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What are the possible economic effects of COVID-19 on the world economy?

Warwick McKibbin

Introduction

The outbreak of coronavirus, or COVID-19, has spread globally. The evolution of the disease and its economic impact is highly uncertain which makes it difficult for policymakers to formulate an appropriate macroeconomic policy response.

The scenarios in this research demonstrate that even a contained outbreak could significantly impact the global economy in the short run.

Poverty kills poor people, but the outbreak of COVID-19 shows that if diseases are generated in poor countries due to overcrowding, poor public health and interaction with wild animals, these diseases can kill people of any socioeconomic group in any society. There needs to be vastly more investment in public health and development in the richest but also, and especially, in the poorest countries. This study indicates the possible costs that can be avoided through global cooperative investment in public health in all countries. We have known this critical policy intervention for decades, yet politicians continue to ignore the scientific evidence on the role of public health in improving the quality of life and as a driver of economic growth.

Warwick McKibbin maintains a large economic model of the world economy, known as G-Cubed, that is widely used by governments and companies. He has estimated the economic effects of the COVID-19 virus under seven scenarios. His analysis, "Global Macroeconomic Implications of COVID-19: Seven Scenarios," is posted [HERE](#).

Here is a Q&A with him about his research.

Q: How does COVID-19 differ from past episodes, such as SARS in 2003 and the Avian flu in 1997? How do the economic risks differ?

SARS was also a coronavirus but had a much higher case-mortality rate (10%) compared with COVID-19 (between 2%-4%) and a much lower case-mortality rate than the Avian flu (60%); on the other hand, COVID-19 may be more contagious than SARS and more similar in contagion to Avian flu. There is still a great deal of uncertainty about COVID-19 which is what makes it very concerning.

Another similarity is that these outbreaks all began in China. China, of course, is a much bigger part of and much more integrated in the world economy than it was 15 years ago, so economic disruption there has much larger spillover effect than it used to.

Q: You have seven scenarios for the COVID-19 virus. In the first three, the virus is contained to China; in the most extreme, a mild pandemic recurs each year for the foreseeable future. Let's focus on your fourth scenario. Describe that.

In scenario four, we assume that COVID-19 eventually affects all countries, but this pandemic is a one-time event and its severity is low. For China, we assume a 10% attack rate (10% of all people fall ill) and a 2% case fatality rate (2% of those who are ill subsequently die). We then use an Index of Vulnerability for each country, basically calibrating how much it is like or different from China, to estimate the effects of the virus in other countries. These assumptions are fed into the model to determine the severity of the outbreak in each country.

Q: In this scenario, you assume that 10% of the Chinese population get the virus, and 2% of those Chinese die. What are the comparable numbers for the U.S.?

The total mortality rate from the virus is the product of the attack rate and the case-fatality rate. In the fourth scenario, 0.2% of the population in China dies as a result of the virus; the assumed mortality rate for the US is 0.07%. (*Editor's note: that is about 230,000 people in the US*).

Q: What are the global economic costs of that scenario? What are the costs to the U.S. economy?

The loss of real GDP, relative to what would have been the model prediction in 2020 without the virus, is approximately \$US2.3 trillion for the world, which is 2% lower than the baseline. Of that, the US economy loses \$US420 billion in 2020, or about 2% less than the pre-virus baseline. Of course, if the virus spreads more widely or turns out to be more severe, the costs would be larger.

Q: The direct costs of a pandemic are, of course, deaths and sickness that prevent people from working. Your model adds indirect effects. What are they, and how do you estimate their effects on the economy?

In the modeling exercise, we reduce the labor supply by the number of people who die, the hours lost due to sickness, and the hours lost due to people caring for family members who are sick. We also make assumptions about the rising cost of doing business in each sector, including disruption of production networks in each country; shifts in consumption as a result of changes in household preferences; and the expected rise in equity risk premia on companies in each sector in each country (based on exposure to the disease).

Q: When you make your projections, what do you assume that fiscal and monetary policymakers will do in reaction to the virus? How potent do you think fiscal and monetary policy are in ameliorating the economic damage of COVID-19?

We model the policy response of central banks in each economy. Some central banks, such as the US Federal Reserve, adjust nominal interest rates in order to target an inflation outcome, while attempting to minimize the loss of output across the economy. For other countries, like China, central banks also target the exchange rates. Fiscal authorities are assumed to change government spending by an amount related to the health and other intervention costs associated with the virus outbreak, and budget deficits increase automatically in response to the economic downturn.

Both monetary and fiscal policies help, but because a significant part of the shock is a disruption to supply, demand management policies, such as fiscal and monetary policies, go only part of the way to stabilizing the economy. In countries that follow a monetary policy rule which does not only focus on output, the response of monetary policy can make the outcome worse. This would be the case for China, for example; by continuing to try to prevent an exchange rate depreciation relative to the US dollar, the Chinese central bank would need to tighten monetary policy or change the exchange rate target.

We construct a series of indexes that attempt to quantify how one would adjust the Chinese numbers (or US numbers where that is relevant to calculating changes in financial variables such as risk). For example, the Index of Vulnerability is constructed by aggregating an Index of Geography and an Index of Health Policy. The Index of Geography is the average of two indexes. The first is the urban population density of countries divided by the share of urban in total population. This is expressed relative to China. The second sub index is an index of openness to tourism relative to China. The Index of Health Policy also consists of two components: the Global Health Security Index and Health Expenditure per Capita relative to China. The Global Health Security

Index assigns scores to countries according to six criteria, which includes the ability to prevent, detect, and respond to epidemics.

Q: In part, your projections are based on what we learned from the SARS episode in 2003 and on what we've seen in China so far. You then build projections based on how countries resemble or differ from China. How do you do that? What's the rationale for this approach?

Ideally, from a modeling perspective, we would have enough pandemics and long enough data samples to estimate, using statistical techniques, how important each index has been in explaining past disease outbreaks. Fortunately, we haven't had enough pandemics, so we have to use what is really an informed guess on what we think is important. This is all that we can do given the reality of the data that is available. The alternative of not attempting any quantification at all is less information for policymakers.

Q: What lessons do you want policymakers to draw from your scenarios?

The cost of a pandemic can be very large. The response should be large enough to reduce the effects of the pandemic once it emerges. Low-cost actions such as promoting good hygiene practices are a good place to start, but other actions such as quarantine and other interventions as advocated by epidemiologists, although disruptive, are probably cost effective.

It is far better to invest substantial amounts to reduce the likelihood of a pandemic emerging. This requires investment not only in developed countries' public health systems, but, more importantly, in the public health systems of poor countries. Even with a low and uncertain probability of a serious pandemic with very large costs, the scenarios in the paper imply much larger expenditure than is currently planned by national governments.

It may well be that, despite the scientifically-based warnings of epidemiologists, a future pandemic does not emerge. Even in that case, the money invested in improving public health systems would not have been wasted; it would improve the quality of life for all citizens.

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Fixed interest LIT carnage makes stamping fees worse

Graham Hand

Fixed interest Listed Investment Trusts (LITs) were one of the market's success stories in 2018 and 2019. Faced with low deposit rates, retail investors placed billions into new trusts, in many cases not knowing much about the underlying assets.

Sub-investment grade bonds and private assets found a way into the portfolios of investors looking for less risk in a frothy equity market. Until the coronavirus hit, these LITs traded well, around their Net Tangible Asset (NTA) values, in contrast to many equity Listed Investment Companies (LICs) trading at heavy discounts.

Retail investors now realise they traded one risk for another, and in the space of a month, the market value of eight fixed interest LITs in the table below has fallen by \$1 billion (revalued to 24 March 2020). Some LITs have halved in price since their issue date a few months ago. So severe is the damage, it is unlikely any similar transactions are viable, perhaps for years.

The decision to allow financial advisers and brokers to continue to receive stamping fees from fund managers to promote new issues, a practice prohibited for unlisted vehicles, was a mistake.

Examples of price falls in LITs

We have published many warnings about narrow margins in debt and sub investment grade bonds markets, such as [in May 2019](#): "Global high-yield debt markets seem determined to go beyond the stupidity seen in 2006

and 2007." [And this](#): "History is replete with examples of investors losing their minds and believing the unsustainable is permanent." An article describing the LIT market [published in Firstlinks](#) in November 2019 concluded with a warning from Howard Marks.

The following table shows recent market prices, NTAs and issue prices of eight leading LITs (this table has been updated many times, as the market is changing each day):

Examples of price deterioration in LITs

ASX Code	FundName	Investments	Targeted Annual Return	Issue Price	Latest Price*	Latest NTA**	Price Discount to Issue Price	Price Discount to NTA	Market Value at 23/3 (\$m)
Fixed Income - Global									
NBI	NB Global Corporate Income Trust	High yield bonds of large, liquid companies globally	5.25%	\$ 2.00	\$ 1.08	\$ 1.47	46%	27%	418
PCI	Perpetual Credit Income Trust	Diversified pool of credit and fixed-income assets in Australia and overseas	Cash rate + 3.25%	\$ 1.10	\$ 0.71	\$ 1.06	35%	33%	262
PGG	Partners Group Global Income Fund	Portfolio of private credit investments mostly in the US and Europe ***	Cash rate + 4%	\$ 2.00	\$ 1.11	\$ 1.87	45%	41%	301
KKC	KKR Credit Income Fund	Various global credit investments	6% to 8%	\$ 2.50	\$ 1.27	\$ 2.19	49%	42%	462
Fixed Income - Australian									
GCI	Gryphon Capital Income Trust	Residential mortgage-based securities and asset-backed securities	Cash rate + 3.5%	\$ 2.00	\$ 1.40	\$ 2.01	30%	30%	268
MOT	MCP Income Opportunities Trust	Private credit to companies and other assets (warrants, options, preference shares, equity)	8% to 10%	\$ 2.00	\$ 1.40	\$ 2.02	30%	31%	222
MXT	MCP Master Income Trust	Australian corporate loans	Cash rate + 3.25%	\$ 2.00	\$ 1.57	\$ 2.01	22%	22%	807
QRI	Qualitas Real Estate Income Fund	Commercial real estate loans ****	8%	\$ 1.60	\$ 1.09	\$ 1.60	32%	32%	233
AVERAGE DISCOUNT							36%	32%	2973

* Prices as at COB on 24/3/2020. Prices move significantly each day and these are representative only.

** NTA as posted on 23/2/2020 for 20/3/2020, except KKC which was as at 16/3.

*** Latest NTA released weekly, as at 11/3. **** Latest NTA released monthly, as at 29/2. All others release daily NTAs.

NTA = Net Tangible Assets value.

The table highlights two major issues.

First, there is a large difference in the extent to which managers are recognising asset value write downs. Two large industry super funds, AustralianSuper and Unisuper, this week marked down their unlisted asset values by up to 10% to increase the accuracy of their unit pricing.

The table shows some 'Latest NTA' figures where the asset values have not changed. For example, Qualitas (QRI) makes loans against commercial real estate. It is probably too early for their borrowers to translate the cash flow impact of coronavirus into an inability to service loans, and to know the extent to which companies can access government subsidies. But it unrealistic to assume no impact. Listed property trusts that own commercial property have fallen in price significantly. Qualitas advised in its latest NTA statement:

"QRI's loan portfolio as at current date is not materially impacted by the coronavirus and no impairment has been deemed necessary. The Trust also benefits from investing only in commercial real estate loans secured by real property mortgages, thereby delivering on the Trust's investment objective being to the maximum extent possible providing capital preservation to investors."

In contrast, Neuberger Berman (NBI) holds bonds which trade in the secondary market. Normally, bonds are preferred for their liquidity, but in this case, the NTA suffers because there is a market price. Ultimately, there is no difference between a loan and a bond from the same company if it ranks equally in the capital structure and the company goes into liquidation. NBI's NTA has taken punishment because there are liquidity problems in bond markets and prices have been marked down on little volume.

Here is a video from Neuberger Berman explaining the opportunities that such sell offs have created in the past.



Second, the closed-end nature of LICs and LITs has a downside where the only available source of liquidity is an on-market sale, and sellers have panicked. In unlisted managed funds, the manager sells the asset and meets redemption requests at NTA (or its best estimate of NTA). This is far from a perfect structure in that the manager may be forced to sell illiquid assets, but at least there is an effort to calculate an accurate NTA.

While the investor may take some comfort from the fact that the assets of GCI, QRI and MOT have not been marked down, the investor desire to sell has sent every LIT to a significant discount to NTA. Maybe there's also an assessment that the asset values are unrealistic and the market value is more accurate.

Whichever way you cut it, these investments were promoted as 'fixed interest' with diversified portfolios offering regular income and capital protection qualities, and an expectation of much less volatility than equities.

In a similar table with seven of these LITs plus KKC at \$925 million published in November 2019, the combined market cap was over \$4 billion. This week, it was less than \$3 billion, a loss of market value wealth for retail investors of over \$1 billion.

Loss of liquidity and wide spreads: the example of KKC

The KKR Credit Income Fund (KKC) is the best example of the problems the sector is facing. This LIT raised an extraordinary \$925 million in a few weeks from retail investors, and the only way such an amount was possible for a relatively unknown name was the motivation of stamping fees. At time of writing, the shares are worth \$463 million less than when issued and listed in November 2019, only a few months ago.

The screen shot below shows an additional problem (this shot was taken a few days before the numbers in the table above). KKC is bid at \$1.58 and offered at \$1.92, a spread of \$0.34. No buyers and sellers should transact with such poor liquidity. A buyer has to hit the \$1.92 price, or a seller has to hit the \$1.58 price in order to transact.

Depth - KKC.ASX@TM - Kkr Credit Inc Fund											
Code: KKC.ASX@TM		N	Request								
+	SecCode	Exch	DS	R	Last	+/-	Trend	%	Volume	Open	
	KKC	ASX	TM	R	156	-10		-6.02	519,590	157	
			Bids				Asks				Last 20 Trades
DS	No.	Volume	Price	Volume	Price	No.	DS	Price	Volume	Time	
TM	1	19,000	158	3,237	192	1	TM	156	34,581	14:08:07	
TM	3	20,976	156	5,000	193	1	TM	156	500	14:08:07	
TM	3	50,159	155	5,000	194	1	TM	157	2,469	14:08:07	
TM	1	19,480	154	12,500	195	1	TM	166.5	5,446	14:08:07	
TM	1	10,000	152.5	1,457	196	1	TM	170	6,004	14:08:07	
TM	1	5,000	152	3,047	198	1	TM	170	1,000	14:08:07	
TM	1	40,000	151	5,034	200	1	TM	168.5	4,000	14:02:57	
TM	2	10,908	150.5	2,996	204	1	TM	165	2,340	14:02:55	
TM	11	104,386	150	3,250	210	1	TM	160	1,060	14:01:19	
			300,407					158	5,596	14:01:04	

Two important lessons here:

1. Transact at a specific price rather than 'at market'. An investor placing an order to buy KKC 'at market' would be filled at \$1.92 (and even higher for volume) whereas the previous trade was \$1.56. For an investor who thinks KKC represents value after the sell off, it's better to place a buy order at say \$1.59, the highest bid in the market, to draw out a seller desperate to exit at any price.
2. Review the spread and depth before trading. KKC was illiquid on this day, as shown by the tiny trades between the times of 14.01 and 14.08. A seller could quickly chase the price even lower.

An adviser who put his clients into KKC at issue date told me he thought it was outstanding value, because he believed the portfolio had avoided the more damaged bond sectors of energy and travel. I pointed out to him that over half the investments are rated CCC or below, or unrated, and companies in the US are about to be hit by a recession, regardless of how much Donald Trump spends. KKC has traded down to \$1.21, less than half its issue price.

This loss of liquidity is typical of a small LIC with \$10 million of assets, but KKC was issued with a value of \$925 million!

Problems compounded by poor selling by brokers and advisers

Treasurer Josh Frydenberg is rightly preoccupied saving the nation from coronavirus, but it means he has been distracted from an issue high on the agenda only a couple of months ago. The problem of financial advisers and brokers accepting stamping fees on new LITS and LICs was a hot issue when he wrote to ASIC in January 2020 expressing *"my concern that ASIC's analysis revealed some correlation between higher stamping fees and underperforming LICs."*

The market collapse highlights the very issue policymakers should address. Financial advisers and brokers were paid an incentive, or stamping fee, by fund managers to promote new issues to their clients. It's a conflict between the best interests of the client and the best interests of the adviser, and it has contributed to a destruction of wealth.

Our articles have been critical of the continuing ability to pay stamping fees, including the following in [this article](#):

"Can anyone deny that many brokers and advisers are motivated by the selling fee? Some of the advisers rebate the fee but what about the rest? Was a LIT offered in a particular month the best fixed interest fund available, and so much so, it deserved a billion dollars? That's a stretch."

For those wanting more details on stamping fees and poor selling, see the Appendix.

Is this a buying opportunity?

There's an important difference between believing that:

1. These LITs are good investments over the long run, and
2. These LIT prices are the lowest we will ever see.

It's more likely that most of the LITs will recover at least some of the loss over time than guessing correctly that this particular moment is the bottom of the market. They might be even better value in a week or a month. Nobody knows where coronavirus is taking us.

On the surface, a fund manager telling us the assets are worth \$2 on a LIT trading at \$1.40 looks like a bargain, but they do not really know the value of the assets. Let's face it, thousands of investors were convinced to buy the LIT for \$2 and it probably looked good at \$1.80, so is \$1.40 the floor? No idea. If the fund managers really believe the assets are correctly valued, they should be buying their own stock back.

What should Josh do?

The Treasurer has other priorities, but one day, he will return to the deliberation on stamping fees. If the Liberal Party had refused to listen to the lobbying demanding the exemption from FoFA in 2014, most of these LITs would either not have happened or would have been a fraction of their issue size. Retail investors might have saved a billion dollars.

In any case, the market for new fixed interest LITs is closed for a long time, so you could say the market eventually fixed the fee problem. How efficient it is.

Appendix

A brief recap (ignore this section if you've been following the subject)

We have covered the stamping fee issue in detail including criticism of a policy which encourages a conflict of interest and not acting in a client's best interests. We will not repeat here the points made in these articles:

5 Feb 2020: [LIC/LIT stamping fees survey](#)
29 Jan 2020: [Survey on attitudes to LIC fees](#)
22 Jan 2020: [Three overlooked points on the LIC/LIT fee battle](#)
8 Jan 2020: [Authorities reveal disquiet over LIC fees](#)
8 Jan 2020: [1 January is a moment of truth for the wealth industry](#)
18 Dec 2019: [Advisers and investors in the dark on LITs and LICs](#)

On 27 January 2020 (seems like a lifetime ago), Josh Frydenberg started a review process when he said:

"The Morrison Government is today announcing that Treasury will undertake a four week targeted public consultation process on the merits of the current stamping fee exemption in relation to listed investment entities.

Stamping fees are an upfront one-off commission paid to financial services licensees for their role in capital raisings associated with the initial public offerings of shares.

Public consultation will allow the Government to make an informed decision on whether to retain, remove or modify the stamping fee exemption in order to ensure that the interests of investors are protected and capital markets remain efficient and globally competitive."

Firstlinks has made a submission to the enquiry, but to date, there has been no response.

Here's how the problem arose. The Future of Financial Advice (FoFA) regulations prohibit payments from product manufacturers to financial advisers. However, in 2014, the Coalition granted an exemption from FoFA for financial advisers and brokers to continue to receive commissions in the form of 'stamping fees'. Under [Corporations Regulations 7.7A.12B](#):

*"A monetary benefit is **not** conflicted [remuneration](#) if it is a stamping fee given to facilitate an approved capital raising."*

Graham Hand is Managing Editor of Firstlinks. This article is general information and does not consider the circumstances of any investor. Prices are constantly changing and numbers quoted in this article were correct at time of writing on 23 March 2020. Fund managers such as Perpetual and Neuberger Berman mentioned in this article are sponsors of Firstlinks.

Optimism among forecasts of the COVID-19 peak

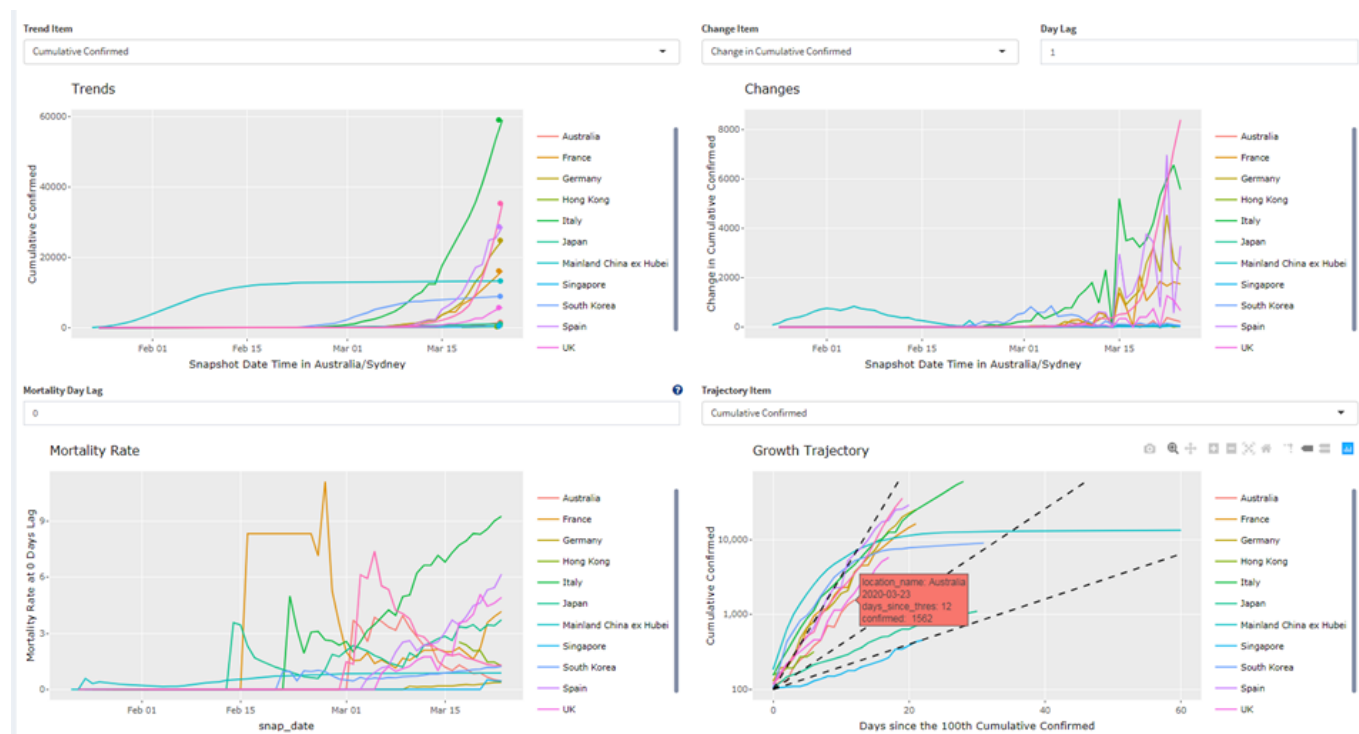
Christopher Joye, Kai Lin

As we move through 'peak virus', our team has spent time reflecting on significant trigger points that might precipitate fundamental changes in future market sentiment.

In this note, we publish preliminary internal forecasts for the distribution of COVID-19 infections in the US and Australia focussing on the time intervals during which we are likely to observe a demonstrable reduction in infection rates after the application of more expansive testing and containment policies. We offer a range of scenarios, conditioning off the reaction functions in a number of different countries, including Italy, South Korea and China, with various discounts to proxy for inefficient or impaired containment in the US and Australia.

A clear deceleration in US infections and fatalities is likely to be a necessary condition for more constructive global market sentiment. We find that it is reasonable to expect US and Australian infection numbers to peak in early to mid-April with a decline evident 10 to 20 days thereafter, although there are risks to these forecasts.

There is also emerging evidence of a game-changer for the treatment of the COVID-19 disease and the observed fatality rates, which is the advent of an effective and cheap anti-viral drug that kills the virus in the form of hydroxychloroquine. This has been [aggressively promoted by President Trump in recent days](#). We discuss this at some length at the conclusion of our forecasting analysis.



(The image above is a screenshot taken from our real-time global infection and fatality rate tracking system, which automatically updates every 15 minutes.)

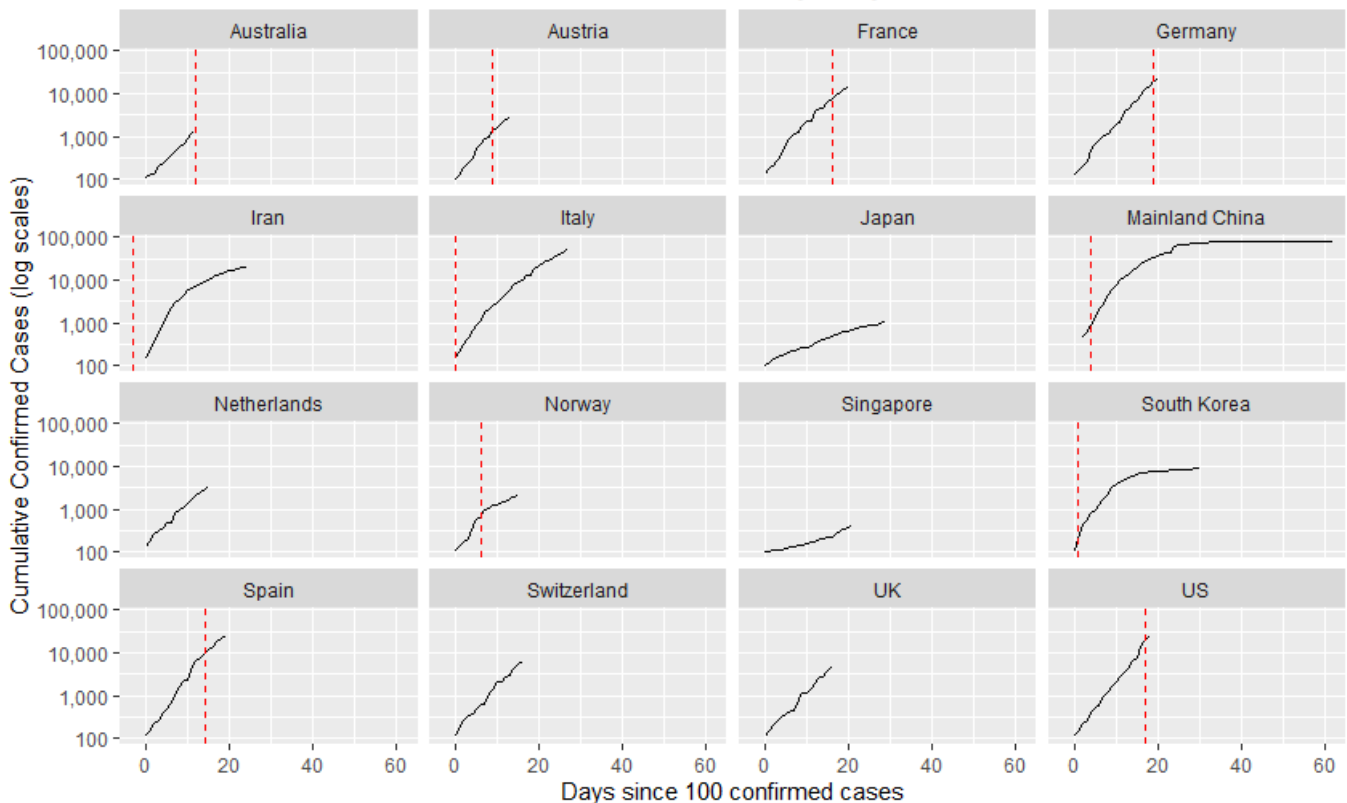
1. Forecasting possible COVID-19 infection distributions

The objective is to forecast country (especially US) daily case counts, eventual case count, and time to peak daily new cases. This is done by first visualising the case growth trajectories, the changes in case growth rates over time, then modelling this growth rate and applying it for case forecasts.

1.1 Case growth trajectory

The first observation is that cumulative total confirmed case counts in countries around the world mostly follow an exponential growth curve, once the infection has taken hold within the country (arbitrarily defined as having at least 100 confirmed cases). See plot 'Case Growth Trajectory'. A straight line on this plot, where the y axis is on a log scale, means we have exponential growth. Of course, government intervention can change the trajectory. In this plot, vertical dotted lines indicate the beginning of major intervention policies, defined as mass closures of services, or extremely comprehensive testing regime.

Case Growth Trajectory



1.2 Evolution of the Case Growth Trajectory

Next we investigate the evolution of the above case growth trajectory. As seen above, the trajectories are rarely a single straight line. Most have a slight trend towards being a less steep line. Some appear to have bigger drops in steepness in response to intervention measures.

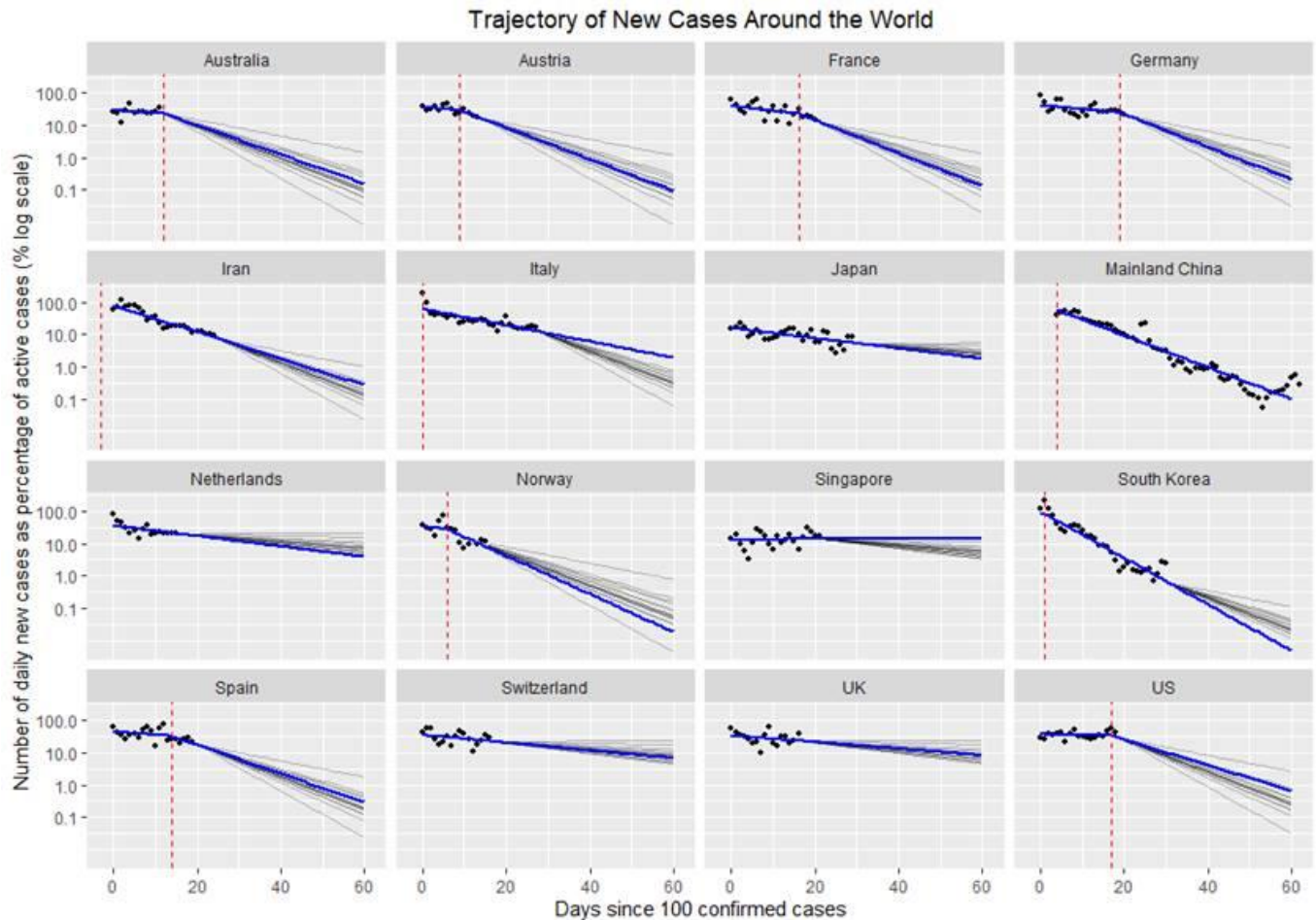
One measure of infection rate is the number of daily new cases as a percentage of the number of outstanding active (ie, infectious) cases. In the plot 'Trajectory of New Cases Around the World', we plot this against the days since 100 cases. We see that this percentage mostly holds constant in countries without intervention measures (eg, Australia and US), indicating unchecked exponential infection growth.

Countries with extreme intervention measures, such as China and South Korea, have a curve with steep negative slope, indicating the process of bringing the infection under control. There is visual suggestion that intervention measures reduce the slope of this line. Many European countries also exhibit a slightly negatively sloped line even before major interventions.

What is useful about this curve is that once plotted in this manner with the y axis in log domain, the curves appear piecewise linear. This allows the characterisation of countries' trajectories via a single coefficient, that being the slope of the line in this plot. This allows us to do what-if analysis, by applying the coefficients of other countries (eg, countries with successful containment strategies such as South Korea) to countries still in the earlier stages of applying intervention (eg, the US).

In the plot below, blue lines are extrapolated from the country's observed past data (eg, the US itself and the global average effect of interventions), while the grey lines are taken from applying the coefficient of other countries from today (eg, applying coefficients from South Korea, China, Italy etc to the US from today onwards).

For completeness, the curves below are all fitted via a linear mixed effect model, which includes fixed effects for global intercept, global slope for days since 100 cases, global slope for days since intervention, plus random effects for these mentioned variables (by country).



2. Forecast of cases

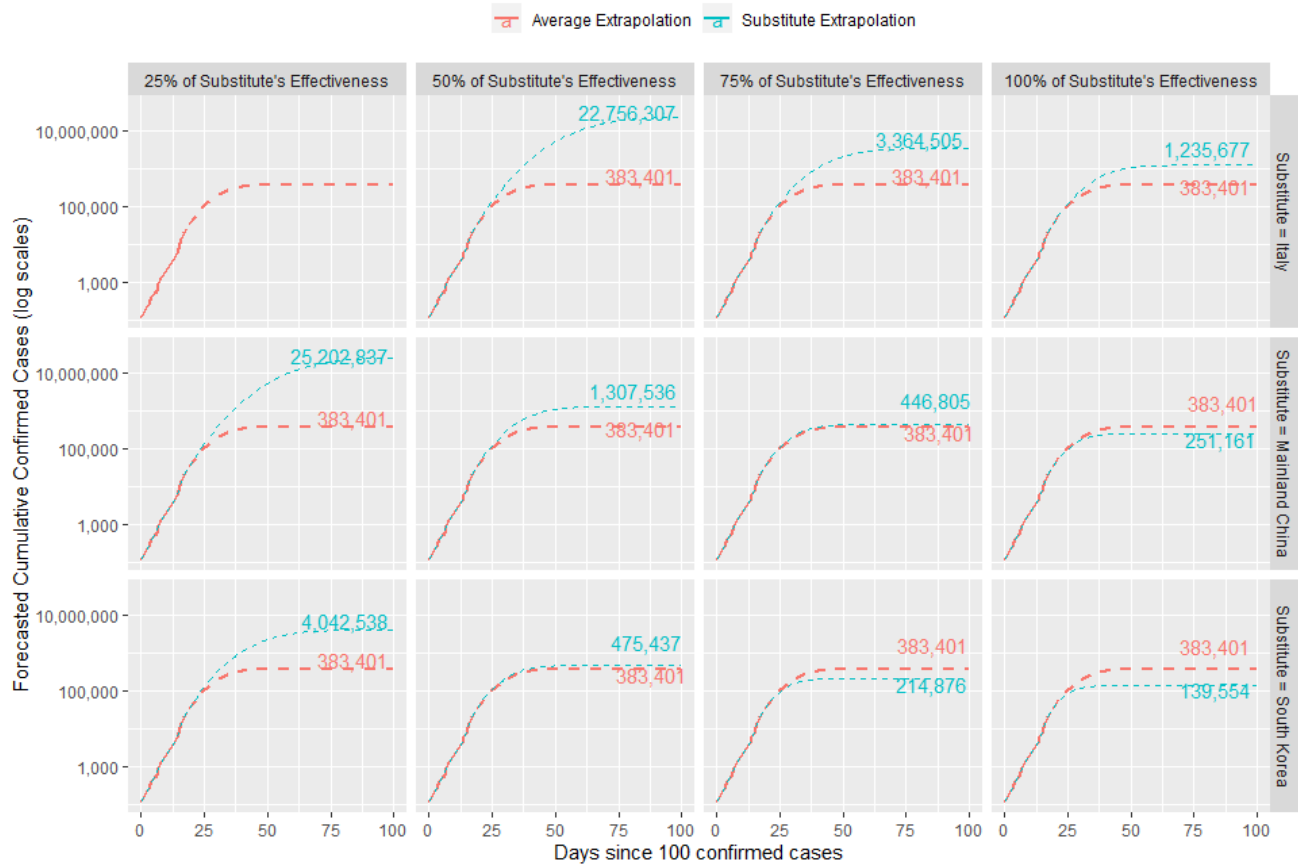
By utilising the trajectory evolution predictions from above, we can forecast case numbers. As a technical note, the above trajectory evolutions require an estimate of recoveries and deaths. This is estimated as the confirmed case count from 14 days ago, as the disease is known to run its course over roughly 14 days. Back-tests show this method is sufficient for its usage, as minor errors will not affect end results much.

Below we plot the forecasted cumulative case counts for the US. One method (light red line) extrapolates off US trajectory curve and uses the global average effect of interventions on the trajectory. The second method (light blue lines) uses the trajectory evolution curves from substitute countries, such as Korea, China and Italy, at 25%, 50%, 75% and 100% of the substitute country's effectiveness.

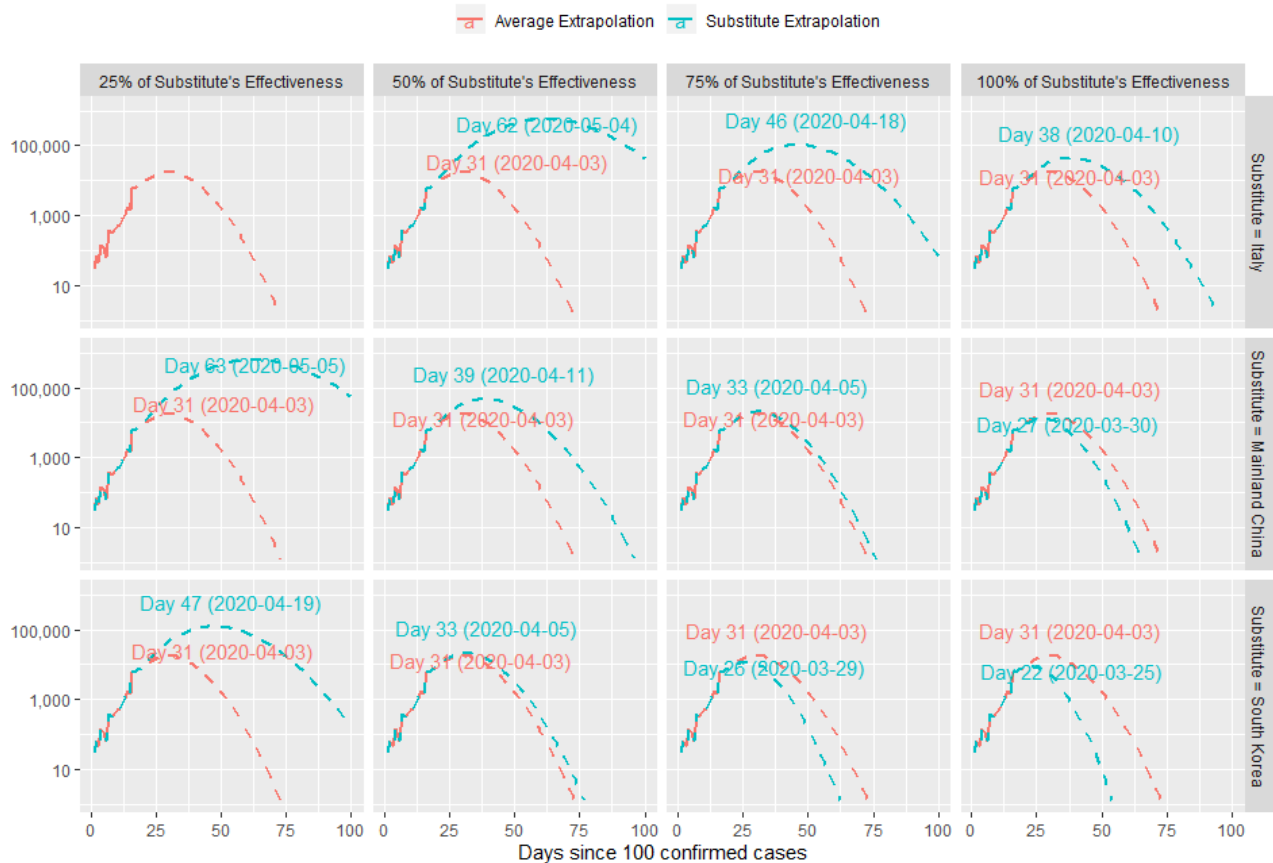
For example, the light blue line from bottom right corner shows that if the US has 100% of South Korea's efficiency in driving down the case trajectory from today, there will be 139,600 cases eventually. Similarly, in the top right corner plot, the light blue line shows that if the US has 100% of Italy's intervention response efficacy, the eventual case count would be around 1.2 million. Otherwise, if the US only has a global average effectiveness of intervention, then the eventual case count will be around 383,000. Note that dotted lines in the plot denotes projections.

The market is known to somewhat irrationally focus on the hump in daily new cases. We would, however, recommend viewing the data in the log domain as shown in Figure 'Trajectory of New Cases Around the World'. However, for visual ease, we have also plotted the forecasted daily new cases. If the US has 100% of South Korea's efficiency in driving down new cases, then the peak will be around March 25 (ie, very soon) and April 3 if at 50% efficiency. Similarly, if the US has 75%-100% of Italy's efficiency, then the peak will be around mid-April.

US Forecast Based on Average Extrapolation and Substitute Country Extrapolation



US Forecast of Daily New Cases Based on Average Extrapolation and Substitute Country Extrapolation



3. Key forecast findings

In this exercise, we explored the infection trajectory of countries currently with the highest Covid-19 cases. We found that, in the log domain, the daily new cases as a percentage of outstanding cases form clear piece-wise linear trends. This facilitates the modelling of each countries' case trajectories using linear coefficients, thus enabling the forecasting of cases, both based on each country's own fitted trajectories with average global intervention effect, as well as via substituting in other countries' trajectories.

For example, by substituting in the South Korea intervention response to the US trajectory to date, and conservatively taking a 50% reduction in efficiency compared to the South Koreans, the US is forecasted to experience peak daily new case count around April 5. A demonstrable decline in US infections should on this basis be observed by mid-April. Similarly, by substituting the Italian intervention response to the US trajectory to date, the forecast peak will arrive at around mid-April if we assume 75% to 100% of the Italian response's efficacy. Again, a clearly declining trend in infections might only be evident by late April. Applying the same assumptions to a country like Australia, infection rates are likely to peak around early to mid-April with a decline in cases observed in the second half of the month.

Within our analysis and forecast of cases, we used the assumption that each country is a homogeneous entity, and that a single coefficient is used to model the trajectory of each nation's case growth. One potential source of inaccuracy stemming from this is that if a country, such as the US, adopts interventions a few states at a time, as opposed to a coordinated nationwide effort, then the time to peak daily new case count could be substantially elongated. In this scenario, much like the game whack-a-mole, the US government may be making intervention decisions based on the goal of keeping the national daily case count manageable but constant until a vaccine is ready, in which case the time to peak daily case count may be, by construction, the time to a vaccine (eg, 12 months). This would be highly sub-optimal.

4. The game-changer: A near-term anti-viral solution?

In addition to a clear decline in infection and death rates, there are several other event risks that could impact market sentiment. Arguably one of the most interesting is the near-term availability of a tractable anti-viral solution.

It would appear that there are two cheap, publicly available, and scalable drugs that have existing FDA approvals for other purposes: **chloroquine (C)**, which is an anti-malarial drug; and its much safer derivative, **hydroxychloroquine (HC)**, which is used to treat auto-immune disease and arthritis.

Based on the available data, it would seem that HC in particular has a reasonable probability of being able to kill the virus in the first couple of weeks infection (before it has permanently damaged lung capacity and triggered an immune system response).

[In recent days President Trump has actively promoted HC use in combination with an anti-biotic known as azithromycin or Z-Pak in his press conferences and online.](#) The FDA has confirmed they are allowing US hospitals to employ HC and Z-Pak on a compassionate basis until formal FDA approval for COVID-19 use is secured, which is expected soon.

We do know that [both C and HC kill the virus in vitro](#). A leading global infection disease expert working in French hospitals has published results of a non-randomised and relatively small clinical trial of his patients that has shown encouraging findings (see the [paper here](#) and a detailed [video with the key author here](#)). There is also [this video interview](#) with a US physician who is treating 100 patients with HC at an east coast hospital who claims they have had similar success with the drug and no fatalities.

It would appear that the Chinese figured some of this out in mid-February, and have since been prescribing C as a [standard therapeutic for COVID-19 patients](#). A [Wall Street Journal article](#) published by two senior practicing doctors on 23 March provides a good summary:

A flash of potential good news from the front lines of the coronavirus pandemic: A treatment is showing promise. Doctors in France, South Korea and the U.S. are using an antimalarial drug known as hydroxychloroquine with success. We are physicians treating patients with Covid-19, and the therapy appears to be making a difference.

Hydroxychloroquine is a common generic drug used to treat lupus, arthritis and malaria. The medication, whose brand name is Plaquenil, is relatively safe, with the main side effect being stomach irritation, though it can cause echocardiogram and vision changes. In 2005, a Centers for Disease Control and Prevention [study showed](#)

that chloroquine, an analogue, could block a virus from penetrating a cell if administered before exposure. If tissue had already been infected, the drug inhibited the virus.

On March 9 a team of researchers in China [published results](#) showing hydroxychloroquine was effective against the 2019 coronavirus in a test tube. The authors suggested a five-day, 12-pill treatment for Covid-19: two 200-milligram tablets twice a day on the first day followed by one tablet twice a day for four more days.

A more recent French study used the drug in combination with azithromycin. Most Americans know azithromycin as the brand name Zithromax Z-Pak, prescribed for upper respiratory infections. The Z-Pak alone doesn't appear to help fight Covid-19, and the findings of combination treatment are preliminary.

But researchers in France treated a small number of patients with both hydroxychloroquine and a Z-Pak, and 100% of them were cured by day six of treatment. Compare that with 57.1% of patients treated with hydroxychloroquine alone, and 12.5% of patients who received neither.

What's more, most patients cleared the virus in three to six days rather than the 20 days observed in China. That reduces the time a patient can spread the virus to others. One lesson that should inform the U.S. approach: Use this treatment cocktail early, and don't wait until a patient is on a ventilator in the intensive-care unit.

A couple of careful studies of hydroxychloroquine are in progress, but the results may take weeks or longer. Infectious-disease experts are already using hydroxychloroquine clinically with some success. With our colleague Dr. Joe Brewer in Kansas City, Mo., we are using hydroxychloroquine in two ways: to treat patients and as prophylaxis to protect health-care workers from infection.

We had been using the protocol outlined in the research from China, but we've switched to the combination prescribed in the French study. Our patients appear to be showing fewer symptoms.

Our experience suggests that hydroxychloroquine, with or without a Z-Pak, should be a first-line treatment. Unfortunately, there is already a shortage of hydroxychloroquine. The federal government should immediately contract with generic manufacturers to ramp up production. Any stockpiles should be released.

There are probably several reasons why we have not heard more about HC until the last week or so. First, a national leader promoting HC as a cure would create a run on the drug, denying it to the sick suffering from lupus and other auto-immune diseases, and those with rheumatoid arthritis. This has already happened in Australia and the US following Trump's advocacy. Second, even with scalable production capacity, it will take time to ramp-up. Encouragingly, this process has already started. One [US journal reports](#):

Novartis has [pledged](#) a global donation of up to 130 million hydroxychloroquine tablets, pending regulatory approvals for COVID-19. Mylan is [ramping up production](#) at its West Virginia Facility with enough supplies to make 50 million tablets. Teva is [donating](#) 16 million tablets to hospitals around the U.S.

This brings us to a third insight, which is that you still need containment to flatten the infection curve and massively reduce reproduction rates, or ROs, ideally below 1.0, if you are to avoid mass infections within any given community. If national leaders start promoting cures, there is a risk that there will be widespread resistance to containment, massively increasing transmission rates, and the need for more drugs that may have capacity constraints.

Christopher Joye is Co-Chief Investment Officer and Kai Lin is a Senior Data Scientist at [Coolabah Capital Investments](#) (Smarter Money Investments). This article is general information and does not consider the circumstances of any investor.

Rob Arnott on flattening the virus curve, not the economy

Graham Hand

Rob Arnott is Chairman and Founder of Research Affiliates and is widely regarded as a pioneer in unconventional portfolio strategies, including recognising the potential of 'fundamental investing', now commonly called 'smart beta'. He has published over 130 articles in distinguished academic journals and works to build bridges between academic theorists and financial markets.

GH: There's only one subject we can start with. How long do you think it will take for the US to get on top of the coronavirus pandemic?

RA: Look at what's happened in Taiwan, South Korea and Japan. These are modern, developed world democracies, not dictatorships, and they dealing with coronavirus directly instead of crushing their economies. They are massively testing people, and if you want to be tested, you are tested. And if you test positive, they find out who you've seen in the last seven days and they test them as well. And whoever tests positive is put on strict and monitored home quarantine. The US and European answers are to close the economy and then throw money at it.

GH: The people in Asian countries seem to accept the need to comply more readily.

RA: Yes, and the rules are mandatory and people can go to the hospital if they need to. But if it's just flu-like symptoms, don't waste more hospital resources in a time of crisis. If you step out of the house, you wear a mask and somebody will be there checking peoples' temperatures. And if you've got an elevated temperature, back to square one where you will be tested and you may be quarantined as we flatten the curve.

It's pragmatic and it doesn't intrude on the workings of the macro economy. Japan, as an example, yesterday had 36 cumulative deaths, but they've also had 3,000 less deaths from seasonal flu than they did last year. It's a fantastic silver lining, although 36 people died, 3,000 were saved.

GH: And 50,000 people a year die from the influenza in the United States.

RA: Exactly. And if this new virus kills 50,000 people, it would not be a surprise. So we're crippling the US economy for maybe a doubling of seasonal flu deaths. That strikes me as borderline insane. That's not a political statement about the current administration as both parties share the same policies. They want to crush the economy and then write cheques. It's astoundingly-badly run.

GH: Would Americans tolerate the personal intrusions?

RA: We have to look at the countries that are getting it under control and ask, what are they doing that we can borrow in a freedom-loving democracy? And the short answer is you can do pretty much all of the things they're doing. Not the command and control they do in China, but the things that worked well in those three countries.

GH: But take the example of Singapore. Anyone who comes in from overseas must go into quarantine and register their mobile phone number, and the location of the phone is checked and they receive a text message a few times a day which they must respond to. And to confirm they are in isolation at home, officials visit the house and check the phone hasn't simply been left there. In the land of free enterprise and individual rights, in both the US and Sydney, would our societies tolerate such things?

RA: They might object to Big Brother knocking on their door multiple times a day, but they need to realise that aggressive actions are needed for a few weeks, and mandatory quarantine is the trade off to stop the spread. I hold to libertarian values and I'm a huge believer in human freedom, but that does not include the right to inflict lethal pathogens on your fellow citizens.

GH: Australia's approach is closer to Europe and the US than Singapore or South Korea, and our market is off another 7% today, taking it over 30% down because we are closing down the entire economy. There's no way back now. How do we avoid losing thousands of companies and millions of jobs and heading into a depression in both our countries?

RA: Yes, it's a government policy-inflicted depression that should have been a short, sharp recession. That said, if the government doesn't compound these missteps, it could still be a short, sharp depression. Goldman Sachs now estimates there will be two and a quarter million new jobless claims within a week, which would be an all-time record. I think they're sandbagging, I think it'll be more than that. In the next three weeks, we could see 10 million new unemployed.

In the US, 10 million people work in aviation, 14 million people in restaurants, and half of those jobs are gone. The numbers will boggle the mind. And both sides are trying to politicise it and blame the other party. Winston Churchill is credited with saying, "Men and nations behave wisely when they have exhausted all other resources." There's a lot of truth in those comments, but we'll find our way back eventually. Roll the clock forward five years and this will be a bad memory.

If that's correct, then sometime in the coming weeks or months, there will be a stupendous buying opportunity. I don't think we're there yet. The time to buy is when we're at peak fear. Right now, we're at 20% growth in infections per day. That's 10-fold growth every 12 days. If those numbers continue on that exponential growth curve, we go from 200,000 cases outside China to 2 million to 20 million in less than a month.

GH: Yes, we have trouble grasping the numbers. It's terrible that 10,000 people have died but the real issue is the growth path and the ability of the health system and resources to cope.

RA: Yes, when do we get it under control so that the growth starts to slow. People need to take personal responsibility, stay home, avoid crowds, wash hands, and we can sharply reduce the spread. If we're idiots, slowing growth might take more than a couple months.

GH: Do you really think there's a good chance of sensible behavior by enough of the 300 million Americans?

RA: Yes, but not quickly enough. We should post the National Guard at the entrances to stores and apartment buildings and offices and screen people using remote temperature gauges as they walk in. Anyone with a fever goes for a test. It's mandatory and if you don't, there's a big fine.

There's another angle. I'm in my mid-60s, which means I'm in roughly the 1% mortality range, I have a modest chance of dying from it. Okay, but I have one in 100 chance of dying this year anyway. People under 50 have about a 0.1% chance of dying from something else, people in their 80s have a 15% chance of mortality from coronavirus but they have about a 15% annual chance of dying anyway.

The way I look at it is, you have this health emergency, that seems likely to be temporary. It doubles your risk of dying in 2020 if you catch the virus. But we're destroying the economies of Europe, North America and Australia with the lunacy of these policies. The focus should be on taking people who are at risk and saying, "You do not have a human liberty to infect others."

GH: Research Affiliates is well known its long-term market forecasts. How will they change?

RA: When markets are down 30% plus, the forward-looking return is improved by 2% or 3% if all else equal. But all else equal is not equal, especially for industries such as airlines and restaurants and so forth. Other parts of the market will see widespread bankruptcies. The weaker players go out and that gives the survivors a clearer runway and less competition, and higher profit potential in the aftermath in recovery. And the government deficit spending has a one-to-one relationship with corporate profits, and the US will spend trillions on this.

GH: What happens to the US government debt to GDP ratio, which was already heading rapidly towards the north east corner of the chart?

RA: It will just get worse and worse until it breaks. It's like Thelma and Louise heading towards the Grand Canyon cliff. Everything looks fine until you go over the cliff. We're playing a very reckless game, and the end game is almost certainly be severe inflation to reduce the real value of the debt to a manageable level.

GH: How do you feel about the messages investment professionals give their clients to 'stay the course' and 'hold your investments', and then the market continues to fall each day? We said it at 10% down and 20% down and now it's 30% down. Should we modify these messages more towards taking the opportunity to rebalance portfolios into a more conservative stance? It's not a time for aggressiveness.

RA: Well, taking risk off the table was obviously better a few weeks or months ago than today. I don't harbour any illusions that I have a crystal ball, but the day of fear will come soon as people start to see how fast these numbers are growing. Then again, when the number of infections crosses a million, then when the deaths cross a quarter million. These things are all coming. The main thing, though, is to avoid doing stupid things in terms of our own personal health, for the sake of everyone.

From an investment perspective, you want to make sure that three months from now, you're ready and back to a 'risk on' stance. A year from now, I don't see this health emergency getting any worse. It's a 1% mortality rate for older folk based on the best-case study, the Diamond Princess, where everybody was tested. If this year, we wind up with as many people dying from coronavirus as from ordinary seasonal flu, that will shock a lot of people but it shouldn't.

Graham Hand is Managing Editor of Firstlinks. This article is general information and does not consider the circumstances of any investor.

Watch this ratio as market volatility escalates

Jordan Eliseo

The sharp correction in global equity markets since late February 2020 is leading investors to revisit the asset allocation in their portfolios, with safe haven assets like government bonds and gold outperforming risk assets over this time period.

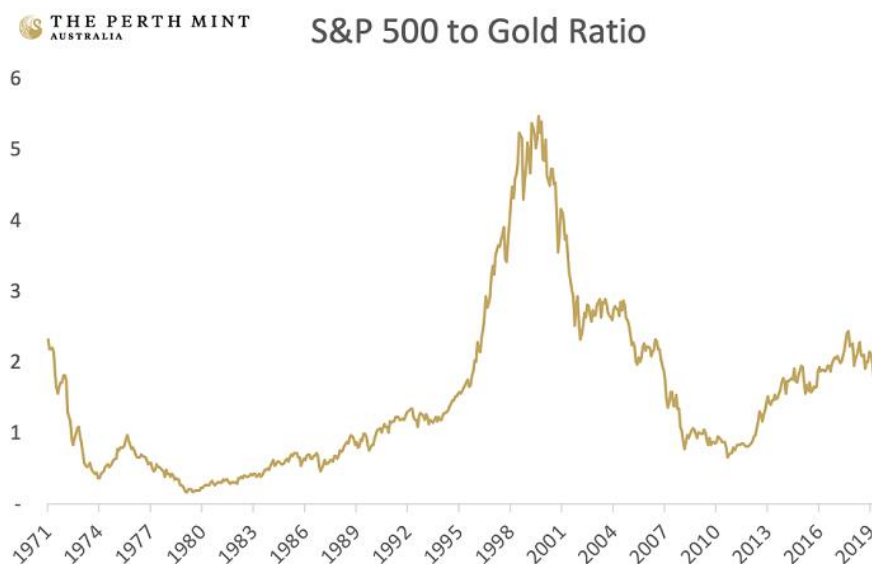
One ratio that might be of interest to Australian investors looking to protect and build wealth in the current environment is the 'S&P 500 to Gold' ratio. This ratio measures how many troy ounces of gold you could purchase with one 'share' of the S&P 500. For example, if gold was trading at USD1,000 per troy ounce, and the S&P 500 price index was at 1,000 points, then the ratio would be 1.

A gauge of the market's mood

The reason this ratio is popular and worth monitoring is that it can easily gauge the 'mood' of the investment community. A low ratio indicates investors are feeling pessimistic about the outlook for the economy and financial markets, whilst a high ratio suggests investors are optimistic.

Many believe a low ratio indicates that gold is expensive relative to equities, whilst a high ratio indicates that equities are expensive relative to gold.

The chart below plots the movements in the S&P 500 to Gold ratio from the beginning of the 1970s through to the end of last month, with the ratio sitting at 1.86 at the end of February 2020.



The chart highlights that there have been four distinct multi-year trends in the S&P 500 to Gold ratio over the last fifty years.

- A decline in the ratio throughout the 1970s, as stagflation saw equity markets disappoint and gold prices soar. The ratio fell from over 2.25 to below 0.2 between 1971 and February 1980.
- An increase in the ratio throughout the 1980s and 1990s, as equities embarked on one of their greatest ever bull-market runs and gold prices languished in a two-decade bear market. As the chart highlights, the ratio peaked at almost 5.5 in August of 2000.
- A decrease in the ratio from August 2000 through to August 2011, driven by a multi-year bull market in gold which saw the price rise from below USD 300 to above USD 1,800 an ounce. Equities were battered by the NASDAQ crash, the September 11, 2001 terrorist attacks and the Global Financial Crisis, which contributed to the ratio dropping from 5.47 to just 0.67 during this period.
- An increase in the ratio from 0.67 in late 2011 to 2.45 by September 2018. This was driven by a rally in the S&P 500 where it rose from 1,219 to 2,913 points and gold prices (in US dollars) fell by 35% over this time period.

The table below plots the price of gold, the price level of the S&P 500, and the S&P 500 to Gold ratio at each of the inflection points mentioned above. It also details the reading as at the end of Friday 13 March 2020, when data for this article was collated.

Date	S&P 500	Gold Price (oz)	S&P 500 to Gold Ratio	Outperforming Asset
31/12/1971	102.09	43.85	2.33	
29/02/1980	113.66	637.00	0.18	Gold outperforming equities
31/08/2000	1,517.68	277.50	5.47	Equities outperforming gold
31/08/2011	1,218.89	1,823.30	0.67	Gold outperforming equities
30/09/2018	2,913.98	1,191.69	2.45	Equities outperforming gold
13/03/2020	2,711.00	1,529.00	1.77	Gold outperforming equities

Source: The Perth Mint, Reuters

The ratio has begun to turn down again

The table above highlights the fact that the S&P 500 to Gold ratio has begun to move lower over the past 18 months, falling from 2.45 at the end of September 18 to 1.77 on Friday March 13, 2020.

This demonstrates the fact that gold has outperformed the S&P 500 recently, with the USD price of gold up by 28.31%, whilst the S&P 500 has declined by 6.97% over this time period.

This is important as a declining ratio will likely encourage further investment into gold going forward, particularly when the fall in the ratio is being driven by heightened volatility in equity markets.

In periods where gold and equities rise together (like they did for most of 2019), there is minimal to no opportunity cost if a portfolio manager or personal investor doesn't own gold, as their stock portfolio is growing.

Gold going up alongside the equity market is a curiosity to many investors. Gold going up whilst equities are tanking and fear abounds is an entirely different phenomenon. One that typically leads to an increase in all types of investors wanting to own the precious metal.

What happens next?

From 1971 through to the end of February 2020, the S&P 500 to Gold ratio has averaged 1.54, roughly 13% below the 13 March 2020 reading of 1.77. By this metric, gold is somewhat cheap relative to equities, though nowhere near as cheap as it was on a relative basis back in August 2000, when the ratio was above 5. Gold is also not as expensive as it was on a relative basis in February 1980, when the ratio bottomed out at 0.18.

Whilst no one can state definitively which way this ratio will move going forward, there is a good chance it will continue to decline, with gold continuing its recent outperformance relative to equity markets.

Even if the impact of Coronavirus is less severe than currently anticipated it remains a fact by many metrics, including price to sales and cyclically adjusted price earnings ratios, that equity markets even after their recent correction are still expensive by historical standards.

To that end, whilst the recent pain we have seen in equity markets has been swift, it has not yet been brutal, at least not relative to prior periods where equities were trading at such lofty multiples, with historical drawdowns of over 50% not uncommon.

The policy response that we have seen from central banks since late February, coupled with already low to negative real interest rates and government bond yields, will of course provide some support for equity markets going forward, but history would suggest it will also benefit gold. Indeed, research from The Perth Mint looking at investment returns from 1971 to 2019 found that gold delivered average annual increases of just over 20% in years where real interest rates were 2% or less, like they are today.

Given all of these factors, the strategic case for including gold in an investment portfolio today remains compelling.

Jordan Eliseo is a Senior Investment Manager at [The Perth Mint](#), a sponsor of Firstlinks. The information in this article is for general information only and should not be taken as constituting professional advice from The Perth Mint. The Perth Mint is not a financial adviser. You should consider seeking independent financial advice to check how the information in this article relates to your unique circumstances.

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Note to Australia: be more French in the COVID-19 war

Andrew Baker

I am currently stuck in rural France on Day 6 of a total national confinement, about to enter a period of unknown duration in which it will be impossible to return to Australia. All passenger flights, as far as I know, cease in the next few days, for a month at least. That will likely coincide with the initial peak of the COVID-19 epidemic in France, making it a bleak time.

Total confinement is pretty close to being under house arrest. So I thought I would share what it has been like here, and my thoughts about what Australia can take from it.

France moved to wartime conditions

Like virtually all countries, France was caught short by the exponential spread of COVID-19 through its population. But shaken by the Italian experience, which increasingly resembles a horror movie, it has taken the most decisive actions in the western world. Macron has realised quickly that this is a shift to essentially wartime conditions.

It was just 8 days ago that all cafes, bars and restaurants in France were closed on Saturday night, with just 4 hours' notice, in the interests of social distancing. We were in a favourite restaurant at the time of the announcement and it is fair to say that everyone, patrons and staff alike, were stunned. However, like Sydney's Bondi Beach experience, the change in behaviour was slow to take effect - the parks and Seine in Paris were crowded with people the following day in beautiful spring weather.

On last Monday a total national confinement of at least 14 days was announced in France, taking effect Tuesday. All shops were closed, excluding supermarkets and other food stores, petrol stations, medical (including vets), and tobacconists (this is France after all). Virtually everything else is closed too, including open public spaces such as parks. Schools and universities were closed 2 weeks ago, and I suspect will not re-open until after the northern summer holidays.

We're now on day 6 of the confinement, and in theory there are only 8 to go. But most expect that it will be extended by another 1-2 weeks beyond the original 14 days.

During this period, you are expected to stay home and remain indoors pretty much all the time; as noted, it's not much different from house arrest. You can leave the house, but only for very specific reasons:

- To go to work (if you can't work remotely)
- To buy food
- For medical reasons
- Urgent family needs
- Individual exercise (but must be within 2 kilometres of your home) or walking your dog.

Every time you leave the house for one of these purposes, you must complete a government form relating to the above, and carry it with you along with ID. There are police roadblocks across France checking drivers for compliance, and patrols of cities and towns checking pedestrians too. Non-compliance brings a fine of at least \$60. A huge number have already been issued.

My day looks like this too. I take the dog outside first thing. I exercise morning or night. I might walk to the *supermarche* or *boulangerie*. I take the dog around the block a few more times during the day, and we take a long walk together before dinner - carrying our form and ID each time. The rest of the time I'm inside. I haven't been stopped in a police check yet but it's probably just a matter of time. Or maybe they know to ignore the local Australian with bad French (their English is worse).

It's draconian stuff so it needs to work given the devastating impact on the economy. Macron figured this out pretty quickly too; France started the now widely accepted (in less than a week, can you believe) approach of the government picking up the tab for a large part of wages etc to try and keep things afloat.

It's too early to say if it's going to work in halting the exponential increase in COVID cases. The data for the past couple of days has stabilised at a bit under 2,000 new cases a day (terrifying in itself). The stabilisation is encouraging; it might be a blip though. Hopefully we see the numbers start to decline next week.

French support for the lockdown

But the population is clearly behind the approach, the often bolshie French have largely answered Macron's call and stayed home. There is a lot of wartime-like solidarity, for now at least.

Some other observations:

- There are no food shortages, other than exotica from overseas. There's plenty of meat, fruit, vegetables, and of course cheese, and ample pasta, rice etc. There was an early run on potatoes, but they were restocked in two days. Combined with the restrictions on physical activity, putting on weight is a considerably higher risk than starvation.
- There is plenty of toilet paper - not all brands are in stock but there is plenty of basic stuff around. Same for tissues, pain killers etc... but as with virtually everywhere, hand sanitiser and wipes are impossible to get. One of the benefits of the confinement is very few cars on the road; cargo trucks have the French motorways largely to themselves and are flowing smoothly.
- There is no panic buying or queues at supermarkets, pharmacies or anywhere else. In fact, it is quiet. At the well-stocked Grand Frais fruit market you are issued with disposable latex gloves on entry for handling fresh produce and no-one complains.
- People are religiously observing the one metre of personal space. They are friendly but cautious, knowing COVID-19 is circulating in this area.
- Official government public health communication and advertising has been good - very regular, consistent, logical and clear.

The French are making the best of it. Whether Macron's strategy proves right or wrong, time will tell very soon, but at least it's super clear and pretty much everyone understands it.

I don't pretend to understand the panicked behaviours of Australians that I have watched from the other side of the world. Australia and France are roughly analogous in producing more food than they need and make plenty of the basics of life. Neither country is going to run out of either. I'd be much more worried about the UK which imports large quantities of almost everything.

The worst of both worlds

I do worry however, that Australia - and the UK for that matter - could end up with the worst of both worlds; ie laying waste to the economy but not dampening down the spread of the virus enough, because the public health measures are half-way houses with too many leaks. I hope my worries are misplaced. But at this stage, I'd back the French to bring COVID-19 under control quicker with their severe, but widely understood and supported approach.

Hopefully we get through this sooner than later. Notwithstanding that I am bunkered down safely and well provisioned in France with Charlie the dog, it's a little unnerving knowing that you cannot flee to the safety of home for a time. It feels like we're about to disappear around the dark side of the moon. We'll just have to ride it out, come out the other side, and trust for a resumption of international movement (no doubt on a more limited basis than we have been used to) which will allow many families to be reunited.

Bon courage a tous!

Footnote: France has announced that the confinement measures will be tightened further, and are likely to be extended for at least a week. Most of the world seems to be moving to a model of three weeks tight lockdown. But it's real tough on a family with three kids in a small apartment!

Andrew Baker is a Global Partner (UK & EMEA) at [NMG Consulting](#).

Media worth consuming - March 2020

Jonathan Rochford

A monthly look at dozens of local and global media articles that often do not receive mainstream coverage in Australia.

Finance

US unemployment claims are pointing to a [2%+ spike in the unemployment rate in a month](#). [China's manufacturing and services PMIs](#) hit record lows. Corporates are [drawing down their full credit lines](#) to stop banks [blocking them with material adverse change clauses](#). Goldman Sachs has [bailed out two of its money market funds](#). [Korean brokers are panicking](#) as the structured products they sold are cracking. [The whole world has become a carry trade](#), which is now rapidly unwinding.

A US high-yield bond index now has [a spread of over 10% above Treasuries](#), three times higher than a month ago. Americans are [stampeding out of bond funds](#). US distressed debt has [doubled in two weeks](#). Vanguard [hiked the sell spread on an Australian bond fund](#) from 0.15% to 1.79%. CLO structures haven't contemplated the [possibility of a negative Libor setting](#).

Coronavirus impacts could [set off a wave of American corporate bankruptcies](#). [Coronavirus might be allowed as an add-back](#) in some leveraged loans. Prices of oil company bonds have gone [from euphoric to depressed in two months](#). Most US shale oil producers have [a breakeven price in the \\$40-50 per barrel range](#). Airlines are heading for [a wave of defaults and bankruptcies](#) with credit card companies increasing the portion of future sales they [hold back from airlines in financial distress](#). After wasting billions on share buybacks, [US airlines are now begging for a taxpayer bailout](#).

Renaissance Technology's enormous run of profitability has [turned into losses this year](#). Six weeks after saying "cash is trash", [Ray Dalio's flagship fund is down 20% for the year](#). [Hedge funds ramped up risk](#), right before the sell-off including [piling into Virgin Galactic](#), betting that it will finally get flights off the ground. [Risky parity funds have had a bad run](#) with both stocks and government bonds falling. [Hedge funds became forced sellers of US treasuries](#) after their leveraged bets ran into margin calls. The spread between [on-the-run and off-the-run US government bonds has blown out](#), just like it did when LTCM blew up. Some private equity firms are [selling assets from their old funds to their own newly raised funds](#). Despite being highly paid, [most private equity employees aren't happy](#) with what they earn.

The Fed is going to [allow equities to be used as collateral](#) as its balance sheet [has exploded higher](#). You can [blame the Fed for this crisis](#). The ECB's latest bailout package [includes buying Greek government bonds](#) and allowing Greek banks to [load up on the country's sovereign debt](#). Citibank and JP Morgan together own [72% of the shares](#) of the New York Federal Reserve.

One of the UK's largest shopping centre owners is [on the brink of bankruptcy](#). Deutsche Bank has [opted not to redeem](#) \$1.25 billion of preference shares. Christine Lagarde initially [threw Greece and Italy under the bus](#) saying it wasn't the job of the ECB to reduce credit spreads. Italy is [suspending mortgage payments](#) due to the Coronavirus. ASIC has conceded that [Elvis Presley could be installed as a company director](#) in Australia. [Australia's stock market](#) has delivered the world's highest return over the last 120 years.

Bitcoin slumped when shares slumped, [destroying the safe haven claims](#) made by its promoters. Online stock broker Robin Hood [shutdown three times in a week during volatile trading](#). As Softbank is pulling back, a wide range of venture capital backed companies are [failing to raise capital, closing down and laying off staff](#). Softbank's [10 worst investments](#).

[Lebanon opted to default](#) on its March 2020 bond maturity and has moved to [freeze the assets of 20 of its banks](#) claiming they were involved in illegal transfers. A Brazilian re-insurer claimed Berkshire Hathaway had bought its shares, but their [shares plunged after Berkshire Hathaway publicly denied it](#). India has [nationalised and imposed withdrawal restrictions](#) on its 4th largest bank, but the chaotic handling has [spooked investors and depositors](#). [Chinese banks are covering up non-performing loans](#) with the approval of the Chinese government.

Politics and culture

[What do people mean when they say "Democratic Socialism"?](#) MSNBC broadcast a claim that [Mike Bloomberg spent over \\$1 million per American](#) in trying to win the Democratic Party's presidential nomination, rather than a mere \$1.53 per person. [A collection of over 30 videos shows](#) that Joe Biden is more than a little gaffe prone. Tulsi Gabbard was still running for President, but many [Democrats were pretending she didn't exist](#).

America's great depression was [started and prolonged by disastrous government intervention](#). Proponents of the "Green New Deal" seem to ignore that the last "New Deal" [delivered a large increase in government debt and no reduction in unemployment](#). [The priorities of the progressive left](#) have become disposable luxuries when facing a pandemic. [Politicians aren't going to save you](#), so start fixing your own life. Politicians will turn to [monetary and fiscal stimulus to buy votes](#), even though it is worse for the economy in the long term.

A Swedish citizen has been jailed in China for 10 years for [publishing books that offended the government](#). The Chinese government has [apologised to the wife of the whistleblowing doctor](#) who raised the alarm on coronavirus.

Economics and work

Too few poverty programs [focus on creating employment](#) rather than giving goods away. [Unemployment benefits need a looking for work test](#), otherwise some recipients will not bother to find another job. Many income inequality arguments [ignore basic statistics](#). People often become poor as a result of a cycle of bad decisions, but the [stress of being poor](#) makes them more likely to keep making bad decisions. Singapore's welfare system strikes a balance [that encourages saving and work, whilst alleviating poverty](#).

Target increased its minimum wage [but slashed hours and benefits to pay for it](#). Pub owner Merivale is facing a court case over [alleged underpayment of staff totalling \\$126 million](#). Forcing employers to offer paid parental leave is a regressive policy that [benefits higher income full time workers](#) but does nothing for lower income casual workers.

[They don't teach university economics](#) like they used to. [Billionaires don't hoard wealth](#), they invest it, spend it and give it away. American farmers are [fighting for the right to repair their own tractors](#). Quotes from Adam Smith that shows [why he believed in markets far more than government](#). Cruise lines pay very little tax and [shouldn't receive any form of taxpayer bailout](#).

Miscellaneous

[A review of the 1918 Spanish flu](#) including how flu passes from birds to pigs and then humans. A [comparison of global pandemics](#). [Using herd immunity against Coronavirus](#) is hotly debated. [Germany's low coronavirus death rate of 0.1%](#) is due to its much higher rate of testing. The arguments for [shutting down the economy](#) to stop Coronavirus. Norwegian Cruise Line [gave blatantly false information to its sales staff](#) to pass on to customers worried about Coronavirus. A conference about Coronavirus [was cancelled because of Coronavirus](#). A Softbank owned patent troll is [trying to stop Coronavirus testing](#).

Scientists are testing [using Durian as a component in supercapacitors](#). Singapore is preparing now for [sea levels to rise much higher than predicted](#). For a few hours, the Italian town of Castelvetro [literally had wine on tap](#). Wendy's burger chain [loves to troll its competitors](#) on twitter.

A minor league baseball team's ["OJ Trial Night" promotion has been cancelled](#), but it succeeded in getting the team national coverage. A car thief stole a hearse with [a body loaded in the back](#). A twitter account that [mocks self-congratulatory tweets of venture capitalists](#) has divided the industry. A massive Disneyland fan had his [streak of 2,995 consecutive visiting days broken](#) by the park's closure. A Zamboni driver [stepped in as an emergency goaltender](#) in an NHL game.

Written by Jonathan Rochford of [Narrow Road Capital](#). Comments and criticisms are welcome.

This article has been prepared for educational purposes and is not a substitute for professional and tailored financial advice. The accuracy of the material cannot be verified in all cases. Narrow Road Capital advises on and invests in a wide range of securities, including securities linked to the performance of various companies and financial institutions.

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