

The postpandemic economy

Will productivity and growth return after the COVID-19 crisis?

Executive summary



McKinsey Global Institute

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MGI is led by three McKinsey & Company senior partners: co-chairs James Manyika and Sven Smit and director Jonathan Woetzel. Michael Chui, Mekala Krishnan, Susan Lund, Anu Madgavkar, Jan Mischke, Jaana Remes, Jeongmin Seong, and Tilman Tacke are MGI partners. Project teams are led by the MGI partners and include consultants from McKinsey offices around the world. These teams draw on McKinsey’s global network of partners and industry and management experts.

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March 2021

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Preface

The COVID-19 pandemic has been a health and humanitarian crisis, but also the most challenging global economic disruption since World War II, and the path out of the pandemic into recovery and beyond is extremely uncertain. Early signs indicate that the economic disruption caused by COVID-19 has driven leading companies in large sectors of the economy to innovate and digitize in exciting ways, but it is not yet clear whether these actions will translate into a broad-based productivity dividend. Moreover, stubborn structural drags on demand long left neglected may now be even worse.

Can pandemic-induced changes in action by firms like innovation and digitization lead to—sufficiently widespread—productivity gains? And will we finally tackle the demand deadlock to unleash strong growth? Decision makers in businesses and governments reacted boldly, imaginatively, and with speed in response to COVID-19. How can they bring those characteristics now to crafting a healthy recovery?

This new McKinsey Global Institute (MGI) report is the third in a series on economies after the COVID-19 crisis. The first examined the long-term changes that COVID-19 may impose on work in the years ahead. The second focused on understanding how the pandemic has affected consumer demand, and what that means for the recovery. This research focuses on potential paths for productivity in eight sectors in the United States and six large European economies (France, Germany, Italy, Spain, Sweden, and the United Kingdom) representing 40 percent of global GDP. The eight sectors we examined in-depth in our focus countries account for nearly 60 percent of the non-farm business economy.

The research was led by Jan Mischke, MGI partner in Zurich; Jonathan Woetzel, MGI senior partner and MGI director in Los Angeles and Shanghai; Sven Smit, McKinsey senior partner and MGI co-chair in Amsterdam; James Manyika, McKinsey senior partner and MGI co-chair in San Francisco; Michael Birshan, McKinsey senior partner in London; Eckart Windhagen, McKinsey senior partner in Frankfurt; Jörg Schubert, McKinsey senior partner in Dubai; and Solveigh Hieronimus, McKinsey senior partner in Munich. We would like to thank our colleague Sree Ramaswamy, an alumnus of the Washington, DC office, who co-led this research while he was a partner at MGI. The work was guided by Mike Kerlin, McKinsey partner in Philadelphia; Jeongmin Seong, MGI partner in Shanghai; and Yassir Zouaoui, McKinsey partner in Dubai. Guillaume Dagorret, a McKinsey consultant in Paris, and Marc Canal Noguer, a consultant in London, led the project team, which comprised Corentin Duvert, Samuel Cudre, Marcel Hechler, Nikita Kolibanov, Kimberley Moran, Aditi Ramdorai, and Quentin Richard. We thank Jaana Remes, MGI partner in San Francisco, for her insights on consumers post-pandemic; Susan Lund, MGI partner in Washington, DC, for her input on the future of work; Michael Chui, MGI partner in Washington, DC, for his input on technological advances; and Alan FitzGerald, McKinsey director of client capabilities, and Ezra Greenberg, McKinsey expert associate partner, for their advice on economic modelling.

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Oliver Adler, Chief Economist, Credit Suisse, Switzerland; Robert D. Atkinson, President of the Information Technology and Innovation Foundation, Washington, DC; Robert J. Gordon, Stanley G. Harris Professor of the Social Sciences at Northwestern University; Catherine L. Mann, Global Chief Economist at Citi; Bart van Ark, Professor of Productivity Studies at the Alliance Manchester Business School (AMBS) at the University of Manchester; and Guntram B. Wolff, Director of Bruegel, together with Maria Demertzis, Deputy Director of Bruegel, and Gregory Claeys, Bruegel Senior Fellow.

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While we are grateful for all the input we have received, the report and views expressed here are ours alone. We welcome your comments on this research at MGI@mckinsey.com.

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Will productivity and growth return after the COVID-19 crisis?

The pandemic caused the deepest economic crisis since World War II, disrupting both supply and demand. In 2020, GDP fell by 3.5 percent in the United States, 9.9 percent in the United Kingdom, and 11.0 percent in Spain. The way ahead is extremely uncertain. Will the stars align for economies after the COVID-19 crisis? History tells us that deep economic crises have been followed by anything from stagnation or sluggish growth (for instance, after the global financial crisis) to rapid economic renewal (as after World War II), depending on whether demand is strong enough to lift the economy and whether firms broadly take productivity-enhancing action, particularly in sectors large enough to affect national productivity. In this research we examine firm and sector evidence in the United States and six large European economies. Key findings include the following:

Despite uncertainty, some firms responded boldly to COVID-19, acting in ways that have the potential to increase productivity. Some firms shifted rapidly to online channels, automated production tasks, increased operational efficiency, and sped up decision making. Companies digitized many activities 20 to 25 times faster than they had previously thought possible. One European retailer achieved three years' worth of prepandemic rates of growth in e-commerce in eight weeks.

Measurable firm advances so far appear concentrated, particularly in the United States. In the third quarter of 2020, acceleration on a range of imperfect firm-level proxy indicators like R&D spending, investment, and M&A appeared concentrated in sectors (including information technology and professional services) that were

already ahead on those dimensions before the pandemic and among large, so-called superstar firms, particularly in the United States. Of our set of about 5,500 US and European firms, for instance, only about half increased R&D spending, and one-third increased investment in the third quarter of 2020 from a year earlier. That is down from more than two-thirds and more than half, respectively, before the pandemic. In the United States, declines in the revenue and capital expenditure of large leading firms were small and growth in R&D investment large in comparison with those of other firms.

If corporate action broadens, particularly in large sectors, and demand is robust, there is potential to accelerate annual productivity growth by about one percentage point in the period to 2024. Such an acceleration would more than double the rate of productivity growth experienced in our sample countries after the global financial crisis. Surveys suggest strong intent to continue advances. For instance, about 75 percent of respondents to our December 2020 survey expected investment in new technologies to accelerate in 2020–24, up from about 55 percent who increased such investment in 2014–19. The largest potential, at about two percentage points, could be in healthcare (such as spreading telemedicine), construction (for instance, accelerated adoption of digital and industrialized methods), ICT (including increased demand for digital tools and services), and retail (notably growing e-commerce).

The economic shock of the pandemic and the response of companies could exacerbate long-run structural demand drags. Our sector-level evidence suggests that 60 percent of

the productivity potential prioritizes efficiency over output growth. Accelerated digitization and automation by firms, added to superstar effects, could hasten income polarization and declines in labor share, leading to a “great divide” among both firms and workers. Prepandemic demand, specifically consumption and investment, was structurally weak, and efficiency-focused actions could now weaken it further. After a potential initial consumer-led bounce-back, pressures on employment and income could hold back consumption, which, coupled with uncertainty, could hold back investment. In the third quarter of 2020, investment was down by up to 11 percent in some countries compared with prepandemic levels in our sample countries. Productivity growth could remain low if most firms do not invest and those that do struggle to grow.

Firms and policy makers should address three interlocking challenges. The approaches taken by businesses as the economic disruption of the pandemic starts to ease will be critical—through the new products and services they offer, the investments they make, and the wages they pay. Collective action will be important, and policy makers have a range of interventions at their disposal to engage with businesses to steer to the right outcomes. Broadly, we see three interlocking priorities: how can innovation and other advances that can increase productivity growth be sustained and spread?; how can action by firms also support employment, median wages, and demand?; and how can investment be increased—and directed to the right places?

Productivity and growth after the COVID-19 crisis

The great uncertainty

Will economies stagnate or enjoy broad-based growth?

x% Per capita GDP growth per year in the years following the crisis

Demand growth	Stagflation United States post-oil shock 1.3%	Age of renewed economic progress Europe/United States post-World War II 3.1%
Unleashed	“Lost decade” or depression Japan post-real estate bubble burst 0.7%	Low growth and/or great divide United States post-global financial crisis 1.0%
Constrained	Low progress	Potential supply growth
	Acceleration and dynamism	

During the pandemic

Some firms responded boldly to COVID-19



Digitizing and automating



Shifting online



Reorganizing and becoming agile



Adopting new business models

But advances were concentrated in large superstar firms

6/7

drivers' acceleration less widespread than before the pandemic

66%

of US R&D investment growth Q3 2019–Q3 2020 from large superstars

0%

revenue decline in US large superstars vs 11% decline for others

After the pandemic

Pandemic-related potential productivity acceleration, 2019–24, CAGR



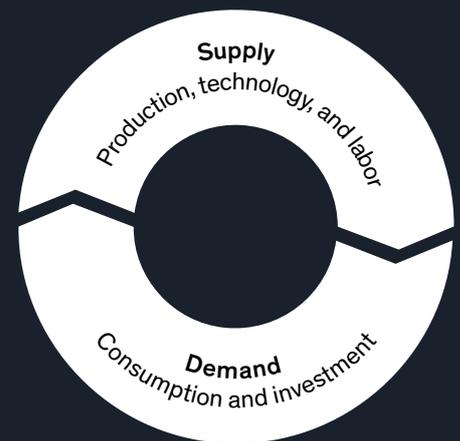
But capturing the potential requires action to diffuse and demand to be robust: a virtuous cycle

~60%

of productivity potential prioritizes efficiency over output growth

Up to 6pp

gap between potential productivity and baseline demand growth by 2024



Three interlocking priorities

1 Sustaining and spreading innovation and other advances that can potentially increase productivity

2 Ensuring that productivity-accelerating action also supports employment, median wages, and demand

3 Increasing investment, and directing it to the right places



Executive summary

The COVID-19 pandemic has first and foremost been a health crisis but has also caused deep disruption to economies. In 2020, the United States and Europe, the focus of this research, experienced the deepest recession since World War II. COVID-19 has been a double-barreled crisis, with demand and supply severely affected; both will need to be addressed.

In 2020, GDP fell by 3.5 percent in the United States, 9.9 percent in the United Kingdom, and 11.0 percent in Spain. Consumption and investment were still 3 percent below prepandemic levels in the United States in the third quarter of 2020, and by 7 and 5 percent, respectively, in the six large European economies we analyze combined. In December 2020, US employment was 10 million less than the prepandemic level, while in Europe millions of workers were still either on short time or furloughed. Businesses were forced to close for long periods. In September 2020, about 25 percent of small businesses in the United States were closed, and how many would reopen was uncertain.¹ As firms adjusted staff levels rapidly and lower-productivity workers in particular lost their jobs, labor productivity (measured as gross value added per hour worked) actually grew by 2.6 percent in the United States in 2020 compared with 2019. In France, productivity was flat. In Germany and Spain, productivity fell by 0.2 and 0.6 percent, respectively (in European economies, labor hoarding is more common). However, these short-term crisis-related effects have limited bearing on the medium- to long-term outlook.

Will the stars align for economies after the COVID-19 crisis? Looking ahead, we assume that a combination of safety measures, vaccines, and immunization will remove pandemic-related restrictions on economic activity in the course of 2021 and 2022. Still, the way ahead—out of the crisis and beyond—is extremely uncertain. We envisage four long-term scenarios (Exhibit E1). Which one will play out? Could we move into an age of renewal as North America and Europe did after World War II on the back of broad-based action on the supply side and resulting productivity gains translating into strong demand? Will we see sluggish growth and increasing inequality, as in the aftermath of the global financial crisis that began in 2008? Will we experience a lost decade? Could we even see a spike in inflation as pent-up demand and government stimulus are unleashed once the health crisis recedes? The jury is out.

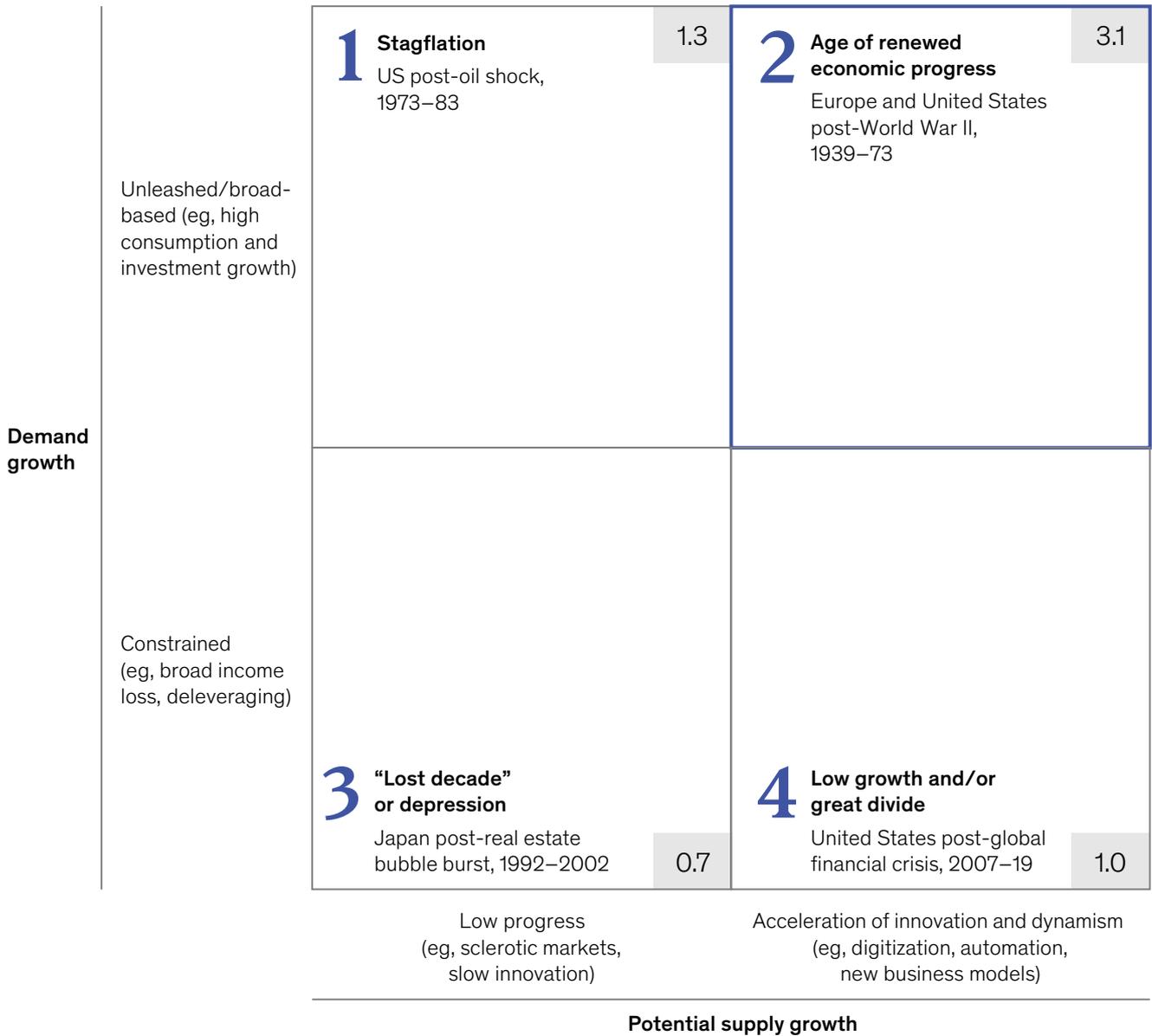
While the direct impact on economies was considerable and remained so in early 2021, this research explores the potential path ahead for productivity growth to 2024 in the United States and six large European economies—France, Germany, Italy, Spain, Sweden, and the United Kingdom; together, these seven economies account for 40 percent of global GDP.² We examine eight sectors in depth (healthcare, construction, information and communication technologies (ICT), retail, pharma, banking, automotive, and travel and logistics) that account, on average, for about 60 percent of the nonfarm business economy, as well as five sectors that represent 40 percent of the nonfarm business economy by extrapolating relevant trends to these sectors based on our eight focus sectors (see Box E1, “Gauging and assessing productivity: Our approach”).

¹ *Global Economics Intelligence executive summary*, October 2020, November 2020, [McKinsey.com](https://www.mckinsey.com).

² We do not analyze emerging markets, which have a different productivity-growth dynamic than mature markets.

Could productivity growth accelerate after the COVID-19 crisis?

X Per capita GDP growth per year following crisis, %¹



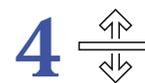
1 Stimulus meets weak productive capacity growth to result in low real output growth and possibly high inflation



2 Acceleration in supply growth translates into broad-based income and demand growth and robust economic growth



3 Failure to increase demand and weak innovation and supply growth lead to economic stagnation or even depression



4 Innovation and progress by only leading firms in the absence of demand leads to sustained output gaps, high unemployment and/or inequality, and slow economy-wide growth

1. Quadrant 1: US per capita GDP growth, 1973–83; Quadrant 2: weighted average of sample countries, 1939–73; Quadrant 3: Japan, 1992–2002; Quadrant 4: United States, 2007–19.

Source: Bergeaud, Cette, and Lecat, 2016; McKinsey Global Institute analysis

To establish a virtuous cycle after COVID-19, as happened in North America and Europe after World War II, requires productivity growth to be broad-based and comprehensively diffused among companies and large sectors to move the needle for the whole economy, and to be accompanied by strong growth in income and demand once public support programs and pent-up demand run out. Starting at US 2019 per capita GDP, the difference between having, during ten years, a per capita growth rate like that after the end of World War II and the one experienced after the global financial crisis, for instance, amounts to 27 percentage points, or about \$17,000. A relevant episode much more recent than the aftermath of World War II—albeit not the result of a deep economic crisis—is the spike in productivity growth of the 1990s and early 2000s in the United States, which was, in large part, the result of a boom in ICT investment, adoption, and integration into business processes and systems.³

There is early evidence of dynamic changes—including accelerated digitization and investment in other technologies, and reorganization—by some businesses in response to the extraordinary pressures of the pandemic. Those changes could, in the right conditions, accelerate productivity growth. This would be a welcome boost emerging from the deep disruption of the pandemic. The key conditions are that action actually matters for productivity, that the diffusion of action is broad-based, particularly in sectors that are large enough for diffusion to have an impact on economy-wide productivity, and that demand is robust. Thus far, sector reviews show real productivity potential from actions taken, yet early firm-level evidence suggests that advances have been relatively concentrated in leading sectors and so-called superstar firms.⁴ If this concentration is confirmed and persists, any acceleration in productivity growth could fall short of potential, the gap between superstars and a long tail of lagging or zombie companies could widen, and income inequality or unemployment could increase. In summary, we could observe a widening “great divide” in which, at best, only a minority of companies, households, and regions enjoy productivity and income growth, as we saw in the aftermath of the global financial crisis (Exhibit E1, Quadrant 4).⁵

Then, any potential acceleration in productivity growth requires robust long-term aggregate demand, and, absent policy action, here there are concerns, too. While a sharp bounce-back in consumption is possible once the health crisis eases as pent-up spending is unleashed, it is far from clear that such momentum will be sustained. The fact that the pandemic has wreaked most damage on those with on low incomes could continue to increase inequality and undermine consumption.⁶ Scarring effects from long-term unemployment, the destruction of human, physical, and organizational capital, and high debt accumulation, among other factors, could have a prolonged impact on consumption and investment. On the other hand, strong action by policy makers of the kind being discussed in early 2021 (for instance, a large infrastructure package in the United States) could mitigate or reverse demand risks.

³ *Solving the productivity puzzle: The role of demand and the promise of digitization*, McKinsey Global Institute, February 2018. Also see Robert J. Gordon and Hassan Sayed, *Transatlantic technologies: Why did the ICT revolution fail to boost European productivity growth?*, VoxEU, August 2020.

⁴ We define large as the top 10 percent of firms by 2019 revenue and superstars as firms with substantially greater share of income than peers and that are pulling further away from those peers over time. See *Superstars: The dynamics of firms, sectors, and cities leading the global economy*, McKinsey Global Institute, October 2018; “What every CEO needs to know about ‘superstar’ companies,” McKinsey Global Institute, April 2019; and David Autor et al., *The fall of the labor share and the rise of superstar firms*, National Bureau of Economic Research (NBER) working paper number 23396, May 2017. On productivity dispersion, see, for instance, John van Reenen, *Increasing differences between firms: Market power and the macroeconomy*, Federal Reserve Bank of Kansas City economic policy symposium, August 2018; and Dan Andrews, Chiara Criscuolo, and Peter N. Gal, *Frontier firms, technology diffusion and public policy: Micro evidence from OECD countries*, The Future of Productivity Background Papers, Organisation for Economic Co-operation and Development (OECD), 2015.

⁵ The OECD defines zombie companies as “old firms that have persistent problems meeting their interest payments.” See Müge Adalet McGowan, Dan Andrews, and Valentine Millot, *The walking dead? Zombie firms and productivity performance in OECD countries*, OECD Economics Department working paper number 1372, January 2017. On superstars, see *Superstars: The dynamics of firms, sectors, and cities leading the global economy*, McKinsey Global Institute, October 2018; “What every CEO needs to know about ‘superstar’ companies,” McKinsey Global Institute, April 2019; and David Autor et al., *The fall of the labor share and the rise of superstar firms*, NBER working paper number 23396, May 2017. On productivity dispersion, see, for instance, John van Reenen, *Increasing differences between firms: Market power and the macroeconomy*, Federal Reserve Bank of Kansas City economic policy symposium, August 2018; and Dan Andrews, Chiara Criscuolo, and Peter N. Gal, *Frontier firms, technology diffusion and public policy: Micro evidence from OECD countries*, The Future of Productivity Background Papers, OECD, 2015.

⁶ In the United States, McKinsey & Company research has found that Black Americans are almost twice as likely to live in the counties at highest risk of health and economic disruption. See Aria Florant, Nick Noel, Shelley Stewart, and Jason Wright, “COVID-19: Investing in Black lives and livelihoods,” April 2020, [McKinsey.com](https://www.mckinsey.com/industries/healthcare/our-insights/covid-19-investing-in-black-lives-and-livelihoods).

Gauging and assessing productivity: Our approach

Productivity is one of the central concepts in economics and is key to raising long-term living standards and driving growth. In this report we use “productivity” as shorthand for what is often called labor productivity, a measure of output per unit of labor input. More specifically, labor productivity is measured as gross value added divided by total hours worked, so it expresses the average value created for each hour devoted to the production of goods and services. Gross value added is the monetary value of all goods and services produced in an economy in a particular period, a metric that is adjusted (imperfectly) year-over-year for changes in the price and the quality of products and services offered. Labor productivity should not be confused with total factor productivity, which excludes the impact of human and physical capital accumulation to focus only on the contribution of technical change and new business methods. In our research, we look at the impact the crisis and how firms reacted to it could potentially have on productivity growth to 2024. We use two lenses: first, medium-term supply potential from changes in firm behavior and the economic fabric; and second, demand and the impact it can have on productivity.

Medium-term supply potential. We decompose productivity growth potential into primary factors: (1) reducing the number of hours needed to produce a good or service; or (2) improving its quality and value. We look at several drivers that often have resulted in productivity growth in the past, and from which we expect to observe impact from the crisis. Notably, they include digitization, automation, and a shift to online channels; operational efficiency and asset utilization; innovation, including in business and operating models; investment in human and physical capital; reorganization and agility; and a dynamic business environment in which the most productive firms can grow and capture market share.¹ At the same time, not all corporate action translates into productivity growth and, as famously described by Robert Solow, even productivity-accelerating action can take time to materialize in observed faster productivity growth.² In this research, we thus pursue a micro-to-macro approach. We look at measures that firms are taking in response to the pandemic, using interviews and external as well as McKinsey surveys, and assess whether those measures may be positive or negative for productivity and in what way, given that both numerator- and denominator-based actions can each improve productivity, with different effects. We then apply in-depth sector reviews to assess and size opportunities for an acceleration in productivity growth. We include the potential for accelerated productivity growth in sectors where measuring it is challenging, including, notably, healthcare. There is concern that many companies, especially small companies, are not able to use best practices and their productivity will lag as a result, so we also look into whether action taken by firms during the pandemic is concentrated among sectors and firms that were already ahead of their peers. For that purpose, we use (albeit imperfect) firm-level indicators from S&P Global Market Intelligence up to the third quarter of 2020, as well as forward-looking surveys.

¹ Philippe Aghion, Céline Antonin, and Simon Bunel, *Le pouvoir de la destruction créatrice: Innovation, croissance et avenir du capitalisme (The power of creative destruction: Innovation, growth and the future of capitalism)*, Éditions Odile Jacob, October 2020.

² Mekala Krishnan, Jan Mischke, and Jaana Remes, “Is the Solow Paradox back?,” *McKinsey Quarterly*, June 2018.

Demand in the short and medium term. Past MGI research has shown that short- and medium-term demand matters for productivity and growth.³ Effective aggregate spending or final demand is captured in the numerator of the productivity ratio. A short-term drop in demand as, for instance, consumption or investment plummets, will be reflected in declining value added and can lead to unemployment and underutilization of capacity, or output gaps. In the medium to long run, in a low-pressure economy with sustained output gaps and high uncertainty, firms are much less inclined to commit resources and invest in new capacity and technology, as we saw in the years following the global financial crisis. Waiting for more clarity becomes attractive.⁴ In the end, everybody invests less, mutually reinforcing the drag. In a high-pressure economy, in turn, in which consumption, investment, exports, and public demand are at or above capacity to supply, waiting implies lost opportunities, so firms tend to innovate and invest in higher capacity and the latest technology, and the most agile and productive firms can outgrow their peers. Additionally, there is more fertile ground for wages to rise as a result of productivity-enhancing investment and of an economy with low unemployment, improving the business case for investment and automation further. Finally, we have seen that both mix and scale of demand can have a direct impact on productivity, for instance in network-based industries like telecommunications or sectors with high intangibles investments like internet services.⁵ This is why we consider it important to focus on both supply and demand in order to foster high medium- and long-term productivity growth.

We look at demand perspectives to 2024 to assess whether there is a risk of persistent output gaps (potential supply continuously above effective demand) beyond the short-term crisis and its immediate aftermath. For a rough initial sizing of the gap between potential supply and demand, we use GDP forecasts from Oxford Economics and IHS Markit Comparative Industry (December 2020) as baseline demand and compare them with our estimated productivity-acceleration potential.⁶ We then analyze the channels through which the economic impact of the pandemic and action by firms could impose drags on demand relative to the higher potential income. We do not model or quantify those channels because typical general equilibrium models are by construction supply driven, and therefore not best suited for such analysis.

³ MGI found that weak demand and an uncertain demand outlook weighed on productivity in many sectors and via multiple channels, including from less investment; capital deepening and investment-embodied technological change; fewer big-box retail stores replacing smaller ones; automated checkouts not being installed because uncertainty was high and wages of cashiers low; a lack of new automotive plants with the latest technology and underutilization of existing technology; less scale effects on fixed-cost businesses, as in lower use of electricity networks; and less upgrading to higher-value products—in automotive, for instance, the saturation of the SUV boom and a slowdown in the shift to premium cars—that can be supplied at higher productivity levels. See *Solving the productivity puzzle: The role of demand and the promise of digitization*, McKinsey Global Institute, February 2018.

⁴ Robert K. Dixit and Robert S. Pindyck, *Investment under uncertainty*, Princeton University Press, 1994.

⁵ *Solving the productivity puzzle: The role of demand and the promise of digitization*, McKinsey Global Institute, February 2018.

⁶ McKinsey & Company and Oxford Economics, November 2020; IHS Markit Comparative Industry (December 2020).

On top of this, actions by businesses could further exacerbate long-standing weaknesses in demand, leading to sustained output gaps. If accelerated productivity growth is the result of businesses largely pursuing measures to boost efficiency (for instance, through automation), unemployment or pressure on wages could rise, weakening incomes and demand if efficiency gains are not reinvested and worker transitions to higher-skill occupations do not occur fast enough. MGI has found that weak demand after the global financial crisis adversely affected productivity growth in sectors such as automotive, financial services, and retail.⁷ In automotive, weak demand created excess capacity, low profits, and slowed investment in equipment and structures, while hours worked increased. Financial services experienced weak demand for credit and limited capacity to streamline labor requirements. In retail, weak demand contributed to a three percentage point decline in sales growth on average in the period from 2010 to 2014, compared with 2000 to 2004, while cash-strapped consumers shifted to lower value-per-unit goods during the financial crisis. In the near term, demand may continue to be shored up by policy support for economic activity that during the pandemic, and possibly for some time, could be larger than in the past; the Biden administration's \$1.9 trillion package announced in January 2021 gives us an indication that fiscal support will continue for a while.⁸ The medium- and long-term outlooks for demand are more uncertain.

In light of this combination of promise, in the form of advances on drivers of productivity, and distinct risks of concentration in diffusion of those advances and weakness on the demand side, policy makers and businesses have important choices ahead. The stakes are high.

Despite uncertainty, some firms responded boldly to COVID-19, acting in ways that have the potential to increase productivity

25x

faster digitization during pandemic than expected

As economic activity plunged during the pandemic, many firms took bold steps that could transform their business over the long term. Some companies' pace of digitization and other technologies quickened, firms became more efficient and agile, remote working became the norm, and many businesses—and people—went online for the first time. However, positive action appeared to be concentrated in large leading firms.

Firms have acted upon several drivers that offer the potential to boost productivity growth

The response of many businesses to the pandemic shows that organizations can transform quickly when they have to. A McKinsey survey conducted in October 2020 found that companies digitized many activities 20 to 25 times faster than they had previously thought possible.⁹ The advances on a range of drivers that have boosted productivity in the past may offer the potential to raise the economy-wide pace of productivity growth considerably (Exhibit E2).

⁷ *Solving the productivity puzzle: The role of demand and the promise of digitization*, McKinsey Global Institute, February 2018.

⁸ Andrew Duehren and Kristina Peterson, "House passes \$1.9 trillion COVID-19 stimulus bill; Biden to sign Friday," *Wall Street Journal*, March 10, 2021.

⁹ "How COVID-19 has pushed companies over the technology tipping point—and transformed business forever," McKinsey & Company, October 5, 2020.

The business response to the COVID-19 disruption could have a positive impact on productivity growth potential through several drivers.

■ Focus of this work

Effect of the pandemic shock

-  Increase
-  Mixed
-  Decrease

Category	Potentially productivity-enhancing drivers	Short term	Long term	Long-term rationale
Firms' response to macro changes 	Automation and technology			Increasing and better use of technology
	Operational efficiency			Cost-cutting takes effect, pandemic measures lifted
	Product, business, and operating model disruption			Scaling up of disruption initiated during the pandemic
	Investment in human and physical capital			Recovery in line with market growth
	Reorganization and agility			New way of operating partially sustained and improved
	Shift to digital channels			Channel shift largely sustained
	Shifts in consumption and sector mix			Consumption shift toward higher-value-added products; sector mix shift only slightly negative over long term
	Business dynamism (incl M&A)			Unclear path of rising M&A and/or business entry and exit (more dynamism vs zombification)
Macroeconomic environment 	Access to and cost of capital			Lower rates for longer, but some scars in balance sheets
	Utilization and demand			Capacity adjustments and rising use of digital networks, but also stranded assets
	Changes in regulation and taxation			Unclear whether boldness of decision making persists
	Global flows of goods, services, ideas, people			Some sustained regionalization possible, but idea flows matter more for productivity

Source: McKinsey Global Institute analysis

The use of technologies such as digitization and automation appears to have accelerated in some companies during the pandemic, and with the right conditions in place, could raise productivity by substituting employees or contributing to boosting output per worker. In a December 2020 McKinsey Global Economic Conditions survey of executives, 51 percent of respondents in North America and Europe said that they had increased investment in new technologies (excluding remote work technologies) during 2020. One pharmaceutical company put in place robotic process automation when the pandemic broke and cut the time it took to recruit patients to a clinical trial for a COVID-19 treatment from weeks to days. In construction, half of respondents to a May 2020 McKinsey survey said that they had already increased investment, including in digitization.¹⁰

A broad shift toward online channels occurred during 2020. In a McKinsey Digital survey, 59 percent and 60 percent of firms in North America and Europe, respectively, said that they were experiencing a significant increase in customer demand for online purchasing, services, or both as a result of COVID-19. One retailer achieved three years' worth of prepandemic rates of growth in e-commerce in eight weeks.¹¹

The pressures of the pandemic also forced many businesses to become more efficient, to rethink their product, business, and operating models, and to become more agile, all of which could potentially drive faster productivity growth. According to our executive survey, 42 to 45 percent of respondents in Europe and North America expected to reduce their operating expenditure as a share of revenue between December 2019 and December 2020. In the face of lockdowns, US hotelier Red Roof turned its hotel suites into remote working offices with day rates. One large retailer put in place a curbside-delivery business in two days; its prepandemic plan called for an 18-month rollout. A leading global bank set up a decision-making daily working group of key leaders from across the company to coordinate its COVID-19 response, which accelerated procurement cycles to days rather than months.

Human and physical capital accumulation are two crucial elements that typically drive growth in productivity, too, but here the evidence was more mixed. On human capital, a recent McKinsey report found that "COVID-19 has accelerated the adoption of fully digitized approaches to re-create the best of in-person learning through live video and social sharing."¹² Seventy-two percent of respondents to a KPMG survey ranked reskilling as one of the most important paths to shaping the workforce, yet only 33 percent characterized it as easy to implement.¹³ The temporary closure of educational institutions and the fact that many workers were outside the labor force for a relatively long period due to lockdowns could have a negative impact on skills.¹⁴ The pandemic had a generally negative impact on short-term accumulation of physical capital. In the United States, total investment (gross fixed capital formation) remained flat between the third quarters of 2019 and 2020, having risen 4 percent between 2018 and 2019 and an average of 5 percent annually between 2015 and 2019.¹⁵ Europe experienced a much steeper drop in overall investment. Additionally, an October 2020 McKinsey report found that 23 to 37 percent of European and UK small and medium-size enterprises were concerned about having to postpone growth projects.¹⁶

Another potential driver of productivity growth is business dynamism, but here the situation is uncertain. Higher rates of entry and exit by firms, which fosters increased competition, can help the most productive firms to grow and move ahead of competitors, as can M&A activity that promotes resource reallocation and consolidation. Total global M&A volume decreased by 21 percent in the first three quarters of 2020 compared with the first three quarters of

¹⁰ "The next normal in construction: How disruption is reshaping the world's largest ecosystem," June 2020, [McKinsey.com](https://www.mckinsey.com).

¹¹ See also *The future of work after COVID-19*, McKinsey Global Institute, February 2021.

¹² Sapana Agrawal, Aaron De Smet, Sébastien Lacroix, and Angelika Reich, "To emerge stronger from the COVID-19 crisis, companies should start reskilling their workforces now," May 2020, [McKinsey.com](https://www.mckinsey.com).

¹³ *The 2020 lesson for HR: Think big and play the long game: Findings from global HR executives in a KPMG survey conducted July 21–August 7, 2020*, KPMG, 2020.

¹⁴ *Bruegel blog*, "The scarring effect of COVID-19: Youth unemployment in Europe," blog entry by Monica Grzegorzczuk and Guntram B. Wolff, November 28, 2020; and Natalia Martín Fuentes and Isabella Moder, *The scarring effects of COVID-19 on the global economy*, VoxEU, February 2021.

¹⁵ OECD.

¹⁶ Jonathan Dimson, Zdravko Mladenov, Ruchi Sharma, and Karim Tadjeddin, "COVID-19 and European small and medium-size enterprises: How they are weathering the storm," October 2020, [McKinsey.com](https://www.mckinsey.com).

66%

of US R&D investment growth from Q3 2019 to Q3 2020 from large superstars

2019. The volume of M&A transactions in the United States demonstrated a particularly steep slump of 43 percent in the same period.¹⁷ Firm entry and exit rates also fell during the pandemic, but this reflected deliberate government policies to avoid mass bankruptcies. From January to September 2020, compared with the same period in 2019, bankruptcies dropped by close to 25 percent, on average, across our sample countries, including in the worst-affected sectors like accommodation and restaurants. The creation of new firms declined in most countries, but there were exceptions. The rate of new business creation rose 12 percent in Sweden and 18 percent in the United States. When direct governmental support tapers off, whether we will see renewed business dynamism or the declining dynamism observed in some countries for years before the pandemic remains uncertain.¹⁸

Measurable firm advances so far appear concentrated, particularly in the United States

Our analyses used a number of metrics that are available at the firm level, such as R&D spending, investment, and M&A, as short-term proxies for our range of potential drivers that could accelerate productivity. These are imperfect, but we need to look at large sets of firm-level data to get an indication of the breadth of advances.

We find that, as of the third quarter of 2020, acceleration was not broad-based among firms or sectors. This is understandable given that the pandemic disruption was still severe. Even with the right diffusion and demand conditions in place, any measurable impact and actual productivity acceleration will take some time to appear. Advances on the metrics we apply appeared greater in sectors that were already ahead of their peers as measured by the same metrics before the pandemic in both Europe and the United States. The sectors that had the largest share of firms improving across metrics in the third quarter of 2020 had also been advancing on them before the pandemic, namely professional, scientific, and technical services; IT; healthcare; and communication services. These are large sectors, and if they achieve higher productivity growth, they could have a positive impact on productivity growth in the total economy. However, some other large sectors such as travel, transport, and logistics, as well as some subsectors of manufacturing, experienced less progress on the same measures. At the firm level, on almost all metrics, acceleration was less widespread during the pandemic than before it (Exhibit E3). The share of firms that accelerated on different metrics was very similar in the United States and Europe both before and during the pandemic. For example, 36 percent and 38 percent of US and European firms, respectively, increased their capital expenditure, compared with 57 and 58 percent before the pandemic.

On many indicators, advances appeared concentrated among large superstar firms, particularly in the United States.¹⁹ This was true across many sectors but particularly pronounced in professional, scientific, and technical services, IT, electronics manufacturing, and healthcare. Overall, capital expenditure declined by much less for large superstars than for other groups of companies between the third quarters of 2019 and 2020. R&D investment by large US superstars grew by about \$2.6 billion (66 percent of total R&D investment growth in the third quarter of 2020 from a year earlier), compared with \$1.4 billion for all other types of firms (34 percent). The superstar effect was less pronounced in Europe.²⁰

¹⁷ Refinitiv; Pamela Barbaglia and Joshua Franklin, "M&A spikes in record third quarter as boards go on pandemic deal spree," Reuters, September 30, 2020.

¹⁸ Ryan A. Decker et al., *Declining business dynamism: Implications for productivity?*, Brookings Institution Hutchins Center working paper number 23, September 2016; and Silvia Lui et al., *Business dynamism in the UK: New findings using a novel dataset (ESCoE DP 2020-14)*, Economics Statistics Centre of Excellence, October 2020.

¹⁹ We define large as the top 10 percent of firms by 2019 revenue and superstars as firms with substantially greater share of income than peers and that are pulling further away from those peers over time. See *Superstars: The dynamics of firms, sectors, and cities leading the global economy*, McKinsey Global Institute, October 2018.

²⁰ McKinsey research has shown that the gap in economic profit between the top quintile of firms and others widened significantly during the pandemic. See Chris Bradley, Martin Hirt, Sara Hudson, Nicholas Northcote, and Sven Smit, "The great acceleration," July 2020, [McKinsey.com](https://www.mckinsey.com).

In the third quarter of 2020, firms' actions appeared less broad-based than before the pandemic.

Share of firms accelerating (firms that improved on a given metric), %

▲ Accelerating ▼ Decelerating

Potentially productivity-enhancing drivers	Proxy indicator used ¹	United States		Europe			
		Pre-pandemic 2019 vs 2018	Pandemic Q3 2020 vs Q3 2019	Pre-pandemic 2019 vs 2018	Pandemic Q3 2020 vs Q3 2019		
Automation and technology	GFCF in hardware, software, and databases ²	Acceleration in growth in United States from 5% in 2018–19 to 7% growth in Q3 2019–Q3 2020 ³					
Operational efficiency	SG&A and COGS margin ⁴	51	▼	35	51	▼	38
Product, business, and operational model disruption	Research and development	67	▼	53	73	▼	41
Investment in human and physical capital	Capital expenditure	57	▼	36	58	▼	38
Reorganization and agility		n/a ⁵					
Shift to digital channels	E-commerce retail sales	Acceleration in e-commerce retail sales growth rate, from 15% to 31%		Acceleration in e-commerce retail sales growth rate, from 7% to 28%			
Shifts in consumption	Gross profit margin	48	▲	51	49	▲	51
Business dynamism (incl M&A)	Acquisitions	24	▼	11	26	▼	14
	Divestitures	7	▼	3	11	▼	6
Revenue (for reference)		65	▼	39	69	▼	42

1. Where we have used proxy indicators, they are the best available but not perfect. In some cases, we did not identify a suitable proxy.

2. GFCF (gross fixed capital formation), also called investment; acquisition of produced assets (including purchases of secondhand assets).

3. GFCF in computer hardware, software, and databases.

4. SG&A = selling, general, and administrative; COGS = cost of goods sold.

5. No relevant metric available.

Note: We exclude companies with insufficient data in 2018–20 and outliers (companies that have one-off data significantly impacting result on driver). Sample sizes may differ across drivers depending on data availability.

Source: OECD; S&P Global Market Intelligence; McKinsey Global Institute analysis

If advances broaden and demand is robust, annual productivity growth could accelerate by about one percentage point in the period to 2024

In the short term, there are compelling reasons to believe that collapsing revenue, space utilization, and investment due to the economic shock of the pandemic could hamper productivity growth.

However, as the disruption eventually recedes, significant productivity acceleration could be possible if action taken by firms enhances productivity, if the action spreads, and if demand strengthens. We reviewed eight sectors with industry experts who found potential for an increase of 1.5 percentage points of productivity growth per year in the period to 2024 across the sectors.²¹ For the total nonfarm business sector, the potential could be 1.1 percentage points of additional annual productivity growth. Our sensitivity analysis suggests that the potential could range between 0.7 and 1.5 percentage points.

If productivity growth were to accelerate by one percentage point a year in the period to 2024, that would be more than double the rate after the global financial crisis in our sample countries. If the potential is realized, it implies additional per capita GDP in 2024 ranging from about \$1,500 in Spain to about \$3,500 in the United States.

The potential to accelerate productivity growth varies among sectors

The largest potential incremental rise in productivity growth in 2019–24 could be in the healthcare, construction, ICT, retail, and pharmaceuticals sectors at about two percentage points per year. Most of the other sectors we analyze could benefit from an acceleration in annual productivity growth of about one percentage point per year (Exhibit E4).

A bottom-up review of sectors with industry experts found potential for an increase of around 1 percentage point of productivity growth per year in the period to 2024

²¹ In this report, we focus on productivity advances as felt by consumers and businesses rather than as measured by official statistics; we do not consider well-known measurement problems in detail. Most of our productivity-enhancing estimates will show up in productivity statistics, but some may not. This is particularly the case in sectors with some activities that standard measures of gross value added (output measured at market prices) do not include. Healthcare is an example.

Our sector analysis indicates potential for incremental productivity growth of approximately one percentage point per year through 2024.

United States and Europe

Sector	Share of nonfarm business economy, 2017, % ¹	Pandemic-related productivity acceleration potential, compound annual growth rate, 2019–24, %	Main contributors to potential productivity growth acceleration driven by COVID–19, 2019–24
Health	10	 1.6–3.0	<ul style="list-style-type: none"> • Telemedicine • Operational efficiency
Construction	5	 1.7–2.5	<ul style="list-style-type: none"> • Operational efficiency • Modularization, design to constructability, and standardization • Digitization of processes and automation
ICT	10	 1.2–2.3	<ul style="list-style-type: none"> • Demand for online services • Online channels • Online advertising
Retail	7	 1.0–2.4	<ul style="list-style-type: none"> • E-commerce • Warehouse automation • Advanced analytics
Pharmaceutical	2	 0.8–2.3	<ul style="list-style-type: none"> • Digitization of sales channels • Automation of manufacturing • AI for vaccine discovery
Banking	8	 0.9–2.0	<ul style="list-style-type: none"> • Hybrid working • Online channels • Shift to digital payments
Automotive	3	 0.4–1.2	<ul style="list-style-type: none"> • Electric vehicles • Connected Car • Online sales
Travel and logistics	13	 0.3–0.5	<ul style="list-style-type: none"> • Digital interaction (eg, apps) • Agile working • Automation of tasks
Subtotal ²	58	 1.0–2.0 (1.5)³	<ul style="list-style-type: none"> • Digital channels • Automation of tasks • Operational efficiency
Other nonfarm business sectors	42	 0.3–0.9	<ul style="list-style-type: none"> • Automation of tasks • Digital channels • Lower real estate costs
Total nonfarm business sectors	100	 0.7–1.5 (1.1)³	<ul style="list-style-type: none"> • Digital channels • Automation of tasks • Operational efficiency

1. Weighted by total nominal GDP contribution of United States (62%) and six European economies (38%) in our focus countries. Pharma includes chemicals and pharmaceuticals manufacturing due to lack of breakdown for United States and Sweden; automotive includes transport machinery; travel and logistics includes arts and recreation, accommodation and food services, transportation and storage, other service activities, and activities of households and extraterritorial units; other nonfarm business sectors includes professional services, wholesale, mining and quarrying, manufacturing excluding chemicals and pharmaceuticals and automotive, and utilities; excludes public administration and defense, real estate activities, education, and agriculture. Sectors included amount to 74% of total economy in United States and 75% in 6 European focus countries.

2. Subtotal potential productivity acceleration and contribution by lever is estimated using weighting of our 8 deep-dive sectors.

3. Midpoint estimate.

Note: Figures may not sum to 100% because of rounding.

Source: EU KLEMS; McKinsey Global Institute analysis

In the five sectors with the highest estimated potential, we note:

- **Healthcare.** During the pandemic, major resources were allocated to fighting the virus and away from services such as elective procedures, which tend to earn hospitals higher revenue. In France, for example, outpatient healthcare providers experienced a 71 percent decline in activity between January and April 2020.²² As a result, the sector could experience lower value-added growth for some time, which could adversely affect productivity growth.²³ The largest driver of potential incremental productivity growth is the acceleration of telemedicine during the pandemic, which could well become a permanent feature. Industry experts say 20 percent of healthcare spending could be delivered virtually. In the United States, 76 percent of patients expressed interest in using telehealth in the future.²⁴ Other drivers of productivity growth include an increased focus on operational excellence through more flexible task scheduling and the adoption of best practices in procurement and lean operations. Overall, the sector has potential to accelerate annual productivity growth by more than two percentage points.
- **Construction.** Construction companies had to manage disruptions to global supply chains and increased costs associated with implementing health and safety measures during the pandemic, undermining productivity. However, accelerated adoption of digital and industrialized construction methods that improve operational efficiency could yield a large productivity boost.²⁵ A McKinsey survey found that two-thirds of construction executives expect the pandemic to accelerate shifts to digital technologies, industrialization, consolidation, and value-chain control.²⁶ Overall, the sector could benefit from an acceleration in annual productivity growth of two percentage points.
- **ICT.** The ICT sector has productivity upside from increased demand for online services. Many ICT firms are fixed-cost platform businesses that can scale rapidly in response to demand, raising productivity. Netflix added 25 million users globally in the first two quarters of 2020, increasing its subscriber base by 15 percent.²⁷ Demand for videoconferencing solutions expanded rapidly as remote working spread. Prior to the pandemic, the rate of remote working was 2 to 9 percent in some US sectors; it increased to between 36 and 84 percent during the pandemic.²⁸ The pandemic intensified the attractiveness of cloud computing to enable other business activities, including e-commerce and remote working. According to a McKinsey survey, 34 percent of business executives increased the migration of their company's digital assets to the cloud as a result of the pandemic, and 54 percent expected this change to persist.²⁹ In the United Kingdom, telecom company BT experienced a 2.4 time increase in demand for broadband upgrades.³⁰ Other drivers include an accelerated shift to online sales and increased online advertising. Overall, the sector has potential to accelerate annual productivity growth by about two percentage points.

²² Giles Colcough, Penelope Dash, and Lieven Van der Veken, "Understanding and managing the hidden health crisis of COVID-19 in Europe," June 2020, [McKinsey.com](https://www.mckinsey.com).

²³ Axel Baur, Panco Georgiev, MD, Imraan Rashid Munshi, MD, and Marek Stepniak, "Healthcare providers: Preparing for the next normal after COVID-19," May 2020, [McKinsey.com](https://www.mckinsey.com).

²⁴ Oleg Bestseny, Greg Gilbert, Alex Harris, and Jennifer Rost, "Telehealth: A quarter-trillion-dollar post-COVID-19 reality?" May 2020, [McKinsey.com](https://www.mckinsey.com).

²⁵ According to previous McKinsey research, the construction sector could experience a productivity boost driven by better digital planning, upgraded on-site execution, and improved procurement and supply chain management of construction projects. Prior to the pandemic, growth in venture capital investment in construction tech outpaced that of overall venture capital investment, which could accelerate further following the pandemic. See *Reinventing construction: A route to higher productivity*, McKinsey Global Institute, February 2017; Katy Bartlett, Jose Luis Blanco, Josh Johnson, Brendan Fitzgerald, Andrew Mullin, and Maria João Ribeiro, "Rise of the platform era: The next chapter in construction technology," October 2020, [McKinsey.com](https://www.mckinsey.com); PitchBook, Inc.; * data have not been reviewed by PitchBook analysts.

²⁶ "The next normal in construction: How disruption is reshaping the world's largest ecosystem," June 2020, [McKinsey.com](https://www.mckinsey.com).

²⁷ Netflix, 2020.

²⁸ Aamer Baig, Bryce Hall, Paul Jenkins, Eric Lamarre, and Brian McCarthy, "The COVID-19 recovery will be digital: A plan for the first 90 days," May 2020, [McKinsey.com](https://www.mckinsey.com).

²⁹ Joe Dertouzos, Ewan Duncan, Matthias Kässer, Satya Rao, and Wolf Richter, "Making the cloud pay: How industrial companies can accelerate impact from the cloud," October 2020, [McKinsey.com](https://www.mckinsey.com).

³⁰ BT Group PLC, October 2020 and February 2021.

- **Retail.** Retailers, particularly in nonessential categories and brick-and-mortar stores, experienced a significant demand shock as well as increased costs associated with added health and safety requirements and with transitioning from offline to online retail. These factors could be a drag on productivity for some time. On the positive side, however, the main driver of additional potential productivity is accelerating growth in e-commerce, which is likely to persist. Before the pandemic broke, e-commerce was forecast to account for less than one-quarter of all US retail sales by 2024; during the first two months of the COVID-19 crisis, the actual share of e-commerce in total retail sales rose from 16 to 33 percent.³¹ Other productivity drivers include increased automation and new technologies, particularly in warehouses, and increased adoption of the so-called store of the future, which could disrupt business and operating models. Overall, annual productivity growth could accelerate by close to two percentage points.
- **Pharmaceuticals.** The productivity of pharmaceutical companies could be compromised in the near term by disruption to clinical trials for treatments unrelated to COVID-19. Between 50 and 75 percent of multisite trials were disrupted by lockdowns.³² However, a shift toward digital channels could drive additional incremental productivity growth. During the pandemic, McKinsey experts estimate, 80 percent of interactions were digitized because sales representatives were no longer able to meet clinicians in person. So long as demand remains strong, rapid growth in digital marketing and sales channels, increased automation in pharmaceutical manufacturing, and greater adoption of artificial intelligence (in laboratories, for instance) could accelerate annual productivity growth by about 1.5 percentage points in the period to 2024.

Among other sectors, in banking the main drivers of productivity growth could be the shift to digital channels, particularly contactless payments, and increased use of telesales or videoconferencing. In the automotive sector, demand fell during the pandemic, but in fall 2020 there was evidence that it was steadily bouncing back toward prepandemic levels.³³ In the period to 2024, productivity growth could be driven by accelerated adoption of electric vehicles and connected cars, and greater digitization of sales channels. Demand for premium vehicles (such as electric vehicles and connected cars) has been robust during the pandemic, partly reflecting consumers' concerns about taking public transit and the fact that affluent households, which tend to drive demand for premium vehicles, have been less affected by the crisis than other households. In travel and logistics, the importance of face-to-face interaction in tourism could limit the potential of automation technology, but in the logistics sector, the shift to digital channels such as online booking and automation of supply chains could accelerate.

75%

of North American and European survey respondents expected higher new technologies investment in 2020–24

Surveys indicate that firms intend to take more action and expect an acceleration in productivity growth

Forward-looking survey evidence compiled in the course of 2020, as well as responses to the December 2020 McKinsey Global Economic Conditions survey, revealed significant intent to build on the changes many businesses made in response to the pandemic (Exhibit E5). A range of external surveys corroborates this broad picture.³⁴ The December survey showed that about 75 percent of respondents in North America and Europe said they expected investment in new technologies to accelerate in 2020–24, up from 55 percent

³¹ Lars Fiedler, Eric Hazan, Brian Ruwadi, and Kelly Ungerman, *Retail reimaged: The new era for customer experience*, August 2020, [McKinsey.com](https://www.mckinsey.com).

³² Gaurav Agrawal, Brandon Parry, Brindan Suresh, and Ann Westra, "COVID-19 implications for life sciences R&D: Recovery and the next normal," May 2020, [McKinsey.com](https://www.mckinsey.com).

³³ "How consumers' behavior in car buying and mobility is changing amid COVID-19," September 2020, [McKinsey.com](https://www.mckinsey.com).

³⁴ Global Economic Conditions survey, McKinsey & Company, December 2020. Other McKinsey surveys used include the Digital Survey, Consumer Pulse Survey, Future of Work Survey, Innovation through Crises Survey, Org4Speed Leadership Survey, *Reimagining the postpandemic organization*, and "COVID-19 and European small and medium-size enterprises: How they are weathering the storm." External surveys include *The future of jobs report 2020*, World Economic Forum, October 20, 2020; *The business response to COVID-19: The CEP-CBI survey on technology adoption*, Centre for Economic Performance, September 2020; and Joachim Rotzinger, *Wer digitalisiert, blickt optimistischer in die Zukunft (Those who digitize are more optimistic about the future)*, Haufe Group, August 2020.

who said they increased such investment in 2014–19.³⁵ Many respondents also said they intend to move to more efficient and agile ways of operating, and a majority of respondents said that the COVID-19 crisis would accelerate their creation of new products, services, or both. On human capital building, a 2020 World Economic Forum report found that in our sample countries, between 35 and 50 percent of firms surveyed were looking to accelerate implementation of reskilling programs.³⁶

This action is also reflected in executives' expectations that their firms will achieve high productivity growth. On average, their responses imply between 2 and 3 percent annual productivity growth in the period from 2019 to 2024, more than the 1.7 percent that results from adding prepandemic productivity growth to our estimate of potential.³⁷

Exhibit E5

Surveyed executives expect acceleration on most drivers.

Share of respondents from Europe and North America whose firms experienced or expected advances, %

Potentially productivity-enhancing drivers	Prepandemic ¹	Postpandemic ²	
Automation and technology	55	75	Estimate increased investment in new technologies
Operational efficiency	30	35	Expect decreased operating expenditure margins
Product, business, and operational model disruption	← 55 →		Creating new products and/or services accelerated by COVID-19
Investment in human and physical capital	← 40 ³ →		Intend to accelerate implementation of upskilling/reskilling due to COVID-19
Reorganization and agility	55	70	Expect more rapid decision making and implementation of business decisions
Shift to digital channels	← 60 →		Targeting new customers and using new channels accelerated by COVID-19
Shifts in consumption	← 20 →		Adoption of new revenue models accelerated by COVID-19 ⁴
Business dynamism (incl M&A)	20	20	Consider M&A one of their biggest opportunities

1. End 2014 to end 2019.

2. End 2019 to end 2024 for all drivers except investment in human and physical capital (post–Oct 2020) and business dynamism (2020–21).

3. Rounded average for France, Germany, Italy, United Kingdom, and United States.

4. Shifting from subscription to freemium model, for example.

Note: Where we have used proxy indicators, they are the best available but not perfect. In some cases, we did not identify a suitable proxy.

Source: McKinsey Global Economic Conditions Survey, Dec 2020; World Economic Forum; McKinsey Global Institute analysis

The economic shock of the pandemic and firms' responses could exacerbate long-run demand drags, compromising the productivity potential

The difference between potential supply growth and fourth quarter 2020 forecast baseline growth in effective demand in 2024 could be as much as six percentage points, expressed in

³⁵ Our December survey includes 584 firms in our sample countries, of which 21 percent have more than \$10 billion in annual revenue, 19 percent \$1 billion to \$10 billion, 33 percent \$10 million to \$1 billion, and 23 percent less than \$10 million. The remaining 5 percent is split between "not applicable" and "don't know" responses.

³⁶ *The future of jobs report 2020*, World Economic Forum, October 20, 2020.

³⁷ McKinsey's December 2020 Global Economic Conditions survey allows us to compare our estimate to the productivity growth firms expect they will achieve. Our central estimate is based on prepandemic productivity growth plus our estimated productivity boost, amounting to total productivity growth of 1.7 percent. We asked businesses what they expect their productivity and customer surplus growth to be in the period from 2019 to 2024. The weighted average estimates of survey responses we obtained from businesses are 1.9 percent and 1.2 percent, respectively. Businesses do not measure these metrics directly, so this result should be treated with care. Additionally, productivity growth and customer surplus growth are not perfectly additive, but at least some of the customer surplus will be reflected in productivity statistics via price adjustments. Based on this, we conclude that businesses expect, on average, their productivity growth to be 2 to 3 percent between 2019 and 2024.

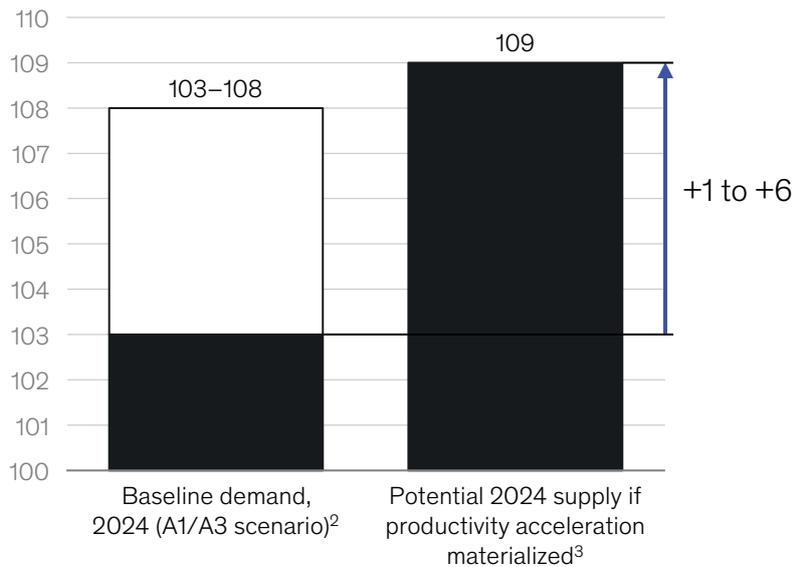
terms of 2019 GDP (Exhibit E6).³⁸ On the upside, additional supply could translate into about \$2 trillion of rising incomes and public and private consumption or investment in our sample countries, equivalent to one full year of Italy’s GDP. However, absent action to strengthen it, demand growth could remain tepid, wage growth will stay low, and, as a result, productivity growth will be slow (that is, the supply will not materialize) as firms do not invest and the most productive firms find growth difficult (as happened after the global financial crisis).³⁹

Exhibit E6

Potential supply could exceed baseline demand in 2024.

United States and Europe

Potential supply and demand, 2024, index: 100 = 2019¹



1. GDP-weighted average of the 7 sample countries.

2. A1 and A3 scenarios from McKinsey and Oxford Economics. Forecast from IHS Markit stands between A1 and A3.

3. Based on historical productivity growth (2010–19) and additional potential due to postpandemic acceleration of productivity.

Source: IHS Markit Comparative Industry, Dec 2020; OECD; Oxford Economics, Nov 2020; The Conference Board, Apr 2019 release; McKinsey Global Institute analysis

Just when robust demand is needed most, the nature of the COVID-19 crisis and of the potential actions taken by firms look set to exacerbate long-standing structural drags on demand. A temporary boost from pent-up demand is likely once the health situation is fully resolved.⁴⁰ However, long-standing structural drags on demand also need to be tackled if demand is to be robust over the longer term (Exhibit E7). Large-scale continuing fiscal support from governments, the Biden administration’s early 2021 support package being a prominent example, could help minimize or reverse these drags.

³⁸ The excess supply potential is the difference between the GDP-weighted average of GDP forecasts (demand) and estimated potential supply for our sample countries in 2024 if the productivity boost is realized. The demand forecast reflects the range between the A1 and A3 scenarios developed by McKinsey with Oxford Economics; see *Nine scenarios for the COVID-19 economy*, December 2020, [McKinsey.com](https://www.mckinsey.com). The supply potential forecast is the addition of prepandemic productivity growth (2010–19) and our estimated productivity acceleration potential of 1.1 percentage points. The gap does not factor in demand drags or demand increases dynamically resulting from the potential supply growth. We used the GDP forecast from IHS Markit Comparative Industry (December 2020) as a check of the robustness of the demand forecast and found that its weighted average forecast for our sample countries is between scenarios A1 and A3.

³⁹ *Solving the productivity puzzle: The role of demand and the promise of digitization*, McKinsey Global Institute, February 2018.

⁴⁰ *The consumer demand recovery and lasting effects of COVID-19*, McKinsey Global Institute, March 2021.

The pandemic and firms' responses could exacerbate structural demand drags.

United States

Impact on demand ■ Positive ■ Uncertain ■ Negative

Demand component	Driver	Pandemic impact	Firm response
Private consumption	Employment and income levels	9pp Increase in savings rate as of Sept	~60% Productivity potential through efficiency-driven actions (ie, denominator-based)
		37% Share of long-term unemployed by Dec	
		61% Share of workforce that cannot work remotely (<1 day per week)	~60% Firms that are looking to accelerate automation
		Temporary boost from pent-up demand	
	Income distribution and propensity to consume	54% Share of decline in consumption from top income quartile households as of Oct	-0.4% Superstar companies' change in revenue as of Sept, compared to 11% loss for competitors
		-25% Employment rate of low-income households vs high-income as of Dec	
Private investment	Demand and macro-economic outlook	140% Global uncertainty compared to previous peak during global financial crisis, as of Dec	~3% Drop in gross output (proxy of revenue) compared to prepandemic level as of Sept
		Low private consumption	~3% Drop in private investment compared to prepandemic level as of Sept
	Investment intensity of production		Superstar effect (see above)
			1pp Increase of intangible investment over total investment as of Sept
	Financial position	Low interest rate environment	7% Increase in total loans on nonfinancial corporations' balance sheets as of Sept
Public consumption and investment	Financial capacity/sustainability	19% Size of announced fiscal stimulus as a share of GDP as of Jan 2021 ¹	
		+21pp Surge in debt-to-GDP ratio, which reached 127% in September, may limit future investment	
		Discussion of whether ultralow interest rates render debt levels less important	

Note: Net exports are not in scope of this research due to global nature of crisis and unclear long-run impact of pandemic.

1. \$1.9 trillion package approved in March not included. Government spending of the kind being discussed in the United States in early 2021 (eg, a large infrastructure package) could mitigate or reverse demand weaknesses.

Source: Baker et al., 2020; BEA; BLS; Chetty et al., Nov 2020; IMF; OECD; Oxford Economics; S&P Global Market Intelligence; W EF, Oct 2020; McKinsey Global Institute analysis

After a potential burst of pent-up demand in the short term, the behavior of consumers and firms could dampen income and private consumption over the longer term

Before the pandemic, productivity growth had not always fully translated into broad-based wage growth and consumption. In the United States, median wage growth has been about 19 percentage points below productivity growth since 2000—6.5 percent of today's GDP in forgone wages. If US median wage had grown with productivity, today it would be close to \$9,000 per year higher than it is. Consumption is mostly a function of employment and the income it generates, and the distribution of that income and the propensity to consume. The shock of the pandemic led to a collapse in consumption and a spike in savings, particularly among high-income households, and to job losses mostly among those on lower incomes.

In the short term, across our sample countries, consumption may spike as pent-up demand is unleashed, but other shifts that took place during the pandemic, notably efficiency-focused productivity action and accelerated digitization, could, over the longer term, dampen employment and incomes, and hasten labor-market polarization and propensity to spend. Our sector reviews suggest that about 60 percent of the estimated productivity potential comes from firms taking measures to cut labor and other input costs, for example by increasing automation.⁴¹ If these productivity gains are not reinvested in growth that drives jobs and incomes, they could lead to a widening gap between productivity and wage growth, rising unemployment or lower employment. Accelerating superstar effects could also lead to further increases in inequality, for instance if the labor share of income falls further.

The pandemic and changes to the economic fabric it has prompted could depress already weak investment over the longer term

Before the pandemic, investment rates were in long-run decline due to factors such as aging and slow growth, and investment weakened further during COVID-19. In the United States, private fixed investment in productive capital such as machinery, equipment, structures, R&D, and software stood nearly 3 percent lower in the third quarter of 2020 than in the fourth quarter of 2019. In Europe (where only combined quarterly private and public fixed investment data are available), the decline was 4 and 5 percent for Germany and France, respectively, but significantly higher for Spain and the United Kingdom at 11 percent.⁴²

While investment will inevitably at least partially recover from this collapse—there may even be some unleashing of pent-up investment—a number of factors could be a persistent drag. A weak macro and consumption outlook can reduce the need to invest. A shift to intangibles and superstar effects, as well as heightened risk and high hurdle rates, might decrease the investment intensity of production. And bankruptcies and corporate debt overhang can reduce the ability to invest. The share of intangible investment over total investment rose across all our sample countries in the first three quarters of 2020—by as much as 2.8 percentage points in France and 1.9 in the United Kingdom. In December, the OECD found that firms anticipating a negative book value of equity and thus higher risk of insolvency had doubled in a sample of 14 European countries.⁴³

Debates on debt sustainability will shape future public investment and consumption

Government consumption and investment made a modest but declining contribution to demand growth before the pandemic as a majority of our sample of countries strove to stabilize public debt built up largely in response to the global financial crisis. This trend reversed abruptly when the pandemic broke. As of January 2021, the size of announced economic support packages in the United States, for example, was the equivalent of 19 percent of 2020 forecast GDP, including additional spending and forgone revenues due to

Up to

11%

fall in investment in Europe in Q3 2020 vs Q4 2019

⁴¹ Productivity measures value added (numerator) per hour worked (denominator). Productivity can therefore be increased by raising value added or by reducing hours worked (that is, labor inputs). When estimating the productivity growth potential from action by firms, we classify each as numerator- or denominator-based and find that about 60 percent of the potential is achieved through denominator-based action. We do not take into account longer-term dynamic or spillover effects; for instance, we classify worker automation as driving productivity growth through reducing the denominator but do not assess resulting price reductions or wage increases that can increase the numerator.

⁴² Quarterly figures for Europe include both private and public investment.

⁴³ "Insolvency and debt overhang following the COVID-19 outbreak: Assessment of risks and policy responses," in *OECD Economic Outlook*, Volume 2020 Issue 2: Preliminary version, December 2020.

tax deferrals, loans, and guarantees for households and firms.⁴⁴ In Europe, the relative size of economic support packages was 39 percent of GDP in Germany and as much as 42 percent in Italy, excluding the European Union's package of 5 percent of regional 2019 GDP. All other countries also registered sizable increases in the contribution of the public purse. This bold government intervention helped to avoid an even larger economic collapse, but at the cost of very substantial increases in public debt. In the United States, the increase was 21 percentage points between the final quarter of 2019 and the third quarter of 2020, taking the US debt stock of the federal government to 127 percent of GDP. In Europe, the increase was more modest but still ranged from three percentage points in Sweden to 20 percentage points in Italy. Despite rising debt levels, in the United States the Biden administration's \$1.9 trillion support package passed by Congress in March 2021 suggested a determination to continue extending public support to the US economy, but there was a lively debate about whether the package was sustainable and may lead to an outbreak of inflation.⁴⁵ The longevity of public support, when it may taper off, and how the transition out of it is managed will be a crucial aspect determining present and future aggregate demand and productivity growth.⁴⁶

\$3,500

additional US per capita
GDP potential in 2024 from
productivity expansion

Firms and policy makers should consider working on three interlocking priorities

Businesses and policy makers were audacious in their response to COVID-19 and need to be bold in crafting a healthy postpandemic economy. Once the health crisis is contained and economies are fully open, they need to work simultaneously on expanding innovation and advances that could accelerate productivity growth, and on addressing drags on demand. The response to the pandemic underlined that both innovation among firms and the engagement of policy makers will be needed to deliver on the productivity potential. CEOs can shape the outlook rather than solely responding to it through the new products and services they offer, the investments they make, and the wages they pay. Yet it is also the time for collective action, as the immediate interest of individual firms (by, for instance, focusing on cutting costs) can work against the collective interest of driving growth. Policy makers have a range of interventions at their disposal to engage with businesses to steer toward a healthy economy. Our analysis suggests three interlocking questions for business leaders and governments to resolve: (1) how can innovation and other advances that can increase productivity growth be sustained and spread?; (2) how can action by firms that could boost productivity growth also support employment, median wages, and demand?; and (3) how can investment be increased—and directed to the right places?

- **How can innovation and other advances that can increase productivity growth be sustained and spread?** The expansion of productivity starts within firms, and many have taken action. In the period to 2024, our analysis suggests that supply potential could accelerate by about one percentage point per year. In our sample countries, if this potential were realized, it would imply additional per capita GDP in 2024 ranging from about \$1,500 (Spain) to \$3,500 (United States). But to underpin strong long-term growth, large corporations need to consider how to catalyze change across their entire supply chains and ecosystems to spread advances more widely. Policy can support these efforts through, for instance, public procurement focused on innovation, direct R&D investment

⁴⁴ Fiscal Monitor Database of Country Fiscal Measures in Response to the COVID-19 Pandemic, International Monetary Fund Fiscal Affairs Department, January 2021, [imf.org](https://www.imf.org). Direct fiscal stimulus excluding loans, equity injection, and guarantees was larger in the United States than in Europe. It amounted to 17 percent in the US, 11 percent in Germany, and between 4 and 8 percent in France, Italy, Sweden, and Spain.

⁴⁵ Some prominent protagonists in that debate in early 2021 were Lawrence H. Summers, Olivier Blanchard, and Paul Krugman. See Lawrence H. Summers, "Opinion: The Biden stimulus is admirably ambitious. But it brings some big risks, too," *Washington Post*, February 4, 2021; Oliver Blanchard, *In defense of concerns over the \$1.9 trillion relief plan*, Realtime Economic Issues Watch, Peterson Institute for International Economics, February 2021; and *Will the Biden stimulus lead to inflation? A conversation with Paul R. Krugman and Lawrence H. Summers*, Bendheim Center for Finance, Princeton University, February 2021.

⁴⁶ Given that interest rates may remain low for some time, it may be feasible for governments to raise their investment in order to stimulate demand, even if their debt burden is high. A renewed debate in macroeconomics concerns the sustainability of debt given low interest rates. See, for example, Olivier Blanchard, "Public debt and low interest rates," *American Economic Review*, April 2019, Volume 109, Number 4; Jason Furman and Lawrence Summers, *A reconsideration of fiscal policy in the era of low interest rates*, Peterson Institute for International Economics, November 2020; and *Fiscal policy advice for Joe Biden and Congress*, Peterson Institute for International Economics virtual event, December 2020, [piie.com](https://www.piie.com).

(subsidies or tax credits), and revising competition, platform, and competition rules, bankruptcy procedures, and product and labor market regulations.

- **How can action by firms that could boost productivity growth also support employment, median wages, and demand?** The evidence presented in this report indicates that long-run structural demand drags could get worse after the pandemic eases and pent-up demand and economic support efforts ebb away. Lifting demand through a combination of consumption and investment to match additional potential supply could add six percentage points of GDP by 2024 in our sample countries. Individual firms will naturally address immediate pressure on their bottom line, but they also have a collective social and economic impact. The investments they make, the wages they pay, and the way they interact with their suppliers and workforces shape the environment they operate in. Businesses can help address demand drags by emphasizing growing revenue rather than solely seeking efficiencies. They can also invest in retraining workers who, without the right skills, risk job loss or wage cuts, undermining demand. Some companies are using the opportunity to gauge and strengthen the financial condition of their most vulnerable workers. Policy makers have a range of tools to support demand and after-tax income, ranging from fiscal stimulus to wage setting norms and predistribution (that is, preventing inequalities, for instance by providing better access to quality education, health care, and other support that enables higher earnings) and redistribution.
- **How can investment be increased—and directed to the right places?** Higher business, public, and household investment will be required to support both demand and productivity. Specific types of long-running investment gaps that could be closed now include sustainability, infrastructure, and affordable housing. For instance, in the United States, closing infrastructure gaps, which at the time of writing in early 2021 was gaining prominence in policy discussions, could produce an increase in annual investment equivalent to 0.5 percentage point of GDP.⁴⁷ Businesses are already considering making environmental, social, and governance issues more central to their decision-making process. Given recent innovation in some of these areas (for instance, falling solar power costs) and changing regulations, some investment opportunities are increasingly attractive. Additionally, firms can work toward setting higher sustainability standards and invest in line with those, getting ahead of the regulatory process. McKinsey surveys find that corporate executives expect sustainability to gain further importance, meaning companies can take advantage of access to capital and labor to invest in areas such as hydrogen, green aircraft, carbon capture, electricity storage, and the renovation of housing.⁴⁸ Governments, in turn, can support such investment by setting rules and pricing externalities, such as for carbon emissions. They could also look at rules governing land and housing markets to unlock investment. Furthermore, they can raise direct investment in high-priority, high-impact areas such as infrastructure, basic science, and skill building. To unlock funds, they could revisit the rules governing public investment, recognizing it as a public wealth-building activity on a balance sheet rather than as a deficit-increasing fiscal expense.

⁴⁷ *Bridging infrastructure gaps: Has the world made progress?* McKinsey Global Institute, October 2017.

⁴⁸ "Sustainability's strategic worth: McKinsey Global Survey results," July 2014, [McKinsey.com](https://www.mckinsey.com).

Shifts in consumer and business behavior under the pressure of the pandemic offer hope that a more dynamic economy could emerge from the crisis—a welcome productivity dividend. However, business advances on potential drivers of higher productivity growth need to be more widespread, and demand must be robust well after the initial spike in consumption that many expect once the health crisis is effectively managed. Notably, the very changes made by some companies that could potentially deliver an acceleration in productivity growth could exacerbate structural weakness in demand and risk higher unemployment, economic stagnation, and higher inequality. The situation requires simultaneous recovery in supply and demand that is sustained over the longer term. The boldness and speed with which businesses and governments responded to the pandemic now need to be deployed to craft a broad-based, equitable, and sustainable recovery.

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