Thomas J. Lee, CFA
inquiry@fsinsight.com
5/12/2020

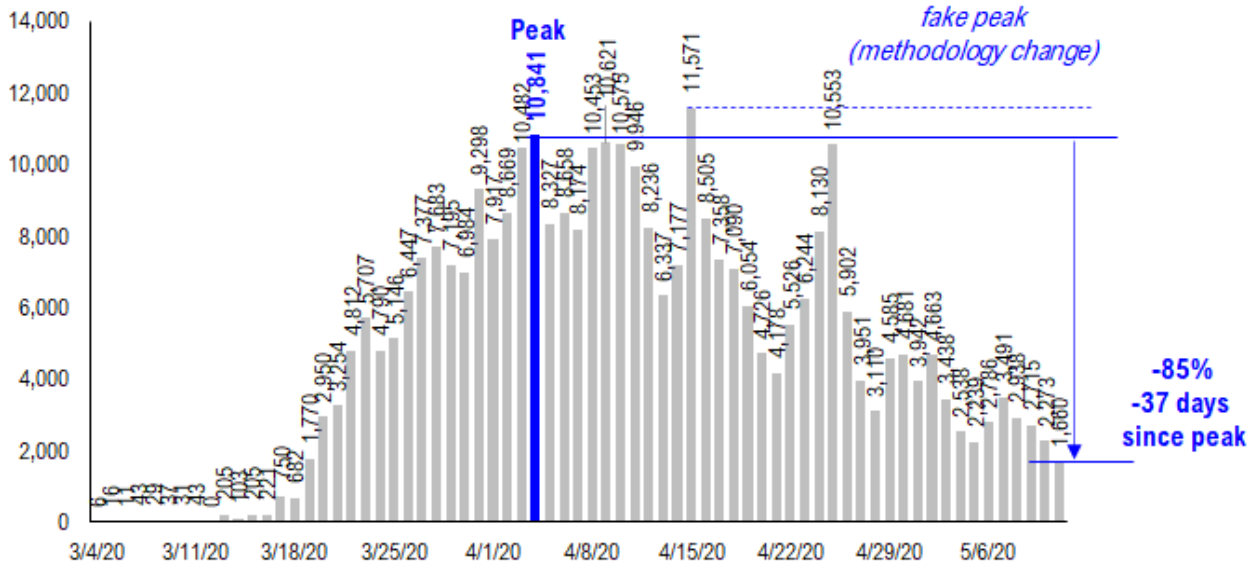
BLAST

COVID-19 UPDATE: USA cases crash to 17,652 (-3,444 vs yesterday) and 51% below 4/24/2020 peak of 36,116. Weighted R0 <0.75 and study suggests herd immunity at 10%

THIS MESSAGE IS BEING SENT SOLELY TO CLIENTS OF FS INSIGHT

There appears to be a multi-state, simultaneous reduction in COVID-19 reported cases, particularly in all the Northeast states (NY, NJ, CT, MA, PA) and this had led to total reported cases crashing below 20K for the first time in almost eight weeks. Because no states instituted stricter measures in the past 14 days, the spontaneous drop in cases across the US does seem to suggest COVID-19 could be "burning out" to an extent. In fact, this drop in cases is occurring at a time when residents across the US are less "compliant" with mitigation measures. And COVID-19 tests surged >400k yesterday vs ~300k past few days, so it is not a drop in tests.

Cases reported early in the week (Sun/Mon) tend to be lower than mid-week, so we do not want to read too much into this. But there are other positive data points today. First, NY state cases crashed further to 1,660, down 85% from the peak on 4/1/2020 (37 days ago) -- so if one wanted to know the definitive trend in NY, it is down. Yesterday, Gov Cuomo announced some "low risk" biz could open 5/15--drive-in theaters, landscaping, etc. -- not big chunks of GDP.



Source: COVID-19 tracking project.

Thomas J. Lee, CFA
inquiry@fsinsight.com
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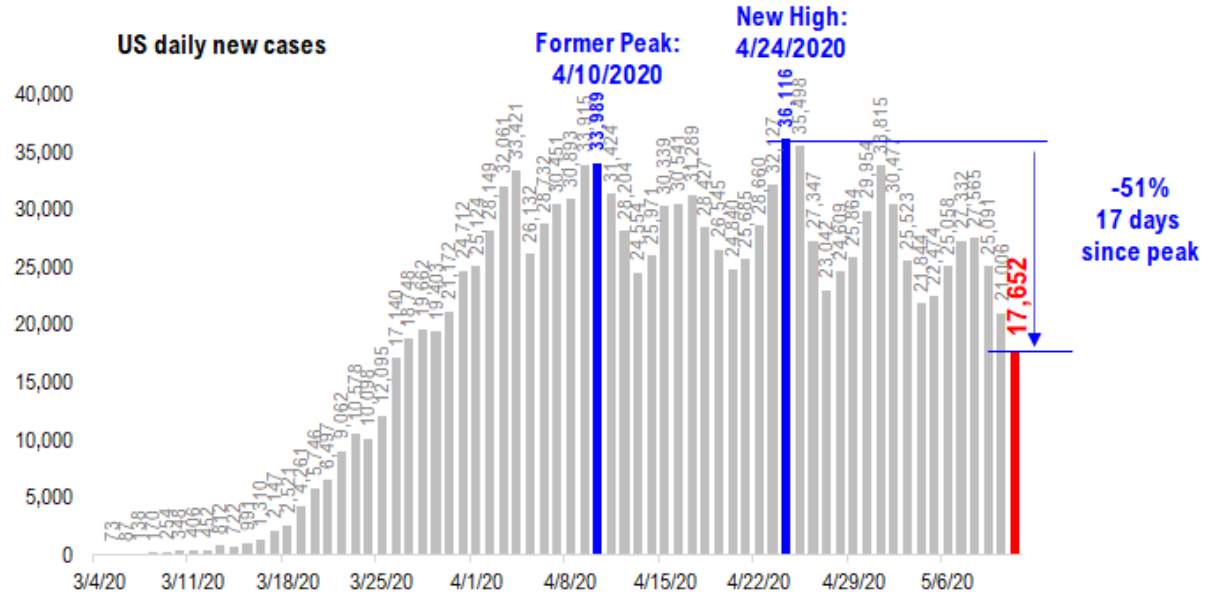
But as states ease and as residents venture out, many will worry about a second wave. Scott Gottlieb, the former FDA commissioner, flagged a study by some UK researchers and the conclusion is that COVID-19 required "herd immunity" may be much lower at 10% (vs 60%-70% conventional thinking) as susceptible cohorts are already exposed (we discuss below) -- if true, this reduces the risk of a second wave. And could support the "optimistic" case for economic outcomes.

Incidentally, Energy stocks may prove to be a leading indicator sector. This group bottomed on 3/19/2020, 4 days before the S&P 500 and have since risen 71%. Oil has made a huge move as well (discussed last week). But here is a fact. Nobody in their right mind, could make a bull case for Energy stocks. In fact, we believe most people have removed Energy stocks from their watchlists.

Oil has only one use case today. To power the movement of goods and people (ok, some plastics too). So it is purely a derivative of the global economy. And with the Global Depression, no air travel, no driving and a fractured OPEC, why in the world should energy stocks rise? There is no rational argument for positive speculation.

As such, we infer that the rise in Energy stocks reflects improving global growth outlook -- another data point suggesting a rising probability of a vigorous EPS and GDP recovery (later). Hence, stocks are rising for the right reasons.

POINT #1: US cases crash to 17,652, the best figure since 3/26/2020 and 51% off peak. NY state could open "some" biz by 5/15...
Total US cases fell another 3,444 yesterday vs the day before to 17,652 vs 21,006 and down -7,439 over the past 2 days.



Source: COVID-19 Tracking Project

Thomas J. Lee, CFA
inquiry@fsinsight.com
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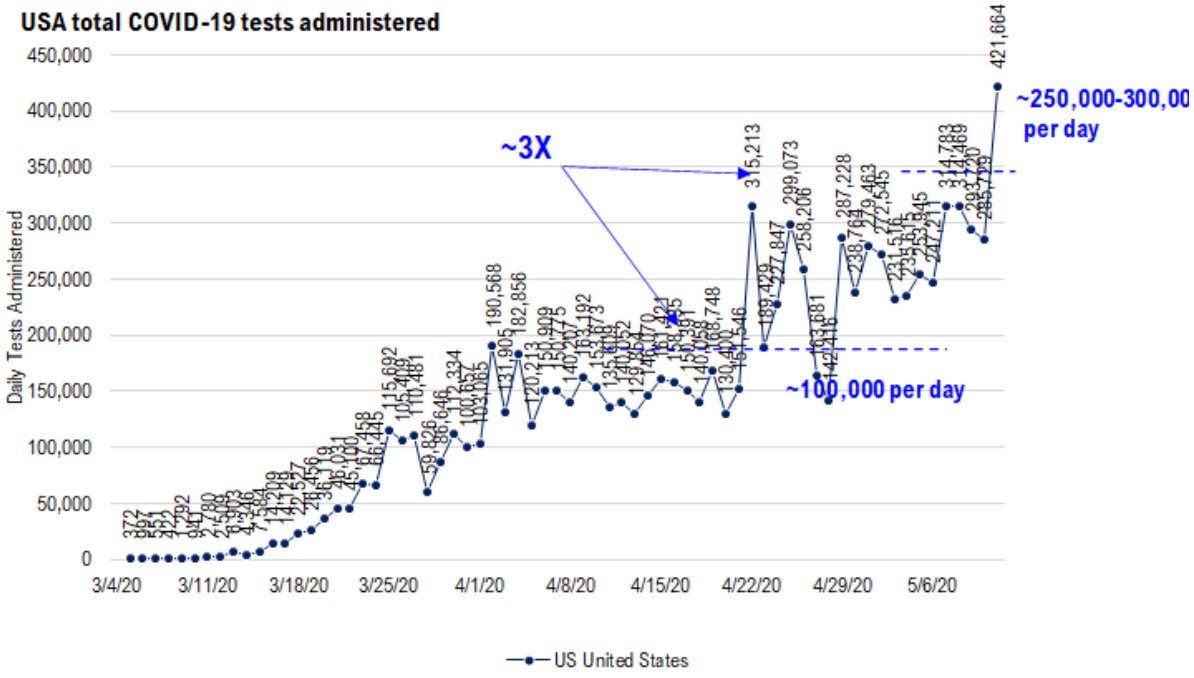
Total reported tests >400,000 for the first time... so the drop in cases is not due to declining testing... 4% "positive"

Perhaps the most impressive aspect of the drop in reported cases is the surge in reported tests. As shown below, this figure reached a new high of 421,000, higher than the ~290,000 2D ago. Thus, the number of "% positives" is much lower at 4% compared to 9% 2D ago.

- Cases have jumped mid-week vs early in the week, so we do not want to read too much into the reported cases for Monday nor Tuesday. But the fact that it is dropping, is encouraging.



Source: COVID-19 Tracking Project

7 states account for 62% of the drop, and most are the Northeast states... is it weather?

The 2-day drop is huge. And it is spread across many states, but 7 states accounted for the bulk of the decline (2D change shown), or 62%:

- IL	1,266 vs 2,325 (2D ago)	-1,059
- NY	1,660 vs 2,715	-1,055
- CA	1,259 vs 2,049	-790
- PA	543 vs 1,078	-535
- FL	386 vs 802	-416
- CO	176 vs 548	-372
- CT	211 vs 573	-362
Total 7 top states		-4,589 (62% of 2D change)

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Such pervasive and broad improvements are a good sign. But the simultaneous improvement is somewhat head scratching. Is this weather? We have no idea. And since cases tend to jump mid-week, we don't want to read too much into the Monday data.

Daily Case Increases (by State) (05/11)

% total new cases (state cases/ total US cases)
% total US pop (state population/ total US population)

Sorted
Last 3-day trend growth rates

The stats for Kentucky reflect the changes over the past two days…

		5/9/20	5/10/20	5/11/20	
	United States	25,091	21,006	17,652	
	States:				
1	New York	2,715	2,273	1,660	
2	New Jersey	1,631	1,447	1,413	
3	Illinois	2,325	1,656	1,266	
4	California	2,049	2,119	1,259	
5	Texas	1,251	1,009	1,000	
6	Virginia	854	885	989	
7	Maryland	1,049	1,053	786	
8	Ohio	681	384	696	
9	Massachusetts	1,410	1,050	669	
10	Georgia	390	873	561	
11	Tennessee	327	217	559	<--higher
12	Pennsylvania	1,078	1,295	543	
13	Minnesota	702	481	528	
14	Indiana	586	394	501	
15	Michigan	430	382	414	
16	Iowa	214	288	414	<--higher
17	Florida	802	595	386	
18	North Carolina	492	404	281	
19	Arizona	434	159	261	
20	Nebraska	403	81	257	
21	Kentucky	149	0	246	<--higher
22	Alabama	192	210	232	
23	Louisiana	562	183	215	
24	Connecticut	573	570	211	
25	New Mexico	105	85	206	<--higher
26	Wisconsin	349	280	199	
27	Washington	157	286	187	
28	Rhode Island	210	285	176	
29	Colorado	548	328	176	
30	Mississippi	288	123	173	
31	South Carolina	164	122	139	
32	Kansas	250	233	132	
33	Delaware	166	170	118	
34	District of Columbia	203	170	117	
35	Utah	184	148	111	
36	South Dakota	249	124	97	
37	New Hampshire	63	61	89	<--higher
38	Missouri	177	178	74	
39	Puerto Rico	17	25	58	
40	Oregon	92	68	58	
41	Nevada	144	70	54	
42	Arkansas	237	28	31	
43	North Dakota	39	27	27	
44	Maine	34	28	26	
45	Oklahoma	66	99	24	
46	Idaho	25	16	14	
47	Wyoming	9	9	7	
48	West Virginia	12	25	6	
49	Northern Mariana Islands	1	0	3	
50	Alaska	1	1	2	
51	Montana	0	0	1	
52	Hawaii	0	2	1	
53	U.S. Virgin Islands	0	1	0	
54	Guam	0	0	0	
55	American Samoa	0	0	0	
56	Vermont	2	6	-1	

Source: COVID-19 Tracking Project

READY TO GO --> Some parts of NY state could open as early as Friday this week (5/15)

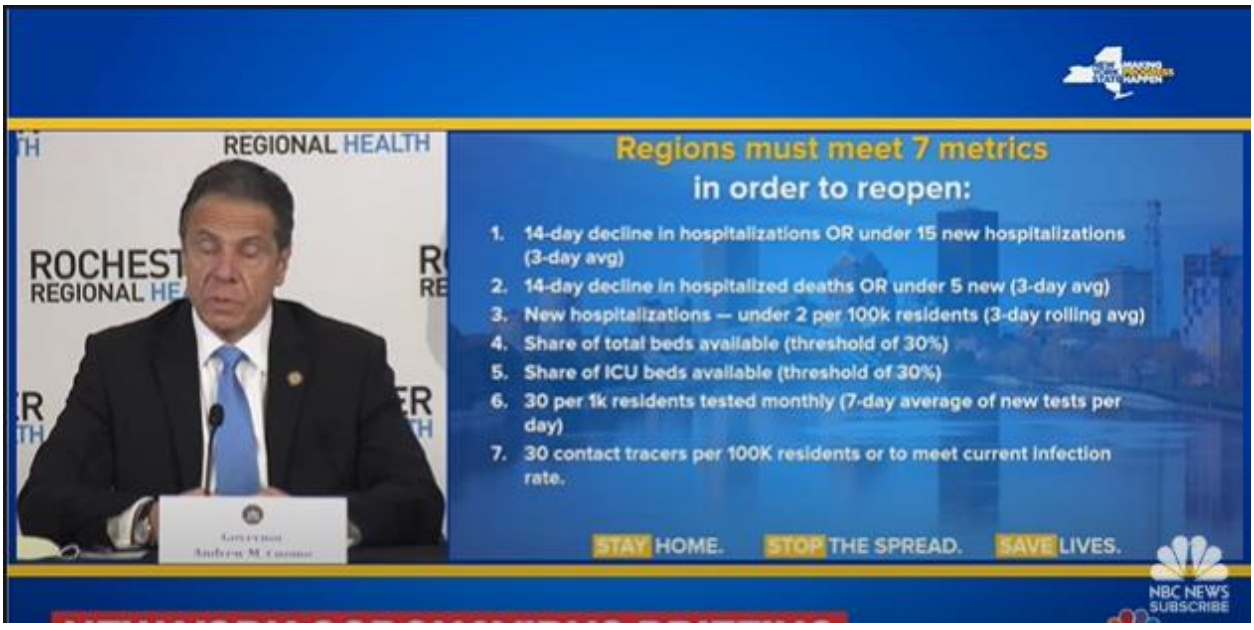
Yesterday, NY Gov Cuomo announced that NY state is moving tangibly closer to easing restrictions, even suggesting some parts of NY state could open as early as this Friday. The governor outlined 7 metrics below and a region meeting 7 of 7 is ready to open.

7 criteria -- need ~6,000 contract tracer (employees) and conduct ~60,000 "new" tests per day (confusing, as "monthly" used)

The criteria is detailed below but it falls into 3 categories:
- case improvements measured as hospitalizations
- healthcare resource capacity (beds available etc.)
- tracking infrastructure (testing + contact tracers) --> 30 tests per 1k residents and 30 contact tracers per 100k residents.

On the latter point, the state has ~20 million residents, this implies the state needs to conduct 60,000 tests per day and needs to hire 6,000 contact tracers. This does suggest quite a significant ongoing cost to the state in the future from COVID-19.

- Assuming $60,000 median salary, the labor cost alone is $360 million annually. A huge figure for a state



Source: NY Gov office

Only Finger Lakes. Mohawk Valley and Southern Tier of NY state regions meet 7 of 7. NYC is 4 of 7 (worst)...

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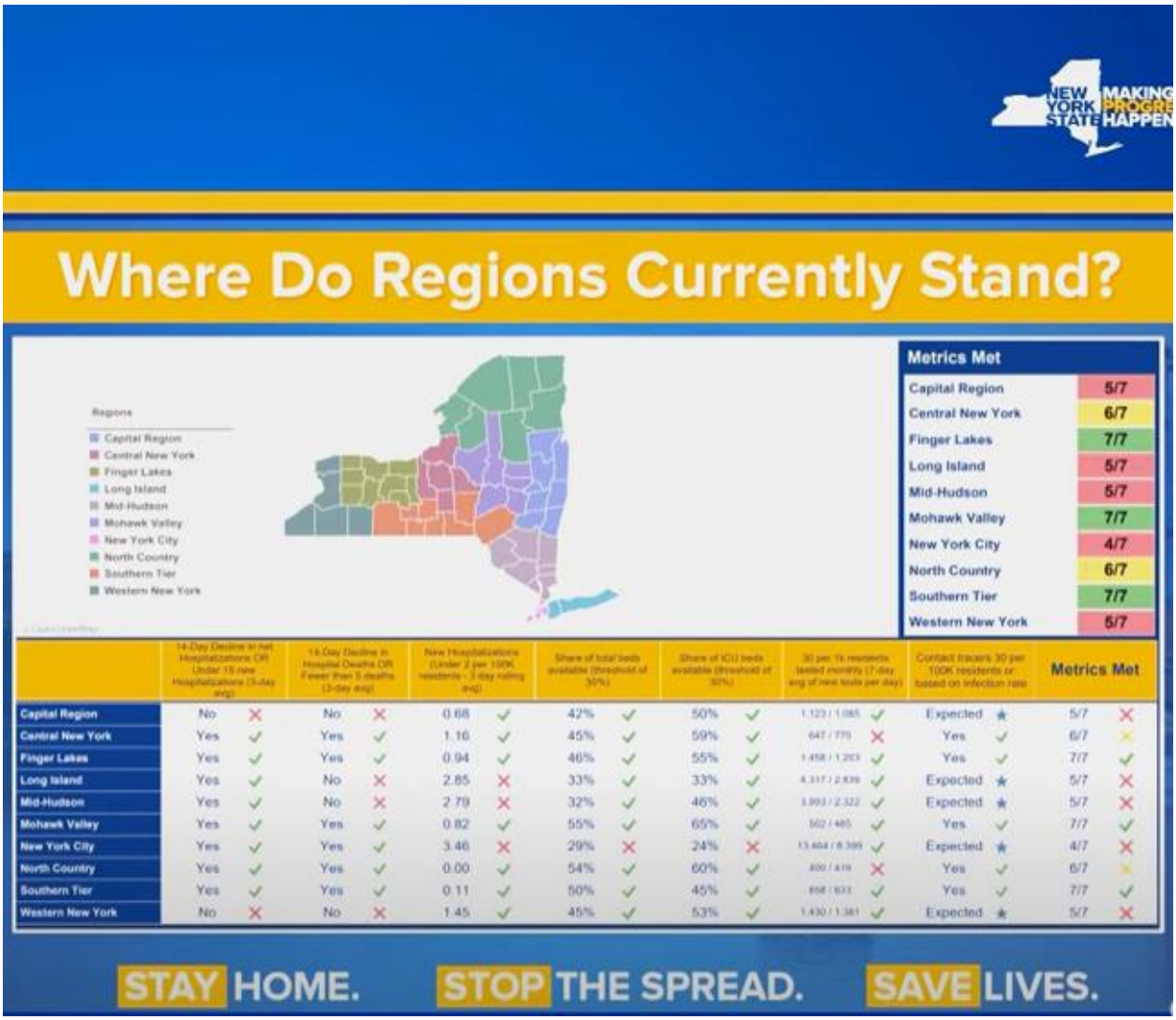

Source: NY Gov office

Drive-in theaters, landscapers and parks and outdoor sports open as of 5/15/2020...
The governor also declared that Low-risk and recreational businesses can open statewide as of 5/15/2020. These are drive-in theaters, landscaping, outdoor sports and parks. These are not big GDP components. And they are relatively small.

- So we are not really scoring NY state as open, until broader categories are included such as offices, etc.
- NYC continues to expect to be closed until at least June.

Source: NY Gov office

POINT #2: USA R0 is 0.75, meaning the country broadly seeing a retracement.
The infectiousness of COVID-19 is what has made this disease spread so quickly. And the metric use to calculated spread is the reproduction rate or R0. If the R0 falls below 1, the epidemic slows as each new patient infects less than "one" person.

Our data scientist, tireless Ken, calculated the R0 for the US counties and states. He based some of his python code on the work done by rt.live, an entity created by Kevin Systrom, the co-founder of Instagram. Kevin's algorithm is described below.

> Bettencourt & Ribeiro's original algorithm to estimate R_t is a function of how many new cases appear each day. The relationship between the number of cases yesterday and the number of cases today give us a hint of what R_t might be. However, we can't rely on any one day too much in trying to guess R_t, as daily case counts are imperfect due to changing testing capacity, lags in data reporting, and random chance. However, using Bayes' Theorem, we can take the new information we get from each day's case count to adjust our expectation of what R_t is, getting closer to the true value as more daily data becomes available.

https://github.com/k-sys/covid-19/blob/master/Realtime%20R0.ipynb
Based on a case weighted basis, the USA overall R0 is 0.75, so COVID-19 is on the

Thomas J. Lee, CFA
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decline...

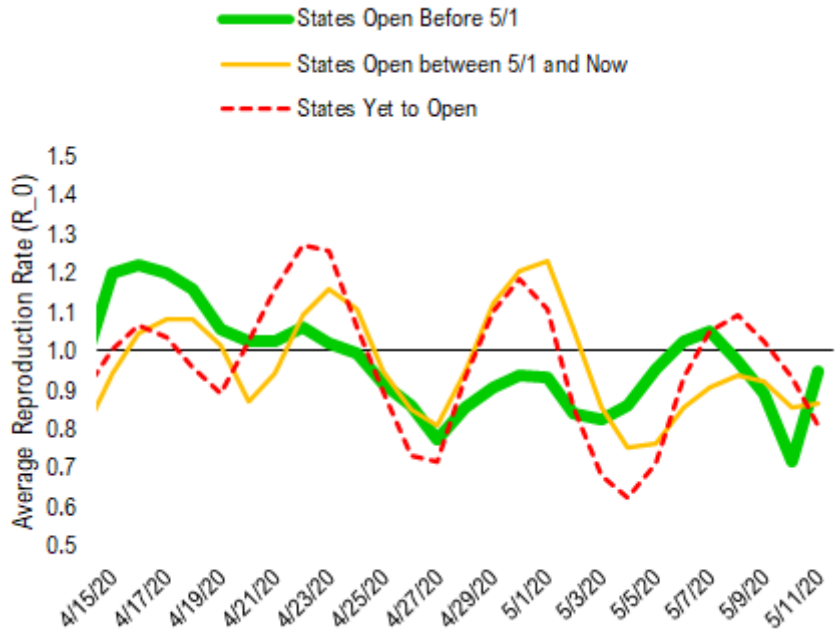
Because each outbreak is local, we compiled the R0 for each state (sorted highest to lowest) and calculated the USA composite on a case-weighted basis. The overall USA figure is 0.75, well below 1.0

We created composite R0 time series, grouping states into 3 buckets:

- States open prior to 5/1/2020 (13 states, 13% of US pops);
- States open between 5/1 to today (26 states and 57%);
- States which have not yet eased restrictions as of today (12 and 30%)

Because states will move through these tiers, and we do not want "mix" changing sequential values, we restate the entire series as states move from the red line to the yellow line.

The R0 is improving most rapidly for the red line, which are states which have not yet opened. A glance at the 50 state chart below explains this -- states like NY, NJ, IL, CT and MA have the best R0 and are not yet opened. Of course, R0 is not the only factor. It is also a function of level of cases. And as many local govt discussed, a function of resource availability.



Source: Fundstrat, COVID-19 tracking project and rt.live

R0 for each of the 50 states below...

We color code the states based on their status on "opening" their economy (as of today) and applied the same color coding as above (i.e., green are those open since before 5/1/2020).

- NY state is now 0.56, a sizable decline and actually the 4th best in the USA.
- Of the states where this R-value > 1, the highest is South Dakota at 1.3 (granted 1.3 is

Thomas J. Lee, CFA
inquiry@fsinsight.com
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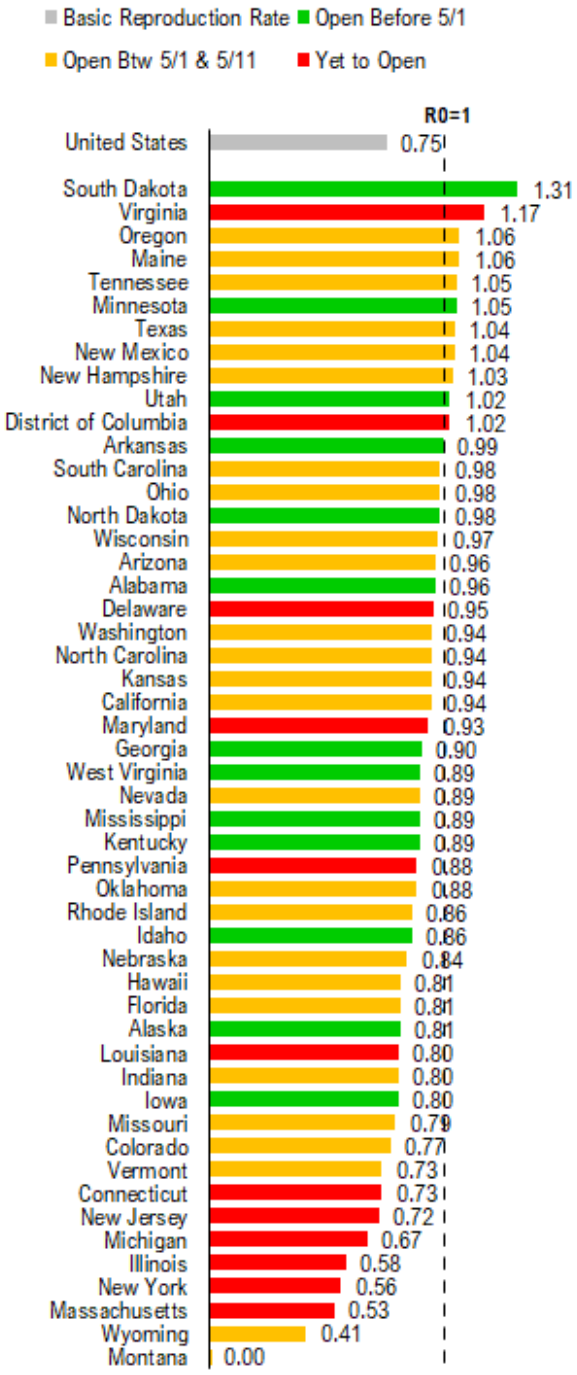
better than 4 or even 2).
- For states like Georgia, which have been open >2 weeks now, the R0 is 0.90, and still below 1.0.



Source: Fundstrat, COVID-19 tracking project and rt.live
NY state (red line) went from worst of 50 states to one of the best...
The R0 for NY state and the other 50 state is shown below. The time series starts on

Thomas J. Lee, CFA
inquiry@fsinsight.com
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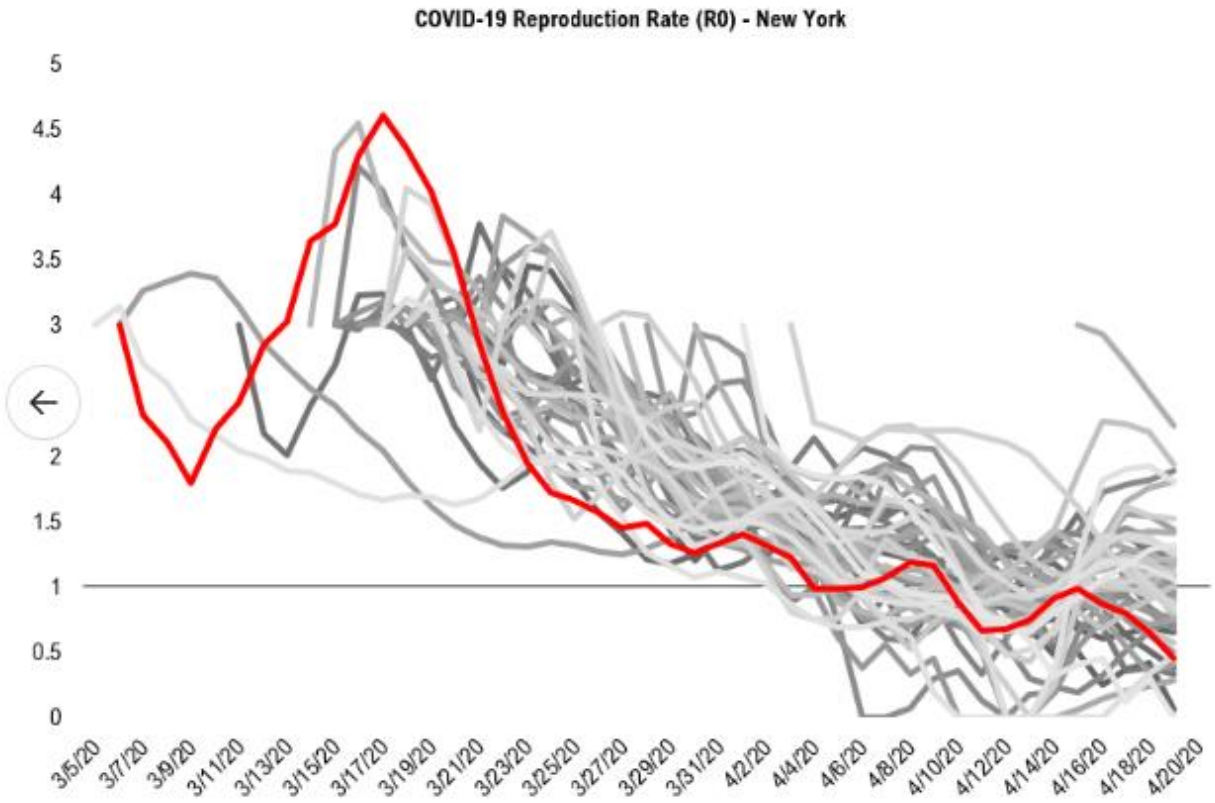
3/5/2020 and as you can see, early in the crisis, NY was the worst with an R0 of >4.5. But with the rigorous efforts of the state, this R0 is now 0.56, and among the best of the 50 states. This is another affirming data point that the state is ready to open.



Source: Fundstrat, COVID-19 tracking project and rt.live

POINT #3: UK study suggests COVID-19 infects "susceptible" population early, depleting the pool of vulnerable, and thus, herd immunity may be achieved with as little as 10% exposed (not 60%-70% commonly accepted) -- a study flagged by Scott Gottlieb, former FDA Commissioner.

Herd immunity matters, because that is one of the reasons society can return to "normal"

One of the greatest concerns regarding COVID-19 is the risk of a second wave out outbreak as local governments ease restrictions. And the prevailing view is that a society only achieves herd immunity when 60%-70% of the population is exposed. And with a case fatality rate of 0.2% to 0.5%, that implies US COVID-19 deaths would eventually hit 400k to 1.2 million, based on 60%-70% prevalence.

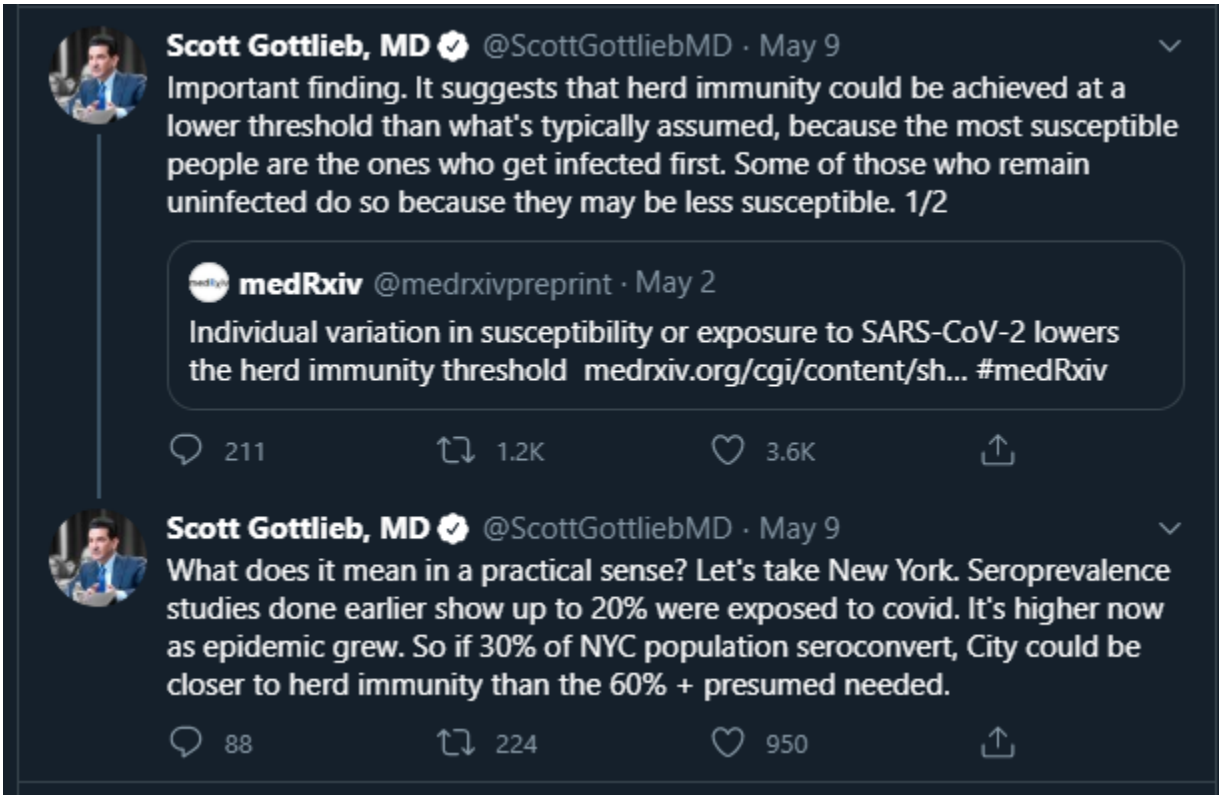
But it is more than deaths that make herd immunity a big deal. It is the question of when the society can return to some semblance of normality. This will be the point when the risk of spread of COVID-19 becomes just "another ailment" -- a status it does not have today. And of course, everyone will worry about a second wave if there is no herd

immunity.

UK et al study suggests that "individual variation" to susceptibility drastically lowers herd immunity threshold to 10%...

One of our clients, based in Westport, CT (and unnamed, because we forgot to ask their permission) flagged some commentary by Scott Gottlieb on Sat (5/9) where he referenced a UK study published on MedRxiv on 5/2.

- In the comments from Scott, he hit on the key takeaway, COVID-19 infects the most susceptible first and thus leads to slowing of infection as this pool is depleted. And also, suggests herd immunity is reached sooner.



source: twitter

Thomas J. Lee, CFA
inquiry@fsinsight.com
5/12/2020

Comments (3)

Individual variation in susceptibility or exposure to SARS-CoV-2 lowers the herd immunity threshold

M. Gabriela M. Gomes, Ricardo Aguas, Rodrigo M. Corder, Jessica G. King, Kate E. Langwig, Caetano Souto-Maior, Jorge Carneiro, Marcelo U. Ferreira, Carlos Penha-Goncalves

doi: https://doi.org/10.1101/2020.04.27.20081893

This article is a preprint and has not been peer-reviewed [what does this mean?]. It reports new medical research that has yet to be evaluated and so should *not* be used to guide clinical practice.

Abstract | Info/History | Metrics | Preview PDF

Abstract

As severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) spreads, the susceptible subpopulation is depleted causing the rate at which new cases occur to decline. Variation in individual susceptibility or exposure to infection exacerbates this effect. Individuals that are frailer, and therefore more susceptible or more exposed, have higher probabilities of being infected, depleting the susceptible subpopulation of those who are at higher risk of infection, and thus intensifying the deceleration in occurrence of new cases. Eventually, susceptible numbers become low enough to prevent epidemic growth or, in other words, herd immunity is attained. Although estimates vary, it is currently believed that herd immunity to SARS-CoV-2 requires 60-70% of the population to be immune. Here we show that variation in susceptibility or exposure to infection can reduce these estimates. Achieving accurate estimates of heterogeneity for SARS-CoV-2 is therefore of paramount importance in controlling the COVID-19 pandemic.

source:https://www.medrxiv.org/content/10.1101/2020.04.27.20081893v1.article-metrics

The study has a logical premise. Those most probable to catch COVID-19 are infected early, either being more susceptible (weaker immune system, age, etc.) or more connected. And also likely to become immune sooner (we wrote about that other study yesterday, that does seem to confirm individuals become immune).

- in their terminology (see below), the subpopulation (of those who can get COVID-19) gets depleted with infections. Their words are shown below.

Here we demonstrate that individual variation in susceptibility or exposure (connectivity) accelerates the acquisition of immunity in populations. More susceptible and more connected individuals have a higher propensity to be infected and thus are likely to become immune earlier.

Source: https://www.medrxiv.org/content/10.1101/2020.04.27.20081893v1.full.pdf

And the key notion is a "heterogeneous" population. The study is 7 pages and they define heterogeneous generally as "individual differences due to biological susceptibility, physical exposure or a combination of trait" -- so it is not heterogeneous in the sense of genetic diversity (or it could be, since that could fall under biological). This CV, or coefficient of variation, affects disease spread.

- by increasing this CV from 0 to 4, the required herd immunity falls to <10%.

Due to this *selective immunisation*, heterogeneous populations require less infections to cross their herd immunity thresholds than homogeneous (or not sufficiently heterogeneous) models would suggest. We integrate continuous distributions of susceptibility or connectivity in otherwise basic epidemic models for COVID-19 and show that as the coefficient of variation increases from 0 to 4, the herd immunity threshold declines from over 60% to less than 10%. Measures of individual variation are urgently needed to narrow the estimated ranges of herd immunity thresholds and plan accordingly.

Source: https://www.medrxiv.org/content/10.1101/2020.04.27.20081893v1.full.pdf

Their takeaway is that the prognosis for the disease path is more optimistic "than currently assumed"

The authors basically believe the existing models overstate the threshold needed to achieve herd immunity and, as such, have a more optimistic take on the disease path. The graph below shows (marked red arrow, by us) that herd immunity is achieved at much lower levels. The green and blue bars are the "herd immunity" levels for malaria and tuberculosis.

- so COVID-19 could achieve herd immunity with lower spread than those diseases.

curtails coefficients of variation with important downstream implications. Popular models based on contact matrices use a coefficient of variation around 0.9 (*13*) and perform similarly to our scenarios for $CV = 1$. Supported by existing estimates across infectious diseases, we argue that CV is generally higher and prognostics more optimistic than currently assumed. However plausible, this needs to be confirmed for the current COVID-19 pandemic and, given its relevance to policy decisions, it should be set as a priority.

Thomas J. Lee, CFA
inquiry@fsinsight.com
5/12/2020

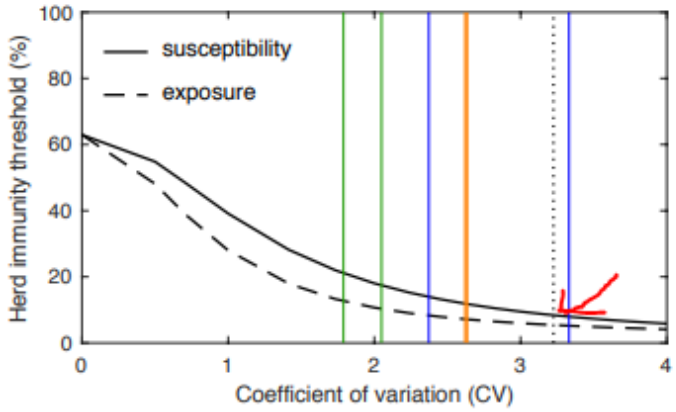


Figure 3: Herd immunity threshold with variation in susceptibility and exposure to infection. Vertical lines indicate coefficients of individual variation for several infectious diseases according to literature: (green) susceptibility or exposure to malaria [Amazon 1.8 (*4*), Africa 2.4 (*5*)]; (blue) susceptibility or exposure to tuberculosis [Portugal 2.4, Brazil 3.3 (*6*)]; (orange) infectiousness for SARS-CoV-1 [Singapore 2.62, Beijing 2.64 (*7*)]; (dotted black) infectiousness for SARS-CoV-2 [3.2 (*8*)].

Source: https://www.medrxiv.org/content/10.1101/2020.04.27.20081893v1.full.pdf

If the study is correct, many states in US are past the 10% threshold, based on serology tests...

Many states and counties have a case prevalence >10% -- certainly, NYC and NY do. And perhaps this explains why the cases are now beginning to fall off sharply, even as there has been no increase in social distance restrictions in the past few weeks. In fact, movement data shows social distance compliance is falling in the NY and NYC area.

STRATEGY: Signal from the stock market increasingly suggesting "vigorous" economic recovery ahead... look at Energy stocks

If someone asked us to point to tangible evidence of "visible" economic recovery -- it does not exist. Sure, big-data/alternative data is showing "movement" and "traffic" increases, but these are measured as rate of change. That we are "off the bottom" but this does not suggest a substantial economic boom ahead. Yet, financial markets are mostly suggesting stronger growth ahead. Last week, we highlighted the $62 rise in oil (from -$48 per barrel to +$20s). And that move, no doubt, created fortunes for some fortunate traders.

Energy stocks bottomed on 3/19/2020 (4 days ahead of S&P 500 bottom) and are up 71%... is this a new "leader"?

Energy stocks are in a stealth rally. It is a stealth rally, because most investors have removed every energy tickers from their Bloomberg screen.

But take a look below at the S&P 500 GICS1 Energy sector price index and price relative to S&P 500 are shown below.

- Energy stocks bottomed 3/19/2020, 4 days before the S&P 500 bottom (which we see as the low)
- Energy stocks are up 71% since then, largely confirming the rise in oil.
- Energy stocks relative strength charts are impressive (lower half).

Thomas J. Lee, CFA
inquiry@fsinsight.com
5/12/2020

Here is a group that has been underperforming for almost 10 years. Got massacred with the OPEC fracture. Got massacred again with the global shutdown.

And yet, this group is rising from the depths of destruction. The collective signal from Energy, in our view, is not "speculation" of a bounce. There are simply too many groups with better long-term fundamentals that one could "speculate" on. And it is not a credit buyer, since a credit buyer is likely long the debt and short the equity.

- We think the rise in Energy, and it is a sustained one, is telling us the economic growth outlook is likely strengthening. Yup.

Source: Bloomberg.

Thomas J. Lee, CFA
inquiry@fsinsight.com
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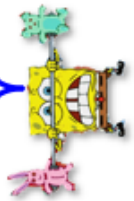
Energy is a reminder investors should "barbell" both Epicenter stocks and Secular Growth...

We continue to recommend investors barbell both "epicenter" stocks and "secular growth" -- yesterday was a good day for FANG, etc.

Figure: Representative styles and themes
Per Fundstrat

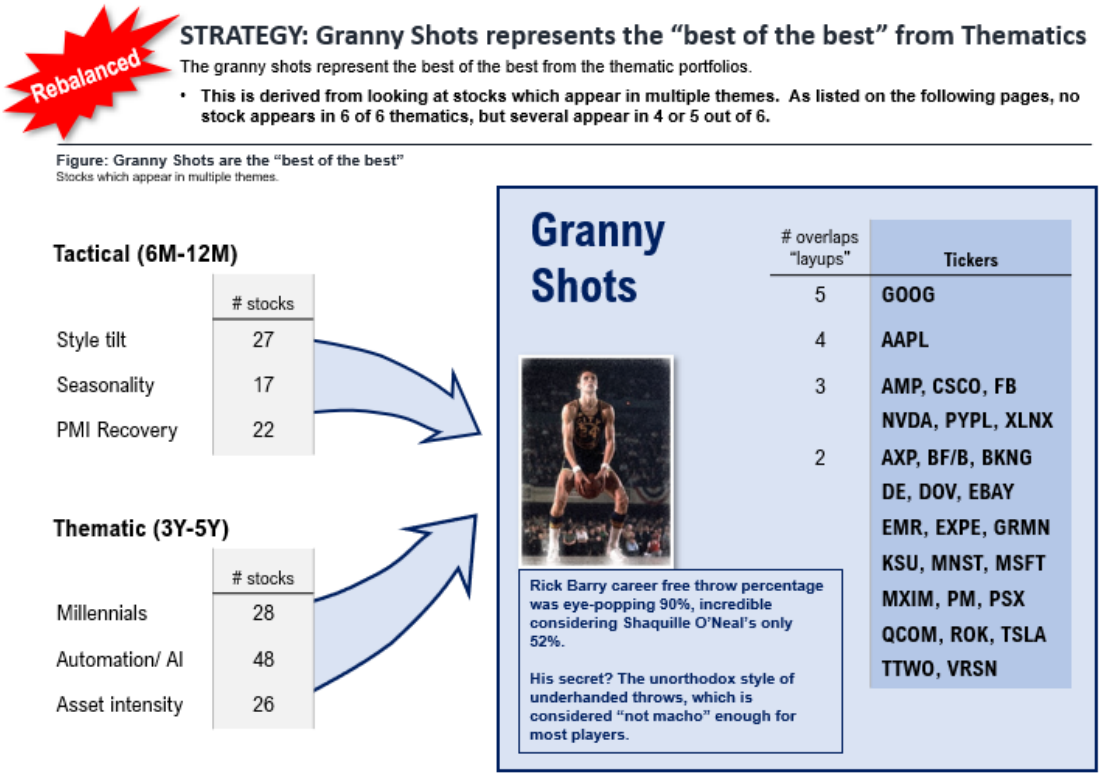
		Rationale	Representative Groups	Fundamental: Rauscher	Technical: Sluymer
Style	*Defensive*	Low rates for a long time L- or I-shaped economy	• Steady growers: Healthcare, Staples • Bond proxies: REITs, Utes	⊘	⊘
	Secular Growth	"good stocks at a any price" L- or U-shaped recovery	• FANG, Cloud, • Technology + "Work from home"	 Barbell	
	Cyclical Growth	Faster re-start V-shaped recovery	• Industrials • Materials + Energy • Small-caps		
		Hardest hit but market "over-reacted" In GFC, best cost cutters Stocks way under-owned	• Consumer Discretionary • Epicenter ("social distance")		
Thematic	*Operating leverage*	Business will re-engineer costs during this global shutdown. WFH exposes efficiency of operations.	• Technology • GFC op. leverage stories • High employee cost + real estate	✓	✓
	De-urbanization	Millennials leave cities for the 'burbs Mini baby boom – "Corona"-ials	• Homebuilders, home improvement, furnishings • Autos, Auto parts, Retailers • Financials	✓	✓
	Supply chain → US	De-globalization Less "China" Stay local	• US infrastructure suppliers • Financials	✓	✓

Source: Fundstrat

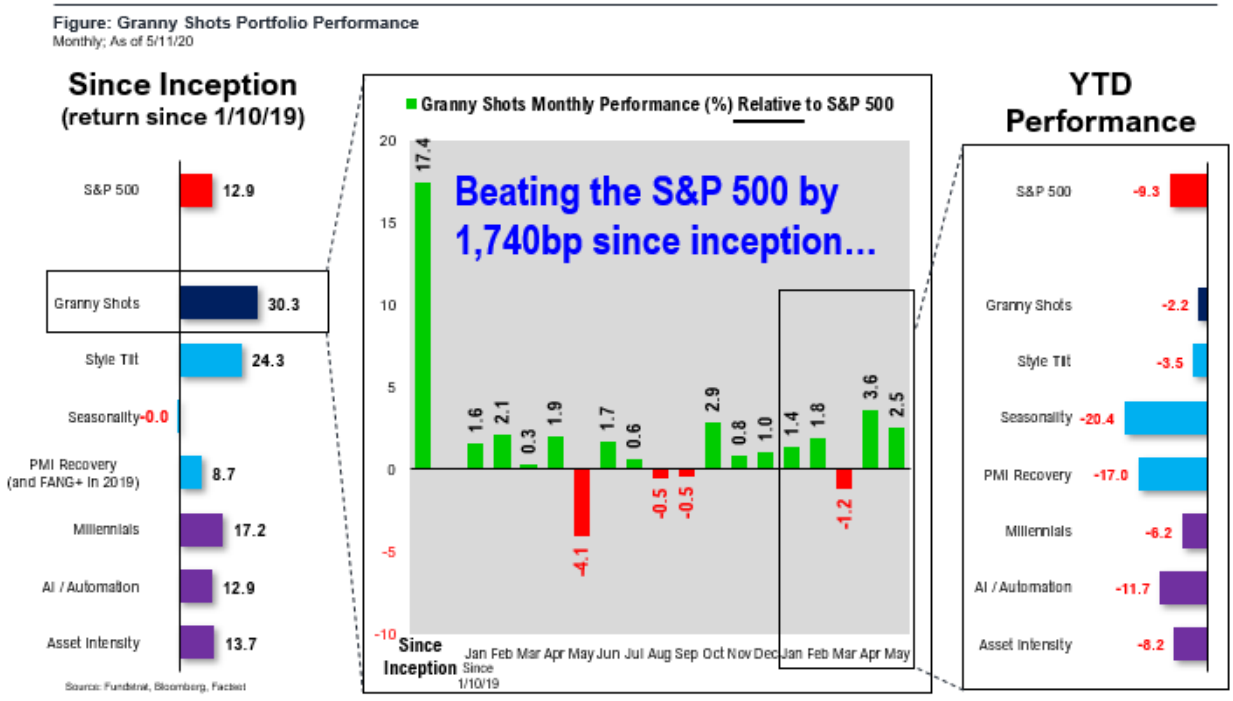
Fundstrat "Granny shots" outperforming by 710bp YTD and beat S&P 500 4 of 5 months in 2020...

Incidentally, our thematic-based portfolios are still identifying attractive ideas. Our "granny shots" is based on the stocks that fall most commonly in our 6 portfolios, 3 thematic and 3 tactical.

- the top names continue to be GOOG and AAPL which are not surprises.
- The full list is shown below, to the right of Rick Barry.



And the monthly performance is shown below. We designed Granny shots to produce thematic ideas, but with lower volatility.



Source: Fundstrat.

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inquiry@fsinsight.com
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Disclosures

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