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COVID-19 THE GREAT INSTABILITY IN MICROCOSM

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COVID-19 – THE GREAT INSTABILITY IN MICROCOSM

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A global pandemic was not exactly front of mind when we settled last year on the label The Great Instability as the best way to describe our concerns about the fragile nature of the global economy and wider society. However, we think the COVID-19 crisis fits comfortably within this framework and neatly illustrates the broader point. Our attention is laser-focused on the virus and will be for some time, tracking its evolution understanding the public policy response and calibrating the impact on markets. But we cannot lose sight of the medium-term. Society will ultimately win the war against the virus although life will not be exactly as it was before and the system will remain fundamentally fragile. Understanding the sources of The Great Instability and what it means for society, the economy and markets will remain of paramount importance for investors over the medium to long-term. We believe the world was, and will remain, a volatile place.

INTRODUCTION

The COVID-19 pandemic poses a clear and present danger to humanity. The final death toll will be enormous, even under optimistic assumptions about the efficacy of social distancing measures to contain the spread of the virus and the pace of scientific progress to deliver a vaccine. The immediate focus for the authorities is to protect human life and prevent the essential public health response triggering an economic collapse. The focus for professional investors is to monitor the evolution of the virus and its impact on wider society, and then assess the likely implications for markets and valuations, both from a high and low frequency perspective. That is, where markets will go in the next 24 hours in response to the next piece of news, but also in the next 12-24 months as fundamentals reassert themselves. In this paper, we are referring to the latter: it is an attempt to place COVID-19 within the framework we use to think about the world around us. As it happens, the pandemic fits neatly into the over-arching concept of **The Great Instability**, a label which we think neatly captures the fragile nature of contemporary society. The world was, and will remain, a volatile place. We will elaborate on this point with five lessons.

i. **The risks that lurk in the left tail**: the pandemic is not the exception to the rule, but the latest in a long line of shocks, from financial and sovereign debt crises, to terrorist attacks, to climate change. These high impact tail risks threaten the stability of the system but are all too easily lost in an assessment of what is most likely to happen. The world is more volatile than we pretend.

ii. **A fragile eco-system**: how globalisation, technological change and competition helped to foster a global economy that is efficient but vulnerable to large disruptive shocks, with a highly inter-connected network of lean companies that have outsourced multiple aspects of the production process, hold minimal inventory and are reliant on technology.

iii. **A role for the state**: the state is the only actor that has the capacity to mobilise resources to build resilience against the left tail risks before they strike and to manage the crisis in the aftermath, but that requires technical competence, a functioning political system and the trust of the electorate. The forceful response to the pandemic in most cases, underscores the basic truth: where there is a will, there is a way.

iv. **The only game in town is over**: how investors and ultimately politicians had become reliant on central banks to do "whatever it takes" to tackle any shock and insulate the economy and markets from left tail risks. Unfortunately, the capacity of central banks to support the economy has waned in recent years, leaving the system more vulnerable. Whatever monetary space existed around the globe before the virus has been largely exhausted as the pandemic in each market took hold.

v. **The day after tomorrow**: our experience of the crisis may change society in profound ways. The pandemic could act as a teachable moment about the need to tackle the left tail risk seriously, prompting in particular a more forceful response to the climate crisis, and a reset moment for the state, and its role in society. New habits learned during social distancing could lead to persistent shifts in behaviour, including the way we work and the good and services we consume.

But before we begin with our five lessons, we need to recap on recent economic history and discuss a period known at the time as the Great Stability, when it appeared as though we had achieved a state of economic nirvana.

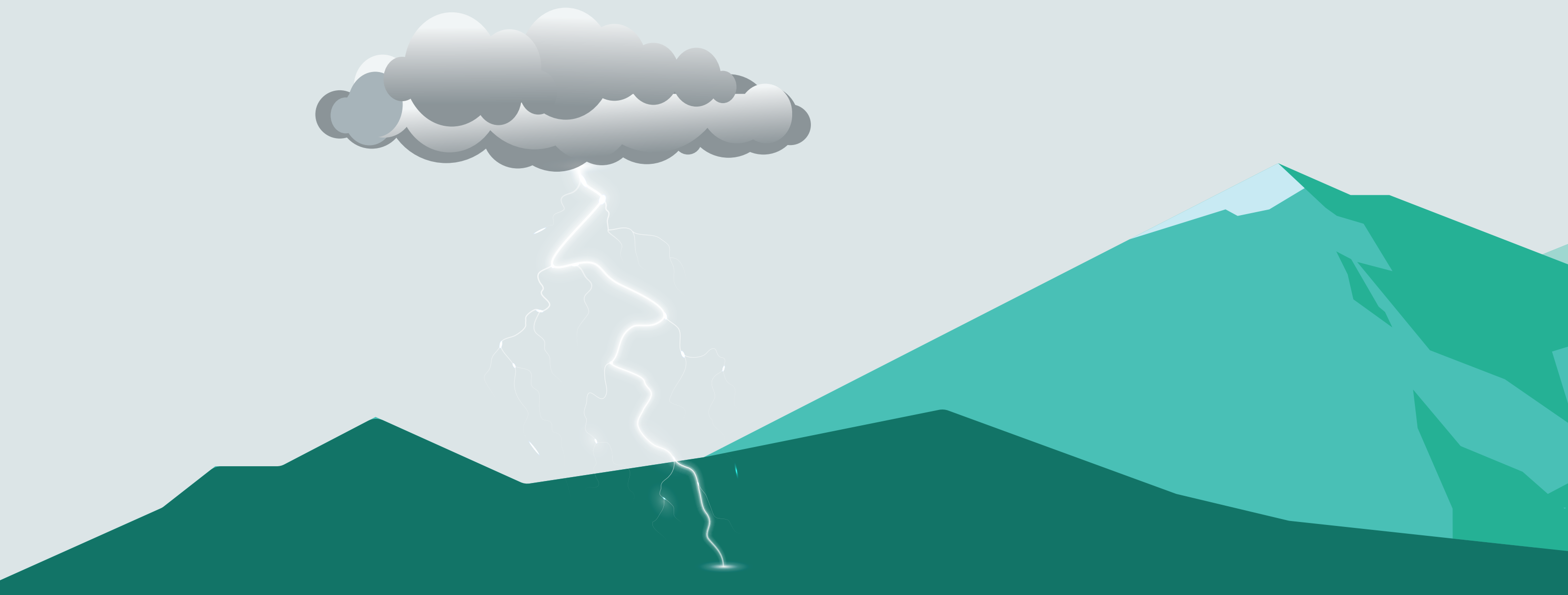
Prelude: The Great Stability

In the dim but not so distant past – in the years leading up to the Great Financial Crisis (GFC) – the world had seemed a very different place.

There had been a significant and sustained improvement in economic performance since the bad years of the 1970s and 1980s. On the whole, economic growth was solid and steady, so much so that in some countries it was said that the boom and bust of the business cycle had been relegated to the dustbin of economic history. The spectre of runaway inflation had certainly been exorcised. Consumer price inflation was low and stable and seemingly anchored on the targets that sprung up around the world. It was a very different story in financial markets: debt stocks, credit flows and asset prices were anything but stable. But very few policymakers paid attention to that until the bubble burst.

The consensus around the merits of free markets also became more entrenched over this period. International trade blossomed, and with the collapse of the Iron Curtain and China's strategic pivot to "reform and opening up' that began under Deng Xiaoping, there was a massive expansion in the supply of productive resources available to the global market economy. Intervention in markets either by the public sector or social partners like trade unions increasingly fell out of favour. The merits of lower taxes and less regulation were championed. The state was in retreat.

Economists coined the phrase The Great Stability to describe the period. The only debate among economists was about the source of the new-found stability. The answer could just have been good luck: the global economy was not hit by any of the large shocks that triggered deep recessions in previous decades. But the answer could also have been good policy: that policymakers, and in particular central bankers, had become more proficient as using the levers at their disposal to stabilise the economy when it is hit by those shocks. Confidence in the new world order peaked with the claim that even a financial crisis could not de-rail the Great Stability, given that the US economy had managed to take the bursting of the Dot-com bubble in its stride thanks in no small part to the prompt corrective action of the Greenspan Fed. Tail risks it seemed has lost the power to shock. And then along came the GFC and the new world order was turned on its head.



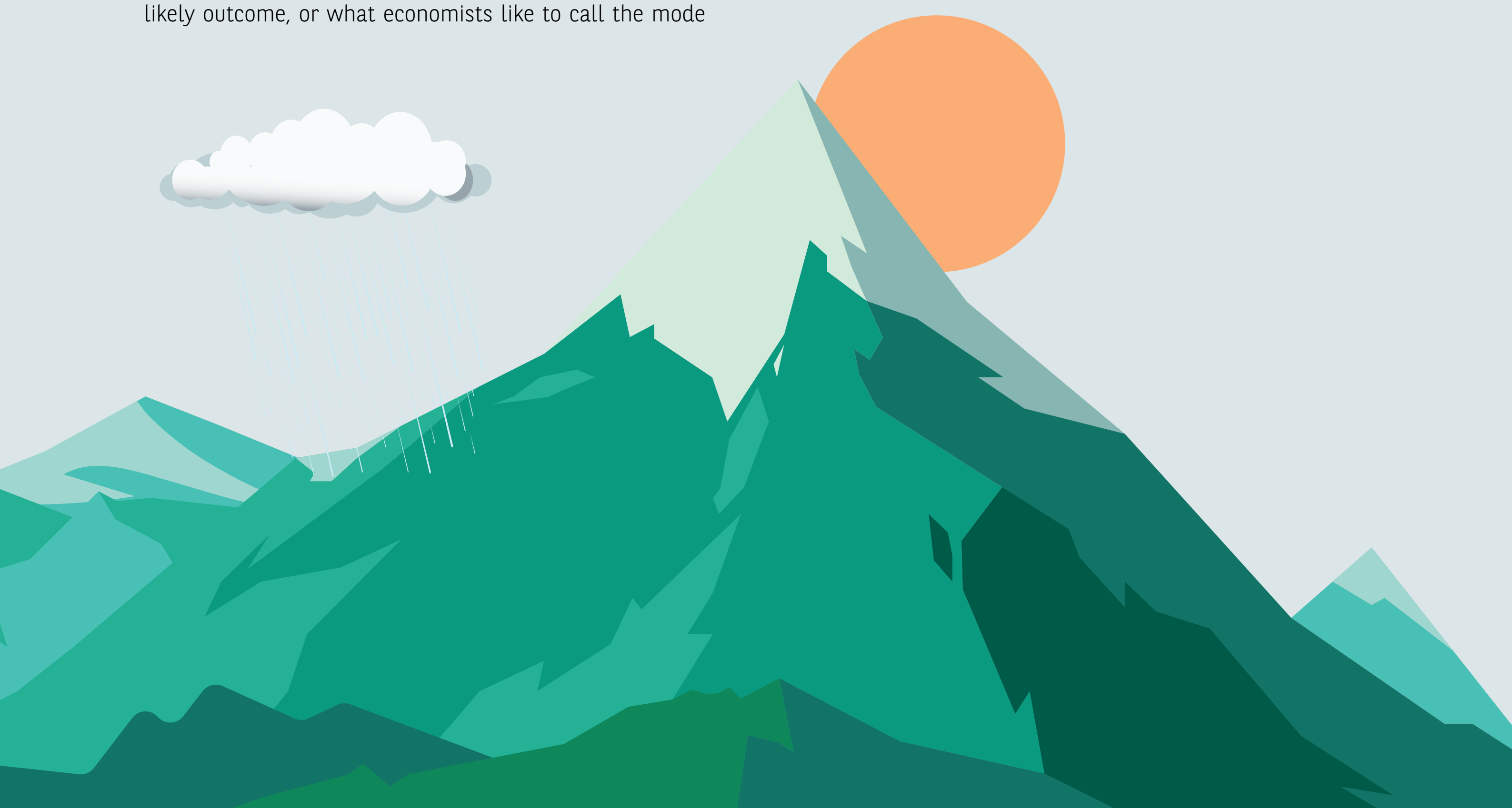
Lesson 1: The risks that lurk in the left tail

In the years that followed the GFC, it has become increasingly clear that The Great Stability was the exception to the historical rule. The scale of the financial crisis was clearly a wake-up call on the potential for shocks to destabilise the system. Since then we have experienced several systemic shocks. We have lived through a sovereign debt crisis in the Eurozone and existential concerns about the survival of the Eurozone. There continue to be major terrorist attacks and mass migrant flows when people are displaced by conflicts. There has been a fundamental shock to the pro-globalisation consensus, with a trade war (or perhaps more precisely a tech war) developing between the world's two economic super-powers. We have had our fair share of infectious diseases too: Ebola, Avian flu, MERS and SARS, And then of course there is the threat posed by climate change which will inevitably lead to ever-increasing disruptions to the economy and broader society. Without for one moment downplaying its severity, the COVID-19 outbreak should therefore be seen as the continuation of a trend: the latest in a long line of destabilising shocks that lurk in "the left tail".

The future is always uncertain. The value of a particular variable of interest at some horizon, whether that be the earnings of a particular company or the output of a particular economy, is unknown. We can think about there being a distribution function describing the probability that the outcome will lie in any particular range. As an industry we collectively spend a lot of thinking about the most likely outcome, or what economists like to call the mode of that distribution. Sometimes we think about plausible alternative scenarios to that mode. But as an industry we tend to devote relatively little time to thinking about the extremely bad outcomes in the left tail of that distribution. That might be a reasonable thing to do if you know that the probability of those outcomes is very low indeed. The key intellectual leap we needed to make as we entered The Great Instability – or perhaps more accurately the old lesson we needed to re-learn – is that this simplifying assumption is no longer (was never) reasonable. Extremely bad outcomes occur too frequently to ignore.

Some people describe these events lurking in the left tail as "black swans" – as events that were entirely unpredictable in advance. However, in many cases that feels like a cop out. We have experienced epidemics before. We have experienced financial and sovereign debt crises before. And whilst the challenge posed by climate change is novel, we cannot pretend that we have not been warned by the scientific community about the potentially catastrophic consequences. These risks that lurk in the left tail are a known commodity.

The problem is not necessarily that these tail risks exist. The problem is the severity of their impact on the system when they crystallise and the capacity of the authorities to manage the situation.



Lesson 2: A fragile eco-system

Once upon a time, a crisis could occur in a far flung corner of the world and life could continue more or less as normal in much of the rest of the world. In other words, crises were local. That era has long since passed. Every major local shock very quickly morphs into a global problem.

Globalisation across multiple dimensions has profoundly changed the world around us. There is nothing new about cross-border trade in goods, although trade volumes have clearly increased in recent decades. But the complexity of international trade has also increased, with output crossing borders multiple times in global value chains before it reaches the end consumer as a finished product. Alongside these cross-border flows in goods and more latterly services, flows of labour, technology, ideas and capital have also flourished. The global economy has become far more integrated and, as a result, far more inter-dependent.

In parallel to this process of globalisation there has been a relentless focus on eliminating inefficiency and redundancy within the system, often facilitated by technological innovation. With the advent of 'just in time' management, companies could synchronise the arrival inputs at their facilities with the demands of the production process, and thereby minimise the cost of holding inventory.

The familiar concept of a firm as an organisation which brings together raw materials, labour and capital in one location to produce output, has become blurred by the interplay between globalisation and technology. The modern company increasingly organises its affairs across borders, decomposing the production process into multiple tasks that are performed in multiple jurisdictions, sometimes by employees and sometimes contracting out to external providers. In the process, companies likely become even more reliant on technology in order to carry out their business.

The end result was an increasingly lean and highly integrated network. Costs may have been squeezed out across that network, but individual companies are more dependent now on decisions that take place beyond the traditional perimeter of the firm, along supply chains and within contractors. It may not even be possible for companies to fully appreciate the latent fragility of their supply chains and production process, given the complexity of both. Some companies will have put in place contingency plans, giving them the capacity to continue producing if a key contractor or supplier fails, but the fundamental fragility of the eco-system remains.

Connectivity is a huge asset in peace-time. The system becomes more productive through specialisation and more efficient allocation of resources. It also enriches our lives as individuals. And in theory, the opportunity to invest abroad allows individuals and institutions the opportunity to diversify and share risk. We are then less exposed to local shocks to production. The problem is that when a big enough shock hits a particular region of the network that asset of connectivity can become a liability. Stress can quickly propagate throughout the system.

The opening act of the crisis illustrates the point perfectly. We suspect that very few people outside of China had even heard of Wuhan before they heard about the virus. Many were probably surprised to learn that the city has a population of around eleven million people – that is, roughly on a par with the population of Belgium. Wuhan is a major economic hub of Central China, with thriving automobile, tech and pharmaceutical sectors. Even if the virus has remained contained within Wuhan there would still have been an impact on the wider global economy through the disruption to production that would have filtered upstream and down along global supply chains. But Wuhan is not isolated from the rest of the world: it has excellent transport links with the outside world, with high-speed rail links to many of China's mega cities and direct flights from an international airport to many of the Worlds metropoles. A public health crisis and the subsequent imposition of quarantine measures in a place that few of us had heard about would have caused a transitory tremor through global supply chains.

Lesson 3: A role for the state

If risks lurk in the left tail and panic and distress can all too easily propagate through an increasingly inter-connected global economy then the burden of responsibility falls on the authorities to take decisive and effective action in moments of stress, and to build resilience in the periods of tranquillity between crises. That requires a state that is ready, willing and able to act.

Capacity to act is partly a function of the health of the bureaucracy and the political system. Technical competence is paramount: officials must provide politicians with accurate information and robust analysis to guide decision-making. But it is also essential that the political process is capable of taking action. Partisan bickering that leads to paralysis is dangerous, particularly when it comes to dealing with clear and present dangers before the fact.

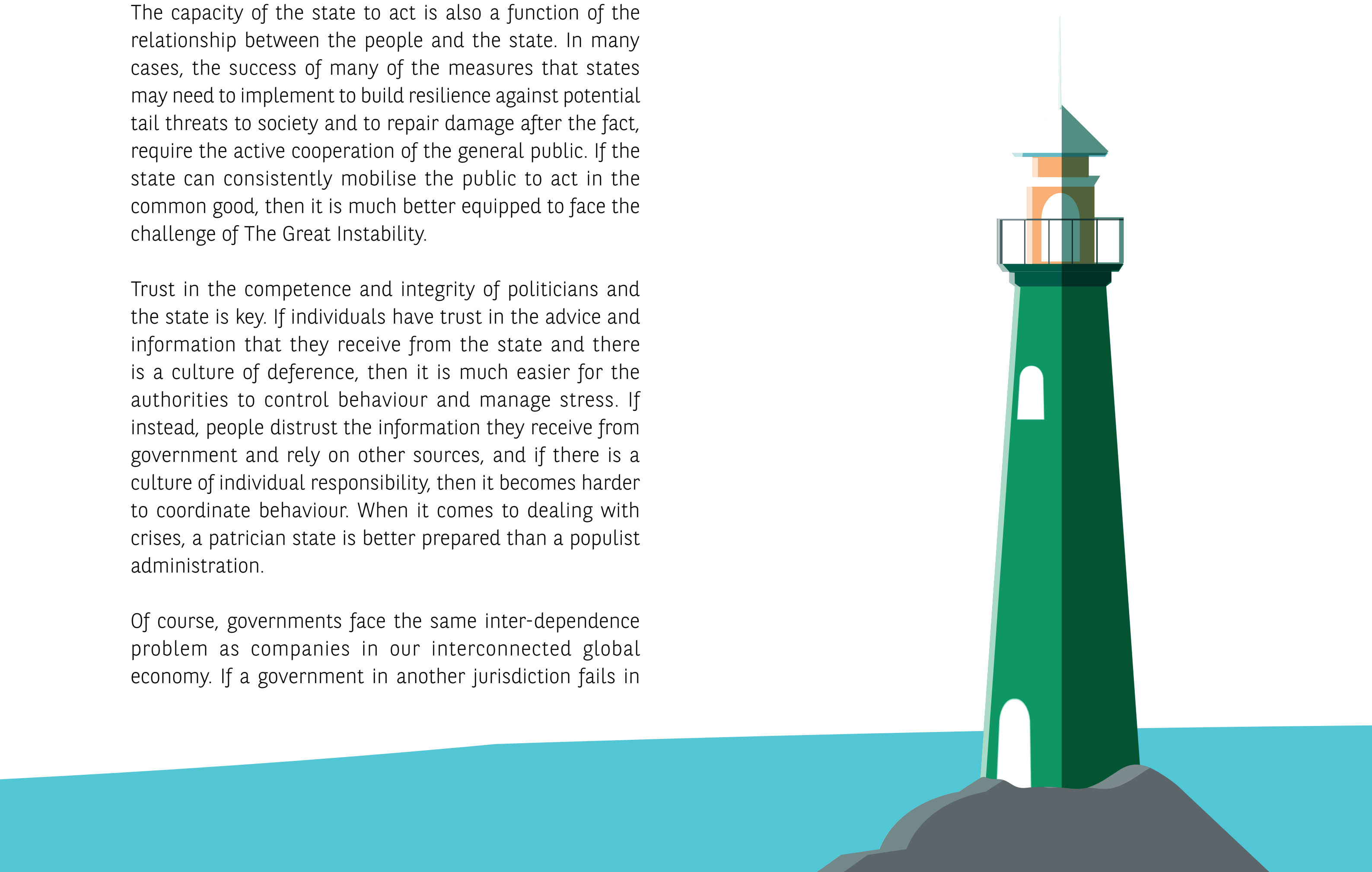
Capacity is also a function of the powers of the state. The authorities may need to take emergency measures in a crisis. This is sometimes presented as a fundamental weakness of mature liberal democracies, although the COVID-19 crisis has already illustrated that even mature liberal democracies can implement what some refer to as draconian measures under sufficient pressure.

The capacity of the state to act is also a function of the relationship between the people and the state. In many cases, the success of many of the measures that states may need to implement to build resilience against potential tail threats to society and to repair damage after the fact, require the active cooperation of the general public. If the state can consistently mobilise the public to act in the common good, then it is much better equipped to face the challenge of The Great Instability.

Trust in the competence and integrity of politicians and the state is key. If individuals have trust in the advice and information that they receive from the state and there is a culture of deference, then it is much easier for the authorities to control behaviour and manage stress. If instead, people distrust the information they receive from government and rely on other sources, and if there is a culture of individual responsibility, then it becomes harder to coordinate behaviour. When it comes to dealing with crises, a patrician state is better prepared than a populist administration.

Of course, governments face the same inter-dependence problem as companies in our interconnected global economy. If a government in another jurisdiction fails in its responsibility to handle a crisis – whether it is dealing with a pandemic or dealing with a terrorist cell – then the problem will continue to fester and spread. In theory, governments may take the extreme step of disconnecting an economy and society from the global network – discrete de-globalisation – to protect the public, but that may not deliver much benefit in terms of added security and is likely to carry an extreme cost if the measures remain in place for any length of time. The system may only be as strong as the weakest jurisdiction.

The responsibility of the state does not end when the crisis ends. If the system is inherently fragile then there is a case for determined action to build resilience within the system. There has been much debate about the merits of increased government investment in an era of ultra-low long-term real interest rates. The focus of that debate has primarily been on the numerous ways in which that higher spending could raise the productive capacity of the economy, or in the familiar analogy, to increase the size of the cake so that everybody can have a bigger slice. However, the left tail reminds us of another motivation for higher spending: to increase the resilience of the economy, or in other words, to ensure that the cake is never too small in any one year.



The purpose of this investment would be to reduce the risk of the left tail risk crystallising in the first place, or to reduce the severity of the impact in the event that it does. The precise form of that spending will vary according to the nature of the identified risk in the left tail and the realistic returns on investment. Where the threat from pandemics are concerned you may wish to have spare capacity within your primary healthcare system. Where there is a threat to key infrastructure you may want to invest in cyber security measures. And when it comes to climate change you may want to invest in renewable energy or flood defences.

The basic point is to not treat the threat from the left tail as given. The state can change the likelihood and severity of these risks. But in reality there is only so much you can do. These risks will crystallise from time to time, and then it is important that there is capacity within the system to deal with them.

The response to this crisis has varied from country to country and from moment to moment, but is encouraging overall. Governments have been willing to take extreme measures, effectively shutting down civil society, in the certain knowledge that they will pay a formidable economic cost in order to protect the vulnerable. The general public has by and large supported those measures.

The economic policy response has been equally impressive. Finance ministers have been quick to grasp the dire consequences of the shut-downs for households and companies, the absolute imperative of nursing the economy through this difficult period and ultimately the need to socialise losses, whatever the cost, to avoid an outright collapse.

In short, governments have risen to the challenge. The maxim where there is a will, there is a way applies here. Politicians understood that they were at war with the virus, discovered the will to do whatever it takes and found a way.

Lesson 4: The only game in town is over

When the economic history of the post-crisis period is written there is no question which individuals will be placed centre stage: the central bankers. It has been central banks and ultra-accommodative monetary policy that has been supporting aggregate demand, not the finance ministers and looser fiscal policy. When economic crises have flared up, most notably the sovereign debt crisis in Europe, it has been the central bankers that have come to the rescue, pledging to do whatever it takes. And by doing more, the central bankers have allowed the politicians to do less. It is with good reason that the central bankers have become known as the 'only game in town'.

Unfortunately, there is only so much monetary ammunition that central banks can fire. We discovered that short-term interest rates can be taken into negative territory but there is a growing appreciation that there is still a limit on how low the rate can go. At some point, the central bank reaches a reversal rate at which point the squeeze on the net interest income of the banking sector prompts a contraction in lending. Central banks can still stimulate the economy through other means when they reach that lower bound, primarily through influencing long rates. Central banks can print money to purchase long duration assets to drive long-term yields lower or they can steer rates lower by providing credible guidance about the future path of policy. However, there is a limit to what can be done here once long-term rates start to approach the lower bound on the short rate.

The global central banking community had already exhausted much of this monetary ammunition before the outbreak of the crisis. Indeed, this was one of the key characteristic features of The Great Instability – the concern that central banks would be unable to take forceful action to stimulate demand if the system was hit by a severe negative shock and therefore in the absence of a rapid and robust fiscal response, a recession could morph into a depression. And it is unclear that we can always rely on that rapid and robust fiscal response, given the size of the automatic stabilisers, the familiar lags in the design and implementation of discretionary measures and in some jurisdictions the possible constraints on issuance given market concerns about debt sustainability.

Our fundamental concern before the COVID-19 crisis was that the global economy had developed a knife edge property. Negative shocks – and not necessarily even those from the extreme left tail – had the potential to drive the economy into a recession because the policy response that helped stimulate demand in previous downturns could no longer be relied upon. Moreover, if companies and households came to understand this then that could trigger a destabilising shift in behaviour. Households and companies may shift into precautionary savings mode when it becomes clear that bad news will not be matched with a major policy response.

In the event, the one major central bank that had a significant amount of conventional monetary ammunition left to fire at the outset of the crisis – the Federal Reserve – exhausted its arsenal within weeks. The FOMC cut the policy rate by 150 basis points to the floor and announced a $700 billion asset purchase programme. The foot is now hard down to the monetary pedal almost everywhere. Unfortunately, it will probably not be enough.

The central banking community is likely to come under pressure to announce further measures in the coming months. Closer, more formal coordination of monetary and fiscal policy seems inevitable. Some form of yield curve control seems preferable, as a means to create and preserve fiscal space for sovereigns. But central banks may be forced to engage in monetary financing, leading to a further significant expansion of central bank balance sheets.

Even the taboo subject of helicopter drops may be on the agenda. Tax cuts today are typically financed by higher taxes or lower spending tomorrow and at least as far as some economists are concerned, that neuters the impact of the tax cut. With a helicopter drop, tax cuts today do not have to be paid for with higher taxes tomorrow: the central bank picks up the tab. In practice, we think a drop would be implemented by the central bank purchasing government debt and pledging to keep the bonds on its balance sheet in perpetuity. In other words, this is permanent monetary financing. The idea sounds simple but it is a radical step and raises awkward questions about the independence of the central bank and its pursuit of price stability.

Looking ahead the key lesson to learn here is that it is near certain that almost all conventional ammunition will have been exhausted before this crisis is over. So when the next crisis hit – and the key message from this article is that there will be another crisis – there will have to be a different game in town. The central bankers will be more or less on the side-lines. Finance ministers will need to step up or else the world will truly become an even more unstable place. The only game in town is over.

Indeed, if the costs that were socialised during the crisis are ultimately warehoused on central bank balance sheets then great care will need to be taken to devise an exit strategy for central banks: to allow them to return to the pursuit of monetary and financial stability and somehow normalise their bloated balance sheets. Meanwhile, the investor community and particularly those active in the government bond market will have to reassess fair value and in particular the appropriate compensation for sovereign credit risk and inflation risk.

Lesson 5: The day after tomorrow

The current crisis will pass. The economy will recover. But society will not be exactly as it was before. Above all, there will be a tragic loss of life, particularly among the older generations and that is something that society will have to come to terms with. The crisis could also have a profound impact on the way we think, the way we behave, the way we work and even the way we vote. So where do we think the virus might have a lasting impact on society? We begin with shifts in public policy and the role of the state, and then turn to shifts in behaviour in the private sector.

The pandemic will hopefully serve as a wake up call for politicians and broader society to confront the challenge of The Great Instability. The human and financial cost of fighting the crisis should demonstrate beyond all reasonable doubt the value of investments to counter other left tail shocks on the horizon, either to reduce the likelihood of those shocks crystallising or to build capacity to deal with those shocks when they crystallise.

The immediate lessons learned will likely be around pandemic risks and the capacity of society to deal with a similar shock in the future. One obvious take-away might be around the need to build spare capacity in the event of any future crisis that places exceptional demand on the healthcare system. But governments cannot do it alone. It seems that Asia was better prepared to handle the COVID-19 outbreak because those societies had been battle-tested during the SARS outbreak. The public knew the drill. Hopefully, the same will be true in other countries too.

But as we have said, pandemics are not the only left tail risk on the horizon. The crisis should prompt a holistic review of resilience. Until very recently, the focus in economic policy has been on efficiency and maximising national income. Belatedly, there has been a focus on inequality too: the distribution of that income across society. The time has come to focus on the resilience of national income as well, and preventing episodes in which there are sharp falls in national income by acting on both the likelihood and severity of tail risks. Priority should obviously be attached to the most serious threats to society.

The threat posed by climate change seems the obvious place to start. Indeed, the contrast between the policy response to the climate crisis and the global pandemic is striking. Politicians have been willing to shut down the economy in order to save lives. The short term economic cost will be massive. But there is broad consensus that this is a price worth paying to save lives. The response required to meet our climate obligations is far less extreme, but it has to happen now. If we delay, there will be no emergency measures that can prevent the tragic loss of life that will inevitably follow if temperatures continue to rise. It will be hard to explain why the authorities implemented such extreme measures in a matter of days to prevent the loss of life from a virus but prevaricated about taking far more modest measures that will prevent a similar loss of life in the future.

These lofty ambitions may be challenged by the limited financial capacity of the state in the aftermath of the crisis. Governments are increasingly adopting a "socialise all losses, whatever the cost" approach to solving this crisis. It is therefore possible, if not probable, that the public finances will emerge from the crisis in much worse shape than they entered, with a much heavier debt-load. Those bonds may be sat on the balance sheet of the central bank in which case the discussion is about the sustainability of inflation targets and the valuation of fixed income assets. If not, there may be pressure to begin the process of consolidation, to gradually repair the damage done, which would severely constrain the capacity of the state to increase spending on other objectives. But failure to act on the resilience agenda will have consequences.

Much ultimately hinges on public opinion. If the general public were to become convinced of the need for dramatic action on other fronts to save lives in the long run, that would simplify matters. But building resilience against abstract tail risks is typically an area where politicians must lead. Whether the politicians will able or even willing to convince the general public that having just declared victory in the war against the virus it is imperative that a new war must be declared against climate change is unclear.

When it comes to the question of who governs us, electorates may reward those politicians who rose to the challenge and punish those that did not, but something more profound might take place. One might hope that the crisis revitalises respect for the technocrat or even the patrician. But we should be alive to the possibility that the terrible human cost of the crisis could provide fertile ground in which the populist can flourish.

The crisis may have a more fundamental impact on public perceptions of the state. The state has been in secular retreat, increasingly seen as an impediment to prosperity and losing the trust of the electorate. Failure to prevent the financial crisis or engineer a robust recovery in living standards in the years that followed sapped belief in the state still further. The war against the virus could potentially present the state in a different light: as the only solution to existential threats to society. It might be easier for politicians of any persuasion to make the case for government on specific issues of pressing public concern, and finally offer a response to President Reagan. 'The nine most reassuring words in the English language might be: "I'm from the Government, and I'm here to help. "'

An obvious focal point for change is the health and social care sectors, and more broadly the value that society attaches to the old and the vulnerable. The intense strain on the healthcare system and the huge loss of life during the pandemic should focus minds on the resources that were being invested and the variation in outcomes across society prior to the pandemic. The institutional arrangements for delivering healthcare vary from country to country, but it seems likely that healthcare will rise up the agenda and there is likely to be pressure to devote additional resources and improve outcomes.

In the private sector one lasting consequence of the crisis might be changes in the pattern of work. Large numbers of people will have to work from home for an extended period of time as a result of the social distancing measures required to contain the disease. Investments in infrastructure and innovations in ways of working may make 'working from home' or 'tele-commuting' a more efficient arrangement for employers and employees alike: the former can economise on the cost of renting floor space, the latter can economise on the cost of the commute.

This transition towards 'tele-commuting' could trigger the next stage in the deconstruction of the traditional firm. The geographical separation could lead to contractual separation: with the employer-employee relationship morphing into a more distant company-contractor relationship. More fundamentally still this shift to 'tele-commuting' could then facilitate the rise of 'tele-migration', in which companies can out-source work to anybody able to provide labour on an electronic platform, and not just a contractor based in the local labour market.

The implications of these shifts are potentially profound. The implied adjustment in costs and wages could be seismic, once skilled labour in emerging countries can effectively compete with skilled labour in advanced economies without having to physically relocate. Likewise, the forces of agglomeration that explain the concentration of economic activity in mega-cities, where the greater potential for knowledge spill-overs create powerful incentives for production to cluster in close proximity to broad and deep talent pools, may no longer justify the exorbitant cost of land in those cities, once production is locatedin the cloud and the workforce is dispersed around the globe.

The experience of social distancing could have long-term consequences for consumer behaviour too. People have been forced to stop certain behaviours and adopt new habits. We should not take it for granted that people will immediately switch back to old behaviours and re-learn old habits once the measures are eventually lifted – particularly if those measures become the norm in 2020. To give one example, there almost certainly be increased demand for entertainment services that can be consumed from the home. More importantly, isolation is only likely to accelerate the process of consumption taking place online rather than on the high street which in turn should make consumers more discerning – more aware of the range of possible consumption choices in a given category – thereby reducing the pricing power of retailers.

Returning to our theme of the climate challenge it would seem that a profitable line of enquiry for the enlightened politician would be to focus on those shifts in behaviour which households and companies have been forced to make as a result of social distancing but which are also desirable in the context of the climate crisis. Asking people to persist with a change in behaviour might be easier than persuading them to make the change in the first place. Long-haul air travel is an obvious example here for both individuals and companies.

This material is obviously speculative, but nevertheless essential to a long-term investor Fundamental shifts in the behaviour of governments, institutions and individuals will trigger shifts in resources, economic activity and market valuations. Forecasting the lasting legacy of COVID-19 should be in the DNA of any long-term investor.

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