



# konzept



Life after  
covid-19

## Life after covid-19

As our personal, business, social, and economic lives begin to change, this edition of Konzept examines 20 different ways in which the world will be different post covid-19. From working from home, to managing seismic industry change, and eventually paying for the astonishing stimulus measures, many difficult questions must be answered. And given the global health and economic backdrop remains highly uncertain, the way we frame the problems is just as important as the way we address them.

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## Editorial

I usually introduce Konzept with much excitement, however, for this edition, the backdrop is more sombre. Over a quarter of a million people are dead as a result of the covid-19 outbreak; treatments for other conditions have been delayed; many millions are unemployed.

It is hard to be objective in the face of such human tragedy, but this edition of Konzept is devoted to thinking about the many ways in which our world will be different as a result of the virus. Some of the changes are already taking place. Front and centre, we do the sums and calculate how much investment countries need to inject into their health systems to make them robust enough for another pandemic. More important is how these funds are allocated and we provide a framework for countries to follow. We then examine prior pandemics and find that they catalysed much change in society.

From an economic point of view, there is much disagreement about whether the eye-popping stimulus packages will result in inflation, or whether deflation will become a permanent fixture. We engage two of our analysts with different views to pen a piece arguing each side. We would be fascinated to know which view you feel is more compelling. Perhaps the more immediate question is how will we pay

for the trillions of stimulus dollars governments are borrowing. We examine the hard choices leaders will have to make, and what central banks need to manage to keep the debt sustainable. All this intervention creates a medium-term dilemma about whether it stifles creative destruction. We agree this is a trend that will continue, however, it is encouraging that there are forces at work that can enable creative destruction without resorting to the economic malaise that sometimes accompanies it.

Next, we examine the corporate angle. Chief executives have many concerns but among the most important are whether their firm can weather the storm, and what they must do to make their company more resilient. We look at the future of the transport sector, airlines, groceries, and meal kits. We also point out the severe disruption occurring in the banking industry, particularly in countries with ageing demographics and high cash usage.

As many of us have found over the last couple of months, the use of digital technology has very quickly become our lifeline. We look at some of the effects that will likely become permanent. That includes the forced migration of reluctant businesses to the online realm, the rise in digital payments, and the structural shifts in online education.

There has also been much discussion about the side effects of this technological advancement. We discuss how covid-19 is helping inflame the 'technology cold war' between the US and China. We also consider the protests from people who are hating the working online from home, and those who lament the end of privacy with the new track-and-trace apps. In both cases, we argue that the debate should be framed around the costs and benefits, both financial and personal.

Finally, we look at two of the biggest issues of our time – inequality and climate change – and examine how covid-19 will affect them both. Here, there is good news. The economic response to the virus is already pushing to narrow inequality. Meanwhile, climate change is becoming an integral part of the post-covid rebuilding in many countries and companies.

It will take years to recover from covid-19. For those who have experienced personal loss, there will be permanent scars. So while societies will eventually heal and economies will recover, the world will be a different place to the one we knew last year. Much change to our personal, business, social, and economic lives awaits. I hope this edition of Konzept goes some way to helping inform us as we take a step into this brave new world.

Jim Reid  
Global Head of Fundamental Credit  
Strategy and Thematic Research

> To send feedback, or to contact any of the authors, please contact your usual Deutsche Bank representative, or write to the team at [luke.templeman@db.com](mailto:luke.templeman@db.com)

# Life after covid-19

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# Summaries



### The investment needed in our healthcare systems

Covid-19 has made it obvious we need to invest more in our healthcare systems. We calculate how much countries need to spend to make their systems more robust. The allocation of funding is also critical. We provide a framework to help leaders best direct resources.

### The case for inflation

As policymakers launch unprecedented stimulus packages, it seems the coronavirus will be inflationary. Add in the supply shock from retreating globalisation, the increase in labour's bargaining power, as well as the need to reduce large debt burdens, and it means inflation is back on the agenda.

### The case for deflation

With the deepest recession in generations taking hold, it is remarkable that many dismiss the deflationary consequences. Deleveraging will be a feature of the landscape for years to come, any fiscal boost will ultimately prove temporary, while any reverse in globalisation would take decades to feed through.

### How will we pay for all that stimulus?

The trillions of dollars of stimulus must be paid for somehow. Low interest rates and inflation make the debt affordable for now. An extended pandemic, though, will be particularly difficult for Europe and we present some ways in which the bloc can ensure financial and political legitimacy.

### The coming Tech Wall and the covid dilemma

The fault lines of the Tech Cold war will emerge dramatically changed in a post-covid world. This has the potential to reach a crescendo where the US and China could create a "Tech Wall" that cuts the world into two halves with little or no inter-operability. This would present a very difficult dichotomy to policy makers that we call the covid dilemma.

### Undermining global value chains

Over the last 40 years, companies have dramatically expanded global value chains. However, recent trends accelerated by the covid-19 pandemic could lead nations and corporations to reduce their reliance on international connectedness. That will change the way we do business and have severe effects on different countries.

### Climate change: 'Acute' threats and unexpected parallels

In some respects, the policy response to covid-19 is a blueprint for climate change policy. However, different notions of 'urgency' are weighing on the environmental response. Despite that, people have shown they are willing to pay a price for societal benefits.

### How our flying habits will change

While history shows us that it can take over two years for an aviation demand shock to return to normal, many people now forecast a permanent drop in travel, particularly for business. We argue business and personal travel will remain, however, the way people book will change the transport industry.

### Online grocery: fad or fate?

Online food ordering (both grocery delivery and meal kits) was already seeing steady growth before covid-19. Since the outbreak, it has taken off. While some people may revert back to their old habits when the pandemic recedes, many have been introduced to the concept and will continue to enjoy the benefits.

### An occasion for online banking to capture laggards

Italy and some other European countries have struggled to convert some customers to online banking. Now that the covid-19 outbreak has forced them online, it is an opportunity for banks to take themselves into the future and focus on high-value add services.

### The stockmarket crash and the detail investors have missed

The biggest stockmarket crash in a decade and the subsequent recovery have left investors wondering whether a second corona-crash is inevitable. In fact, the direction of the market may be less relevant than the unwinding of the factors that have kept share prices of both high- and low-performing stocks moving in the same direction.

### What prior pandemics can teach us today

Pandemics through history have left a long shadow. As well as the direct health effects and demographic consequences, previous pandemics have been connected to a variety of long-term changes, stretching from adverse educational effects to decreases in social trust. We consider what these previous legacies might mean for today.

### Football: The divide between clubs will grow wider

With European football leagues on hold, clubs are facing severe losses that will likely continue over into next season. The transfer market has also been highly disrupted. Not all clubs have shareholders with deep pockets and so there is likely to be a widening of inequality between the big and small clubs.

### Higher e-duc@tion and the future of homework

A confluence of factors – a pandemic, high education costs, environmental concerns, and new instructional technology – could rapidly increase the popularity of online education. Moreover, because online platforms transcend political boundaries, top universities could gain more market share on a global level, leading to the disappearance of many lesser-known schools.

### Our new technology habits

We have seen a profound shift in consumer behaviour over the last few months. This covid-19 crisis could lead to even more widespread acceptance of digitalisation in our lives, permanently changing the way we work, consume, socialise, entertain, and learn.

### Cash is not immune to the virus

The global spread of covid-19 has already led few nations to disinfect, destroy, and reprint their currencies. The virus may be a “once-in-a-century pathogen”, as Bill Gates has previously warned, and the pandemic may warrant a “once-in-a-century solution”. Part of that will involve the push for all nations to move rapidly toward digital payments.

### The end of privacy?

Many believe track-and-trace health apps will erode privacy and risk freedom. But while there are some legitimate concerns, we argue that the trade-off between privacy and technology has been a net benefit to both individuals and society and has actually made people more ‘free’.

### The future of work from home

Children, interruptions, loneliness, and an unsuitable workplace has left many frustrated as they attempt to work from home. We do the sums to see if businesses should subsidise their employee’s housing costs so they can save on expensive office space.

### The end of creative destruction?

With governments moving to protect jobs and businesses, a side effect could be that the natural creative destruction process is impeded, something that could have serious implications for productivity growth. Moving forward, the question will be whether other catalysts such as technological growth can make up for this.

### How the virus could reduce inequality

As long as they are covered by salary protection schemes, those on low incomes have seen their paycheque relatively more insulated than those on higher incomes. Other redistributionist measures also mean the rich are likely to face a higher burden, thus reducing inequality.



# The investment needed in our healthcare systems

Pito Chickering



Intro

There is no question we could have been better prepared for the covid-19 pandemic, and avoided much of the cost. First and foremost, the human cost has been incalculable as healthcare systems have been found wanting. The associated economic cost has also been heart-wrenching as unemployment has skyrocketed around the world. The financial cost is forcing leaders to make impossible trade-offs, particularly in developing countries. In developed countries, the numbers are startling. Stimulus programmes in the US alone have blown past \$2tn. In Europe, many countries with already-shakey finances will run record deficits this year.

To be better prepared for the next pandemic, additional health funding is key. Indeed, the World Bank and WHO have estimated that countries need to spend just \$1-2 per person per year to reach an acceptable level of pandemic preparedness, and that a yearly investment of \$1.9–3.4bn is required..

But it is the allocation of that funding that will determine how well a country is prepared. In this piece, we look at the level of funding that needs to be allocated to various areas of the healthcare system and its value chain. We also provide a framework for how countries should allocate resources to build a more robust healthcare system that can better cope with future disease crises.

Deutsche Bank analysis of required investments in pandemic preparedness

Factor	Investment per annum for G10	Investment per capita/ annum	Basis
Diagnostics R&D	€ 300m	€ 0.3	Equal to the R&D budget for a mid size diagnostics company for each of the developed economies
Diagnostic testing capacity	€ 7,722m	€ 9.0	Analysis of industry capex. Annual investment required to maintain specific capacity for one test per person for pandemic purposes
Pharma active ingredient supply chain	€ 5,000m	€ 5.8	Analysis of industry capex. Assumes reliance on India & China is reduced to 20 per cent of global API supply from 60 per cent
Increased R&D investment in infectious disease	€ 1,000m	€ 1.2	Equivalent to R&D spend of a mid size pharmaceutical company

Source: Deutsche Bank

Where American and European healthcare systems failed

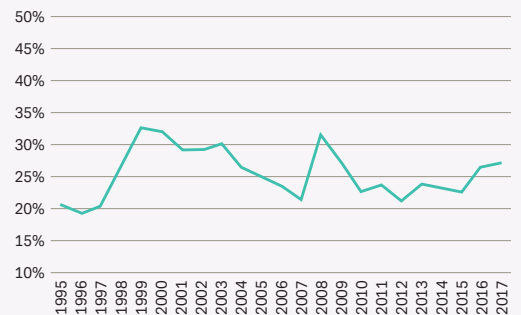
The failure of many countries to effectively deal covid-19 has stemmed from a combination of inadequate health systems and the public awareness of the risks. Indeed, countries that have dealt with several pandemics over recent years have been more successful in dealing with covid-19. As we prepare for the next wave or a future pandemic, we need to be critical to our failures in several areas, including testing, treatments, personal protective equipment stocks, staffing, and protocols.

The drive for efficiency

The global trend for the last couple decades has been for countries to reduce healthcare costs through more efficient care. Typically, that involves taking patients out of expensive settings such as hospitals and caring for them in lower acuity settings. Technological innovations have aided this transformation as surgeries that were once done in a hospital setting are now done in an outpatient setting, and surgeries once done in outpatient settings are now done in physician offices.

The unintended side effect of this policy has been for hospitals to reallocate capital to less capex intensive services like outpatient. In the US in particular, the effect has been compounded by an increasing gap in the level of government payments versus costs. Correspondingly, the proportion of US hospitals with negative margins is increasing, up from around 20 per cent to 27 per cent since 1995 in a normal economic environment, with further spikes during recessions.

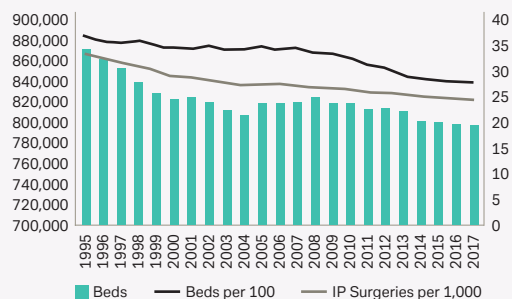
% of Hospitals with Negative Total Margins



Source: MedPAC

The result is that hospitals have been adapting and expanding into higher acuity surgical procedures to offset lower reimbursement. This has resulted in hospitals that are more tied to surgical procedures versus medical procedures, because that is where the economic incentives have moved. Consequently, beds per capita and inpatient surgeries have both declined by about a quarter over the last two decades, while there has been underinvestment in critical infrastructure to address emergencies such as covid-19.

### US Hospital Capacity



Source: MedPac

### A framework for future pandemics

While no amount of preparation can completely 'solve' a future pandemic, the effects can be greatly minimised by targeted investment. The following is a framework for countries as they consider future healthcare investment allocation. It comprises six components: Testing, hospitals, PPE, staffing, protocols, and equipment and drug development.

### Testing

Some of the countries that have best dealt with covid-19 are those that had the best testing systems in place. The bulk of centralised laboratory testing occurs on high throughput machines, although there are lower volume laboratory developed tests (LDTs). The first tests built to detect covid-19 were the LDTs, which have a hard time scaling. The second was PCRs, which are dependent on manufacturers sending kits to the labs. The force multiplier is antibody tests, which are far simpler to run on equipment that is more widespread and can provide test results in minutes versus hours or days as with PCR tests. The lack of antibody tests available has been a serious bottleneck.

Planning for the next pandemic involves accepting that PCR tests simply cannot scale during pandemics. Rather, point-of-care testing is needed. This gives a patient and healthcare workers a

15-minute read. Ideally, a patient can then validate positive reads with centralised PCR tests.

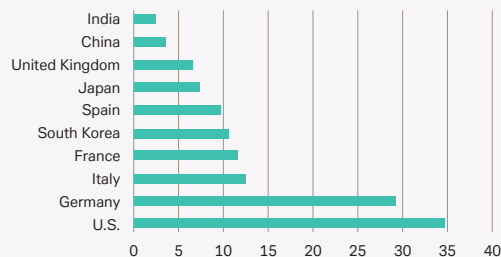
Point-of-care, rapid turnaround tests may be platform-based or self-administered like an at-home pregnancy test. Home tests also have the advantage of minimising exposure to clinicians and are widely deployable. Capacity for both exists globally, however, most of the current commercial clinical tests for covid-19 come from China-based manufacturers with mixed results reported in western countries.

### Hospitals

The focus on efficiency within the current global reimbursement models have pushed hospitals to reduce staffing and capital investments to be as lean as possible. If countries are going to prepare for another pandemic, there must be an influx of capital to buy the necessary equipment and then additional money to ensure there are enough healthcare workers to deal with an influx of patients.

*Pandemic surge beds.* It is relatively simple to equip every bed to handle covid-19 patients. While the focus today is on the bottleneck of ICUs, governments should be thinking of more realistic solutions. As we move through the crisis it will become clear what proportion of all beds must be able to handle these patients. For now we will simply assume they all should. Upgrading these beds requires investments in key areas of capital equipment: (1) Mechanical ventilators; (2) ICU advanced monitoring systems; (3) Continuous replacement therapy (CRRT); (4) Infusion pumps; (5) Negative pressure environment; (6) Additional consumables. For US hospitals, renovating these beds to handle the next pandemic will cost between \$200,000 and \$250,000 per bed. Assuming all non-ICU beds are upgraded to pandemic surge beds, the cost to the US healthcare system is \$175bn – relatively cheap relative to the overall economic cost of covid-19.

### Critical Care Beds per 100,000 inhabitants



Source: Society of Critical Care Medicine

*Additional hospital beds.* There are several ways to prepare for surges from pandemics. The easiest is to have excess capacity of hospital beds and to add surge capabilities on top. While the cost to build a hospital bed is different in each country, to simplify we assume about \$1m per bed which is the ballpark price tag for a bed in the US. As the pandemic is still with us, it is unclear exactly what is the gold standard for hospital beds per country. For now we assume that the US bed capacity is the right one, but as the pandemic evolves we will have better information.

Governments also need to recognise that the vast amount of hospital revenues (depending on the country) come from deferrable surgeries. When hospitals cancel these procedures and wait for covid-19 patients, the government must step in to replace the lost cash flows. From a process perspective, the US government has already passed a \$100bn bailout to hospitals.

After hospital beds, there are a number of methods to prepare for additional surge capacity which require minimal economic investments, but rather require preparation and legal authorisation. For example, operating rooms at Ambulatory Surgical Centers (of which there are 17,000 in the US) can be converted into surge capacity with almost no effort. Surge capacity can also be organised with a combination of temporary military hospital units and other resources such as hospital ships. What is really needed is predetermined coordination between to handle the hot zones.

### Personal protective equipment

Prior to covid-19, hospitals had stockpiled PPE based on standard utilisation behavior, which provided PPE to clinical staff involved in surgeries or those working with infectious diseases. PPE stockpiles that were supposed to last months now last just weeks, as most workers at a hospital need to be wearing PPE to protect themselves.

PPE is a relatively cheap investment as it helps prevent clinical staff becoming sick who are then unable to care for patients. The easiest fix for governments is to invest in large stockpiles to prepare for the next pandemic. If 10m patients are hospitalised for an average of 14 days, the cost to the US would be only \$19bn.

### Staffing

While national stockpiles of PPE will reduce the infection rates of healthcare workers, excess capacity also needs to be built into the system.

As there are many different methods of dealing with hot zones, and staffing within those areas, different countries may take different paths on staffing. What is certain, though, is that because frontline healthcare workers are severely impacted by covid-19, the system must be built where staff can handle the large percentage of workers that become sick.

There are two main ways to solve staffing issues. The first is the easiest fix, namely, to cross-train clinicians from other specialties into respiratory, and intentionally create excess staffing capacity in the system. The second is to create excess capacity in the system. This is less efficient and increases annual operating costs and so must be supported by governments.

### Protocols

Protocols are the fastest, cheapest and most effective process to prepare for the next pandemic. In general, we place protocol development into two main buckets: health systems, and individual responsibility.

*Health systems.* Depending on the country, individual hospitals and health systems often compete against each other for patients, doctors and referral sources. This can lead to a situation where there is no process in place for hospitals to share information on capacity, staffing and best practices. What is needed are additional layers of government control and systems to share information on a real-time basis. This includes sharing data with ambulance drivers, fireman, and all physicians in the area, to direct patients to the proper hospital.

*Individual responsibility.* It is important the lessons of this pandemic are not forgotten. Now they have experience, Americans and Europeans will likely be more involved in preparing their homes for the next pandemic. This includes stockpiling individual PPE and long-term storage food. The next time the government calls for a lockdown, citizens should be more aware of how to act and protect themselves.

### Insourcing of essential equipment / drugs

It seems obvious that uninterrupted drug supply is critical. It is not wonder that countries with an established diagnostics industry have been better placed to implement large scale testing since the covid-19 pandemic began.

Yet economies need to bolster infectious disease research and development. That is because

poor historical returns on investment in this area have left the industry without the incentive to invest in this research. This is partly a question of technological knowledge which would simply require governments to bolster existing investment in Life Sciences R&D. The economic cost of this is likely to be modest.

The global lack of testing capacity has been exacerbated by shortages of raw materials including swabs, laboratory reagents, specialty chemicals and plastic components. Going forward, countries must maintain surge capacity for these consumables and for assay production.

To estimate the cost, take the commercially marketed diagnostic assays are priced at around €90 per test in developed markets, with cost of goods in the 30 to 50 per cent range. Industry capital expenditure levels are also in the range of ten per cent of sales. This suggests that investments to maintain manufacturing capacity for pandemic preparedness for the G10 economies could be more than adequately covered with an investment of €8bn. That allows for surge capacity testing for every head of population (equal to €9 per capita per annum). This cost could largely be offset by efforts to incentivise regional diagnostics industry investment with mandated surge capacity requirements for companies receiving government subsidies.

#### Pharmaceutical supply chains are dependent on Chinese and Indian manufacturers

In recent years, Western markets have become increasingly dependent on Indian and Chinese manufacturers for production of active pharmaceutical ingredients (APIs) and generic drugs. This has led to concerns that covid-19 could lead to global shortages of generic medicines.

The reliance on Asian manufacturers has been a concern for regulators for some time. In August 2019, the FDA estimated that only 28 per cent of the manufacturing facilities making APIs to supply the US market were domestically located.

Reasons for this include the need for a large factory and low-cost labour. Existing firms are also embedded in a network of raw materials and intermediary suppliers and face fewer environmental regulations. Because these issues are hurdles for Western countries, governments must step in to incentive change.

The global API manufacturing market is currently worth €120bn with annual growth of six per cent. The industry is highly fragmented which makes estimates challenging, however, the European Medicines and Healthcare products agency suggests that India and China currently supply 60 per cent of the volume of active pharmaceutical ingredients globally.

In order to estimate the cost of redressing the global imbalance in manufacturing, we refer to the current cost structure of one of the largest API manufacturers, Sanofi. The company's API business is expected to generate revenues of €1bn by 2022 supported by annual capex of just under €100m (or ten per cent of sales), according to DB estimates. As a result, about €12bn is needed per annum to sustain this global industry. Thus, reducing the reliance on India and China for API manufacture from 60 per cent currently to 20 per cent, will cost just €5bn each year. For G10 economies, this equates to just €6 per person each year. The incremental cost of incentivising multinational pharma companies to source locally would likely be a magnitude lower than this.

#### Research and development in infectious disease needs to be strengthened

As globalisation has increased the risk of pandemics, research and development must be bolstered. Unfortunately, the incentive structure currently undermines investment in infectious disease. That is despite the fact that an additional investment of just \$1bn per year is needed for research and development into pandemic and epidemic disease, according to the Commission on a Global Health Risk Framework. This is equivalent to the R&D budget of a medium-sized pharmaceutical company.

All the factors in the framework we have laid out have a financial costs. But that cost is far below not only the economic cost of dealing with the current pandemic, but also, and more importantly, far below the cost of the human tragedy we have seen unfold this year. If governments take heed of the lessons of covid-19, the silver lining to the disaster may be that the world is better prepared for the next one.



# The case for inflation

Oliver Harvey

The covid-19 crisis will be remembered for many things, and among them will be the long-awaited return of inflation in developed markets. Three factors will support this: macroeconomic policy, political preferences and structural trends.

Take macroeconomic policy first. The policy response to the coronavirus looks very similar to the last financial crisis, except on steroids. Central banks have injected unprecedented amounts of liquidity into the private sector through purchases of private and public sector securities, swap lines and direct lending to the real economy. The Fed's balance sheet has expanded more in the space of less than two months – from \$4.29tn to \$6.42tn – than in the four years following the 2008 financial crisis. The fiscal response has been just as aggressive. One calculation suggests that

front-loaded US stimulus amounts to 9.1 per cent GDP, more than double that for the last financial crisis. Germany's discretionary fiscal response – when including deferred measures – amounts to a fifth of its entire economic output.<sup>1</sup>

The problem is that this crisis is very different from 2008, or for that matter 1929, where much of the macro playbook being used by policymakers today was written. 2008 was a classic demand shock caused by a loss of confidence in the banking sector. In a demand shock, fiscal and monetary tools should be used aggressively to bring confidence back.

The current economic crisis is not a demand shock, however. It is first and foremost a supply shock which is now spilling over to demand. Consumers did not start staying away from shops and restaurants because they were worried about their future economic prospects, but because governments told them to. Holidays were not cancelled to shore up household finances but because countries closed their borders. Workers were not furloughed from factories just because of insufficient orders but also because employers were worried about the risk of spreading disease.

Understanding this has very important implications for the policy response to the coronavirus. Most of all, it tells us that massive stimulus is not the answer. In economic parlance, policymakers are attempting to shift the demand curve back to where it was before the virus started, at the same time as holding the supply curve fixed. Less technically, the government is handing out \$100 bills when there is nowhere open to spend them.

Government attempts to keep household incomes stable – through job retention schemes announced in Europe for example – have the best of intentions, but the result will simply be more money chasing after significantly fewer goods and services. The result of this will be inflation. Evidence is already growing. Our economists note that food prices in the United Kingdom have risen 0.8 per cent in the last week according to the ONS (an annualised rate of 54 per cent). Pet food prices have risen a truly hyperinflationary 6.2 per cent (annualised: 2,575 per cent). Of course, these two factoids don't settle the matter, but it is significant that prices on the few number of goods the statistical office can still collect appear to be gathering steam.<sup>2</sup>

<sup>1</sup> Bruegel blog: <https://www.bruegel.org/publications/datasets/covid-national-dataset/>

Critics of the view of higher inflation like to point out two big disinflationary forces: rising unemployment and an increase in precautionary savings. But unemployment doesn't have to lead to downward pressure on wages if the unemployed are simply shut out of the labour force which, in the case of workers in sectors such as hotels, restaurants, airlines and retail, is presently the case. For all intents and purposes those industries do not currently exist, and there is a major question mark as to whether they will return in anything like recognisable form for months, if not years, to come.

As for rising precautionary savings, households' spending and saving behaviour is, as every economist knows, about expectations. As soon as households perceive the price of everyday goods and services starting to rise, their rainy day funds will quickly be raided to buy them.

The second reason that coronavirus will lead to the return of inflation is political. At a very basic level, it is in governments' interests to generate inflation.

Many have invoked the spirit of the first and second world wars in the present coronavirus crisis. These two episodes in fact provide a useful history lesson as to the consequences of deflationary versus inflationary policy after large shocks. After the First World War, the British government pursued a deflationary macroeconomic policy aimed at shoring up its borrowing credibility, reducing its debt and returning the pound to the gold standard. The consequence was a decade and a half of misery, with persistently high unemployment rates and widespread industrial unrest. Worse, due to the unforgiving arithmetic of weak nominal growth and high interest payments, debt to GDP stood at roughly the same level by the end of the 1930s as it had two decades earlier.

After the Second World War, the British government took a different approach. Rather than seeking to reduce the deficit, it founded the modern welfare state, nationalised swathes of industry and pursued an incomes policy aimed at full employment. The result of this policy was relatively high levels of post war inflation (constrained only by the continuation of rationing) and strong nominal growth. Combined, these far

outweighed ongoing budget deficits and interest payments, leading to a fall in the national debt from a peak of well over 270 per cent to below 50 per cent in the late 1970s.

Put another way, policymakers in the West (and for that matter China) simply cannot afford to go the way of Japan following the bursting of its real estate bubble in the late 1980s. Lacking Japan's high levels of GDP per capita, impressive social cohesion and rapidly declining demographics, perhaps with the exception of Italy in the latter case, a deflationary 'lost decade' would spell disaster both in terms of debt levels and at the ballot box.

And when it comes to the electorate, there is no doubt that maximum pressure will be applied on governments to maintain, if not increase, their generous handouts. That includes those for furlough schemes, deferred tax payments and unemployment benefit increases that have been enacted over the last two months to cope with the current and future economic shocks. The political zeitgeist had already turned firmly against austerity before this current crisis hit. Now a Pandora's Box of government activism has been opened: Reinhart and Rogoff have been replaced by Modern Monetary Theory when it comes to the prevailing mood not just among political commentators but respected economic institutions such as the IMF, who have called for fiscal activism and debt moratoria for well after the initial containment phase.<sup>3</sup>

The third reason to believe that inflation will be the standout macro result from the coronavirus concerns structural forces. Here, we can briefly discuss two: retreating globalisation and the distributional consequences of government policy.

It is now widely understood that one of the key factors behind the secular decline in developed market inflation from the mid-1980s onwards was globalisation. The effects of globalisation on suppressing inflation were twofold: first, cross border immigration and the offshoring of production increased the global labour supply, putting downward pressure on workers' wages in developed economies, particularly among the lower skilled. Second, enhanced competition in the manufacturing sector led to a decline in costs of many consumer products.

<sup>2</sup> Focus Europe: European inflation outlook in a time of pandemic: it's complicated. Sanjay Raja and Marc de Muizon

<sup>3</sup> IMF blog on World Economic Outlook <https://blogs.imf.org/2020/04/14/the-great-lockdown-worst-economic-downturn-since-the-great-depression/>

Both of these are under threat from the coronavirus. As the World Economic Forum discusses in a recent blog, major companies are re-evaluating the commercial benefits of far flung supply chains in light of their fragility over the last two months.<sup>4</sup> Political forces are also at work, with the present US administration pledging to end the country's reliance on pharmaceutical products from abroad. Finally, immigration regimes are set to become significantly more restrictive, if not closed altogether, until a vaccine inoculates countries against the prospect of a second wave of infections.

Turning to distributional effects, a second round impact from both retreating globalisation and more expansionary fiscal policies is likely to be at

least a partial reversal in the recent decline of the labour share of income. This should put upward pressure on inflation: the loss of labour bargaining power has been one important factor behind the weak relationship between labour markets and inflation over recent years.

It is difficult to think of any global event that has such a clear read across into future macroeconomic trends. Policy, political and structural factors all point to rising inflation as a result of the coronavirus. Of course, this has not stopped many economists and commentators from claiming the risk is deflation. In the near term, their argument has been buttressed by a price war between oil producers. The worry, however, is that this is a classic case of looking in the rear view mirror.

The covid-19 crisis will be remembered for many things, and among them will be the long-awaited return of inflation in developed markets. ➤

<sup>4</sup> <https://www.weforum.org/agenda/2020/04/covid-19-pandemic-disrupts-global-value-chains/>



# The case for deflation

Robin Winkler, George Saravelos

Following the extraordinary event of oil prices turning negative, it seems odd to make a case against inflation. Yet a recent dbDIG survey found that a majority of our clients expect the pandemic to be ultimately inflationary. Remarkably, the disinflation argument is anything but consensus.

**Don't put the cart before the horse—this is a huge recession**

Our starting point is that the current crisis is a bigger demand than supply shock. Let us assume that the virus disappears tomorrow or (more likely) a vaccine is in place by next year. Our ability to fly, build cars in factories, go to cinemas and football events will all be the same. Our willingness and ability to do so will not. Higher unemployment, more bankruptcies, greater “fear” of the unknown will scar our memories and wallets for many years to come. A group of Harvard economists that modelled the economy recently concluded the same.<sup>1</sup>

Still, even many of those arguing for inflation agree this shock is deflationary in the short run. Eventually, the argument goes, a supply shock will dominate. The problem is that in the long run, as Keynes famously said, we are all dead. For many households and corporates, balance sheet repairs will be imperative for years to come. Corporate debt levels were high before the crisis and are now exorbitant. Government support has mostly come in the form of loans and guarantees—a perfect recipe for a severe debt overhang. Tens of millions of Western households will emerge from the crisis unemployed.

Once deflation takes hold, even in the short-term, it can become self-perpetuating in the long-run. It will clobber already weak inflation expectations and create an irresistible incentive to save. Large-ticket and capital expenditures will be deferred until the risk of further pandemic waves has vanished beyond doubt. With central banks

<sup>1</sup> <https://scholar.harvard.edu/straub/publications/indebted-demand>

unable to take rates lower, there is no penalty on hoarding cash—classic conditions for a liquidity trap. It will take years for confidence to be fully restored. In the meantime, everyone will spend less. As recent Fed research has shown, the main effect of pandemics over the last 1,000 years has been a big rise in precautionary savings.<sup>2</sup>

### Let's not over-hype the fiscal boost – it is neither big or permanent

Governments have an enormous task on their hands. The fiscal numbers announced are large because the economic shock is huge. To argue that fiscal stimulus is a game-changer is to put the cart before the horse. The important question is not about current stimulus but whether huge deficits will continue deep into the future.

The starting point should be that a big chunk of the fiscal measures announced are loan guarantees rather than fresh new money. There is nothing stimulative about adding more debt to corporate balance sheets. But even the direct stimulus is designed to be temporary and self-calibrating. Consider the employment protection schemes in Europe whose size is purely a function of the unemployment rate and will disappear once employment goes back to normal. The bulk of the US fiscal stimulus is also temporary – households have received a one-off paycheck, more likely to be saved rather than spent, like in 2008. As things stand, the fiscal stance is set to be massively contractionary next year, not expansionary.

If stimulus is extended next year, it will be because unemployment and demand are still weak. Yet even the extension of the stimulus is not a given. The UK Chancellor is already in discussions about winding down the employment protection scheme. Germany suspending the debt brake to deal with a natural catastrophe doesn't imply Germans are no longer committed to it or indeed bound by law. If things improve, the government will tighten back. Divided US government – as is likely following the US election – is just as likely to lead to partisan politics and restricted spending like the big fiscal tightening experienced during the Obama years. Austerity on public services may be more toxic than in the past. Indeed, the UK's National Health Service is unlikely to ever be short on funding again. Yet, there is

already a debate about raising taxes. This crisis has caused a massive redistribution of income from the young to the older generations. Higher taxation – especially on wealth – should be a far bigger concern than unlimited spending.

And let us not forget China. The Global Financial Crisis is a misnomer insofar as China came through it relatively unscathed thanks to truly massive stimulus. As the Chinese growth boom continued, it provided crucial support to the global economy in the wake of the financial crisis. The rise in commodity prices helped support inflation expectations. Today, China is a less reliable engine for global growth. For one, its growth mix has transitioned toward domestic services in the last decade. And more importantly, there is simply too much leverage in the Chinese system to pump prime the economy at the same rate as a decade ago. Other emerging markets, meanwhile, will likely face an even greater pandemic recession than the developed world. Add the global oil price war into the mix and the environment is highly deflationary. The West is truly on its own.

### Deglobalisation—it is very slow

If the cycle won't help inflation that leaves us with the trend. Where we have most sympathy with the inflation argument is that the pandemic will structurally raise business costs over time. Western manufacturers will need to reconsider their supply chains. The integration of global value chains reduced manufacturing costs by shifting production to locations with cheap labour (see our piece 'Undermining global value chains'). Yet businesses will face pressure from shareholders, regulators, and governments to make supply chains more local and resilient to future shocks.

An unwinding of global value chains should strengthen the position of workers in Western economies. If Western workers have been the main victim of globalization, they stand to benefit from deglobalisation. But this structural effect will take decades, not years to feed through. It is unlikely to play any immediate role in driving up wages during the deepest labour market shock since the Great Depression. German trade unions will not emerge from this crisis pressing for higher wages just because the next generation of car factories is less likely to be built in Eastern Europe or South America.

<sup>2</sup> <https://www.frbsf.org/economic-research/files/wp2020-09.pdf>

And what about business costs? A negative productivity shock would indeed raise costs of production. But, in a recent paper, our economics colleagues have estimated that even a return to a pre-WTO trading regime will bump up inflation by a moderate amount.<sup>3</sup> And it still doesn't follow logically that higher costs will be passed on to consumers. With weak demand, price rises are more likely to be absorbed into profit margins. And even if they are passed on the last ten years have shown that weak and entrenched inflation expectations are extremely difficult to move up again--a very different story to the cost-push inflation of the 1970s.

### Who really wants inflation?

Ultimately, to move back to a high inflation regime we need unlimited fiscal and monetary easing. Yet we would dispute the shift in thinking on both fronts. On the monetary side, central banks have not given up on their commitment to inflation targets and their independence does not seem jeopardised. Recently, the Bank of England governor authored a piece in the Financial Times emphasising the central bank's independence. There is little reason to think that central banks could not turn around policy stance on a dime if inflation reared its head.

More importantly, what about politicians? The commitment to reduce unemployment rates should be indisputable. Yet to posit that this is the same as generating a shift in inflation thinking is an argument too far. Prime Minister Abe succeeded in reducing the Japanese unemployment rate to record lows and stepped off the fiscal gas pedal once this was achieved.

The thought of inflation in Japan did not prove very popular. The Germans – with very poor demographics – would almost surely not welcome inflation and neither would Italy with the tighter ECB policy and explosive debt paths it would entail.

With the policy response already succeeding in averting an economic meltdown, the question is not whether policymakers will sign up to a 1920s depression but whether a disinflation environment similar to what prevailed in the global economy for centuries before the second world war would be attractive. As global demographics deteriorate, so disinflation becomes politically attractive; old people prefer low prices to protect their savings.

Monetary and fiscal policy-makers received much flak for rewarding moral hazard and sowing the seeds of inflation during the financial crisis. In the event, no advanced economy has managed to hit its inflation target. Today, critics argue this time is different because the pandemic is also a supply shock. That is true and will have ramifications for the global economy in the next decade. However, the demand shock is even greater, the slippage in inflation expectations is more dangerous, and the shift in fiscal policy over-hyped. If inflation did overshoot against all odds, there is little reason to think governments and central banks in particular would be more tolerant of it than in the last forty years. The world has lived with disinflation for centuries. We should worry about turning into Japan, not Zimbabwe.

<sup>3</sup> [https://research.db.com/research/research/Document?rid=b6f51e78\\_02c2\\_47b0\\_aa71\\_bdcff75e4bd7\\_604&kid=ESN001&wt\\_cc1=ind-1823-4112](https://research.db.com/research/research/Document?rid=b6f51e78_02c2_47b0_aa71_bdcff75e4bd7_604&kid=ESN001&wt_cc1=ind-1823-4112)



# How will we pay for all that stimulus?

Jim Reid, Mark Wall

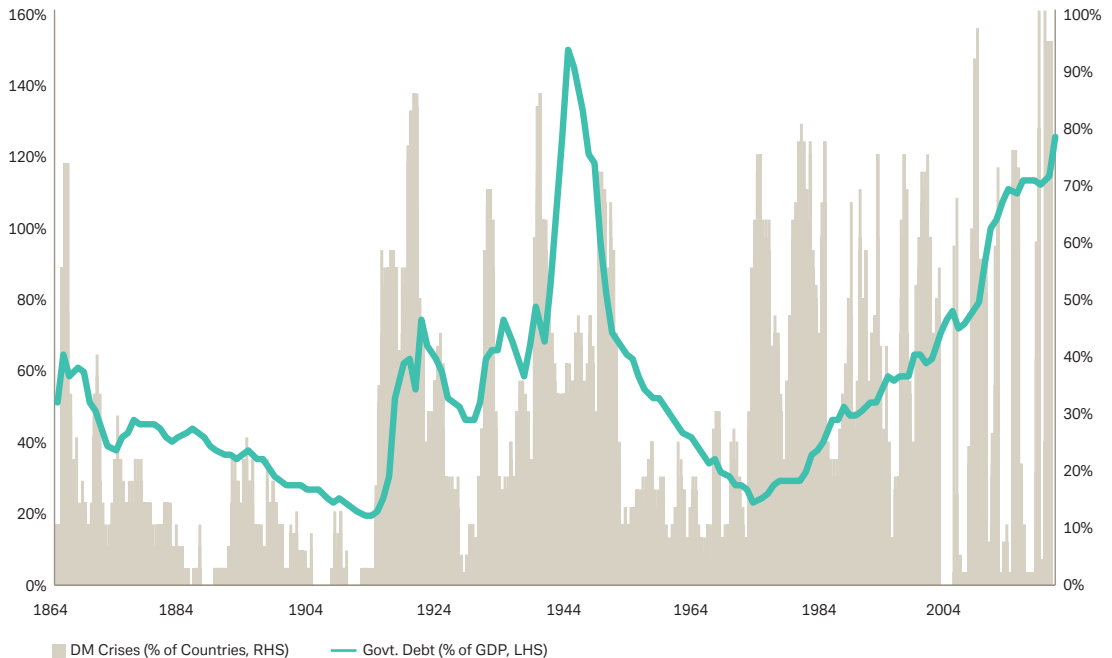
Virtually every country around the world has reeled out significant support mechanisms for their citizens and companies over the last two months in the face of the extraordinary covid-19 shock. Whilst this is admirable and well intentioned it leaves the question as to how they will end up paying for it. After all, if it was this easy to boost public spending in the economy, surely there would always be a blank cheque available to finance it.

There is good news and bad news. The good news is that we live in a fiat currency world where (in theory) there is no constraint on printing money and IOUs. This allows more flexibility in downturns compared with the pro-cyclical tightening of policy that commodity-based (e.g. gold) systems experience, as we found out in the 1930s. The bad news is that we have continuously dipped into the well of the fiat-based system over the last 50 years. So much so that G7 private plus public debt has increased from around 130 per cent of GDP to

270 per cent in 2019. It will likely hit 300 per cent this year – a record high.

As debt increases with the covid-19 crisis, one consequence will be to reinforce the belief that the modern global economic system is prone to regular financial crises. Since the Bretton Woods system collapsed in the early 1970s and we moved into an era of fiat currencies, financial crises have become more regular. The following chart shows average G7 government debt-to-GDP versus the percentage of countries that have seen a financial shock over any 12-month period. Prior to the Bretton Woods system, financial crises existed (often around wars), but the frequency was not as intense as it has been in the post-Bretton Woods world. We should stress that this should not be seen as a reason not to buy financial assets as in this era financial stress brings huge intervention, but it should help raise an awareness to the structural regime we are living through, how it relates to history and how covid-19 will perpetuate this.

Percentage of DM countries in financial stress vs. G7 government debt to GDP



Source: GFD, Bloomberg Finance LP, CBO, Deutsche Bank

### The end game?

So financial crises are likely to continue as a feature of our global economic system post covid-19 but so will heavy intervention. In terms of the end game, though, if there is something resembling a V-shaped recovery from what will still be one of the worst recessions of the last century, then government debt-to-GDP will increase by plus or minus 10-15 percentage points for most developed countries this year. This will leave a sizeable scar on public finances but it should not lead to an imminent funding crisis. Taxes will likely have to rise but central banks will do most of the heavy lifting by increasing government bond purchases. As long as we see an economic rebound in 2021, and as long as central banks can keep bond yields comfortably below TREND nominal GDP, then debt sustainability can be prolonged beyond what might appear obvious by simply looking at the debt-to-GDP statistics. Consider Japan over the past two decades. So far so good.

However the real curveball comes if this pandemic is extended. While this is not the base case it is an ever increasing risk and we will likely see some elements of it. Social distancing would become the new normal and we could see second or third waves of the outbreak which involve new lockdowns to varying degrees of severity. In this scenario, economies will operate well below their potential for a long period of time and the damage to public finances could become more existential.

In countries like the US and the UK where central banks are independent only by policy choice, the market will largely assume that these central banks will always help to monetise the debt, either by direct purchases or by indirect control over the yield curve. Currencies should fall but in a world where everyone has similar issues, there may be benefits to actually having a solution to the issue.

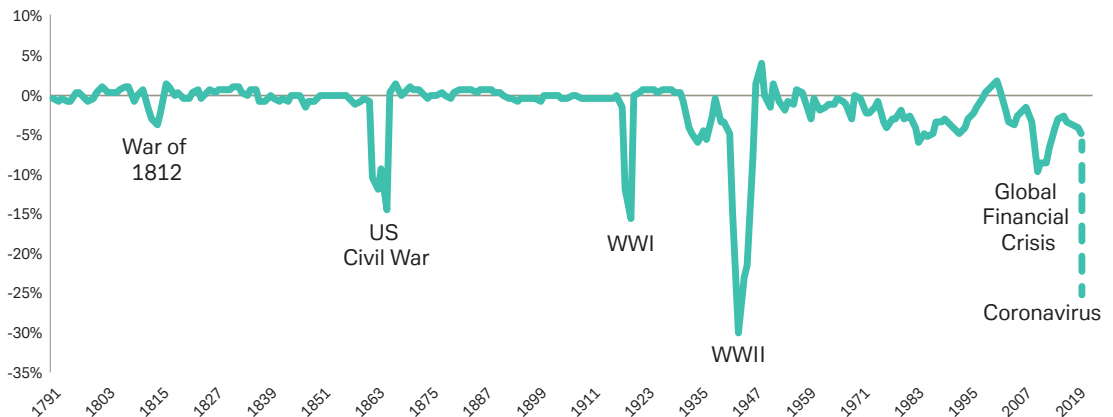
In a protracted pandemic scenario, DB economists see the US economy shrinking over ten per cent in 2020 and being fairly flat in 2021. The budget deficit will then hit a stunning 25 per cent of GDP this year and next. By 2030, debt-to-GDP could rise to 175 per cent, not far from double last year's figure. This level was not previously expected by the Congressional Budget Office until 2049. These are war time type level deficits as shown in the following chart.

### US wartime deficits

These already scary debt numbers assume a permanent and sustained low interest rate relative to growth thanks to heavy intervention from the Federal Reserve. If the Fed purchases a large proportion of the extra debt, and interest rates can be controlled, we could kick the proverbial can down the road as we have done so many times since the start of fiat money in 1971.

This high debt/low interest rate outcome is possible if the demand for US securities remains

US Surplus/Deficit (% of GDP)



strong and if inflation remains low. If inflation does start to rise, demand for these securities will likely fall and central banks will have a much tougher job. The likelihood is that, in a country like the US, the Fed will choose, or will be forced by the government, to monetise the debt by buying US treasuries in even larger size. This could involve not only buying up new issuance but also bonds that free markets no longer wish to own.

If the Fed can keep yields well below inflation, then this will, of course, help to reduce the climb in debt. If inflation is the route chosen it could help manage the debt burden more successfully but this will create periodic bouts of huge volatility in financial markets and ensure turbulent times. Equities prefer low stable inflation and some of the mountain of fixed income will need to find its way from private hands to the central bank balance sheet.

### Europe

The picture in Europe is far more complicated. Under the protracted pandemic scenario DB economists see the big four Euro Area debt-to-GDP rising from 92 per cent to 148 per cent next year. Germany's position rises from 59 per cent to 'only' 97 per cent. In contrast, Italy is a concern. The country's debt-to-GDP ratio will likely climb from 135 per cent pre-covid to just over 200 per cent by the end of 2021. If Italy was a stand-alone country outside of the EU then its independent central bank would have to make a decision as to whether to monetise that debt. And the market would have to decide what to do to its currency. Japan is proof that a country can survive with a surge in debt if the central bank buys almost half. In Japan's case, the currency has actually been relatively stable over this period. The good news for Italy is that, like Japan, it has a wealthy private sector and a current account surplus.

The potential problem is that Italy is in the EU and shares a currency with Germany. By the end of 2021, Italy and Germany could both have debt of around three trillion Euros, even though the Germany economy will be around twice as big. At current yields, Italy's borrowing rate is at 2.25 percentage points above that of Germany. This does not seem sustainable.

So how will Europe stay together? The optimistic scenario is that the ECB will

increasingly be allowed to deviate from capital keys and buy significantly more Italian debt than for other countries. For this to happen Italy will likely have to commit to rolling conditionality over how it manages its economy. The main threat to this strategy is inflation and politics. Over the last decade, the ECB has purchased government bonds in order to meet its inflation mandate. If low inflation is not an issue, then at some point will it have the political or legal mandate to keep buying Italian debt? Much will depend on the politics. Will northern European countries tolerate the ECB financing of Italy's debt if and when inflation is rising?

In terms of domestic politics, will Italy continue to accept some oversight from Europe in return for continually financing its excess debt? Rationally this may make sense but politics over the last decade has shown that populism breeds in troubled times. A more Eurosceptic government ruled in the future by perhaps Mr Salvini of the League Party might take a more combative approach with Europe. Can the ECB still buy an outsized proportion of Italian debt in such a hostile environment? Whatever path is taken, it is a relatively unstable equilibrium and ECB involvement for now is mostly about buying time for a bigger solution. As we go to print the German Constitutional Court has demonstrated that the exit risks also come from the German side. The legal resistance to monetising debt may increase further over time.

### The bigger solution

One of the founding fathers of the EU, Jean Monnet, said that the union "will be forged in crisis and will be the sum of solutions adopted in those crises". This sums up the evolution so far. The problem is that the EU is in a permanent identity crisis. Compromise has kept the bloc together while at the same time leaving it vulnerable.

We know what is unlikely to work and that is more austerity after the political and economic carnage that it created post 2010. Default is not a straight forward option either due to the sovereign/banking doom loop where banks have been forced to hold more domestic debt. Also joint liabilities and European bond issuance are unlikely to fly. It would be akin to a direct bottomless fiscal transfer from the northern to southern states and politically near impossible.

There are some options. A decade ago, the idea of a debt redemption fund was raised. Here, an SPV would be formed to purchase all member state public debt above 60 per cent of GDP and financed by joint-and-several bonds. Using the fund entails a commitment to fiscal consolidation and dedicating national revenue streams to the fund. Excessive debt will then be worked off over 20 years.

The possibility of a Covid debt redemption fund has been mooted by Francois Villeroy de Galhau, the influential Governor of the Banque de France. Here, one-off debt inherited from the covid crisis could be ring-fencing into a separate entity, similar to how France created 'Caisse des Depots et Consignations' to absorb the debts from the Napoleonic Wars. This separation would allow a return to "ordinary" fiscal policy once the virus crisis is over.

With a Treaty revision, the EU could create a Pandemic Emergency Recovery and Resolution Corporation (PERRC). This would be an official EU entity, fully under the oversight of the ECJ. Like the ESM, it could issue debt backed by paid-in and callable capital. That is, it would be financed by 'several' but not 'joint' bonds. Treaty revision would allow a carve-out from the Article 123 prohibition on monetary financing. That is, the PERRC would have the ability to finance itself at the ECB.

Consistent with Villeroy's concept of ring-fencing covid crisis debts, the PERRC would consist of two funds. First, a Pandemic Emergency Recovery Fund of up to €1tn would finance a large-scale recovery and investment programme over the next several years. Second, a Pandemic Emergency Resolution Fund would purchase the PEPP portfolio from the ECB. In doing so, it would acquire the liabilities that member states have built up responding to the crisis (including national discretionary policies, cyclical deficits, any use of the ESM pandemic tool, the SURE labour support tool, debt financing for corporate capital injections or nationalisations, etc).

The quid pro quo for the carve-out from the prohibition on monetary financing is that euro area member states agree a constitutional change to implement a covid tax to finance the redemption of the recovery and resolution

funds over a long period of time (for example, 100 years). This tax would need to be designed carefully and ring-fenced so as not to be adapted for other uses. Part of the financing could also come from asset sales. The PERRC would absorb the acquired assets as well as the liabilities and the benefit of any ECB-financed equity position can be offset against the total, area-wide cost of covid. And management by an EU-level entity would ensure compliance with the State Aid rules post-covid.

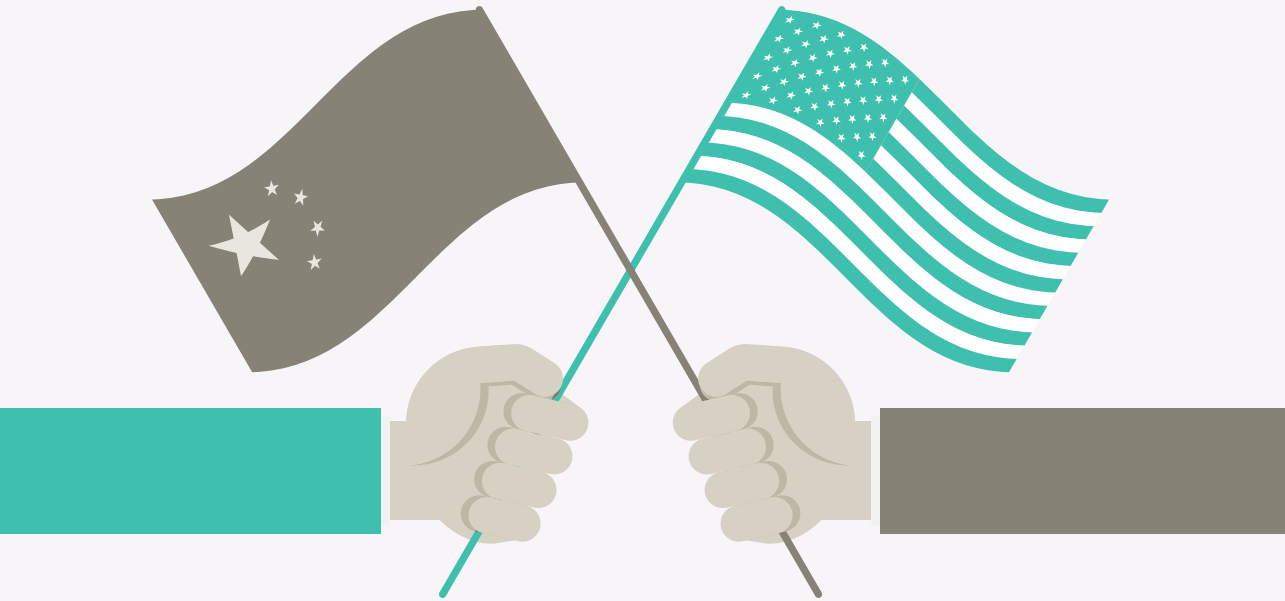
The politics entailed in creating the PERRC will be extremely challenging. Exclusion from monetary financing and limited tax raising powers are highly controversial. Moral hazard is also an issue. Although the covid debt shock was not the result of an economic policy choice and therefore not subject to the usual moral hazard considerations, PERRC would create a precedent and that could need its own offsetting controls.

The EU and EA have had a tendency to find sufficient compromises for ensure survival. That is what the covid debt redemption fund would allow. Without something like this, the risk is that the covid debt shock will prove existential to Europe in its current form.

What is certain is that there will be an astonishing amount of global debt after covid-19 recedes. Inflation and politics will determine how the world manages this though. A global situation that accelerates us closer to the Japanese experience is possible. If we see higher inflation and more fractious politics then the outcome will likely be binary and volatile.

Yet, political fault lines could emerge even without inflation, particularly in Europe with its tensions between the north and south. Regardless, covid-19 has accelerated the day when policymakers will have to decide how to manage what was already a rising debt outlook. While the US and UK will likely choose monetisation, the situation is more complicated in Europe. The ECB may not be legally able to continuing buying into perpetuity. There are certainly no easy choices after years of benign neglect towards ever mounting global debt levels. That will make Europe's propensity to find a compromise more important than ever.





# The coming Tech Wall and the covid dilemma

Apjit Walia, DB Analysts

Technology has been at the forefront of the global political, social and economic spectrum for more than two decades. The \$5tn ICT sector continues to have an inordinate impact on daily life. With the coming of covid-19 and the resultant global lockdowns, the significance of tech can be seen not so much from how much it has helped governments, corporates, institutions, central banks, hospitals, families, even religious bodies function. But, from the basic question that where would the covid-inflicted world be if we didn't have tech-induced 21st century connectivity? What would the impact be to GDP, government functioning, central bank programs, work from home operations, at-home learning, home deliveries, security, in essence, the basic functioning of a citizen's life if one wasn't able to connect digitally? The answer is abundantly clear and the majority of the world's population would cite that tech will become an even bigger part of their life as we emerge out of this crisis.

To predict as to how much people will evolve in using tech post covid to work or consume from home would be an exploration of human psychology. It is hard to ascertain how much

a prolonged traumatic episode makes an individual crave the previous paradigm or accept the newer one. Once the crisis is over, people may whole-heartedly welcome the "work from home" digital culture. Or reject it due to the inherent need of humans to want to connect with others physically. The level of impact on digitisation, e-commerce, social media, home entertainment, tele-education and tele-health is well telegraphed with many differing opinions. However, the one paradigm one can cite with a high degree of confidence that will emerge dramatically different post covid is the fault lines of the Global Tech Cold war. The acceleration of this 21st century cold war has the potential to split the world into two halves by a "Tech Wall" – two parallel tech regimes – a US centric one and a Chinese centric one, with little or no inter-operability. The impact this Wall could have on every sphere of life globally may last decades, if not generations. *It is something every policy maker, institution and corporate has to bear in mind as they plan for life post covid.*

The striking similarity between the 2020 crisis and the previous 2008 crisis is they both seem to

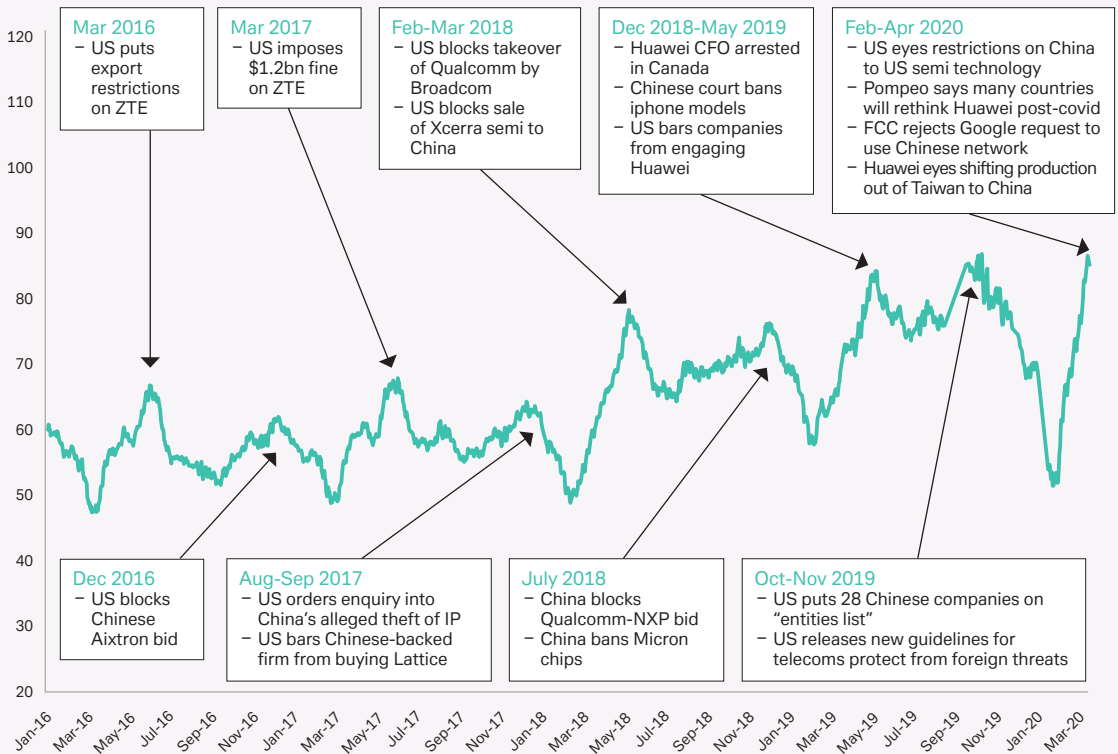
have been caused by globalisation. One by the untethered flow of funds, and the other by the untethered flow of humans. As nations emerge from the crisis, and with nationalism on the rise, a growing averseness to globalisation seems to be occurring. A recent survey conducted by dbDig showed 41 per cent of Americans state they will not buy a "Made in China" product again and 35% of Chinese state they will not buy a "Made in USA" product again. Tempers and emotions are running high in both populations and the politicians know this very well, making the matter more complicated as it is an election year in the US. It is somewhat ironic that tech has been a major contributor to globalisation and this reversal might fuel the Tech Cold War even more.

We collaborated with dbDig using machine learning to track the number of Global Tech Cold War and proxy mentions in newswires globally over the past five years to create the DB Tech Cold War Index. It has been trending

higher over the past five years with peaks coinciding with tit-for-tat measures by US and China on technology IP protection and counter measures. Fascinatingly, it made an all-time high in April 2020 as the covid crisis fueled a strong reaction from the US administration. At the root of this cold war is a view by the US administration that China is engaging in forced IP transfer and "innovation mercantilism". The Chinese administration view is that they are migrating from a "factory of the world model" to a global innovation hub model, and technology supremacy is a natural national priority. The two countervailing views have had very little movement, causing the Trump administration to embark on the tariffs policy culminating with a pause and the Phase One deal receiving a fair amount of global coverage.

*A nuanced observation of the tariff issues suggest they are primarily a smaller strategy that is part of the larger Global Tech Cold War.*

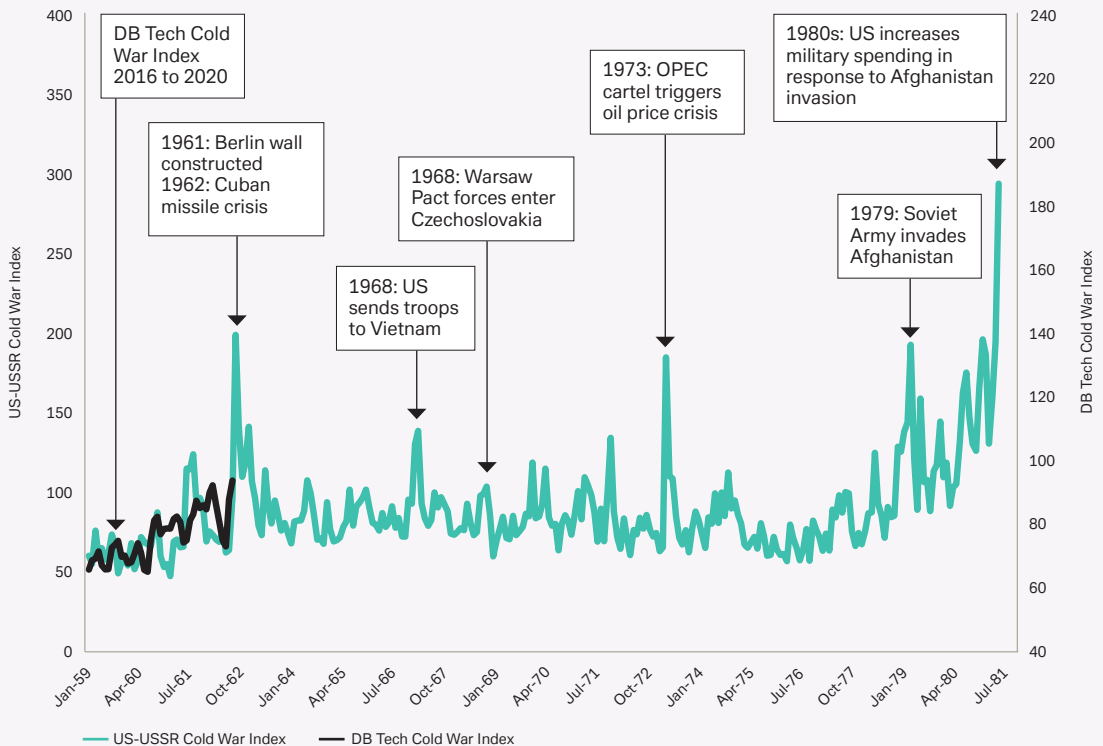
### DB Tech Cold War Index



Source: Deutsche Bank

The previous cold war between the US and USSR lasted more than four decades and had a major differentiating factor with the current one as there was very little co-dependence between the two blocks. On the other hand, *US and China have been engaging in an increasing capacity since the 1970s and the level of integration between the two global tech regimes is unprecedented. To detangle that will be extremely painful and costly.* Cold wars, once they start tend go on for several decades and the following chart shows how early we might be in the stages of the current one.

### Tech Cold War vs US-USSR Cold War Index



Source: Caldara, Dario and Matteo Iacoviello, "Measuring Geopolitical Risk," working paper, Board of Governors of the Federal Reserve Board, December 2019), Deutsche Bank

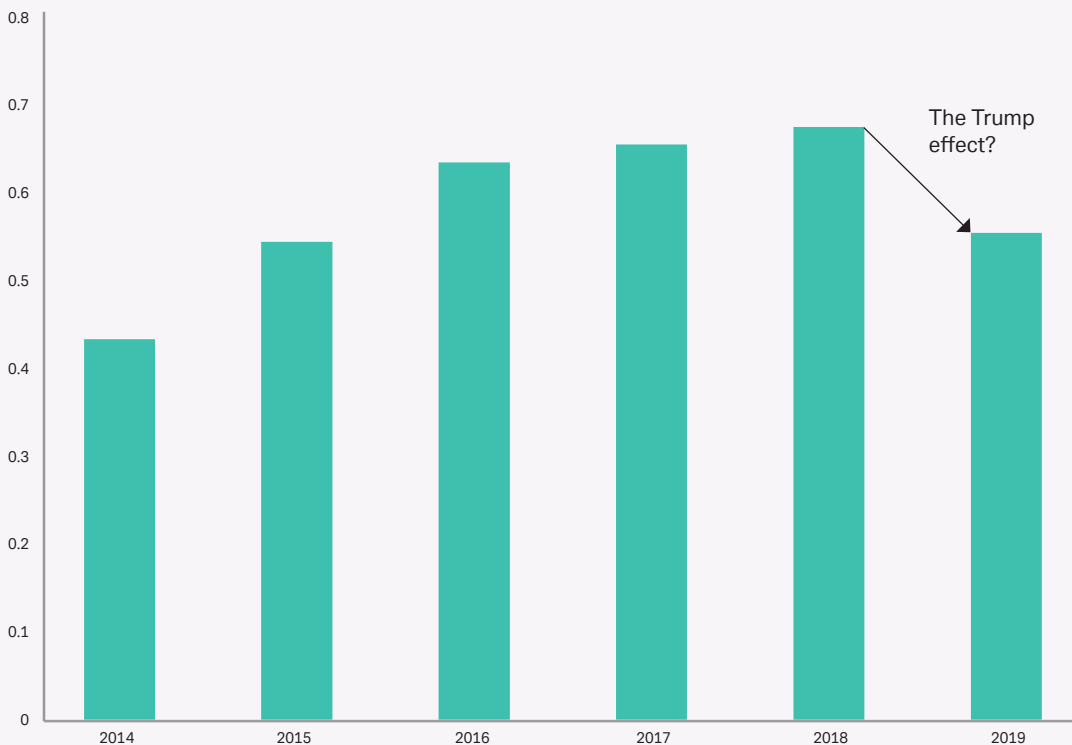
In the previous cold war, the US won the innovation race versus the USSR by simply outspending them, and that primary strategy eventually worked. The current one has augmented differing policy reactions from the US. At first, it was a lack of acceptance that there is a tech rivalry. Gradually, with a fair amount of industry noise reaching D.C., the administration started to formulate a strategy. So far it has been leaning more towards slowing down Chinese tech progress by going after some of the key Chinese players like Huawei, as US and Western alternates catch up in capacity and sophistication. We created a China versus US Geopolitical Tech Ratio using primary technology segments - Semiconductor capacity,

Telecom infrastructure, VC Funding, High-end AI engineering talent, Quantum computing capacity, Tech R&D, Patent applications, Number of Tech PhDs and Big Data capabilities. We gave higher weightage to high-end semiconductor capacity (sub 10 nanometer) and AI talent, which we believe will make the eventual difference, two segments in which the US leads considerably and where China is focusing most of its efforts.

*The ratio shows the yearly gap narrowing between the two, with China at 0.4 of US in Geopolitical Tech Capacity in 2015 and rising steadily to more than 0.6 by 2018. This trajectory would ensure China reaches Geo-Political Tech Parity with the US between 2025-2030, in-line with their goals.*

Fascinatingly, 2019 saw a first time drop in the ratio to 0.5. *The Trump strategy to slow China seems to be working.* This would come as a surprise to several stakeholders who believe Trump's China policies are flawed. However, this one-year downtick might just be a short pause with a renewed acceleration of the Chinese progress.

### DB China/US Tech Geopolitical Capacity Ratio (DB CUSTGCAR)

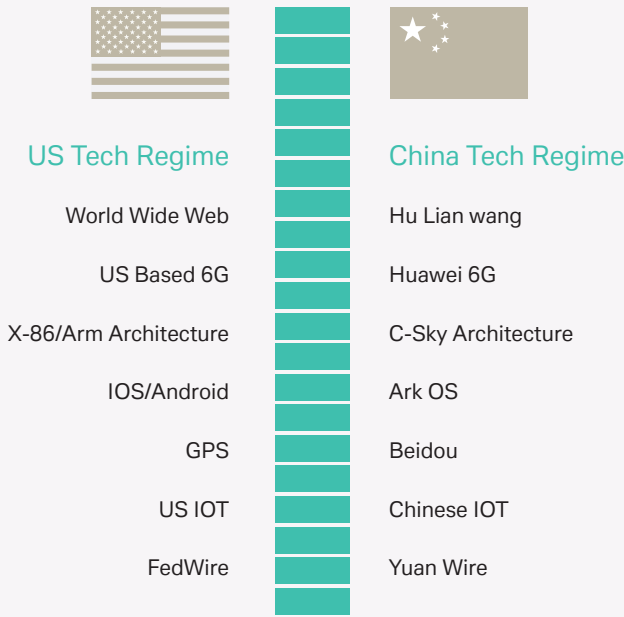


Source: Bloomberg, SEMI, NSB, Pitchbook, IFR, OECD, Deutsche Bank

As the Tech Cold War continues unabated, there is a growing inclination from both sides to create their own tech regimes. We believe this has the potential to reach a crescendo when both sides end up creating a "Tech Wall" with little or no inter-operability. This will push neutral states to make a choice with the fault lines most painful in Europe, a continent where Tech has not yet become a strong contributor to domestic innovation. *It would present a very difficult dichotomy to policy makers to what we call the Covid dilemma. As US and China ask nation states to make a choice between their rival technologies and the covid crisis creates a focus on cash conservation, stimulus to jump start economies and job creation, what will policy makers do?* To strip out one technology is very

painful and expensive. For example, asking a nation like Germany to strip out Huawei from their network would cost tens of billions of euros, delaying infrastructure build and hurting job creation. And staying the course would ensure a strong diplomatic reaction from the US with unforeseen outcomes. Either choice leads to complicated and expensive paths. A world where two rivaling tech regimes carve out their spheres will also have many second and third derivative impacts. The Tech Wall would entail rival internet platforms, satellite communication networks, telecom infrastructure regimes, CPU architectures, operating systems, IOT networks and payment systems with very little inter-operability or interaction.

## The Coming Tech Wall



Source: Deutsche Bank

For corporates, it would mean having to deploy two different communication and networking standards across several geographies to ensure inter-operability. Product design would be lot more challenging as they would no longer be able to design once and sell everywhere without incurring additional costs of complying with two different standards. Stricter regulatory controls would make data sharing across the Tech Wall and two different regimes of hardware an IT quagmire.

*The Tech Wall's cost to the \$5 Trillion ICT sector could amount to a yearly demand destruction of around two per cent and another two-to-three per cent increase in costs (capex, labor). At around \$250bn per year and increasing, this geo-political cost on the ICT sector and global growth would start to feel incredibly painful as time progresses.*

When nation states formulate strategy, these costs are outweighed by the larger national security decision matrix. However, the most pain is felt by the common person on the street and small businesses, who are already reeling from the covid impact. Policy makers and key stakeholders globally have to navigate the covid crisis, create jobs and conserve cash whilst keeping at bay the geo-political tech war that is coming to their shores. These choices will impact the next few decades of the futures of nation states. The irony of this whole multi-decade saga is that history tells us that technology cannot be monopolised by anyone for too long, sheer diffusion ensures it spreads ubiquitously. An objective observer hopes this reality is dawned on the two tech regimes and administrations sooner rather than later.

History tells us that  
technology cannot  
be monopolised by  
anyone for too long. >

# Undermining global value chains

Marion Labouré



Sudden, sharp disruptions to global value chains are not new. Consider how the Japanese earthquake and tsunami in 2011, and the financial crisis a few years earlier, both caused havoc in the world's interconnected supply chains. As companies and governments formulate their plans for both near-term economic recovery and longer-term resilience, they can incorporate some of the lessons of these past episodes.

Given the speed at which the covid-19 pandemic has severely disrupted global value

chains, it can be thought of as something akin to a natural disaster in its effects on supply and demand. This can give companies a guide as to how long the impact may last. The chart below compares the growth in sales (relative to the same quarter in the previous year) and at different quarters surrounding a major natural disaster. The figure also shows the impact of a natural disaster on directly-affected suppliers, who provide sub-components to a firm, and their customers. The chart shows that disruptions can lower sales for more than six quarters after a natural disaster.

Natural disasters propagate to business partners, with long-lasting effects

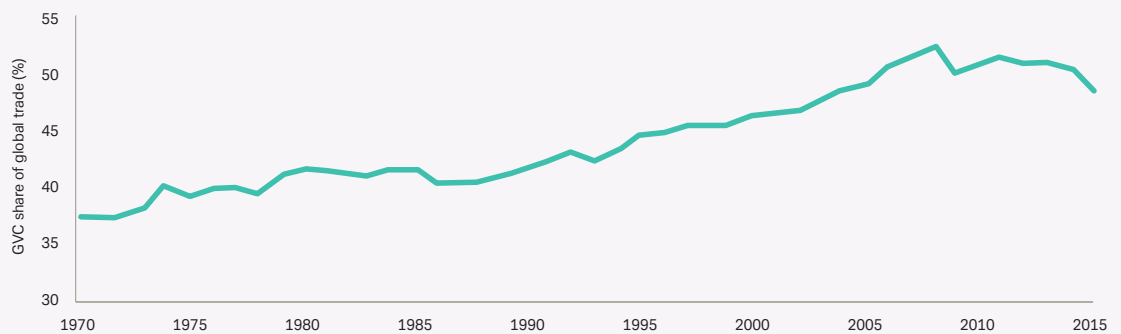


There are three factors that can amplify the shock to global supply chains. The first is when there is a synchronisation of shocks, in other words, several disasters happening at once. The second is when restrictions on the movement of people come into play. Today, these restrictions are the result of government-enforced quarantines and border closures. In some ways, this is akin to the experience of some natural disasters which suppressed movement as transportation systems failed.

### International tensions and global value chains

The third factor that can amplify value chain shocks – and is one of the highest risk factors today – is protectionism and export restrictions. A pushback against globalisation after covid-19 would not be new. In fact, some developed countries have been turning inward for the past decade. Usually this is due to political viewpoints related to the rise of nationalism and economic protectionism. The graph below depicts this resistance to GVCs over the past decade.

### Global value chain trade



Sources: WDR 2020, World Bank.

The covid-19 pandemic could further accelerate this trend. Some political leaders who hold nationalist and protectionist views could exploit the pandemic by arguing that countries should, for example, ban immigration under the pretext of reducing health risks and protecting national labour markets. Some policymakers have already started blaming globalisation as the “original sin” for many economic and social ills. United Nations Secretary-General Antonio Guterres described how “rising ethno-nationalism [and] populism” could be co-opted to “provide a pretext to adopt repressive measures for purposes unrelated to the pandemic.”

In the most urgent initial phase of the covid-19 outbreak, one limitation of GVCs became starkly apparent. Some protectionist leaders argued that GVCs were responsible for the shortage of critical personal protective equipment needed by health care providers. Of course, this argument was used by some to mask a lack of preparation. But their argument is not completely ill-founded. Offshoring domestic capacity has made it harder to ramp up local supply for N-95 masks and ventilators. Export restrictions imposed

by some countries have strangled this further and increased prices. Furthermore, as some governments in advanced countries look to encourage companies to reshoring some economic activity, they point out that this process could be accompanied by an increase in domestic employment.

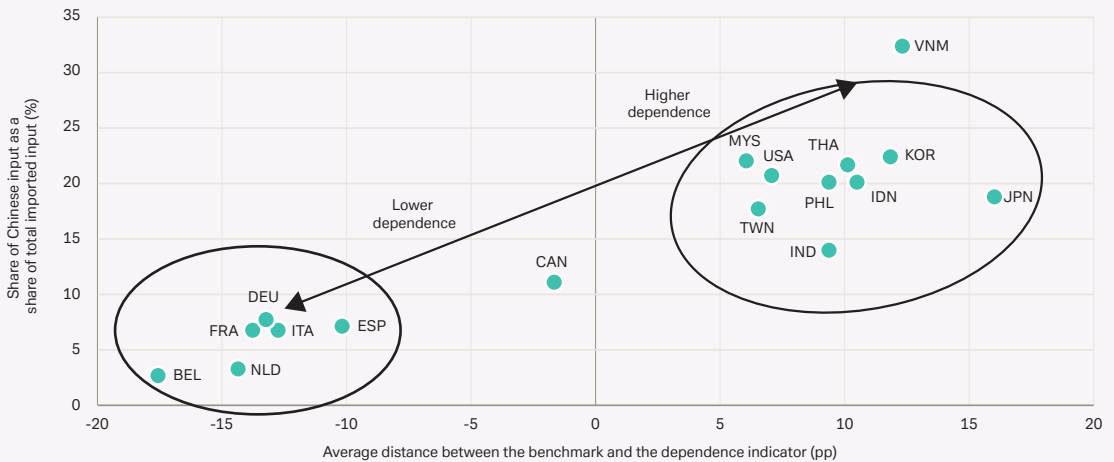
What protectionist leaders fail to recognise with these short-term adjustments are the benefits of GVCs and globalisation during healthcare crises and natural disasters. Indeed, international diversification can help when a pathogen spreads in one region, or when a natural disaster impacts one country. In such cases, globalised supply chains can enable nations to provide economic and relief assistance to hard-hit regions, helping them to recover and regain resilience.

In support of this view, EU Trade Commissioner Phil Hogan said, “Strategic autonomy does not mean that we should aim for self-sufficiency... We have to look at how to build resilience based on how we can diversify, not be totally reliant on one geographical entity for supplies of everything.”

As we consider the effects of effective and ineffective reshoring of global value chains, each country's interactions with China will be crucial. Indeed, as China has become critical to supply chains over the last 30 years almost every country has become more dependent on outsourcing to the country. So it is the extent of each country's dependence on China that will determine how easy or difficult it may be to change strategy. Analysing the dependence of a country's supply chain on China is complex,

however, one factor we examine is the level of general imports less intermediate inputs. This gives us an idea of the dependence of first-order supply chain effects. As the following chart shows, European supply chains are less dependent on China than are those in the US, Canada, Japan, and all the major Asian countries. As a result, the direct impact of the covid-19 will likely be lower for the euro area than for other major countries.

### Country exposure (dependency) to China



Sources: Deutsche Bank, OECD

The Benchmark is the China export share in those particular sectors where China has a revealed comparative advantage (for more see the above). The dependencies indicator is the ratio of imports from China for a particular product on the total imports of that product (for more see above).

It is important to remember that evidence from past episodes may not apply to all situations. The covid-19 pandemic is different than many other disasters, for three reasons. First, this pandemic (compared to local epidemic) has presented many countries with simultaneous supply and demand shocks. That fact has already led to some perverse outcomes for companies. For example, in January and February, when many countries believed covid-19 would be contained within China, some retailers stocked up on inventory to mitigate the risk of a Chinese supply shock. Unfortunately, that strategy backfired as a synchronised demand shock in March left those retailers with elevated levels of inventory right at a time when cash preservation was critical.

The second reason that covid-19 is defying some historical examples is that the pandemic has hit many countries and global economic centres

almost simultaneously whereas other shocks have only impacted individual countries, regions, or cities. The third reason is that the duration of this pandemic's health impact remains uncertain, thereby making it difficult to implement economic policy.

In response to these unusual shocks to the global supply chain, the most agile companies have managed to develop contingency plans for their products, services, and components. It is likely that the pandemic will force managers to rethink their supply chains and give more consideration to disruption risks vs. costs. Companies could start manufacturing products and components in places where they are closer to consumers and customers.

As companies strive to boost the resilience of their supply chain, the issue appears set to

become a big issue for investors. Indeed, it is likely that investors may give greater weight to the environmental, social, and governance scores (ESG) of large companies, with respect to their 'operational resilience'. This means that some will be incentivised to move away from just-in-time (JIT) approaches. This is where design occurs in one country while product assembly and shipping is managed by numerous partner companies in different regions. Prominent examples abound in the automotive and electronics industries.

Do not write off JIT manufacturing completely. Although large companies will likely retract from it, small and new companies simply cannot afford the cost of improving their resilience. And because they are not subject to the same ESG scrutiny as big companies, it is likely some small firms will retain their JIT strategies.

Furthermore, people have short memories. While it is hard to imagine now, when the virus subsides, history shows that people will begin to look forward, not back. Companies will gradually recommence trying to gain the edge over their competitors and move back to JIT. Against the backdrop of higher costs in large businesses that prioritise resilience, startups will no doubt be founded with a JIT business model. And this model will work, at least until there is another major global supply chain problem.

### Inequality and the value of GVCs

As some companies and countries move away from JIT manufacturing, it will become apparent just how this international division of production has been supported by the relatively low cost of labour in emerging economies, along with advancements in communication and low transportation costs.

The economic benefits of this approach are undeniable. The unprecedented growth in international trade has increased the purchasing power of consumers in developed countries. Meanwhile, employees in emerging countries working in export sectors have benefited from an increase in their standard of living linked to higher wages.

In the aggregate, humanity has arguably experienced its best quarter century in history—at least in economic terms. Since 1980, over a billion people have been lifted out of extreme poverty. Infant mortality has halved. Globalisation has helped the literacy rate grow 80 per cent over the past 20 years, while developing countries have seen life expectancy grow to 65 years. These trends are even more remarkable when we realise that the world's population grew by almost 2bn since 1980.

GVCs have played a direct role in these remarkable global socioeconomic improvements. As wealthy nations and multinational companies have increasingly shifted work to developing nations, the world has steadily narrowed the gap between low- and high-income economies. Indeed, a one per cent increase in GVC participation boosts per-capita income levels by more than one per cent. That is about twice as much as income growth as that generated by conventional trade, says the World Bank.

If the covid-19 pandemic encourages political leaders to respond with protectionism and nationalism, it is true that we will see the repatriation of manufacturing processes, and perhaps some employment gains, at least in the short term. However, developing nations will likely see a downturn in their economic growth and increased unemployment. This, in turn, will increase the inequality between advanced and developing nations.

That would be a great shame. Although the progress of globalisation over the last 40 years has certainly resulted in some adverse outcomes, that progress has nonetheless resulted in massive improvements in health, education, and poverty around the world. To backtrack on this now would not only stall that progress for developing countries, but it will reduce the purchasing power of people in advanced countries. So while there are certainly lessons in 'economic resilience' that must be enacted as the world recovers from covid-19, if the world gives up on globalisation, we will all be worse off.



# Climate change: 'Acute' threats and unexpected parallels

Eric Heymann



Public attention has shifted away from climate change as the coronavirus pandemic has spread. Nevertheless, mitigating climate change and making sure that the growing global population has access to climate-friendly energy remain among the key challenges of this century. These issues will still be on the agenda when the pandemic is over. It is therefore an encouraging sign that many policymakers and corporates have said that not only will they take this into account, but they will also pay more attention to climate protection when re-opening the economy. The heated discussion about which instruments are best suited to ensure climate protection will continue for years to come, though.

A comparison between the coronavirus response and the measures against climate change makes sense, as there are some similarities. And although there are some key differences the response to the pandemic holds a number of lessons for climate policy.

**Key characteristics: development over time, regional spread and causes**

The coronavirus pandemic is obviously an acute threat. Older people and those with certain pre-existing conditions are particularly susceptible. In this sense, the virus has a selective impact and it causes a sudden emergency when it develops in a person. In contrast, the question how acute

the problem of climate change is may be up for debate. The term “climate emergency”, which some activists use, indicates urgency. While we will not discuss the issue in detail, climate change is certainly a less acute issue than is the coronavirus pandemic. Yet climate change has a selective impact, too. At this point in time, it tends to affect mainly those for whom adapting to it is more difficult.

Both the coronavirus and climate change are global phenomena. The etymology of the term “pandemic” already suggests that “everybody” (“pan” means “all” in Greek) is affected. Turning to climate change, the geographical source of greenhouse gas emissions is quite unimportant. Nevertheless, there is a significant difference between the two problems. Individual countries can take national measures to contain the spread of the coronavirus by simply closing their borders. While stopping international travel is certainly not an adequate medium to long-term solution, it helps to contain new infections in the short run and is effective even without co-operation from other countries.

In contrast, national measures are largely ineffective in the fight against climate change if the rest of the world does not pursue ambitious goals as well. The contribution of national climate-protection policies becomes more insignificant if a country has only a small share in global greenhouse gas emissions. The difference becomes obvious when we look at an example of a small island state: external border closures would help to eliminate the corona virus in the country within a short time. However, such a country is clearly not in a position to make a major contribution to climate protection.

Let us now take a look at the causes of the two problems. Climate change is to a large extent caused by human activities. While the exact contribution of these activities is unclear, it is clear that burning fossil fuels is a major cause of climate change. From an economist’s vantage point, climate change is a global negative external effect that is not (adequately) priced into the market. In contrast, the link between the coronavirus pandemic and human activities is by far less obvious. One can argue that, if mankind increasingly encroaches upon the habitat of wild animals, the probability increases

that viruses will spread from animals to people. However, such events have regularly taken place over time, even when considerably fewer people lived on earth.

### Government measures and their acceptance

Environmental economics and common sense alike suggest that an acute threat requires comprehensive countermeasures. The corona crisis is a good example of this. Governments around the world are relying on far-reaching command and control regulation, including bans on a number of economic and private activities. Most countries have entered some kind of economic and social lockdown.

Regulatory law has a major disadvantage, however. It tends to lead to significant economic losses and costs. In order to mitigate the economic impact of the lockdown, countries have adopted comprehensive subsidy and aid programmes for the affected sectors and private households of their economies. These measures constitute the second line of the response to the corona crisis. Quite apart from the economic losses, the government measures severely interfere with basic human rights and people’s quality of life. Throughout, most people have accepted and complied with the restrictions. However, no one can really believe that people will continue to do so indefinitely. Policymakers regularly underline that the current situation, with all its constraints, is highly exceptional.

Climate protection policy uses a mix of different instruments and, in this area too, command and control regulations (obligations, bans, quotas, caps etc.) play a significant role. Many technologies are subsidised; just think of renewables. At the same time, and alongside regulatory law, policymakers use market-based instruments, such as energy or carbon taxes or emissions trading. These tools aim to internalise the negative impact of greenhouse gas emissions. While it is quite possible to “put a price” on carbon dioxide and other greenhouse gases, it is certainly not viable to put a price on the virus.

Right now, climate protection measures are widely accepted in many countries. In fact, surveys often say people support stricter climate protection policies. One reason for the high degree of acceptance is certainly that the costs of climate protection measures are not very

transparent and spread across a long period of time. People bear them by paying higher prices for everyday goods or paying taxes (or not benefiting from tax cuts). Moreover, climate policy has only small effects on everyday life so far. As long as people can afford it, they travel without restriction, live in large flats or houses and heat them as they like. They use more and more electronic consumer goods, surf the internet, download films and music, buy cars, eat meat – the list goes on. However, even as people say in surveys that they are in favour of climate protection they are often less willing to shoulder the (considerably) higher costs for this goal.

#### Lessons from the corona crisis for climate protection policy: new technology and adaptation promise better success than sacrifices

The covid-19 crisis has shown that people accept major restrictions laid down in regulatory law if there is an acute threat. At the same time, the global debate about easing the lockdown also shows that acceptance of such measures wanes over time as the threat recedes. We do not believe that people in western democracies will accept similar constraints of everyday life for climate-protection purposes in the coming years. First, the threat perceived at the individual level is not sufficiently acute, second, people feel they can adapt to climate change over time, and third, every citizen and even every country can make only a small contribution to climate protection. Like it or not, most people simply will not be willing to make sacrifices if others do not.

There is the option of relying on higher carbon prices (instead of regulatory law) to make people behave in a more climate-friendly way. Market-based instruments are indeed more efficient and effective (both in economic and ecological terms) than either regulatory law or technology-specific subsidies. In fact, this seems to be

the only realistic way to achieve the ambitious long-term climate targets. However, if carbon prices rise above a certain level and people can no longer afford everyday conveniences (such as travelling), majorities in western democracies may gradually shift. From our vantage point, there is a significant risk that excessive climate-protection measures (implemented either via energy and carbon prices or via regulatory law) may strengthen parties on the political margins.

The covid-19 crisis has also shown that millions of jobs hinge on everyday activities and luxuries which are currently which may appear superfluous at first sight. Due to its significant economic impact, it is impossible to fight the virus simply by a continued lockdown of the economy. In the long run, new technologies are the only option. In the coronavirus context, these new technologies take the form of efficient drugs and vaccines, which are currently being researched around the world. In the meantime, we can only try to contain the virus by ensuring good hygiene, relying on social distancing etc. In addition, we need to adapt to the virus – at least for now.

In some respects, the corona crisis is a blueprint for climate protection policy. In that area, too, we need better technologies than those available today. We need high-performance, low-carbon, controllable and cheap sources of energy which permit climate-friendly growth. That is what the world's best minds should focus on in the coming years. Most people will be unwilling to accept persistent, massive growth losses and/or restrictions on individual consumption and production choices for climate reasons in the long run. The near-term costs are simply too high. So, as long as the necessary technology is not available, we will have to try and slow climate change by using the tools available today and accept that some degree of adaptation will be necessary.



# How our flying habits will change

Siobhan Lynch

If you had said back in December that in 2020 European aviation would grind to almost an entire halt you would have found few allies. And yet in the second quarter of 2020 most European airlines could cut between 95 and 100 per cent of their flight schedules due to covid-19. Much attention has been paid to one part of the recovery story – the airlines' ability to weather the storm (and to what extent government aid might be needed to ensure their survival). But equally important is the question of passenger habits. Once distancing restrictions and travel bans have been lifted will people still want to fly?

In this article we consider a number of factors that will drive our post covid-19 choices when it comes to flying. History would tell us that a two to three year recovery time for passenger numbers to return to pre-crisis levels is typical after such an event, but there are a number of reasons why the recovery could be different, particularly for business travel. We also touch on some potential other implications around booking habits.

**The history lesson: there are different types of events that typically stop people flying...**

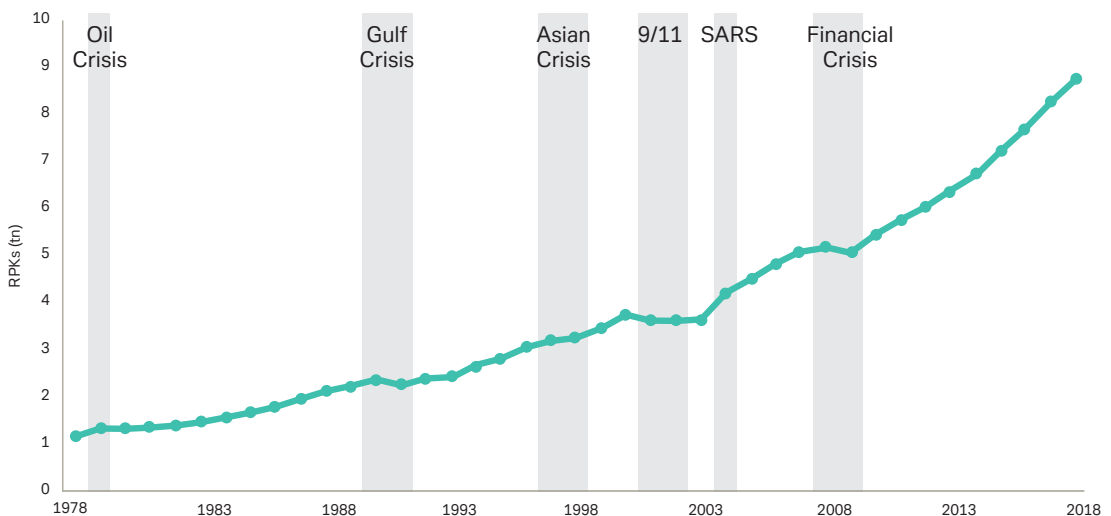
In the history of commercial aviation there are a select number of things that have deterred people from flying en masse. They are generally related to war, terror incidents, natural disasters, financial crises, and significant health pandemics. Covid-19 covers the final two in this list.

Financial crises, like the one we saw in 2008, have a seemingly straightforward connection to lower levels of air travel. In simplistic terms, higher unemployment and financial burdens on households decrease disposable income and the ability to justify leisure travel. Greater general economic uncertainty further adds to this. For business travel the push-and-pull factors are broadly similar and financial downturns typically thwart business travel demand in the near-term.

The impact of global health pandemics on people's reasons for not flying are arguably more focused on safety concerns and the risk of contracting or spreading the illness. Decisions not to travel during these crises can also be influenced/determined by government travel bans and restrictions. Terror attacks have also caused declines in passenger numbers due to fear of further attacks or terror related incidents, the most prominent example being the September 11 terror attacks in the US.

Yet, while the reasons behind significant numbers of people choosing not to travel, or being unable to, are varied, the kind of recovery pattern we see in the aftermath of these events is often relatively similar. History suggests that people revert to the kinds of flying habits they exhibited prior to the event over a two to three year period such that passenger levels usually recover to pre-crisis levels within this timeframe.

People do fly again but it may take some time



Source: (RPKs = Revenue Passenger Kilometers), AirBus GMF 2019, ICAO.

So, do we expect the usual two to three year recovery, or will it be different this time?

### Starting with leisure travel... fear will fade; some (manageable) environmental factors to remain

In the main, we think the pent-up demand for exploring the world and holiday-making, as well as visiting friends and relatives, will be the overriding driving force that could lead to a relatively typical recovery in leisure travel.

The green agenda (does anyone remember flight shaming?!) had already posed the risk of some structural change here, and we acknowledge that marginal decisions about whether and where to go on holiday will not have been helped by covid-19. But ultimately, we think the aforementioned desires coupled with actions by governments, airlines and passengers themselves around carbon offsets, will mean that healthy demand for leisure travel returns.

Probably the bigger risk near-term will be the fear-factor. This is particularly the case for people of a certain age or health as they consider where to go that might be more or less risky. However, we expect all of the governments and industries for whom a recovery in tourism is important to do everything within their powers to stimulate travel again and make people feel safe. This could be via pricing or via some initial social distancing. Already we have seen some airlines and hotels announce details of significant increases in cleaning measures. There is also the ongoing debate on the 'middle seat' measure airlines could implement to increase passenger distancing during flights. As a result, we expect the fear factor to fade over time, especially if we see the development of an effective vaccine or cure.

### Turning to business travel... there could be some more serious lasting implications

At every major technological development or financial crisis people have declared the death of business travel in favour of lower-cost, technologically savvy virtual interactions. So far, this has not materialised at the scale many have predicted. However with covid-19 sparking the world's largest ever working from home experiment, almost complete reliance on virtual interaction in our work and personal lives must surely have some impact on the way workers and businesses think about business travel.

There are a few things that could make covid-19's impact on business travel unique:

1. Workers have increased dependence on virtual connectivity in all aspects of their lives. This will likely have increased the level of familiarity with such technologies for many people and perhaps their willingness to more actively adopt virtual communication in place of business travel in their working lives.
2. Business enlightenment to technological capabilities. Most businesses have been forced to find alternative means of communication to face-to-face interactions, and this forced integration, further investment, or in some cases initial investment in virtual communication will likely better position many businesses post covid-19 to make more efficient use of travel-replacing technologies should they choose to.
3. Economic pressures – not unique to covid-19 but important nonetheless. The severe economic impact that covid-19 has wrought is something we typically expect to suppress business travel demand in the near-term, similar to experience seen in prior financial downturns. Typically this impact would be shorter-term but it could certainly further contribute to changes in longer-term business travel habits when coupled with the technological factors listed above.

So are we declaring the death of business travel? No, that has been done before and it has never materialised. Despite the above factors it is also important to acknowledge that for some businesses travel will remain essential. Auditing, sales/buying, infrastructure/oil rig workers, and engineers among others will continue to have travel-critical aspects to their roles. Beyond this it is important to remember that not all virtual experiences will have been positive, or quite the same – really a two-pronged point. Firstly, not all businesses will have found the quality of their technology platforms or their ease of use a positive experience and this could deter some from long-term adoption. Secondly, and more related to 'soft skills', some workers and businesses may conclude that the ability to properly interact (body language recognition, lasting impression of an interaction, ease of communication) cannot currently be truly

replicated virtually. These kinds of factors will continue to prevent the death of business travel. However, it is abundantly clear that there is potential for covid-19 to impact habits in this travel segment beyond a shorter-term cyclical decline.

#### What else might change?

The coronavirus lockdown and all the cancelled travel plans that came with it might not deter people from travelling in the medium-term, but it could change how they book. In recent years we have seen the introduction of a broader suite of ticket types available including 'flexible tickets'. This fare typically includes on-board perks and, crucially in a post covid-19 world, greater ability to change your flights at late notice for little or no charge. Given the level of disruption covid-19 has caused to travel plans, the ability to buy guaranteed flexibility could be increasingly appealing to passengers. Currently, the level of promotion of these fares from airlines has been limited but they could pose an interesting addition to the post-covid air travel dynamic.

Another aspect to consider is the timeline with which people book travel. Business travel lead-times are typically short (a few weeks) but for leisure they can be much longer. If people retain a level of caution around future possible lockdowns or virus outbreaks the average lead-time with which people book holidays could decrease, particularly in the first few years post covid-19. Current pricing trends for flights usually sees fares increase as the date of travel approaches so for airlines this could have good implications for yield trends.

#### Bottom line

History tells us that people normally go back to travelling within two to three years of a crisis. We continue to think that pent-up demand for leisure travel will aid the post covid-19 recovery as the virus is unlikely to have fundamentally thwarted people's desire to visit family and friends, and take regular vacations. However covid-19 could well lead to a different kind of recovery timeline because of its unprecedented impact on society and social interaction, particularly when it comes to business travel.





# Online grocery: fad or fate?

Nizla Naizer



The ongoing covid-19 pandemic has brought the world to a grinding halt in many areas but has re-enforced a significant point – when the going gets tough, we all gather in those lower-most tiers of Maslow’s hierarchy of needs. Our physiological needs in particular become paramount and shelter and access to food become the focus of our day-to-day. Discretionary spending takes a backseat and people all over the world look at options that would ensure their families are fed and healthy.

Given the nature of the crisis, where social interaction can lead to the virus spreading faster, it is natural that people look for options to source food without having to physically enter a supermarket. In most developed markets, the concept of online food, either in the form of grocers delivering produce online, or other alternatives like meal kits or online takeaway, was seeing a steady increase in penetration but had not reached critical mass. However, with the current crisis, we have seen these options, particularly related to online grocery delivery and meal kits, really take off, with penetration accelerating in most markets. The logic is clear, you order the produce/meals you need from the comfort of your home, limiting the need for human interaction. The question is will this behaviour continue in a post covid-19 world?

## Online grocery penetration historically lagged other verticals

Although the concept of having a heavy weekly grocery shop delivered to your doorstep sounds appealing, online penetration in grocery delivery was lagging most other e-commerce sectors. In the US for instance, online grocery penetration last year was only about six per cent, and it was markedly lower at two per cent in Europe. In comparison, online penetration in verticals such as fashion was as high as 20 per cent in most markets.

Several reasons may have contributed to the lag in online grocery penetration. For instance, groceries are a small-ticket purchase that are impulsive purchases at times, the minimum basket value required by some online grocers could be relatively high, and capacity was still being built out by online grocers. However, we always anticipated that as adoption and familiarity improved, the segment would see robust growth. Prior to the covid-19 outbreak, we estimated that the US online grocery market could see a penetration of about 12 per cent by 2025 with a market size of about \$120bn. That equates to a compounded annual growth rate of 28 per cent between 2018 and 2025.

<sup>1</sup> <https://scholar.harvard.edu/straub/publications/indebted-demand>

<sup>2</sup> <https://www.frbsf.org/economic-research/files/wp2020-09.pdf>

### Social distancing has resulted in a dramatic uptick

Growth in online grocery orders has been phenomenal during the current crisis. Indeed, the average daily sales for groceries online doubled by the middle of March compared with the start of the month in the US according to an Adobe Analytics study quoted by Bloomberg. Anecdotally, we have seen several instances where popular online grocery delivery players had long waiting times merely to access the platform and fully-booked delivery slots for weeks on end. Several grocers who previously did not offer online purchasing options, such as Aldi in the UK, have now started. It appears that the demand for online grocery in the current environment has outpaced the delivery capacities of several of these players in most major markets. Accordingly, there has been a significant uptick in online grocery shopping, with 45 per cent of people saying they purchased groceries online over the past 12 months in April 2020 compared with 28 per cent just six months earlier, according to a dbDIG survey published by our US Retail team. Frequency is also increasing with half of the online shoppers buying groceries at least once per week (up from 37 per cent last October).

### Meal kits have gained traction in the current environment

Then there are meal kits. This market is worth \$3.5bn today and is expected to triple over the next five years. As a reminder, meal kits are a small, but fast-growing niche within the online grocery value chain. A pure-play meal kit player such as HelloFresh or Blue Apron offers customers a selection of recipes to choose from and delivers pre-portioned ingredients weekly which the customer then cooks. In a proprietary dbDIG survey we published in 2018, we saw that individuals who purchased groceries online were more likely to be meal kit customers and the current covid-19 crisis has only accelerated growth in the market.

Meal kit firms, which have had mixed success over the past few years, have seen a surge in demand since March. Our survey showed a third of Americans used either HelloFresh or Blue Apron in April 2020 compared with just under a quarter last October. HelloFresh, the largest global player in the category, was already on a

strong growth trajectory coming out of 2019 as it gained traction in its developed markets. However, in the first three months of 2020, the company reported revenue annual growth of over 60 per cent, significantly better-than-expected. While the company indicated January and February were already strong months for growth, March in particular saw a steep increase in new customer demand as social distancing measures made the concept of a meal kit appealing to thousands of customers.

HelloFresh operates in 12 markets in Europe, North America and Australasia, and most of these markets started partial to full lockdowns starting March. As a meal kit customer myself for the past two years, the appeal is even greater in the current environment. A meal kit box typically comes with three week night dinners which you pick from a collection of 21 options. The ingredients are fresh and are delivered to your doorstep. It takes away the hassle of planning for three nights of cooking at a minimum and with the addition of options such as brunch to the menu, it offers a convenient way of sourcing meals that can be cooked at home in the absence of access to your favourite restaurant. To keep up with the demand, in markets such as the UK, HelloFresh has increased its workforce temporarily by as much as half in its fulfilment centres.

### Could the crisis have changed behaviour and made these trends more permanent?

Even as restrictions are eased, how long will it be before people across the globe are comfortable enough hobnobbing with strangers in supermarket aisles or restaurants? Will customers prefer to stick to their online grocery and meal kit purchasing habits? Experts believe it takes several months to change behaviour and we may be resolved to this new reality for some time so it is very possible that the increase in penetration stays at these high levels and continues to expand. Admittedly, there may be some meal kit or cooking-at-home 'fatigue' once things normalise completely (and that normal world is one we hope will arrive quickly). However, if consumers have a taste of the convenience that online grocery purchasing provides, and are familiar with dealing with the delivery format, we think the future might see more of the same behaviour.

Growth in online grocery orders has been phenomenal during the current crisis. >



# An occasion for online banking to capture laggards

Paola Sabbione



I recently walked to the grocery store in my little town in Piedmont, in the north west of Italy. Lockdown conditions were fully in place and, on the way, I walked by a bank. A long queue was standing there waiting to withdraw money from a cash machine (use of cash in Italy...). As I walked past, I heard an attendant from the bank asked a nice old lady if she could assist. The lady answered: "I'd like to donate to the Red Cross for the covid emergency and the television mentioned I could do this via a payment slip."

This true story illustrates one of the ways in which Italian banks lag. The country has 485 banks, over 24,000 branches, and 282,000 employees. In other words, the Italian banking system still relies on physical presence and proximity to serve customers. This is also due to demography and concentration of the wealth in older part of population but, as a result, Italy is one of the laggards in the use of online banking in Europe.

When will Italy evolve to a digital approach, for the low-value added services at least? The answer would have been different until a few weeks ago. Of course, there was a structural trend towards online banking but it was slow. The aging population coupled with low GDP growth suggested that a large part of the Italian wealth was going to change hands gradually, and new generations will prefer other channels to branches over time.

Now, the covid-19 emergency has accelerated the trend. During the lockdown, customers have been encouraged to use online facilities before

going to a branch – normally branches open a couple of days per week, and receive customers by appointment only. The first anecdotal evidence of a faster-moving trend is the boom of requests to call centres to teach first-time users over 65 years old how to setup usernames and passwords they can easily remember.

Inexperienced customers are to not the only ones to blame though because, frequently, digital interfaces are not as user-friendly as they should be. This is changing quickly. Over the last few weeks, banks made some efforts to improve their platforms; however, considering massive investments in technology they were planning for the next few years, they might need to spend more to be up to speed later in the year.

If lockdowns are prolonged or reinstated, new fin-tech or existing diversified financial companies whose model is already fully digital can benefit from the "occasion" to show clients how easy is to perform banking transactions via their apps. This might allow them to steal market share to traditional players – even in Italy.

Still, among established players, there could be also be two relative winners: 1) asset gatherers and 2) Poste Italiane. Let's see why.

**Asset gatherers** have already been winners in Italy. Since the financial crisis in 2008, their market share has increased from 6 per cent to 14 per cent looking at the total Italian families' wealth, or from 13 per cent to 25 per cent looking at managed assets only. The asset gatherer model does not envisage any form of physical presence, but counts on a network of financial advisors, working as tied agents

for each firm, and on advanced technology platforms. Some asset gatherers acquire new clients via financial advisors only, others also directly via their online channels.

In both cases, the model works perfectly these days. In fact, financial advisors do meet clients face-to-face normally, but for some time, they have been able to sign contracts and more broadly advise clients remotely, thanks to fancy apps, which are bulletproof from a compliance perspective. This is the perfect mix of human interaction and digital tools.

The covid-19 crisis might lead to three incremental opportunities for asset gatherers. First, the sell-off in all asset classes has increased the importance of advisory. Financial advisors know how to reassure /retain/expand a client base under emotional pressure, perhaps better than the average branch employee in a traditional bank. They are entrepreneurs; their salary depends on their success (and from the company standpoint, their cost is fully variable). Second, the higher capital ratios and the lack of asset quality concerns of asset gatherers compared with banks could lead to a “fly to quality” in term of deposits, for those who own a banking licence. In order to make money out of those deposits the asset gatherers need to convert them into assets under management, but, again, they are used to deliver on this.

The third opportunity is that the technology platforms of asset gatherers are new, simple, structured to be flexible, and user friendly. Some among them might be stronger than others in this respect, but they are all stronger than banks at first glance. The scalability of their models is generally huge. It would not be surprising to see more advertising and ad-hoc commercial campaigns to remind possible new customers about their pure online banking services (by the way, these are typically quite cheap given wealth management is the profitable area).

[Poste Italiane](#) might look like a typo in the article. A state-owned company with 12,800 postal offices and 126,000 employees, it is present in every little town in Italy. Weirdly, it does not come across as the most digital example that can be mentioned. However, Poste has developed strong digital internal knowhow and this has allowed it to convert some of its

key activities, including financial activities, from physical to digital in a few weeks.

Before the pandemic, Poste already had 1.4m visits in their postal office, but also 2m daily online users. The latter appears to have increased dramatically in March and April. The customer experience in the online Poste app and website is good: simple, direct, user-friendly and integrated. Since March, new payment products have been available online, and Poste can distribute traditional products as postal savings with a physical history of over 150 years in the digital space too. In wealth management, Poste has just launched a new partnership with the fin-tech Moneyfarm which will help to capture new clients where the business proposition is based on cheap but high quality services thanks to robot advisory and exchange-traded funds.

[So what about banks after Covid-19?](#) Benoît Cœuré, Head of the Bank for International Settlements Innovation Hub said “Will customers find their way back to banking branches when lockdowns are lifted and economies restart? Will this accelerate the shift towards virtual banking? Issues such as tokenisation, open banking, and using technology to support regulatory and supervisory compliance (“regtech” and “supotech”) are high on our agenda.”

The answers to these questions will depend on the depth of the current crisis. Banks might not be able to rapidly invest in new technology to the extent they should, under severe and prolonged pressure. Meanwhile, in a more benign scenario, potentially also thanks to mergers and acquisitions, and the rationalisation of other expenses (more working from home, less branches and real estate costs, less travels) they could face the transformation more pro-actively.

Regardless, the opportunities for other financial players with more flexible models are huge: in the retail space in particular, to survive, banks need to move towards their model and this tells a lot. In a world of growing importance of ESG dynamics, all pointing towards a wider use of digital channels, we wonder why banks should move backwards. Legacies from the past might still be a problem and pose important social dilemmas to solve, but the current pandemic crisis is the occasion to work to a constructive solution.

# The stockmarket crash and the detail investors have missed



Luke Templeman

Some investors have pointed out that the one thing that makes them fearful of a second corona crash in stockmarkets is that Warren Buffett has been unusually quiet. In fact, his most high-profile decision during the crisis so far has been to admit he was wrong about airlines and sell their stock. Contrast that with the financial crisis when the Sage of Omaha made some high-profile purchases when the going was tough.

So was the 33 per cent crash in the S&P 500 in March just a taste of things to come? With so much covid-19 uncertainty remaining, it is no wonder many investors are fearful.

There is some precedent for how equity markets behave during a pandemic. During the first and second waves of the 1918 Spanish ‘flu, US equity markets rose steadily, but dropped about 20 per cent during the third and fourth waves in 1919 and 2020. The 1957 ‘flu pandemic saw US equities lose almost 20 per cent during a steady four-month decline over the summer and spring before a steady recovery that took about a year to regain losses. Meanwhile, the ‘flu pandemic in the late-1960s was associated with a stockmarket that essentially moved sideways.

So history may not be a good guide. Indeed, in the prior three pandemics, none of the market moves were wholly determined by the disease. And there was no crash as we saw in global markets in March of this year. Some reasons for this include the fact that the world has grown more interconnected, the lockdowns of 2020 were far more strict, while the internet has enabled commerce and work that was previously impossible.

There are certainly some good reasons to believe sharemarkets will retest their lows. For

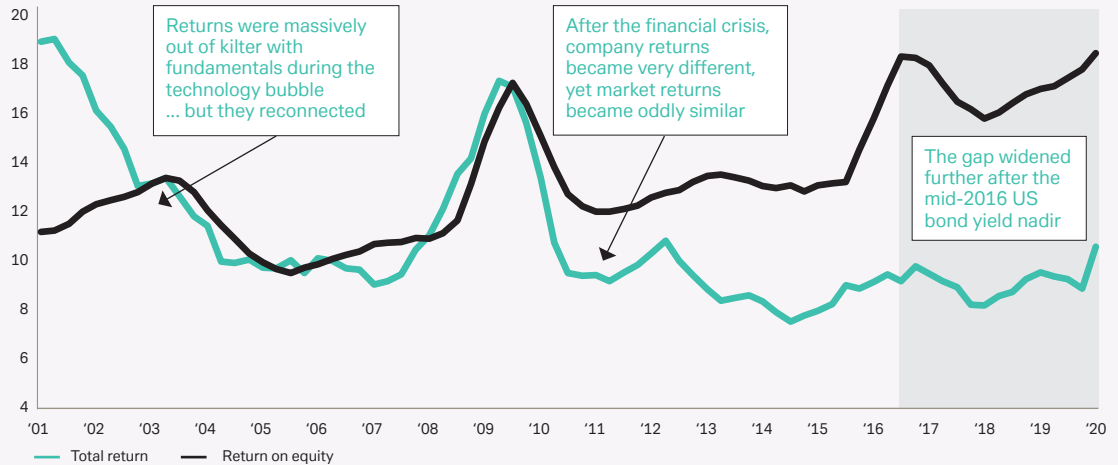
starters, with a vaccine at least a year away, a second wave of the virus would necessitate more lockdowns, while concerns about oil storage and faltering demand could send crude prices crashing again. Furthermore, political relations between China and the US remain uncertain, and that is before considering that forecasts for second-quarter data – both economic and corporate – seem to be in a constant state of deterioration.

Frustratingly, there seem to be just as many reasons to be optimistic. After all, central banks have said they will do whatever it takes to support economies, the rebalancing at large passive funds has supported equities, and higher-income retail investors have been less likely to lose their job and thus have tried to take advantage of the market drop. Many also consider the bond market too expensive and thus have few other places to store their money but in equities.

A further oddity about the current recession compared with prior ones is that we can put a timeline on it. Assuming no new lockdowns are required, economies should start growing again later this year. Contrast that with the financial crisis where many commentators worried the event would bring about “the end of capitalism”. The relatively specific timing of the corona recession means that stock valuations done using discounted cashflow models are not dramatically affected, as long as one assumes a return to normal growth over the next two years or so.

While it is hard to predict whether stockmarkets will experience a second corona-crash or simply rise steadily in anticipation of a recovery, there is one phenomenon that could be a double-edged sword. It concerns the strange way in which investors have been paying the same price for

## Dispersion of total returns and return on equity – S&P 500



Source: Deutsche Bank, Factset

different companies. The first chart illustrates the point. It shows that, since the financial crisis, the prices that investors pay for stocks has been relatively similar (low dispersion between them) while the differences between companies' return on equity has been very high. Essentially, investors are paying the same price for different stocks.

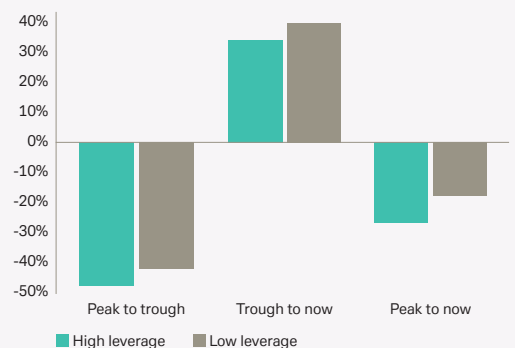
Stranger still is that the dispersion of prices has not jumped during the corona crisis. True, the above chart shows a jump in the last quarter, but it is still very low compared with the jump seen in the aftermath of the technology bubble and the financial crisis. Of course, the market drop associated with the technology bubble and the financial crisis were worse than the corona crisis. In both instances the share market dropped by about 50 per cent compared with 33 per cent this year. However, in both prior instances, price dispersion was very high before those markets dropped to their lowest levels.

It is true that a small number of stocks with high returns on equity skew the data somewhat. Indeed, if we omit the top 20 per cent of stocks, the spread between returns on equity drops by about a third. Yet, the spread between prices remains at similar levels and keeps an almost identical shape.

That means that even when the best-performing companies are excluded, investors have continued to pay the same prices for stocks during the corona crisis.

This lack of dispersion helps explain why stock prices of companies with different debt levels have behaved in similar ways. Indeed, one of the few investment themes that was almost universally accepted at the beginning of the corona-crisis was that companies with strong balance sheets would outperform those with weak balance sheets. To test this, we examined the median performance of stocks with high and low leverage according to the DuPont formula – so assets as a proportion of equity. High leverage were companies with a ratio over 4.0, and low leverage was companies with a ratio under 2.0. As the following chart shows, companies with strong balance sheets have outperformed their weaker peers, but the difference has not been dramatic.

### Median share price performance of S&P 500 stocks during corona crisis



Source: Deutsche Bank, Factset

As the rest of the year unfolds, investors must be careful how the corona crisis leads to a potential unwinding of the low-dispersion phenomenon. The first reason is that it is has been supported by unsustainable dividend and share buyback promises. Indeed, just before the current crisis, the median dividend payout ratio for S&P 500 companies had risen to just over 40 per cent, a multi-decade high. Meanwhile, the median dividend yield was two per cent, in-line with its post-financial crisis average. At the same time, the dispersion of each of these metrics shows a wide gap. In other words, there is a much bigger difference between the dividend payout ratios of companies than between their dividend yields.

The issue is that corona crisis is leading an increasing number of companies to cut their dividends (and share buybacks). These had already risen to unsustainable levels and some chief executives may welcome the excuse to cut them and will be reluctant to immediately return dividends and buybacks to their old levels when the crisis subsides.

The second reason that could lead to investors being more discriminating between different stocks concerns second-quarter results. These seem certain to show that different companies are recovering (or not) in different ways. And given that the extent of those differences will likely be more dramatic than in previous quarters, it will shine a spotlight onto a phenomenon that investors have been ignoring for some time.

So active managers rejoice. Despite the forecasts of the death of their industry as funds have poured into passive vehicles, the corona crisis has showed that prices are set at the margin. Dramatic swings and recalibrations of value are not only possible, but they can occur in short order. So it may not matter whether the overall level of the equity market rises or falls from here. Rather, a focus on intrinsic value could well be the new theme for 2020. Those investors ambivalent to stock selection are the ones who should watch out.

# What prior pandemics can teach us today

Henry Allen



History teaches us that pandemics have long legacies. With covid-19, regardless of whether it takes a short or a long time for things to return to 'normal', experience shows that similar crises have regularly acted as catalysts for change. This piece looks through history, and particularly at the experience of the Spanish 'flu to help determine the legacy of today's covid-19 crisis.

The Spanish flu itself was the deadliest pandemic of the 20th century with a global death toll estimated to be as high as 50m. Not long after the outbreak passed however, Western society entered the 'Roaring '20s'. The decade was one of growing prosperity. Consumers accessed a range of new products for the first time, with motor vehicles and the household radio becoming much more widespread. Societal change accelerated as well, with women gaining equal voting rights to men for the first time in both the US and the UK.

This description might make it seem like the pandemic had no adverse lasting legacy. However beyond the economics, numerous studies suggest that Spanish 'flu had a number of negative long-term effects. A recent New York Fed study found a link between the German cities that were the hardest hit by the Spanish 'flu and their likelihood to vote for the Nazi party a decade later. Meanwhile, children born during the Spanish 'flu were disadvantaged. For example, one study<sup>1</sup> looked at data from US Censuses and found that children in utero during the pandemic displayed "reduced educational attainment, increased rates of physical disability, lower income, lower socioeconomic status, and higher transfer payments compared with other birth cohorts." Another study<sup>2</sup> found that had the pandemic not occurred, "the 1919 birth cohort would have been more likely to graduate from high school, an effect that is largely unaffected by including parental controls and city-specific time trends." Finally, a third study<sup>3</sup> found that prenatal exposure to the Spanish 'flu was associated with excess cardiovascular disease in old age. They also noted that when enlisting for the second world war, the heights of the 1919 birth cohort were lower than those for adjacent years.

Today, we have some consolation in that living standards and the quality of medical care

far exceeds those at the time of Spanish 'flu. Nevertheless, there are a number of lessons to be learned. Consider that many children today have missed substantial amounts of schooling, while prolonged social isolation can have long-term effects on mental health. Policymakers should therefore be aware that the effects of measures in place today are likely to persist over years and even decades to come.

Prior experience also shows that the economic impact is also likely to have severe consequences, even in the optimistic event of a V-shaped recovery. Indeed, recessions have negative health effects of their own, quite aside from the virus itself. Unemployment has long been linked to higher rates of anxiety, depression and suicide. And these effects do not simply pass once the recession has concluded. For example, one study<sup>4</sup> found that the state of the business cycle at a child's birth effected its mortality later in life. Those born in a boom live longer than those born in a recession.

There are other reasons why the effects of the virus may not pass as it recedes. History shows that many of those laid off in recessions never return to the labour force. A recent example can be seen in the US after the financial crisis. Then, the prime-age employment rate of 25-54 year olds did not return to its level at the start of 2008 until a decade later. The negative effect on earnings is also likely to be persistent. For example, young graduates who join the workforce in a recession only see their initial earnings losses fade after eight to ten years.<sup>5</sup> Given the recession occurring today is astonishingly severe in its scale and severity, the risk is that these effects will be even more pronounced than normal.

In response, many might conclude that we should lift containment measures in order to prevent this economic damage from having its own effects on public health. However, there is evidence that during the Spanish 'flu, those cities that put in place non-pharmaceutical interventions "earlier and more aggressively do not perform worse and, if anything, grow faster after the pandemic is over."<sup>6</sup> This suggests that policymakers should be cautious when it comes to easing social distancing measures in order to protect the economy, since a second wave of

<sup>1</sup> Almond (2006)

<sup>2</sup> Beach et al. (2018)

<sup>3</sup> Maxumder et al. (2010)

<sup>4</sup> Van den Berg et al. (2006)

<sup>5</sup> Oreopoulos et al. (2006)

the pandemic could have its own very negative effects on economic activity, and an aggressive approach at the start might in fact be the best strategy for long-term economic performance.

Another pernicious outcome of pandemics are its effects on social cohesion. One theme that repeats through history is how pandemics have been tied to conspiracy theories or discrimination of various kinds. For example, Jews were often blamed for the spread of the Black Death in the mid-14th century, with massacres taking place across the European continent. When Spanish 'flu began to spread at the end of the first world war, there were suggestions that the virus had been spread by Germany as some form of biological weapon. And once again today, unproven claims have spread that 5G is responsible for the spread of the coronavirus, and a number of incidents have occurred where people of various ethnicities have faced discrimination as a result of the coronavirus. Furthermore, political disagreements have emerged based on the origin of the virus.

It is therefore no surprise that pandemics have been connected to lower levels of social trust. One study looked at the issue by studying the descendants of migrants to the US, in order to obtain estimates of social trust for different countries around the time of the Spanish 'flu. It found that if 'flu mortality increased by one death per thousand, there was a decrease in trust of 1.4 percentage points.<sup>7</sup> With death rates today already well above their historic norms, the risk is that covid-19 could similarly lead to a breakdown in trust in an already polarised society.

The politics of social trust should not be underestimated as disease has also played an important role in the geopolitical formation of the world. Perhaps the most notable example in the last millennia occurred when Europeans who colonised America brought new illnesses for which the indigenous population had no immunity, thus playing a key role in the European colonisation.

Though the geopolitical consequences of covid-19 are unlikely to be as severe as the colonisation of the 'new world', its impact

has already been felt across multiple regions. Tensions between the US and China have risen once again. Within the EU, traditional dividing lines between northern and southern member states have resurfaced as they work out how to pay for a recovery fund. Meanwhile, protectionism has grown as countries have instituted export restrictions on certain medical supplies. Over the longer term, globalisation itself could be a victim (see our piece 'Undermining global value chains') as countries seek to internalise supply chains and restrict the movement of people.

While this article has discussed many of the adverse consequences that may result from the covid-19 pandemic, it would be remiss not to acknowledge that prior pandemics show that they can help catalyse positive change in society. Just one example is a potential decrease in inequality (see our piece 'Undermining global value chains'). It is also worth noting that the feel-good 'Roaring '20s' followed both the first world war and the recovery from the Spanish 'flu. This was a period of profound social change.

Fast forward to today and medical knowledge and global cooperation is much stronger. Meanwhile, governments around the world have taken extraordinary steps to protect human life and support their economies. This offers the chance for the subsequent recovery to be significantly stronger than it could otherwise have been. Technology is already taking a leap forward. Indeed, the only reason why the covid-19 recession is not even more severe than it is, is because technology has allowed people to work and engage with the economy remotely. Given that so many people have been forced to adopt these technologies it is likely a self-fulfilling cycle will lead to even better technology in the near future.

Necessity is certainly the mother of all invention and if the current pandemic continues to spur technological innovations that offer new forms of working, living, and communicating, then there may be some small consolation that society is better placed to cope with pandemic-like scenarios in the future.

<sup>5</sup> Correia et al. (2020)

<sup>7</sup> Aassve et al. (2020)



# Football: The divide between clubs will grow wider

Marion Labouré

With European football (and almost all sport) stopped due to the covid-19 pandemic, there are two very important questions that will impact the future of football. First, should leagues conclude the season by resuming matches, or should they simply implement a mechanism to rank teams based on their current win-loss records? Second, what will be the short-term financial impact of possible match cancellations, games played in empty stadiums, and renegotiations of advertising and television rights?

Answering these questions is critical for football clubs which are facing severe losses that will likely continue over into next season and a highly-disrupted transfer market. Not all clubs have shareholders with deep pockets and there is likely to be a widening of inequality between the big and small clubs.

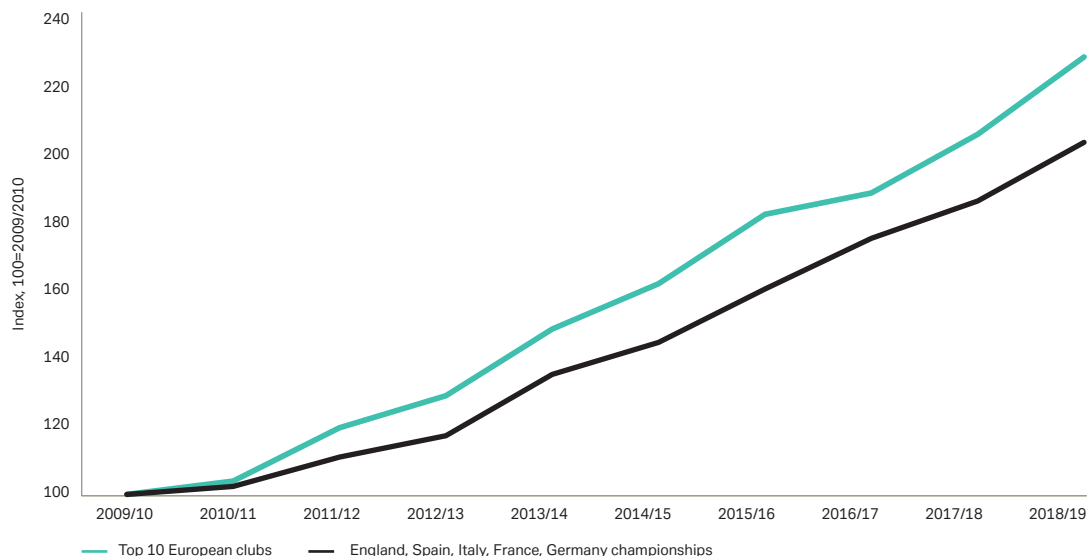
The football industry has grown, particularly the 'superclubs'

Until the pandemic halted all games, the football industry had enjoyed increased revenues generated by television rights and advertising, along with increased funding through the entry of new super-wealthy investors.

As in many industries, a "winner-takes-all" phenomenon has emerged in which the wealthiest clubs have benefitted from a virtuous cycle of abundant funding, international followers, and increased television and sponsorship revenues.

The emergence of 'super clubs' with ever-increasing financial means, has heated up the competition to attract the very best players. Those athletes have been the biggest winners as their salaries have skyrocketed.

## Revenue growth



Sources: Deutsche Bank, Deloitte, Statista.

### The covid-19 impact will first be felt by top teams

Cancelling championships two-thirds of the way through the normal season will hit football clubs in multiple ways: (i) loss in remaining ticketing and stadium revenues, (ii) renegotiation of television rights, even if matches are played in empty stadiums over the summer; and (iii) prorated or renegotiated sponsorship revenues, especially if matches are cancelled. To examine the issue, we simulated the impact of the shutdown on Europe's top 20 clubs. These are the teams that risk losing the most revenues and have the highest payrolls.

At this stage, championships will not resume at least in France, Belgium, and the Netherlands. Talks are still being held for resuming matches in empty stadiums in other championships. For our simulation, we took the following assumptions for the season 2019/20:

- Television rights: 10-30 per cent at risk for this season;
- Commercial advertising: 10-30 per cent at risk this season;
- Ticketing: pro-rata of remaining matches for this season.

It is very early to assess the economic impact on the 2020/21 season. Premier League clubs are preparing the scenario of playing behind closed doors. Final decisions will take time to unfold over the summer. We have modelled two scenarios: a fast recovery scenario and a prolonged crisis scenario.

In the fast recovery scenario, we assume that the season resume with only slightly lower attendance in stadiums:

- Television rights: no change from current contracts;
- Ticketing: 10-30 per cent at risks as less people dare joining the stadium;
- Commercial advertising: 5-20 per cent at risk given economic recession and lower stadium attendance.

In our prolonged crisis scenario, we assume the season is being played behind closed doors:

- Television rights: renegotiated up to 20 per cent lower as part of the show is impaired in empty stadiums;
- Ticketing/matchday: fully lost;
- Commercial advertising: 30-60 per cent at risk in particular matchday sponsoring.

## Potential impact on revenue of the top twenty clubs

	2018/19	2018-19 Revenues breakdown			2018-19 Revenues (€m)			DB Est. loss due to covid-19 (€m)		
	Rev. (€m)	Commercial	Broadcast	Matchday	Commercial	Broadcast	Matchday	2019/20	2020/21 - RECOV.	2020/21 - PROLONG.
1 FC Barcelona	841	46%	35%	19%	387	294	160	[120 ; 260]	[30 ; 120]	[270 ; 450]
2 Real Madrid	757	47%	34%	19%	356	257	144	[100 ; 230]	[30 ; 110]	[240 ; 400]
3 Manchester United	712	45%	38%	17%	320	270	121	[90 ; 215]	[30 ; 100]	[215 ; 360]
4 Bayern Munich	660	54%	32%	14%	356	211	92	[80 ; 200]	[25 ; 100]	[195 ; 345]
5 Paris Saint-Germain	636	57%	25%	18%	362	159	114	[100 ; 195]	[30 ; 110]	[220 ; 360]
6 Manchester City	611	43%	47%	10%	263	287	61	[75 ; 185]	[25 ; 75]	[140 ; 270]
7 Liverpool	605	35%	49%	16%	212	296	97	[75 ; 185]	[20 ; 70]	[155 ; 280]
8 Tottenham Hotspur	521	29%	53%	18%	151	276	94	[70 ; 160]	[15 ; 60]	[135 ; 235]
9 Chelsea	513	41%	44%	15%	210	226	77	[60 ; 155]	[20 ; 65]	[135 ; 245]
10 Juventus	460	41%	45%	14%	188	207	64	[65 ; 140]	[15 ; 55]	[120 ; 215]
11 Arsenal	446	28%	47%	25%	125	209	111	[65 ; 140]	[15 ; 55]	[145 ; 225]
12 Borussia Dortmund	377	40%	44%	16%	151	166	60	[50 ; 115]	[15 ; 50]	[105 ; 180]
13 Atlético de Madrid	368	27%	57%	16%	99	210	59	[50 ; 110]	[10 ; 40]	[85 ; 155]
14 FC Internazionale Milano	365	42%	44%	14%	153	160	51	[50 ; 110]	[15 ; 55]	[95 ; 170]
15 Schalke 04	325	34%	50%	16%	110	162	52	[40 ; 10]	[10 ; 35]	[85 ; 150]
16 AS Roma	231	24%	62%	14%	55	143	32	[30 ; 70]	[5 ; 20]	[45 ; 90]
17 Olympique Lyonnais	221	26%	55%	19%	57	121	42	[30 ; 65]	[5 ; 25]	[55 ; 100]
18 West Ham United	216	19%	67%	14%	41	145	30	[25 ; 65]	[5 ; 20]	[40 ; 80]
19 Everton	213	21%	71%	8%	45	151	17	[25 ; 65]	[5 ; 15]	[25 ; 70]
20 SSC Napoli	207	22%	70%	8%	46	145	17	[25 ; 60]	[5 ; 15]	[25 ; 70]
<b>TOTAL</b>	<b>9283</b>				<b>3689</b>	<b>4098</b>	<b>1496</b>	<b>[1225 ; 1225]</b>	<b>[330 ; 1195]</b>	<b>[2530 ; 4450]</b>
As % of 2018/19 revenues		36%	49%	15%				[13% ; 30%]	[4% ; 13%]	[27% ; 48%]

Sources : Deutsche Bank, Deloitte.

### The halt in transfers could spill over to smaller clubs

Based on our assessment in the recovery scenario, the top-20 clubs will see about ten per cent of their revenue at risk and should be able to weather the storm through minor or short-term readjustments, mostly to cover the lost revenues of 2019/20 season.

However, in an extended crisis, more than a third of their revenues could be impacted which would necessitate much more drastic measures. Football clubs are companies, so shareholders will have to decide which combination of levers to pull in order to cover their losses.

The first lever would be to reduce costs. This would require teams to renegotiate player salaries, with the risk of demotivating athletes or even losing them. The second option would be to decrease investments by reducing the amount spent on acquiring new players via transfers. A third alternative would be to increase funding. This would require some combination of shareholders injecting new capital, bank loans, and bond issuance. A final option would be to sell assets – in other words, top players. This choice would raise money in the short-term and decrease wages in the medium-term.

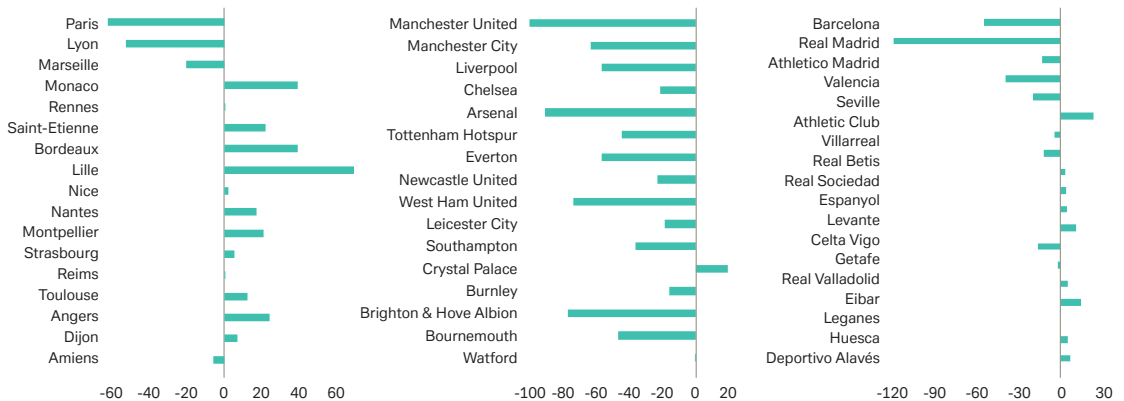
Pulling one or both of the latter two levers would increase supply and decrease demand for transfers. The Football Observatory forecasts that the total transfer value of players would decrease by 28 per cent, from €32.7bn to €23.4bn euros across the main five championships. The further covid-19 extends, the more clubs are planning for the worst. That means the decrease could be even more severe.

A decrease in transfers would severely hit smaller clubs. These teams have seen outlays for wages outpace revenue growth, and they have increasingly relied on grooming and selling their best players to supplement revenues.

We have estimated, over the last two seasons, the amount of net transfers (meaning the price paid for new players minus the price received from selling players). See the below table.

While it is common knowledge that the largest clubs are spending more than they sell on the transfer market, most other clubs have a positive transfer balance. In particular, for French Ligue 1 clubs this typically represents 20-30 per cent above and beyond revenues (television rights, matchday, and sponsorship).

## Net transfer by clubs in France, England and Spain (ranked by revenues)



Sources: Deutsche Bank, transfermarkt.com. Note: net transfers are the average between difference transfer sum of departures and arrivals over 2019/20 and 2018/19.

### Is now the time for industry disruption?

Regardless of whether matches resume this season or next, or in empty or half-empty stadiums, today's pandemic will have a long-term impact on the whole industry—from the top leagues down to amateur clubs. All football clubs will have to find solutions to finance losses. Some may go bankrupt and some may change ownership.

This will result in a widening of inequalities, in particular between clubs with access to funding and those without. Those clubs with deep-pocketed shareholders such as billionaires or investment funds, and access to capital markets will become more dominant. Teams that rely on less wealthy private shareholders could experience the disequilibrium of their financial situation and be hit by both the loss of direct revenues as well as financial income from the transfer market.

In this way, today's pandemic could be a catalyst that accelerates the already large inequalities between Europe's top clubs. That may add to the discussion between them to create their own supranational championship, leaving the smaller clubs to compete for national championships.

There is a solution that is potentially on the horizon. As a result of the pandemic, European clubs could now have a unique opportunity to curb the inflation of players' salaries without suffering from the 'prisoner's dilemma'. This occurs when a prominent club tries to reduce players' salaries but fears losing top athletes to other clubs. If the impact of the pandemic enables

teams across all main championships to reduce or regulate salaries, leagues could see more equal distribution of the best players. In turn, that could make the respective championships more competitive and exciting.

Could things go as far as UEFA and European championships agreeing together on a salary cap to replace current financial fair-play regulation? Indeed, salary caps are seen as enhancing the competition in many other leagues around the world. In the US, the National Basketball Association and National Football League both have a well-ingrained salary cap mechanism at the club level which forces the wealthiest clubs to readjust their rosters.

Another factor that helps with the competition of the American basketball and football leagues is the draft system. This is where clubs can recruit the most promising new players with an order determined by a lottery system that gives the highest probability to the lowest ranked teams.

The salary cap and draft systems mean the worst-performing teams have an opportunity to become top performers and vice versa. Consider that the Milwaukee Bucks basketball team managed to improve from barely making the play-off up until 2015, to now being one of the top teams after the emergence of Giannis Antetokounmpo, its draft choice in 2013. There is plenty of evidence to show that these systems improve the capacity for leagues to grow both interest and revenues. Might the covid-19 pandemic spur the same sort of change in European football?

# Higher e-duc@tion and the future of homework

Marion Laboure

There is nothing new about a pandemic closing schools. In 1665, Cambridge University closed because of the plague. Isaac Newton decided to work from home. He formulated calculus and discovered the laws of motion. More recently, when the SARS virus hit the world, many governments, including Hong Kong and Singapore, closed all schools. Ebola caused the same response in Africa

However, the covid-19 pandemic of 2020 will do more than cause temporary school closures. It will likely lead to dramatic long-term changes in how nations deliver education. This pandemic, unlike others in the past, is coinciding with two factors affecting education: extremely high costs and disruptive instructional technologies.

## The impact of covid-19 on education

Governments have implemented a widespread shutdown of education systems in 193 countries, affecting more than 1bn learners, mainly children.

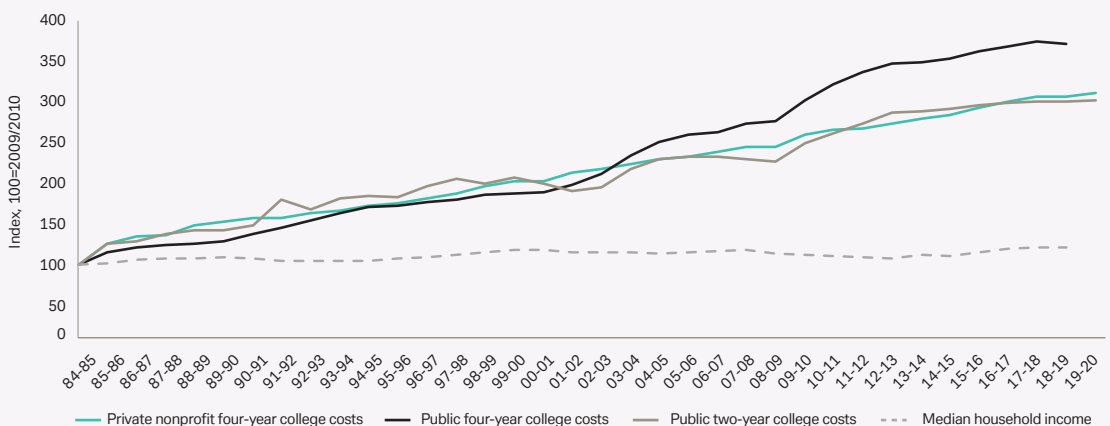
At the recent peak, 90 per cent of the world's students were not learning in physical classrooms. If we see a second or third wave of infections, the pandemic could catalyse the world's reliance on, and familiarity with, online education.

## The rising cost of education

This shift to online education systems is occurring at a time when tuition costs have grown at great speed. In less than four decades, the cost of attending a public four-year college in the US has quadrupled. Meanwhile, the median US household income has remained relatively stable. As a result, student loan debt in the US has grown rapidly since 2008, reaching \$1.6tn in 2019, or 7.5 per cent of GDP. Many educators believe that online education could be a solution.

The price rises reflect the increased demand to education in a global market. In particular, Anglo-Saxon universities have used this to increase their geographical reach and revenue. For example,

College costs and median family income in the United States, 1984 to 2020



Source: Fred.

New York University has opened a campus in Abu Dhabi and the London School of Economics has opened a campus in Beijing.

Schools and universities in many countries recognise they can increase revenue by offering online degrees to any qualified student in the world. In turn, the income generated from foreign students frequently subsidises local students who pay lower fees. But in a post covid-19 world, one question remains: Will students and professors adapt to online education platforms?

### Online education will become mainstream

The popularity of online education has been slowly increasing in recent years. First introduced in 2008, Massive Open Online Courses (MOOCs) have emerged as a popular method of learning. They provide affordable quality instruction from top institutions and a flexible learning schedule. These new platforms have allowed professionals to complete degree and certificate programs while continuing to work.

Nevertheless, there are barriers to the widespread acceptance of online education. First, many employers have been slow to recognise MOOC certificates as legitimate credentials for employment. Second, most undergraduate students have preferred to attend physical schools, where they enjoy campus social life and extra-curricular experiences, as well as in-person contact with professors. Third, students, particularly in MBA and executive education classes, benefit from on-campus networking opportunities that are hard to replicate online. Indeed, when the pandemic forced the Wharton Business School to move classes online, many students complained about remote learning and filed petitions for partial tuition reimbursements.<sup>1</sup>

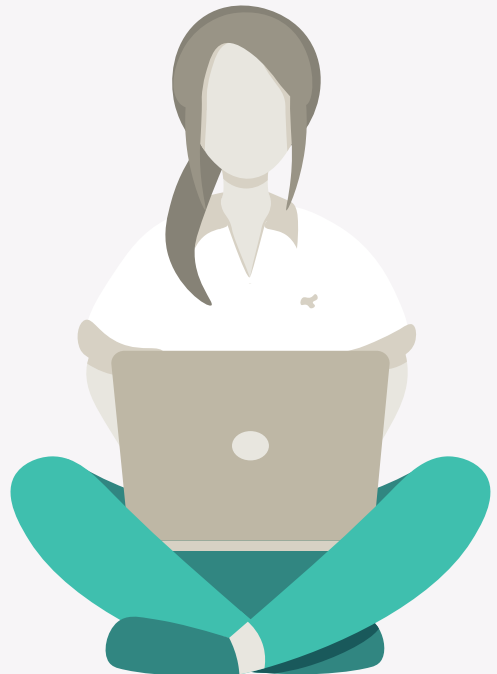
To cope with the barriers to online education, most top universities are developing the next generation of remote learning platforms. It is now possible to earn a bachelor of science degree remotely from the Harvard Extension School, or to earn a micromaster degree online from MIT. All Harvard summer school courses will be taught online, including the MPA summer program at the Kennedy School. Even professors can find there are benefits to online instruction, as it enables them to better combine career and teaching commitments.

### The impact of digital instruction on global education

Collectively, these disruptive trends – the pandemic, high education costs, and new instructional technologies – are already changing the global education market. The best schools will do the best. They will continue to attract endowment contributions from wealthy alumni. Government funding will continue to flow due to the quality of their research.

The disruptive forces, however, will likely be problematic for those with fewer financial resources and weaker reputations. As technology enables the best universities to reach more students and hire the best professors—without concern for geographical limitations—elite colleges will be able to compete with colleges in other geographical regions. Already, there is talk of several countries allowing weaker universities to fail. In a post-covid world, education will become more and more a winner-take-all market. One in which many schools and colleges will have to quickly change or disappear altogether.

*Marion Laboure is an analyst in Deutsche Bank's thematic research team and also a lecturer at Harvard University*



<sup>1</sup> At Stanford and Wharton, more than 80 per cent of MBA students has signed a petition to demand that tuition be cut back substantially for the 2020 spring term, saying that an online education is a "subpar classroom experience."



# Our new technology habits

Juliana Lee

As governments formulate their strategies for kick-starting the economic recovery, there are many different forecasts of how long economic normalisation might take. One way to monitor changes in household sentiment and spending habits is our proprietary dbDIG Household Surveys. They point to a fragile state of mind among households and great caution in regard to returning to pre covid-19 behaviour. They also point to important changes in household behaviour, which may prove permanent in some cases, especially if lockdowns persist for lengthy period of time.

According to the British Journal of General Practice, it takes on average 66 days for a new behaviour to become automatic, with simpler behavioural changes become permanent more quickly than complex ones. Some social distancing practices may, in this way, become permanent.

So, as the life cycle of covid-19 plays out, we may witness a profound shift in our society, including in consumer behaviour. For example, this crisis could lead to even more widespread acceptance of digitalisation in our lives, permanently changing the way we work, consume, socialise, entertain, and learn.

At least on a part-time basis, working-from-home (WFH) is likely to become permanent, with video and audio conferencing replacing the majority of face-to-face meetings (see our piece 'The future of work from home'). Our household surveys suggest that while a third of respondents are now WFH in China, South Korea, France, Germany, Italy, Spain, and the UK, more than one-third of respondents would like to be able to do so, at least on an occasional basis, even after an end of the outbreak. Most, however, believe that their employer will not be receptive to this option. If the latter turns out to be false,

we could see a normalisation of WFH that could not only reduce costs but also address inclusive agendas going forward. To do this, technological constraints still need to be addressed: half of households report they cannot currently effectively work from home.

Other consumer behaviours could also become permanent habits now that covid-19 has given them a start. Our surveys indicate significant changes in consumer behaviour, reflecting the avoidance of crowded venues like restaurants, bars, theatres, among others. Households are spending more online than they used to, especially older and lower income households, which previously spent much less online. The shift is most notable in Asia, followed by the US, while it has been rather more limited in Europe where logistics infrastructure may be an issue. Even well-developed economies are facing capacity constraints in meeting the surge in digital spending, particularly with regard to grocery purchases, which were turning increasingly digital even before the outbreak. Indeed, Deutsche Bank's food retail survey reports that about one-third of grocery shoppers in the US made their first online purchases within the past two months, up from around 20 per cent in early 2019. Acceptance of such services is growing: only a quarter of US households are uninterested in online grocery shopping, versus 40 per cent before the covid-19 lockdowns.

The extent to which these behaviour shifts become permanent after the threat of covid-19 recedes may depend on the robustness of providers. Indeed, some platforms have struggled to keep up with demand. The surge in online shopping has resulted in delays in deliveries due to capacity constraints among logistics companies. The latter in turn has led to companies like Amazon hiring more workers – about 30 per cent more in the US – and reopening

warehouses to non-essential items as it plans for sustainably higher demand. China has also seen a surge in online grocery purchases, as has South Korea, stretching its capacity.

Not only has online shopping allowed people to access necessities at a time of social distancing, it has other benefits that many people are only just experiencing for the first time. Online shopping saves consumers' time, freeing them up for other activities, but it could also contribute significantly to cutting their carbon footprint. For example, according to an EPA study, if consumers are flexible about delivery times, they can reduce their carbon footprint by half by making their grocery purchases online, allowing economies of scale in transportation by more energy-efficient delivery vehicles.

During the covid-19 outbreak, entertainment has also become more digital, with a surge in online content demand. Online entertainment companies, including TV/movie streaming and gaming, have reported a surge in users amid strict social distancing. Netflix's global streaming memberships have risen nearly 10 per cent to 182.9m since the beginning of the year, with most of that growth coming in March with lockdown orders in many countries. Chinese technology firm Tencent has also benefited from a rise in mobile gaming subscriptions. Moreover, robust growth in subscriptions, traffic, and user engagement have offset weakness in advertising revenues in Alibaba's digital media and entertainment segment. Live-streaming video service platforms have also reported an increase in new users and viewers, as personal trainers and educators have turned to online platforms during lockdowns. Where infrastructure allows, many governments have also taken national education online. Although they are unlikely to replace traditional schools, online platforms are likely to become more accepted as a core element in the delivery of education.

As the covid-19 shifts consumers online, and that behaviour becomes permanent, the impact will be felt beyond commerce. National education is likely to move more online and thus further build the case for addressing internet access as a basic human right at an institutional level. Access to real-time, mobile data has proved highly valuable in strategies

for tracking close contacts of infected persons and thereby helping to contain the spread of the virus. In China, although the covid-19 outbreak has posed challenges to the daily operations of telecommunications, it has also accelerated the demand for digitisation. Clearly, further digitalisation of services will require substantial investments in infrastructure. That comes as the EU has had to limit the streaming of high-definition video over mobile data networks to ensure they remain accessible by all subscribers.

New technologies giving access to massive data sets are likely to play a part in the reopening of economies or the management of social distancing policies in a persistent pandemic scenario. China, Singapore, South Korea and Taiwan, have used geolocation, travel and financial data, among others, to track close contacts of infected people in an effort to contain the spread of the virus. China went further by using users' past and current medical conditions to develop a Health QR Code which, depending on the score, either allows access to activities such as shops and public transportation stations, or orders people to self-quarantine. Governments can provide real time alerts to the public regarding the risks of infection, allowing them to choose how much distance to keep from others and thereby cutting short the transmission of the disease.

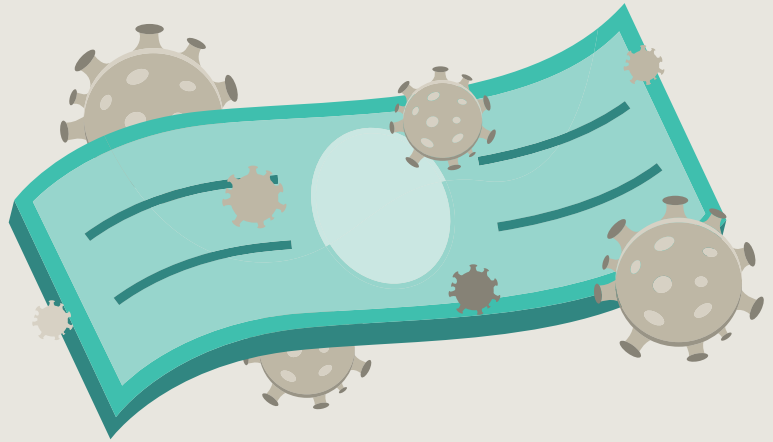
Of course, privacy concerns may constrain the acceptance of these new technological applications. About half of households we surveyed are unprepared to accept constant monitoring of their health by the authorities for the indefinite future. Reflecting these concerns, Apple and Google have partnered on covid-19 contact tracing technology, with user security central to their design.

Privacy concerns need to be better addressed, but in this time of covid-19, we are making great advances in digitalisation, especially as some social distancing practices are becoming permanent. Such a significant shift in behaviour is being accommodated by the adoption of new technologies, which may also help address other pressing goals such as the mitigation of climate change. We may not return to pre-covid norms of behaviour, but our path may be a more sustainable and thoughtful one after having faced such an existential threat.

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# Cash is not immune to the virus

Marion Laboure



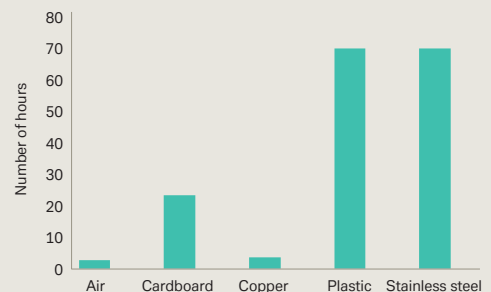
Covid-19 might be the catalyst that finally brings digital payments more fully into the mainstream. That is because the global spread of the virus is forcing countries to reconsider the use of physical money, which might transmit the disease. In fact, many people see the handling of cash as a potential risk factor in the pandemic. To bolster public confidence, central banks have quarantined, disinfected, and isolated banknotes as part of their efforts to stem the spread of the virus. This will likely add to calls for governments, central banks, consumers and businesses to move toward digital payments.

## Physical payments: a vector for transmitting pathogens

The physical washing of cash is justified as there is little disagreement that physical currency can serve as a vector for transmitting pathogens, much like a mosquito. Studies have shown that banknotes and credit cards, like any other surface that large numbers of people touch, can carry bacteria or viruses.<sup>1</sup>

A recent study suggested covid-19 “can persist on inanimate surfaces like metal, glass or plastic for up to nine days, but can be efficiently inactivated by surface disinfection procedures.”<sup>2</sup> Another study found the virus can survive on plastic and steel for up to three days after contamination, and on cardboard or copper for a full day.<sup>3</sup>

## Survival time of covid-19 on different surfaces



Source: van Doremalen et al (2020).

<sup>1</sup> The U.S. Department of Health & Human Services explained how covid-19 spreads from contact with contaminated surfaces or objects: “It may be possible that a person can get covid-19 by touching a surface or object that has the virus on it and then touching their own mouth, nose, or possibly their eyes, but this is not thought to be the main way the virus spreads.” For more details, see <https://www.cdc.gov/coronavirus/2019-ncov/about/transmission.html>

<sup>2</sup> G. Kampf, D. Todt, S. Pfaender, E. Steinmann (2020), Persistence of coronaviruses on inanimate surfaces and their inactivation with biocidal agents, *Journal of Hospital Infection*, March 2020, Volume 104, Issue 3, Pages 246–251 [https://www.journalofhospitalinfection.com/article/S0195-6701\(20\)30046-3/abstract](https://www.journalofhospitalinfection.com/article/S0195-6701(20)30046-3/abstract)

<sup>3</sup> N. van Doremalen et al (2020), Aerosol and Surface Stability of SARS-CoV-2 as Compared with SARS-CoV-1, *The New England Journal of Medicine*.

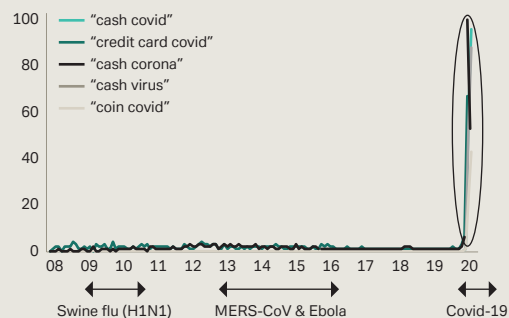
Smartphones are not necessarily a better option for avoiding germs. Preliminary results show that the covid-19 could survive up to a week on the smartphone screen. Researchers showed that 92 per cent of phones and 82 per cent of hands had bacteria on them.

Of course, users can easily disinfect their smartphones and cards, thus helping to prevent the spread of disease-causing microbes. Cash is more difficult.

### Central banks have responded to unprecedented public concerns

Globally, the number of internet searches of “cash virus” recently surged to astonishing levels, a phenomenon that was seen in such diverse geographies as Australia, Canada, France, Ireland, Singapore, Switzerland, the UK, and the US.

### Search intensity of relevant terms



Source: trends.google.com. Notes: The shaded areas in the left-hand panel indicate Jan 2009–Aug 2010 (Swine Flu (H1N1)), Sep 2012–Mar 2016 (Middle East Respiratory Syndrome Coronavirus (MERS-CoV)), Dec 2013–Mar 2016 (West African Ebola epidemic) and Dec 2019–current (Covid-19).

Central banks have responded to the public concerns in three different ways. Several central banks (including the Bank of England, Bundesbank, Bank of Canada, and South African Reserve Bank) have actively communicated that risks are low.

Other central banks have taken further precautionary measures. First, the People’s Bank of China, and then the central banks in South Korea, Hungary, and Kuwait began to disinfect and even destroy banknotes to mitigate the spread of the virus. For fear of importing contaminated currency from Asia, the US Federal

Reserve has initiated quarantine measures for dollar banknotes from the region.

Several other governments and central banks (including those in India, Indonesia, and Georgia) have explicitly encouraged cashless payments.

### Covid-19 fuels the transition to digital payments

Over the short term, the virus may continue to accelerate trends to switch to digital payments. The effect of the virus on payment systems in Asia could be felt sooner than in Europe and the US, given the already high penetration rate on digital payments. As of the end of 2018, around 73 per cent of internet users in China used online payments services (up from 18 per cent in 2008). One reason is that China and Southeast Asian countries have young populations that are significantly larger than those in Europe and the US, and young populations tend to be more open to adopting new technologies.

But covid-19 could be a game changer given that older people are the most vulnerable to this virus. They are also the most cash-intensive users and therefore have the most incentive to switch to cashless payments.

Our research shows that Americans and Western Europeans are much more dependent on cash. It takes much longer to change the ingrained habits of people in a legacy system. In terms of disease control, this could be a significant problem, especially in cash-based societies where populations are ageing, such as the US or Germany. To reduce physical contact and queuing at checkout, the contactless card payment limit rose from £30 (\$35) to £45 (\$52) across most European countries a month ago. And things are already starting to evolve: over the past few weeks, more than half of card payments have been done contactless, vs. a third in December in Germany.

The pursuit of digitisation in Europe might hollow out the continent’s payment sector unlike in China where there are no large European digital payments companies. Thus, a European shift to digital payments might benefit US companies.

Moreover, most people we have surveyed plan to use a smartphone wallet more frequently in the

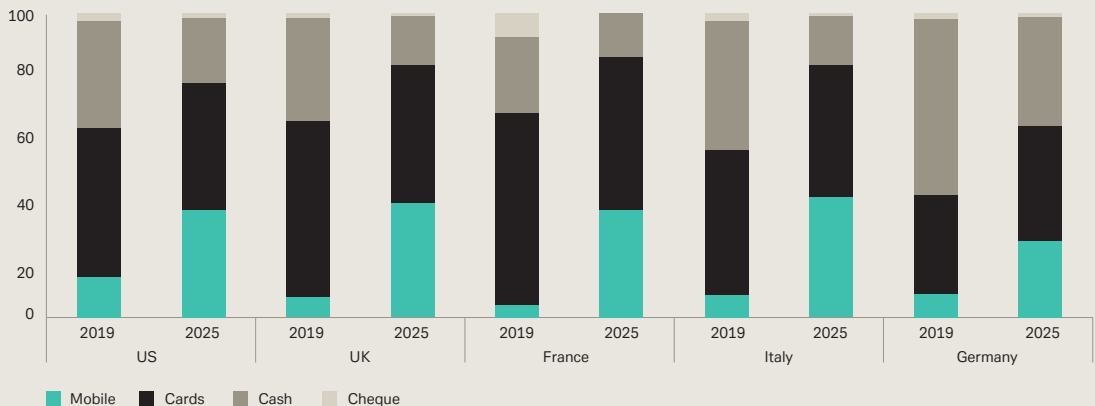
next six months and believe that digital wallets will replace traditional wallets within the next five years. Looking forward to 2025, we continue to expect e-wallets to be the second most preferred method of payments after cards, and the most preferred method among millennials.<sup>4</sup>

As we look towards the medium and long term, concerns over handling cash will add to the calls for central banks to develop their own digital currencies (CBDCs). Over the past two years, global central banks have increased their digital cash initiatives. Today, 80 per cent of them are developing a CBDC and the work goes far beyond research: 40 per cent of central banks are experimenting with proofs of concept and

10 per cent are already running pilot projects. Looking ahead, countries representing about a fifth of the world's population are likely to issue a general purpose CBDC in the next three years.<sup>5</sup>

This process is already in motion. The former president of the People's Bank of China, Li Lihui, argued that a digital currency's efficiency, cost-effectiveness, and convenience makes it especially desirable during an epidemic. Reports indicate the PBoC, in collaboration with private companies, completed development of the CBDC's basic function. In the last couple weeks, without any formal announcement, China began trialling payments – with Starbucks and McDonalds on-board – in its new digital currency

### Weekly in-store purchases per country in 2019 and 2025



Source: Deutsche Bank dbDIG, The Future of Payments.

in four major cities. In February 2020, Sweden, a country where cash in circulation now represents only one per cent of GDP, revealed that it began its first trial of the e-krona and is expected to become the world's first cashless society by March 2023. In the US, the drafts of the covid-19 stimulus bill first included and then discarded the creation of digital dollar wallets. Indeed, the US Federal Reserve could use a 'digital dollar' and digital wallets to send payments to individuals and businesses.

So although covid-19 may be a "once-in-a-century pathogen", as Bill Gates has previously warned, it may have coincidentally emerged when we have the ability to respond (at least to the cash problem) with a once-in-a-century solution. The virus has already driven nations to disinfect, destroy, and reprint their currencies. Compared with that, a digital payment system must seem a far more straightforward solution.

<sup>4</sup> According to FIS, a financial software and services provider. "On Monday, April 6 – the original target date set by President Trump for the stimulus to start going out – new mobile banking registrations jumped by approximately 200% over the daily average in March." "On Wednesday, April 15, registrations peaked and were roughly 207% higher than the daily average."

<sup>5</sup> <https://www.bis.org/publ/bppdf/bispap107.pdf>



# The end of privacy?

Luke Templeman

As many countries roll out track-and-trace apps to help contain covid-19, there are those who lament the plans as the end of privacy.

Certainly, there are very serious questions to be asked about how governments and companies will use and protect the data. Those who grew up under regimes that used authoritative surveillance techniques will have particular concerns.

Yet, while our privacy appears on track to be permanently eroded with mass tracking systems, it is wrong to see them as the end of privacy, freedom, or a 'net negative' on life. Rather, the experience over the last century is that free societies view privacy as a currency. And, at the risk of sounding like a character from an Ayn Rand novel, they happily spend that currency to acquire things of value: security, prosperity and, now, health.

Perhaps the best example of this trade-off concerns what are probably the world's greatest tools for the invasion of privacy – the internet, email, and smartphones. People are well aware that these technologies have eroded their privacy, yet there is (so far) overwhelming net value in its benefits.

There are also other examples of the privacy exchange that most people today would not even regard as a trade-off. Take, for example, passports. It was not until the first world war that passports became a widespread requirement and some people saw this as an invasion of privacy. Call it the beginning of location-based tracking. Few would argue that today. The benefits (perceived or real) of security and territorial sovereignty in the age of mass travel far outweigh the loss of privacy. Most people today would not say, "I hold a passport despite the loss of privacy". They would simply say, "I hold a passport."

Furthermore, as society develops, we naturally develop more privacy (and its associated currency) in different ways. For example, before non-landed folk could vote, there was little

value to politicians in understanding what they thought about issues. Now there is. Similarly, before data analytics had developed to the point that our computer cookies could be examined, there was little value in knowing the stores at which someone had shopped. Today, many companies have vast 'big data' sets that they do not yet have the capacity to analyse. From one point of view they are value-less until artificial intelligence becomes more developed. And as AI does become more developed, other things that today seem innocuous about our private lives will suddenly become valuable information.

Many would argue this is a dystopian view of the future. Those who grew up under authoritarian regimes will rightly attest that the erosion of privacy can lead to the erosion of freedom.

But under the right social and political system, this could, in fact, be the opposite. Privacy could be traded off for more freedom. That is because most people forget there are two elements to freedom. They define freedom as merely the absence of barriers, and the erosion of privacy is, of course, the erection of a barrier. But freedom has a second part, namely, enablement. For example, it is easy to tell someone they are free to play the piano because there is no rule against it. However, if they have no means or opportunity to play the piano, then they are certainly not free to do so.

Similarly, the internet, email, and smartphones have enabled billions of people. People are well aware that these technologies have eroded their privacy. Yet, in spite of the increase in this mass surveillance (both actual and potential) people feel freer than ever. Indeed, one poll showed that four in five people globally feel they have more freedom now than at any time since at least 2006, before smartphones were released.

People feel freer, despite the loss of privacy, for many reasons. A big reason is that so many have been pulled out of poverty. Others have simply used the online tools to take up a new hobby that

was previously inaccessible. In both cases, the trade-off of privacy for freedom and progress was a net benefit to many people's lives.

In exactly the same way, if track-and-trace apps become a normal part of life, many will see them as a way for them to trade some privacy for the greater benefit of the freedom to live a longer, better quality life.

Finally, a word of caution. While the privacy/development trade-off is usually seen as a net benefit, and is usually entered into voluntarily, there is a big difference in the trade-off today that is a very recent development. Namely, the online storage of data. Barely a day goes by without a company somewhere being hacked, and the perpetrators can physically sit anywhere in the world.

The global scale of potential access to data raises concerns society has not had to grapple with in the past. Indeed, they are concerns we are still unequipped to fully deal with. If data is ubiquitous then, will the track-and-trace apps accidentally create second-class citizens? And if those with antibodies in their blood are given privileges that others are not, will that create the perverse incentive for people to risk self-infection? This is not a novel concept. When smallpox was prevalent, there are stories of people deliberately infecting themselves and their children (and assuming the small risk of death) in order to hopefully acquire some level of immunity before a larger wave of the disease hit their community.

As tracking apps are increasingly used to ensure public health, the risks rise. What happens in the event of a disease outbreak more deadly than covid-19? Or a disease that remains permanently in a person's body, such as HIV? Could future tracking systems be used to discriminate against these people in ways which are currently unintended? Already during the covid-19 outbreak there have been sad incidents of people suspected of having the disease being violently attacked. Should hackers release a database (either real or fake) with names of people during a future outbreak, there could be tragic consequences. And that is before considering how irresponsible governments may manipulate such a system to punish political opponents.

Rightly or wrongly, it seems inevitable that most

people in society will see the benefits of giving up some privacy as outweighing the costs. That applies particularly to the families of those who have sadly died of covid-19. It also applies to the many people in low-risk groups who currently face economic hardship as the result of the global lockdowns. Many will happily support a tracking system that allows police to ask people why they were not obeying rules governing movement or isolation if it means future lockdowns can be avoided. Many people will also support the use of the same system in crime prevention and investigation.

That then raises questions about where the burden of proof will fall. If smartphone tracking becomes mandatory, then telecom or technology firms will become critical in ensuring public health. Will they then be regulated in ways that mirror the regulation of banks? Will they be required to document extensive 'know your client' information whenever a new user signs up for a phone plan? And will phone companies be on the hook if they allow a criminal to buy a phone that is then used in connection with a crime in a similar way to how banks are (rightly) on the hook if criminals use their systems to transfer money?

Although some will lament the fact that post covid-19 technologies will impinge on their privacy, it seems most people will accept the trade-off. Indeed, just one generation from now, it is possible that people will look back on the debate today and wonder why it occurred at all. The benefits will be obvious and societal norms will have evolved, even if sometimes the technology is exploited in nefarious ways. The real challenge, though, will come in the future when a privacy-based crisis affects the lives of a large population. At that point, the trade-off between privacy and security (health and economic) may be more hotly debated. For now, most people appear to see the health benefits as outweighing the costs to privacy.

Privacy could  
be traded off for  
more freedom. ➤

# The future of work from home

Luke Templeman



A friend has come to dread her Friday afternoon 'Zoom Happy Hour'. I am told this weekly ritual involves bumping the computer camera with a glass and saying 'cheers' before engaging in some forced social chat with colleagues. Cue much awkwardness. Even more awkward is finding an excuse to leave – apparently easier in a physical bar than a virtual one.

Her Friday afternoon dread stems from the fact that our culture and etiquette have not yet figured out how to work from home because not enough people do it. Herein lies the 'chicken and the egg' problem. Without social adaption, more people will not work from home. But if more people do not work from home, society will not make the necessary adjustments.

This disconnect between potential and reality is why, since the dawn of the internet, technology evangelists have failed in their prediction that working from home would quickly become mainstream. They promised the holy grail of flexibility, empowerment, and comfort. But although work-from-home technology has been available for years, the price of office space has continued to rise, and ever more skyscrapers silhouette our skylines.

The working-from-home movement has always needed a social catalyst, one beyond the mere development of technological tools. Covid-19 may be exactly that. So it is no wonder that, since the outbreak, there have been various predictions that 30, 40, or 50 per cent of us will still work from home after the virus recedes. Our own survey shows that almost half of people believe that, once things are back to normal, they will work from home at least one day a week. That may be because about 60 per cent of people believe that they are at least as productive at home as they are in the office.

Will it actually happen this time? To answer this question we first need to put aside the possibility that during a recession, when companies are considering lay-offs, many people want to be seen in the office. We also need to put aside the research done on work-from-home productivity. For every study that finds a net benefit, another finds a net cost. Instead, the likelihood that at least some form of permanent working-from-home will become widespread may depend on the incentives for both employers and employees.

Employers first. Against the backdrop of the virus-driven recession, most managers have considered a smaller office. As managers eye the savings, they can also claim a win-win by citing the bevy of studies that extol the productivity benefits of remote working. They can also point to studies that show long commute times increase staff attrition.

For employees, the picture is different. Some benefits are obvious: greater flexibility, the ability to care for children, relief from micro-management, and the elimination of the daily commute are oft-cited. In fact, one study estimated that a 20 minute increase in commuting time each day was equivalent to a 19 per cent pay cut, in terms of job satisfaction.

However, many employees only consider the hidden costs when they are faced with the day-to-day reality of working from home for an extended period. These may significantly change their incentives. Consider that one of the few things agreed upon by almost every study on working-from-home is the need for people to have a dedicated work space. Setting oneself up on the kitchen table is fine for a week, but the clutter and hassle gradually gnaws away and work becomes less efficient.

The need for a dedicated workspace presents a particular problem for those at the beginning of their career who live in small apartments in big cities. After all, there is a reason why cheap, shared office spaces, such as WeWork overtook the local café as the popular workspace for entrepreneurs.

Take London as an example. Just a few of the most desirable places for city living, particularly for young people are central areas such as the West End, Midtown, and SouthBank areas. Renting an average one-bedroom apartment in these areas costs £2,400, £1,820, and £2,100 per month respectively. Upgrading that apartment to a two-bedroom version will add £2,000, £773, and £643 to the monthly cost, based on our analysis of Rightmove data. If we take an average of the extra costs the two cheaper areas, £708, gross it up for tax assuming a marginal rate of 20 per cent, it means a staff member will require an annual salary increase of just over £10,500 in order for working from home to breakeven.

Might it then make sense for employers to raise salaries for staff who work from home? Consider the office rental costs across popular office locations in London (the West End, Midtown, the City and fringe areas, and Docklands). If we assume an average annual rent of £65 per square foot, multiply by 80 square feet per employee, that equates to an annual cost of about £5,200. That is half the cost of a staff member upgrading their own home, meaning any employer subsidy will likely be insufficient to incentivise all but a handful of staff to work from home (rates and utilities were excluded from both).

Some would argue that people can just move out of the city to a cheaper area with a bigger house, especially if commuting is no longer an issue. But that is a very undesirable solution, particularly for young people who desire the excitement of a big city. And it only increases the problem of social isolation that many studies cite as a factor in work-from-home's desire to return to the office.

Aside from the financial cost of having a suitable apartment or house, both firms and staff should consider the intangible pros and cons of decentralised working. There are many studies on the topic and many contradict each other. Far more interesting are the few researchers who seemingly contradict themselves. Among them is Nicholas Bloom, a Stanford University economist. In 2015, he was held up as a work-from-home cheerleader after he found that a Chinese company with work-from-home policies boosted productivity by 13 per cent and halved the rate of employee resignations.

Yet, Bloom's response to covid-19 was very different. Working from home in this scenario, "will create a productivity disaster for firms". This is because most people cannot achieve the four requirements needed to successfully work from home. First, children must be in school or daycare. Second, employees must have a home office that is not a bedroom. Third, complete privacy in that room is essential. Finally, employees must have the choice to work from home. If they want to work from the office but cannot (either due to formal policies or informal 'nudges') work-from-home simply will not work.

Despite good intentions, many people will be unable to meet all four of these requirements on a consistent basis, at least in the short term.

That goes most of the way to explaining why half of the employees who chose to work from home for the Chinese company that Professor Bloom examined asked to come back to the office just nine months later. And that is despite them having an average commute time of 40 minutes each way.

There are other intangible reasons why working from home eventually grates away at many people. Perhaps the most important is the issue of human interaction and the retreat from physical contact to the virtual sort. This can be a particular problem for roles that require a high level of communication. There are several parts to communication and two of the most important are idea generation and social company. No matter how sophisticated the technology, and how well-appointed the home office, human communication is usually more effective and fulfilling when done in person. Without it, innovation can suffer.

Yet, all these problems amount to nought in the face of enforced lockdowns. These have and will catalyse change, and even if working from home is detrimental to businesses in the long term, it seems some will pivot that way nonetheless. Indeed, there are many reports of companies using the lockdowns and enforced working-from-home regimes to test how the setup could work on a more permanent basis. Many of these companies may not require employees to permanently work from home. Rather, they will likely encourage staff to come into the office only a few days a week. That will allow the firm to downsize rather than eliminate its office space.

So, despite the drawbacks, the mass working-from-home experiment catalysed by covid-19 means many employees must ready themselves for at least a semi-permanent change in the foreseeable future. To adjust, we should focus on, and look to amplify, some of the benefits that are not always obvious. First, the benefits of eliminating the daily commute extend beyond lost time. Various studies show the health improvements of avoiding the stress and stuffiness of public transport. And consider the impact on personal relationships. Indeed, if one partner in a marriage spends more than 45 minutes commuting, they are 40 per cent more likely to divorce, according to one Swedish study.

Further unexpected benefits may be in store for

Without social adaption,  
more people will not work  
from home. But if more  
people do not work from  
home, society will not make  
the necessary adjustments. >

minority groups. Workplace biases are well-documented for things like race and gender. However, studies show that unconscious bias is also rife for other reasons, some of which working from home may help nullify. Indeed, studies have shown various degrees of height discrimination. Malcolm Gladwell found almost a third of Fortune 500 chief executives are at least six feet two inches, almost ten times the rate in the normal population (a fact that further disadvantages women). Working over email and video chat makes this less of an issue.

Another drag on some people's careers is their accent. One British poll found that over half of people believe a regional accent leads to discrimination in the workplace. Furthermore, one in five feel they must alter the way they speak to be successful.<sup>1</sup> Similar studies have found discrimination against people based on perceptions of attractiveness, introversion, and presentation ability. Of course, it can be argued that video conferencing still perpetuates these biases, however, there is some evidence that video conferencing is a 'great leveller'. People who appear to be strong presenters in person are perceived to be less so on a video call.

Perhaps the most important reason why working from home appears likely to become a more permanent fixture of our post covid-19 world relates to a human trait that the virus outbreak has highlighted more than any other. Quite simply, humans are very adaptable. How many people in February said Western countries could never pull off a lockdown?

Our ability to adapt is also accelerated when many people do the same thing at the same time. Take, for example, the thorny work-from-home problem of social isolation. This is very hard to fix in normal times, but with everyone thrown into the same boat during the recent lockdowns, there has been an explosion in new community organisations to help people deal with the issue. Common problems lead to common solutions. So if a great number of people all begin to work from home at the same time, they will all seek similar social interaction at the same time. Imagine how local community organisations could flourish once again.

Finally, consider the impact on house prices. As companies now encourage workers into remote working, a certain proportion of people will certainly embrace it. Some will move out of the city and buy a big house. If this helps solve the 'chicken and the egg' problem mentioned at the beginning of this piece, it could not only boost regional areas but also help make cities more affordable. That could lead to a reversal of the century-long trend of ever-denser cities. And given disease tends to spread faster in urban areas, working from home may just contribute to a virtuous cycle of deurbanisation that helps prevent, or at least lessen, the next pandemic.

<sup>1</sup> <https://www.peoplemanagement.co.uk/news/articles/one-in-five-feel-need-change-accent-get-ahead>

# The end of creative destruction?

Jim Reid, Peter Sidorov



Even for those accustomed to reading big numbers, the size of today's stimulus programmes are eye-popping. They come as governments and central banks around the world race to support workers and businesses through the covid-19 economic crisis. In the US, the Fed has lowered interest rates to the zero lower bound and unveiled a raft of credit and liquidity facilities, while Congress has passed trillions of dollars' worth of stimulus. In Europe, the ECB has unveiled a Pandemic Emergency Purchase Plan, and even Germany has suspended its constitutional debt brake. Meanwhile, a number of countries, including the UK and Canada, have announced extensive wage subsidies from the government in order to prevent companies laying off workers.

Yet, while the desire to prevent economic ruin is a noble one, there are rising concerns that the natural process of creative destruction will be unable to work as effectively as it has in the past. If creative destruction is impeded, there are major implications for the path of productivity growth, and hence wages and living standards in the long run. While it is understandable that companies are receiving support through this turbulent period, there are a number of enterprises that would have gone under even without the pandemic. They are being artificially kept alive only thanks to drastic policy support.

This policy support goes beyond the stimulus measures we have seen enacted this year. Indeed, additional central bank support built up over the past few decades has been central to eroding creative destruction. Take the US

for example. In the immediate post-war period, the Fed operated under the Bretton Woods system, and it was then further constrained into the 1980s by the inflationary shock of the previous decade. However, once inflation came under control into the 1990s, the Fed faced far fewer obstacles when it came to supporting the economy. After all, the Fed's mandate from Congress is to promote maximum employment and stable prices. If prices are stable, then that allows it to focus increasingly on the employment goal. In turn, this means that factors such as financial market performance will play an increasing role in their decision-making. Indeed, the Fed's measures under former chairman Alan Greenspan led to the idea of the "Greenspan put", with the Fed stepping in to support financial markets when in turmoil. Simultaneously, the Fed has been forced to shoulder an increasing burden because of the ineffectiveness of fiscal policy, which has regularly worked against, rather than with, monetary policy.

The financial crisis exacerbated this problem as loose monetary policy helped companies that would not have been able to withstand interest rates at higher levels. The term 'zombie companies' even came into usage, originally in the Japanese context but since more broadly, to denote those firms being kept afloat only thanks to intervention.

Yet policy intervention is not the only reason why the rate of creative destruction has slowed in recent years. A number of Western democracies have become more oligopolistic in various ways, which is further stifling the

creative destruction process. Rising wealth inequality has seen the top end of the income distribution accumulate a rising share of the economic pie. In turn, that enables the richest to have much greater lobbying power and influence over government policy. Furthermore, in the US, there has also been increased market concentration, giving incumbent firms greater market power and excess profits.

All these factors suggest we could be heading for a world of lower growth, as companies that should fail in a free market are kept afloat only thanks to a variety of interventions.

Some may argue that, quite apart from policy intervention, lower levels of creative destruction are to be expected relative to the past. Consider that in the decades immediately after the second world war, a period often dubbed the “golden age”, rapid technological progress, coupled with helpful demographics and a relatively low capital stock, contributed to strong and sustained rates of economic growth. Furthermore, because growth was at high levels, society was more tolerant of business cycles, since a slowdown in growth was less likely to cause a full-blown recession.

There were also a number of catalysts that aided growth and disruption in the post-war period that are not easily replicable today. The first is the gain in education. In 1947, just a third of Americans aged over 25 had completed either high school or college. By 2019, that figure had climbed above 90 per cent, enabling major productivity improvements over the period. While this is undoubtedly a good thing, the substantial gains achieved means that this is not an area where the same level of progress can be made today.

Another major catalyst behind the change in many companies and the creative cycle after the war was the entry of women into the workforce. In 1948, women made up less than 30 per cent of the total US workforce. However, by the late 1970s that number had grown to over 40 per cent, and today stands at 47 per cent. This same level of growth is not available over the coming decades. Furthermore, demographics were far more favourable from a growth standpoint in the post-war period, with a much smaller share of elderly citizens in the population compared with today.

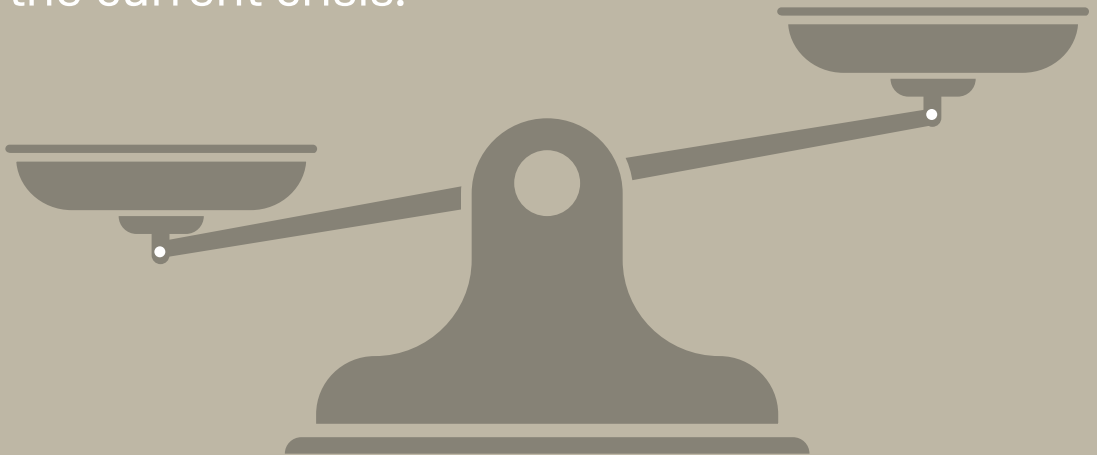
So, it seems that the risks for creative destruction are structurally worse now than in the past. Nevertheless, it is worth paying attention to a number of other factors that could give creative destruction a boost without the catalysts of past decades which have frequently involved economic malaise.

One of the most important catalysts is the pace of technological growth. While this has slowed in recent years, it is perfectly plausible that we will see this accelerate in the near term. In particular, the covid-19 crisis has increased the focus on online tools for remote working, shopping, and more. And yet businesses have a long way to go to achieve their online ambitions, and artificial intelligence is still only in its infancy. Furthermore, 5G technologies have the potential to offer transformational change, from autonomous robots to smart cities (See Konzept #16 from July 2019). Put simply, there is tremendous untapped potential.

Contrary to popular opinion, could Europe be better placed to see more competitive markets than the US in the future? The continent has made considerable moves towards open markets over the last 25 years, supported by the relatively apolitical position of EU institutions. Indeed, an ECB working paper found that concentration ratios in the Euro Area over the last decade or so “have remained broadly flat”. Of course, EU member states frequently face disagreement as each looks out for their respective interests, and populism is a growing risk. However, the threat to free and competitive markets appears low for now.

So the risks to the functioning of creative destruction could actually be more relatively skewed towards the US. The question to ask is whether the world’s biggest economy can escape a trap that will result in lower long-term productivity. If the current framework of strong intervention from the state and the central bank continues, and wealth inequality continues to rise alongside that, it is entirely plausible that there will be an increasing drift in an oligarchical direction. In fact, with hindsight we may see that the covid-19 stimulus measures only entrenched the notion that the status quo should be protected at all costs. It’s all relative of course but maybe the US is becoming more European at a time when Europe has moved more in the US’s direction.

With effects pushing on both ends of the income and wealth spectrums, it seems that a reduction in inequality is a likely consequence of the current crisis.



# How the virus could reduce inequality

Henry Allen, Jim Reid

Though the entire world has been affected by the covid-19 pandemic, those on low incomes have been amongst the most heavily affected. They are more likely to be in occupations where working from home is not viable, and are less likely to have emergency savings to fall back on. Furthermore, in countries without universal health coverage, they are less likely to have insurance which means they have disproportionately poor health outcomes.

In spite of these factors, however, covid-19 may actually lead to lower levels on inequality, particularly in developed countries where the poor may, in some ways, be less affected than those in higher income groups. In fact, we have already seen redistribution to lower income groups through the salary protection programmes many countries have initiated. In the UK, the government covers 80 per cent of furloughed employee's wages up to £2,500 per month. In the US, unemployed people receive an extra \$600 per week for up to six months. As a proportion of a staff member's paypacket, those on low incomes have been better protected than those on higher incomes.

Beyond direct monetary transfers, the pandemic has also revealed key vulnerabilities in social safety nets that will become a priority of governments to fix. Consider benefits such as paid sick leave or good quality healthcare coverage. We are now discovering that it is not just individuals who benefit from this, but society as a whole, particularly when the people involved are essential workers, many of whom are in lower-income brackets.

Large and positive externalities are also being recognised by governments. For example, the UK has changed the rules surrounding statutory sick pay so that people are now able to receive it from the first-day of self-isolating, rather than

the fourth. The change meant that workers, who could well have been struggling financially, would no longer face the invidious choice between going into work when suffering from ill health and potentially transmitting the disease further, or being worse off financially from choosing to self-isolate.

Meanwhile in the US, amidst concerns that people could be reluctant to be tested for covid-19 because of the financial implications, the federal government subsequently legislated for free tests. This approach recognised that there is a public health interest in people knowing if they have come into contact with someone infected by the disease, as well as for epidemiologists to be able to track the extent of its spread.

As we learn to live with the virus, countries will likely maintain social distancing measures for some time. And as these measures benefit society as a whole and not just the direct beneficiaries support for them will likely continue, as well as for governments to take action in similar areas.

Support for action will not be limited to the health sphere but it will entail an economic response that may see governments act to redistribute resources to those on lower incomes. This is not least because those on low incomes are less likely to be able to work from home and so are disproportionately affected by the virus. The support for such redistributionist measures can also be expected to increase over time, given that unemployment is projected to rise to its highest levels in decades as many countries fall into their worst recession since the Great Depression.

Even once the immediate crisis is over, one of its legacies will be the question of how governments deal with heightened levels of public debt

that have been incurred from the various relief measures put in place (see our piece “How will we pay for it?”). The IMF forecasts that the gross debt levels of governments in the advanced economies will rise from 105 per cent of GDP in 2019 to 122 per cent in 2020, with countries such as Italy, Greece and Portugal projected to rise to higher levels still. Once again however, there are strong reasons to suspect that the impact of measures to reduce public debt burdens will fall hardest on rich individuals and large corporations.

This may be particularly so given the experience of fiscal restraint following the financial crisis. In the 2010s, many governments across the developed world moved to cut expenditure in order to reduce their budget deficit, particularly in the early part of the decade against the backdrop of the sovereign debt crisis in Europe. Yet many countries continued to cut corporate tax rates whilst doing so, at the same time as various benefits were slashed. The legacy of these measures is a factor behind the success of populist parties since.

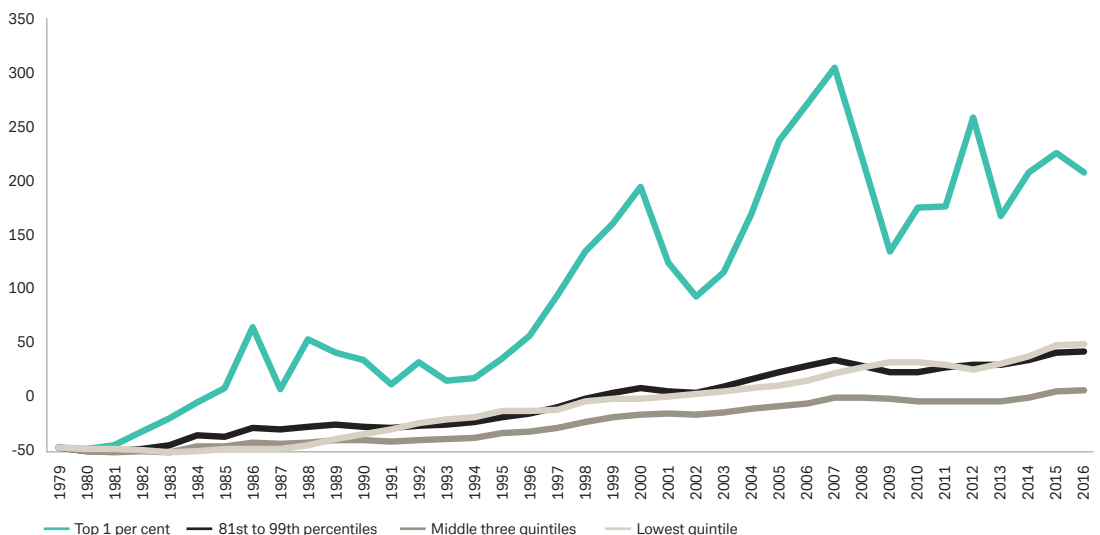
In the covid-19 recession, however, it appears that governments are taking a very different tack. Companies have already come under pressure not to issue dividends or bonuses. It will be no surprise therefore if governments act carefully

to ensure that those on low and middle incomes bear a much lighter burden than the richest and large corporations, particularly given the explicit pledges from many to support those left behind from the benefits of globalisation. Higher taxes, both income and corporate, could be inevitable.

A more immediate way in which the coronavirus pandemic is helping to reduce inequality is through the sizeable corrections already seen in global equity and other asset markets – where the rich hold a greater proportion of their wealth compared with those on lower incomes.

The 2008 financial crisis offers a precedent for how these market declines, coupled with a recession, coincide with lower inequality. This is illustrated for the US on the following chart. The cumulative income growth for the top one per cent fell sharply around 2008, and by 2016 had still not reached its peak in 2007. Furthermore the Gini coefficient that measures overall inequality also fell in the US after the financial crisis, with the measure that takes into account transfers and taxes falling from 0.453 in 2007 to 0.413 in 2009. This is not to say it is inevitable that recessions lead to lower inequality, but depending on the cause of the downturn and the government’s response to it, inequality can be lower in the aftermath.

## United States, Cumulative Growth in Average Income After Transfers and Taxes



Looking further back into history, there is a strong case that the covid-19 pandemic will be another event that leads to widespread recognition of the key roles that many workers play in the economy and society, and a desire to be more formally rewarded. This would be akin to what happened after the world wars and other major crises that have galvanised societies. While health workers may be the most obvious candidates for such recognition, being at the frontline of the response to this crisis, this could also extend to other essential workers such as supermarket delivery drivers or charity workers protecting the vulnerable and who are continuing to work in spite of the risks and low pay.

This desire to reward those on the frontlines has regularly been seen before. In the US, after the second world war, the GI Bill was passed and provided a range of benefits to returning veterans, including help to attend college or with applying for a mortgage. Similarly, a post-

9/11 GI bill was later passed to help veterans pay for college or job training. In the UK after the first world war, the realisation that a number of the returning soldiers would not be able to vote saw this right extended to all men over 21 for the first time.

It would therefore be no surprise to see governments implement measures after the covid-19 crisis that recognise the essential workers who have risked their lives to provide for others. And because many of these people are on low incomes, these measures will likely extend to others in the same income groups. At the same time, financial restrictions have already been made on companies who are generally owned by the wealthy. Measures could soon follow on wealthy individuals as governments seek to pay for the current stimulus. So with effects pushing on both ends of the income and wealth spectrums, it seems that a reduction in inequality is a likely consequence of the current crisis.



## Connecting our clients with real-time debate #PositiveImpact

Konzept discusses the thematic issues that affect the world from a financial, social, and environmental point of view. In this edition, we address the enormous challenges presented to the world by the covid-19 pandemic. In particular, we calculate how much investment countries need to build more robust health systems. We also look at the future of privacy, how we can work from home, and the likely impact on inequality. Furthermore, we seek to address how an inclusive economic response could affect inflation and the ability of economies to pay for their stimulus measures. Together with our other articles, we hope this issue of Konzept will help address the enormous challenges currently faced by our society.

