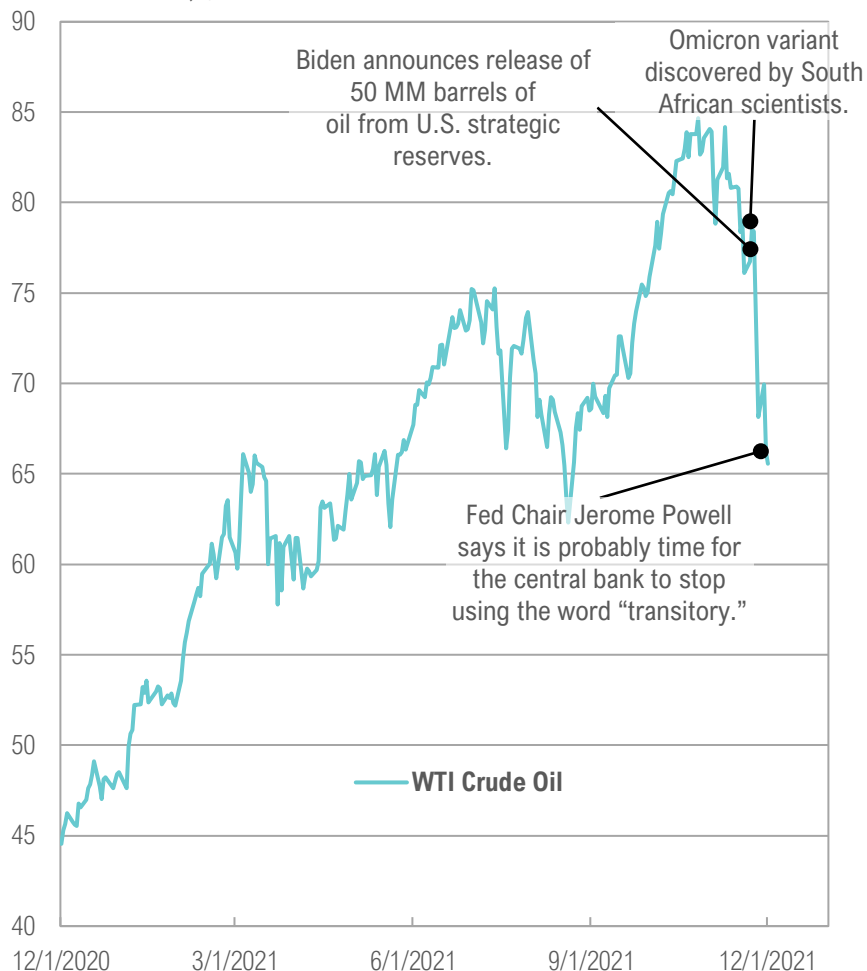
SPRINGTIDE U.S. EQUITY SENTIMENT COMPOSITE



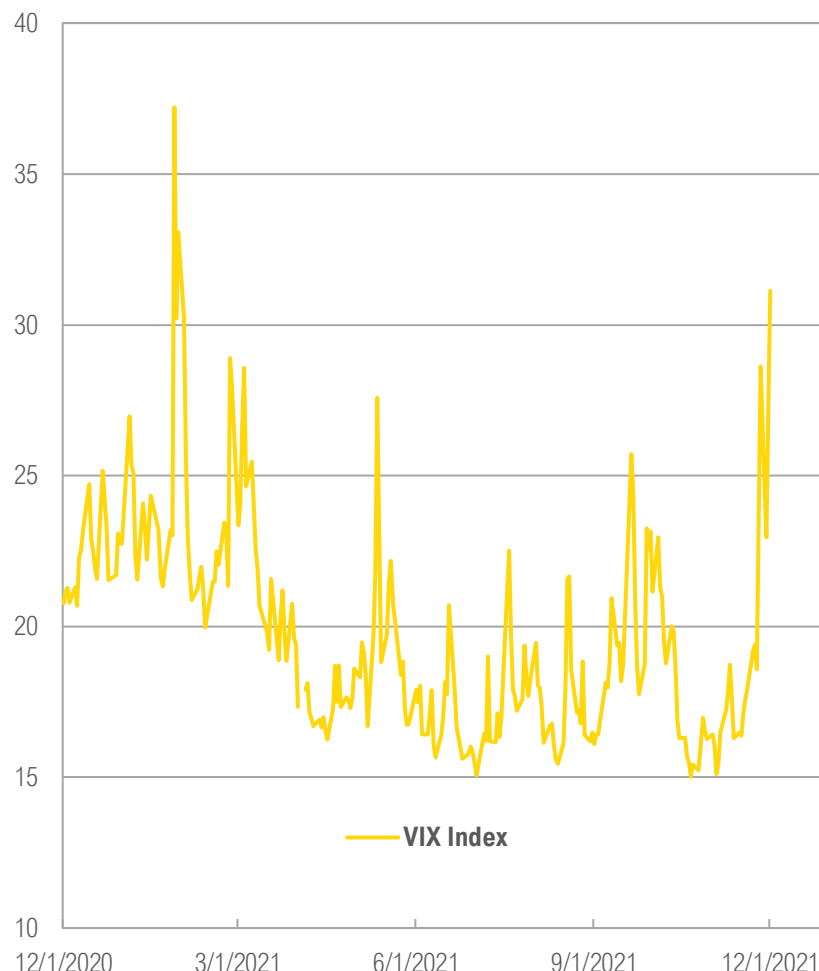
Source: Bloomberg, AAIL, Investor's Intelligence, TD Ameritrade, NAAIM, UofM, Standard & Poor's, Gallup, CBOE, SpringTide Calculations

The VIX jumped to its highest level since January and WTI Crude Oil entered a bear market after news of the Omicron variant broke

WTI CRUDE OIL, \$/BBL



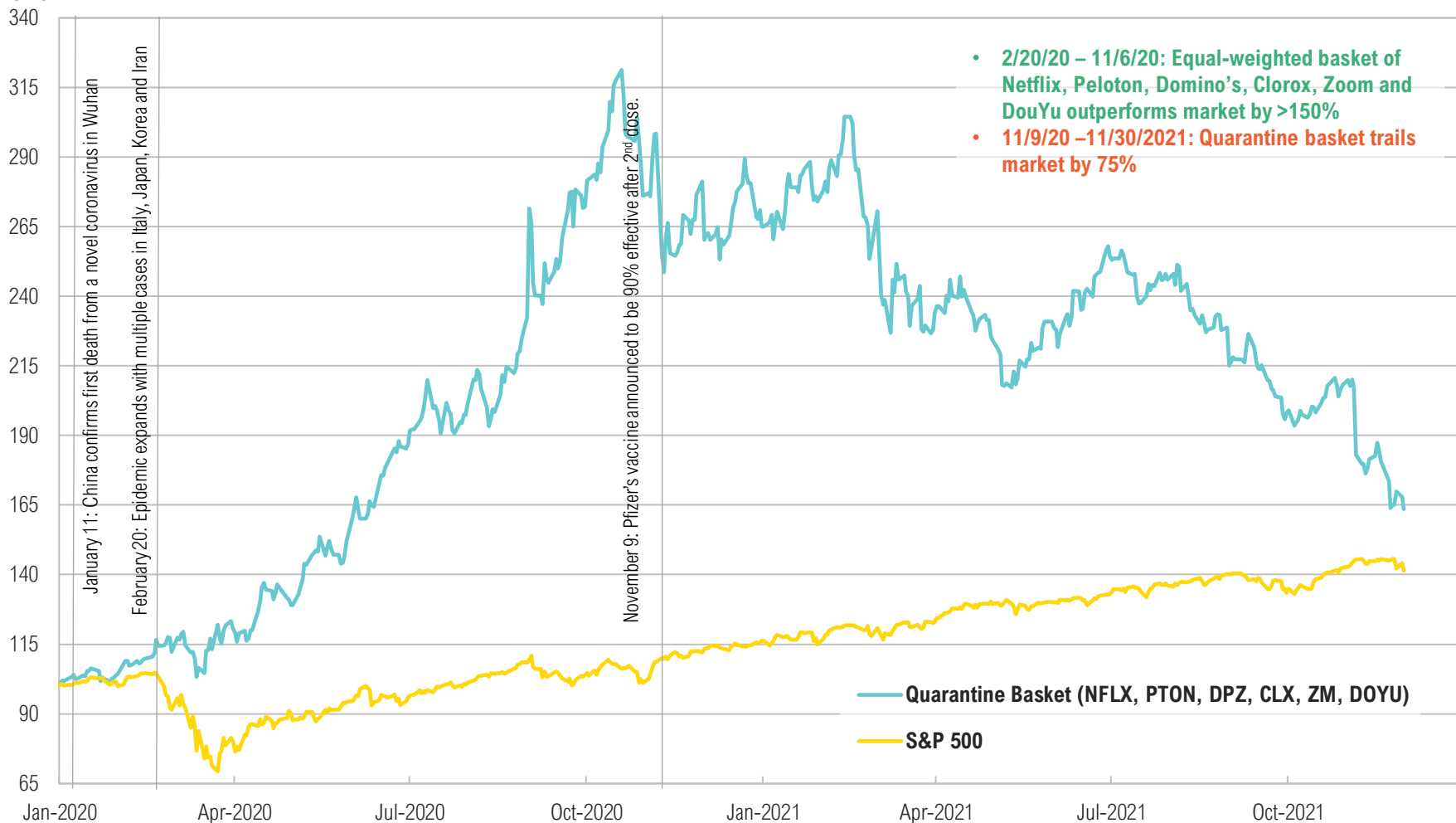
VIX INDEX



Source: Bloomberg

➤ Quarantine stock basket continues to trail the broader U.S. stock market, will Omicron put some of these trades back on?

GROWTH INDEX



Source: Bloomberg

APPENDIX: SECTOR & INDUSTRY PERFORMANCE

Sector/ Industry Name	MTD (%)	YTD (%)	1-Yr (%)	3-Yr (%)	5-Yr (%)
Communication Services	-5.2	18.6	22.2	21.7	12.7
Entertainment	-9.2	-5.0	10.7	17.4	n/a
Media	-4.7	-1.2	2.0	10.2	9.5
Diversified Telecommunication Services	-6.8	-11.3	-12.8	-2.7	0.0
Interactive Media & Services	-0.1	47.9	47.3	36.0	n/a
Wireless Telecommunication Services	-1.4	-15.9	-14.7	n/a	n/a
Consumer Discretionary	2.0	24.7	27.9	24.9	21.4
Internet & Direct Marketing Retail	3.6	10.1	13.7	26.5	33.4
Specialty Retail	4.8	41.7	42.6	28.1	21.9
Leisure Products	1.2	6.5	7.1	1.3	-4.3
Auto Components	-6.6	21.2	30.2	22.4	16.8
Hotels, Restaurants & Leisure	-5.2	5.4	9.8	9.5	12.9
Distributors	2.6	44.9	50.6	18.0	10.7
Textiles, Apparel & Luxury Goods	0.7	16.7	23.3	20.5	18.3
Automobiles	3.7	63.2	58.0	21.6	12.6
Household Durables	2.0	25.2	24.5	24.4	10.7
Multiline Retail	-0.7	27.0	24.2	28.1	18.1
Consumer Staples	-1.1	7.6	9.5	11.4	10.3
Tobacco	-7.0	8.5	17.9	3.0	1.8
Food Products	-1.3	4.1	5.0	8.0	4.5
Beverages	-2.7	2.8	7.9	8.2	10.5
Food & Staples Retailing	0.9	18.1	15.2	16.4	15.4
Personal Products	2.6	25.6	36.3	31.6	26.3
Household Products	0.7	2.1	2.0	14.6	12.4
Energy	-5.2	49.7	56.3	-1.0	-1.7
Oil, Gas & Consumable Fuels	-4.7	52.6	58.5	0.0	0.2
Energy Equipment & Services	-10.4	22.1	33.8	-10.8	-15.3
Financials	-5.7	30.6	38.7	14.5	13.3
Insurance	-5.5	23.5	29.6	13.5	10.8
Banks	-6.2	35.4	47.1	11.9	12.2
Diversified Financial Services	-3.6	19.3	20.9	8.2	11.8
Capital Markets	-5.4	34.2	42.3	24.0	18.3
Consumer Finance	-8.6	31.5	43.4	15.9	13.7

Sector/ Industry Name	MTD (%)	YTD (%)	1-Yr (%)	3-Yr (%)	5-Yr (%)
Health Care	-3.0	15.7	20.3	13.2	15.7
Life Sciences Tools & Services	-1.4	31.7	36.2	28.0	31.1
Biotechnology	0.1	7.3	10.0	8.1	8.7
Health Care Equipment & Supplies	-7.6	10.4	15.9	16.7	20.9
Health Care Providers & Services	-4.2	22.3	25.5	12.5	17.2
Pharmaceuticals	-0.6	14.9	20.2	9.4	12.1
Health Care Technology	-5.2	-9.4	-4.8	7.7	7.8
Industrials	-3.5	15.0	16.3	13.8	11.7
Industrial Conglomerates	-6.7	2.3	5.9	9.4	-0.5
Building Products	2.3	38.0	38.9	31.5	15.6
Aerospace & Defense	-5.2	6.5	7.4	1.5	8.4
Commercial Services & Supplies	-2.2	25.8	28.0	25.5	21.6
Professional Services	-0.3	25.8	29.0	25.0	16.2
Electrical Equipment	-3.5	27.2	28.7	23.6	18.2
Construction & Engineering	-6.2	49.8	54.1	34.0	18.2
Trading Companies & Distributors	-1.1	28.4	28.0	28.7	22.8
Machinery	-1.8	14.5	16.2	18.8	17.2
Air Freight & Logistics	-4.9	10.8	7.1	14.9	11.8
Airlines	-7.3	-4.2	-3.5	-14.9	-6.2
Road & Rail	-3.7	21.4	23.1	20.1	23.3
Information Technology	4.3	30.1	37.6	37.0	31.6
Software	-1.1	42.4	48.0	40.8	38.3
Technology Hardware, Storage & Peripherals	7.3	22.3	36.5	51.1	40.7
Communications Equipment	0.8	32.5	37.6	11.0	17.6
IT Services	-7.0	-5.1	-0.8	14.6	17.8
Semiconductors & Semiconductor Equipment	16.7	52.0	56.9	46.1	34.0
Electronic Equipment, Instruments & Comp.	4.1	27.9	31.7	24.4	19.4
Materials	-0.5	18.3	21.3	18.3	13.5
Chemicals	0.0	17.5	19.9	16.6	13.7
Metals & Mining	-1.4	29.5	36.1	31.2	16.1
Containers & Packaging	-3.4	6.5	8.1	14.2	10.1
Construction Materials	1.9	36.3	45.2	26.1	11.7
Real Estate	-0.9	32.6	34.6	15.7	13.6
Equity Real Estate Investment Trusts (REITs)	-0.6	32.0	34.0	15.3	13.3
Real Estate Management & Development	-8.2	52.4	56.3	29.8	26.9
Utilities	-1.6	7.3	8.1	9.4	10.8
Independent Power and Renewable Electricity Pro	-6.4	1.9	17.1	13.6	25.2
Electric Utilities	-0.6	9.9	11.9	11.5	11.9
Multi-Utilities	-3.1	3.4	1.1	5.0	7.6
Water Utilities	-0.1	14.5	14.6	23.9	21.2
Gas Utilities	-1.2	-2.8	-3.3	n/a	n/a

Source: Bloomberg. GICS Sectors are shown in bold text.

Coronavirus Trends

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