



*May 8,
2020*

Macroeconomic and Geopolitical Risk Report & COVID Epidemiological Dynamics

Though the COVID-19 crisis is far from over globally, this report returns our analytical focus to GCR's traditional staple of political and macroeconomic risk analysis. This is in part because we expect the greatest impact of COVID in coming months to be on international and US domestic political dynamics. **We identify political risk, rather than COVID itself, as currently the primary potential source of financial market instability.**

SUMMARY

The COVID crisis has exposed and accelerated significant long-term macroeconomic, financial, and political fault lines highlighted in our previous reports. Short-term, our assessment is that these fault lines - and especially the epidemiological impact of COVID - might be stabilized relatively quickly. **The principal market risk we see is the potential for US political instability to undermine efficient achievement of policies required for stabilization, combined with a legacy political impact of COVID's significant death toll on the 2020 elections.** The potential for these dynamics to substantially exacerbate long-term economic, financial, and political systemic vulnerabilities represents COVID's most significant current threat in our assessment.

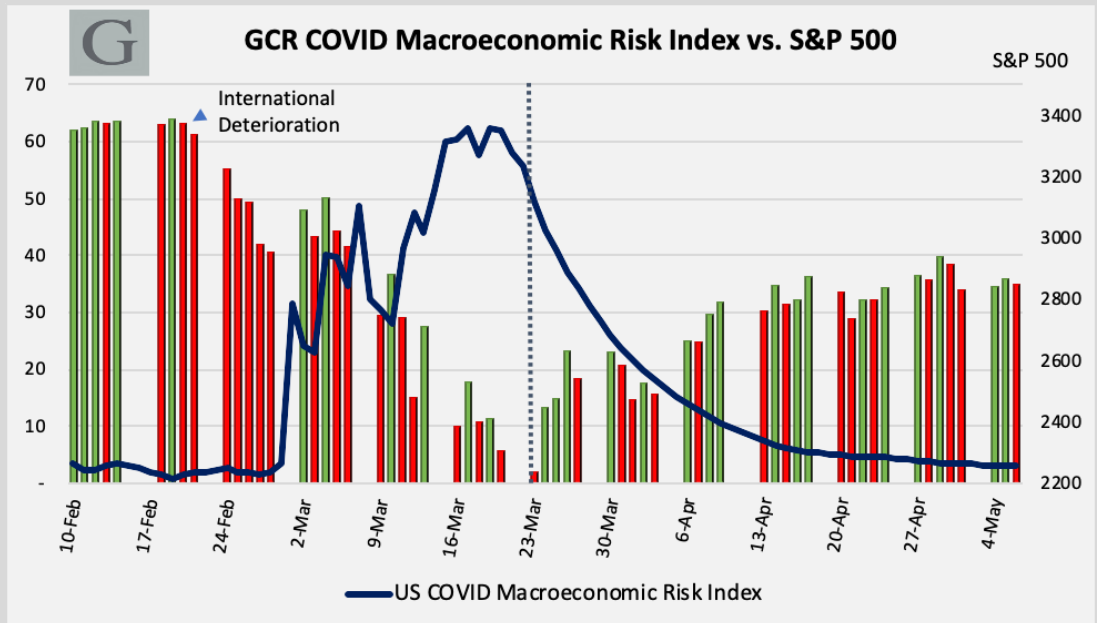
At the onset of the COVID crisis, we highlighted that the principal direct risk the virus poses is its **potential to overwhelm public health systems** via large numbers of severe cases. This risk **has now largely been overcome in the US** at least temporarily. By no means does this imply the public health threat of COVID has been eliminated, but **the original impetus for emergency "shelter-in-place" policies** – the direct source of the virus's greatest financial and economic impact – **is substantially reduced.** Our assessment is that continued "lockdown" policies derive primarily from the political impact of previous deaths rather than their original data-driven impetus.

Recent research on COVID virulence has significantly changed likely cyclical patterns of COVID, as highlighted in this report. This has substantially increased the potential for herd immunity to reduce the severity of future COVID infection cycles in the US.



This shift in risk dynamics is captured in a key quantitative metric developed by GCR: our US COVID Macroeconomic Risk Index*.

COVID MACROECONOMIC RISK INDEX



As detailed in our March 1 report and captured in another GCR quant metric (our International COVID Macroeconomic Risk Index), the market’s initial drop from Feb 19 was driven by international deterioration in COVID dynamics. After March 1st, our US Risk Index began to deteriorate rapidly as well, reaching its peak immediately prior to the market’s March 23rd bottom. Since then, **our metrics have indicated a steady reduction in COVID macroeconomic risk. This shift in our risk indices has been closely correlated with a rising trend in US equity markets.**

POLICY DRIVING MACRO DAMAGE

Our quantitative risk metrics are built on an assessment that the primary macroeconomic impact of COVID-19 derives from a rapid acceleration of infection rates. The primary conduit of macroeconomic damage of this rapid epidemiological deterioration has thus far not been the direct impact on consumer confidence and behavior. Rather, **an incomplete understanding of COVID dynamics has driven policymakers to panic and implement exceptionally inefficient policies in terms of epidemiological benefit relative to economic impact.**

Our March 1st note highlighted this threat and forecast its progression: an exponential acceleration in infections due to failure to implement effective policies early has led to subsequent “catch-up” policy responses, with outsized negative macroeconomic effects. In

* Our US COVID Macroeconomic Risk Index estimates the velocity of infections in each state (using derivatives based on logarithmic analysis of infection data) and weighs each state’s trajectory according to GDP contribution.



our March 16th and subsequent reports, we highlighted how **this initial dynamic has been exacerbated in the US by shelter-in-place policies that are fundamentally inefficient.**

In coming months, we anticipate **financial and economic risks will be driven by the political aftermath of this policy dynamic.** Beyond contentious policy efforts to address the financial destabilization that has resulted from inefficient ‘lockdown’ policies, we anticipate significant further political pressures related to the substantial death toll that has emerged from the initial wave of COVID infections.

These political pressures are likely to manifest both internationally and domestically, with US-China relations and US-Iran relations fault lines that are likely to widen. **Within the US, the most direct financial impact of these political pressures is likely to relate to political posturing over further fiscal stimulus** as US federal, state, and municipal finances rapidly deteriorate.

A primary concern is the potential for **political recrimination leading into the 2020 Presidential election to drive destabilizing long-term shifts in financial and economic policy trajectories.** Though macroeconomic deterioration has been significant, this political risk represents the most significant risk we currently see to markets, alongside international dynamics.

POLITICAL RISK METRICS

For a data-driven assessment of political risk, we have developed metrics derived from COVID mortality rates. These metrics indicate significant international political risk and in the US context are noteworthy in terms of their implications for the key 55+ voter demographic. 92% of all deaths in the US have been in this demographic, with 80% in the 65+ age group. **The outsized impact COVID has had on the 55+ demographic represents a major political risk in upcoming elections** given the central role this demographic played in President Trump’s victory in the 2016 elections.

EXPECTED RISK TRENDS

Our US COVID Macroeconomic Risk Index is driven by the trajectory of COVID infection data, implying **any acceleration of infections as shelter-in-place orders are lifted would connote a quantifiable increase in macroeconomic and financial risk.** Our base case scenario has been: without an efficient and targeted tightening of epidemiological preventative measures a second wave of infections should be expected, with such an acceleration of epidemiological pressures carrying over into financial and economic as well as political risk.

However, recent revelations regarding COVID’s virulence (and thus its implied prevalence in the US population) have potentially shifted this baseline risk scenario.

COVID SIGNIFICANTLY MORE VIRULENT THAN PREVIOUS OFFICIAL ESTIMATES

In the last month, research has emerged which confirms our assessment in earlier notes that COVID was far more virulent than initial official estimates. This variance has exceeded even our models, though, with **recent US government research now setting the R_0 basic reproduction number of COVID in the 5.7 to 6 range, versus previous official estimates in the 2.3 to 3 range.**[†] This development has far more significant implications than seems broadly appreciated.[‡]

Research confirmation that COVID is far more virulent than the estimates used to drive official models and formulate early policies might at first glance be expected to have dire implications. The reality is more complex.

This exceptional virulence does not necessarily indicate a powerful second wave of COVID infections should be expected as lockdown restrictions are lifted. The prevalence of COVID that this level of virulence implies may actually help limit the scale of subsequent infection waves in the US.

PRIMARY COVID RISK IS IN FALL

We have highlighted the potential for a short-term resurgence of infections to drive an increase in macroeconomic, financial, and political risk as lockdowns are lifted. Of far greater consequence, however, is the potential for an even more significant third wave of infections in the fall.

Any second wave of infections that might emerge now as lockdowns are lifted will be at least partially suppressed in the northern hemisphere by positive seasonal factors.

- seasonal temperature increases and increases in sunlight reduce virus survivability
- humidity dynamics reduce virus airborne transmission potential
- seasonal shifts in human behavior reduce time indoors

Summer seasonal factors cumulatively reduce rates of COVID transmission but will turn from positive to negative beginning in the fall.

The potential for a more powerful third wave of infections to emerge in the fall represents not only the primary current epidemiological threat of COVID but also a significant potential macroeconomic and financial stressor. Should such a third wave appear, it will be arriving at a time when markets are still digesting the macroeconomic

[†] “High Contagiousness and Rapid Spread of Severe Acute Respiratory Syndrome Coronavirus 2”; Sanche S, Lin YT, Xu C, Romero-Severson E, Hengartner N, Ke R; <https://doi.org/10.3201/eid2607.200282>

[‡] As a reminder, the R_0 basic reproduction number indicates the number of people one infected person infects in a population that is fully susceptible if no preventative measures are taken. The recent doubling of COVID R_0 estimates implies far more than a doubling of infections. This number indicates the exponential growth path of viruses, so that after 10 chains of transmission the difference between an initial infected person spreading the virus at an R of 3 vs. an R of 6 is 1 million infections vs. 280 million infections.



and financial fallout of the first infection wave (and potentially a second wave, too).

SECOND WAVE HASN'T EMERGED

Our US COVID Macroeconomic Risk Index closely tracks these developments in real time and has remained stable as of May 6 even as lockdown policies have loosened across the US.

This stability is in part driven by the fact that California and New York remain relatively locked down. Those two states together represent nearly a quarter of US GDP and have been a major mover of our weighted US Risk Index. **Virus trajectories have remained stable or downward in nearly all US jurisdictions, however.**

Should states that have the lowest penetration of COVID and the loosest epidemiological policies see a sudden acceleration in infections, this may generate headlines but will have a limited impact on overall US macroeconomic risk. States which represent a small portion of US GDP have a limited impact on our US Risk Index.

However, such further penetration of COVID does represent **a potential longer-term epidemiological risk in terms of “wells” of COVID continuing to develop.** As COVID survives and progresses at a different trajectory in these thus far less-impacted jurisdictions, future waves of infection might emerge to travel from these GDP marginal areas to states with more significant GDP contributions. This risk highlights the importance of the dynamics highlighted below and finding policies that have the right mix in diverse areas of the US. Under nearly all scenarios, however, we continue to advise that **tightened and sustained travel monitoring and limits should be expected.**

At the international level, similar dynamics are active. **Our International Macroeconomic Risk Index spiked as COVID accelerated in China, Europe, Japan, and the US, but has since decreased substantially as those areas stabilize.** As COVID has shifted to penetrate nations less critical to global GDP, the index impact is minimal, but this evolution might pose a longer-term source for COVID to be sustained as a threat.

POSSIBLE EXPLANATIONS FOR DATA STABILITY

Sustained low transmission trajectories of COVID across the US have multiple possible explanations. We highlighted the importance of seasonal factors above, but policy and epidemiological dynamics are ultimately the most important factors affecting transmission levels.

The replacement of inefficient ‘shelter-in-place’ policies with more effective targeted policies offers a key possibility for rates of transmission to be kept low even as economic activity resumes (as highlighted in our April 9 report). Policies currently being adopted across the US which see **businesses implementing usage of face mask coverings in indoor closed environments represent a major step forward in epidemiological and economic efficiency.**

It is still too early to draw definitive conclusions from recent infection trends, since **current numbers may not fully capture COVID transmissions post-lockdown due to**



a lag between COVID exposure and confirmed infection diagnosis. We covered in our March 1 note how this lag dynamic can drive a sudden rapid explosions in cases. **Our US COVID Macroeconomic Risk Index assesses this risk closely in real time and remains stable and decreasing as of May 6.**

Should infection data continue to remain stable, **this may be an indicator that the virulence of COVID beyond initial estimates has significant positive implications for US macroeconomic risk moving forward.**

HERD IMMUNITY DYNAMICS

It is important to recognize that the development of herd immunity is a dynamic process. This process is driven by a virus's rate of transmission when no vaccine is available, and a high initial R_0 basic reproduction number is a critical factor shaping a virus's subsequent actual rate of transmission (R_t). **A very high R_0 can limit subsequent waves of infection after the virus's initial entry and its first infection wave.**

Recent research on COVID indicates it likely falls into a category of viruses that spread very rapidly but kill a relatively small percentage of the infected population – a dynamic which self-limits second and third waves of infections. The more massive an initial wave of infections, the more significantly reduced is the remaining susceptible population. This offers a significant source of hope for the future trajectory of COVID in the US. **COVID's high R_0 level of virulence might have driven a first wave of infections that will significantly limit subsequent infection waves.**

INITIAL COVID ESTIMATES VS. RECENT REVELATIONS

Initially, COVID was expected to fit within an infectious disease “sweet spot:”

- if a pathogen is very deadly but spreads slowly, it kills its hosts before they can transmit it onward (a dynamic which helped limit the spread of SARS);
- at the other end of the spectrum, if a pathogen spreads very quickly and kills relatively few, it can quickly exhaust the number of potential hosts without causing catastrophic damage

Initial estimates of COVID-19 indicated it spread just quickly enough to stymie containment, was not deadly enough to kill or even cause symptoms in infected persons before they transmitted it onward, yet caused enough severe complications to overwhelm health systems.

It now appears the virus might fall closer towards the second part of the above contagion spectrum. Per recent R_0 research, **COVID might already be so prevalent that it has exhausted a significant portion of its supply of susceptible hosts in the US.** This would significantly reduce the potential for a second or third wave of infections.

Not only does this present major potential upside regarding suppression of cyclical dynamics vs. previous dire predictions. **This factor could dramatically limit ongoing rates of transmission and reduce the need for strict epidemiological measures.**



Recent stability in infection numbers may be an indicator of this dynamics, though as noted above there are multiple other possible explanations. Despite this optimistic implication of recent R_0 estimates, **even if the risk of future infection waves has been reduced this does not indicate herd immunity is near nor that the COVID crisis is over.**

QUANTIFYING HERD IMMUNITY

The table below shows the estimated number of infections needed to cross what is known as the “herd immunity threshold” based on different R rates of transmission. It also details the implied number of deaths at these infection levels, per CDC estimates of COVID mortality.[§]

R rate of virus transmission	Herd Immunity Threshold % of population	Implied US Infections millions	Implied US Deaths thousands
5.7	82%	270.46	3,326.6
3	67%	218.67	2,689.6
2.5	60%	196.80	2,420.6
2	50%	164.00	2,017.2
1.5	33%	109.33	1,344.8
1.2	17%	54.67	672.4
1.1	9%	29.82	366.8
1.05	5%	15.62	192.1
1	0%	-	-

Epidemiologists calculate the number of infections required to reach the threshold of herd immunity based on a virus’s rate of reproduction. The bad news is that at COVID’s higher R_0 value of 5.7 the number of COVID infections required for herd immunity is 82% of a population, i.e. over 270 million infected individuals in the US (or alternatively 270 million vaccine recipients). Herd immunity, however, is a dynamic process.

INSIGHTS FROM TABLE

Multiple insights can be garnered from the above table. First, **any optimism that herd immunity might already be achievable in the US without significant continued epidemiological preventive measures is likely misplaced.**

[§] The CDC estimate of 1.23% mortality for COVID infections is significantly lower than what is currently reflected in US data (deaths attributed to COVID currently equal 6 percent of total US COVID diagnoses). This variance, alongside recent revelations regarding COVID’s base R_0 of 5.7, likely indicates infections are far more widespread in the US than the 2.5 million official tally of confirmed diagnoses. Using the CDC mortality estimate to reverse calculate the number of total US infections from current deaths, a total number of US COVID infections just under 7 million is currently implied.



If the actual number of US infections is even twice the level we reverse calculate from current death numbers (see footnote), this still would be less than 15 million total infections. Per the above table, the rate of transmission (R_t) needed to take advantage of herd immunity dynamics and prevent infections from spreading at this level of virus penetration is around 1.05 (see the table line with 15 million infections).

Holding R_t at near 1 is an extremely challenging feat with a virus that has a natural basic reproduction rate of 5.7. We also suspect that COVID may turn out to have an even higher R_0 than recent upward revisions (though as per above this could have positive implications).

TWO SIDES OF THE COVID SOLUTION

To better understand the above table and herd immunity dynamics, it is important to recognize that the relationship between R_t rates of transmission and the number of persons needed with immunity is a dynamic sliding scale.

- Lower R_t rates of transmission reduce the needed number of immune individuals for the virus to remain under control (thus also reducing deaths).
- As a broader portion of a population becomes infected and is no longer susceptible, this allows the R_t rate of transmission to increase without the virus accelerating out of control.

Lower R_t means fewer people can be infected before stability is achieved. At the same time, more people infected means a higher R_t is sustainable (though this higher number of infections also entails a higher death count).

Understanding this dynamic brings us back to our focus on political and policy risk.

POLITICAL IMPLICATIONS

By design or by luck, **if the number of infections in the US proves higher than what has been broadly expected this indicates the US is further on the road towards herd immunity.**

This difference could be particularly important in terms of US susceptibility to further waves of COVID infection vs. the susceptibility of other nations which implemented policies early and stopped the virus from spreading throughout their population. **Countries that have lower numbers of infection and lower deaths also have a higher percentage of their population that is still susceptible to COVID.** These jurisdictions thus have a greater need to maintain lower R_t rates of transmission, per the above sliding scale.

This difference means not only that the US potentially can handle a higher R_t level without COVID infections accelerating out of control. It indicates nations with lower levels of developed immunity will remain more dependent on maintaining strict epidemiological strategies, and also would make **other nations far more dependent on securing a vaccine to develop herd immunity synthetically.**



BY DESIGN OR BY ERROR?

Whether this potential outcome was by design or a fortuitous error, **the consequence of these higher infection numbers has been a significantly higher death rate in the US** than countries that took more proactive preventative policies. If by design, this would fit with what we perceive as **a relative bias within Western epidemiological circles towards encouraging herd immunity when possible.**

In this context, **recent revelations about COVID's high R_0 may actually indicate that the US strategy that allowed high initial infections was purposeful.** This would represent a significant political revelation, implying a policy decision was made that essentially ended up sacrificing a portion of the US population for broader strategic goals. **We suspect this hypothetical could have significant political repercussions.**

POLITICAL IMPACT OF COVID DEATHS

With viruses that spread extremely rapidly but have a relatively low death rate, herd immunity strategies represent an optimal response from a systemic level, but entail significant individual human suffering. **Any benefits in terms of reducing vulnerability to subsequent waves of infection in the US - should they materialize - have come at the cost of tens of thousands of lives due to the size of the US's initial wave of COVID infections.**

We expect this theme - whether such deaths were the result of an intentional policy or simply a consequence of poor federal preparation and communication that allowed the virus to get out of control - to become a dominant and contentious political topic in coming months.

Voting patterns are likely to be affected regardless of whether blame for these deaths is assigned to missteps by federal agencies following opaque strategies or an administration perceived to be focused on political and economic priorities. Per our models, **such effects are most likely to emerge in the 55+ and 65+ demographics** which have been hit hardest by COVID management in the US.

IMPACT OF EMERGING COVID STRATEGIES

Another reason we see political risk concentrated in the 55+ and 65+ demographics is that this group will be disproportionately affected by epidemiological policies we expect are likely to further emerge.

As highlighted above, significant efforts will likely need to be maintained to keep R_t rates of transmission low enough to minimize virus deaths. A possible outcome we see emerging, as highlighted in our March 16 note, is:

- **low risk individuals that face minimal threat of severe complications will see restrictions lifted** so that economic activity can be maintained,
- **but sectors of the population at highest risk of severe complications will continue to remain isolated.**



**BIFURCATED
LIVING
BY
DEMOGRAPHIC**

The above policy trajectory is all the more critical if in fact COVID is far more prevalent in the broad US population than earlier estimates, i.e. is easier to contract. **To maintain economic output while minimizing deaths, a bifurcated style of living is probable in the US until herd immunity or a vaccine is developed.** The 55+ and 65+ demographics will suffer most within such a dynamic, leading us to further expect increased political risk in that active voting sector.

**OPTIMAL
BALANCE**

A policy balance that minimizes the actual rates of transmission amongst the most susceptible population while simultaneously maximizing the overall number of immune individuals will reduce both deaths and the size of future infection waves.

Achieving this balance is not only challenging from an epidemiological perspective. It is likely to prove extremely contentious from a political perspective as per above. Yet from a macroeconomic and financial perspective we see **significant positive potential to suppress the impact of future infection waves and simultaneously maximize US economic activity.**

SHIFTING FROM ABSOLUTIST TO PROBABILISTIC APPROACHES

Lockdown policies that hit all economic activity without an assessment of varying levels of risk or the potential to mitigate that risk through alternative policies are a prime example of an inefficient “absolutist” approach.

Another critical error based on an absolutist approach was the dismissal of mask usage in the US early in the crisis, under the auspices that masks were not “absolutely” effective at protecting wearers. **This critical error is not only rife for political repercussions;** it also missed the cumulative potential of masks to dramatically reduce probabilities of transmission by reducing both the probability the virus might enter the wearer’s system *as well as* significantly reducing the probability the virus might exit from an infected host.

More sophisticated analysis based on probability assessments is likely to emerge and achieve significantly more efficient outcomes from both epidemiological and economic perspectives.

This shift in approach is also likely to reduce political risk related to policy enforcement.

“Absolutist” enforcement of policies that have an inefficient probability impact to reduce infections has ultimately been counterproductive. Rigid enforcement of mask usage in relatively low risk outdoor environments is a prime example of such an approach. **These approaches have depleted political capital and trust that is needed to encourage more critical interventions.**

Absolute reduction of probabilities to zero is not essential in order to achieve a



sustained suppression of R_t actual rates of transmission. Rather, policy implementations that leverage probabilities to cumulatively achieve critical goals is the direction we expect COVID policy to evolve.

SUMMERTIME

The current summer season may represent an optimal period to take advantage of seasonal suppression dynamics and work towards establishing herd immunity alongside effective epidemiological policies.

Failure to take advantage of the seasonal summer weather dynamics can be expected to lead to significantly greater challenges maintaining suppression of R_t as the fall and winter season emerge. This highlights again the critical political risk dynamic we see driving economic and financial risks related to COVID in the coming months.

Despite these risks, there is significant cause for optimism. We see a strong potential for a policy mix to be found that maximizes economic benefits as well as the ability of the majority of the US economy to return to work. Achieving this outcome will likely require the exercise of significant political capital and entails a high level of political risk.

SUMMARY AND INTERNATIONAL POLITICAL RISKS

This report has focused on US domestic considerations and their link to US domestic epidemiological trends. International epidemiological trends and especially emerging political dynamics, however, represent a potentially significantly underappreciated threat.

FAULT LINES WIDENING

COVID has widened and accelerated pre-existing international fault lines, most notably within the EU and also in US-China relations. Per our mortality-derived quant political risk metrics, the EU and the US both are highlighted as areas where political risk is high. Conversely, China has a relatively low political risk metric outside of its Hubei epicenter.

Our assessment is that the recent rapid deterioration in US-China relations reflects not just “blame-game” tensions and a manifestation of US dynamics. It is **an indicator of just how extensive US-China fault lines are, with COVID accelerating their exposure.**

Such fault lines have been a major driver of US-China trade tension – a critical source of market fluctuations over the last two years. As per our beginning of year 2020 Macroeconomic and Geopolitical Risk Report, these tensions were put on hold until after the 2020 US elections. COVID has potentially accelerated this timeline.

CHINESE DEPENDENCY

China is firmly in the camp of countries that have focused on suppressing the initial wave of infection, implying it will remain heavily dependent on tight epidemiological and travel policies to prevent subsequent waves.

This also makes China particularly dependent on vaccine development and distribution. Recent intel reports of Chinese attempts to steal intellectual property related



to COVID vaccines is a manifestation of this dynamic, and another potential source of deterioration in US-China relations. We do hold some hope that a cooperative approach to vaccine development and distribution might increase US political capital within China.

The need for countries with low herd immunity to continue to implement strict epidemiological measures that can disrupt international travel and economic patterns is also apparent in Chinese policy, which recently has denied nearly all foreigners entry into China (and cracked down on their activity within).

UNEMPLOYMENT DOES NOT EQUAL GREAT DEPRESSION

From a macroeconomic perspective, though COVID has had a major negative impact on economic activity it has not yet spurred a “Great Depression” as per the most dire of analyses. We’ve noted in previous reports our assessment that the immediate impact of COVID on economic activity outside of a few specific sectors is significantly lower than worst case assessments, and **the only potential for a Great Depression to evolve would come from significant further financial deterioration.**

Potential for financial deterioration was already apparent prior to COVID, though the US was experiencing a significant short-term cyclical upswing (covered in detail in our Macroeconomic and Geopolitical Review of 2019 / Outlook for 2020.)

Furthermore, **talk of a Great Depression having emerged based on current unemployment data is highly misleading.** Current unemployment numbers do not indicate the total loss of income and aggregate demand that unemployment numbers during the Great Depression implied.

Due to extensive Pandemic Unemployment Assistance programs that have been extended across the US economy, “unemployment” in the COVID context actually connotes a shift from private sector sources of income to public sector sources of income. This is not unemployment in the traditional sense. **Vast swathes of the US population are effectively becoming government employees** (paid to do nothing): an acceleration of movement towards universal income schemes as floated in recent years.

The potential for public income “employees” to be “fired” when the Pandemic Unemployment Assistance program expires – scheduled for July 31st – represents the primary traditional macroeconomic threat of COVID currently. Perhaps most importantly, it highlights how **COVID has placed more emphasis on political systems as important drivers of economies.**

CONCENTRATION OF POLITICAL RISK

This concentration of power carries significant political risks and is a dynamic within both China and the US as well as other countries. The emphasis this places on political systems may accelerate pressures emerging prior to COVID regarding incompatibility between the US and Chinese political systems.

Our assessment is that tensions related to this incompatibility represent the primary developing long-term global macroeconomic and geopolitical risk, with potentially significantly underestimated short- and medium-term implications.



This concludes our public report.

CONSULTATIONS AND METRICS

For **quickest access to our perspective**, GCR's research team is available for calls and **consultations** to discuss areas of interest to you and your firm.

Our written **analysis and quantitative metrics are available in real time** via a variety of subscription options.

BESPOKE RESEARCH

For bespoke research projects tailored to your specific concerns, our staff has extensive expertise in a variety of areas. Contact us at client.relations@greygcapital.com or our Director of Research, Mark Reedy, directly at reedy@greygcapital.com

Clients contracting bespoke research receive full access to our staff and research product.

BUSINESS CONTINUITY

Assistance with the design and implementation of business continuity plans to match COVID best practices is available through our affiliate [GCR CONSULT](#).

For full access to above referenced research, see georgetowncapitalresearch.com

ABOUT OUR BACKGROUND IN PREPARING THIS REPORT

In addition to experience as an economist, financial analyst, and diplomat serving in China, our GCR Director of Research Mark Reedy was a team leader in pandemic responses for the United Nations. He helped lead the development of infectious-disease prevention and treatment programs on behalf of the Global Fund to Fight AIDS, Tuberculosis, and Malaria on the ground in Equatorial Guinea, Central Africa. Subsequent work focused on advanced data analysis for the assessment of epidemiological trajectory, clinical operations, and best practices with a Gates Foundation / Clinton HIV-AIDS Initiative co-project called the Consortium for Strategic HIV Operations Research.