

CHAPTER

5

Advancing human development in uncertain times

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Uncertainty need not be paralyzing. In fact, it presents opportunities to test the fences of conventional thinking and to pursue reimagined futures.

What do those opportunities look like today? How big are they?

As this chapter argues: huge.

Among the many things the Covid-19 pandemic broke open was our imaginations, from revolutionary vaccines to unprecedented fiscal and monetary interventions. Rapidly evolving technologies, such as artificial intelligence and synthetic biology, and frontier ones, such as nuclear fusion, could usher in a new era of prosperity for people and planet. Opportunities abound. It is up to us to steer them towards human development.

Uncertainty need not lead to negative outcomes. A context of uncertainty and change can also alter the reference for what is possible or desirable, opening new opportunities to expand human development along the four aspects of capabilities highlighted in chapter 3: wellbeing achievements (typically the dominant focus of assessments of progress and policies), wellbeing freedoms, agency freedoms and agency achievements.

Transformational change happens against the backdrop of the uncertainties discussed in part I. Some of the implications associated with climate change are daunting, as the most recent Intergovernmental Panel on Climate Change assessments have highlighted.¹ But the ability of societies to respond is not predetermined. A recent model of human behaviour that looked at the interactions among social, political, economic, technical and climate systems found that interactions at the individual, community, national and global scales could lead to substantial mitigation action.² In fact, the reality of the Anthropocene is that human agency signals hope to consciously manage planetary ecosystems in a way that eases planetary pressures.³

This chapter calls attention to the potential for expanding human development in uncertain times. It argues that such an expansion can be leveraged in part precisely because uncertain times provide a context where individuals and society see more fundamental changes as possible or required. Uncertainty itself can be a source of knowledge to be mobilized to act differently,⁴ something that empowers individuals and societies to adopt fundamental changes in choices,⁵ that leads people to act according to new moral codes⁶ and that can enhance cooperation when it gives more salience to thinking about the future.⁷ It has even been suggested that the greatest source of political legitimacy may need to evolve beyond process legitimacy (complying with procedures that link people's aspirations and preferences to political decisions) and substantive legitimacy (delivering outcomes that matter to people). It can also come from promissory legitimacy (justifying decisions and persuading others to act based on claims about what the future will hold).⁸ With democracy, uncertainty announces the freedom to choose. By institutionalizing an iterative and evolving configuration of winners and losers, uncertainty over political outcomes keeps

many different possibilities open, thereby supporting pluralism and participation.⁹ Uncertainty can thus help tap into people's energy and appetite for change.

Uncertainty forces us to make choices—between sticking to known paths and exploring new ones, between yielding to paralysis and polarization or tackling them head on.¹⁰ Both bleaker and more optimistic scenarios may seem plausible, but the paths are open and will be shaped by choices. Multiple narratives are being discussed and debated about what the future holds,¹¹ and this diversity can be mobilized to enable people to cooperate.¹² When old ways of doing things seem to no longer work and development pathways seem less obvious than in the past, the opportunities for rethinking ideas and practices open up.¹³ Uncertainty can provide fertile ground for experimentation, innovation and purposeful transformation.¹⁴ In other words, it is possible to embrace uncertainty and not be paralyzed by it.¹⁵ We can do much today to ensure human thriving and flourishing, even in times of crisis and turbulence.

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This chapter considers some of those possibilities. It explores the example offered by technological advances, arguing that the context of uncertainty provides a space for steering technological progress in ways that advance human development. It also shows that times of crisis can alter the horizon of what is possible. Even amid significant failures, the Covid-19 pandemic has changed our reference points for what we can achieve in many aspects of life. These are examples of the new possibilities in today's uncertain world.

Technological innovation opens new possibilities

Technological advances have been behind vast improvements in human life and flourishing. They have been the engine of economic growth—powering the Industrial Revolution, building cities and allowing movement of people and goods. The printing press and photography have expanded human knowledge.

Communication technologies have linked people across vast distances, allowed for rapid dissemination of information and expanded our social connections in large-scale networks. Numerous innovations in health, from anaesthetics to vaccines, have allowed us to live longer and healthier lives.

However, technological innovation does not happen in a vacuum, nor does it have a life of its own: technology is us. Our social, economic and political choices—about where innovation can be directed, to what priorities and to serve which people—determine how technology changes and how innovations advance human development. Consider the sobering case of vaccine deployment during the Covid-19 pandemic. Advances in science and manufacturing allowed for multiple, highly effective vaccines against Covid-19 to be developed in record time, in a remarkable feat of modern science. But amid a global failure to share vaccines equitably, wide disparities have emerged: by June 2022 less than 15 percent of people in low-income countries had received a full protocol of Covid-19 vaccines, compared with nearly 75 percent of people in high-income countries.¹⁶ Unequal access to lifesaving vaccines has had a tragic toll on human lives and wellbeing.

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This startling disparity in vaccine access reflects in part patterns in the diffusion of technological innovations. The share of the population that benefits is small when a new technology is introduced; then typically the share grows slowly at first, then increases very quickly after a threshold is reached and then slows down as the share of the population with access approaches 100 percent—in what is well known in technology diffusion studies as an S curve. Depending on the innovation at stake, often those with higher income, power and social status benefit from technological advancements first. This pattern is well documented, in particular, for health innovations,¹⁷ in part because initial adopters have better access to information.¹⁸ Disparities in health outcomes have been found to increase for diseases with better tools

for prevention and treatment, because people with more resources are better able to use new knowledge.¹⁹ As such, an acceleration in new health-related technology can worsen health gradients within and between countries for a time, even as it eventually drives improvements at large.²⁰ In terms of Covid-19 vaccines, while the gap between richer and poorer countries has decreased over time, there is still a long way to go.²¹

The initial stage of the technological diffusion process—of remarkable improvements alongside widening gaps—is eventually closed, not only as technological innovations become more affordable, but also as complementary changes in economic and social arrangements foster both greater benefits and lower prices due to further diffusion.²² At the same time, those excluded as the technology diffuses to a larger and larger share of the population are doubly disadvantaged, in that not only do they lack the benefits of the innovation, but they are also left outside what is increasingly the norm. The ongoing digital revolution is an example, promising to vastly improve the world’s production possibilities but risking leaving a substantial proportion of people excluded and ultimately worse off if insufficient attention is paid to those exclusions.²³

Past technological advances have generated great disruptions alongside opportunities and deep anxieties about the future, as well as the promise of progress to come. Rapid technological change is part of the uncertainty complex gripping the world today. New technologies are upending our economies and societies, and many aspects of our social systems will need to adjust before the vast potential of technological innovation can advance human development. As argued in the 2019 Human Development Report, these adjustments must unequivocally pay attention to inequalities if another great divergence is to be avoided.²⁴ The shift from concentrated access and wide inequality to convergence over time depends on social and political choices. Amid technological change as rapid and destabilizing as we are seeing today, the need for institutional and behavioural transformation becomes not only more salient but also necessary and actionable. Periods of turbulence have prompted radical new policies in the past: in Britain the Industrial Revolution saw far-reaching interventions to improve labour and working

conditions (including regulating work hours and taxing incomes), which helped convert the structural change in the economy into improved opportunity and wellbeing.²⁵

The initial stages of diffusion are characterized by growing inequality in access and typically also social dislocation. But this context is an opportunity for action: the choices made at this stage determine the trajectory to come. Expanding human development becomes even more important at this stage, with the concern for inequalities at the centre, implying that uncertain times need not be seen as an impediment to action; rather, they provide a context in which new possibilities for action emerge.

Many of today's hopes for positive transformational change rely on technological innovations. New technologies have helped deliver rapid advances in human development. For instance, in health, antibiotics and vaccines vastly improved life expectancy in just a few decades in Africa, Asia, and Latin America; in Europe the same improvement took well over a century, from the early 1800s, when such technology did not exist.²⁶ More recent technological advances have been crucial for curbing human-induced pressures on the planet—enabling more efficient land use, more sustainable food systems and a transition away from fossil fuels. Technological changes affect human capabilities in multiple ways: they not only expand people's ability to do more things (as an enabler), but they also affect our social context and people's agency.²⁷ Innovation is more than new inventions or machines; it is about new ideas for doing things and taking advantage of existing resources to make those ideas come to fruition. In this respect innovation is linked to agency—people's ability to act on their values, ideas and priorities. It is a broad process of transformation, where human initiative and creativity interact with social, economic and political choices.

Technological advances are offering transformative potential

Today, several developments in science and technology signal the potential for far-reaching transformation. There have been major developments in computing, biology and energy, as discussed in chapter 1. These advances are occurring in what has

been described as the exponential age, fostered by remarkable improvements in computing power and connections across people and machines.²⁸ Exponential development in new technologies is not simply about individual inventions—it is the result of several new technologies developing in parallel and nourishing one another.²⁹ In digital technologies our capacity to generate innovations on the back of old or existing technologies has greatly expanded. Many important technologies today are standardized and interoperable³⁰—that is, made compatible with other technologies by design. The internet is based on standard web protocols, and much modern software development relies on modular, standard code blocks. These conditions help make breakthrough innovations possible.

“Disruptive change in major technological sectors has the potential to dramatically alter societies and economies

Economic and political conditions are an important part of this picture. The availability of markets for new goods and services, facilitated by trade and globalization, has helped new technologies diffuse widely. This has enabled us to engage in learning by doing: more production allows us to learn how to further improve the production process. This learning effect is an essential driver behind the exponential development of solar power technology.³¹ Our networks for sharing information are also larger and more complex than ever, facilitating flows of data, ideas and know-how. Consider some factors that made Covid-19 vaccines possible, such as global scientific collaboration, open data sharing and the release of the latest research on preprint servers—all capabilities based on information networks.³² Spurred by the Covid-19 crisis, advances in mRNA vaccine technology are now opening new possibilities for controlling disease.³³

Disruptive change in major technological sectors has the potential to dramatically alter societies and economies. Many new technologies are general purpose, with applications beyond a single sector. General purpose technologies are transformative because they create new products and processes and new ways of organizing economic activity. The general-purpose technologies of today include new forms of computing (such as artificial intelligence), among

many others, with a dizzying array of applications for advancing human development. The following sections consider some of the possibilities offered by technological advances in energy, computing and biology.

That even the most beneficial advances often generate negative consequences only heightens the importance of purposefully managing technological disruption. Technological change is far from deterministic—the related risks and impacts and the prospects for positive transformation are all ultimately shaped by social and political choices. Even as rapid technological change fosters uncertainty, it also opens space for action. There is enormous potential to be realized, and with the right policies and actions in place (as discussed in depth in chapter 6), the future should be one of remarkable gains for human development.

Renewable energy technologies are getting better and cheaper

Making progress on clean energy is essential for breaking the patterns of human wellbeing improvements generating planetary pressures. Because energy is so crucial to overall human development, energy consumption is unlikely to ease in the near future, particularly in developing countries. So, in the absence of technological advancements towards plentiful clean energy, there are few viable paths to mitigating planetary pressures.

On the technological front there are remarkable positive signals both as outcomes and as processes. New capacity additions were dominated by renewable energy, accounting for 72 percent of additions worldwide in 2019.³⁴ The costs of renewable energy technology and energy storage have declined dramatically in recent years. The price of utility-scale solar photovoltaics dropped by 89 percent from 2009 to 2019 (figure 5.1).³⁵ The price of lithium-ion batteries has fallen by 97 percent since their commercial introduction in 1991.³⁶ Maturing technology contributes to cost and price reductions. For solar power technology, installed capacity has increased exponentially, accompanied by exponential declines in the cost of solar modules.³⁷ Since the 1970s the unit costs of solar photovoltaics have fallen by 24 percent each time the cumulative installed capacity has doubled.

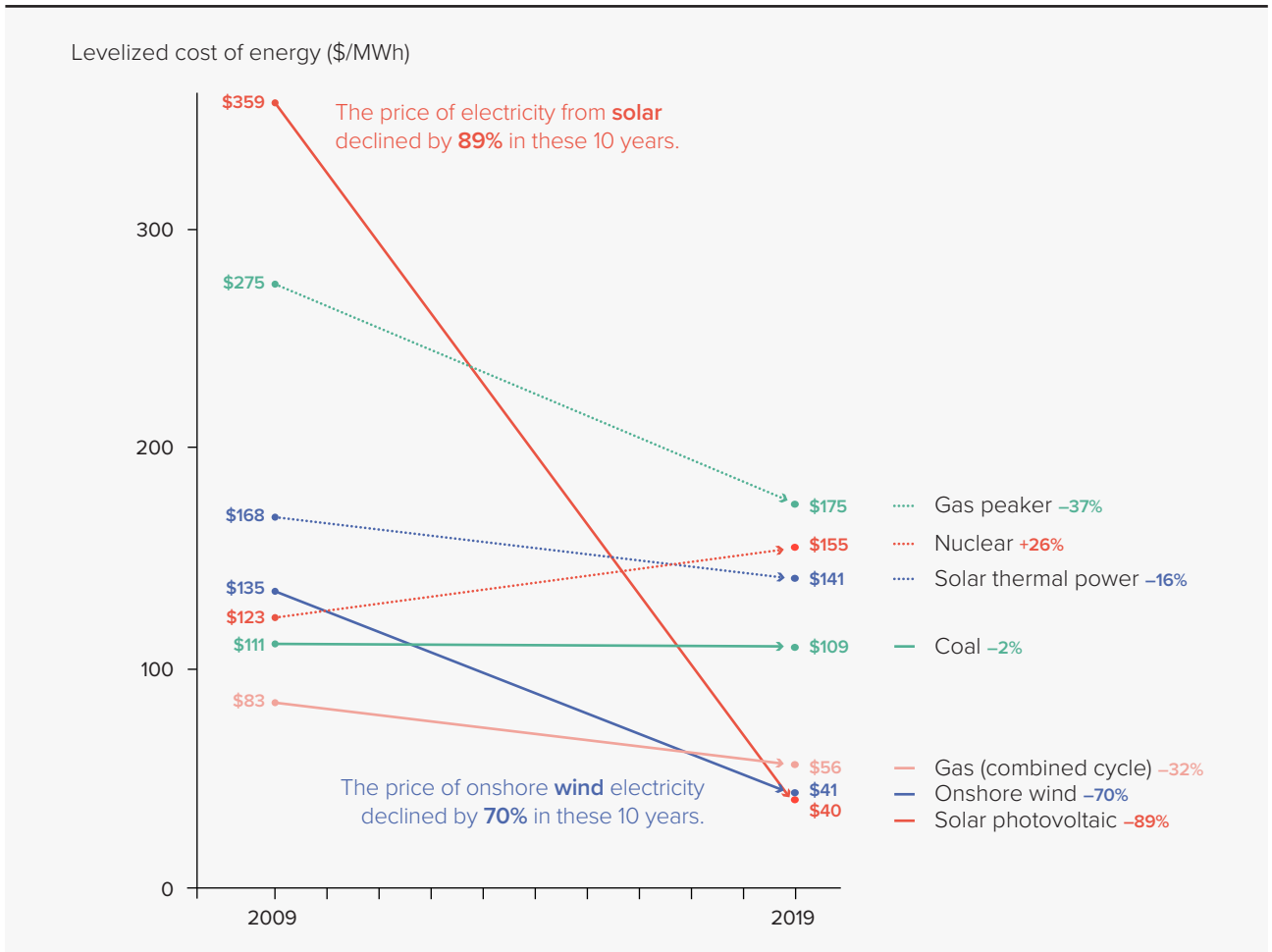
The equivalent learning rate for lithium-ion batteries has been around 20 percent.³⁸ Other energy storage technologies have followed similarly steep learning curves.³⁹ Batteries are also becoming smaller and lighter. Between 1991 and 2018 the energy density of lithium-ion batteries rose 3.4-fold.⁴⁰ The dramatic cost reductions in renewable energy technologies have consistently exceeded expectations: contrary to the projected average annual cost reduction of 2.6 percent between 2010 and 2020 (based on 2,905 global energy-economy models), solar photovoltaics costs declined by 15 percent a year over the same period (figure 5.2).⁴¹

There have been major breakthroughs in nuclear fusion. Leveraging nuclear fusion's enormous potential will require substantial innovations before it can be deployed at scale. This transition will take time, but recent developments provide some grounds for optimism. There have been important advances in some nuclear fusion experiments, and at least three may soon generate energy gain factors (the ratio of fusion power to externally applied heating power) greater than 1—the National Ignition Facility and SPARC are expected to do so in the 2020s, and ITER by 2040.⁴² In February 2022 scientists at the Joint European Torus generated more than double the previous record for energy generated in a fusion reaction, a major step towards nuclear fusion becoming a viable clean energy source.⁴³ There are also signs of new technologies interacting in ways that can accelerate progress. Machine learning techniques are being used in the tokamak configuration (a form of magnetic confinement used in nuclear fusion research).⁴⁴

“Making progress on clean energy is essential for breaking the patterns of human wellbeing improvements generating planetary pressures

But the path forward is likely to be volatile in the context of uncertainty that we confront today. During the Covid-19 pandemic progress in clean energy innovation may have been affected by pressures on public and private budgets, creating a riskier environment for clean energy venture capital and disrupting global supply chains. Global carbon dioxide emissions declined by 5.8 percent in 2020, as the pandemic affected demand for oil and coal, but rebounded by

Figure 5.1 The cost of renewable energy has declined dramatically



Note: Prices are expressed in levelized cost of energy, which captures the cost of building the power plant itself as well as ongoing costs for fuel and operating the plant over its lifetime.

Source: Roser 2020.

nearly 5 percent in 2021, approaching the 2018–2019 peak.⁴⁵ Still, the pandemic could present a unique opportunity to leverage clean energy innovation, given the global demand for a greener recovery.⁴⁶ New players with new ideas aiming to displace high-carbon producers and to scale up quickly may find a supportive environment if they are able to enter the market at the right moment. Economic stimulus plans could be an opportunity to boost clean energy technology innovation. This potential is being underused: a review of 75 International Monetary Fund (IMF) programmes in 65 countries shows that the indicator for the green recovery is very low, at 0.59 (on a scale of 0 to 3).⁴⁷

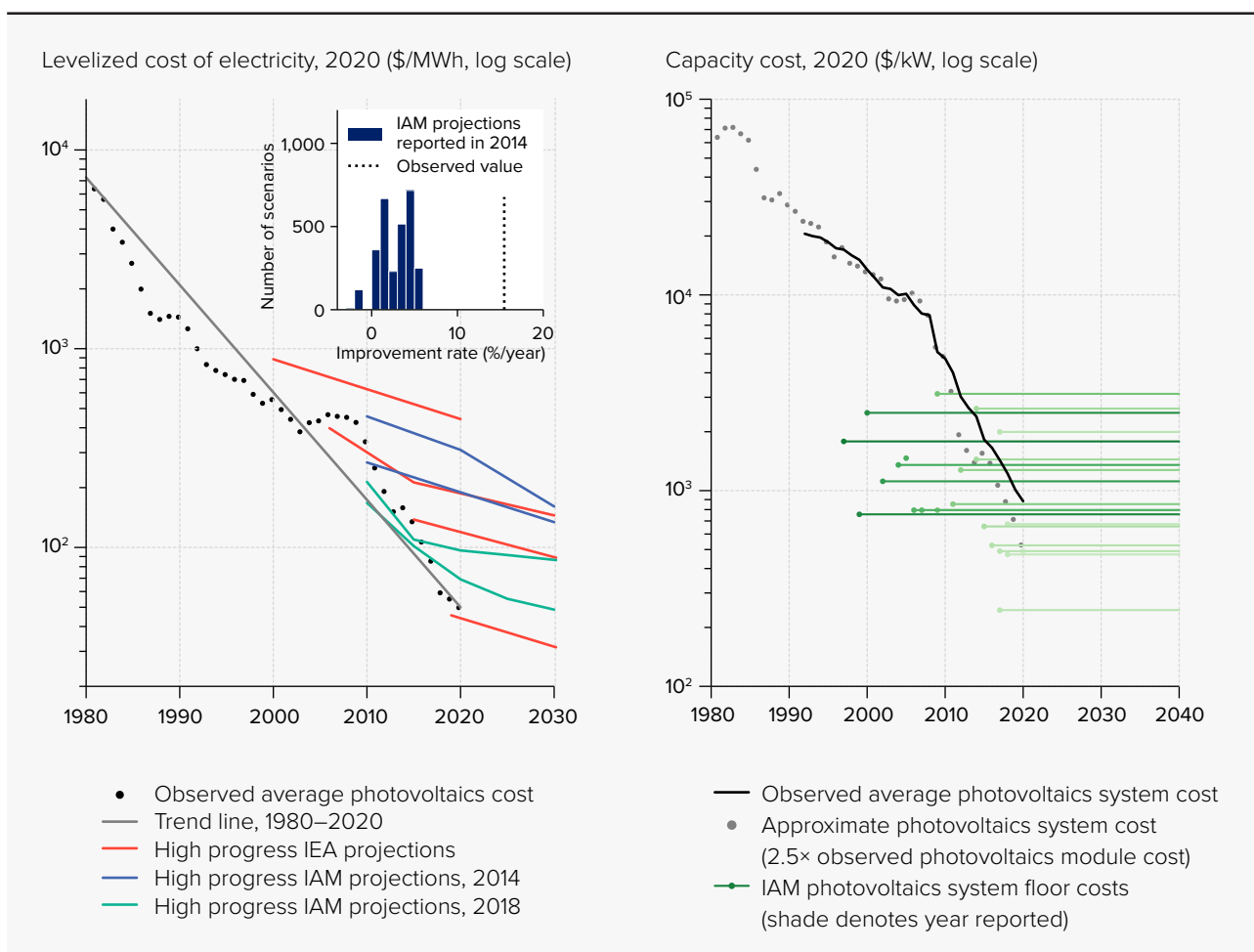
Today, there is potential for expansion in this area. The International Energy Agency’s Energy

Technology Perspectives Clean Energy Technology Guide includes information on the maturity level of more than 400 technology designs and components, as well as a compilation of cost and performance improvement targets and leading players in the field.⁴⁸ Some 5 percent of technology designs and components analysed are at a mature stage. Around 60 percent are not commercially available today, and 35 percent are at the early adoption phase.⁴⁹

Leveraging artificial intelligence for augmentation of the demand for labour

Rapid advances in computing over the past decade have drawn attention to the possibilities of powerful artificial intelligence (AI). Some of the biggest

Figure 5.2 Contrary to the projected average annual cost reduction of 2.6 percent between 2010 and 2020, solar photovoltaics costs declined by 15 percent a year over the same period



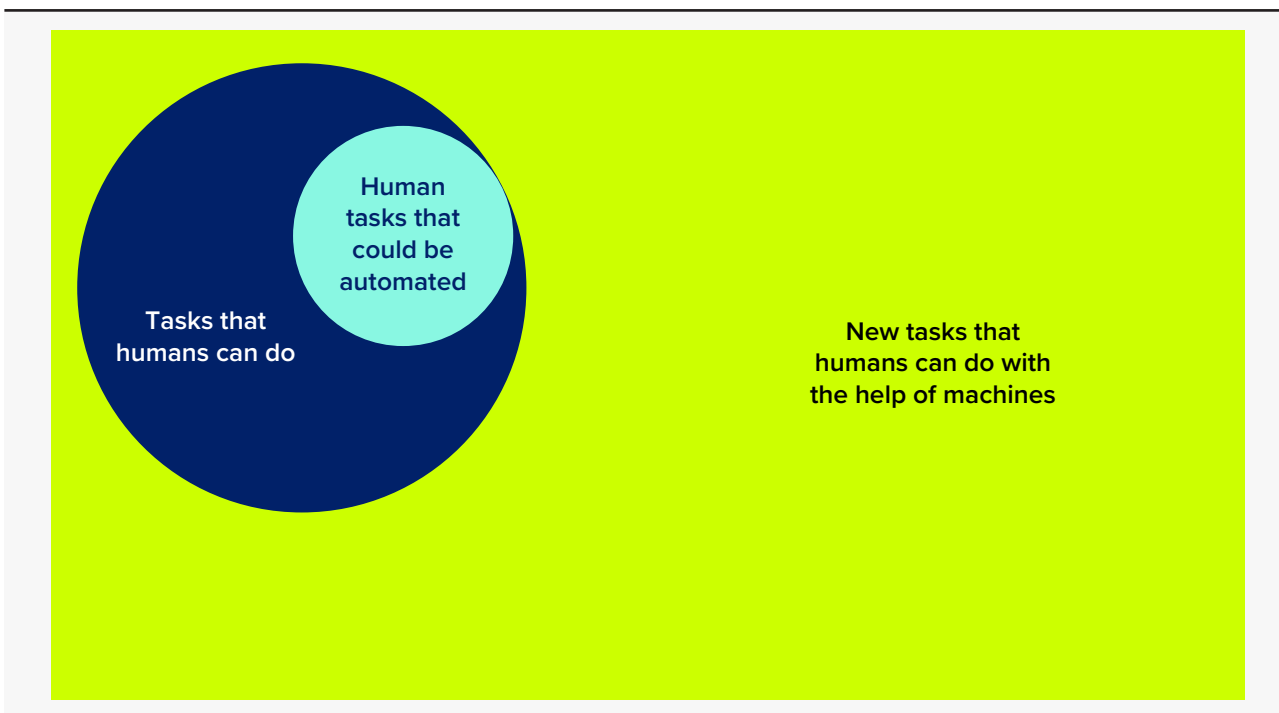
IAM is Integrated Assessment Model. IEA is International Energy Agency.
Source: Way and others 2021.

opportunities for applying AI are in automation that augments—rather than replaces—demand for human tasks across various sectors of the economy. AI-based systems are driving major technological developments in several applications, such as autonomous vehicles, medical diagnosis and inventory management, to name a few.⁵⁰ This means that some tasks can be performed by machines, but there is little evidence that machines can replace whole occupations.⁵¹ Instead, applications for machine learning (a subset of AI) that have exploded in numerous fields are opening an array of new possibilities for advancing human wellbeing. For climate change, machine learning is aiding in predicting disasters and modeling climate change impacts, among many other applications. In healthcare, machine learning is offering

new ways to detect and diagnose disease.⁵² Machine learning applications have the potential to improve education outcomes through individualized learning techniques and accessibility applications.⁵³

Augmenting what humans can achieve by using AI in a complementary way rather than substituting what humans can do offers enormous promise—what people can achieve with these machines can be greater than what people might achieve without them (figure 5.3). AI applications can supplement human cognitive tasks. For instance, there is evidence of AI’s potential for supporting human decisionmaking through teaching people cognitive strategies.⁵⁴ By augmenting the process of technological invention, AI applications could vastly increase the rate at which human capacities further expand.⁵⁵

Figure 5.3 Opportunities for augmenting human activity are far greater than opportunities to automate existing tasks



Note: Figure is illustrative.
Source: Brynjolfsson 2022.

One of the most widely discussed impacts of AI relates to its effects on the world of work. The possibility of labour displacement is a source of anxiety, as it has been in previous waves of automation.⁵⁶ AI-induced labour displacement could exacerbate inequality, both within and between countries.⁵⁷ But AI also offers labour-enhancing potential.⁵⁸ When machines replace labour, workers' bargaining power and influence diminish; in contrast, when AI augments human activity, people remain important for value creation and continue to wield power and influence. There is some evidence that the augmentation effects of introducing AI can outweigh the effects of automation, but this requires appropriate incentives.⁵⁹ Moreover, introducing technology can generate new tasks and activities that demand human labour.⁶⁰ Most jobs performed today came into being in part through the task-creating effects of new technologies: in the United States around 60 percent of people are now employed in occupations that did not exist in 1940.⁶¹ Expanding AI into the world of work could similarly generate new tasks, new occupations and new industries altogether.

Harnessing synthetic biology

Advances on several fronts are now propelling what has been described the Synthetic Age, where biological systems can be redesigned and re-engineered for a variety of useful purposes.⁶² Synthetic biology builds on advances in multiple fields over the past decade, including dramatic declines in the cost of DNA sequencing and synthesis, the development of sophisticated gene editing tools such as CRISPR and high-powered computational tools.⁶³

Redesigning organisms to have new abilities could have numerous applications in health, agriculture, manufacturing and ecosystem management. Synthetic biology is supporting new advances in medicine—for treating cancer,⁶⁴ improving cell-based and gene therapies⁶⁵ and developing new drugs.⁶⁶ In agriculture there are now possibilities for engineering nitrogen fixation in crops and increasing crop resistance to pests and pathogens.⁶⁷ Potential applications of synthetic biology in managing the environment include breaking down pollutants⁶⁸ and supporting biodiversity and habitat restoration.⁶⁹ There is also potential for developing synthetic alternatives to fossil fuels.⁷⁰

Times of change come with space for purposeful intervention

In addition to great opportunities, fast-changing technologies also create new challenges: potential for misuse, thorny political and ethical issues, and risks from unintended and even unknown consequences. For instance, synthetic biology applications such as human genome editing involve urgent ethical questions.⁷¹ Some of the challenges introduced by synthetic biology applications are unprecedented in nature, such as the novel risks of introducing artificial life forms. Expanding AI applications also introduces considerable risks. AI and digitization more broadly can contribute to the concentration of wealth and market power.⁷² Beyond the impact in some sectors of the economy, using AI to assist human judgement and predictions in several domains (health, education and governance to name a few) introduces new risks, including of algorithmic bias and discrimination (see chapters 1 and 2).⁷³

“Given the speed at which technological advances are unfolding, there is the risk that, without appropriate incentives and regulation, new problems might accumulate just as rapidly while long-standing ones are further exacerbated

The potential of these technologies, coupled with the new challenges they pose, increases the importance of purposefully steering technological progress in ways that expand human capabilities. Indeed, given the speed at which technological advances are unfolding, there is the risk that, without appropriate incentives and regulation, new problems might accumulate just as rapidly while long-standing ones (such as inequalities) are further exacerbated. Many new technological advances reflect what has been considered an era where societal implications are exceedingly complex and require sophisticated governance and policymaking.⁷⁴ New social and ethical questions might unfold faster than appropriate responses can be formed.⁷⁵ Moreover, the Covid-19 pandemic has generated an enormous setback for human development progress. It is in this context that the double-edged sword of technological change must be wielded carefully.

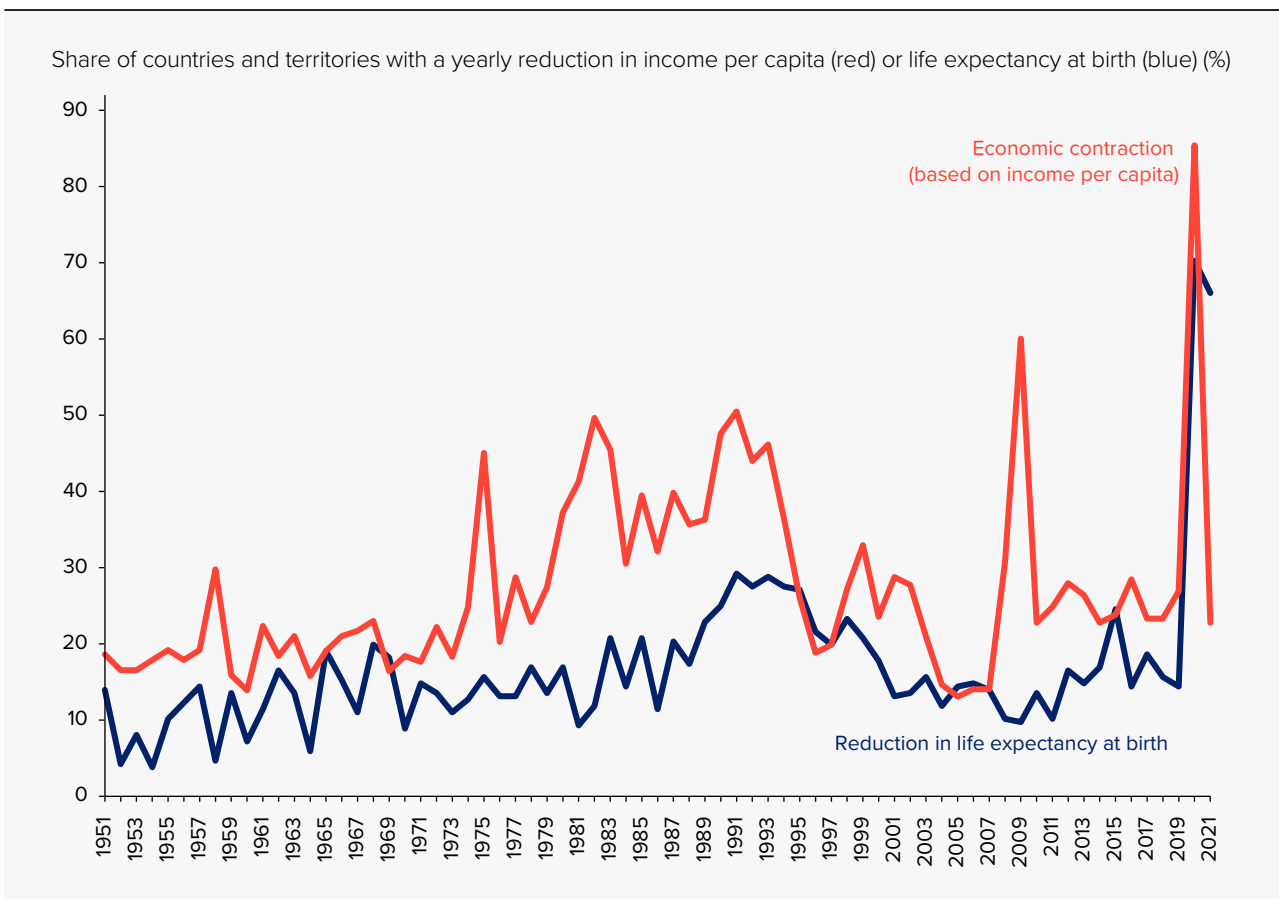
These conditions highlight the importance of purposefully advancing the full potential of new technologies for human development. For instance, rather than leaving the evolution of new technologies up to markets or to the narrow incentives of a few actors alone, actively steering new technologies towards expanding human capacities is essential. Policy and regulatory interventions are important in this respect, as is a broader evolution of norms for responsible innovation and avoiding harm. Opening spaces for broad deliberation and overcoming the gulf between technical and social debates on new advances will be essential for advancing the human development potential of the disruptive new technologies.⁷⁶

A context of uncertainty can provide the conditions in which such actions become possible. Navigating our current reality will require new ways of thinking. In these conditions opportunities emerge to rethink old ideas and practices and to experiment with different ways of doing things. For instance, it has been suggested that managing technological disruption today demands rethinking competition policy and antitrust regulation.⁷⁷ Things that once appeared impossible or infeasible are becoming possible in governance, science, technology and innovation. Indeed, as the next section discusses, times of crisis can alter our reference points for what we can achieve—and open new avenues for action in uncertain times.

The Covid-19 pandemic: A window into a new reality

The Covid-19 pandemic has exerted a vast human toll, not only through loss of life but also through long-term damage to economies and communities. It is the greatest global crisis in human development since World War II. Harmonized information since 1950 for income per capita and life expectancy shows the magnitude of the crisis and its global character in historical perspective (figure 5.4): in 2020, 85 percent of countries experienced a decline in income per capita, and 70 percent of countries and territories faced a reduction in life expectancy at birth. The comparison of income and life expectancy also reminds us of the importance of looking beyond income: despite significant economic recovery in 2021, the health crisis intensified, with two-thirds of countries recording even further reductions in life expectancy at birth.

Figure 5.4 The Covid-19 pandemic led to an unprecedented synchronized and multidimensional crisis



Note: Based on countries with available data in each year. Data for 2020 and 2021 are preliminary estimates.

Source: Human Development Report Office calculations based on data from Bolt and van Zanden (2020), IMF (2022), UNDESA (2022a), UNSD (2022) and World Bank (2022c).

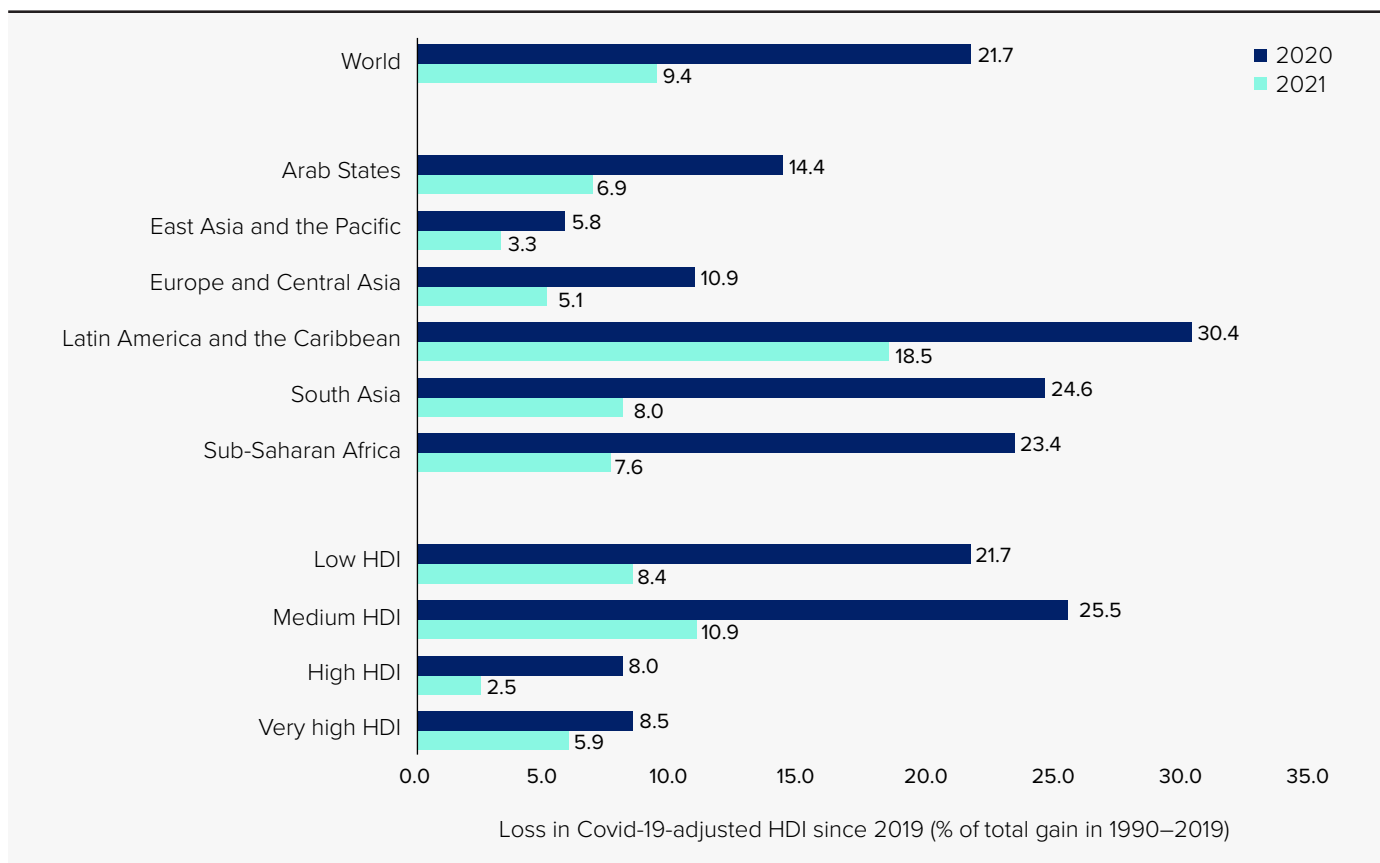
The Covid-19-Adjusted Human Development Index quantifies the depth of the crisis from a multi-dimensional perspective. The index retains the standard Human Development Index (HDI) dimensions but modifies the expected years of schooling indicator to reflect the effects of school closures and the availability of online learning on effective attendance rates.⁷⁸ The Covid-19 pandemic touched nearly every person in the world, with all regions facing declines (figure 5.5). In 2020 the world experienced a loss in Covid-19-adjusted HDI value equivalent to more than one-fifth of the progress from 1990 to 2019. Latin America and the Caribbean was the most affected region, losing in one year the equivalent of 30 percent of its pre-Covid-19 progress since 1990.

In 2021 there was a recovery, but it was partial and uneven. For very high HDI countries the 2020

Covid-19-adjusted HDI shock was not as large as across other country groups, but it was more sustained, with a slow recovery in 2021.

Crises on such a large scale hold up a mirror to societies. Covid-19 has laid bare the vast prepandemic disparities in people’s ability to cope with shocks to access healthcare and to rebuild from loss. The pandemic has exposed the fragilities in global coordination mechanisms in pandemic preparedness and response. The Independent Panel for Pandemic Preparedness and Response found “gaps and failings at every critical juncture of preparedness”: containment measures that were too slow, a lack of coordinated global leadership, emergency funding that took too long to materialize, and large holes in social protection systems.⁷⁹ The unequal access to lifesaving Covid-19 vaccines demonstrated a tragic failure of global solidarity.⁸⁰ These failures played a role in

Figure 5.5 Widespread but unequal declines in Covid-19-adjusted Human Development Index (HDI) value: Regional and group aggregates



Note: The Covid-19-adjusted HDI retains the standard HDI dimensions but modifies the expected years of schooling indicator to reflect the effects of school closures and the availability of online learning on effective attendance rates.
Source: Human Development Report Office.

the pandemic’s disproportionate impacts on people around the world.

Yet, even as crises mirror weaknesses and injustice, the current crisis also shows us that there are opportunities. Wars, pandemics and disasters can trigger far-reaching change. The 1918 flu pandemic helped spur investments in medicine in some countries, and the bubonic plague triggered efforts to improve sanitation and working conditions.⁸¹ At other times shocks have fostered repressive or harmful policies or not resulted in change.⁸² Opportunities for positive transformations are context-specific and far from inevitable (box 5.1). The next section suggests that amid significant collective failures the world’s response to the pandemic offers new possibilities for transformation. In our response to Covid-19 are new reference points for what we can achieve in times of crisis—triggering breakthrough

technological innovation, delivering inclusive social protection and changing social norms.

New reference points for technological breakthroughs

Less than two years after the novel coronavirus strain was identified, multiple highly effective vaccines against Covid-19 were deployed around the world.⁸³ The availability of vaccines for Covid-19 was a crucial turning point. The speed of developing these vaccines—just 11 months after the SARS-CoV-2 sequence was published—is a remarkable achievement. This outcome was made possible in part by years of scientific work, including three decades of prior research into RNA-based vaccines, now deployed for the first time to tackle Covid-19. The history of mRNA vaccine development starts in the 1960s.⁸⁴ But only

Box 5.1 The Covid-19 pandemic as an opportunity? A call for a contextual approach

Do shocks create opportunities for policy change? How can the Covid-19 pandemic help ensure that in the future most of the population has access to clean water, sanitation, healthcare, school services and other social benefits as a matter of right? These questions have surfaced in the aftermath of a pandemic that upended all dimensions of everyday life. Progressive policymakers, social activists and international organizations have identified the current crisis as an opportunity to promote radical policy change.

An important body of research identifies shocks as triggers for policy change. Pandemics have also generated opportunities for change as early as the 14th century, contributing to the growth of public institutions and the modern state.¹ The extent to which pandemics have triggered opportunities for inclusionary change has depended at least in part on the role of ideas—including scientific ideas—and how they have shaped the narratives regarding policy responses. Each narrative is a story about a problem and its sometimes-obvious solution.²

Analytic frameworks that move beyond grand proclamations about how shocks enhance opportunities for inclusive social policies can be useful. To determine whether such policies have created longer term opportunities, we propose focusing on three key variables. First are the incentives that the policy tools themselves create.³ Second are the responses to shocks that can also modify the distribution of power among state actors. Third are the narratives that are particularly important as a mechanism for change—one that deserves special attention here. In this way ideas are a power resource to define what the problem subject to state intervention is, frame possible and desirable outcomes and lead policy implementation.⁴

Opportunities are context-specific and revolve around the combination of narratives, policy tools and pro-equity state actors. Take the emergency cash transfers under the Bono Proteger programme, which buffered the sudden loss of income in Costa Rica. The pandemic, along with high uncertainty and fear of social unrest, lifted constraints and made space to implement new policy measures. The programme empowered state entities focused on advancing social goals and created openings for new narratives and policy tools.⁵ A second lesson is that the pandemic may leave as many challenges as opportunities when narratives of austerity, including the claim that more taxes are not politically possible or even desirable, take hold.

This reminds us of the power of the idea that states should live within their means, which often also implies that they should avoid increasing taxes as much as possible. Austerity is as much a scientific idea as it is a moral imperative linked to moderation and sacrifice.⁶ It alters the relationship between the state and citizens and has become a powerful tool against serious attempts towards redistribution.⁷ In recent decades, austerity has become appealing for conservative political actors critical of the welfare state, because it is “politically more expedient to argue that the government lives above its means than to directly attack the poor.”⁸

To further advance and fight this dominant narrative, much needs to change. The combination of state weaknesses and pro-status quo actors (such as the economic elites) that ended up inhibiting rapid use of the opportunities created to expand inclusive social policy should be analysed further.

Notes

1. McMillen 2006. 2. Stone 2011. 3. Martínez Franzoni and Sánchez-Ancochea 2016; Pierson 1994; Pribble 2013. 4. Swinkels 2020. 5. Costa Rica responded to the Covid-19 pandemic and lockdowns by adopting an emergency cash transfer programme, Bono Proteger, which provided 676,340 people (13 percent of the population) two to three payments of up to \$214 each (Contraloría General de la República de Costa Rica 2020). Martínez Franzoni and Sánchez-Ancochea (2022a) compared the Costa Rican experience with that in Guatemala and El Salvador and reached similar conclusions. 6. Schui 2014. 7. Blyth 2013. 8. Jabko 2013, p. 706.

Source: Martínez Franzoni and Sánchez-Ancochea 2022b.

in 1993 was the first vaccine tested for influenza in mice. Commercial research and development started only in the late 1990s, with the US Defense Advanced Research Projects Agency financing a large part of the research. This long history of development made possible vaccine development from when the pandemic started.

Even as these advances in vaccine technology built off a pre-existing foundation, the Covid-19

emergency injected an unparalleled sense of urgency into scientific work, producing a systemic shift in supply and demand. Addressing the pandemic through vaccination became a mission, and vaccine supply chains emerged.⁸⁵ Moreover, thanks to the steady reduction of DNA sequencing time, many countries could receive current information on prevailing strains of the virus and to act accordingly. Publication pipelines worked overtime to keep up with the rapidly

emerging research.⁸⁶ The rate of Covid-19-related therapies in research pipelines and the academic publication rate of Covid-19 articles exceeded that of recent Ebola, Zika and H1N1 crises by at least an order of magnitude.⁸⁷

The success of vaccine development shows that governments, industry and academia can work together to great effect in a crisis. Regulatory processes were deployed to support the acceleration of clinical development, trials and emergency use authorization. Governments provided large investments in manufacturing capacity and in supporting private research and development. Manufacturing pipelines were developed alongside clinical trials to allow for rapid scale-up. Government investments helped support development of several potential vaccine candidates, increasing the odds that at least a few might be successful. The United States and Germany were the largest investors in vaccine research and development, providing about \$2 billion and \$1.5 billion respectively to pharmaceutical companies.⁸⁸ Covid-19 also propelled major technological advances in our ability to develop vaccines for future diseases: novel RNA technology appears set to permanently transform how vaccines can be developed and manufactured in the future.⁸⁹

New reference points for social protection and economic policy

In the more than two years since the SARS-CoV-2 virus was first identified, governments have adopted new and unprecedented policy measures to protect vulnerable populations and national economies from lasting damage.⁹⁰

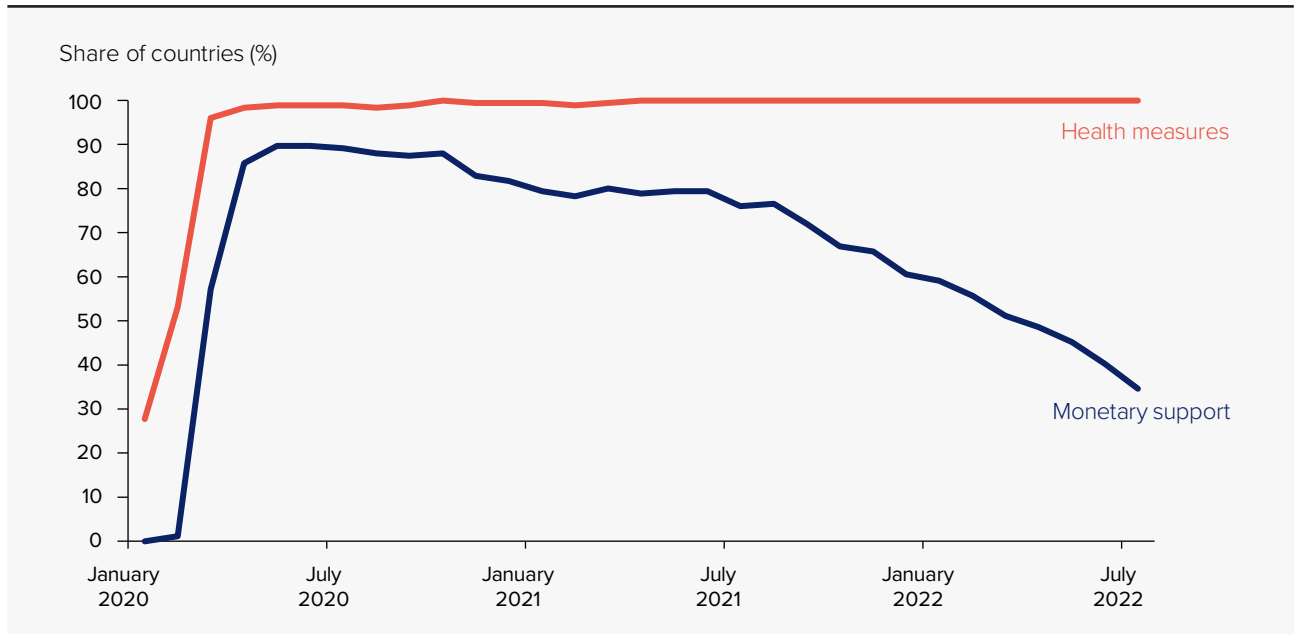
Instruments of economic policy have been deployed at an extraordinary scale. In August 2021 the IMF issued \$650 billion equivalent in new Special Drawing Rights, the largest in the fund's history—even if the process took much longer than what would have been feasible. The new Special Drawing Rights provided vital support for national economies as governments battled the health and economic damage the pandemic wrought. A G20-sponsored Debt Service Suspension Initiative granted 73 countries temporary relief on debt-service payments until December 2021. Government fiscal responses were

among the largest in recent history, totalling \$16 trillion in support between April 2020 and April 2021.⁹¹ These resources were poured into helping households and businesses survive the crisis through a variety of instruments, including direct transfers, expanded benefits, payment deferrals and liquidity injections. To deliver these massive financial support measures, governments moved to rapidly upgrade existing social protection systems and develop new facilities, such as for digital payments.

“The response to the Covid-19 pandemic has reminded us how people-centric policies can substantially enhance human wellbeing

The response to the Covid-19 pandemic has also reminded us how people-centric policies can substantially enhance human wellbeing. As the pandemic's economic, social and health impacts mounted, governments around the world deployed a flurry of expansive social protection measures to support people through the crisis. More than 1,600 social protection measures were reported across virtually all countries and territories in February 2020 and January 2021.⁹² The scope and scale of these measures were unprecedented in many settings. In several countries governments expanded protections for losses of livelihoods and income (see monetary support measures in figure 5.6). Many began to extend direct transfers, in the form of cash payments and guaranteed income. Where transfer programmes already existed, governments increased benefits and expanded coverage to include more recipients.⁹³ By the end of 2020, cash transfers had reached nearly 1.1 billion people worldwide, with coverage growing by 240 percent on average relative to prepandemic levels.⁹⁴ By some estimates almost 17 percent of the world's people saw at least one Covid-19-related cash transfer payment between 2020 and 2021.⁹⁵ Several countries delivered one-off payments to their populations on a universal or near-universal basis.⁹⁶ In addition to cushioning the blow of lost livelihoods, income support programmes helped stem the spread of Covid-19. In low-income countries income support measures were found effective in reducing the growth rate of Covid-19 cases, and in middle-income countries they helped reduce both case growth rates and deaths linked to Covid-19.⁹⁷

Figure 5.6 Most countries implemented monetary support and health measures during the Covid-19 pandemic



Note: Figure tracks the “flow” of active policies across around the world, displaying the percentage of countries that had any active monetary and health measures in any given month during the Covid-19 pandemic. Data are for 177 countries. Monetary support refers to measures considered income support and debt or contract relief. Health measures refers to testing policy, contact tracing, emergency investment in healthcare, investment in vaccines and vaccination policy.

Source: Human Development Report Office based on Hale and others (2021) and Oxford COVID-19 Government Response Tracker (<https://www.bsg.ox.ac.uk/research/research-projects/covid-19-government-response-tracker>, accessed 29 July 2022).

Many social protection schemes saw unprecedented expansions in scope, reaching groups that have been excluded from support in the past, such as informal sector workers and the self-employed.⁹⁸ Governments of several countries provided food aid, delivering baskets of staples and essential foods to households for free.⁹⁹ Some suspended routine payments and contributions, including for utility bills, loans and pension schemes. Mobile payment systems were deployed to deliver financial support—in Bangladesh, Jordan and Mali for instance—to minimize the need to visit banks and service providers in person. Countries turned to online application systems to reach as many of their citizens as they could. Brazil expanded coverage for households already registered as potential beneficiaries and then registered about 27 million households within a few weeks through an online system.¹⁰⁰

Since Covid-19 triggered a public health crisis, measures to expand health coverage were deployed around the world (see health measures in figure 5.6). Several countries sought to ensure that facilities to identify, diagnose and treat Covid-19 were readily available at low or no cost. Many countries sought to

close gaps in health coverage by expanding existing schemes to cover additional segments of their populations, such as temporary and migrant workers. Paid sick leave and other forms of support were expanded, such as compensation for earnings lost due to self-isolation and quarantine.¹⁰¹

These efforts reflected the urgency of the crisis, and emergency measures are unlikely to remain in place indefinitely, as figure 5.6 seems to confirm. But they have demonstrated that inequalities and gaps in social protection are not insurmountable. They have shown that governments can do more to make social protection a reality. And they have shown that interventions in income security and healthcare in particular can make an enormous difference to people’s lives. The Covid-19 pandemic may have helped broaden public appreciation for social protection and improve government experience with delivering it. And it has added to a growing evidence base on the effectiveness of relatively untested social protection measures, such as guaranteed basic incomes.

The Covid-19 pandemic has also brought previously neglected concerns to the forefront of the reform agenda. Bridging digital disparities has become more

urgent than ever, as the pandemic made affordable internet access essential for education as schools closed (recognizing, though, that it should not be seen as a replacement for in-person education). Governments around the world ramped up e-government facilities to continue delivering essential government services, manage new demands (including administering expanded social protection programmes) and provide dedicated Covid-19 information portals.¹⁰² Living with Covid-19 is providing new impetus to digitalization efforts, bolstered by a renewed awareness that going online can create new possibilities for public administration and that strengthening internet access and infrastructure could be essential for resilience against future disasters.¹⁰³

Tools such as nowcasting (providing real-time information about economic and social processes as they unfold, as opposed to waiting for official statistical information) are already gaining traction in efforts to understand and respond to the fast-moving crisis presented by Covid-19. Alternative data sources such as mobility data, congestion data, mobile payment patterns and internet search activity are being incorporated into models for understanding outbreak patterns and economic activity.¹⁰⁴

This spate of policy activism, through ramped up social protection and new delivery mechanisms, may have reset public expectations of what governments are able to do, at least for some people. If sustained, a new mindset about what governments can do for people opens new possibilities to transform economic policy thinking and approaches as we confront the challenges ahead.

New reference points for altering norms and behaviour

Covid-19 showed us that people all over the world are willing to dramatically alter their everyday conduct in service of a common purpose. Although responses to the Covid-19 pandemic became the focus of divisions in society sometimes associated with political polarization, as discussed in chapter 3, there was remarkable and unprecedented behavioural and institutional change. Combating the spread of Covid-19 required a range of social and behavioural changes such as social distancing, contact tracing, masking and restrictions on gatherings. These changes could not have

been sustained without voluntary cooperation from the vast majority of the world's population. A survey of people in 58 countries during the early stages of the pandemic showed high voluntary compliance with several behavioural measures: 91 percent of respondents reported that they did not attend any social gatherings, 78 percent said that they stayed home in the week before the survey and 93 percent said that they would have informed people around them if they experienced Covid-19 symptoms.¹⁰⁵ A different study of pandemic-related behaviour in 28 countries in August 2020 found that 58 percent of respondents reported always or frequently avoiding having guests in their homes and that 78 percent reported always or frequently avoiding crowds.¹⁰⁶

“Covid-19 showed us that people all over the world are willing to dramatically alter their everyday conduct in service of a common purpose

Behaviours that were exceedingly rare in many societies becoming commonplace, such as wearing masks, suggests the emergence of new social norms. This means that people are motivated not only by the need to protect themselves but also by a sense of shared responsibility, a perception that others are doing the same or the possibility of social disapproval for noncompliance. People in several countries reported feeling proud of their contribution to stopping the spread of Covid-19 and believing that they were setting a good example by wearing a mask.¹⁰⁷ A variety of interventions based on new social norms engendered by Covid-19 can be considered for future disease control, including normalizing paid sick leave, voluntary social distancing and self-isolation in the event of exposure to infection.¹⁰⁸

* * *

The foreseeable future remains one of uncertainty. Social upheaval, climate and environmental crises and rapidly changing technology may be here to stay for some time. The Covid-19 pandemic has given us a glimpse of the kinds of reality we may need to confront. It has also shown us who we are in times of crises, how we can mobilize with a sense of common purpose and how we may yet shape our common destiny. The extent to which we succeed in this era of uncertainty is up to us.

Our ability to manage this new reality will be strengthened only with a new resolve for far-reaching change. The pandemic has disrupted the world, and it is unlikely, even undesirable, that things will return to how they once were. And there is much more left to do. Our response to the crisis has shown us some of the possibilities for ensuring that the world will be more just and resilient. We have seen that it is possible to substantially reorient people's relationships with governments and that this reorientation can deliver enormous improvements to people's lives. The pandemic showed that social protection can work better where it corresponds to how people actually live, work and

navigate times of crisis. We saw how people possess an immeasurable capacity to care for one another—and how our ties to one another provide an invisible infrastructure for human flourishing. We saw also that our ability to spur technological innovation can dramatically expand our possibilities for surviving and thriving. More than any single technology or invention, it is our capacity for innovation at large that matters the most. Technological advances will be vital for the structural changes needed in our economies and society. The direction of technological change remains up to us, and much can be achieved by turning its potential to tackle the challenges we face.