

Thinking Exponentially



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“There are no facts, only interpretations”

Friedrich Nietzsche (1844 – 1900), German philosopher, composer and writer

Not too long ago, it seemed that the world was heading towards a fiery end, a crash and burn scenario. The combined effects of virulent tribalism and protectionism, threatening to unwind decades of progress and prosperity; the increasing destructiveness of climate change, a consequence of that very same progress; and now an emerging pandemic that appeared to be of similar calibre as the Spanish flu, turned into a toxic cloud engulfing almost the entire planet in its wake. Fast forward to today and it is somewhat startling to note how relatively well things have turned out when considering the type of dangers we faced. Certainly, it has been an atypical, turbulent ride: the tragic loss of lives, businesses upended, others decimated and the sudden spike in unemployment (some of it permanent), has made this “event” one that will likely be remembered for generations to come.

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Mind you, we are not out of the woods yet. We still don’t really know where it ends, let alone in what form or how affected we are likely to emerge from it. And yet here we are as masters of the universe, stronger and more confident than ever before! Thanks to our ingenuity and resourcefulness, combined with the wondrous technologies at our disposal, we have been able to push back and overcome a threat that less than a century ago would have caused far more trouble and misery than it is possible to imagine in the present. Whereas in the distant past a lockdown would have meant certain economic collapse, our advanced technologies have permitted us to continue operating sufficiently to ensure that the most vital tasks are being met. And all this from the comfort of our homes as an increasing proportion of the physical world economy is operated by AI augmented computers and robots.

Since the way in which the current pandemic is unfolding is in stark contrast to those of the past, could it be that we have reached some sort of milestone where future pandemics no longer pose an existential threat? Some would argue that this is indeed the case¹ and I certainly agree that much has changed. Our economies have not only demonstrated impressive resilience to the pandemic, but our ability to overcome a substantial threat in such a dizzyingly short time frame is truly mind boggling. To think that it took less than a year to develop, manufacture and distribute highly potent vaccines in sufficient enough quantities is a truly astounding feat. Certainly humanity deserves a pat on the back for this, but it would be foolish to rest on our laurels like we often do, especially when there is almost always a reverse side to the coin.

¹ <https://www.ft.com/content/19d90308-6858-11ea-a3c9-1fe6fedcca75>

In this brave new age of singularity² a multitude of emerging technologies have been upending our lives in wondrous ways, but the true power lies in the innumerable manners in which they are being mixed and matched. This is bound to continue at an accelerating pace, which means our reliance on such technologies can only increase. If dependence and the passage of time breeds complacency like it has in the past, maybe we should be looking elsewhere when it comes to the type of risks we will be facing in the future. We may have mastered a major hazard that has been threatening humankind over centuries, but the tools that give us such powers can make us more vulnerable in other areas. A major geomagnetic storm-inducing solar flare, or the electromagnetic pulse from a nuclear attack could wreck havoc on our digital infrastructure to an extent that could drag us back into the stone age.

The same goes regarding the various potential dangers that we are unwittingly creating by further advancing these technologies³. Major significant breakthroughs have happened in the last decade in areas such as Artificial Intelligence, robotics or genetic engineering, pushing our boundaries to new and uncharted extremes. If there is awareness as to the risks that these new technologies pose, why is it that we don't seem to be doing much about it? Could it be that through the process of singularity, we are reaching a point where progress is taking place at such an extraordinarily rapid pace that we just don't have the mental capacity or bandwidth to think things through⁴ in the required time frame?

Ray Kurzweil, author of the singularity, once stated that "the future is widely misunderstood because our forebears expected it to be pretty much like their present, which had been pretty much like their past." Our brain is designed to think linearly about the future because most of our history has been linear and thus predictable. This all changes when the future begins to unfold exponentially as we fail to integrate that critical detail into our forecasts. The two elements to retain about exponential change (in contrast to its linear counterpart) is that most of it happens towards the very end of a much shorter time frame⁵. We tend to fail in our forecasts when we expect the same pace of progress as that of the recent past to repeat itself. If progress is accelerating, surely it must mean that over the same time frame, the amount of change will be greater. This could explain why "black swan" type events appear to be occurring more frequently; accelerating progress combined with linear thinking is where the errors lie.

Where Do We Go From Here?

The duration of market rallies is by their very nature uncertain as they rely on a multitude of factors that not only evolve over time but also interact with one another in an infinite number of ways. Some of these factors, such as sentiment, can sway from one extreme to the other at moments notice, whilst others are more anchored to processes that evolve at a more "glacial" pace. Markets may be difficult to predict but they do come embedded with directional clues that can be of great use to the forecasters amongst us. Technical analysts gauge the "quality" of a rally by measuring the proportion of constituents of an index that are participating on the upside (also known as the breadth of participation). From a historical perspective it has been observed that the larger the number of stocks that are part of a rally, the greater the likelihood that the rally itself will be sustained over the longer run⁶.

The dot com rally of the 90's lacked breadth, as it was driven by a concentrated number of companies, most of them without any real earnings, and we saw where that went. The rally of last year, after the march corrections, was also narrowly driven. Most sectors apart from tech and a few others, struggled to stay afloat amidst the fallout from crippling pandemic induced lockdowns. That appears to be changing now, the recent pickup in economic activity for a broader range of sectors, as the western hemisphere heads towards the warmer seasons, has led to a re-composition of the

² https://en.wikipedia.org/wiki/The_Singularity_Is_Near

³ <https://phys.org/news/2021-04-ai-algorithms-people-voting-dating.html>

⁴ There is cause for concern when we hear stories where legislation struggles to regulate emerging technologies, because they are being rendered obsolete by the time they become law. Tesla and their autonomous driving technology is a case in point.

⁵ Most of human history has witnessed progression at a linear scale when in fact it is exponential, because from a mathematical perspective, when something is subject to exponential growth, that growth remains almost flat for a long while before its acceleration becomes noticeable.

⁶ Broad participating in this example occurs when the percentage of stocks trading above their 200-day moving average reaches 95%.

markets, which have become significantly more breadth driven than before. What is different this time around, however, is the manner in which the rally is unfolding. Whereas most “breadth” driven rallies of the past have almost always appeared soon after a sharp correction, the current one is more like an extension of the previous one of last year. It is also true that the circumstances surrounding the current rally are also very different from any previous one.

After numerous setbacks and delays, the global immunization campaign appears to be ramping up to an extent that should lead to greater effectiveness in combating the virus, which means that we can expect to see pandemic driven constraints being dismantled in coming months. This is also affecting sentiment to an extent where its effects are being increasingly felt in both the markets and the economy. With the massive amounts of liquidity being pumped into the markets, and governments across the globe under increasing pressure to “normalize” conditions for their “Covid-fatigued” citizens, there is more than enough out there to trigger a powerful jolt on the economy. Expect inflation down the road.

But even with these encouraging developments, the risks lurking on the sidelines remain considerable. India’s latest Covid wave appears to be plunging the country into a catastrophic crisis that also threatens the world at large. The remarkable degree of cooperation in the development and production of vaccines has been less the case when it comes to its distribution, leading to serious immunization disparities between developed and emerging countries. This is unfortunately what tends to happen when politics and greed get in the way of reason and compassion. With large swaths of populations remaining vulnerable to the virus, not only does it threaten their already fragile economies, but it also puts at risk the more advanced countries, especially if the virus is given a chance to mutate into a form that renders current vaccines ineffectual⁷.

How things unravel in the next couple of months will likely set the stage for the years to come. The post-Covid world we are emerging into is shaping up to be starkly different from the one we left at the beginning of last year. Certain industries are in the midst of profound transformations, whilst others are having to reinvent themselves, in some instances radically in order to survive. The pandemic has acted like a time warp for many businesses, accelerating the digitization of the economy and unleashing the juices of “creative destruction”. These all bode well for the markets over the longer run, even if current valuations suggest otherwise, but it won’t be a smooth ride. There are still many obstacles along the way that will require skillful maneuverings if we are to avert a less appealing outcome.

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⁷ <https://www.nytimes.com/2021/04/24/opinion/covid-vaccines-poor-countries.html>