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Partners Capital Covid-19 Update #15 -- What a Mature Pandemic Looks Like

As we enter the fourth quarter of this tumultuous year, experts estimate that 8% of the world's population has been infected with Covid-19. Inadequately improved levels of testing have distorted data on case counts, but new cases are stubbornly persistent in the US, many parts of Europe and in Brazil. With improved therapies and hospital treatment, mortality rates are approaching levels of the seasonal flu. Despite the recent Covid case resurgence, the drop in mortality rates combined with public fatigue of lockdowns suggests a repeat of the severe lockdowns of last March remains an unlikely prospect in most countries going forward. Localised lockdowns will continue where case clusters sprout. Human behaviour, rather than government-imposed lockdowns continue to depress levels of economic activity to 10-15% below normal with pockets of deeper declines in the obvious places. Sectors such as hospitality, entertainment, and travel are currently undergoing or at risk of further restrictions and business failures.

While no miracle cure has yet been found, enormous progress has been made in both therapeutics and vaccine development. On the economic front, Q2 growth was less depressed than feared, and third-quarter growth has generally exceeded even some of the more optimistic predictions. The latest full-year 2020 growth forecasts suggest global GDP will be down c. -4.0%, while US growth may 'only' decline -3.7% vs earlier expectations of -8.0%. With governments continuing to support history-making levels of stimulus, financial markets have rebounded and global equities are now actually in the black up c. 1.0% YTD; an unfathomable outcome given the severity of the crisis.

Equity markets as of 6 October 2020

Equity Index	YTD	From Peak	From Low
MSCI World	1.0%	-4.8%	48.4%
S&P500	5.5%	-5.0%	52.4%
China A-shares	19.2%	-1.5%	43.7%

Credit markets as of 6 October 2020

	Spread over Treasuries			Yield to Worst		
	Current Level	Change MTD	Change YTD	Current Level	Change MTD	Change YTD
Global High Yield	5.3%	-0.3%	1.0%	5.7%	-0.3%	0.0%
US Corp High Yield	4.8%	-0.4%	1.5%	5.4%	-0.4%	0.2%
US Corp High Yield ex-energy	4.4%	-0.4%	1.4%	5.0%	-0.4%	0.2%

Source: Bloomberg

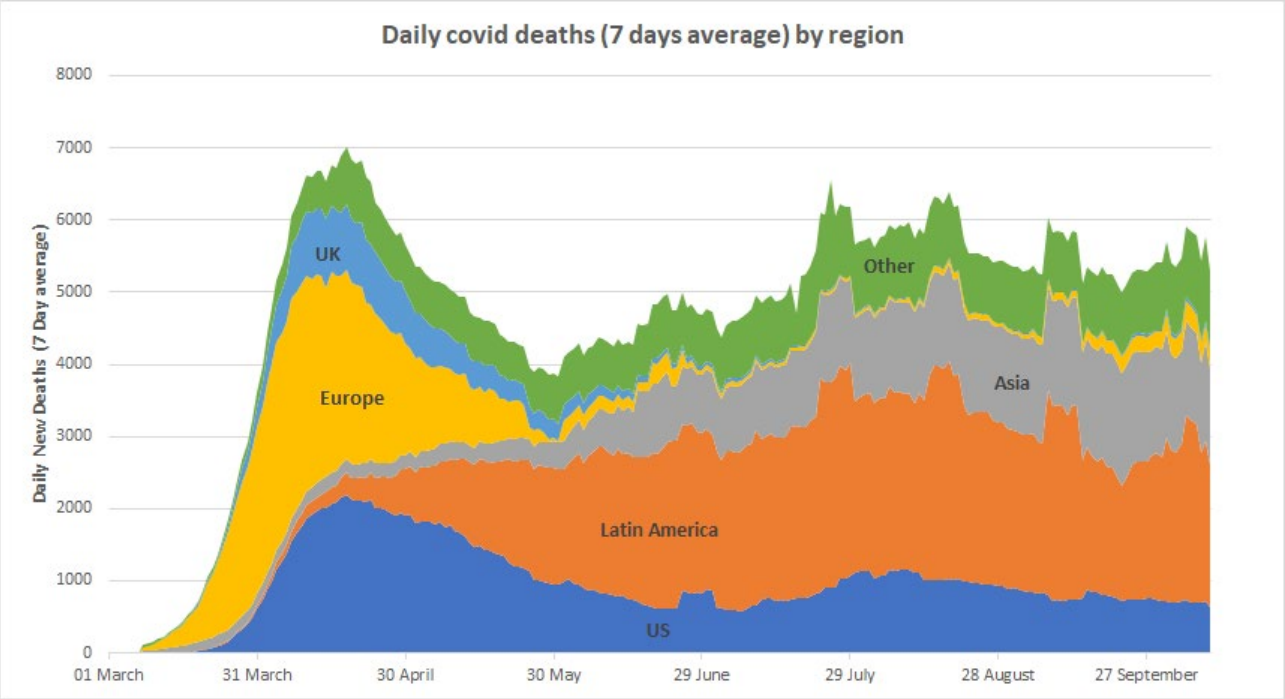
In this note, we aim to bring our clients up to speed on the latest developments and prospects on Covid-19, the stimulus response from policymakers, their cumulative impact on the economy and how these shape investment themes and portfolio positioning. In addition to Covid-19 developments, the outcome of the upcoming US election will also be a key determinant of the amount and shape of any further fiscal stimulus, but we also argue below that the election outcome appears to be increasingly linked to this pandemic, bringing these two issues together. Many experts suggest that to the extent that the pandemic is the key issue on voters' minds in November (as opposed to, for example, taxes or law and order), the more likely a Democratic win becomes, and by extension the greater odds for increased fiscal stimulus.

1. What is the current trajectory is Covid-19?

What we now know is that the stealth nature of this virus makes it difficult to measure how much the situation is improving using case counts. Experts believe that the initial waves may have underestimated case counts by nearly 20-fold and actual daily cases today are 10% of the peak level in May. Perhaps the most reliable measures for tracking the pace of virus change are deaths as a proportion of the population and mortality rate. Deaths/million/day in advanced economies have declined from c. 10 in March-April to approximately 1 death/million/day today. Mortality rates (Hospitalisation rate x deaths/hospitalisation) have fallen 82% in the US from 2.3% (adjusted for higher testing) to 0.42% today. Adjusting for asymptomatic cases, the mortality rate is very close to that of a normal flu, which has a death rate of 0.10% with 30 million cases and 600,000 hospitalisations on average over the last 10 years in the US.

Eight months into the global pandemic, we see the global death rate has remained stubbornly high at or about 6,000 deaths per day since hitting that level for the first time in April, with a cumulative death count of over one million. Exhibit 1 below shows the flatness of this tragic pattern, but sees it migrating across the globe over time from China to Europe, then to the US and now predominantly in Latin America and India. Latin America is the current epicentre of the pandemic, with the region accounting for over a third of all new virus-related deaths, driven by Brazil, Mexico and Colombia as illustrated in Exhibit 1. India appears to have finally peaked with over 90k daily cases and 1,000 daily deaths. In Europe, Australia and Japan, governments have implemented new localised restrictions to contain second waves, with Spain and France struggling the most. These second waves are differentiated by far lower hospitalization and death rates. Hospitalisations are just 2-3% of cases compared to over 10% during the summer but experts believe many cases may have gone undetected, particularly in the early stages of the pandemic. The official Covid global case count currently stands at just over 36 million, although experts put the actual number at over 600 million.

Exhibit 1: Latin America accounts for nearly 40% of Covid related deaths



Source: Bloomberg

Although in some regions the current wave of new cases appears as large or larger than the first, this is almost certainly explained by an underestimation of the scale of the first wave. The Economist recently published a seropositivity model based on data gathered from studies by Johns Hopkins. The model uses 279 serosurveys (antibody test-based sampling) taken from different regional sample populations which are extrapolated

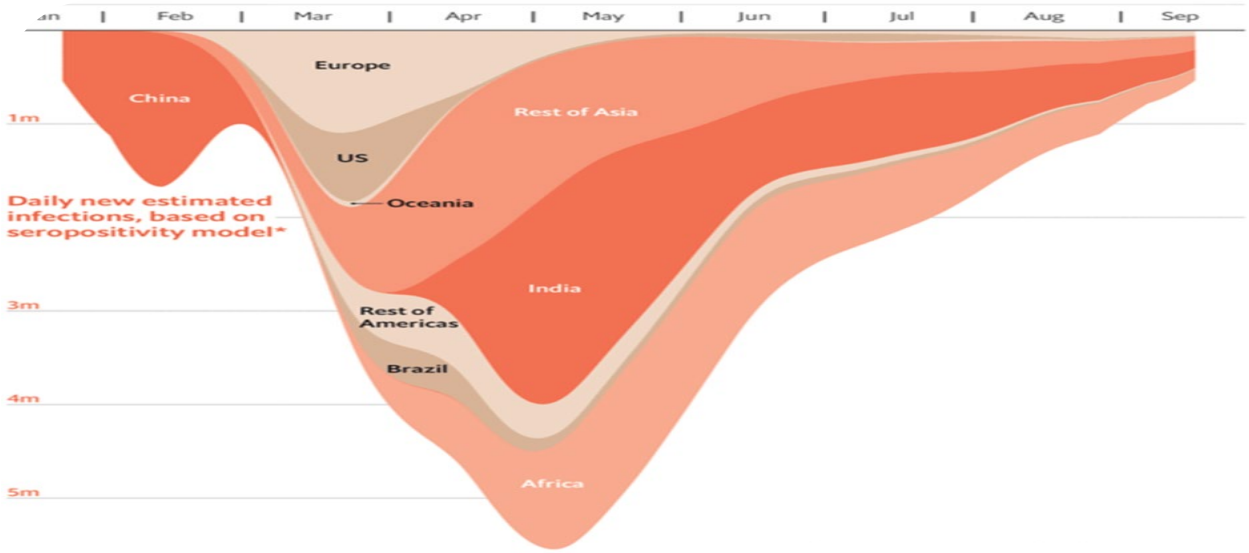
based on reported cases, confirmed deaths and average country income. While we would emphasise that this is purely a model estimate, the implications are quite striking. The model's results are shown in Exhibits 2 and 3 estimating that the true number of global cases is closer to 600 million[1] vs the officially reported 36 million. This would suggest that 8% of the global population has been infected.

Exhibit 2: Cumulative Global Covid cases are estimated to be 8% of the global population at 600M to date vs the 36M reported

Source: The Economist

Exhibit 3 shows the models' estimate that global new cases peaked in early May at 5.7M per day vs the officially reported 90,000/day or over 60 times more cases than were reported. The model suggests that current daily cases are approximately 10% of where they were in May at around 500,000 cases vs the 350,000 cases being reported then. This huge disparity is largely explained by low levels of testing in most countries in the early stages of the pandemic combined with poor government data from developing countries including China. The model estimates that China's cases peaked in mid-February with 1.7M cases per day when China was reporting just 8000 cases per day. The second wave currently taking place in Europe would appear to be just under one-tenth of the size of the initial wave using the Economist's model. While the US was reporting 25,000 cases per day in late May the estimate of actual cases is 700,000.

Exhibit 3: Daily new cases today are estimated to be about one-tenth of where they were in late April



Source: The Economist[2]

[1] https://www.economist.com/briefing/2020/09/26/the-Covid-19-pandemic-is-worse-than-official-figures-show

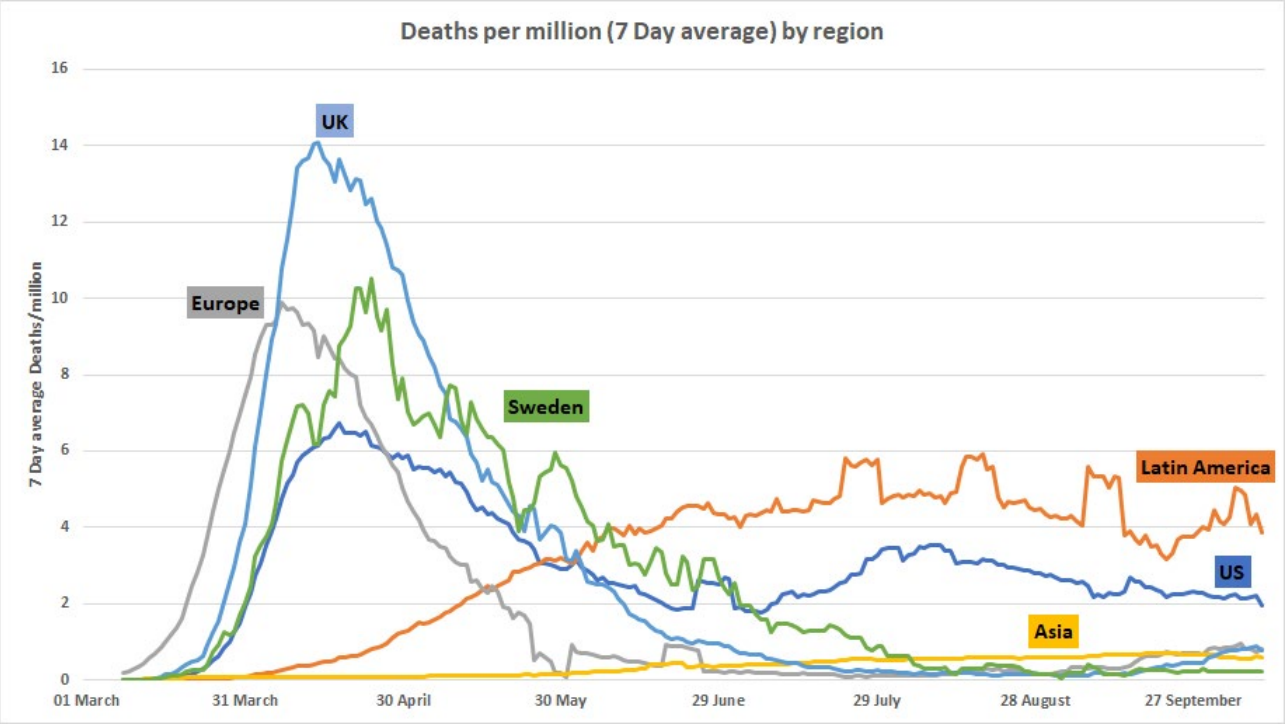
[2] Extrapolation from linear model of seroprevalence

The estimated 90% decline in cases is explained by the actions governments and individuals took to socially distance. The biggest drivers are people working from home (pre-pandemic 6% of people worked from home regularly, this is now 43% in the UK[3]), more prevalent use of facemasks and greater sheltering among the most vulnerable. There is also likely some degree of immunity present following the initial wave.

The implication is that the current situation is not as bad as the official data would suggest – i.e., current waves are in reality much smaller than what was truly happening in the first waves. Cases are, however, on the rise in many countries, even after adjusting for testing rates and other factors. The trigger for this new wave of cases in Europe appears to be a mix of people returning from holidays, offices partially reopening and perhaps most importantly schools and universities reopening. Data in the UK suggests that nearly 50% of all new Covid cases in the last month have come from schools or universities[4].

Mortality curves provide a clearer picture of the trajectory of the virus and regional variations than case counts. As shown in Exhibit 4, depending on the region, death rates peaked somewhere between 6 and 14 deaths/million/day except for Asia. Asia never saw more than 1 death/million/week. Despite differences in mitigation strategies, Europe, Sweden and the UK experienced similar death rates per million population trajectories as shown below in Exhibit 4. At "maturity" (outside of Asia) the virus seems to settle around 1 death/million/day or lower. In the US, still at 2 deaths/million/day, what appears to be more stubborn persistence of the virus, is exaggerated by cases migrating from one region to another throughout the country and only progressing to the southern states after the initial lockdowns ended. Latin America is furthest from maturity still experiencing approximately 4 deaths/million/day with a similar explanation of its persistence being related to migration within regions of Brazil and across Latin America.

Exhibit 4: Despite differences in mitigation policies, new Covid related deaths/million have followed similar trajectories in the Europe, Sweden and the UK.



Source: Bloomberg

[3] https://www.bbc.co.uk/news/uk-wales-53946487

[4] https://www.wsws.org/en/articles/2020/10/05/surv-o05.html

The big difference in fatality rates is in Asia, where Korea and Japan have hardly seen any increase in excess mortalities[5]. Experts have suggested many theories for this but the most logical appears to be that there was a better system in place for dealing with pandemics following the 2003 SARS outbreak in Asia, including the use of facemasks which was already common practice. Once Germany set up its own 'gold standard' track and trace program, its mortality rate has behaved similarly to those of Japan and Korea. Germany, today, is experiencing less than 0.1 deaths/million/day. Another theory suggested by experts is that the SARS and Swine Flu outbreaks in Asia provided a higher level of cross-immunity to Covid-19 in the region[6]. This would not explain low rates in Germany.

There is no one factor that explains the lower death rates observed at present, but rather a combination of factors. This is best explained by looking at the individual components of mortality rates. Mortality rate is defined as the hospitalisation rate as a % of Covid cases x Deaths/Hospitalisations- i.e., the joint probably of finding oneself in hospital and dying there. In June, in the US, the hospitalisation rate was 11.5% which means 11.5% of people who tested positive for Covid ended up in the hospital. 28% of those died, so the mortality rate of Covid patients was 3.2%, varying considerably by age and vulnerability cohort. Today, we estimate the mortality rate at 0.4%, having declined by 88%. So what explains this huge improvement?

Firstly, hospitalisation rates have dropped. Data from the CDC in the US shows that the hospitalisation rate for Covid cases averaged about 11.5% in the period from May to late June then dropped sharply to an average of 3.5% between late-June and the end of August[7]. This drop in the hospitalisation rate is explained by two developments. First, data from the CDC shows that the median age of infection has dropped by about 15 years over the same period, from 50 to 35 years[8]. This is most likely due to the elderly isolating more than those younger and better management of care homes. This lower median age translates into a 30-35% reduction in hospitalisations. Younger Covid-infected people have less severe cases. Second, according to Stat News, the rise in testing levels is also responsible for an increase in the number of positive cases being discovered[9]. So the hospitalisation rate denominator rose, taking the rate down. Testing levels in the US are up about 25-30% from mid-June levels with the positivity rate remaining stable. In other words, this is an accounting difference affecting mortality rates, not a real improvement. This suggests that the actual hospitalisation rate was 8.2%. With 28% dying in hospital, the mortality rate from last summer is estimated to have been 2.3% rather than 3.2%, but still implying an 82% improvement in mortality rates.

Survival rates of hospitalised patients have improved from 72% to 88% as explained above based on data from Johns Hopkins[10]. The higher survival rate is partly attributable to new treatments such as Remdesivir, Dexamethasone and other corticosteroids which reduce mortality rates in the most serious of patients by about 20-30%[11]. The rest is attributable to hospitals being better resourced and more experienced in treating Covid patients. For example, the use of the prone position, the timing of drug and oxygen administration and an understanding that the virus is a vascular disease and not just a respiratory illness have all contributed to a reduced mortality rate. A breakdown of this data is presented in Exhibit 5.

Recent estimates for the US and UK suggest that the mortality rate is somewhere between 0.25% and 0.40%, but this does not account for unrecorded asymptomatic cases which by many estimates are up to 50% of cases[12]. This would in effect halve the implied mortality rate to 0.12% to 0.20%. For reference, the mortality rate for seasonal flu is estimated to be about 0.10% in the US[13].

[5] https://www.medrxiv.org/content/10.1101/2020.07.09.20143164v4
[6] https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7326438/
[7] https://www.cdc.gov/coronavirus/2019-ncov/Covid-data/Covidview/index.html
[8] https://www.cnbc.com/2020/07/06/dr-anthony-fauci-says-the-average-age-of-us-coronavirus-patients-has-dropped-by-15-years-as-sun-belt-states-gets-hit.html
[9] https://www.statnews.com/2020/07/20/trump-said-more-Covid19-testing-creates-more-cases-we-did-the-math/
[10] https://www.economist.com/briefing/2020/09/26/the-Covid-19-pandemic-is-worse-than-official-figures-show
[11] https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7320713/
[12] https://www.sciencedaily.com/releases/2020/06/200612172208.htm
[13] https://www.livescience.com/new-coronavirus-compare-with-flu.html

Exhibit 5: Breakdown of the implied Covid mortality rate

US Data from CDC	%
Mid-Summer Hospitalisation Rate (% of Covid cases)	11.5%
Change in median age	-3.7%
Change in testing levels	-3.2%
Unexplained	1.1%
Current Hospitalisation Rate	3.5%
US Data from Johns Hopkins	**%**
Mid-Summer Hospital Survival Rate	72%
Proning/Timing of Oxygen, other treatments	7%
Remdesivir/Dexamethasone/Steroids	9%
Current Hospital Survival Rate (Survivors/Hospitalised Patients)	88%
US Implied Mortality Rate (Hospitalisation rate*Deaths/Hospitalisation rate)	**0.42%**

UK Data from ECDC/NHS	%
UK Hospitalisation Rate (% of Covid cases)	5%
UK Deaths/Hospitalisations	5%
UK Implied Mortality Rate (Hospitalisation rate*Deaths/Hospitalisation rate)	**0.25%**

Source CDC, Johns Hopkins, the NHS

If Johns Hopkins' model is correct and we are still seeing 500,000 daily cases worldwide, even a 0.10% Mortality Rate in the absolute is something we would like to stop, with 500 people dying each day or 180,000 if it carries on at its current level for another year. But this is unlikely, given the estimated daily new 500,000 cases are mostly in Africa, Latin America and India today, where case counts and deaths appear to be coming down, even without adjusting for increased testing.

2. What is the status of testing and which systems work best?

In most countries outside of Asia and Germany, Covid (PCR) testing rates are barely sufficient to test front line workers and those with symptoms, but continue to be well below desired levels to catch asymptomatic infected individuals or levels which would increase mobility (travel without quarantine). Low adoption rates of integrated track and trace systems have hindered their effectiveness in most regions.

Testing rates have increased sharply in some regions. Both the US (2.7 tests/thousand) and the UK (3.4/thousand) currently have some of the highest per capita testing rates globally. Germany, which has a much lower testing rate of just 2.0/thousand has nevertheless achieved better results in containing the virus, as shown in Exhibit 6. This is attributable to a more efficient test and trace program, similar to the Asian model.[14] Germany has managed to maintain a lower test positivity rate of about 1% despite the lower testing rates.

[14] https://ourworldindata.org/coronavirus-testing

Exhibit 6: Germany has handled the crisis far better than the UK and US with a lower daily death rate
(7-day rolling average of daily deaths/million attributable to covid.

Source: Financial Times

While it is difficult to assess the US testing strategy because it is comprised of a patchwork of different strategies, we can compare the UK and Germany. Germany had a contract tracing system fully in place at the beginning of May. Germany uses a decentralised public health system where each state is responsible for managing its testing, tracking, and tracing resources[15]. Over 97% of Germany's Covid test results are provided within 24 hours. By contrast the UK only had a contract tracing system partially in place by late July and utilises a centralised system that has outsourced large parts of its testing and tracing infrastructure to private companies. The Financial Times reported in early-September that only 63% of UK test results were communicated within 24 hours. For a week in mid-September, this figure dropped to just 10%, and current estimates suggest that just 38% of test results are communicated within 24 hours[16]. Germany's welfare protection scheme, "Kurzarbeit", has been described as the model Covid furlough system. It has been wide-reaching and provided a safety net for the livelihoods of those experiencing Covid symptoms. This is in stark contrast to areas in the north of England where workers fear losing their jobs and self-employed people are not covered by the UK's furlough scheme.

Hence, testing alone is not the answer. Instead, a decentralised public health structure with an integrated, rapid test, track and trace system accompanied by adequate employment support of those isolated, has been a more effective way to control the spread.

Contract tracing apps have yet to provide the potential benefit demonstrated in Korea in other countries due to low adoption rates. Back in March, Singapore launched the world's first track and trace app based on Bluetooth technology called Trace Together, but only 20% of its inhabitants downloaded. As a result, Singapore has started distributing dedicated Bluetooth contact-tracing tokens to its five million residents to augment the use of Trace Together used on iPhones. Bluetooth technology is currently being used in track and trace apps by countries including Australia, Switzerland, France, Germany, the UK (only recently), Finland, Denmark, Japan, Italy, Poland and Latvia, among others.

In April, Apple and Google released their technology allowing individual states develop their own apps and integrate into their local health systems. Only six states signed up. In early September, Apple and Google,

[15] https://www.bmj.com/content/369/bmj.m2522
[16] https://www.ft.com/content/ab006ca3-bd4f-49ef-a248-276381276d76

provided custom apps for each state. States will still need to opt in, but the tech companies will take care of more of what is solidly in their hands: the technology. Still, getting those apps working at a large scale, so that they become useful tools to public health officials, will require overcoming the nation's patchwork pandemic response. The system still has bugs. Studies at Trinity College Dublin found that apps using the Apple-Google method performed inconsistently on buses and trams due to interference. They suggested changing the threshold for what qualifies as "exposure" to being within 6 feet of an infected person for 10 minutes, as opposed to 15 minutes.

Adoption rates outside of the US range from 35% in Switzerland, 33% in Finland and Germany, 21% in Australia to just a 5% average in France and across the rest of Europe[17]. Experts assert that adoption rates above 50% are required for them to be effective. Swiss officials argue that any level of adoption can be helpful, citing 26 people recently reported testing positive who went into quarantine after receiving an alert via the Swiss national app. Others may have received alerts and chosen to self-quarantine. In contrast, app effectiveness has recently been called into question by authorities even in Germany. In a recent survey, just 38% of public health departments in Germany found their tracing app to be a useful addition in their armoury, as opposed to conventional tracing systems.

3. How are activity levels evolving?

At the aggregate level, global activity levels are about 10-15% below normal but there are sharp sectoral and regional differences. A return to full lockdown is considered unlikely and progress in vaccines and therapeutics will eventually allow further re-opening.

There remains a great deal of divergence across sectors and regions. The latest data from Google Mobility in Exhibit 7 suggests that recreation activity (bars, restaurants, retail, cinemas, sporting events,etc) in the US and Europe remains about 10-15% below normal levels[18]. Data from Asia is slightly more encouraging and suggests that activity is getting back closer to levels observed in early January. In the US and Europe, there have been pockets of exceptionally strong activity with mortgage applications, new business applications and e-commerce transactions hitting multi-year highs. However, certain sectors continue to suffer severely. Hotel occupancy rates remain about 15-20% below historical levels, department store sales are 20-30% below January levels, the number of daily flights is down about 40% YoY and workplace/office attendance is down about 30%[19].

[17] https://www.statista.com/statistics/1134669/share-populations-adopted-Covid-contact-tracing-apps-countries/
[18] Google Mobility
[19] https://privatebank.jpmorgan.com/content/dam/jpm-wm-aem/global/pb/en/insights/eye-on-the-market/S1-US-reopens-embedded.pdf

Exhibit 7: Google Mobility data shows that we are still 10-15% below normal activity levels in the western world but slightly closer to normal in developed Asia.

Country/Region	Retail & Recreation (% change from Jan 2020 level)		Workplaces (% change from Jan 2020 level)	
	1 Month Ago	Current	1 Month Ago	Current
UK	-14	-24	-38	-27
Germany	-5	-10	-19	-12
France	-8	-18	-28	-15
Italy	-8	-11	-26	-18
South Korea	-26	-7	-11	-14
Hong Kong	-27	-16	-20	-9
Japan	-12	-5	-12	-8
Brazil	-27	-28	-8	-5
India	-49	-42	-25	-23
US	-16	-16	-29	-26
Average	**-19**	**-18**	**-22**	**-16**

Source: Google Mobility

What is the probability of a return to the extreme lockdowns we saw in Q1? Such a degree of lockdown appears to be a low probability due in part the analysis above on the Mortality Rate having fallen to a level comparable to the seasonal flu. In addition, we add the following reasons:

a) **The cost/benefit trade-offs are not compelling.** Analysis from Equitile notes that all government healthcare spending undergoes a cost/benefit analysis to determine which health treatments the government is willing to fund. They do so by estimating the treatment's cost per Quality Adjusted Life Year (QALY) which is an estimate of the cost of extending quality life by one year. The NHS sets an upper limit of £30,000/QALY. Equitile estimate that the lockdown in Q1, which was in effect a form of healthcare spending, translated to a cost of £1 million/QALY[20]. On October 5th Germany's economics minister stated that there would be no second lockdown for businesses in order to contain the pandemic, arguing the costs far outweighed the benefits.

b) **Daily case rates alone should not determine public policy.** Cambridge statistician David Spiegelhalter has also called into question the use of daily new cases as a basis for forming public policy. He argues that the accuracy of PCR tests, their lack of comparability through time and their actual impact make them a completely inaccurate tool to utilise to design public policy. He argues that deaths and hospitalisations are far better indicators albeit subject to a lag[21]. In the US for example there have been 70,000 officially recorded Covid cases on university campuses since they have reopened. These cases have translated to less than 10 hospitalisations[22].

c) **Public support for full lockdowns is waning.** The fear and uncertainty surrounding the virus in Q1 accompanied with furlough schemes facilitated high levels of public compliance and support for lockdowns. Public weariness has however crept in and less generous furlough schemes will reduce support for full-scale lockdowns.

[20] https://www.equitile.com/article/lockdown-what-did-we-get-why-did-we-do-it
[21] https://www.ft.com/content/45af2de8-8207-4c7d-8eeb-50347a7f8518
[22] Dr Simone Gold/collated university statistics

d) **Governments are starting to face legal and parliamentary challenges.** In the UK several legal challenges have been brought by the hospitality industry against the recent curfew laws with demands to produce scientific backing for the legislation[23]. Parliament has also reined in government powers by demanding votes on changes to restrictions retrospectively and going forward.

4. When will a vaccine be available?

Experts believe that a vaccine will be available for mass distribution in Q2 2021 according to data from the Good Judgement Project[24].

While there is a lot of uncertainty around vaccine production, McKinsey have estimated that 1 billion doses of vaccine will be produced in 2020 and 9 billion doses by the end of 2021[25]. There are currently ten vaccines in phase 3 trials at present, all shown in Exhibit 8, with the lead candidates being Pfizer (BioNtech), AstraZeneca (Oxford), Moderna and Johnson and Johnson. Each of these companies have said they will have enough data to know whether their vaccine is effective prior to year-end[26].

Historical analysis from Deutsche Bank shows that once a vaccine (for an infectious disease) has reached phase 3 trials it has about an 85% chance of being approved[27]. However, virtually all successful vaccines in the past have been developed from a weakened whole virus, a fragment of the virus or a deactivated form of the virus being treated. Both the AstraZeneca and Johnson & Johnson candidates are viral vector vaccines, based on the virus gene, that have thus far only been utilised for the treatment of animals. The Moderna and Pfizer candidates are mRNA vaccines and only one such vaccine has been approved in the past. That was an Ebola vaccine that was approved in December 2019[28]. mRNA and viral vector vaccines have advantages over traditional vaccines in that they are far quicker to produce and may also trigger the innate immune system as opposed to just the acquired immune system which traditional vaccines target. If these candidates are not successful, more traditional protein-based vaccines will arrive later in Q4 from Novavax and from GSK, Sanofi and Merck in Q1 2021.

Phase 3 vaccine trials are structured so that half of the participants receive the vaccine, and half receive a placebo shot consisting of saltwater. Neither the volunteers nor the doctors treating them know who gets which. Two shots are needed for Moderna, Pfizer and AstraZeneca's candidates. Johnson and Johnson's candidate has the advantage of requiring just one shot. The participants are then monitored to see if they test positive for the virus or experience any side effects. They are not forcefully exposed to the virus for obvious reasons. The clinical trial is monitored by a data and safety monitoring board, or DSMB, a group of independent experts hired to make sure volunteers in the study are safe. The DSMBs conduct what is called an interim analysis after a certain number of people have been infected with Covid-19 and show symptoms. During this interim analysis, they have the ability to recommend stopping a study not only if a treatment is unsafe, but also if it is so clearly ineffective that continuing would not be ethical. Pfizer believe they will have reached this point in late October. AstraZeneca are also expecting results on a similar timeline. Moderna and Johnson and Johnson expect to reach the same point by mid-November. Once this point is reached the candidates could be approved for emergency use. This would likely lead to vaccine doses being provided for front line workers and those most vulnerable. US states have been told to prepare for a vaccine by November.

[23] https://www.simpsonmillar.co.uk/media/government-faces-legal-challenge-over-10pm-curfew/
[24] https://goodjudgment.com/Covidrecovery/
[25] https://www.mckinsey.com/industries/pharmaceuticals-and-medical-products/our-insights/on-pins-and-needles-will-Covid-19-vaccines-save-the-world
[26] https://www.nytimes.com/interactive/2020/science/coronavirus-vaccine-tracker.html
[27] DB research
[28] https://www.hhs.gov/about/news/2019/12/19/hhs-secretary-azar-statement-on-fda-approval-of-ebola-vaccine.html#:~:text=On%20Thursday%2C%20December%2017%2C%202019,eastern%20Democratic%20Republic%20of%20the

Exhibit 8: The vaccine pipeline suggests a vaccine will be approved for emergency use prior to year-end

Leading Candidate	Pre-clinical	Phase 1	Phase 2	Phase 3	Fast Track Reg Approval	Dates announced
Normal Time		3 months	3 m - 2 years	1 - 4 years	60 days	
CanSino Biologics						Approved for military emergency use 28/6
Oxford/Astra						Emergency Use Nov 2020/Temporary halt in US
Johnson & Johnson						Will know by year end if effective/Hope to have 1B doses by 2021
Gamleya Research Institute (Russia)						Experts sceptical about the vaccine speed, no phase 1/2 results
Moderna						Emergency Use Nov 2020/Patent dispute has caused some issues
BioNTech/Pfizer						Submit data to FDA Oct 30th/Emergency use thereafter
Imperial College/ Morningside						Expect conclusive results by year end
Zydus						
AnGes/Takara/OU						Recruiting for phase 3 trial
Curevac						Seeking approval early 2021/Partnering with Tesla to produce faster
DukeNUS						Expect initial data in the fall
Beijing Inst./Sinopharm						
Wuhan Inst./Sinopharm						
Sinovac						Approved for emergency use in China in July
Inst. Of Medical Biology						
BHARAT						Target changed from August to early 2021
MERCK/THEMIS						
ZFSW/China AMS						
Novavax						Data in Dec/Jan.100m doses by Q1 2021
Sanofi						Phase 3 trials by Dec, regulatory approval Q1 2021 with 1bln doses
Inovio						Phase 2&3 in Sep/100m doses in 2021

Type of Vaccine	Description
Non-replicating Viral Vector	Viral gene is added to a different, non-replicating, virus and delivered to the vaccine recipient. No approved product of this kind has resulted to date.
DNA/mRNA Based	Work by inserting a genetically engineered blueprint of viral gene(s) into small DNA molecules (called plasmids) for injection into vaccinated people. Cells take in the DNA plasmids and follow their instructions to build viral proteins, which the immune system recognises as foreign, triggering the immune response that protects against the disease. Only one vaccine approved of this kind in December 2019 which was an Ebola vaccine.
Protein Subunit	A fragment of the virus is used to trigger an immune response and stimulate immunity. Examples include the subunit vaccines against hepatitis B and shingles.
Live Attenuated Virus	Whole viruses introduced live to elicit a stronger immune response but weakened to reduce virulence. Examples include those for measles, mumps, and tuberculosis.
Inactivated Virus	Disease-causing virus that has been killed (with heat or chemicals), so it won't make you sick, and can be used in people that may not be able to use a live attenuated virus vaccine (e.g., those who are immunocompromised). These do not provide as strong of an immune response as live attenuated virus vaccines, so additional doses of the vaccine may be needed to get a strong enough immune response.

Source: New York Times

5. What is the status of therapeutics development?

Monoclonal antibodies like Regeneron's and other new therapies are on the way to supplement existing treatments such as Remdesivir, Dexamethasone/corticosteroids, convalescent plasma and oxygen administration. These have already helped to increase hospital survival rates up by c 9% to c 88%. With new monoclonal antibodies, hospitalisation rates could fall dramatically (85% in the case of Ely Lilly's).

It is now seven months since Covid-19 was labelled a global pandemic and the key lesson so far is that this is a virus that disproportionately affects those over 70 years of age and those with comorbidities. Over 70's account for 90% of coronavirus deaths and this increases to 95% when we include those with

comorbidities[29]. In advance of a reliable vaccine being made available in large quantities, substantial progress has been made in the area of treatments (Exhibit 9).

Exhibit 9: Therapeutics have already reduced the mortality rate and more effective treatments are potentially on the way in Q4.

Manufacturer	Treatment	Treatment Type	Development Stage	Function	Effect	Target
Gilead	**Remdesivir**	Antiviral	Approved for use, now trialling with beta interferons	Kills or prevents	Recovery time decreased by 30%	Severe Patients
OncoImmune	**SACCOVID**	Antiviral/Immuno modulator	Phase 3 trials	Alleviate Cytokine storm	Reduced mortality by 50%	Severe Patients
Merck/ Ridgeback	**EIDD-2801/MK-4482**	Anti-viral nucleoside analogue	Phase 3 trials (results expected Oct)	Kills or prevents	Unknown - only animal trials to date	Mild Patients
Generic	**Dexamethasone**	Steroid/ Anti-inflammatory	Approved for use	Anti-inflammatory (Alleviate Cytokine storm)	Mortality rate reduced by 20-33%	Severe Patients
Regeneron	**REGN-COV2**	Monoclonal Antibodies	Phase 3 trials, FDA assessing data. Utilised on the US president.	Infusing antibodies or prophylactic	Shown promise to reduce hospitalisation rate in early trials.	Vulnerable, immuno deficient patients or front line workers
Eli Lilly	**LY-CoV555**	Monoclonal Antibodies	Phase 3 trials, FDA assessing data.	Infusing antibodies or prophylactic	Reduced risk of hospitalisation by 85%.	Vulnerable, immuno deficient patients or front line workers
Mayo Clinic, Rockefeller University	**Convalescent Plasma**	Antibodies	Approved for emergency use.	Infusing antibodies	Some promising	Vulnerable, immuno deficient patients or front line workers

Source: Stat News, New York Times, Barclays

New therapies with the most promise include :

1) **Monoclonal antibodies (prophylactics)** that reduce the risk of infection or progression from mild infection early on. These include monoclonal antibodies from Eli Lilly and Regeneron which may be available for use before the end of the year. Eli Lilly submitted data for emergency use authorisation on 7th October. Their phase 3 data showed that the risk of hospitalisation from initial mild cases was reduced by 85% versus a placebo group. Lilly have said they will have one million doses available in Q4. Regeneron are expected to submit data for their monoclonal antibodies in the coming weeks. Regeneron's antibodies have already been trialled on the US president which would suggest they could be even more effective than Eli Lilly' antibodies. Regeneron have approximately 500,000 doses available and have manufacturing capacity for 250,000 doses per month.

2) **Antivirals** that can stop mild cases from developing into more severe cases. MK-4482 from Merck/Ridgeback has shown the potential to arrest symptoms in mild patients and may prove to be more effective than Remdesivir. Phase 3 results are expected this month.

3) **Immunomodulators** which can reduce mortality rates for the most severe hospitalised cases. SACCOVID from Oncolmmune has been shown to reduce mortality by up to 50% in severely ill patients in initial clinical trials[30]. The hope is that these treatments can soon be added to the existing armoury of Remdesivir, Dexamethasone/corticosteroids, convalescent plasma and oxygen administration.

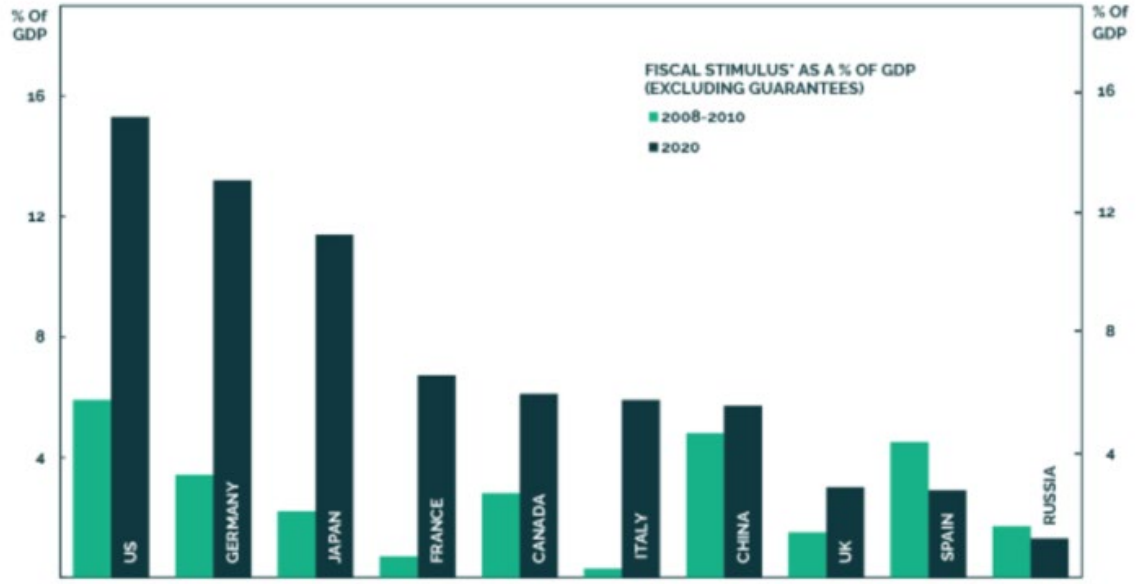
[29] https://www.cdc.gov/coronavirus/2019-ncov/Covid-data/investigations-discovery/hospitalization-death-by-age.html
[30] https://www.pharmaceutical-business-review.com/news/oncoimmune-sacCovid-Covid-19/

6. What are the prospects for additional fiscal stimulus?

The magnitude of the fiscal policy response has been far greater than in 2008. Further stimulus is likely on the way, the magnitude of which depends on which party controls Congress in 2021.

Within weeks of the outbreak of the pandemic, the taps of global fiscal and monetary policy were turned on aggressively.

Exhibit 10: The magnitude of fiscal stimulus is far greater than during the financial crisis.



Source: BCA Research

In the US, fiscal policy has tightened since August as many emergency measures have expired. However, Congress appears unable to pass another round of stimulus. The inability has stemmed from differences between Democrats and Republicans on the size of the package required. Democrats are seeking another $2 to 3T in stimulus whereas Senate Republicans will only agree to a package of less than $0.5T. It is now increasingly unlikely a meaningful deal can be reached until after the election. While both parties have promised greater stimulus, in the event of a 'Blue Sweep' of both the White House and Congress, we expect a significant increase in fiscal spending. As it stands, Biden's spending plans are estimated at an additional $6T with higher healthcare spending accounting for over one third of that. Roughly $4T in increased taxes will partially offset that spending, leaving c. $2T of net stimulus.

Turning to other economies, the UK government unveiled a fresh round of economic and fiscal measures in early October. The intent is to ease the burden on both employees and firms by subsidising part-time work and by extending government-guaranteed loan programs. At the beginning of September, the Macron government announced a €100bln stimulus plan in France. Meanwhile, European leaders are moving forward on a €750bln stimulus package that was announced this summer. In Japan, the new Prime Minister Yoshihide Suga has indicated that he will pursue a third budget to fight the economic downturn, adding that "there is no limit to the number of bonds the government can issue to support an economy battered by the coronavirus pandemic." The Japanese government now earns more interest than it pays because two-thirds of all Japanese debt bears negative yields[31].

[31] BCA research

7. What is the latest outlook for global economic growth?

The economic impact is unprecedented in recent history but appears less severe than originally feared. The range of forecasts for 2020 GDP growth have narrowed considerably with most experts estimating global growth will contract by c. 4%[32].

To put this in context, this will be the largest contraction since WWII and roughly twice as severe as the global financial crisis. Unprecedented levels of global monetary and fiscal stimulus have however helped prevent some of the major spillover effects that often occur in recessions and have allowed for a sharp recovery.
As economies began re-opening in May, pent-up household demand was amplified by fiscal support that more than offset the dramatic compression in labour income. Global consumer goods spending surged over May and June, returning close to pre-pandemic rates by midyear. The latest data show that global growth remained strong through September, even in the face of rising case counts and a pullback of fiscal support. Consumer credit card spending is now only c. 6% below pre-pandemic levels. While the initial surge in consumer spending is now moderating, business spending is picking up. A turn in the global inventory cycle is underway as the combination of forced factory shutdowns and a slow response of manufacturers to the midyear spending bounce has depleted inventories. Proxy indicators point to a strong rebound in business investment, with global capex (ex. China) tracking at a c. +35% annualised surge in Q4.

The IMF will release their updated forecast for growth on October 13th and have already stated that it will be an upgrade to their June forecast as conditions having improved markedly.

Exhibit 11: GDP forecasts for 2020 suggest a contraction of about 4% from 2019.

	2020 Real GDP Growth Forecasts					
	IMF	JP Morgan	Goldman Sachs	Deutsche Bank	Capital Economics	Average
Date	24-Jun	02-Oct	05-Oct	06-Oct	02-Oct	
Global	**-4.9%**	**-3.8%**	**-3.2%**	**-4.0%**	**-4.8%**	**-4.1%**
DM	-8.0%	-5.2%	-5.7%	-6.0%	-5.5%	-6.1%
US	-8.0%	-3.6%	-4.8%	-4.0%	-3.7%	-4.8%
Eurozone	-10.2%	-6.9%	-7.6%	-8.0%	-7.5%	-8.0%
Japan	-5.8%	-5.7%	-5.8%	-6.2%	-5.3%	-5.8%
EM	-3.0%	-2.0%	-1.1%	-2.7%	-4.3%	-2.6%
China	+1.0%	+2.3%	+3.0%	+2.0%	-1.0%	+1.5%

Turning to 2021, experts expect global growth to re-accelerate by 5-7%, taking the level of GDP back to slightly above 2019 levels.

[32] Experts as referenced in tables below

Exhibit 12: GDP forecasts for 2021 suggest we will return to GDP levels just above those observed in 2019.

	2021 Real GDP Growth Forecasts					
	IMF	JP Morgan	Goldman Sachs	Deutsche Bank	Capital Economics	Average
Date	24-Jun	02-Oct	05-Oct	06-Oct	02-Oct	
Global	**+5.4%**	**+6.1%**	**+6.5%**	**+5.4%**	**+7.0%**	**+6.1%**
DM	+4.8%	+4.0%	+6.2%	+3.8%	+4.8%	+4.7%
US	+4.5%	+2.8%	+6.4%	+3.3%	+4.5%	+4.3%
Eurozone	+6.0%	+5.6%	+7.4%	+5.4%	+5.0%	+5.9%
Japan	+2.4%	+3.0%	+3.3%	+1.7%	+3.5%	+2.8%
EM	+5.9%	+7.0%	+6.7%	+6.3%	+8.2%	+6.8%
China	+8.2%	+8.7%	+8.1%	+9.0%	+11.0%	+9.0%

8. What is the outlook for corporate earnings?

Earnings in the US are expected to recover to 2019 levels in 2021, however a large dispersion among sectors is likely to persist.

The Q3 earnings season begins in earnest this week and should provide more clarity on how companies are being impacted at present and how they see this crisis developing. For the S&P500, the latest forecasts point to a -21% contraction in full-year 2020 earnings from 2019 levels. 2021 earnings are expected to grow by about 27%, leaving earnings in line with 2019 levels as shown in Exhibit 13.

Exhibit 13: Consensus EPS forecasts suggest by 2021 we will have recovered back to 2019 earnings levels.

S&P500	2019 EPS	2020 Consensus	2021 Consensus	2022 Consensus
EPS	$165	$130	$165	$195
Change from previous year	1%	-21%	27%	18%

Source: I/B/E/S Consensus

A sectoral breakdown of the earnings in Exhibit 14 shows where the impact of the crisis will be temporary and where lasting structural damage is expected. Energy, Hospitality and Airlines are forecast to be loss-making in 2020 and have earnings estimates that have been lowered by 30-50% for 2022. Conversely, the tech and household goods sectors are expected to be more profitable this year and structurally more profitable by about 5% over the longer term[33].

[33] Bloomberg data

Exhibit 14: The S&P500 is skewed towards technology sectors which have been relative beneficiaries of the pandemic.

Industry	S&P500 Weight	2020 EPS estimate change from Jan 1st	2022 EPS estimate change from Jan 1st
Software	15%	11%	9%
Semis	5%	6%	0%
Household Goods	2%	5%	6%
Hardware	8%	4%	-5%
Pharma	7%	-1%	0%
Food Staples	2%	-2%	1%
Utilities	3%	-2%	-1%
Bev & Tobacco	3%	-5%	-4%
Commercial Ser.	1%	-8%	-5%
Healthcare Equip	7%	-9%	-5%
Retail	8%	-12%	2%
Insurance	2%	-14%	-8%
Communications	2%	-15%	-7%
Real Estate	3%	-14%	-18%
Media	9%	-16%	-4%
Materials	3%	-19%	-9%
Durables	1%	-21%	0%
Div Fins	5%	-24%	-21%
Aerospace & Def.	2%	-46%	-24%
Banks	3%	-52%	-23%
Autos	0%	-90%	-17%
Energy	2%	-110%	-45%
Hospitality	2%	-112%	-33%
Airlines	0%	-296%	-55%

Source: Bloomberg

9. How has the pandemic impacted loan defaults and corporate bankruptcies?

Despite a larger economic impact than the GFC, fewer defaults and bankruptcies are occurring due to fiscal support and stronger balance sheets.

The shock to 2020 US GDP from the Covid-19 crisis is expected to be about 60% larger than that experienced in 2008 during the peak of the global financial crisis (GFC). Despite the scale of the economic shock, bankruptcies, defaults and loan loss provisions are expected to be only 50-90% of the magnitude experienced during the GFC[34] as shown in Exhibit 15. JP Morgan anticipate that by year-end, default rates for 2020 will have risen to about 8% for high yield bonds and 5% for leveraged loans, which would be about 70% and 40%, respectively, of the magnitude of defaults in 2008. However, it is worth noting that loss recovery rates are far lower for high yield bonds based on observations so far in 2020[35].

Many sectors have been protected to a certain extent by loan guarantees, payroll protection plans and rent moratoriums. The energy sector however has been hardest hit with over 33% of total defaults occurring in this sector alone. The retail sector is the next worst affected contributing 17% of all defaults.

[34] Quarterly filings
[35] JPM Monthly Default Monitor

Exhibit 15: While the hit to GDP will be greater than the GFC, the financial impact has been softened by greater stimulus and more robust consumer and banking balance sheets.

US Data	Dotcom Crisis (2001)	Global Financial Crisis (2008)	Covid Crisis (2020)	Covid relative to GFC
Real GDP Growth YoY	1.2%	-2.5%	-4.0%	1.6
Fiscal Stimulus % GDP	n/a	5.8%	16.0%	2.8
Tier 1 Capital Ratio major banks (average year prior to crisis)	8.2%	8.2%	14.4%	1.8
Personal Savings as % Disposable Income (Pre-crisis average)	5.8%	3.7%	7.8%	2.1
% Change in Permanent Unemployed (estimate)	1.3%	3.5%	1.7%	49%
Peak Bank Loan Loss Provisions as a % of assets	1.8%	3.1%	2.5%	81%
Number of bankruptcies > $1B in US (YTD for Covid)	37	50	44	88%
Total Bankruptcies (Annualised Q2 data for Covid)	12617	14135	8080	57%
High-Yield Bond Default Rate	10.0%	11.0%	8.0%	73%
Leveraged Loan Default Rate	7.5%	14.0%	5%	36%
Default/Distressed Volume ($B)	127	290	123	42%
HY Recovery Rate	25%	25%	15%	60%
Loan Recovery Rate	67%	53%	47%	89%

Source: Bloomberg, JP Morgan, BAML, BCA, Quarterly Filings

The key to understanding this mismatch between the GDP shock and financial impact is to look at 1) the magnitude of support that has been injected into the financial system via fiscal policy (approximately 3x the amount from the GFC) 2) the health of the consumer due to lower borrowing, higher savings rates (2x pre GFC levels) and greater fiscal support and 3) bank balance sheets prior to Covid in contrast to the GFC (core capital nearly 2x larger)[36]. The GFC was a balance sheet recession where consumers and banks were forced to de-lever over a number of years resulting in a drawn-out recession and an anaemic recovery. Aggressive fiscal policy and healthier balance sheets should ensure that as restrictions are lifted the subsequent recovery will be far swifter with a more benign financial impact. The key risk in terms of defaults and bankruptcies from here would be a true second wave of Covid that was met with the same type of lockdowns we observed in Q2 but without the accompanying fiscal stimulus.

10. What are the likely scenarios for the evolution of the pandemic?

The base case doesn't see economic normality until mid-2021 and even then, there will be some remaining restrictions in travel and mass events. Some changes to working and living practices will stay embedded in our normal lives beyond the pandemic, with flexible working and concern for the environment among the most significant. Key events to watch for changes in scenarios are the usual ones: vaccine and therapy approvals, the election and case counts as we socialise indoors and flu season hits.

There is little debate among experts on what is needed to achieve a return to full normality (i.e., large-scale immunity either from vaccines and/or treatment remedies to reduce its effects), but there is considerable debate on the timing. McKinsey's base case scenario sees this happening in mid-2021, but many experts are more pessimistic and expect this could take several years.[37] However, even without full immunity, as therapeutic measures improve, many activities can resume on a near-normal basis with adequate safeguards.

[36] Bloomberg data/quarterly filings

[37] https://www.mckinsey.com/industries/healthcare-systems-and-services/our-insights/when-will-the-Covid-19-pandemic-end

Exhibit 16: Key Event Calendar: There are several milestones and events into the end of January that will likely have a significant bearing on the trajectory of the virus.

Date	Event Calendar
9 Oct 2020	Congressional deadline for passing stimulus
22 Oct 2020	FDA Vaccine Committee Meets
31 Oct 2020	High speed antigen tests expected
31 Oct 2020	Pfizer to submit data for EUA to FDA
Mid Oct/Early Nov	Monoclonal antibodies phase 3 data may allow for EUA
3 Nov 2020	US Presidential Election
Mid/Late Nov	Astra/Moderna/J&J expect phase 3 data
26 Nov 2020	Thanksgiving holiday (more travel in the US - watch for spike)
Mid/Late Dec	Novavax expect phase 3 data
Late Dec 2020	Christmas (expect significant travel and potential spikes)
Early/Mid Jan 2021	Sanofi/Innovio expect phase 3 data
20 Jan 2021	US Presidential Inauguration

Exhibit 17: Covid Scenarios: vaccine and monoclonal antibody approvals will likely prove crucial to the path to the end of the pandemic

Category	Pessimistic Case	Base Case	Optimistic Case
Q4 2020			
Vaccines	No vaccine approvals	One vaccine is approved for emergency use	2 or more vaccines are approved for emergency use
Treatments	No treatment approvals	Monoclonal antibodies are introduced but not at scale	Monoclonal antibodies rolled out for use in care homes
Testing	insufficient PCR tests to open up travel and tourism	insufficient PCR tests to open up travel and tourism	Begin to see PCR testing replacing quarantine
Seasonality	Flu season is severe	Flu season is mild as it was in southern hemisphere	Flu season is mild as it was in southern hemisphere
Trajectory	Cases remain elevated across EU/US	Cases fall in line with the 2-month cycle we have observed.	Cases fall in line with the 2-month cycle we have observed.
Stimulus	No further US stimulus agreed	No further US stimulus agreed	US Stimulus package announced
Mobility	Further tightening of restrictions	Small loosening of restrictions late in the quarter	Significant loosening of restrictions late in the quarter with the hospitality sector getting a boost and offices increasing capacity
Q2 2021			
Vaccines	One vaccine is approved for emergency use to begin inoculating those most vulnerable	More vaccines are approved with those most vulnerable being inoculated and mass vaccinations begin	Mass vaccinations are in full flow for most of the developed world
Treatments	Monoclonal antibodies are introduced but not at scale	Monoclonal antibodies are also utilised to help ensure against further spikes	Monoclonal antibodies are also utilised to help ensure against further spikes
Testing	insufficient PCR tests to open up travel and tourism	Abundant PCR testing opens travel and tourism (end to quarantine)	Testing of low importance due to low case counts (vaccines)
Seasonality	Flu season begins to fade	Flu season has passed with no major complications	Flu season has passed with no major complications
Trajectory	Cases start to subside after a post-Christmas spike	Following a brief blip post-Christmas cases resume their downward trend	There is no spike in cases post-Christmas suggesting we may be nearing the end of the pandemic
Stimulus	US government passes stimulus package	US government passes stimulus package	US government passes stimulus package
Mobility	Offices remain at low capacity; Some loosening of restrictions with hospitality starting to fully reopen	Offices move to 50%+ capacity Sporting events/concerts start to be green lighted.	Offices return to new normal 10-20% below pre Covid levels Sporting events/concerts have large crowds returning, some inter-continental travel resumes between countries that are vaccinating at scale

11. What are the investment implications?

Our seven core investment themes remain resilient in the current context. However, the two themes around inflation and ESG are likely to gain particular prominence.

From the perspective of an investor, the Covid-19 pandemic appeared in early January 2020 and soon became the most impactful driver of both economic growth and financial market performance of our lifetimes. Ten months later we still cannot say that this pandemic is behind us, nor even that we have confidence that a definitive cure is close at hand (although there has been some unprecedented progress). Even after this pandemic is behind us, its effects on the global economy will continue to be felt as the way we interact with each other and with the natural environment may be permanently impacted, possibly in some ways for the better.

At the same time, our focus must increasingly revert to including other classical macro factors that drive economic and financial performance. These include the upcoming US elections and its implications for fiscal stimulus, stretched valuations in certain equity sectors and regions, the monetary policy/inflation outlook and ongoing geopolitical risks. Any investment implications we arrive at must take into account all of the above, as investors can no longer base investment decisions exclusively on Covid-19.

Currently, the biggest question on many investors' minds is to what extent the US will provide further fiscal stimulus to the economy. The answer to this largely depends on which party will control the Senate. While earlier polls suggested the Senate was securely in Republican hands, more recent polls see this race as very close, and betting markets actually give a clear lead to the Democrats. While such a 'Blue Sweep' scenario could also be partly classified as a direct consequence of Covid-19 (i.e. President Trump, rightly or wrongly, is perceived as having downplayed the severity of Covid), it would nevertheless result in a wide range of policy changes, including not only greater fiscal stimulus (to the tune of an extra $6T of spending), it would also likely bring higher taxes ($4T), some degree of wealth redistribution, greater healthcare spending and investment in renewable energy sources.

Such an outcome does not materially change our core investment themes which are by design meant to be long lasting (see below with updates). However, in the current context, the two themes around inflation and ESG may gain particular prominence.

Exhibit 18: Core investment themes

Investment Theme	Status
1. Long Innovation	This had been a consensus view, but some are now concerned about valuation/regulatory risk in large cap tech. Our view is that there are short term risks but as long as growth prospects remain strong and interest rates remains subdued, innovation remains an attractive theme over the long term.
2. China's emerging middle class and digitalisation	This was a non-consensus view during the last few years of trade wars but has performed well and remains attractive as a diversification bet on the other major economic growth game in town (tech).
3. Maximum exposure to Private Markets	Non-consensus, but generally accretive over the longer term given expected 4-5% returns from traditional equity/bond portfolios.
4. Diversified safety net allocation	Non-consensus originally, but gold now becoming more consensus so near-term risk to retail investor sentiment. Longer term a good hedge against liberal monetary policy and weakening US$.
5. Accelerated ESG implementation	See detail below
6. Prepare for distress	Low consensus. Some opportunities in March but credit generally held up better than in the GFC. Longer term opportunities in commercial real estate, energy and sectors in the eye of the Covid storm.
7. Prepare for higher inflation	See detail below.

Prepare for higher inflation: The Covid-19 crisis initially resulted in a disinflationary demand shock. Inflationary pressures are now building and may rise further over the medium-term as demand builds while the supply of goods and services is constrained by protectionism and years of underinvestment in capex. While few expect a return to the double-digit inflation rates of the 1970's, the long-lasting 2% inflation ceiling could easily be punctured, and we could see periods of low to medium single-digit inflation over the next few years. Such an overshoot (fully endorsed by the Fed's new average rate targets) would be supported by lower-for-longer short-term rates, and lead to higher breakeven inflation rates causing real yields to decline. This would suggest diversified allocations to Gold, TIPS and inflation-sensitive equity sectors would be prudent for portfolios. Such an inflationary scenario could also result in a degree of sector rotation from growth to value and, if combined with yield-curve steepening, would favour the financial sector in particular. While there may be a short-term retracement of some of the explosive 2020 gains in tech stocks (e.g. NYSE FANG+ index up +73% YTD) we do not anticipate any such correction would be long-lived (even with some increased regulatory/anti-trust burden) as the underlying growth generated in that sector is expected to persist for decades.

Accelerated ESG implementation: We have seen policymakers in the EU explicitly target much of their new €750B stimulus package towards renewables and would expect a similar tendency in the US from a newly elected Democratic Congress. If anything, the scale of the Covid-19 pandemic has refocused attention on the sustainability of life on this planet. Employers are recasting working from home policies with the impact on their carbon footprint very much top of mind. Right through the crisis, Partners Capital took new strides on asset managers' ESG integration, ESG equity manager due diligence and built a deeper understanding of the growing universe of impact investment opportunities, particularly those focused on climate change. Aggregated assets in ESG-themed ETFs kept growing despite Covid-19 through to June of this year. But investment committee conversations have started to shift from purely Covid-19 related discussion to more focus on the best way to shift portfolio investing to measure risk, return and impact, along the lines of what Sir Ronald Cohen discusses in his latest book: Impact: Reshaping Capitalism to Drive Real Change. We will discuss ESG themes in more detail in our upcoming Webinar dedicated to this theme.

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Firm Profile

Partners Capital is a leading Outsourced Investment Office located in London, Boston, New York City, San Francisco, Paris, Singapore and Hong Kong serving investment professionals, endowments, foundations, pensions and high net-worth families globally. We provide wholly independent advice on asset allocation and access to what we believe to be best-of-breed asset managers across all asset classes and geographic markets. This access is strongly enhanced by the quality of our community of shareholders and clients, most of whom are veteran investors themselves in specialist sectors around the world.

The firm was founded in 2001 by investment professionals seeking an independent and conflict free adviser to provide portfolio construction advice and rigorous analysis of investment opportunities. From its initial focus as the "money managers to the money managers" with a base of 70 clients, Partners Capital has grown to become an adviser to endowments and foundations as well as prominent family offices and successful entrepreneurs across the U.S., U.K., Europe and Asia. Endowments have become a large proportion of the institutional client base, which now includes Oxford and Cambridge Colleges, and many of the most highly respected museums and charitable foundations located around the world.

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