COVID-19: The Power of NIMBY

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Last week, the COVID-19 epidemic turned into a financial pandemic. The MSCI World equity market suffered its third worst loss ever in a week, right behind the 1987 and 2008 crashes. However, the number of new infections in the world had turned out to be some 40% fewer than during the previous week.

So, why did the market crash?

The Chinese coronavirus epidemic had already been developing for two months. It was fading nicely and in line with the statistical analysis that we published on the 10th—despite widespread skepticism concerning China's coping abilities and willingness to report accurate contamination numbers. Skepticism about the spread of the virus simply proved to be unfounded.

However, global equity markets started collapsing between the 21st of February and the 24th, and since then the fall has only accelerated. Weekends are always dangerous periods for stressed markets. Two days without the ability to protect oneself: It's more than enough time to think and worry.

Panic arose from the epidemic spreading outside of China, as evidenced by limited but increasing numbers of cases reported in South Korea, Italy and, to a lesser extent, the USA. South Korea has modern infrastructures, a world-class healthcare system, and a revenue per capita listed higher than Spain's or Italy's. There is little concern that the country can address the issue the way China did, if not better.

Italy and the USA are another story and were the likely trigger of the global markets' collapse.

The two countries belong to the peer group of Western developed economies. The financial pandemic revealed their internal fragility, which has been mounting for decades. Sure, any Western society can cope with health risks, but the gut reaction is unavoidable: 'Not In My Backyard'. NIMBY!

Risk vs. Catastrophic Risk

There is a fundamental difference between risk and catastrophic risk.

Risk is opportunity. It's the main driver of wealth in any stable ecosystem, simply because an ecosystem arbitrates risk-adjusted returns. Investors know the rule quite well: equities return more than bonds, and bonds more than bills. Some risk-takers will do well, others will go bankrupt but, on average, risk is remunerated via a 'risk premium'.

A psychological factor, however, weighs in at an individual level. An 'average' is not incarnated; it's statistical, i.e. never guaranteed for the decision maker: "Even though I know the rule, am I ready to risk bankruptcy, or simply a discomfort, for a potentially better outcome?"

A society or a civilization can study risk and manage it in an intelligent way. However, if it turns its back entirely on risk, it will inevitably soft-land and vanish.

A catastrophic risk is of a different nature. It endangers the stability of the ecosystem itself. No one will be better off if it materializes, until the system finds a new equilibrium, a long way down the road.

Since our first publication on the coronavirus, one month ago, we have been tracking and analyzing the 'catastrophic risk'. Where do we stand?

State of the COVID-19 Epidemic

Investors know that an interest rate that remains constant leads to an exponential increase in price. This explains why they generally use logarithmic scales to analyze asset price dynamics. The exponential price growth becomes linear, and its dynamics easier to understand.

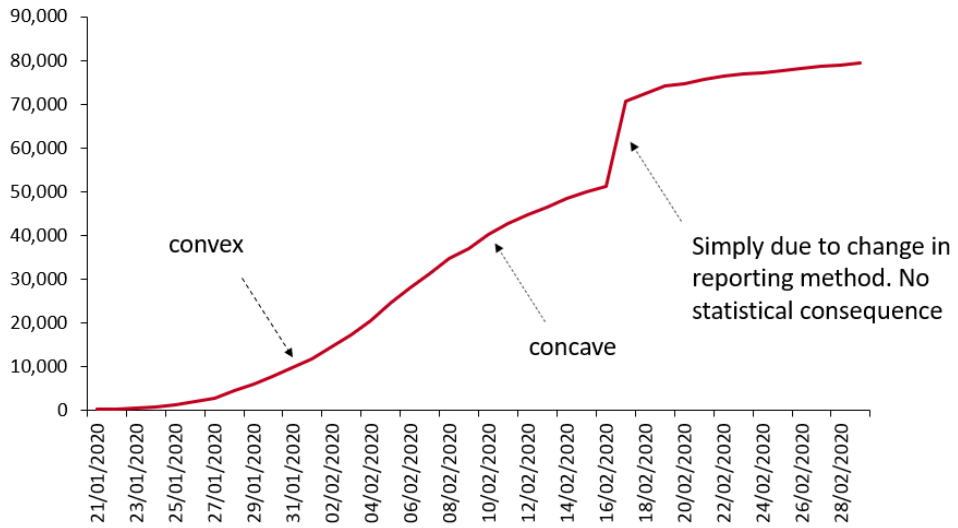
Epidemics, like financial returns, are exponential processes—unfortunately for the worst (in the former case), and not for the best. In log-scales, the trend of an epidemic process provides information on its virulence, and the convexity (upward curvature) or concavity (downward curvature) an information on the nature of its embedded catastrophic risk.

If the evolution is concave, the dynamic is fading, and the catastrophic risk mitigated. Alternatively, if the evolution is linear, the virus' propagation is exponential. If the evolution is convex, the propagation is super-exponential. In both cases, the risk of a massive pandemic becomes real at very short timescales, between one and two months.

As at the 1st of March, what is the state of the COVID-19 dynamics?

In China, the catastrophic risk has been contained as shown in Figure 1 below since the evolution turned from convex to concave around the 10th of February, when we published optimistic expectations.

Fig 1. Number of reported cases of COVID-19 infections in China. Log scale



Source: WHO data, Gavekal Intelligence Software

At the current fading pace, the total number of infections shall converge towards 85,000, maybe slightly more. The total number of deaths is expected to continue rising to circa 4,500.

The expected mortality rate on reported cases, therefore, shall converge toward 2%. Based on the assumption that many infected people have simply not been diagnosed, the effective mortality rate of the COVID-19 virus is expected to stand below 1%.

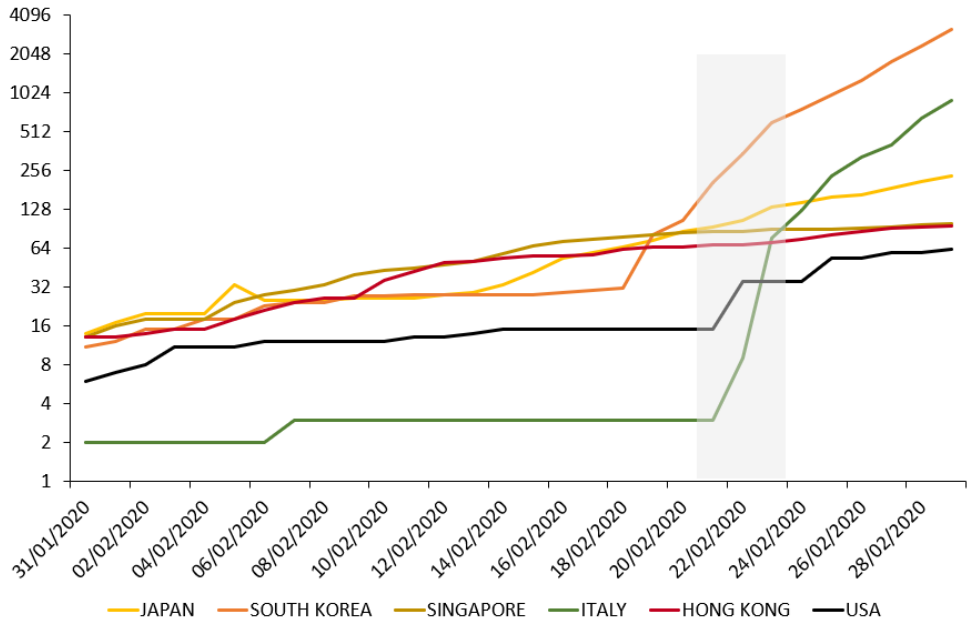
Furthermore, China has not experienced, so far, any jump from our simulation three weeks ago, neither in terms of reported cases nor in terms of deaths. This tends to prove that the virus has not muted into a rampant killer, which is a great relief.

This interpretation has lately been confirmed by epidemiologists, who verified the genetic stability of the virus.

Outside of China, the picture is less rosy. Figure 2 below shows that the outbreak has disseminated, and that other countries are now facing the initial acceleration phase that China experienced some weeks ago.

The grey area in Figure 1 below highlights the weekend of all dangers, when the Western world realized it would probably have to face an epidemic at home, which lead to a market crash.

Fig 2. Number of reported cases of COVID-19 infections. Log scale



Source: WHO data, Gavekal Intelligence Software

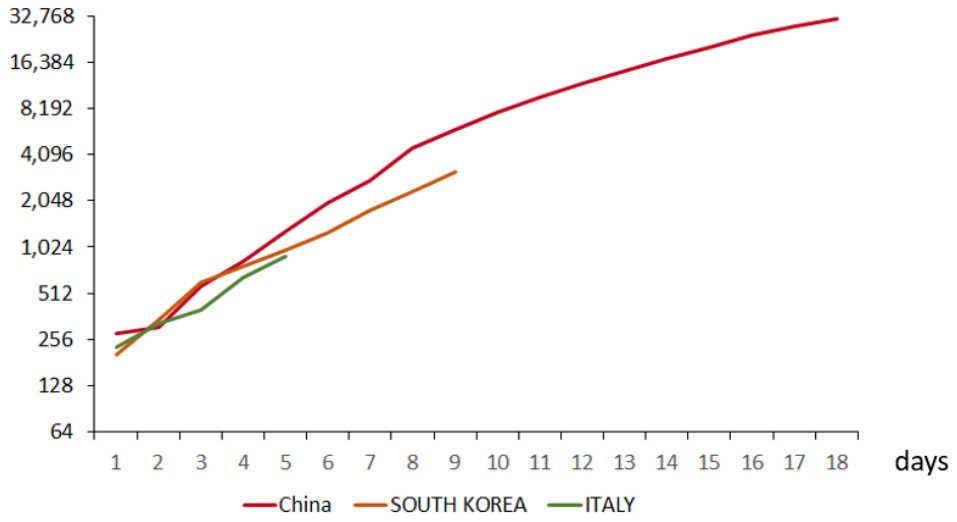
The concavity of the expansion cannot yet be verified statistically with enough confidence. We need more data and we're therefore facing approximately a full week of statistical darkness.

The Chinese precedent can be used, however, for comparison, at least on the seriousness of the propagation.

South Korea and Italy are lagging behind China—the USA as well, but the number of cases is too limited to provide a relevant comparison. Figure 3 below eliminates the lags to compare evolutions at start: South Korea's and Italy's numbers are growing with a lower virulence than China's.

Regarding the catastrophic risk, we need a few days more for South Korea to confirm the switch from convexity to concavity, at least a full week of data for Italy, and more for the USA.

Fig 3. Number of reported cases of Covid-19 infections. Log scale. Starting day around 250 cases for China, South Korea, and Italy



Source: WHO data. Gavekal Intelligence Software

Conclusion

A catastrophic biological risk for humanity, leading to millions of deaths, cannot yet be fully discarded, given the proliferation of secondary epidemic centers.

Many indicators, however, point toward the same conclusion: The COVID-19 virus is not a massive killer. The Chinese precedent shows that the diffusion can be contained. The other epidemic centers are following the same path, even a milder one. In other words, the catastrophic risk is statistically lower today than it was, for instance, four weeks ago.

Equity markets from developed economies have a different opinion, because the epidemic expanded into their 'backyards'. China, basically, sacrificed a quarter of its economic growth to contain the epidemic. Developed economies are now facing the same question. The difference lies in the psychology of the population and of its leaders, measured in economic terms by the appetite for risk—what Sir John Maynard Keynes called the "animal spirit".

Whatever the Western world's reaction may be, 'NIMBY' discrimination might be changing sides. Will the Chinese now scrutinize and fear the rest of the world?