



Executive
Perspectives

Lessons learned from the frontline of the global COVID-19 vaccine rollout

March 2021



BCG Executive Perspectives

OBJECTIVES OF THIS DOCUMENT

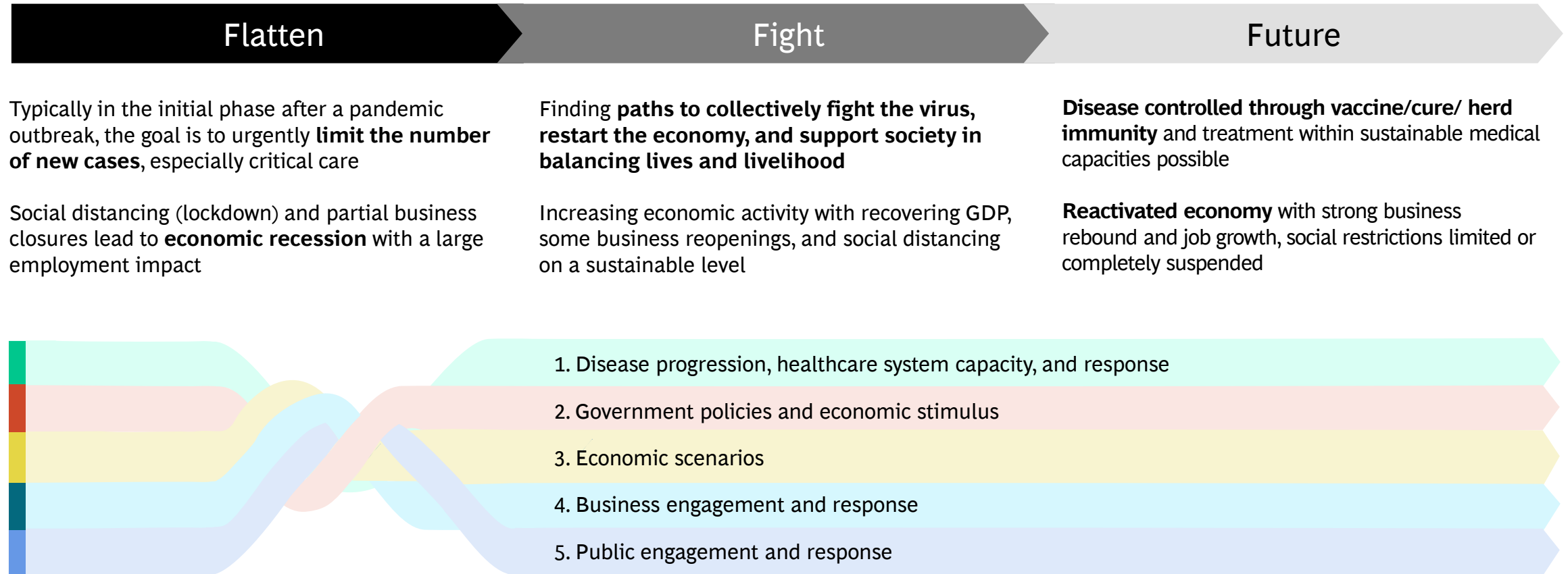
COVID-19 IS A GLOBAL SOCIETAL CRISIS

We at BCG believe that the COVID-19 outbreak is first and foremost a societal crisis, threatening lives and the well-being of our global community. Society now, more than ever, needs to collaborate to protect people's lives and health, manage mid-term 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, societal 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

The COVID-19 recovery will be driven by disease progression, de-averaged economic impact, government policies, and business and public responses



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

Summary snapshot | Restart progression at a glance

As of 15 Mar 2021

To be updated in forthcoming editions

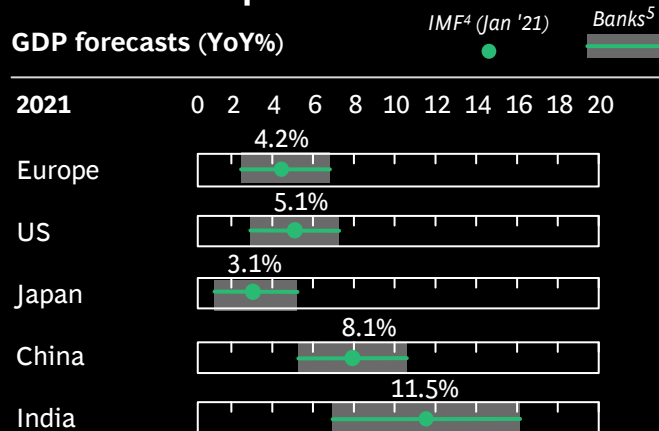
Epidemic Progression

Global epidemic snapshot

120M	20.7M	2.7M	359M		
# of cases	# of active cases	# of fatalities	Vaccine doses administered		
		Nov	Dec	Jan	Feb
Month-on-month growth of new cases ²	Americas	1.7x	1.4x	1.1x	0.6x
	Europe	1.8x	0.8x	1.1x	0.7x
	Asia ³	1.0x	1.1x	0.7x	0.9x

Economic Impact

GDP forecasts (YoY%)



Consumer Activity

Mobility

		Nov	Dec	Jan
Mobility ⁶ (month vs. Jan '20)	US	-20%	-20%	-26%
	Europe	-31%	-34%	-47%
	Japan	-7%	-6%	-22%
Domestic air travel tickets booking ^{7,8} (YoY)	US	-45%	-43%	-54%
	UK	-55%	-53%	-78%
	China	-5%	-15%	-37%

Sales

Retail goods sales ⁹ (excl. auto & fuel, YoY)	US	5%	2%	10%
	Europe ¹⁰	0%	2%	-4%
	China	4%	4%	
Passenger vehicle sales ¹¹ (YoY)	US	-21%	-9%	-15%
	Europe	-5%	-3%	-22%
	China	13%	7%	30%

Business Impact

Stock market performance

Month end vs. 02 Jan '20	Nov	Dec	Jan
S&P500	11%	15%	14%
FTSE100	-18%	-15%	-16%
CHN SSE	10%	12%	13%
Volatility Index (S&P500) ¹²	1.6x	1.8x	2.7x

International trade

Trade value ¹³ (YoY)	US	1%	3%	2%
	France	0%	5%	
	China	14%	13%	

Industrial production

Purchasing manager's index ¹⁴ (base = 50)	US	57	57	59
	EU	54	55	55
	China	52	52	51
Steel production (YoY) ¹⁵		6%	6%	8%

1. Calculated as 7-day rolling average; 2. Calculated as monthly average of daily cases vs. previous month; 3. Includes Middle East and Oceania; 4. IMF Jan 2021 forecast; 5. For India, forecast is for financial year; for others, it is for calendar year; YoY forecasts; range from forecasts (where available) of World Bank, International Monetary Fund, JP Morgan Chase, Morgan Stanley; Bank of America; Fitch Solutions; Credit Suisse; Danske Bank; ING Group; HSBC; As of reports dated 08 June 2020 to Mar 01 2021; For India's GDP forecast, World Bank's 2020 forecast from 08 June provides the upper bound of the forecast range; 6. Mobility values are calculated as the average of mean monthly mobilities in workplace, public transit, retail & recreation, and grocery & pharmacy and compared to a baseline from 03 Jan - 06 Feb 2020; Europe mobility values are calculated as the average of Germany, France, UK, Spain, and Italy; 7. Calculated as change in last 14 days rolling average value as compared to same period last year; 8. As of 01 Mar 2021; 9. Retail goods sales include online & offline sales and comprise food & beverages, apparel, cosmetics & personal care, home appliances, general merchandise, building materials, do not include auto, fuel & food services; 10. Europe includes 27 countries currently in EU; 11. Figures represent passenger vehicle (including sedan, hatchback, SUV, MPV, van and pickup) sales data for over same month in previous year; Europe value calculated as cumulative sales in Germany, France, UK, Spain, and Italy; 12. Underlying data is from Chicago Board Options Exchange Volatility Index (VIX); Volatility Index is a real-time market index that represents the market's expectation of 30-day forward-looking volatility and provides a measure of market risk and investors' sentiments; 13. Calculated as sum of imports and exports, measured in USD and compared to previous year period; EU trade values between EU and all outside countries; 14. PMI (Purchasing Manager's Index) is a diffusion index that summarizes whether market conditions, as viewed by purchasing managers, are expanding (>50), staying the same (50), or contracting (<50); 15. Data corresponds to G-20 countries (minus Indonesia). Source: JHU CSSE, Our World in Data, WHO, World Bank, IMF, Bloomberg, Google Mobility, US Census Bureau, Eurostat, PRC National Bureau of Statistics, ACEA actuals, Marklines, ARC ticketing data, STR, Statista, CBOE, OECD, BEA, GACC (customs) China, ONS, BCG



BCG Executive Perspectives

AGENDA

LESSONS LEARNED FROM THE FRONTLINE OF THE GLOBAL COVID-19 VACCINE ROLLOUT

Global vaccine development and implementation

Equitable vaccine distribution and path to normality

UPDATED ANALYSES AND IMPACT

Epidemic progression and virus monitoring

Economic and business impact

7 key lessons learned from the frontline of the global COVID-19 vaccine rollout

A

INITIAL FINDINGS

Develop and implement global COVID-19 vaccination program with unprecedented speed

B

STRATEGIC PRIORITIES

Minimize harm from COVID-19 and maximize equitable distribution within and across nations

1

Vaccine development in record time

Safe and effective vaccines were developed, tested, and approved with unprecedented speed

2

Vaccination uptake will follow "S-curve"

Vaccine uptake can be modeled along a predictive path, shaped by shifting constraints and supply

3

Vaccine effectiveness proven in real world

Israel is a successful example showing that broad vaccination across the population results in controlling cases

1

Developed nations must focus on uptake

Developed nations will soon have adequate supply, but must address hesitancy to increase demand

2

Urgency to get vaccine to Southern Hemisphere as winter approaches

Low- and middle-income countries lack vaccine supply; redistribution from developed nations is crucial to protect populations

3

Phased approach to reopening will save lives

A planned and phased approach to reopening alongside other public health measures is critical

4

COVID-19 will stay; goal to treat as "next flu"

COVID-19 will not be fully eliminated; the mid-term objective is to de-risk and manage it like the "next flu"

A.1 Vaccine development in record time

Safe and effective vaccines were developed, tested, and approved with unprecedented speed

Key findings

Vaccine candidates

As of March 15th, 2021, **12¹** vaccine candidates have been approved for use globally

Registration trials have resulted in **0 hospitalizations and deaths**

Process acceleration

Despite concerns, **no** steps were skipped in the vaccine development process

Regulatory agencies substantially **accelerated review** between phases

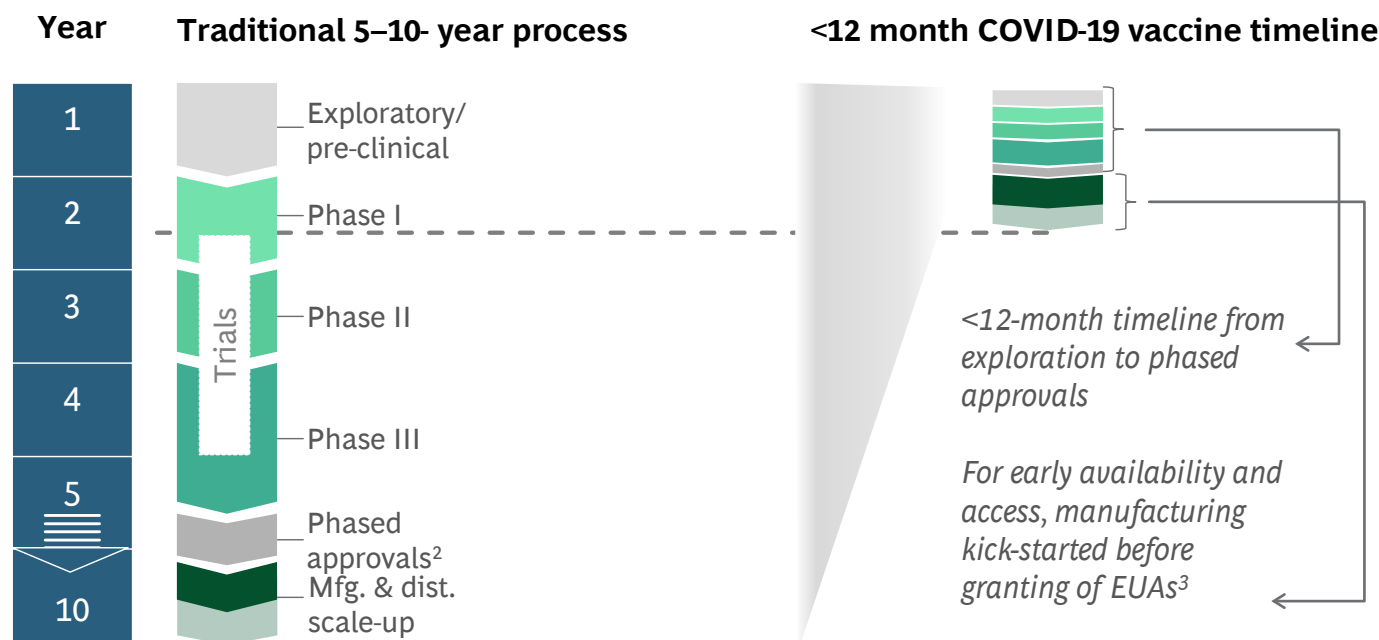
Looking ahead

Clinical assessments for approved vaccines will **continue** throughout vaccination rollout

Thus far, vaccines scrutinized by scientific community were found **safe and effective**

Both public health and private organizations continue to emphasize importance of vaccination and **combating misinformation** with **education** on vaccine safety and efficacy

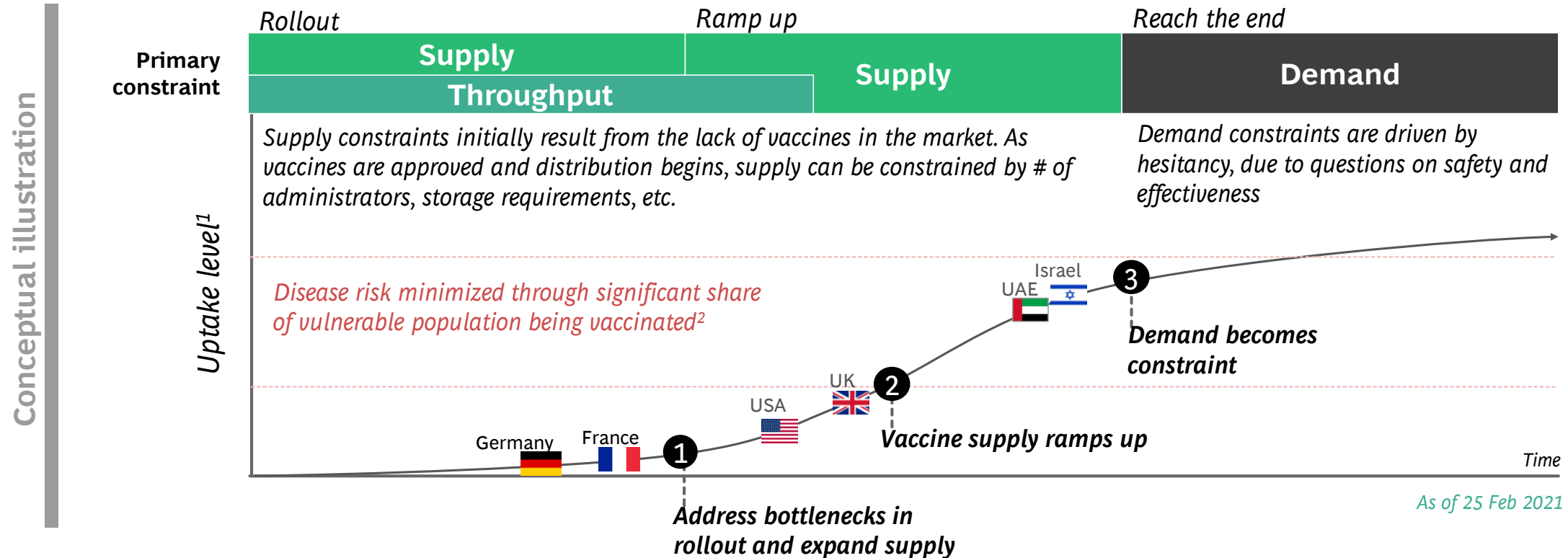
Vaccine development timeline



1. CanSino Biologics, Sinovac, Gamaleya, WIBP Sinopharm, BIBP Sinopharm, Vektor, Pfizer BioNTech, Moderna, AstraZeneca, Bharat Biotech, CoviVac, Janssen; 2. Phased approvals are sequential approvals for specific segments of population based on Phase III results; 3. Emergency use authorization
Source: FDA, CDC, Press search, BCG

A.2 Vaccination uptake will follow "S-curve"

Vaccine uptake can be modeled along a predictive path, shaped by shifting constraints and supply

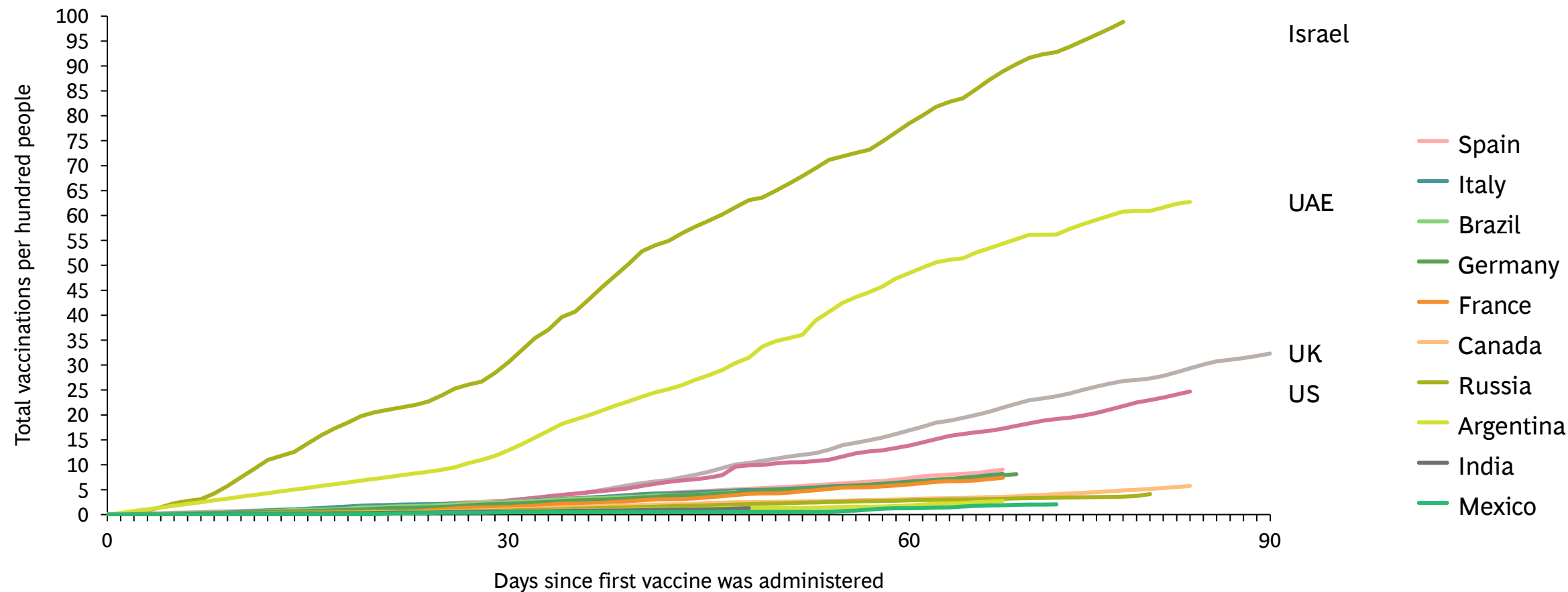


Looking ahead

As nations continue to obtain more vaccine supply, they will reach an inflection point where demand will be the primary constraint. Priorities will shift from increasing vaccine supply to increasing uptake among different populations, particularly those that are vaccine hesitant

A.2 (continued) Vaccine campaigns are underway globally; countries are at different stages

Cumulative COVID-19 vaccinations given per 100 people *as of 05 March 2021*



Note: Data counted as a single dose and may not equal the total number of people vaccinated, depending on the specific dose regime. For China and Russia, first available data point in December is treated as Day 0, although vaccinations commenced in Summer/Fall 2020
Source: Our World in Data

A.3 Vaccine effectiveness proven in real world

Israel is a successful example showing that broad vaccination across the population results in controlling cases

Key statistics

Vaccination

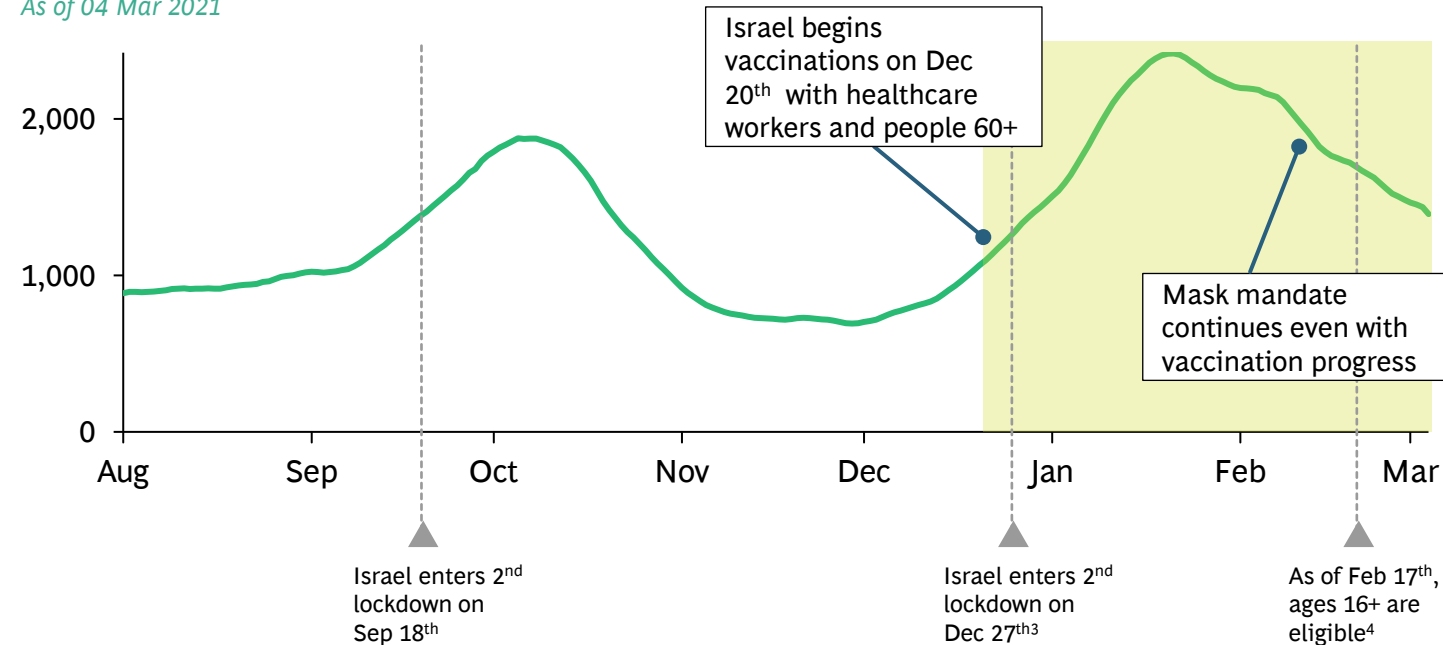
>**50%** of total population has received at least 1 dose (~4.5M people)

>**80%** of people aged 60+ are fully vaccinated

~**50%** decrease in hospitalizations since peak¹

Daily hospitalizations in Israel²

As of 04 Mar 2021



Looking ahead

Israel continues to vaccinate more people while continuing with other **public health measures**

Israel continues to promote vaccination while closely monitoring different **variants**

Reopening continues as vaccinated people are issued a "**green pass**", which can be presented on paper or via mobile

1. Change in 7-day trailing average of daily hospitalizations from Jan 21st peak to Mar 4th; 2. 7-day trailing average of daily hospitalizations in Israel; 3. Third lockdown ended on February 8, 2021; 4. People with severe allergic reactions, recovered patients, and <16 years are not yet eligible
Source: Our World in Data; Israel Ministry of Health; MedRXIV; Jerusalem Post; Times of Israel; CNN

B.1 Developed nations must focus on uptake

Developed nations will soon have adequate supply, but must address hesitancy to increase demand

Vaccine supply

Vaccine hesitancy

U.S. example shown

U.S. vaccine supply forecasts

Based on current manufacturer commitments, the U.S. will have enough vaccines available for:

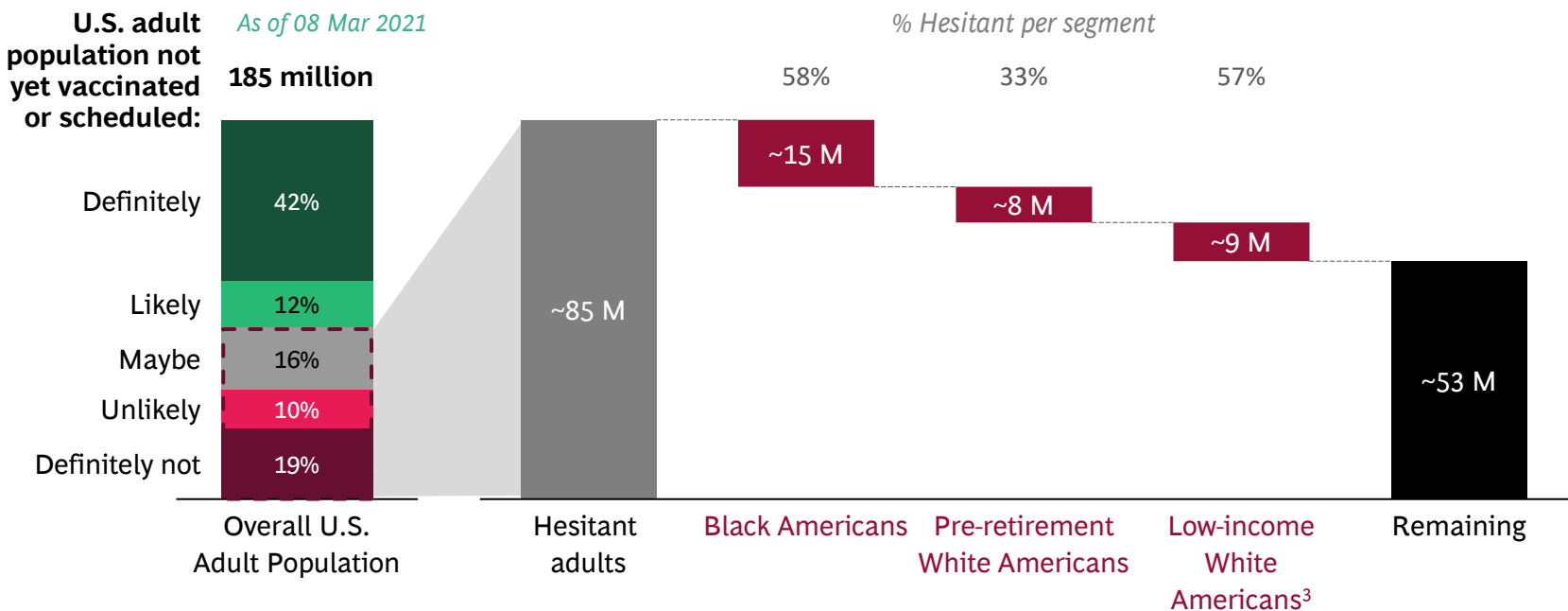
- 200 million people in CDC's priority groups by early May¹
- All 250 million U.S. adults by end of May²

Looking ahead

Rapidly expand vaccine throughput **capacity** to accommodate for supply increases immediately

This includes building **slack capacity** into system to allow for uneven supply releases

Urgently address **vaccine hesitancy** through targeted outreach to increase uptake of vaccine



1. Captures all priority groups (~202M) including healthcare workers, 65+, health vulnerable, and essential workers since prioritization varies across states ; 2. 77% of US population (~253M) over 18 years old; 3. Excluding Black Americans and White Americas age 55 to 64. Note: Vaccine supply estimates based on US purchasing agreements, including for J&J vaccine, which was given Emergency Use Authorization by FDA late February; Assumes near constant flow of doses from manufacturer. Hesitancy is attributed to respondents who answered 'Maybe,' 'Somewhat unlikely,' or 'Highly unlikely' to a question asking whether they would make an appointment for a COVID-19 vaccine today if it were available; responses filtered to include only individuals who had not already received a vaccine and were not scheduled to receive a vaccine at the time of the survey. Source: BCG National Vaccine Sentiment Survey February 17-22, 2021; n = 1,450; overall sample representative of US adult population by age, income, ethnicity, gender, and region); US American Community Survey 2019; CDC COVID Data Tracker; New York Times; Bloomberg; NPR; Pfizer, Moderna, and J&J press releases

B.2 Urgent need to get vaccine to Southern Hemisphere as winter approaches

Low- and middle-income countries¹ lack vaccine supply; redistribution from developed nations is crucial to protect populations

Administered vaccines

70%

of vaccines have gone to people representing 20% of countries

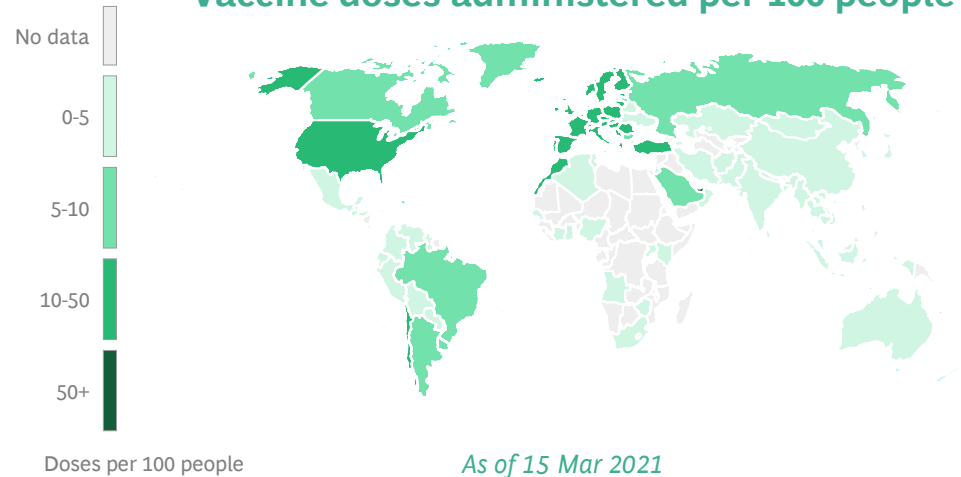
These countries have an average GDP per capita more than 2x global average

Vaccine contracts

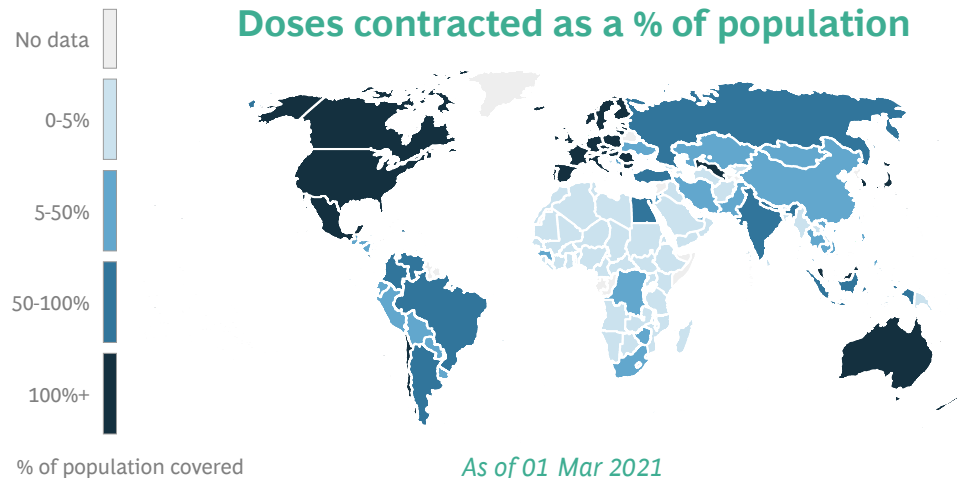
50%

of countries have only secured enough vaccine supply for 5% of their population

Vaccine doses administered per 100 people



Doses contracted as a % of population



Looking ahead

Mission critical to protect populations in low- and middle-income countries as **variants** proliferate and **winter** approaches in the Southern Hemisphere

It is imperative to **redistribute vaccines** immediately from wealthy nations to prevent impending health crises

1. Low- and middle-income countries, defined as countries with a GNI per capita of <\$12,536 per year (World Bank)
Source: Our World in Data; Bloomberg Vaccine Contract Tracker

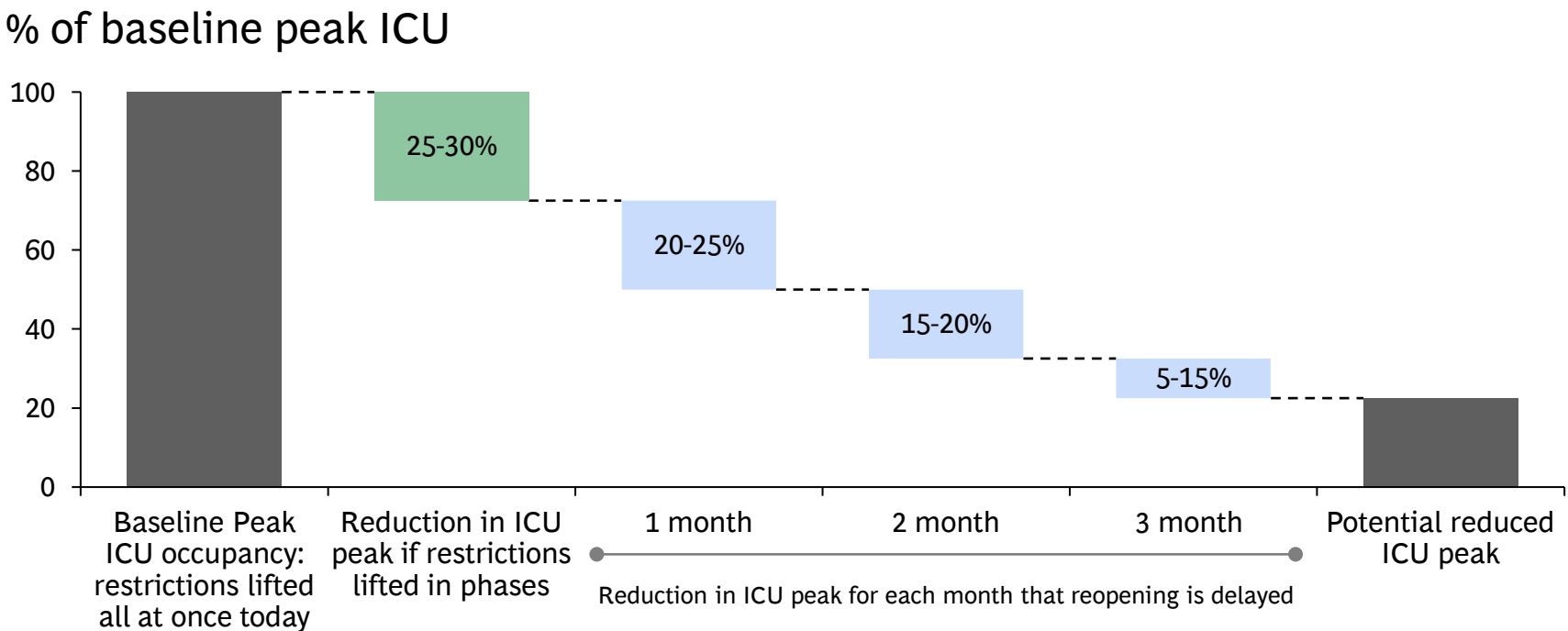
B.3 Phased approach to reopening will save lives

A planned and phased approach to reopening alongside other public health measures is critical

Modeled effects of reopening decisions

65-90% reduction in peak ICU occupancy projected by phasing the lifting of restrictions and delaying reopenings

Modeled impact of phased and delayed reopening decisions on ICU occupancy peak



Looking ahead

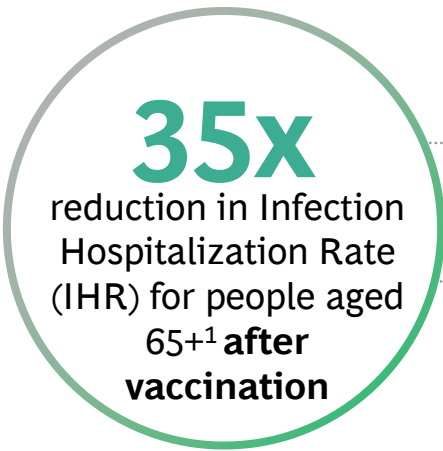
It is critical for businesses, schools, etc. to use a **phased reopening** approach, with clear thresholds for action based on local **infection dynamics** and **vaccination progress**

As reopening commences, COVID-19 testing, contact tracing, and other public health measures **should continue** to be upheld

B.4 COVID-19 will stay; goal to treat as "next flu"

COVID-19 will not be fully eliminated; the mid-term objective is to de-risk and manage it like the "next flu"

Hospitalization rates



COVID-19 vaccines can help reduce hospitalization rates to **manageable levels** that are even **below** the hospitalization rates of the **annual flu**

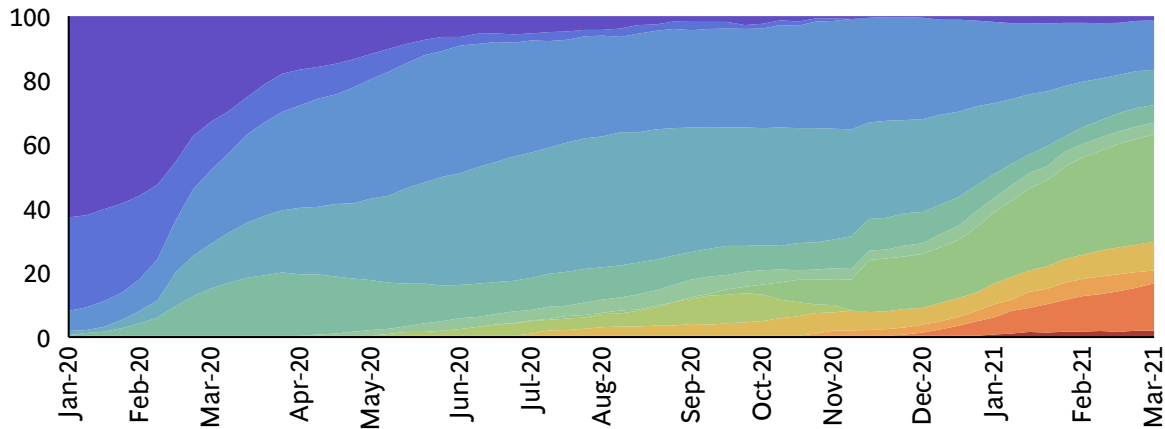
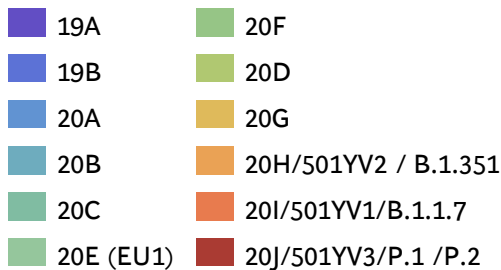
Looking ahead

Through **regular vaccination**, COVID-19 risk can be managed to levels similar to those of the **annual flu**

Variants introduced over time pose risks to vaccine efficacy

As of 05 Mar 2021

Variants



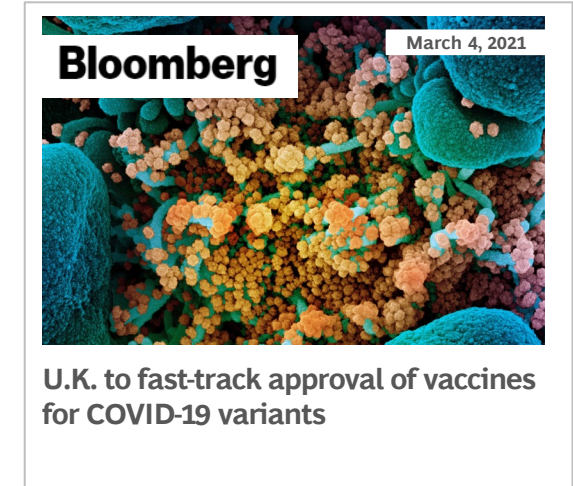
Variants have the potential to **increase** COVID-19 infectiousness and/or **decrease** vaccine effectiveness

Booster shots administered on a regular cadence can help **combat variants**

1. Derived using the CDC's data on COVID-19 net hospitalization, South Korea's hospitalization data, and data from the New York City Department of Health and Mental Hygiene. Note: Several of the concerning variants (e.g., those first identified in the UK and South Africa), share mutations (e.g., N501Y), while also having distinct mutations (some more than others)
Source: JAMA, Nextstrain, Financial Times, Virological, CDC, New York City Department of Health and Mental Hygiene, real world data in South Korea and Israel, BCG analysis

Vaccine roll-out underway amidst spread of COVID-19 variants; vaccine distribution and access raise ethical questions

As of 18 Mar 2021



Action areas for leaders | Menu of actions under consideration by companies to encourage uptake among employees, subject to local regulation

	Educate & encourage	Facilitate access	Incentivize	Penalize	Mandate
	<i>Educate employees on vaccines and/or encourage uptake</i>	<i>Make it easier for employees to get vaccinated</i>	<i>Reward individuals for inoculating</i>	<i>Punish individuals for not inoculating</i>	<i>Require vaccination for a group of individuals</i>
Example interventions	Encourage vaccination and highlight benefits through educational information; sharing science and evidence from trusted authorities	Adjust workers' schedules around vaccine appointments Provide onsite vaccination	Provide paid time off and transportation to vaccination Provide \$100 for vaccination or educational course if medical/religious exemption	Restrict work travel or attendance at company events without vaccine No paid medical leave if vaccine is refused	Mandate employees to be vaccinated Require proof of vaccination for onsite vendors and/or customers
Simpler interventions (minimal liability or legal issues, straightforward communications)					More complex issues with liability and legal issues to resolve, complex communications



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Equitable vaccine distribution and path to normality

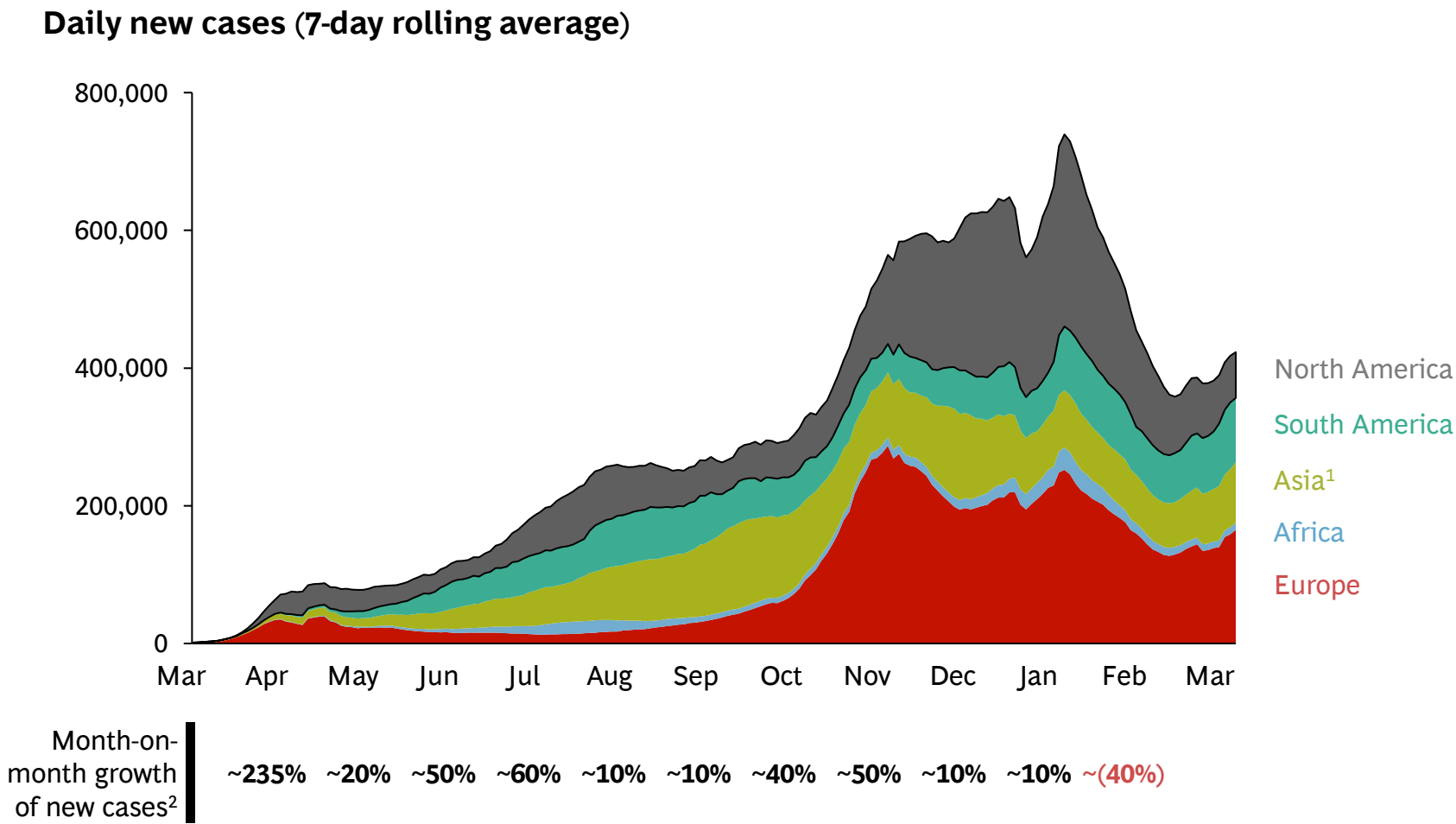
UPDATED ANALYSES AND IMPACT

Epidemic progression and virus monitoring

Economic and business impact

After a substantial case peak during Northern Hemisphere's winter, global case volumes have begun to drop

As of 15 Mar 2021



Key observations

120M
of confirmed cases

20.7M
of active cases

2.7M
of fatalities

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1. Includes Oceania (Australia, New Zealand, Papua New Guinea and surrounding island nations of the Pacific ocean); 2. Calculated as monthly as average of daily as compared To previous month; Source: Johns Hopkins CSSE; Our World in Data; BCG

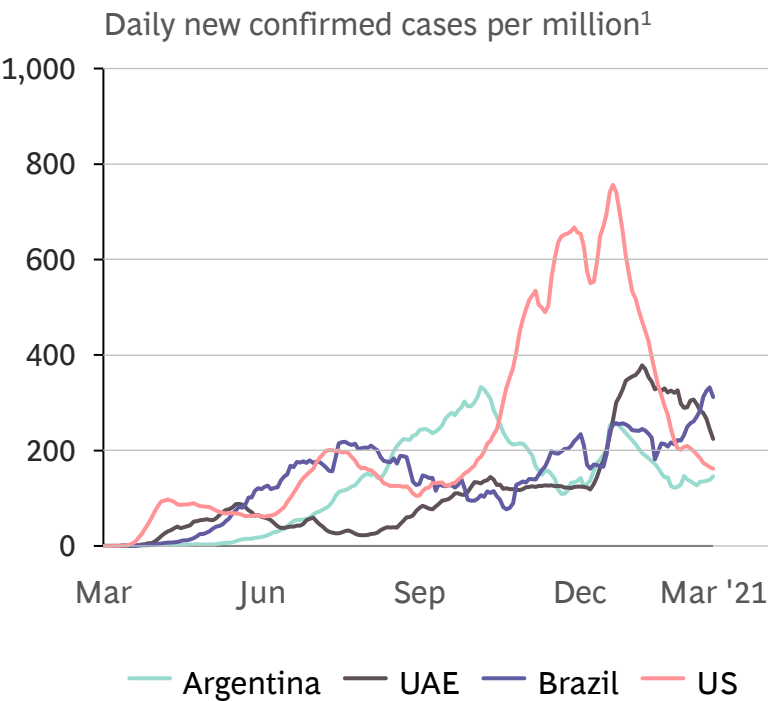
COVID-19 has broader geographic reach today with countries at different stages in their fight

As of 15 Mar 2021

Non-exhaustive

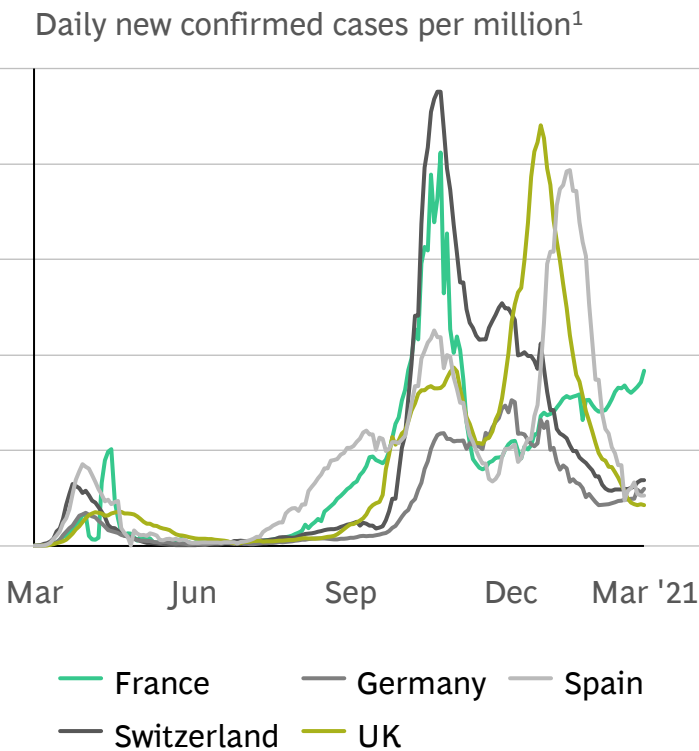
CONTINUATION

Curve was never quite flattened;
on-going battle



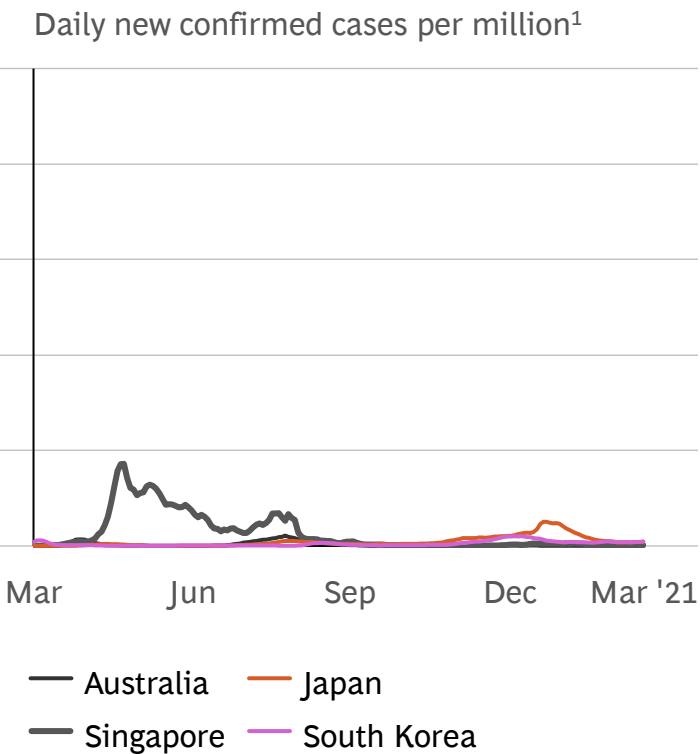
RESURGENCE

Curve was flattened, but saw one
or more resurgences



CRUSH AND CONTAIN

Curve was flattened and case
counts continue to remain low

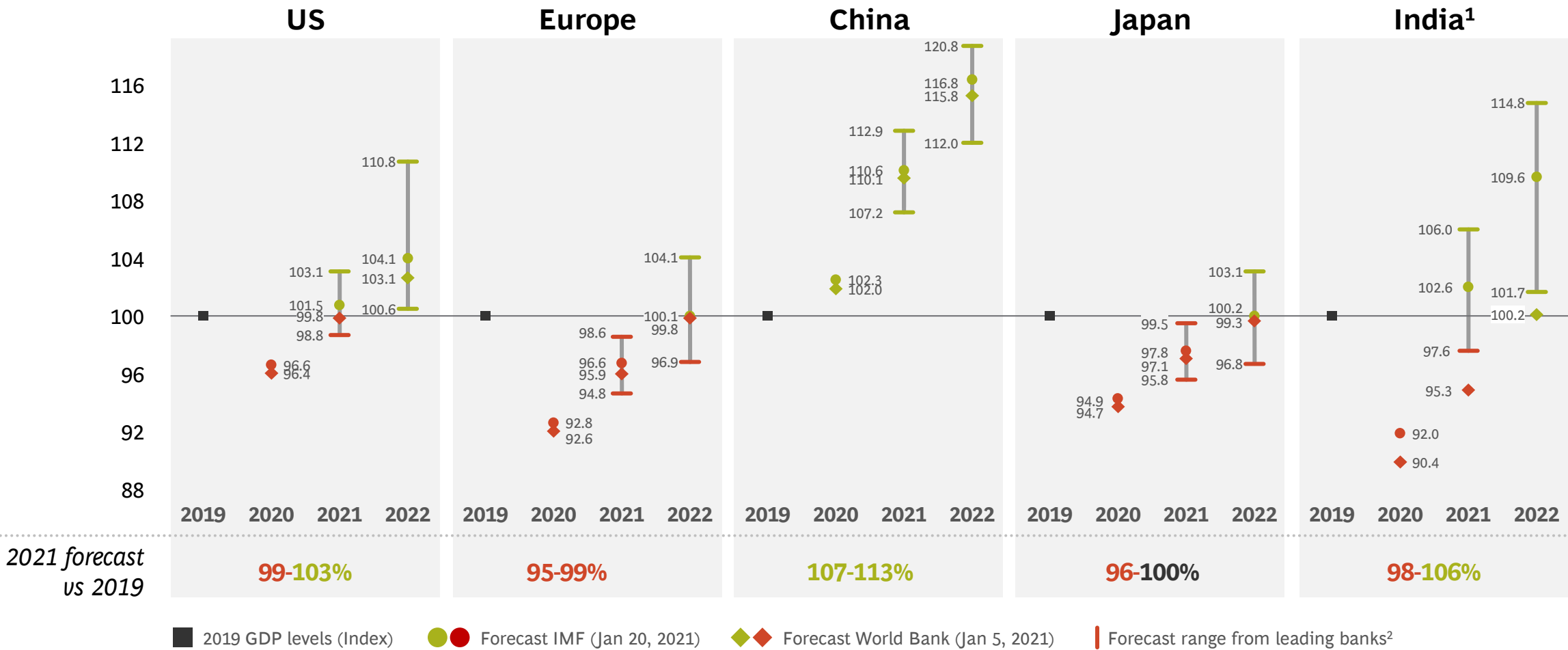


1. Data shown as 7 day rolling average of daily new cases per million
Source: Our World in Data; BCG

Many large economies expected to continue recovery and reach 2019 GDP levels between 2021-2022

As of 01 Mar 2021

GDP forecast levels indexed to 2019 value (Base: 100)



Note: As of reports dated 08 June 2020 to 01 Mar 2021, YoY forecasts 2020 values are estimated actual GDP; 1. For India, forecast is for financial year; for other countries, the forecast is for calendar year; 2. Range from forecasts (where available) of JPMorgan Chase; Morgan Stanley; Bank of America; Fitch Solutions; Credit Suisse; Danske Bank; ING Group; HSBC; Source: Bloomberg; World Bank; IMF; BCG

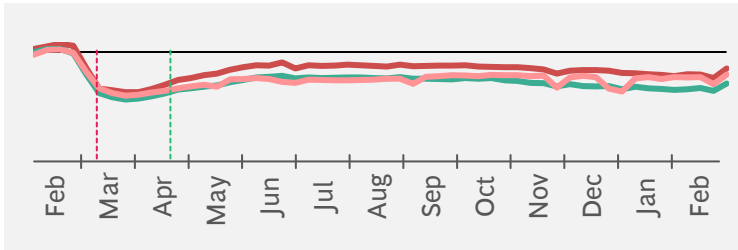
Retail and recreation mobility recovered fastest; public transit mobility remains lower in most countries

As of 01 Mar 2021

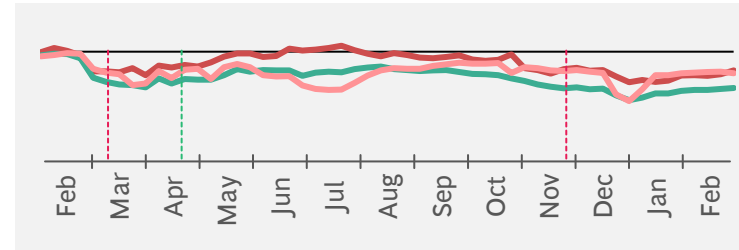
ECONOMIC
IMPACT

Workplace¹, public transit² and retail & recreation³ mobility compared to baseline of January 2020 to February 2020

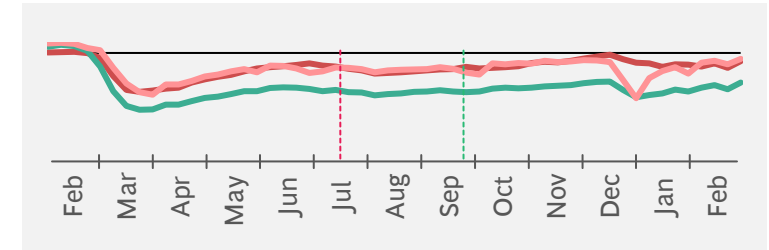
US



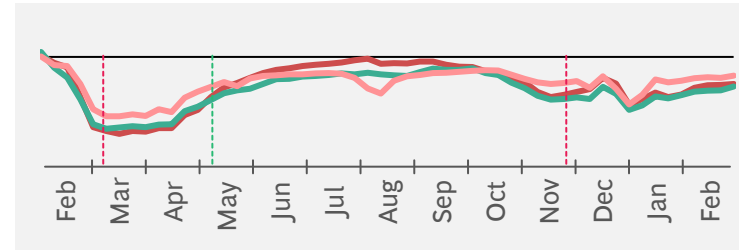
Germany



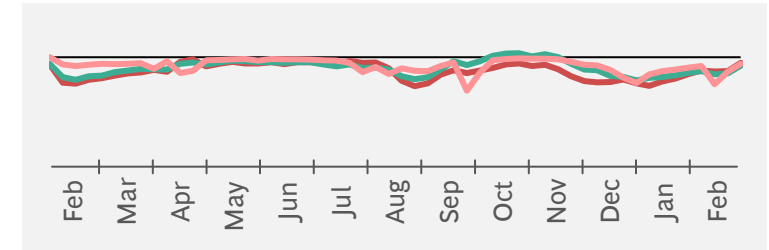
Australia



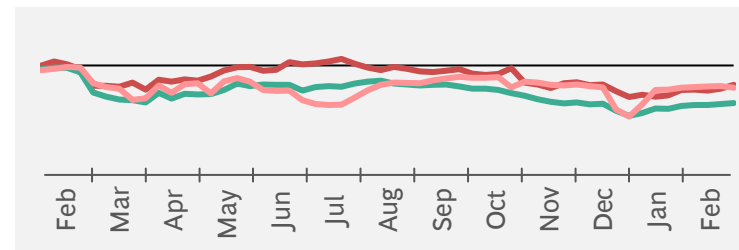
Italy



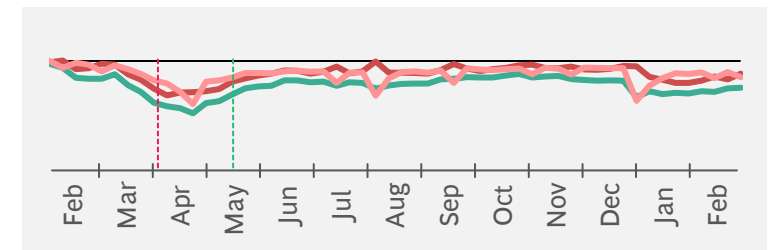
South Korea



Sweden



Japan



— Workplace mobility
— Retail & recreation — Public transit mobility
- - - Lockdown started⁴ - - - Lockdown easing⁴

1. Tracked as changes in visits to workplaces; 2. Tracked as changes in visits to public transport hubs, such as underground, bus and train stations; 3. Tracked as changes for restaurants, cafés, shopping centers, theme parks, museums, libraries and cinemas; 4. Refers to average lockdown start and easing dates; Note: Data taken as weekly average compared with baseline (average of all daily values of respective weeks during Feb 15 2020–Feb 28 2021); Source: Google LLC "Google COVID-19 Community Mobility Reports". <https://www.google.com/covid19/mobility/> Accessed: 01 Mar 2020; Press search; BCG

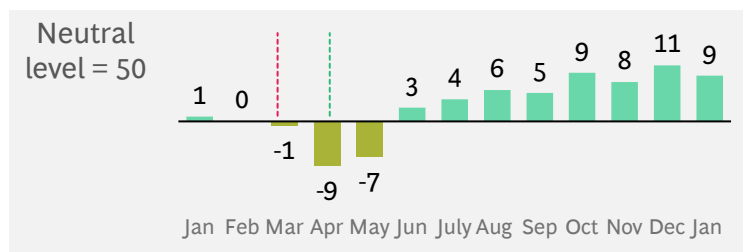
Manufacturing PMI recovery globally indicates positive momentum

As of 01 Mar 2021

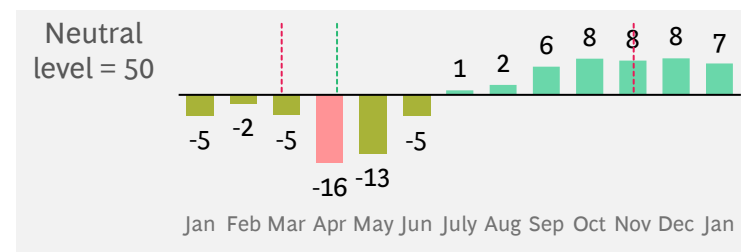
ECONOMIC
IMPACT

Manufacturing PMI before, during, and after the crisis

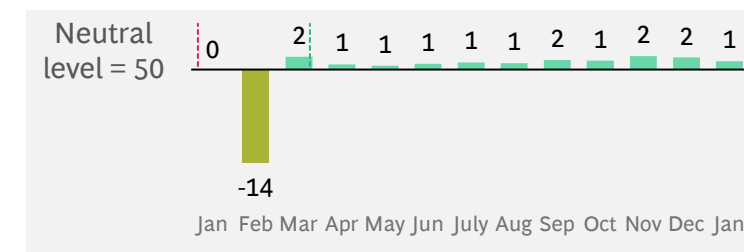
US



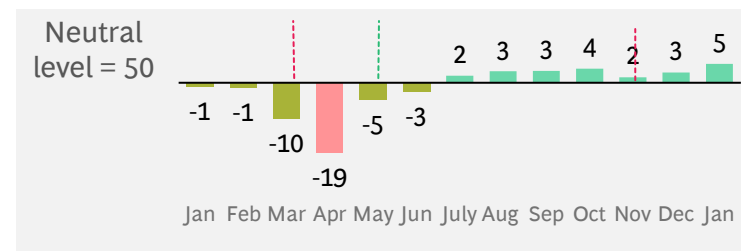
Germany



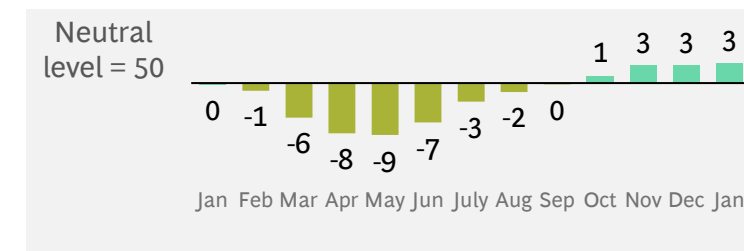
China¹



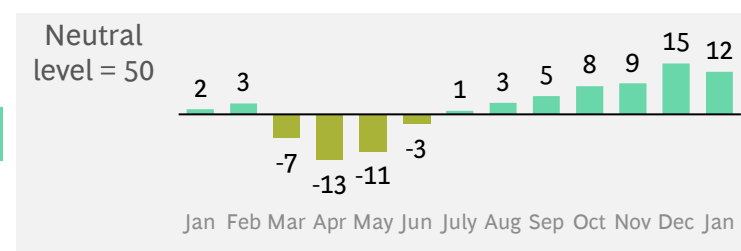
Italy



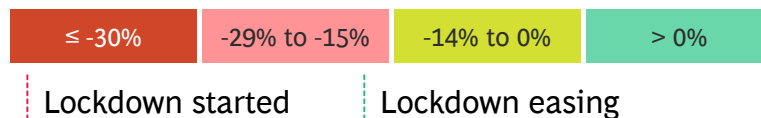
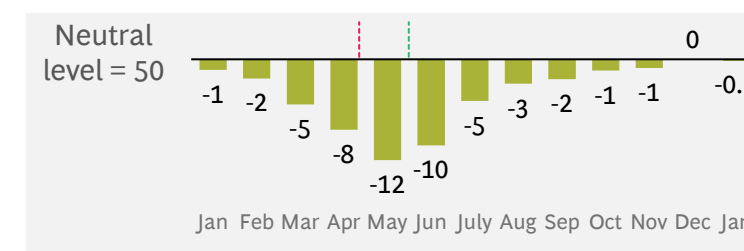
South Korea



Sweden



Japan



1. Lockdown dates are only pertaining to Hubei province; Note: PMI (Purchasing Manager's Index) is a diffusion index that summarizes whether market conditions, as viewed by purchasing managers, are expanding, staying the same, or contracting. 50 is neutral, >50 is considered to be positive sentiment and <50 is considered to be negative sentiment; Source: Markit South Korea Manufacturing PMI SA; Jibun Bank Japan Manufacturing PMI SA; China Manufacturing PMI SA; Swedbank Sweden PMI SA; Markit/BME Germany Manufacturing PMI SA; Markit Italy Manufacturing PMI SA; Markit US Manufacturing PMI SA; EIKON

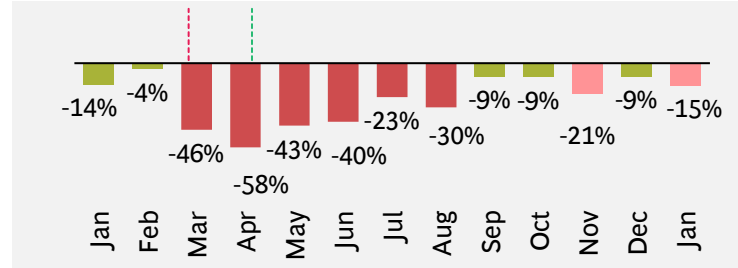
Passenger vehicle sales see rebounds but dips again in countries with second wave of lockdowns

As of 01 Mar 2021

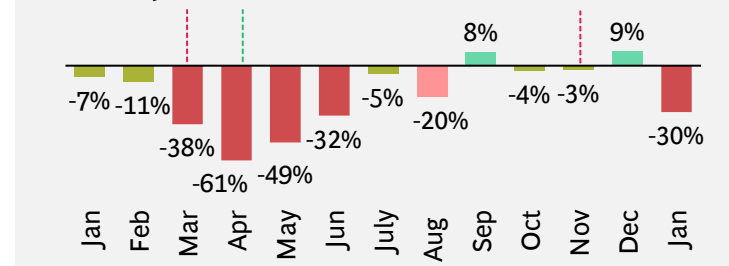
ECONOMIC
IMPACT

Monthly passenger vehicle¹ sales, YOY % change vs past year

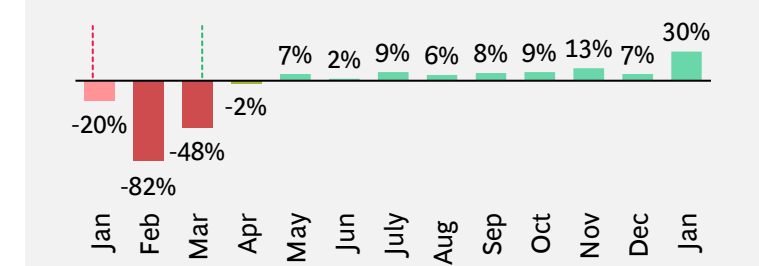
US



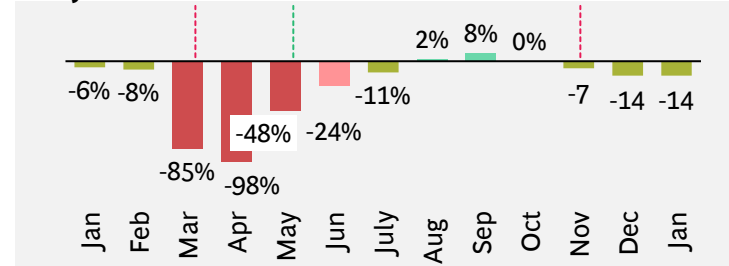
Germany



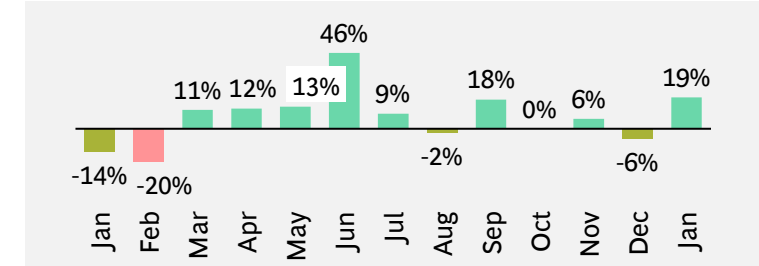
China²



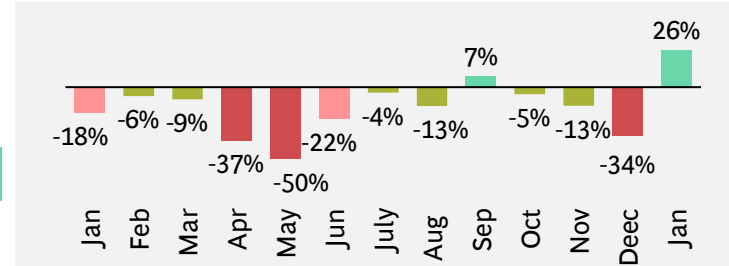
Italy



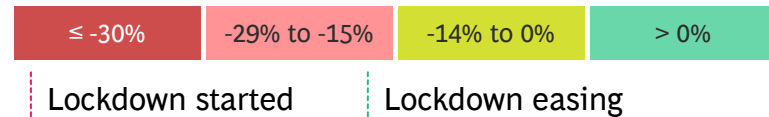
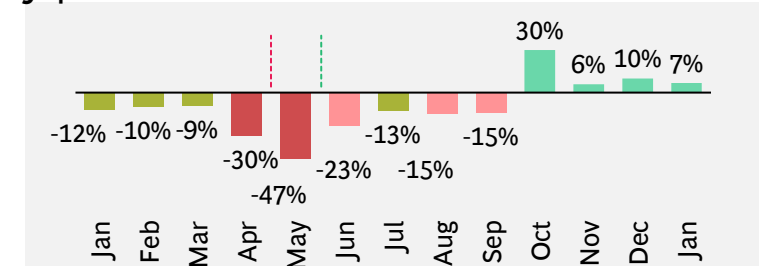
South Korea³



Sweden



Japan



1. Passenger vehicle sales includes data on, where available, hatchback, MPV, pickup, sedan, SUV, and vans; 2. Stimulus policies: Launched subsidies for car purchases in 10 cities, lessened purchase restriction in high tier cities and extended NEV subsidies; 3. South Korea's growth in auto sales from Mar through June 2020 is supported by recent tax cuts for individual consumption goods (e.g., cars), several carmakers (e.g. Audi, VW) launching new models and the increased appreciation by the Koreans of cars as a safe mode of transport and as a travel alternative for camping during COVID-19, supported by recently passed legislation to allow a variety of different cars to be modified into 'camping cars'.

Retail goods sales (excl. auto and fuel) have rebounded to pre-COVID-19 levels across most countries

As of 15 Mar 2021

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Growth of total retail goods sales (excl. auto & fuel)¹, YOY % change vs same month past year

Retail goods sales include online & offline sales and comprise food & beverages, apparel, cosmetics & personal care, home appliances, general merchandise, building material; do not include auto, fuel & food services

	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Jan '21
US	4%	4%	1%	-15%	-4%	3%	4%	5%	7%	6%	5%	2%	10%
UK	1%	0%	-4%	-19%	-11%	1%	3%	4%	6%	7%	6%	-	-
Italy	1%	2%	-18%	-27%	-11%	-1%	-11%	1%	0%	1%	-7%	-6%	-8%
Sweden	3%	5%	2%	-3%	2%	3%	2%	2%	3%	3%	5%	0%	3%
Belgium	2%	1%	-6%	-14%	2%	7%	3%	14%	5%	8%	-5%	9%	5%
China ²	-16%		-12%	-6%	-1%	2%	-2%	-1%	2%	1%	4%	4%	-
Japan	0%	2%	1%	-6%	-2%	9%	7%	7%	-1%	12%	8%	6%	3%

≤ -30%
-29% to -15%
-14% to 0%
> 0%



Retail goods sales have **rebounded** to pre-COVID-19 levels, with countries showing higher growth levels than in Jan

US and UK have seen consistent retail sales growth over last 6 months

Some European countries have seen retail sales dips coinciding with second waves of cases/lockdown

1. Retail goods sales categorization may be different across countries; seasonally adjusted values taken; country-specific categorization; 2. For China, combined value of Jan & Feb is available
Source: US Census Bureau; PRC National Bureau of Statistics; Eurostat; Ministry of Economy Japan

De-averaged view | Retail store sales in China have rebounded across categories; apparel sales continue to be impacted in other countries

As of 15 Mar 2021

ECONOMIC
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Retail store sales breakdown by category, YoY % change vs same month in past year

Food & beverage stores

	May	June	Jul	Aug	Sep	Oct	Nov	Dec	Jan '21
US	15%	12%	11%	10%	10%	10%	11%	9%	12%
UK	4%	4%	2%	2%	2%	2%	6%	-	-
Italy	1%	-1%	-2%	2%	1%	2%	3%	4%	3%
Sweden	0%	1%	0%	2%	3%	2%	2%	2%	0%
Belgium	10%	4%	4%	5%	2%	6%	2%	11%	4%
China ¹	11%	11%	7%	2%	5%	5%	9%	9%	-
Japan	2%	3%	1%	2%	2%	4%	0%	-1%	0%

Personal care & cosmetics stores

	May	June	Jul	Aug	Sep	Oct	Nov	Dec	Jan '21
US	-8%	-1%	4%	4%	5%	4%	4%	5%	7%
UK	-30%	-5%	-1%	1%	15%	14%	3%	-	-
Italy	-13%	-9%	-5%	-1%	-2%	-2%	-2%	-12%	-13%
Sweden	-5%	3%	1%	2%	3%	0%	1%	0%	-3%
Belgium	-8%	0%	0%	3%	7%	9%	0%	-3%	-
China ¹	13%	21%	9%	22%	16%	20%	32%	9%	-
Japan	-3%	3%	1%	2%	-7%	3%	-1%	1%	-1%

Apparel stores²

	May	June	Jul	Aug	Sep	Oct	Nov	Dec	Jan '21
US	-62%	-24%	-23%	-20%	-9%	-11%	-16%	-16%	-10%
UK	-60%	-34%	-25%	-15%	-14%	-14%	-29%	-	-
Italy	-43%	-18%	-41%	-2%	-3%	-4%	-44%	-26%	-40%
Sweden	-31%	-22%	-22%	-18%	-14%	-14%	-25%	-30%	-24%
Belgium	-35%	-9%	-33%	18%	-7%	-14%	-73%	-13%	-
China ¹	-1%	0%	-3%	2%	6%	10%	5%	4%	-
Japan	-35%	-6%	-19%	-18%	-24%	-4%	-8%	-5%	-18%

Home appliance stores³

	May	June	Jul	Aug	Sep	Oct	Nov	Dec	Jan '21
US	-42%	-20%	-6%	-4%	-7%	-5%	-10%	-16%	-2%
UK	-29%	2%	12%	13%	11%	18%	21%	-	-
Italy	-15%	2%	0%	2%	2%	2%	-12%	-11%	-1%
Sweden	15%	15%	15%	7%	10%	9%	17%	5%	11%
Belgium	2%	14%	2%	23%	19%	16%	-18%	11%	-
China ¹	4%	10%	-2%	4%	-3%	1%	5%	11%	-
Japan	9%	26%	12%	10%	-29%	29%	25%	15%	11%

≤ -30% -29% to -15% -14% to 0% > 0%

1. For China, Feb data includes both Jan & Feb, Food & beverages category only includes food & grains; 2. Includes clothing accessories, shoes, etc.; 3. Includes audio video & home appliances stores; Note: For US, share in retail store sales in Q4 2019: F&B ~25%, personal care & cosmetics ~12%, apparel ~6%, home appliances ~3%, general merchandising ~25% and building material & gardening equipment ~13%. Sector classification & mix may be different across countries; Source: US Census Bureau; PRC National Bureau of Statistics; Eurostat; Ministry of Economy Japan

China's sales (except Home Appliances) have rebounded past year-ago run rates

Retail store sales recovery driven by F&B across all countries

Personal care & cosmetics category sales have rebounded to 2019 levels except in Italy

Apparel category saw the largest decline; continued fluctuations and far from recovery across countries except China

Home appliances sales with mixed development; US sales continue to struggle

Stock markets continue to have an optimistic outlook: 11 out of 24 sectors currently above pre-crisis TSR levels

As of 01 Mar 2021

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Based on top S&P Global 1200 companies

	21 Feb 2020 -20 Mar 2020	21 Feb 2020 -28 Feb 2021
Semiconductors	-30%	60%
Tech Hardware	-26%	25%
Media	-36%	21%
Materials	-32%	20%
Retailing	-40%	19%
Durable Goods	-39%	18%
Capital Goods	-35%	12%
Auto	-41%	12%
Financials	-35%	8%
Software	-30%	5%
Health Equipment	-31%	5%
Pharma	-20%	0%
Prof. Services	-30%	-1%
Household Products	-16%	-2%
Hospitality	-44%	-3%
Food/Staples retail	-10%	-3%
Insurance	-39%	-5%
Banks	-39%	-7%
Food & Beverage	-23%	-8%
Energy	-52%	-10%
Transport	-34%	-11%
Telecom	-17%	-13%
Real Estate	-39%	-13%
Utilities	-30%	-16%

Companies² with probability of default >15%³

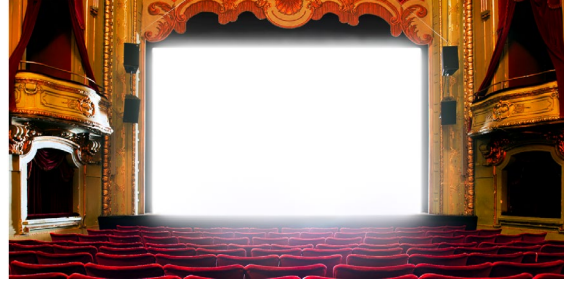
	21 Feb 2020	28 Feb 2021
	0%	0%
	0%	0%
	0%	0%
	5%	4%
	0%	18%
	0%	0%
	2%	2%
	0%	0%
	0%	0%
	0%	0%
	0%	0%
	0%	5%
	0%	0%
	0%	0%
	8%	15%
	0%	0%
	0%	0%
	0%	4%
	0%	0%
	0%	12%
	0%	24%
	0%	4%
	0%	0%
	0%	3%

1. 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 28 Feb 2021; 2. Retailing, Hospitality, Transport and Energy are sectors with > 10% of companies with a probability of default > 15%; 3. Implied by 5-year credit default swap based on median; Note: Based on top S&P Global 1200 companies; Sectors are based on GICS definitions; Source: S&P Capital IQ; BCG ValueScience Center; BCG

Additional perspectives on COVID-19



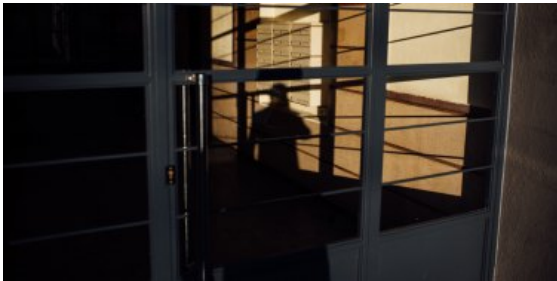
US Vaccine sentiment



Getting to the COVID-19 Finish Line: A Drama in 3 Acts



Reimagining global health after the coronavirus



Seven lessons from the corporate frontlines



Why the global economy is recovering faster than expected



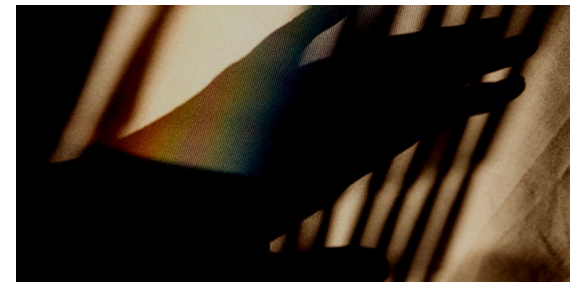
A Vaccination Strategy to Save Lives and Livelihoods



As vaccines roll out, testing still matters



What 12,000 employees have to say about the future of remote work



Designing resilience into global supply chains

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