

BCG Perspectives

Facts, scenarios, and actions for leaders

Galvanizing nations for the new reality

COVID-19 BCG Perspectives

Objectives of this document

COVID-19 is a global societal crisis

We at BCG believe that the COVID-19 outbreak is first and foremost a societal crisis, threatening lives and the wellbeing of our global community. Society now more than ever, needs to collaborate to protect people's lives and health, manage midterm implications, and search for lasting solutions.

Leaders need to drive an integrated response to navigate the crisis

It is the duty of health, political, societal, and business leaders to navigate through this crisis. A complex interplay of epidemic progression, medical response, government action, sector impact, and company action is playing out. This document intends to help leaders find answers and shape opinions to navigate the crisis in their own environments. It encourages thinking across the multiple time horizons over which we see the crisis manifesting itself.

COVID-19 will be a journey with three distinct phases, requiring an integrated perspective

Flatten	Fight	Future		
Typically the initial phase after a pandemic outbreak–goal is to urgently limit number of new cases , especially critical care	Finding paths to collectively fight the virus, restart the economy, and support society in balancing lives and livelihood	Disease controlled through vaccine/cure/ herd immunity, and treatment within sustainable medical capacities possible		
Social distancing (lockdown) and partial business closures, lead to economic recession with large employment impact	Increasing economic activity with recovering GDP, some business reopenings, and social distancing on sustainable level	Reactivated economy with strong business rebound and job growth, social restrictions limited or completely suspended		
	 Disease progression, health care system capacity, and response Government policies and economic stimulus Economic scenarios 			
	4. Business engagement and response			
	5. Public engagement and response			

All of the above five factors result in specific economic and social outcomes in each phase

Executive Summary | COVID-19 BCG Perspectives

Governments are actively responding to the societal crisis that is threatening lives and livelihoods. Need to further prepare for the new reality

- COVID-19 is a global societal crisis, threatening lives and the wellbeing of our global community
- Governments across the globe are racing to respond to the human suffering and economic loss; announced stimulus packages are unprecedented
- As governments plan for the new reality, they need to 1) enhance social and economic resilience; 2) build and strengthen capabilities required for the future; 3) deploy equitable and forward-looking financial support
- To ensure effectiveness of stimulus packages, government leaders need to follow best practices in aim, design, channel mix, and governance
- Business leaders need to actively engage with governments. Stepping up on social responsibility is critical

Across countries, efforts to flatten the curve and ramp-up testing continue. The impact on economy and businesses persists

- Globally, 2.5 million patients have recovered from COVID-19 and the case-doubling rate has improved to 37 days
- As countries move into the 'Fight' phase, several have started to see a decline in daily case while some emerging economies continue to see an increase
- Many governments have started to relax lockdown measures; continued testing capacity ramp-up is critical in many countries
- Economic forecasts are deteriorating; rebound of global GDP not expected before 2021; 20-45%+ of employees in major economies affected
- Multiple sectors continue to be stressed; 11 sectors with a number of companies have more than 15% probability of default

We believe during this crisis leaders need to think along two dimensions: Taking an integrated perspective on health/medical progression, governmental responses, societal reactions, and economic implications to understand business/sector impacts

Thinking multi-timescale in a Flatten-Fight-Future logic



Guide for leaders

Enhancing social and economic resilience

Building and strengthening capabilities for the future

Deploying equitable and forward-looking financial support

Updated epidemic progression and impact

Epidemic progression and virus monitoring

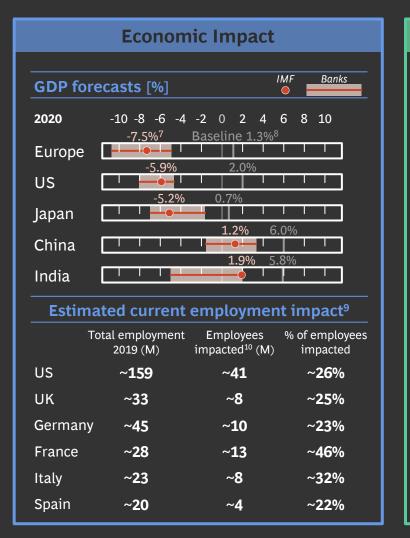
Economic and business impact

Government response

COVID-19: Impact dashboard

As of 29 May 2020

Epidemic Progression						
5.9M # of cases	2.5M # of recoveries		365 K # of fatalities			
		1 May	15 May	29 May		
# of days of case doubling¹		26	33	37		
# of reported recove as % of total cases	eries	32%	36%	42%		
# of countries with 1k+ cases		87	98	112		
# of tests / case ²		11	14	17		
# of tests / million ²		16k	24K	44K		
		Vaccii	ne Trea	atment		
Trials in pre-clinical stage and beyond ³	1	144	:	125		
Trials in Phase 1 an beyond ⁴	ıd	9		52		
Current est. timelin for approval & scale	-	12-36 6-24 months ⁵ month				



Business Impact								
Stock market performance ¹¹								
20 Mar vs 21	Feb -31%	-30% -3	4% -10%					
29 May vs 21	Feb -9%	-18%	5% -6%					
	S&P500	FTSE100 D	AX CHN SSE					
To	otal Shareh	older Returi	ns ¹¹					
First column: 2	21 Feb to 20 Ma	r; Second columr	n: 21 Feb to 29 May					
	Americas	Europe	Asia					
Pharma	-19% 4%	-20% -5	<mark>-22%</mark> 8%					
F&B ¹²	-26% -12%	-24% -13%	-12% -2%					
Telecom	-17% -11%	-20% <mark>-17%</mark>	-14% -12%					
Software	-30% -2%	-32% <mark>-10%</mark>	-28% -10%					
Retailing	-42% <mark>-13%</mark>	-36% <mark>-16%</mark>	-24% 7 %					
Capital goods	s <mark>-38% -15%</mark>	-35% -20%	-29% -9%					
Auto	-47% -24%	-45% -21%	-32% -12%					
Real Estate	-42% -31%	-26% -27%	-22% <mark>-20%</mark>					
Energy	-56% -31%	-45% -31%	-41% <mark>-28%</mark>					
Banks	-41% -31%	-44% -40%	<mark>-26%</mark> -15%					

^{1.} No. of doubling days based on 7 day CAGR; 2. Median of values for top 15 countries by nominal GDP (except China); 3. Ongoing trials including pre-clinical, Phase 1 (first trial in humans), Phase 2, Phase 3, Phase 4; 4. Ongoing trials including Phase 1 (first trial in humans), Phase 2, Phase 3, Phase 4; 5. 12 month development "best case", then likely to require time time to scale across population; 6. Remdesivir is approved now, could be more widely available by Jul '120. For the next wave, estimated timeline is Oct '20 – April '22 (6-24 months). If first round of Merica being reported, as a first provided of the provided of the provided in th

COVID-19 is a societal crisis, threatening lives, livelihoods, and the wellbeing of our global community

As of 22 May 2020

Economic recession

Employment impact

Structural starvation

Poverty aggravation

Domestic violence

-3%

Decline in global GDP forecast for 2020, rebound to pre-crisis level not expected until end of 2021

(IMF)

20-46%

Of employees in US and Europe impacted by unemployment and/or support programs

(BCG)

66%

Of African people run out of food and water after 14 days of stay-at-homeorder²

(PERC)

86M

Children worldwide at risk of slipping into poverty through end of 2020

(Save the Children)

60%

Increase in emergency calls by women subjected to violence by their partners

(WHO)

^{1.} Pharma, Telecom, Retailing, Materials, Transport, Media, Capital Goods, Auto, Real Estate, Energy, Hospitality with > 10% of companies with probability of default > 15% as of 15 May 2020 2. Study conducted on 20,990 adults across 28 cities in 20 African Union member states (March 29 to April 17, 2020)

Source: BCG

Governments across countries are racing to respond to the human suffering and economic loss

As of 29 May 2020



Switzerland fast-tracks emergency aid for small businesses weathering COVID-19



Singapore government ramps up reskilling efforts for sectors hardest hit by COVID-19



Coronavirus: India targets small businesses in economic bailout



Australian federal government unveils \$1.8 billion stimulus for local job growth



'You deserve a raise': Canada to help fund pay hikes for essential workers



Covid-19: emergency measures to help EU farmers and fishermen



Small-Business Loan Terms Eased Under U.S. House-Passed Bill

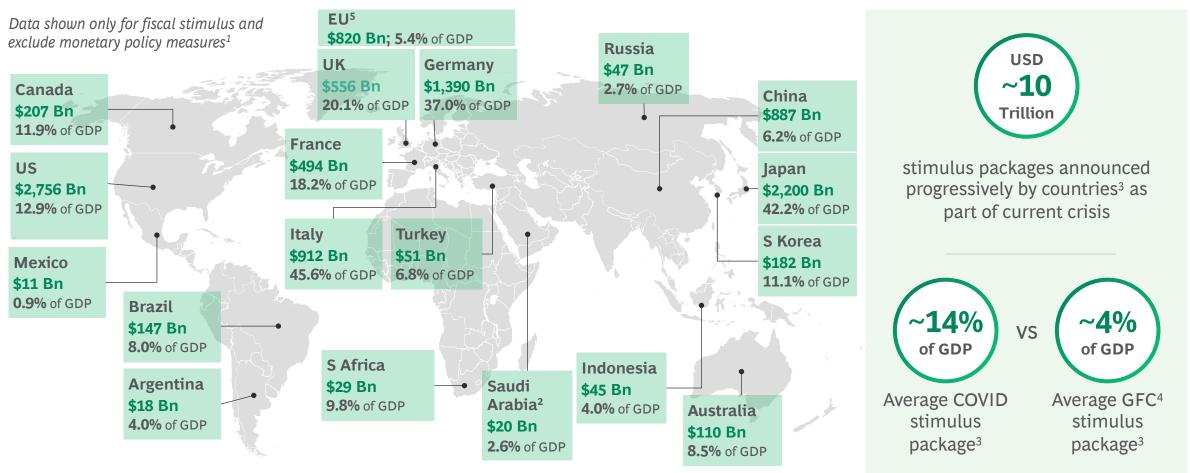


Germany's Angela Merkel calls for 'climate-friendly' coronavirus response

Updated 2 June 2020 Version 8.1

Announced stimulus packages are unprecedented, and already dwarf Global Financial Crisis scale





\$xx Bn Approx. Nominal Value of COVID-19 stimulus package in US dollars

^{1.} Numbers may differ from total stimulus announced by various countries due to composition including fiscal as well as monetary measures. Also, different methodologies used across countries in assessing the size of the stimulus e.g. inclusion of guarantees or value of tax deferrals; 2. Saudi Arabia total stimulus figure takes into account budget rationalization of ~40B announced by the Ministry of Finance on March 19th and May 11th; 3. Data is represented for G20 countries, excluding India; Total figure of USD10 trillion & 14% of GDP excludes EU figure as it is still pending member state approval 4. Global Financial Crisis 5. Pending approval of member states; GDP figure excludes the UK; Note: stimulus packages inclusive of loans and loan guarantees; figures include preliminary estimates from IMF as additional stimulus measures are being announced or details of individual measures being finalized; Sources: IMF, Reuters, Australian Treasury, Italy MEF, BMWI, OBR; BCG

Fight

Future

From crisis response ...

... to the new reality

Improve health care capacity (test, track and trace, treat)

Enhance social and economic resilience

Lockdown and restart approach (plan when and how)

Build and strengthen capabilities for the future

Protect the most vulnerable

Deploy equitable and forward-looking financial support

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1,046 measures in **188** countries announced so far

~\$570B

has been pledged globally toward social protection initiatives (0.7% of 2019 World GDP)1

55%

of measures are new benefits or programs recently deployed by the governments

Leaders need to continue the progress made...

Institutionalize selected new programs, use crisis as catalyst to close gaps

Engineer financial sustainability of basic protection measures beyond one-off stimulus

Ensure tripartite approach among government, business, and employees

Leverage digital delivery channels that are fast and cost-effective

Preserve agile and crossgovernment working mode

As of 29 May 2020

... and think holistically about how social protection can enhance resilience

Key pillars	Health	Basic needs	Income security				
		Need based on life-cycle and risks					
		Effectiveness					
Levers for design		Sustainability and funding					
101 0.00.511		Coherence of programs					
		Delivery models for businesses and beneficiaries					

1. Preliminary estimates on total global social protection spend since not all countries report on cost figures and some are planned volumes, 2019 Global GDP: 86.6 trillion from IMF; Source: OECD, ILO, World Bank, BCG Copyright © 2020 by Boston Consulting Group. All rights reserved. Updated 2 June 2020 Version 8.1.

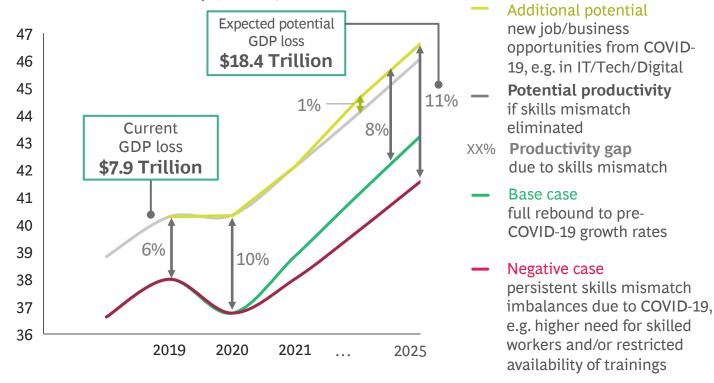
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Building capabilities for the future | Skills mismatch could cost ~\$18 trillion in unrealized GDP by 2025; mitigation measures need to be intensified

As of 18 May 2020

Existing skills mismatch have been exacerbated by COVID-19 crisis; due to increased need for high-skilled jobs, for example

Global Labor Productivity (US \$ K)¹



Governments have taken actions to address skills

Improve access and fill gaps

Australia promotes labor-sharing platforms to access staffing opportunities

Support up-/reskilling

Singapore subsidizes trainings to address structural labor market changes

Support critical services

Ireland reallocates workers to sectors low on capacity, for example, to health care

Further reading

Governments Must Fix the Skills
Mismatch for a Post-COVID World

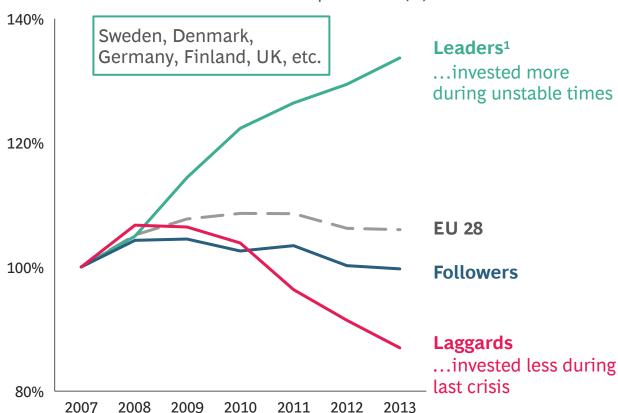
Building capabilities for the future | Counter-cyclical investments required; governments need to double down on innovation and digital

2

EU example from Global Financial Crisis

Invest counter-cyclically in innovation ...

Share of R&D in Total Government Expenditure (%)



... while building a conducive environment

Prioritize projects with future needs

- Stimulate digitization and innovation
- Focus on environmentally sustainable industries and maximize social returns²

Establish complementary policies

- Invest in supporting infrastructure
- Ensure that regulation keeps pace with technology and scientific advances

Drive collaboration and foster ecosystem

- Promote international partnerships
- Foster collaboration between academia and business

^{1.} Based on EU's Innovation Union Scorecard indicator for innovative performance pre-crisis (2007) 2. E.g. healthcare R&D, smart diagnostics, public health awareness Source: Public Investment in R&D in Reaction to Economic Crises – Longitudinal OECD Study

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Financial support | Stimulus packages essential for sustainable recovery; multiple waves may be required

3

As of 17 May 2020

Positive economic impact

Stimulus measures have historically demonstrated positive impact in accelerating economic rebound

Example: US emergency funding (2009 to 2011) raised the country's GDP by 2% to 2.5%

Context and goals shape stimulus design

Announced stimulus size and composition varies across countries based on context, priorities and objectives

Example: Canada and France among few countries to have linked stimulus to climate actions

Multiple waves

Largest stimulus historically multiple waves expected to help navigate crisis and address growing constituencies

Example: US stimulus of \$2 trillion revised to \$3trillion. Japan added \$1trillion to COVID response

Speed of deployment

COVID-19 stimulus funds to be fully deployed soon— execution and timely disbursal critical

E.g. Germany government disbursed €500M to freelancers within 4 days of launching grant program

3

As of 29 May 2020

Aim for equitable & sustainable growth

Focus on the most **vulnerable sectors**

South Korea employment security scheme for hardest hit sectors

design and implementation

Target systemically critical sectors & social/econ. multipliers

France, UK offer compensation schemes¹ to partially cover payroll

Invest in **new reality** and embrace sustainability

Canada creates Emissions
Reduction Fund

Determine an optimal stimulus design

Communicate consistently to all audiences

Financial support | Four principles emerge to ensure effective

Singapore shares infographics via social media and official websites

Tailor stimulus to the target groups, define eligibility **criteria**

Australia has guardrails & compliance checks for wage subsidies

Balance short- and long-term impact, have clear **exit strategy**

Germany's economic stabilization fund guarantees loans for 60 months

Select the right channel for disbursement

Leverage digital to boost productivity and reach

Brazil provided unbanked with smartphone based savings account

Use **existing channels** where possible

Switzerland unveiled CHF60 B for SMEs via bank network

Build for the future, e.g. use of **digital & fintech**

US launched **My Payment App** for the direct deposit of stimulus

Deploy inclusive governance structure

Set clear mandates and engage necessary stakeholders

Germany's MOF provides oversight and clear allocation of responsibilities to agencies and States

Coordination between **oversight** and **fiscal authority**

UK's Treasury and Bank of England monitor overall stimulus execution

Monitor and **provide transparency**

Germany has **KfW tracker** on loan requests

Further reading

Generating the Right Returns from Stimulus Packages

1. Applied by ~90% of G20 & OECD countries 2. Bank of England Source: BCG

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Critical for governments and businesses to track and understand long-term shifts

As of 21 May 2020

Consumption patterns will be altered in a non-linear way

Need for digital engagement has shifted consumer behavior, preference, and choice

Ex.: 48% of consumers plan to maintain their changed habits¹

Supply chain ecosystems will be very disrupted

Supply chains interrupted by uneven movement restrictions across nations

Ex.: 20-30% decline in global trade expected as result²

Competitive landscape will change dramatically

Pushed-out companies may generate attractive acquisition targets

Ex.: -4 to +6 p.p. market share for video-conferencing companies in two months³ New government and community expectations will emerge

Shift in balance of public and private mandates and need for social license-tooperate

Ex.: Auto OEM produces 30,000 respirators under Defense Production Act⁴

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Business leaders need to actively engage with governments

Implications for business leaders

Generate transparency



Support decision making



Benefit and give back

Create an understanding of starting situation of countries you operate in (impact on industries and society)

Monitor the **outcomes** governments are pursuing (short-term liquidity vs. long-term growth), and plan accordingly

Estimate the **expected impact** of stimulus packages on your sector and company, locally and abroad

Monitor the current **stage** of stimulus package (design phase, sector allocation, company breakdown, deployment)

Track and provide inputs on **next steps** government officials are thinking through (such as criteria to apply for companies)

Engage with stakeholders directly or via associations to explain context and critical needs

Build and evaluate options for bold strategic moves arising from economic agenda of relevant governments

Actively pursue viable diversification into other (and potentially more beneficial) businesses or geographies

Create an action plan to **benefit** from targeted future growth and also **give back** to society

16

Many companies already stepping up on social responsibility; which also positively impacts customer preferences

As of 29 May 2020

Help local communities

Mining company provides services to local communities—food, supplies, and training to 70 clinics

Support the weakest

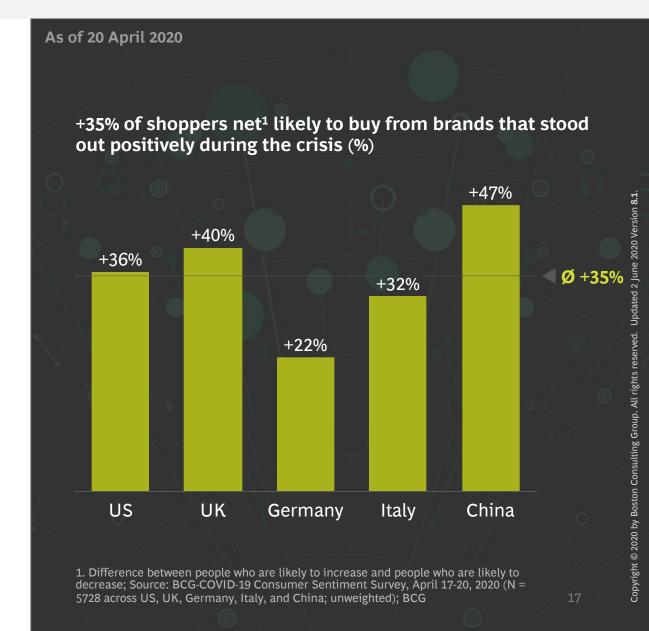
Mask manufacturer prioritizes customers according to their vulnerability

Step up for your people

Airline company supported evacuation efforts for ~90,000 people from multiple locations

Find quick/creative solutions

Natural resources company accelerates ~\$60 million liquidity to small suppliers by reducing payment terms





Guide for leaders

Enhancing social and economic resilience

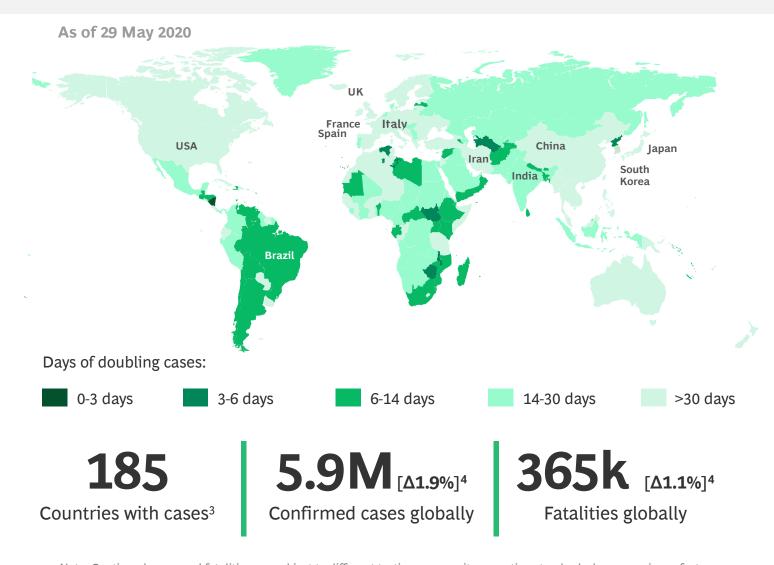
Building and strengthening capabilities for the future

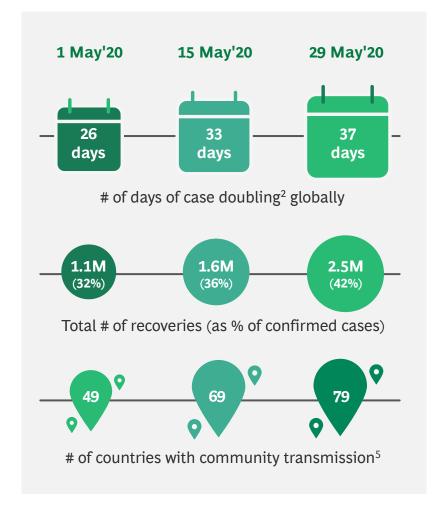
Deploying equitable and forward-looking financial support

Updated epidemic progression and impact

Epidemic progression and virus monitoring
Economic and business impact
Government response

Approximately 2.5 million reported recoveries¹ globally so far; case-doubling rate improves to 37 days





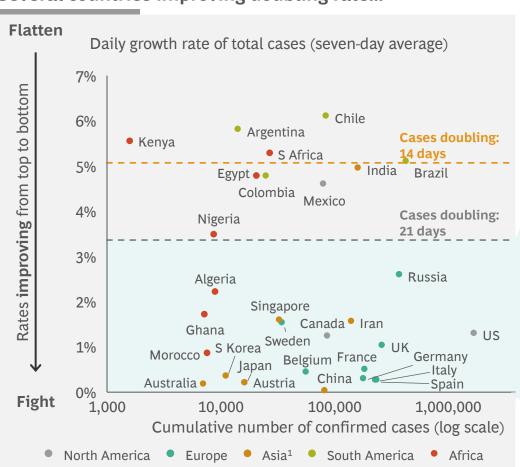
^{1.} Refers to total reported recoveries as a percentage of total reported infections (cases) 2. No. of doubling days based on 7-day CAGR 3. Basis Johns Hopkins CSSE 4. Daily growth rate basis 7-day CAGR; 5. Community transmission defined basis WHO - Countries experiencing larger outbreaks of local transmission on basis of decided factors Sources: Johns Hopkins CSSE; Our world in data; WHO situation reports; BCG

As countries move into Fight phase, several have started to see decline in number of daily cases

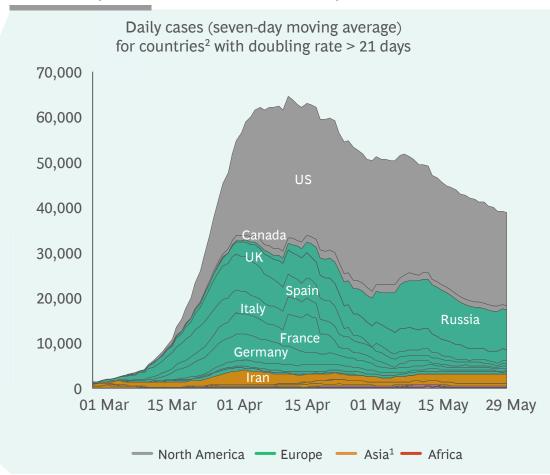
As of 29 May 2020

Non-exhaustive

Several countries improving doubling rate...



...driven by decline in number of daily cases



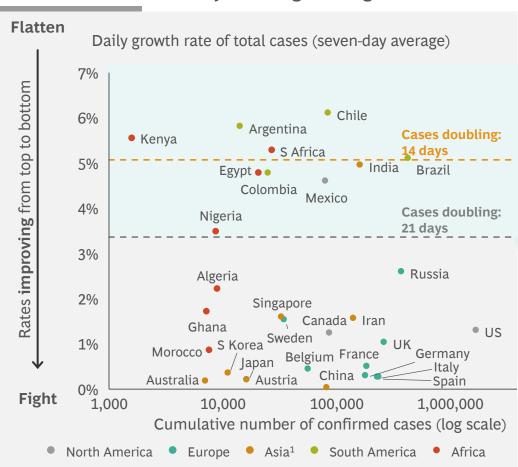
^{1.} Includes Middle East and Australia 2. Countries selected from the chart on the left Source: Johns Hopkins CSSE; Our World in data; BCG

Some countries currently have cases doubling under 21 days; strong monitoring essential in the next few weeks

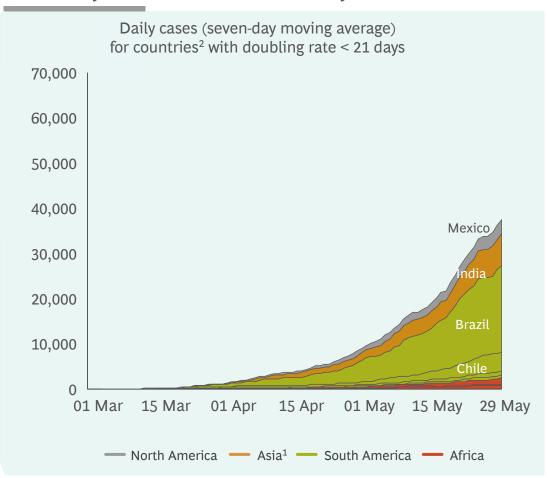
As of 29 May 2020

Non-exhaustive

Some countries currently have high case growth rate...



...driven by increase in number of daily cases



^{1.} Includes Middle East and Australia 2. Countries selected from the chart on the left Source: Johns Hopkins CSSE; Our World in data; BCG

Governments have started to relax lockdown measures

Max restrictions

Min restrictions

Index

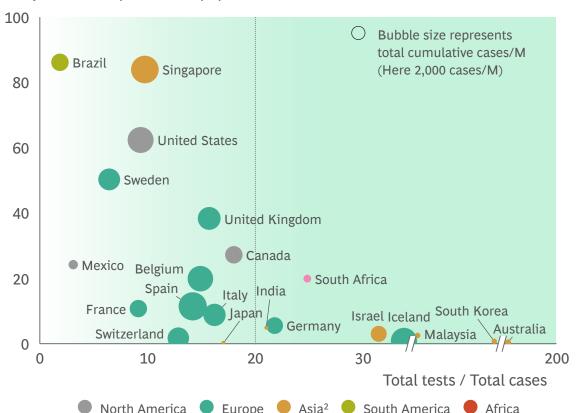
^{1.} Stringency index is calculated using 8 govt. policy indicators (School closing, workplace closing, public events cancellation, gatherings restriction, public transport closure, stay at home requirements, internal movement restrictions, international travel controls) and public information campaigns; represented for selected countries; Data as of 24^t May,2020. 2: In China, lockdown has been started only in Northeast region; Note: Lockdown is defined as "stay at home" orders from govt. People are allowed to go out only for essential activities like medical, grocery shopping, etc. following certain restrictions. Lockdown measures can differ across countries; Source: Oxford covid-19 Government response tracker; Our world in Data, News articles

As countries further relax lockdown measures, continued testing capacity ramp-up is critical

As of 29 May 2020 Non-exhaustive

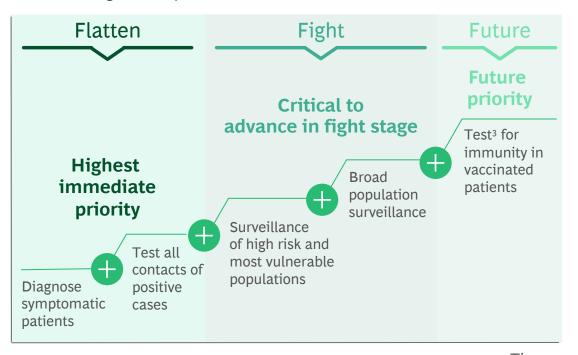
As countries ramp-up testing capacity...

Daily new cases per million population¹



..they must plan to move beyond testing symptomatic patients to greater degrees of population monitoring

Overall testing level required



Time

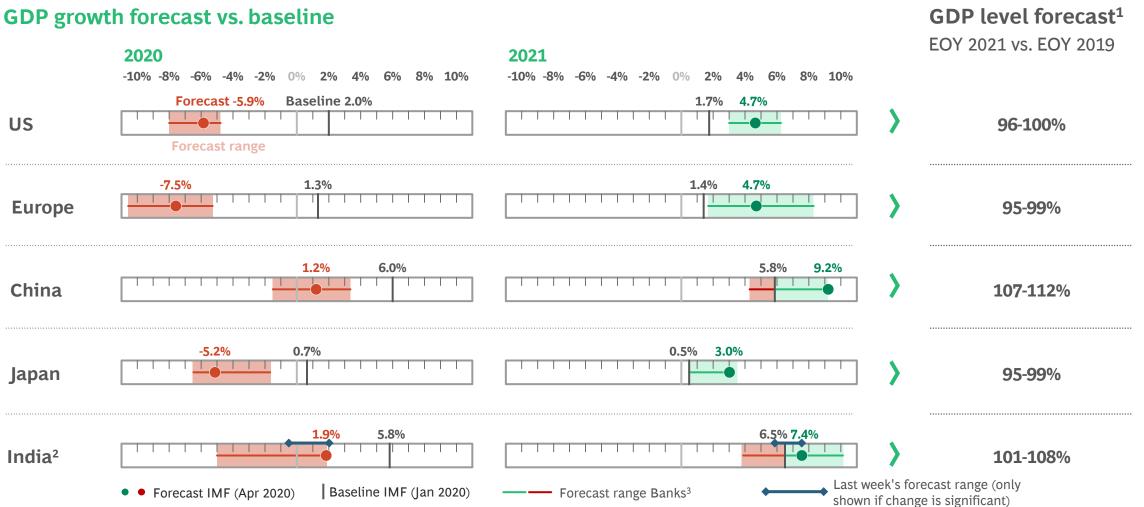
^{1.} Taken as 7-day moving average; 2. Includes Middle East and Australia; 3. Tests for testing immune response to vaccines may be different from current ones to test infection

Source: Our World in Data, Worldometer, BCG Analysis

ECONOMIC & BUSINESS IMPACT

Economic forecasts point towards severe downturn in 2020; rebound of global GDP not expected before 2021

As of 29 May 2020



Updated 2 June 2020 Version 8.1

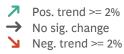
Multiple sectors continue to be stressed; 9 sectors with a number of companies with high¹ probability of default

As of 29 May 2020

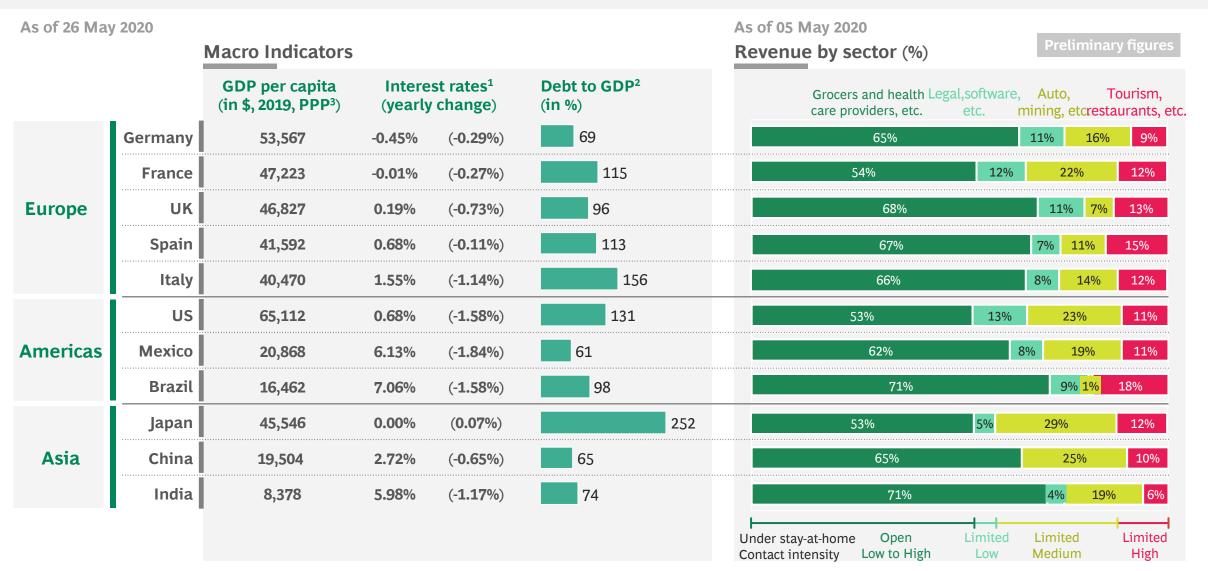
Decline reflects economic scenario and consumer sentiment

		TSR performance ²			Companies with probability of default >15% ³			
		21 Feb 2020 - 20 Mar 2020	21 Feb 2020 - 29May 2020	15 May 2020 - 29 May 2020	21 Feb 2020	29 May 2020	15 May 2020 - 29 May 2020	
Healthier sectors	Pharma	-20%	1%	7	0%	5%	7	
	Household Products	-16%	-3%	\rightarrow	0%	0%	\rightarrow	
Healtiffer Sectors	Food/staples Retail	-10%	-5%	\rightarrow	0%	0%	\rightarrow	
	Health Equipment	-31%	-6%	7	0%	0%	\rightarrow	
	Semiconductors	-30%	-7%	7	0%	0%	\rightarrow	
	Tech Hardware	-26%	-7%	7	0%	0%	\rightarrow	
	Retailing	-40%	-8%	7	0%	41%	7	
	Software	-30%	-8%	7	9%	8%	\rightarrow	
	Food & Beverage	-23%	-9%	7	0%	0%	\rightarrow	
Draceured costors	Materials	-32%	-11%	7	4%	13%	7	
Pressured sectors	Prof. Services	-30%	-11%	7	0%	0%	\rightarrow	
	Telecom	-17%	-11%	7	0%	12%	7	
	Transport	-34%	-13%	7	0%	36%	\rightarrow	
	Capital Goods	-35%	-15%	7	2%	11%	\rightarrow	
l	Financials	-35%	-15%	7	0%	0%	\rightarrow	
	Media	-36%	-15%	7	0%	15%	7	
Vulnerable sectors	Utilities	-30%	-16%	7	0%	0%	7	
	Auto	-41%	-17%	7	0%	33%	\rightarrow	
	Durable Goods	-39%	-19%	7	0%	5%	\rightarrow	
	Insurance	-39%	-26%	7	0%	0%	\rightarrow	
	Hospitality	-44%	-28%	7	7%	36%	7	
	Real Estate	-39%	-29%	7	0%	17%	\rightarrow	
	Energy	-52%	-31%	7	0%	21%	7	
	Banks	-39%	-31%	7	0%	4%	\rightarrow	

Note: As of 6 May 2020; Based on top S&P Global 1200 companies; Sectors are based on GICS definitions; 1. Companies with probability of default >15%; 2. Performance is tracked for two periods, first from 21 February 2020 (before international acceleration of outbreak) to 20 March 2020 (trough of the market) and from 21 February 2020 through 29 May 2020 based on median; 3. Implied by 5-year Credit Default Swap based on median Source: S&P Capital IQ; BCG ValueScience® Center; BCG



Governments face different starting points for stimulus response



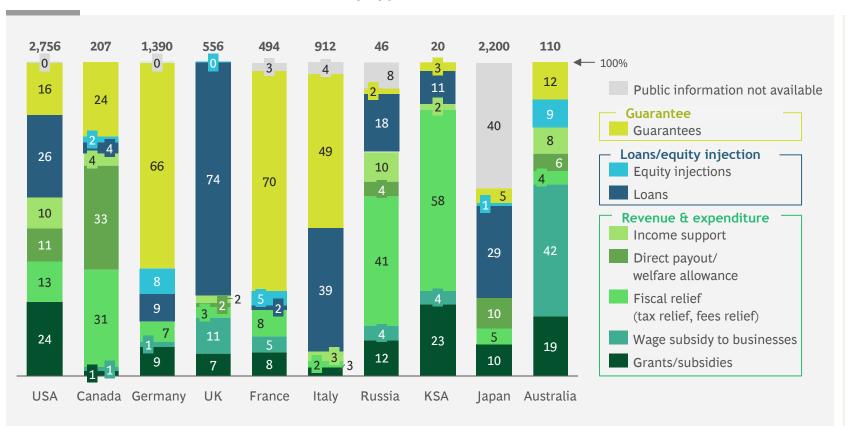
^{1. 10} year government bond yield 2. 2020 number per IMF Fiscal Monitor April 2020 3. Purchasing power parity
Note: European figures reflect gross output by sector, which is analogous to revenue by sector. US figures directly reflect revenue by sector.
Source: Eurostat Database; CNBS; Statistics Bureau of Japan; St. Louis Fed; O*NET; American Community Survey; other country-specific sources on request; BCG

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Due to different starting points, governments have opted for a different mix of measures

As of 28 May 2020

Select countries' stimulus breakdown by types of measure (%)





Germany, UK, and Japan's stimulus spend targeted at businesses

~40%

Australian stimulus funding targeted at workers via wage subsidy program

~2-9%

UK, US, and Germany funding dedicated to health care

Canada and France have linked stimulus support to climate actions¹

^{1.} Canada linked CA\$1.7B support for the oil & gas sector to cleaning up orphan and inactive oil and gas wells, and set up CA\$750M Emission Reduction Fund; France has set green conditions for the €7bn state loan to Air France and work toward being the world's "most environmentally friendly" airline

Additional perspectives on COVID-19

COVID-19 BCG Perspectives



Edition #7

Sensing Consumer Behavior & seizing Demand Shifts



Edition #5

Revamping
Organizations for the
New Reality



Edition #3

Emerging stronger from the Crisis



Edition #6

Restructuring Costs, and managing Cash and Liquidity



Edition #4

Accelerating Digital & Technology
Transformation



Edition #2

Preparing for the Restart

Selected general publications



People & organization

Governments Must Fix the Skills Mismatch for a Post-COVID World



Diversity & Inclusion

Digital & Easing the COVID-19
Burden on Working
Parents



Economy

Companies Need to Prepare for the Next Economic Downturn



Climate & Environment

<u>Climate Should Not Be the</u> Virus's Next Victim



Leadership

<u>Is Leadership Your Agile</u> <u>Blindspot?</u>



Economics & Society

How Chinese Companies
Have Responded to
Coronavirus





Public Sector

Start Reimagining
Government Now Beyond the Curve



Public Sector

Three Paths to the Future



Healthcare

Restoring Patients'
Confidence in Elective
Health Care



Public Sector

Generating the Right
Returns from Stimulus
Packages



Public Sector

How Governments Can Galvanize Their Nations for the Rebound



Agriculture

Signs of Rebound Forecast a New Era for Agriculture

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