7 April 2020

Pandenomics

How Covid-19 could change the world

Follow us
@ING_Economics

Pandenomics

How Covid-19 could change the world

The Covid-19 pandemic leaves us wrestling with a callous, crude and capricious trade-off between the loss of livelihoods or a loss of life.

We are nowhere near knowing how bad it will get, or when it will end. Varying behavioural and policy responses, and pervasive misinformation, are making matters worse.

What is worrying is that the epidemiologists are warning that the disease could return later in the year, or even become endemic like colds and flu. But even if we hope that it will be over in a few months, and a vaccine is fast-tracked, the world will never be the same again.

The pandemic is set to shake up not just healthcare, but politics and business, the economy and financial markets, culture and society, lifestyles, the use of technology, well-being and the environment.

While the world will undoubtedly breathe a collective sigh of relief when the pandemic ends, it is likely to be left profoundly changed by the experience. Actions taken in the heat of the crisis will have lasting effects on attitudes, relationships and behaviours.

So how might the new world look? Here we make a start on 'pandenomics', combining several disciplines to identify 15 shifts that may confront us over the coming years.

Mark Cliffe, London +44 20 7767 6283
@markcliffe
New Horizons Hub

Pandenomics

15 ways that Covid-19 could change the world

1. Big government is back - Covid-19 has forced governments to intervene in the economy and daily life in a way unprecedented in peacetime. More changes will come after emergency lockdowns and support has ended.

2. Peak populism – populist politicians will push their nationalist agendas, pointing to the dangers of unbridled openness, but some countries may embrace a more focused internationalism to tackle global problems.

3.Competence matters - governments and companies that fail to show competence and compassion amid lost lives and livelihoods will rapidly lose trust and support. The recriminations may fuel ongoing conflict.

4. From monetary to fiscal - a further radical transformation of macro policy will cast a long shadow. With fiscal rules cast aside, dealing with a massive build-up of debt will be an enormous challenge.

5. Inequality matters – it's not just a matter of fairness, it's a matter of social stability and public health security. Society's dependence on often low-paid and vulnerable people providing vital services is now in the spotlight.

6. 'Too many to fail' – pandemic lockdowns will lead to a shake-up in the service sector, especially in high social contact areas such as leisure, which are dominated by small businesses, the low-paid and self-employed.

7. Collateral damage – government intervention in the financial system will continue. Beyond a rethink of how to keep financial markets functioning in future crises, a surge in insolvencies will leave a painful legacy.

8. Rethinking efficiency – the pandemic exposed the dangers of over-optimising processes, which leave little slack to deal with sudden setbacks. Instead of 'just in time', the ethos will shift to bigger 'just in case' inventories.

9. Rethink risk management – businesses will shift from linear thinking based on quantifiable risks based on past precedent to a new focus on mastering uncertainty with resilience and agility.

10. Rethinking supply chains – the fact that the pandemic emanated from China, the modern day 'workshop of the world', exposed the vulnerability of global supply chains.

11. Expertise matters, and it needs to be diverse – on top of epidemiology, investments in science, both physical and social, will be needed to help inform difficult political, ethical and economic choices on future challenges.

12. War on disease – the huge human and economic toll of pandemics will push investments in health research and systems to the top of the agenda and add to the urgency of addressing other global threats to sustainability.

13. From physical to digital – sustained curbs on travel and enforced working from home during the pandemic will lead to a step increase in people interacting digitally, radically shaking up the structure of the economy.

14. Lasting shifts in consumer behaviour and social norms – the mortal threat posed by social interactions has shifted our thinking about how we relate to our households, families, neighbours and communities.

15. More benign surveillance of individual health and social interactions – the benefits of tracking of personal health and our interaction with others may be reconciled with privacy and security by decentralised technology.

1 Big government is back

Covid-19 has forced governments to intervene in the economy and daily life in a way unprecedented in peacetime. More changes will come after emergency lockdowns and support have ended. Travel bans, lockdowns, quarantines and social distancing designed to slow the spread of the infection have exacted a heavy economic toll far exceeding the direct costs to health care systems.

In addition to the dislocation of supply chains that began with the shutdowns after the emergence of the disease in China, the containment measures have triggered a sudden stop in demand in high-contact services and travel. It is already becoming clear that the exit from this heavy government intervention in the economy and daily life will be far from straightforward, as the progress of the disease will dictate which elements can be reversed or sporadically re-imposed. This process will most likely take us into 2021.

"Once the immediate pandemic is over, there will be calls for governments to step back, but the rationale for more assertive state intervention will persist"

Once the immediate pandemic is over, and the economy, like society, recovers, governments will have to figure out how to share out the bill. But while there will be calls for governments to step back, the rationale for more assertive state intervention will persist.

In the face of mortal threats, people will be more willing to accept constraints on their liberties and tracking of their behaviour. In industries such as airlines where companies faced a near total loss of revenue for a long period, nationalisation or state support may be needed. In others, such as health care and pharmaceuticals, intervention will be justified on public health and national security grounds. Shifting consumer preferences and policy priorities will entail a major shift in the structure of the economy which force governments to become more directive in their industrial policies, corporate taxation, state aid and competition law.

The pandemic, and the accelerating damage from climate change, has brought home the dangers of our collective abuse of the natural world. The prospect of more frequent and bigger crises will call forth societal pressure for government-led action. Ambitious government-led 'Moonshot' investment and regulatory programmes to address existential threats will gain mainstream support. This may call for a deep-seated review of how public and private investment interacts, including innovative financing techniques, including equity participations, which enable governments to reap more of the benefits.

2 Peak populism

Populist politicians have exploited the pandemic panic to pursue their nationalist agendas, pointing to the dangers of open borders and the security risks of excessive dependence on foreign suppliers.

Those that are in power are seeking to capitalise on the popularity bounce enjoyed by incumbents, as people rally around authority figures to lead them out of the crisis. Those that are not will aim to capitalise on the hardship that will follow the pandemic to grab control.

"Past US leadership of global co-operation has been marked by its absence. Meanwhile, the co-ordination of national responses in Europe has been far from seamless"

The primacy of national interests has been seen in the efforts to hoard vital medical supplies, and a blame game has broken out, notably between the US and China. Past US leadership of global co-operation has been marked by its absence. Meanwhile, the co-ordination of national responses in Europe has been far from seamless. Familiar North-South and East-West fault-lines over burden-sharing have reopened, begging questions about the appetite for European integration.

So, it is hardly surprising that there is a widespread view the Covid-19 pandemic will result in further deglobalisation and political division. This poses a long-term threat to policy cooperation, which may inflict further harm on trade and investment. But the long run picture could look different.

The self-evident global nature of the threats of pandemics and climate change strengthen the hand of those arguing for increased global co-operation. Much will depend on how far populists manage to avoid or divert the blame for the damage inflicted by the pandemic. In the case of China, beyond the war of words with the US, it has taken positive action to assist elsewhere sharing some of its war-like mobilisation of its output of urgent medical supplies such as face masks and ventilators.

> *"Rather than 'reglobalisation', we may see 'internationalisation', in effect a friendly nationalism involving active co-operation between nations."*

However, it is unlikely that we will revert to the deeply integrated form of globalisation that policy and business elite aspired to before. The pandemic has exposed the dangers of over-optimised and complex global supply chains. This suggests that rather than 'reglobalisation', we may see 'internationalisation', in effect a friendly nationalism involving active co-operation between nations.

3 Competence matters

Governments and companies that fail to handle pandemics competently will rapidly lose trust and support. With thousands dying, populations, equipped with real-time social media connectivity, will be ruthlessly unforgiving of mistakes made by governments and companies. Amid panic and latent or actual social disorder, the pandemic calls for consistently competent communication and action.

But since it is far from over, the ultimate winners and losers are not yet clear. Responses will be shaped by the psychological 'peak-end rule': people will focus on the worst moment and on how it ends.

> *"If things go badly over the summer, President Trump's, chances of re-election will suffer. Even if the pandemic has passed its peak by election day in November, the recriminations will still be raging"*

So, at this point, it would be wrong to read too much into the fact that President Donald Trump's popularity rating has risen, despite widespread criticism of the Administration's initial handling of the Covid-19 crisis and the stock market crash. The reckoning will come later.

If things go badly over the summer the President's, chances of re-election will suffer. Even if the pandemic has passed its peak by election day in November, the recriminations will still be raging. Were he to be replaced Joe Biden, this could mark a major reversal of the populist trend. Although strategic competition with China may continue, this might lead to a fresh start in global co-operation in general and Transatlantic relations.

In a similar fashion, companies that fail to act through the pandemic in a pro-active, competent and socially responsible manner towards their customers, suppliers and employees face potentially grievous damage to their reputations and businesses. Indeed, the fall-out is likely to involve extensive legal action and a new wave of government intervention and tougher regulation.

4 From monetary to fiscal

A further radical transformation of macro-economic policy will cast a long shadow. With fiscal rules cast aside, dealing with the massive buildup of debt will be an enormous challenge.

The unprecedented policy responses that fueled the post 2008 recovery left the macro policy cupboard looking bare when the pandemic struck. On the monetary side, with interest rates already at or close to zero, interest reductions, albeit swiftly enacted, were immediately acknowledged to have a limited impact in offsetting the 'sudden stop' in economic activity. Radical options were rushed through to address the emergency. The previous unwinding of central bank bond buying has been reversed. In the US, the Federal Reserve has gone all out by being ready to buy without limit. But despite all this, the heavy lifting to support the economy has come from fiscal policy.

> *"With government debts set to soar to levels unprecedented in peacetime, this raises the question of how far and how quickly austerity measures to reduce debts should be applied once the pandemic is over"*

With large swathes of the economy coming to a halt, governments of all political stripes have been running through an escalating range of fiscal options. The first stage included tax deferrals, state guarantees for bank lending and increased government spending on public health. Since the problem for most businesses and households is less the ability to borrow than a sudden loss of income, income support through wage subsidies, benefit increases or generalised direct payments have become critical in mitigating mass unemployment and bankruptcy.

With government debts set to soar to levels unprecedented in peacetime, this raises the question of how far and how quickly austerity measures to reduce debts should be applied once the pandemic is over. The death toll will also lead to more permanent income losses. These will vary across countries depending on how well their health systems coped with the pandemic and on the demographic profiles of their populations, especially given the vulnerability of older age groups to Covid-19. Fortunately, some of the developed countries with the fastest ageing populations, like Germany and Japan, have relatively well-endowed health care systems. But others, like Italy and Spain, have been caught out. High fatality rates will to lead losses of pensioner income and spending which will have a lasting negative effect on activity and household poverty.

The sheer scale of the policy measures to tackle the pandemic means that they are not merely temporary palliatives. This should kill off once and for all the decade-long debate about how, having finally shaken off the legacy of the global financial crisis, macro-economic policy could be 'normalised'. The pandemic may finally shatter the framework of monetary policy directed at inflation targets of 2% or so, and fiscal policy aimed at lowering government deficits and debt. Instead, we face fundamental debates about the objectives and instruments of policy.

> *"A key question is whether governments will aim to impose many years of austerity to pay off their pandemic debts. More radical options suddenly become real."*

A key question is whether governments will aim to impose many years of austerity to pay off their pandemic debts with spending cuts and higher taxes. More radical options may suddenly become real. One would be to have central banks issue 'helicopter money', perhaps targeted at low income groups. Such monetary financing would not add to government debt, in process going beyond QE and further blurring the boundary between monetary and fiscal policy. Another option would be for central banks to issue digital currency to drive interest rates well below zero and perhaps make it time-bounded to force people to spend it. This may address the problem of consumers, (contrary to concerns about a pandemic hangover of demand-led inflation) aiming to build up precautionary savings.

5 Inequality matters

There is likely to be a recognition that reducing inequality is not just a matter of fairness, but also social stability and public health security. The pandemic has suddenly highlighted society's dependence on often low-paid people providing vital services, in the private as well as public sector. When we start worrying not just about our health but our food supplies, services previously taken for granted are suddenly very precious. Scenes of panic buying of food and toiletries in Europe indicate how vulnerable the stability of even prosperous societies is.

Moreover, the pandemic showed the health risk posed to everyone by income inequality. Without an adequate income safety net or health provision workers on low incomes and lacking savings would otherwise continue to work, jeopardising their health and that of others.

> *"The pandemic has suddenly highlighted society's dependence on often low-paid people providing vital services, in the private as well as public sector"*

Emergency fiscal programmes to cope with the lockdowns will be unwound once the pandemic has passed. But there is likely to be a sustained shift towards more progressive tax and benefit systems. Although unemployment will drop back sharply from the levels reached at the height of the lockdowns, it is likely to remain much higher than pre-pandemic levels. This may give momentum to calls for temporary income support to turn into a more permanent universal basic income.

Moreover, societal attitudes will likely favour sustained support of vulnerable groups including the aged, infirm, unemployed, working poor, and the self-employed. Workers forced into caring for their loved ones during the pandemic will push governments to invest more in elderly and child-care systems.

> *"Although, unemployment will drop back, sharply from the levels reached at the height of lockdowns, it may give momentum to calls for universal basic income"*

The pandemic will also add a negative twist to the debate about intergenerational inequality. Covid-19 has been distinctive in being especially deadly for older people.

This will be particularly true of Italy and Spain, where the high pandemic fatality rate partly reflected their cultural tendency to rely on grandparents for child care. The flip-side is that older people have more accumulated wealth than younger generations. Although the pandemic has depressed asset prices and wealth, the young may well press for their elders to carry more of the burden of the extra debt will be another legacy of Covid-19. This may lead to higher tax burdens on the wealthy, high earners and large corporations.

6 'Too many to fail'

The pandemic has revealed the vulnerability of the service sector.

Recessions typically hit manufacturing and real estate sectors especially hard, with consumption spending remaining relatively resilient and trade and investment falls. But in the case of this pandemic, containment hit services involving social contact, such as leisure, retailing and travel, especially hard. These 'social consumption' sectors have grown dramatically in recent decades. Moreover, they have a relatively high proportion of small businesses, low wage jobs and self-employment.

The global financial crisis threw the spotlight on banks and financial institutions that were 'Too Big to Fail', forcing governments to step in to support them, the latest crisis has been more a case of 'too many to fail', forcing governments to act quickly to support millions of workers and businesses.

An important feature of these 'social consumption' services is that little of the business lost during the pandemic will be recouped once it is over. Thus, many journeys, sports events, holidays, and meals out will be largely foregone rather than merely postponed. This will make it hard for the businesses concerned to repay the extra debts that they run up in the pandemic. Moreover, while the physical capital and infrastructure that they used will still exist, it is doubtful that it will all be smoothly or fully re-employed afterwards as consumer demand may fall or change.

7 Collateral damage

Government intervention in the financial system will continue. The financial markets have again shown their fragility in the face of extreme uncertainty triggered by the pandemic. With asset prices at high levels courtesy of low interest rates and central bank asset buying, the combination of computer-driven trading and the regulatory-driven reduction in market-making capacity led to disorderly markets. This briefly extended to the US Treasury bond market, ordinarily a safe haven, as investors scrambled to raise cash. It also prompted a shortage of US dollars, forcing the Federal Reserve to crank up its dollar lending lines to other central banks to help borrowers elsewhere to finance their dollar-denominated debts.

> *"Despite the rebuilding of the banking industry's capital and liquidity buffers over the past decade, the severity of the downturn may force governments to bail-out and restructure failing banks and financial institutions"*

Immediate measures to support market liquidity, while essential, are not enough when a sharp downturn triggers bankruptcy across the economy. Although large financial market players entered the pandemic in much better shape than in 2008, the scale of the sell-off again has imperiled the wider system. While the system of loan and credit guarantees to borrowers will have cushioned the fall-out in the loan markets, the damage to profitability and fire-sale asset prices point to higher default rates being sustained. In the capital markets, although central banks have stepped in to buy investment grade debt, the high yield markets will see a huge surge in defaults.

Internationally, the pandemic has also exposed the vulnerability of emerging markets that have built up huge debts, much of it in US dollars, in recent years. The sudden withdrawal of capital from these markets, combined with the economic challenges of the pandemic, will doubtless put many at risk of default.

Despite the rebuilding of the banking industry's capital and liquidity buffers over the past decade, the severity of the downturn may force governments to bail-out and restructure failing banks and financial institutions. Regulations designed to address risks at specific institutions are not well suited to the systemic challenges posed by a global crisis. This will force greater flexibility in the application of capital and liquidity requirements. Moreover, with economies facing longer term restructuring, governments may take a more activist role in the allocation of capital and lending.

8 Rethinking efficiency

The pandemic has exposed the dangers of over-optimising processes and supply-chains, which leave little slack to deal with sudden setbacks.

This was not confined to the tragic lack of critical care capabilities in health care systems, but across a whole range of sectors. Further waves of the pandemic will drive home the need to build resilience and robustness, or even what Nassim Taleb calls 'antifragility', namely an ability to benefit from shocks. In any case, it is unlikely that we will quickly see a return to 'business as usual'.

"To cope with future shocks, businesses are likely to shift from 'just in time' processes to 'just in case', where the presumption is that things will not always work smoothly"

To cope with future shocks, businesses are likely to shift from 'just in time' processes to 'just in case', where the presumption is that things will not always work smoothly. This means building in bigger inventories and redundancy and flexibility in processes and systems. Businesses will be warier of single sources of supply or demand, allowing for a greater ability to switch activities or locations. Many businesses will rethink their reliance on Chinese manufacturing. This is likely to be reinforced by public policy designed to ensure continuity of supply of essentials such as food and medical supplies.

Building greater business resilience will not just be operational, re-evaluating processes and crisis management, but structural, requiring a review of the strategic mix of products, assets, geographies, customers and suppliers.

Businesses will may seek to diversify their operations, looking for 'real options', or else to further limit their financial exposure through legal protections, insurance and hedging instruments.

9 Rethink risk management

Traditional approaches to risk management that rely on quantifiable risks and probabilities based on past precedent have again been found wanting. Indeed, they have been actively damaging, by blinding us to the reality that today's hyper-connected world is marked increasingly by unprecedented and unquantifiable uncertainties.

Pandemics are a painful lesson in the dangers of spurious point forecasts and linear thinking. Confusion about the initial exponential progress of the spread of Covid-19 led to a damaging loss of time to act decisively against it, initially in China, and then elsewhere.

The lesson of previous pandemics is clear. During uncertainties of emerging existential threats, we should apply the precautionary principle: 'act early and hard'. Given what is at stake, the cost of overreacting will be less than that of underreacting, because an initial overreaction can be reversed at relatively little cost.

"Pandemics are a painful lesson in the dangers of spurious point forecasts and linear thinking."

Shifting from a risk mindset to an uncertainty mindset means recognising that the data, and even historical parallels, required for risk modelling are often lacking. In their place intuition, imagination and deductive logic are required to build plausible scenarios, contingency plans and useful rules-of-thumb ('heuristics'). As John Maynard Keynes said, it's better to be roughly right rather than precisely wrong. The trick is to find actions that will help us to survive or thrive in a range of different environments.

Adapting to uncertainty also means always being alert to the question: "what kind of a world are we in?". The onset of a potential pandemic should take us away from linear extrapolation to the epidemiological curve marked initially by rapidly exponential growth, in which time is of the essence. Avoiding such 'category errors', means that you can ask the right questions and apply a mental framework appropriate to the circumstances. Macro-economic forecasters often fail on this account, because they struggle to relate to sudden shocks that periodically occur, which involve non-linear changes, such as exponential phenomena like the spread of disease or financial panics, or step changes like wars or unexpected election results.

Dealing with pervasive uncertainty means cultivating a culture of preparedness and responsiveness. For business, this means not just contingency planning but acting quickly. This can be helped by standardisation or simplification of products, processes and services. Digital technology also facilitates means real-time monitoring of customer or supplier behaviour to look for early warning signals.

10 Rethinking supply chains

The fact that the pandemic emanated from China, the modern day 'workshop of the world', exposed the vulnerability of global supply chains. The fragility of depending on China as the single supplier of so many parts and products, and the complex nature of many supply chains, will force a rethink of business models and processes. This will mean a search for back-up suppliers and revisiting inventory management.

> *"Aside the geographic distance of China from many of its customers outside Asia, the atmosphere of geo-political antagonism will reinforce a new trend towards national, regional or even local self-sufficiency"*

Even leaving aside the geographic distance of China from many of its customers outside Asia, the atmosphere of geo-political antagonism will reinforce a new trend towards national, regional or even local self-sufficiency. The direct disruption of the pandemic has highlighted the need to secure critical supplies like food, medical supplies and core inputs (such as power sources) and components.

On top of this, the societal and cultural shock of the pandemic is likely to spark the development of local networks and communities. In this respect, accelerated development of new technologies such as the 3D printing may facilitate the localisation of production.

11 Expertise matters, and it needs to be diverse

The pandemic has forced everyone to play very close attention to the advice of epidemiologists. The mortal threat of the disease has concentrated minds and forced a reconsideration of the denigration of experts by populist politicians. In a fast-changing situation errors have been quickly exposed, and the desperate need for accurate data has been recognised.

> *"Policy choices and the social compliance to them have highlighted the complexity of the challenge. Painful trade-offs and the limits of our knowledge have been cruelly exposed."*

But in scrambling to assess the threat, it has also become clear that we need diverse expertise, as understanding the progress of the disease, and so how to deal with it, involves not just understanding the virus but also how people react to the epidemic. Policy choices, and the social compliance to them, have highlighted the complexity of the challenge, reflecting a mix of medical, social, economic and political processes. Painful trade-offs and the limits of our knowledge have been cruelly exposed.

Different countries took different approaches to locking down their economies, sacrificing output to limit casualties. But even this 'wealth-health' trade-off is far from straightforward, since austerity will exact a longer-term toll on health and in the absence of a successful vaccine it is far from clear whether lockdowns will succeed in reducing the ultimate casualties. A key factor which led countries to react differently was some had more limited health care capacity faced tougher choices. The US, UK, and

Italy, for example, entered the pandemic with barely a third of the acute critical care hospital beds per head in Germany.

The aftermath of the pandemic will lead to deep reflection on the choices that were made and a broader recognition of the need to cultivate multidisciplinary expertise and cognitive diversity to address future challenges. This is bound to lead to calls for investments in science, both physical and social, and in monitoring and data collection to assess emergent threats. The transformation of the political, economic and social landscape will mean that businesses will have to fundamentally rethink how they do business in the new environment. There will be no simple return to 'business as usual'.

12 War on disease

The world has woken up to how unprepared it was for the pandemic. Experts had been warning of this for years. Now that it has materialised, exacting an enormous human and economic toll, protecting populations from future pandemics will inevitably move to the top of the agenda.

Since the massive costs of repeatedly locking down economies to contain pandemics will not be sustainable, resources will be shifted urgently to step up medical research and invest in global health capacity and security. Governments will likely take the lead in this.

> *"Protecting populations from future pandemics will inevitably move to the top of the agenda"*

The Covid-19 pandemic will surely lead to an acknowledgement that recurrent pandemics are a grave threat. Aside from zoonotic viruses (which jump from animals to humans), other dangerous viral and bacterial infections will need to be addressed. Warnings about anti-biotic 'superbugs' will be taken more seriously. More concerted efforts to address the overuse of antibiotics, notably in livestock production, will be needed.

More encouraging is the rapid response of medical researchers to Covid-19, in sharing information and applying creative techniques such as AI and 3D printing in the pursuit of treatments and vaccines. Urgent investments in bio-tech and the application of genomics will accelerate vaccine and drug development, with enormous spin-offs in personalised medicine. In the longer term this could even offer potential upside risks for economic development if medical technology gets ahead of the curve.

Alongside this, there will also be huge investments in health and care infrastructure. The insufficiency of critical care capacity in several countries, including facilities, equipment and staffing has been exposed by the pandemic. There is an obvious analogy here with the global financial crisis, which exposed the lack of capital and liquidity buffers in the financial sector.

In addition, the health sector will also need bigger investments in monitoring and testing, public health education and rapid communication. Telemedicine is also likely to be given a major boost as a cost-effective and convenient way of delivering health care in situations where physical contact is unnecessary.

> *"The pandemic has again thrown the spotlight on the fact that nearly 30 million Americans lack health insurance, which will make universal health care a key debate in this year's US presidential elections."*

The uneven distribution of health care provision, across the populations and regions, intensified the spread and damage of the pandemic. Recognition of need for greater health equality (nationality and internationally) to support the vulnerable will therefore become an important policy issue. The pandemic has again thrown the spotlight on the fact that nearly 30 million Americans lack health insurance, which will make universal health care a key debate in this year's US presidential elections.

Meanwhile, the inadequacy of health systems in Africa and other parts of the emerging world, which so far has received little attention, will become a major global policy challenge. This is likely to add urgency to addressing the full range of the UN's sustainable development goals, given the connections between environmental and economic vulnerability.

13 From physical to digital

Sustained curbs on travel and enforced working from home during the pandemic will lead to a step increase in people interacting digitally. Massive investments in the capability and capacity of video and virtual reality technology is likely to accelerate its adoption by households and businesses. This may be particularly true of its usage for remote working and education, as people may be more anxious to return to face-to-face leisure activities once the pandemic is over. This will also have substantial implications for real estate, notably office accommodation and home-working configurations, and commuting levels and patterns.

"One major side benefit of the shift from physical to digital will be to reduce physical movement and therefore energy consumption, carbon emissions, and pollution"

One major side benefit of the shift from physical to digital will be to reduce physical movement and therefore energy consumption, carbon emissions, and pollution. This will be good news for the environment and help countries to meet their climate change goals, although the flipside of reduced mobility is that the energy, transport, travel and real estate sectors will suffer. One risk is that this process will be subverted both by policy makers' attention being distracted from climate change and the collapse in energy prices weakening the incentives to act. However, the fall in energy prices could offer governments a golden opportunity to ramp up carbon taxes raising much needed revenue as well as motivating consumers and business to change their behaviours.

E-commerce has been another major winner from the of the physical to digital shift triggered by the pandemic. Lock-downs have boosted the penetration of e-commerce for grocery shopping and meal deliveries, as well as for non-essentials in the face of temporary or permanent store closures. The pandemic surge in demand for e-commerce is likely to be converted into a sustained acceleration in capacity in this sector, and a corresponding acceleration in the restructuring of the off-line retailing and restaurant industries.

Similarly, lockdowns and concerns about the exchange of physical cash has given a boost to the use of digital money and cashless payment. Vulnerable elderly or poorer people have been forced or helped to make this transition. The pandemic may also accelerate the promotion of mobile banking as a cost-effective, swift and secure means of offering the personalised delivery of advice and state benefits.

The usefulness of digital technology during the pandemic is also prompting a rethink of the 'techlash' that preceded it. Big tech companies have a huge opportunity to rebuild their reputations as a force for social good and prosperity. However, given the global need to rebuild public finances, they will undoubtedly face higher tax burdens in the process.

14 Lasting shifts in consumer behaviour and social norms

The mortal threat posed by social interactions during a global pandemic has prompted dramatic and diverse changes in individual and collective behaviour. Even with the waning of the pandemic, the legacy of painful memories is likely to lead to sustained shifts in attitudes, norms and behaviours.

"On one side there has been widespread panic, selfish behaviour and a sudden wariness of physical interactions with strangers. On the other hand, there has also been a revival of community spirit and selfless altruism"

On one side there has been widespread panic, selfish behaviour and a sudden wariness of physical interactions with strangers as 'social distancing' is becoming a norm. On the other hand, there has also been a revival of community spirit and selfless altruism to support and protect families and neighbours.

Digital technology has played an enabling role, but after the pandemic, people's new-found awareness of their local communities, even impersonal urban areas, may well persist. The harsh reminder of the fragility of human existence and our interdependence, and recognition of the importance of face-to-face interactions to our well-being, may lead to more tolerant and community-oriented behaviour.

The heightened awareness of our social interactions will lead to changes in the frequency and nature of both of physical and digital interactions. In the physical realm, the quality of interactions will be more highly prized, perhaps with more attention to known individuals, clubs and trust mechanisms for immunity in the face of future health threats. In the digital realm, innovation will also improve the quality, with the use of VR and robot technology.

Meanwhile, the widespread failure of individuals to respond to exhortation or subtle nudges in the pandemic may lead to more emphasis on social rules and regulations in the future.

15 More benign surveillance of individual health and social interactions

The pandemic may transform attitudes towards tracking personal health and interaction with other people. Reconciling this with the protection of personal privacy, security and civil liberties will be challenging in the West, where the ability of the Chinese government to track its citizens is regarded with suspicion.

But the success of other Asian economies to contain the virus by utilising mobile technology to monitor its spread may also lead to a reappraisal of the societal value of doing so in the West.

"The pandemic may transform attitudes towards tracking personal health and interaction with other people"

Nevertheless, people are prepared to trade freedom for security at the height of the pandemic, they are likely to push back on restrictions afterwards. They may be withdrawn in a stepwise fashion, with occasional reversions depending on future health threats. Fast testing equipment may become ubiquitous in public buildings.

In the absence of that, another approach that might reconcile security with personal privacy would be to deploy health monitoring and tracking in a more decentralised and personalised way. Thus, biometric monitoring would help individuals by giving them early warnings of illness and advice on pre-emptive treatments and behaviours. They could also be advised about whether people in their immediate vicinity are either infected or immune and on how to respond. Mobile apps could also be used to verify their immunity, indicating that they are not infectious, having recovered from, or being vaccinated against current diseases.

The pandemic is likely to lead to changes in data sharing processes and privacy legislation, particularly in crisis situations. In particular, the ability to track face-to-face social interactions in real-time with geo-spatial mobile technology will be invaluable in future epidemics. Video surveillance and drone cameras may also become the norm anticipating future pandemics and monitoring of lockdowns and social distancing.

Conclusion

The Covid-19 pandemic is teaching us some painful and humbling lessons.

Looking beyond it is challenging because we still far from knowing how bad it will get, or when it will end. But even if hopes that it will be over in a few months are fulfilled, and a vaccine is fast-tracked, the world will never be the same again. The pandemic is set to shake up not just healthcare, but politics and business, the economy and financial markets, culture and society, lifestyles and the use of technology, along with our well-being and the environment.

While the world will undoubtedly breathe a collective sigh of relief when the pandemic ends, it is likely to be left profoundly changed by the experience.

Actions taken in the heat of the crisis will have lasting effects on attitudes, relationships and behaviours. Mass unemployment and bankruptcies will cast a long shadow, necessitating sustained state intervention. Nationalist responses will sustain protectionism and tension, delaying necessary international co-operation. The need to build resilience into production processes will carry a heavy cost, and the pandemic's scars will lead to lingering risk aversion and caution. These factors will weigh on long term economic growth.

However, the challenges of the pandemic aftermath also present enormous opportunities to put the global economy on a more sustainable path. While creating resilience for households and businesses will be costly, the long run benefits of avoiding or mitigating catastrophes will be huge. The recognition of the downsides of hyper-connectivity will lead to smarter use of digital technology, and the societal pressure for greener and more social approaches will present opportunities for smarter, more far-sighted governments and institutions.

Grasping these opportunities will not be easy and may take many years, but the mobilisation around them may help us get through the pandemic.

References

VoxEU: Mitigating the COVID Economic Crisis: Act Fast and Do Whatever It Takes

2° Investing Initiative – Stress Testing Covid-19

ING - Covid-19: The scenarios, the lockdown, the reaction, the recovery

Russ Roberts and Tyler Cowen on Covid-19 (podcast)

VoxEU: Tools to fight Covid-19

Project Syndicate – Economic Insurance Requires Massive Government Intervention

F.T. - The tragedy of two failing superpowers

Stumbling and Mumbling Another Wasted Crisis?

F.T. - Short sellers circle virus sinners

VoxEU: Covid Perpetual Eurobonds - Jointly guaranteed and supported by the ECB

OECD: Coronavirus: The world economy at risk

New York Times Opinion - This Is the One Thing That Might Save the World From Financial Collapse (paywall)

Bruegel: Banks in pandemic turmoil

BIS: Covid-19, cash, and the future of payments

IIF: Digital Transformation and COVID Adaptation

IIF: Managing Through the COVID-19 Pandemic: How Financial Firms are Responding

FT - Can behavioural science slow the spread of Covid-19?

HBR - Science Fights the Coronavirus (podcast)

New England Complex Systems Institute - Making decisions with uncertainty and how acting early would have cost less (video)

Marginal Revolution - World 2.0 — "There are decades where nothing happens, and weeks where decades happen"

ING – The Largest Working From Home Experiment

F.T. - Coronavirus monitoring poses dangers for civil liberties

F.T. - Yuval Noah Harari: the world after coronavirus

Disclaimer

This publication has been prepared by the Economic and Financial Analysis Division of ING Bank N.V. (**"ING"**) solely for information purposes without regard to any particular user's investment objectives, financial situation, or means. ING forms part of ING Group (being for this purpose ING Group N.V. and its subsidiary and affiliated companies). The information in the publication is not an investment recommendation and it is not investment, legal or tax advice or an offer or solicitation to purchase or sell any financial instrument. Reasonable care has been taken to ensure that this publication is not untrue or misleading when published, but ING does not represent that it is accurate or complete. ING does not accept any liability for any direct, indirect or consequential loss arising from any use of this publication. Unless otherwise stated, any views, forecasts, or estimates are solely those of the author(s), as of the date of the publication and are subject to change without notice.

The distribution of this publication may be restricted by law or regulation in different jurisdictions and persons into whose possession this publication comes should inform themselves about, and observe, such restrictions.

Copyright and database rights protection exists in this report and it may not be reproduced, distributed or published by any person for any purpose without the prior express consent of ING. All rights are reserved. ING Bank N.V. is authorised by the Dutch Central Bank and supervised by the European Central Bank (ECB), the Dutch Central Bank (DNB) and the Dutch Authority for the Financial Markets (AFM). ING Bank N.V. is incorporated in the Netherlands (Trade Register no. 33031431 Amsterdam). In the United Kingdom this information is approved and/or communicated by ING Bank N.V., London Branch. ING Bank N.V., London Branch is subject to limited regulation by the Financial Conduct Authority (FCA). ING Bank N.V., London branch is registered in England (Registration number BR000341) at 8-10 Moorgate, London EC2 6DA. For US Investors: Any person wishing to discuss this report or effect transactions in any security discussed herein should contact ING Financial Markets LLC, which is a member of the NYSE, FINRA and SIPC and part of ING, and which has accepted responsibility for the distribution of this report in the United States under applicable requirements.

Additional information is available on request. For more information about ING Group, please visit https://www.ing.com.