BCG

COVID-19 BCG Perspectives Series
Facts, scenarios, and actions for leaders

Global Restart:
Key Dynamics

21 July 2020

BCG Perspectives
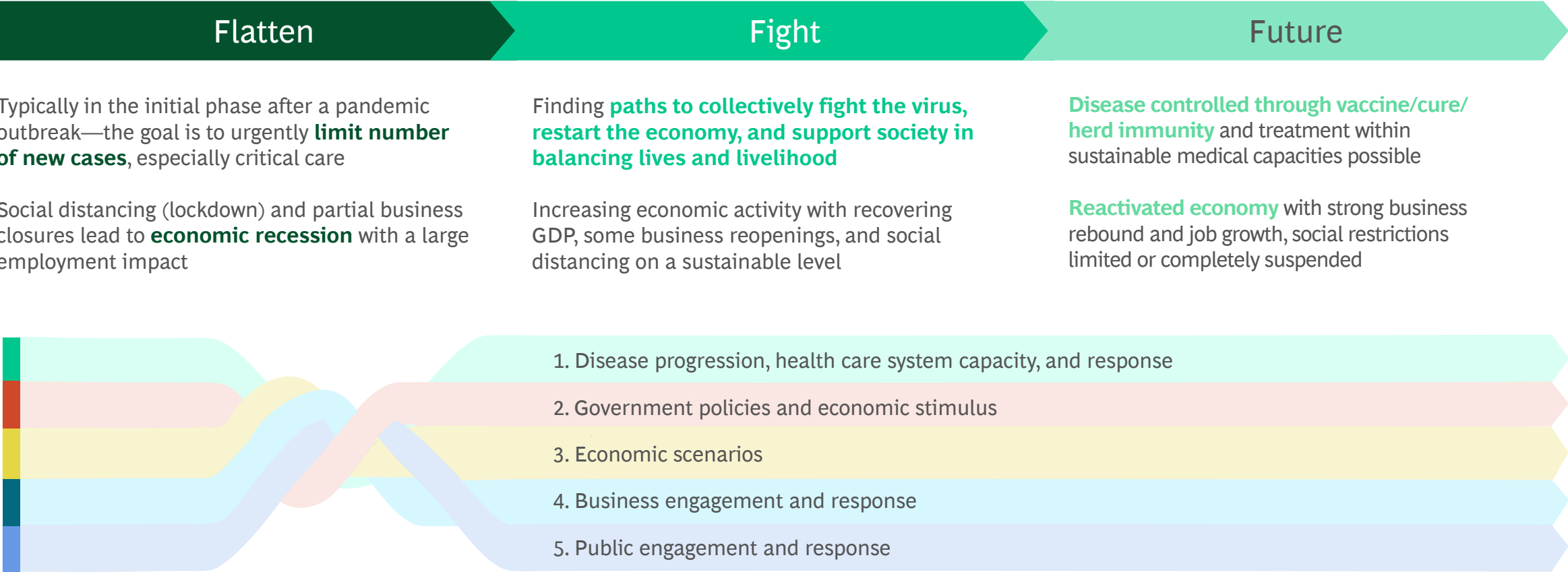
Objectives of this document

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 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, 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.

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

Flatten	Fight	Future

Flatten

Typically in the initial phase after a pandemic outbreak—the goal is to urgently **limit number of new cases**, especially critical care

Social distancing (lockdown) and partial business closures lead to **economic recession** with a large employment impact

Fight

Finding **paths to collectively fight the virus, restart the economy, and support society in balancing lives and livelihood**

Increasing economic activity with recovering GDP, some business reopenings, and social distancing on a sustainable level

Future

Disease controlled through vaccine/cure/ herd immunity and treatment within sustainable medical capacities possible

Reactivated economy with strong business rebound and job growth, social restrictions limited or completely suspended

1. Disease progression, health care system capacity, and response

2. Government policies and economic stimulus

3. 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

2

Executive Summary | COVID-19 BCG Perspectives

As countries restart across the globe, managing disease progression continues to be a major challenge for governments

- Daily cases continue to rise globally, with cases in July ~1.5x[1] those in June; case growth does not slow down in summer/warmer months
- New hotspots emerge across the globe; in the US, there has been a shift from eastern states to western and southern states
- Country lockdown strategies are evolving from national to regional/local; several countries are experiencing second waves of cases
- Governments can take a set of concrete actions to protect the broader population, especially the health-vulnerable, e.g., mandate face coverings

Severe global economic downturn expected for 2020; however, economic activity does show signs of recovery

- Sector activity in transportation and automotive most impacted; however, manufacturing PMI[2] indicates positive momentum globally
- Retail goods sales[3] are back to 2019 levels in the US, China and Japan, while other countries are ramping up; shift from offline to online sales continues
- In only 4 out of 15 of the world's largest economies, mobility is back to 85% of pre-crisis levels; workplace mobility and public transit most constrained
- Companies must augment their capabilities to win; building greater systemic resilience and developing demand sensing capabilities are key

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

1. Calculated as monthly average of daily cases as compared to previous month; 2. 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. 3 Excludes auto & fuel. Source: BCG

Summary snapshot | Restart progression at a glance
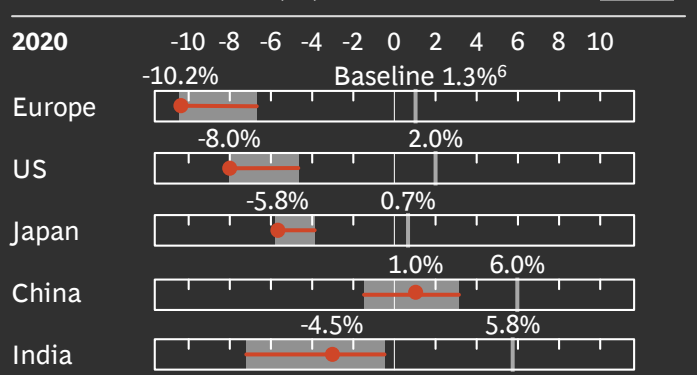
As of 17 July 2020

Epidemic Progression

Global epidemic snapshot

14.1M	220K	7.9M	596K
# of cases	# of daily cases[1]	# of recoveries	# of fatalities

Month-on-month growth of new cases[2]		April	May	June	July[4]
	Americas	6x	1.4x	1.6x	1.6x
	Europe	2.1x	0.7x	0.8x	0.8x
	Asia[3]	3.8x	1.7x	2.0x	1.4x

Economic Impact

GDP forecasts (%) — IMF (24 June) — Banks[5]

2020 — scale: -10 -8 -6 -4 -2 0 2 4 6 8 10

Baseline 1.3%[6]

Europe	-10.2% ... -8.0% ... 2.0%
US	-8.0% ... -5.8% ... 0.7%
Japan	-5.8% ... 1.0%
China	1.0% ... 6.0%
India	-4.5% ... 5.8%

Consumer Activity

Mobility

Month vs. Jan '20		April	May	June
Mobility[7]	US	-38%	-27%	-19%
	EU	-61%	-42%	-25%
	Japan	-24%	-26%	-13%

Y-o-Y changes		April	May	June
Domestic air travel tickets booking[8]	US	-88%	-82%	-69%
	UK	-91%	-92%	-88%
	China	-59%	-37%	-45%

Sales

Y-o-Y changes		April	May	June
Retail goods sales[9] (excl. auto & fuel)	US	-6%	3%	6%
	EU	-16%	-3%	N/A
	China	-6%	-1%	2%
Auto sales[10]	US	-52%	-29%	-38%
	EU	-83%	-56%	-34%
	China	-3%	15%	2%
Hotel occupancy[11]		-70%	-60%	N/A

Business Impact

Stock market performance

Month end vs. Jan 02, '20		April	May	June
S&P500		-11%	-7%	-5%
FTSE100		-22%	-20%	-19%
CHN SSE		-7%	-8%	-3%
Volatility Index (S&P500)[12]		2.7x	2.2x	2.4x

International trade & CO_2 emissions

		April	May	June
Y-o-Y change in trade value[13]	US	-24%	-27%	N/A
	China	-5%	-6%	N/A
	Japan	-12%	-21%	N/A
Drop in CO_2 emissions[14]		16%	9%	6%

Industrial production

		April	May	June
Purchasing Manager's index[15] (base = 50)	US	36	40	50
	EU	33	39	47
	China	51	51	51
Steel production (Y-o-Y)[16]		-13%	-9%	N/A

Key dynamics of the restart

Restart progression and early indicators

Trends in industrial, consumer activity, and mobility

Updated analyses and impact

Epidemic progression; economic and business impact

COVID-19 epidemic continues to progress globally while disease hotspots are changing and lockdown strategies are evolving

As of 17 July 2020

Daily case growth

Disease hotspots

Lockdown strategies

1.5x **cases in June[1]**

30% **cases from new hotspots[2]**

Localized

Europe is the only continent where daily new cases are declining in July as compared to June

In the US, hotspots shifted from east in April to west and south in July; only 4% of recent cases from old hotspots[2]

New local hotspots emerging globally (e.g., Australia and Germany)

Countries (e.g., Australia, India, Spain) shifting from national to localized lockdowns to control the progression

(Our World in Data)

(JHU CSSE, Our World in Data)

1. Monthly average of daily new cases; In July average is taken till July 17; 2. Recent US cases refer to June to mid-July period; new hotspots defined as top 5 US states by daily cases / M inhabitants in June until mid-July; old hotspots defined accordingly for April period
Sources: JHU CSSE; Our World in Data; Press search; BCG

Daily cases on the rise | Cases in early July ~1.5x those in June; ~56% of the confirmed cases have recovered globally

As of 17 July 2020

Daily new cases (7-day rolling average)

Chart axis values: 250,000 / 200,000 / 150,000 / 100,000 / 50,000 / 0

Regions labeled: South America, Asia[1], Africa, North America, Europe[2]

Months: Mar, Apr, May, June, July

Month-on-month growth of new cases[3]: ~340% ~20% ~50% ~50%
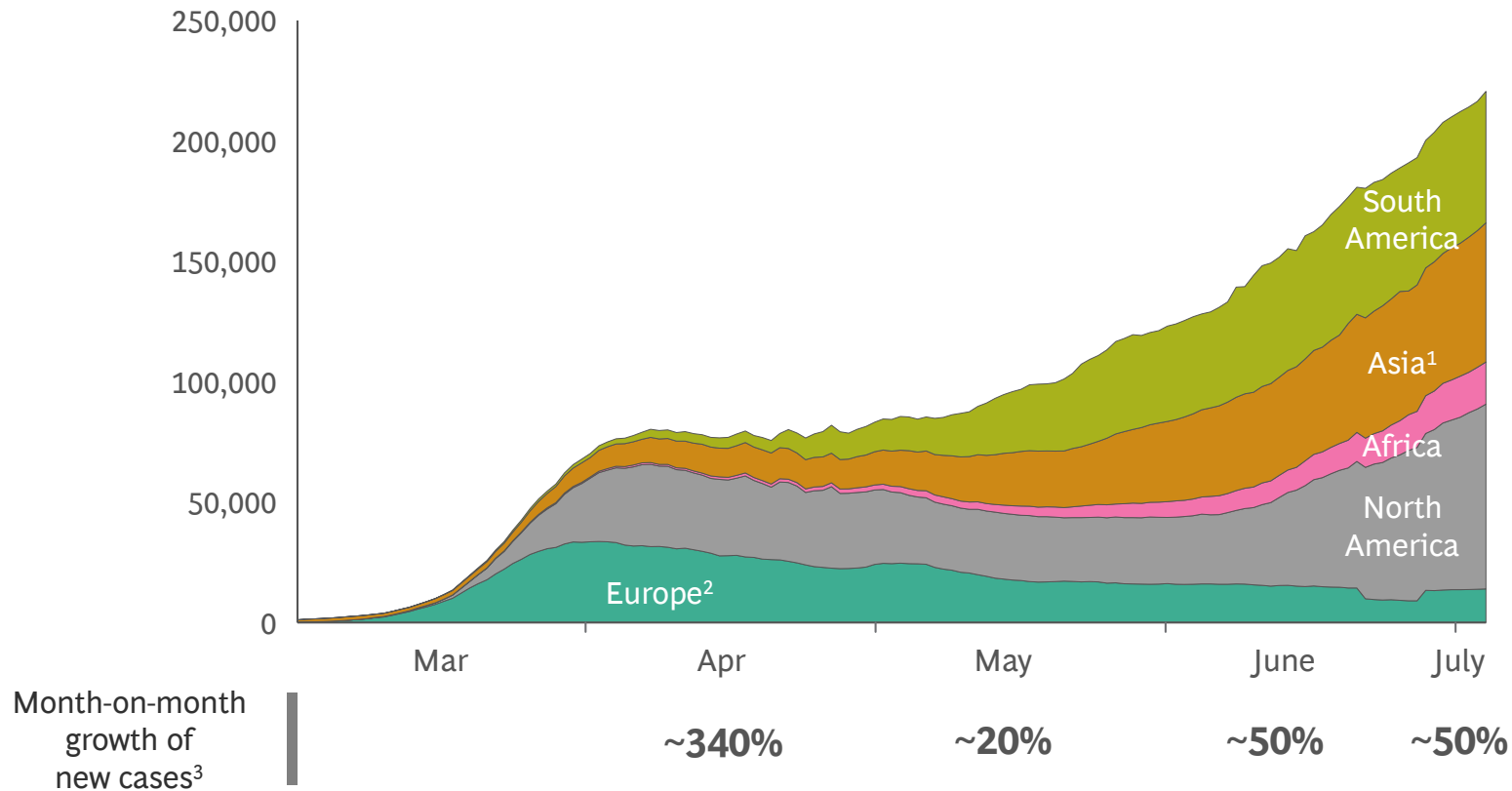
Key observations

5.2M (Δ1.5%)[4]
Active cases globally[5]
(daily growth rate %)

7.9M (56%)
# of recoveries[5]
(% of confirmed cases)

596k (Δ0.9%)[4]
Fatalities globally
(daily growth rate %)

No slowdown in summer
US, India seeing increase in case numbers despite warmer weather

1. Includes Oceania; 2. Source data reported UK correction of confirmed cases on 03 July and reduced ~30k cases resulting in a dip in the cases in Europe; 3. Calculated as growth in monthly average of daily cases as compared to previous month; 4. Growth calculated based on 7 day average; 5. Some countries like UK, Netherlands, Sweden do not report recoveries or active cases
Source: Johns Hopkins CSSE; Our World in Data; BCG

7

De-averaged view | 9 of top 15 economies show increasing daily case numbers; recovery rate of 75+% for 7 economies

CASE GROWTH

Top 15 economies by GDP
As of 17 July 2020

	Daily cases		Recovery		Testing	
	Daily Cases/M	**Growth of daily new cases[2]**	**Total cases**	**Recovery**	**# tests/ # cases**	
	New cases per million population[1]		In thousands	% of total cases	● 2 weeks ago ▲ current value[3] 0 10 20 30+	
US	198	2.8%	3,576	30%	▲●12	
Brazil	172	-0.1%	2,012	70%	●▲2	
Mexico	46	-0.7%	324	80%	2 ●●	
Russia	45	-0.2%	753	71%	32 ▲	
India	22	3.2%	1,004	63%	13 ▲●●	
Spain	19	9.5%	260	58%	●▲ 20	
UK[4]	10	3.5%	293		●▲ 25	
Australia	10	7.5%	11	71%	298 ▲	
Canada	9	2.8%	109	88%	31 ●▲	
France[5]	8	0.1%	174	37%	15 ▲	
Germany	5	0.9%	201	93%	34 ▲	
Japan	4	13.2%	23	79%	●▲ 26	
Italy	3	-0.3%	244	81%	●▲ 25	
S Korea	1	<100 daily cases	14	91%	106 ▲	
China[6]	0	<100 daily cases	85	94%		

1. 7-day rolling average; represented scale rounds up daily case/M to next 20th place; 2. Growth rate calculated basis 7-day rolling average of new cases; values calculated only for countries with 100+ daily cases; 3. Test/case data is not updated daily for a few countries, data represented is within last 1 week; 4. UK recovery data not available; 5. Two weeks ago testing data not available for France; 6. In China, daily cases/M is close to zero; recent testing data not available; Source: Our World in Data; JHU CSSE; Worldometers; BCG

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8

COVID-19 hotspots are changing | In the US, shift from eastern states in April to western and southern states in June and July

As of 17 July 2020
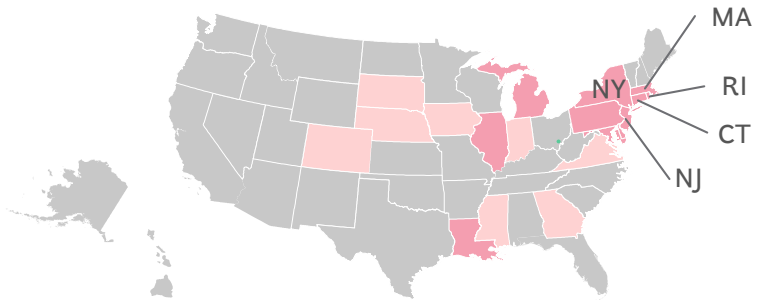
US Example

Top 5 US states with highest daily cases per M population[1]

April

392	375	274	256	230	
New York	New Jersey	Massachusetts	Rhode Island	Connecticut	US avg ◄ 90

May

192	174	171	166	164
Rhode Island	Massachusetts	Illinois	Maryland	Nebraska	◄ 71

June and July[2]

347	269	224	223	196
Arizona	Florida	S Carolina	Louisiana	Alabama	◄ 119
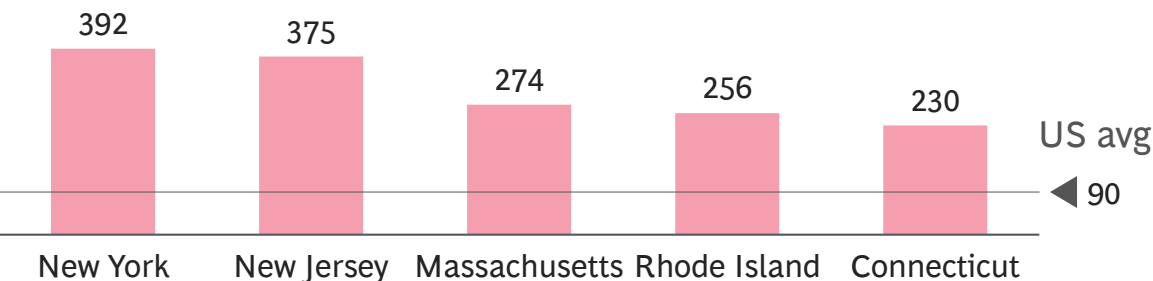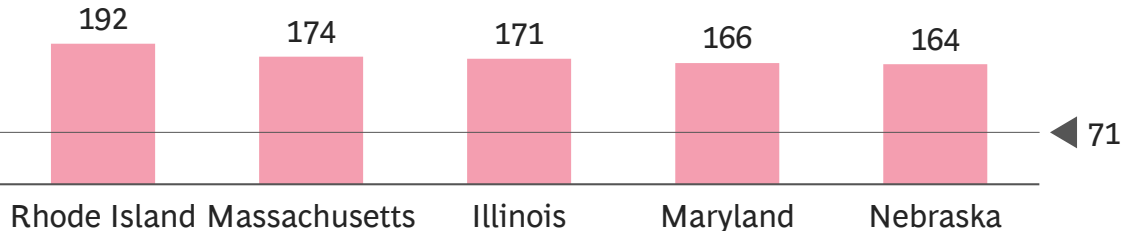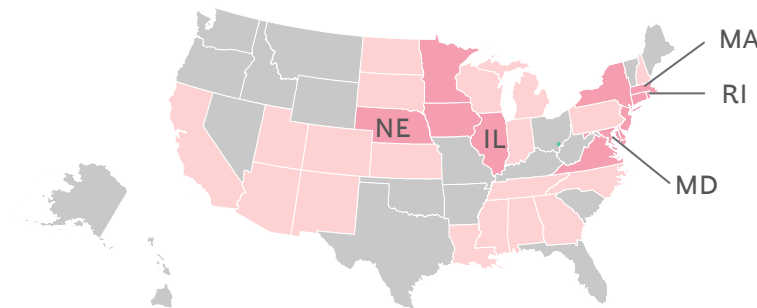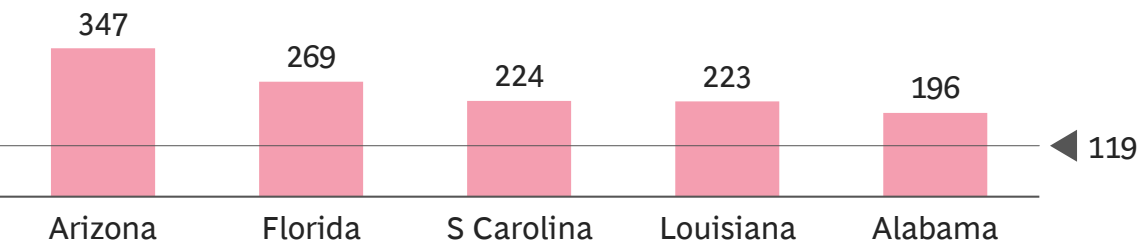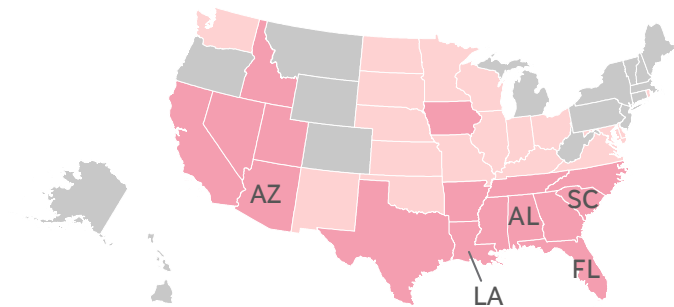
Current top 5 states contribute **30% of new cases[2]**; while top 5 states from April contribute only **4% of new cases**

Daily cases per M population[1]   <50   50-100   >100

1. Taken as monthly average; 2. Total US cases in June and July (to date); Source: Our World in Data; JHU CSSE; BCG

Most of the developed economies that implemented significant testing & tracing or stringent lockdowns controlled epidemic better

As of 17 July 2020

Daily cases per million population[1]

		Cumulative Cases / M
	US	10,804
	Sweden	7,612
	UK	4,309
	Italy	4,031
	Germany	2,397
	Australia	424
	South Korea	267
	Japan	186

Implemented stringent lockdowns after initial outbreak

4TIQ[2] countries: Controlled initial outbreak using extensive measures
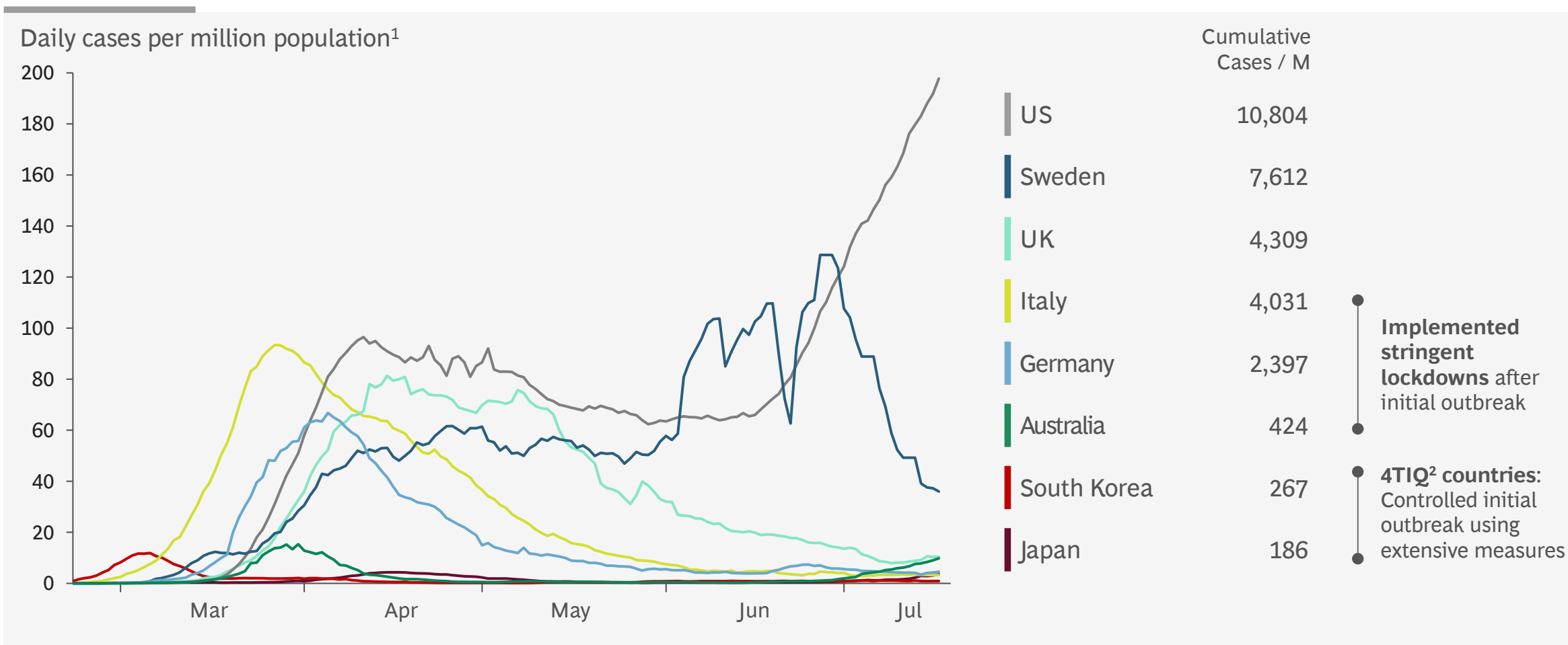
1. Calculated as a 7-day rolling average;   2. 4TIQ = Test, trace, track, technology, isolate, and quarantine
Source: JHU CSSE, BCG

Fast and stringent lockdowns shorten outbreaks; but neither is sufficient alone

Early lockdown alone
does not shorten outbreak

Not statistically significant (P-value: 0.45)

Outbreak length (# days fatalities/M > 0.1)

Improving from top to bottom

Speed (days to lockdown)

● Country
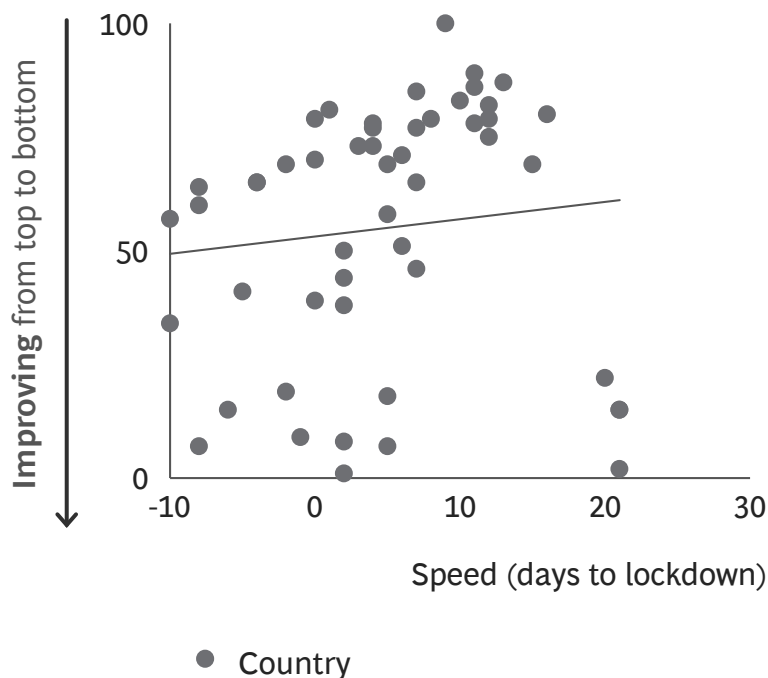
Stricter lockdown alone
does not shorten outbreak

Not statistically significant (P-value: 0.48)

Outbreak length (# days fatalities/M > 0.1)
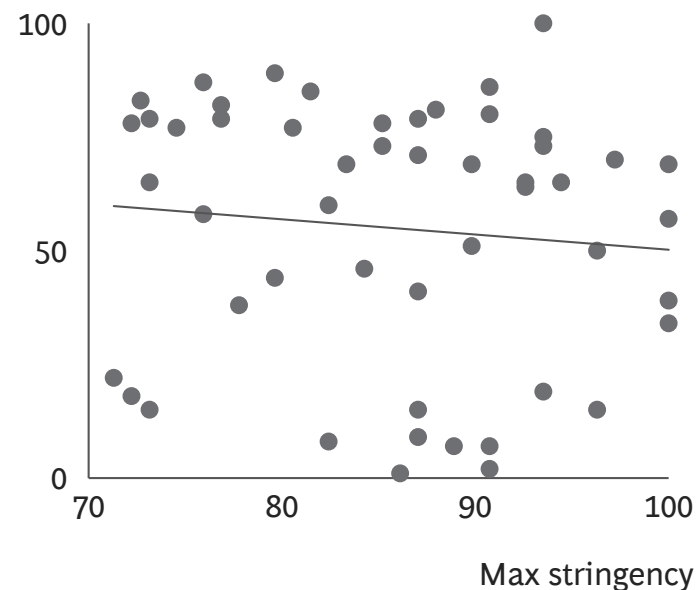
Max stringency

Strict lockdown early on
shortens length of outbreak

Statistically significant (P-value: 0.00)

Outbreak length (# days fatalities/M > 0.1)

Cumulative stringency before
15 days after start of outbreak
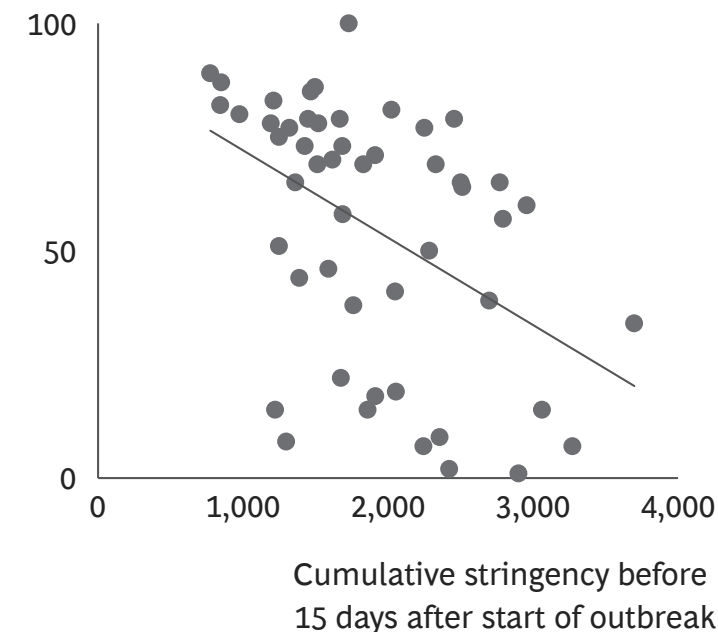
Note: Data as of 02 June 2020; excludes countries that did not use lockdown as a strategy, did not reach stringency above 70, and did not ever have more than 0.3 fatalities/M or more than 10 days of 10 cases/M; lockdown defined as stringency > 70. Analysis excludes India. Source: John Hopkins CSSE; Oxford OxCGRT government stringency index.

11

Countries have shifted to localized lockdown measures to control COVID-19 progression and a possible second wave

As of 17 July 2020

Non-exhaustive

India
From national to state-wide to localized lockdowns

Nationwide lockdown started	Lockdown extended	Relaxations in zone with low/no cases	Further relaxation across country; multiple states continued with lockdown	Lockdown extended in two states till 31 July	Bengaluru in triple lockdown[1]	State of Bihar enters 2-week lockdown
25 Mar	14 Apr	04 May	01 June	27 June	06 July	16 July
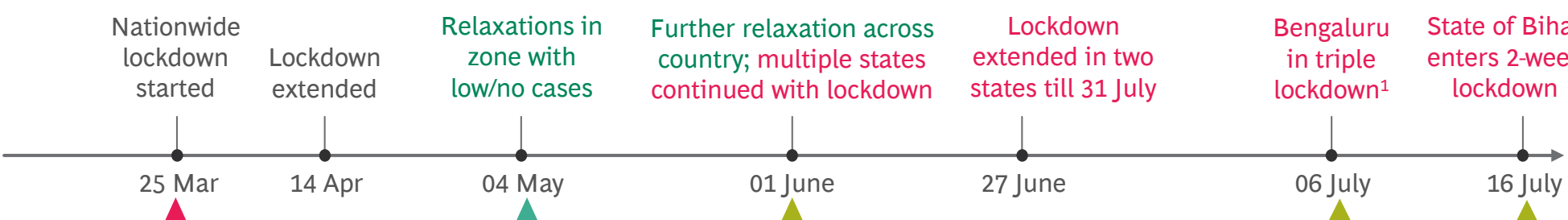
Australia
Lockdown in large city re-imposed after second wave emerged

Lockdown started	New South Wales started to ease restrictions	State of emergency extended in Victoria	Melbourne suburbs in lockdown	Lockdown 2.0 in Greater Melbourne	Heightened preventive measures in NSW
23 Mar	15 May	20 June	01 July	08 July	17 July

Spain
From national to proactive lockdowns in small regions/provinces

Nationwide lockdown started	Lifting of restrictions started	Phased easing of lockdown started	State of alarm expired	Local lockdown re-imposed in one region	Second local lockdown in 2 days
16 Mar	13 Apr	02 May	21 June	04 July	05 July

▲ Lockdown started   ▲ Lockdown easing   ▲ Local lockdown/restrictions started

Note: Timeline is not drawn to scale. Only selective events regarding lockdown & easing restrictions have been captured; list is not exhaustive; 1. Offices, shops & public transit closed;
Source: Press search; BCG

12

5 key actions governments could take to protect the broader population and limit overall hospitalizations

Mandate face covering

for public gatherings; distribute masks to the vulnerable & their contacts

Japan, Singapore widely distributed face masks

Increase sentinel testing[1]

including pooled testing solutions to prevent and detect outbreaks

South Korea, Iceland scaled up testing as a key containment lever

Restrict large indoor gatherings

where social distancing is not feasible (e.g., 50+ people; bars, sports arenas, etc.)

California re-imposed closure of all restaurants, movie theatres, zoos, museums, etc. in July 2020

Promote safe work practices

and their adoption at workplaces (e.g., hygiene, PPE)

New Zealand, Australia released guidelines on safe work practices

Prioritize disadvantaged populations

through health, education, livelihood, and food security measures; and support the health-vulnerable

Uganda implemented radio-based learning to reach children with no access to the internet

1. Sentinel testing involves testing random sample of people across the community, including those who appear well and show no symptoms, in order to discover unseen, asymptomatic cases;
Sources: LTC Responses to COVID-19; UK Government; UK Local Government Cohort report; Irish Times; Mercury News; BBC; BCG

Countries are attempting to restart economy while managing disease progression

THE WALL STREET JOURNAL. July 03, 2020

Chinese factories get back to work with a few COVID-19 adjustments

REUTERS July 01, 2020

Germany's retail sales rose by almost 14%, rebounding from a 6.5% drop in April

The Guardian July 16, 2020

US economy restarts from COVID-19 with the number of unemployment claims dropping over past 16 weeks

CNN July 07, 2020

Australia to reimpose six-week lockdown on Melbourne as country battles potential second wave

THE STRAITS TIMES July 09, 2020

Shopper traffic up and stabilizing after Singapore's reopening, clients adjusting well to safety measures

FINANCIAL TIMES July 07, 2020

Italian retail sales surge 24% after lockdown eased

The New York Times July 07, 2020

Thermometers in Hand, Dubai Opens for Tourists Amid Pandemic

TIME July 15, 2020

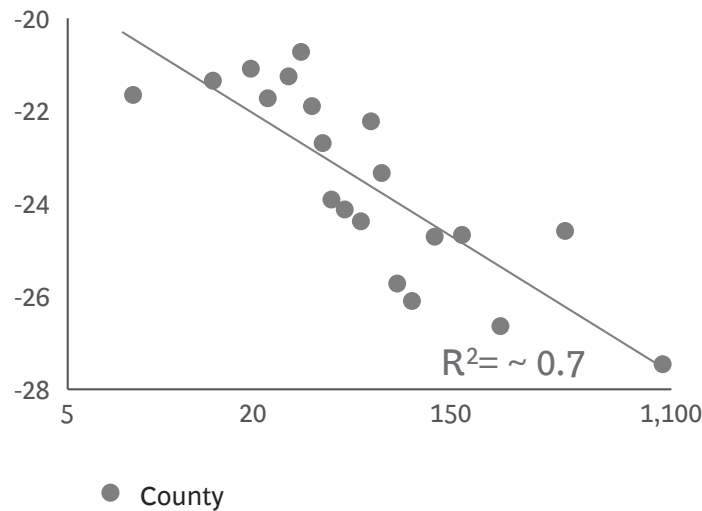**India Reimposes 2 Week Lockdown in Parts of Country as Cases Surge to 1 Million**

As of 26 June 2020   **US Example**

Consumer spending decreases as local cases increase

Change in consumer spending[1] (%)
vs. Jan 2020

$R^2 = \sim 0.7$

● County

County-level COVID-19 cases per 100K people
(log scale)

More affluent likely to stay home, driving decline in spending

Change in mobility[2] (%) vs. Jan 2020

$R^2 = \sim 0.9$

$R^2 = \sim 0.8$

● Counties in top quartile avg. income
● Counties in bottom quartile avg. income
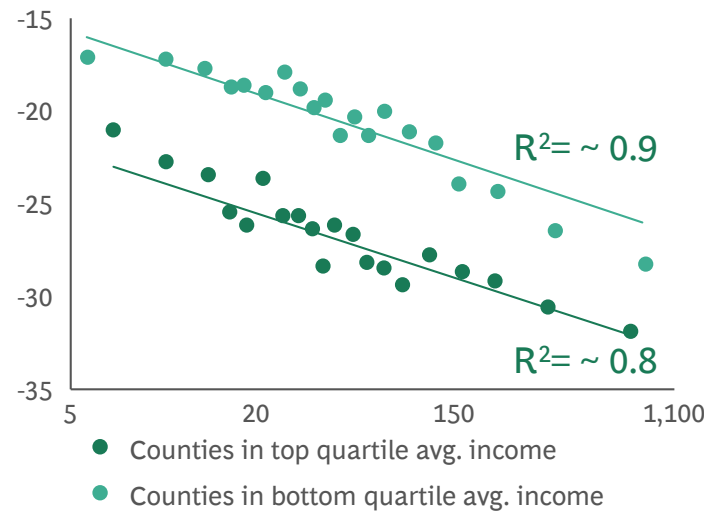
County-level COVID-19 cases per 100K people
(log scale)

Spending not correlated with government restrictiveness

Average change in overall spending[3]
vs. Jan 2020

$R^2 = \sim 0.03$

Most restrictive   ● State   Least restrictive
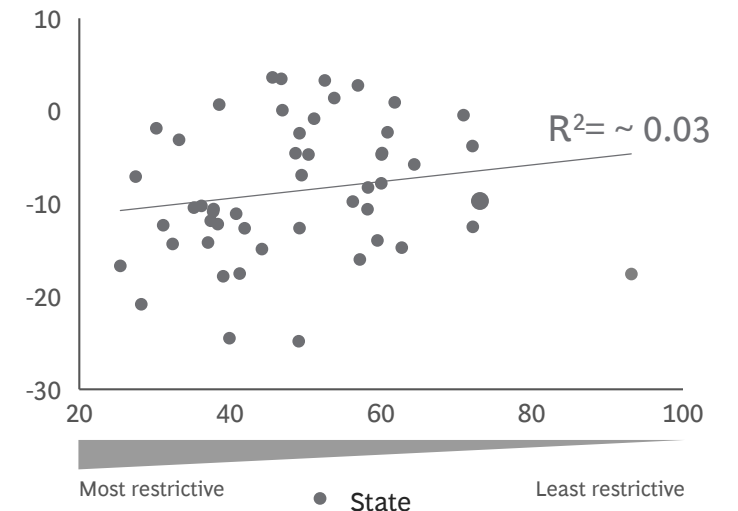
State-level composite score of level
of government restrictions[4]

1. Based on data from April 1 to April 14, 2020; 2. Based on data from March 25 to April 14, 2020; 3. Based on data from June 26, 2020; 4. Composite score of restrictions includes,
e.g., requirement to wear a mask in public, travel restrictions, large gathering restrictions.
Sources: Anity Solutions; Google LLC "Google COVID-19 Community Mobility Reports". https://www.google.com/covid19/mobility/ Accessed: June 26, 2020;
Chetty, Raj, et al; Opportunity Insights; New York Times, The COVID Tracking Project; CDC; WalletHub; BCG

15

Industrial activity and mobility still far from pre-COVID-19 levels; retail goods sales (excluding auto and fuel) seeing early recovery

As of 17 July 2020

Industrial activity

Only

20-30% decline

in June activity in transportation and automotive sectors as compared to 2019

(BCG Economic Recovery Pulse Check)

Retail goods sales

Only

3% decline

in total retail goods sales (online + offline; excluding auto and fuel) in EU in May as compared to 2019

(Eurostat)

Mobility

Only

4 out of 15

largest economies show mobility[1] back to 85%+ of pre-COVID-19 levels

(Google Mobility)

1. Workplace, retail & recreational, public transit and, grocery & pharmacy mobility
Sources: Google LLC "Google COVID-19 Community Mobility Reports"; Eurostat; BCG

Transportation and automotive sectors most impacted; materials and process industries have recovered

As of 28 June 2020
Largest 5 European economies[1]

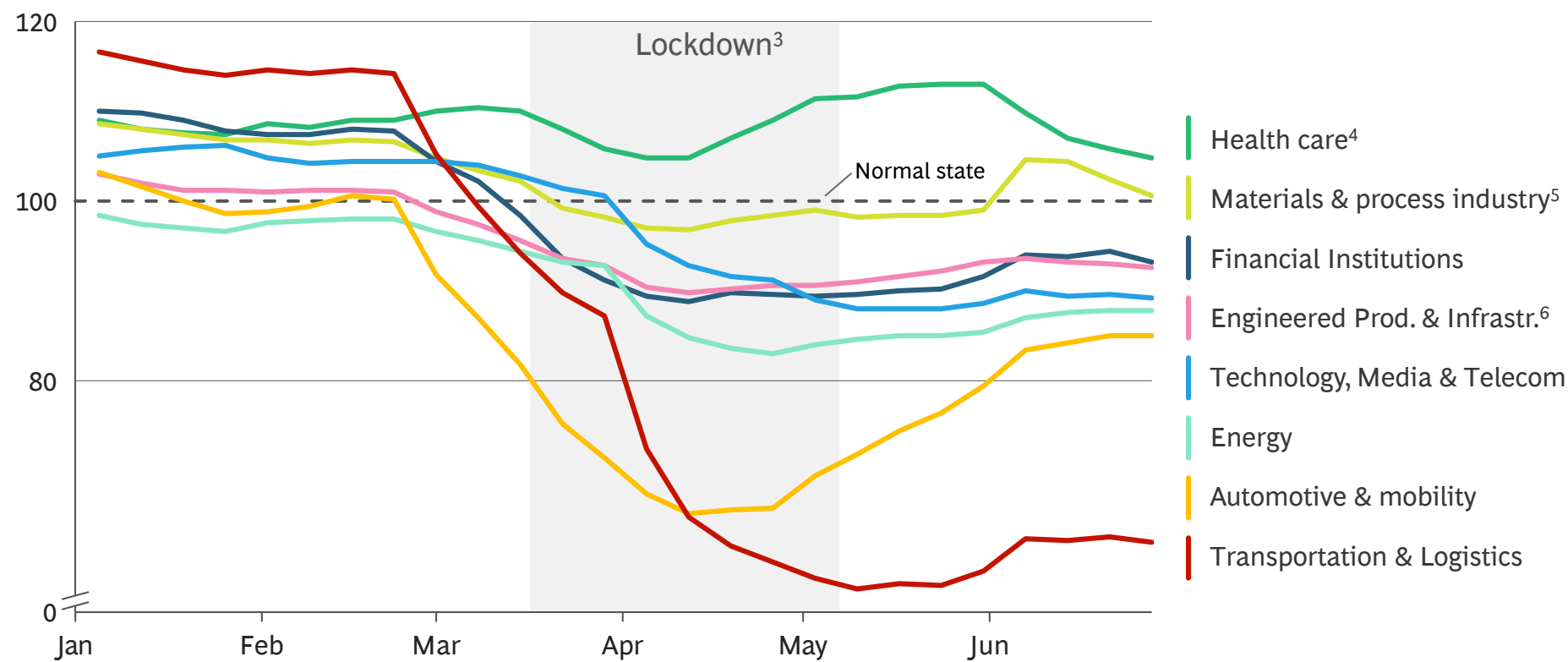Non-exhaustive

BCG Economic Recovery Pulse Check (ERPC)

Methodology

ERPC is a **high-frequency index** capturing sector activity

Based on **100+ data sources** (sector specific), e.g.:
- Financials
- Macro data
- Employment
- Sector confidence

Activity across time (year-on-year)[2]

Legend:
- Health care[4]
- Materials & process industry[5]
- Financial Institutions
- Engineered Prod. & Infrastr.[6]
- Technology, Media & Telecom
- Energy
- Automotive & mobility
- Transportation & Logistics

Note: ERPC tracks industries in EU5 (GER, FR, UK, ITA, SPA), US, Brazil, China and Japan. Index value of 100 indicates a normal activity compared to previous year's period. Current activity and at normal state are computed with a 4-week exponential smoothing; 1. Germany, France, UK, Italy, Spain; 2. Average sector activity values across EU5 countries; 3. Refers to average lockdown start and easing dates in EU5 countries; 4. Medical Tech, Biopharma, Consumer Health (excluding Hospitals); 5. Chemicals, Metals and Mining, Building Materials, Forest Products, Paper and Packaging; 6. Aerospace & Defense, Infrastructure, Machinery & Industrial Automation; Source: BCG

17

Manufacturing PMI recovery globally indicates positive momentum, except in Japan and South Korea

As of 01 July 2020

Manufacturing PMI before, during, and after the crisis

US

Neutral level = 50

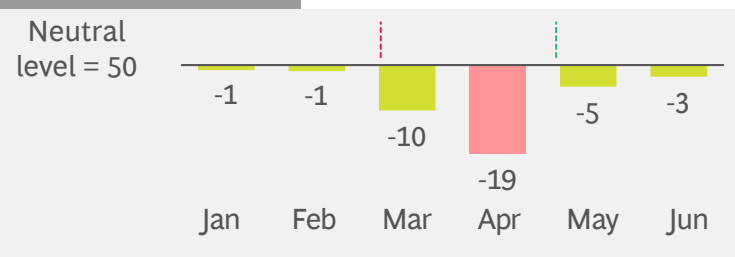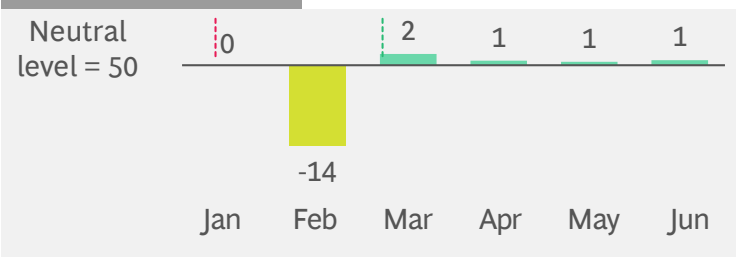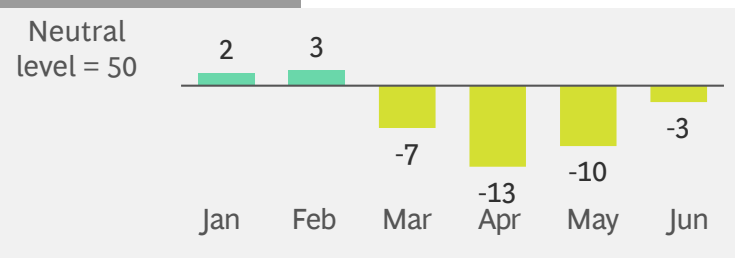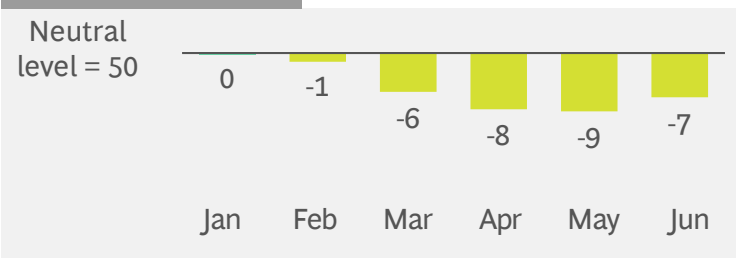| Jan	Feb	Mar	Apr	May	Jun
2	1	-2	-14	-10	0

Italy

Neutral level = 50

Jan	Feb	Mar	Apr	May	Jun
-1	-1	-10	-19	-5	-3

China[1]

Neutral level = 50

Jan	Feb	Mar	Apr	May	Jun
0	-14	2	1	1	1

Sweden

Neutral level = 50

Jan	Feb	Mar	Apr	May	Jun
2	3	-7	-13	-10	-3

South Korea

Neutral level = 50

Jan	Feb	Mar	Apr	May	Jun
0	-1	-6	-8	-9	-7

Germany

Neutral level = 50

Jan	Feb	Mar	Apr	May	Jun
-5	-2	-5	-16	-13	-5

Japan

Neutral level = 50

Jan	Feb	Mar	Apr	May	Jun
-1	-2	-5	-8	-12	-10

Legend:
- < -30%
- -30% to -15%
- -15% to 0%
- > 0%
- Lockdown started
- Lockdown easing
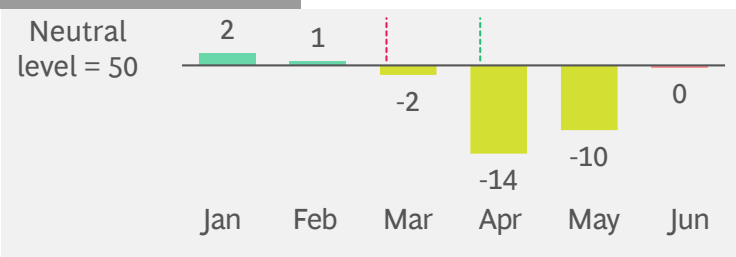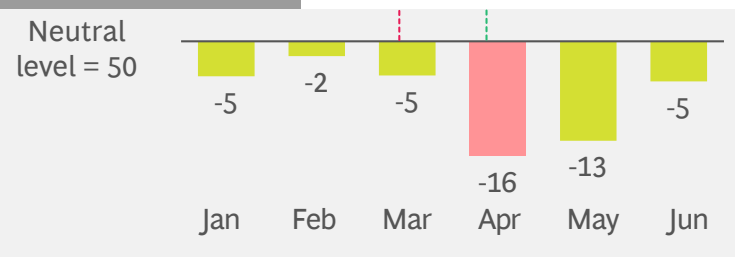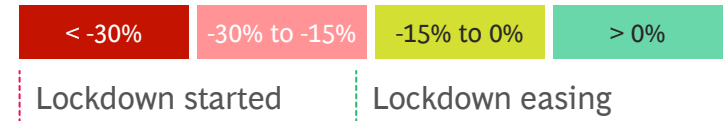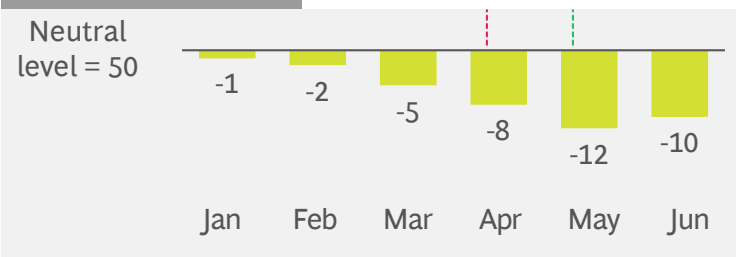
Note: PMI (Purchasing Manager's Index) is a diffusion index that summarizes whether market conditions, as viewed by purchasing managers, are expanding, staying the same, or contracting. 50 is neutral, >50 is considered to be positive sentiment and <50 is considered to be negative sentiment.

1. Lockdown dates are only pertaining to Hubei province; 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 Spain Manufacturing PMI SA; Markit/CIPS UK Manufacturing PMI SA; Markit US Manufacturing PMI SA; Bloomberg

18

Retail goods sales (excl. auto and fuel) recovered to pre-COVID-19 levels in US, China & Japan; showing sign of recovery in Spain & UK

As of 17 July 2020

Growth of total retail goods sales (excl. auto & fuel)[1], YOY % change vs 2019

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

	Jan	Feb	Mar	Apr	May	June
China[2]	-16%		-12%	-6%	-1%	2%
Japan	0%	2%	1%	-6%	-1%	
US	3%	4%	7%	-6%	3%	6%
UK	1%	0%	-4%	-19%	-11%	
Spain	3%	3%	-12%	-27%	-16%	
Sweden	4%	4%	1%	-1%	2%	

Retail goods sales have **already recovered** to pre-COVID-19 levels **in US, China & Japan**

Spain & UK have shown signs of recovery but still **lag behind** last year's sales

Sweden hasn't shown a significant impact of COVID-19 on retail goods sales

Legend: <-15% | -15% to 0% | > 0%

Further reading
Reigniting Retail Demand

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

19

Shift to online retail goods sales (excluding auto and fuel) accelerated during lockdown period and is continuing

As of 05 July 2020

Non-exhaustive

Year-on-year online and offline retail goods (excluding auto and fuel) sales
UK credit card sample spending in retail

Online share[1]	16%	16%	18%	22%	24%	23%
Change in UK retail overall[2]	1%	0%	-4%	-19%	-11%	N/A
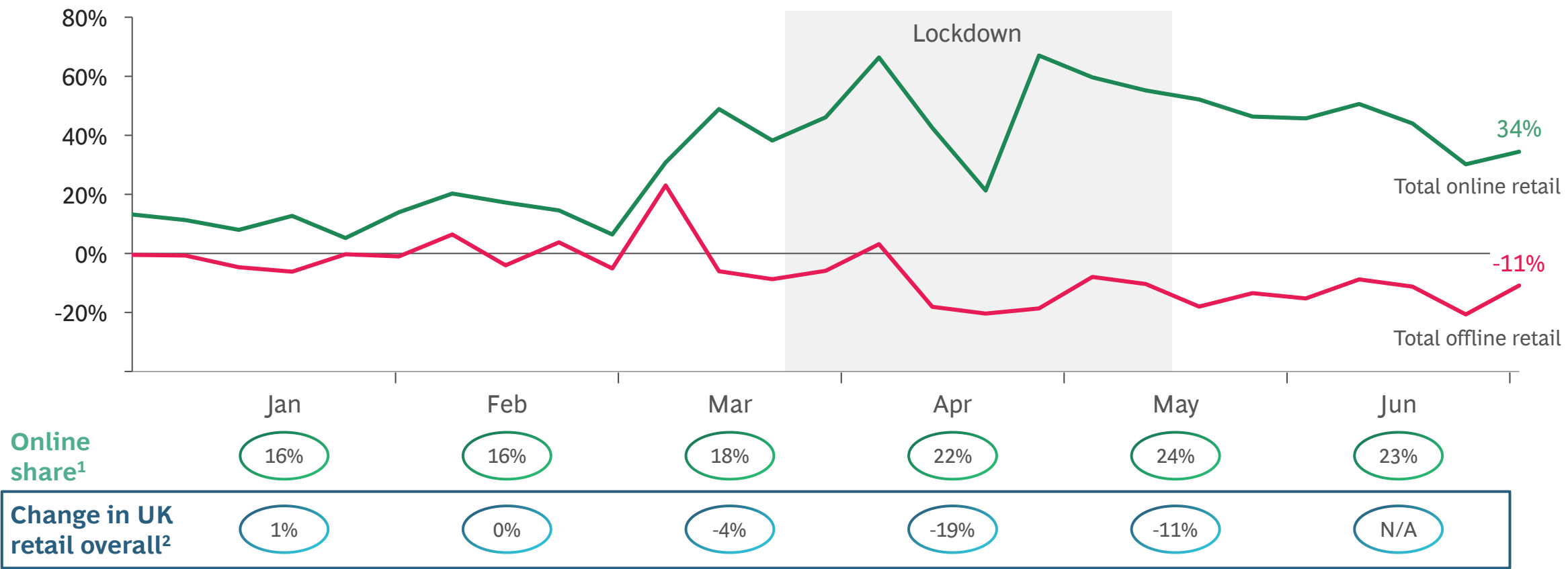
Note: Included offline categories: Discount Retail, Groceries, Supermarket, Bookstore, Department Store, Electronics & Electricals, Clothing, Designer Clothes, Toys, Home, Pet Care, Toiletries, Shoes; Included online categories: Online Shopping, Online only fashion; Online share; Credit card sample represents approx. 1% of total spending; 1. Calculated as average online share throughout calendar month, based on categories in-scope; 2. Based on Eurostat capturing changes in overall UK retails sales; Source: Money Dashboard; Eurostat; BCG

Further reading
CPG Companies Face an E-Commerce Tsunami

20

De-averaged view | Retail store sales in China recovering across categories; apparel sales continue to be low

As of 17 July 2020

Retail store sales' breakdown by category, YoY % change vs 2019

Food & beverage stores

	Feb	Mar	Apr	May	June
China[1]	10%	19%	18%	11%	11%
Japan	4%	1%	0%	2%	
US	4%	29%	12%	15%	12%
UK	1%	10%	5%	5%	
Spain	2%	8%	-2%	1%	
Sweden	2%	5%	-2%	1%	

Personal care & cosmetics stores

	Feb	Mar	Apr	May	June
China[1]	-14%	-12%	4%	13%	21%
Japan	9%	2%	3%	-3%	
US	0%	6%	-10%	-9%	-6%
UK	-10%	-4%	-37%	-37%	
Spain	4%	2%	-12%	-10%	
Sweden	5%	20%	-3%	-4%	

Apparel stores[2]

	Feb	Mar	Apr	May	June
China[1]	-31%	-35%	-19%	-1%	0%
Japan	-4%	-23%	-54%	-34%	
US	1%	-49%	-86%	-62%	-23%
UK	0%	-36%	-68%	-61%	
Spain	0%	-62%	-90%	-67%	
Sweden	-2%	-34%	-38%	-31%	

Home appliance stores[3]

	Feb	Mar	Apr	May	June
China[1]	-30%	-30%	-9%	4%	10%
Japan	5%	-10%	-9%	9%	
US	0%	-18%	-53%	-37%	-13%
UK	-1%	-11%	-50%	-31%	
Spain	3%	-44%	-77%	-31%	
Sweden	8%	1%	10%	16%	

Legend: < -30% | -30% to -15% | -15% to 0% | >0%

For all categories, **China's sales have reverted to year-ago run-rates**

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

Limited recovery in personal care & cosmetics category across US & European countries

Apparels' category saw largest decline; **far from recovery** across countries except China

Home appliances sales seeing a recovery; already higher than last year in Sweden, Japan, and China

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 equip ~13%. Sector classification & mix may be different across countries; 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; Source: US Census Bureau; PRC National Bureau of Statistics; Eurostat; Ministry of Economy Japan

21

Discretionary spend, e.g., passenger car sales, sees limited recovery, except for China and South Korea due to local market dynamics

As of 16 July 2020

Monthly passenger car sales, YOY % change vs 2019

US

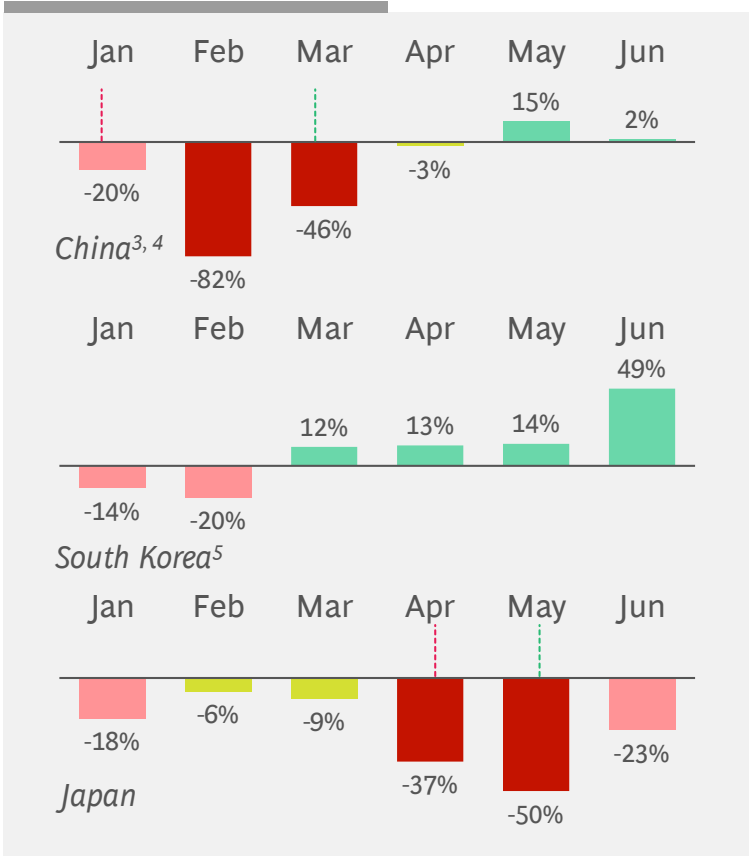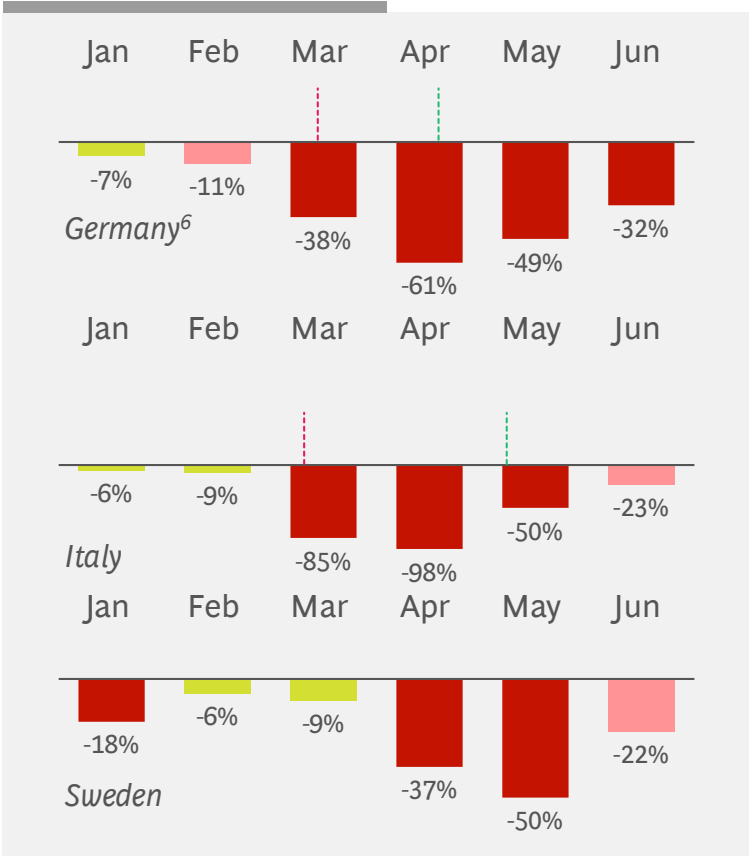|	Jan	Feb	Mar	Apr	May	Jun
US[1, 2]	0%	8%	-39%	-52%	-29%	-38%
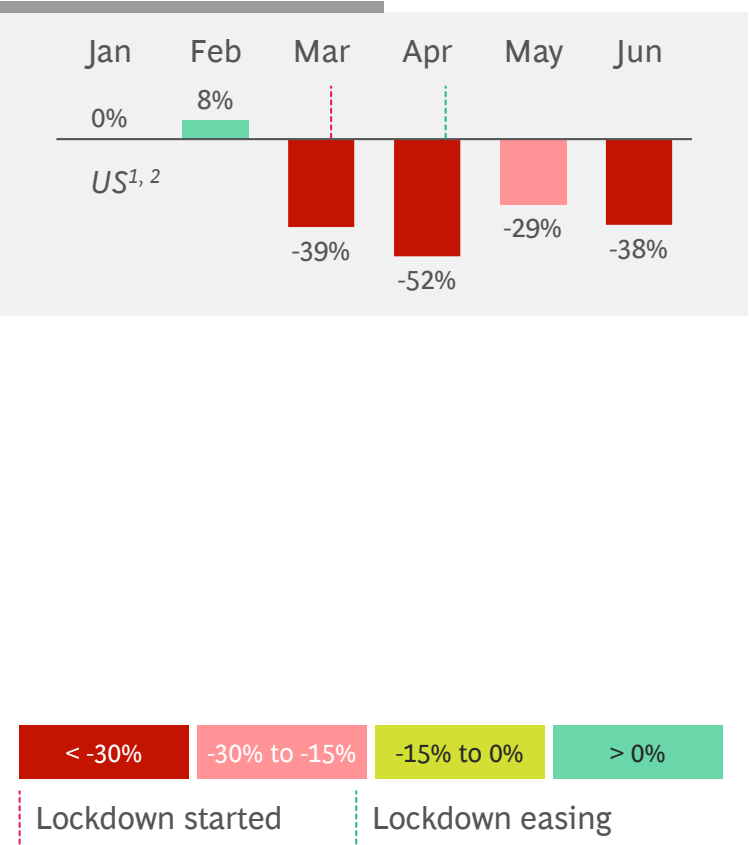
China, South Korea, and Japan

	Jan	Feb	Mar	Apr	May	Jun
China[3, 4]	-20%	-82%	-46%	-3%	15%	2%
South Korea[5]	-14%	-20%	12%	13%	14%	49%
Japan	-18%	-6%	-9%	-37%	-50%	-23%

Germany, Italy, and Sweden

	Jan	Feb	Mar	Apr	May	Jun
Germany[6]	-7%	-11%	-38%	-61%	-49%	-32%
Italy	-6%	-9%	-85%	-98%	-50%	-23%
Sweden	-18%	-6%	-9%	-37%	-50%	-22%

Legend:
- < -30%
- -30% to -15%
- -15% to 0%
- > 0%
- Lockdown started
- Lockdown easing

1. Light Vehicles (LV) include Passenger Vehicles (PV); 2. Stimulus policies: USD 2 trillion economic rescue package announced without specific auto sector measures; 3. Passenger vehicle sales by month incl. mini vans; 4. Stimulus policies: Launched subsidies for car purchases in 10 cities, lessened purchase restriction in high tier cities and extended NEV subsidies; 5. 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'; 6. Stimulus policies: Launched purchase incentives for EVs and PHEVs of up to 9K EUR per car (for EV with purchase price of <40K EUR);
Note: Figures represent new passenger car registrations; Source: ACEA actuals; Wards Automotive; just auto; Marklines/China Assoc. of Automobile Manufact. (CAAM); BCG

Further reading
COVID-19's Impact on the Automotive Industry

Only 4 of top 15 economies[1] show mobility back to 85% of pre-COVID-19 levels

As of 14 July 2020

Monthly change in mobility levels to baseline of January to mid-February 2020

15 largest economies[1]	February[2]	March	April	May	June
US	2%	-14%	-38%	-27%	-19%
Japan	-2%	-7%	-24%	-26%	-13%
Germany	0%	-20%	-38%	-23%	-15%
India	1%	-24%	-66%	-50%	-33%
United Kingdom	-2%	-21%	-61%	-51%	-41%
France	-2%	-36%	-67%	-42%	-19%
Brazil	-2%	-17%	-41%	-34%	-26%
Italy	-2%	-51%	-68%	-42%	-22%
Canada	0%	-20%	-50%	-37%	-25%
Russia	4%	-2%	-39%	-27%	-11%
South Korea	-12%	-14%	-7%	-1%	-1%
Australia	6%	-6%	-39%	-26%	-18%
Spain	2%	-40%	-73%	-50%	-26%
Mexico	3%	-12%	-45%	-43%	-36%

Legend: Lockdown   ● < -30%   ● -30% to -16%   ● -15% to 0%   ● > 0%

Current mobility levels are below January 2020 for all countries

Many countries showed a 50% reduction in mobility in April, the month of widespread lockdowns across geographic areas

1. Except China; 2. Change based on the data starting on 15 Feb throughout the end of February; Note: Lockdown definition varies among countries but generally refers to period when non-essential businesses were ordered to shut down; Easing of lockdown comes with certain restrictions in all the countries; Monthly change in mobility levels is calculated by taking an average of the monthly values of workplace, public transit, grocery & pharmacy and retail & recreation mobility; Source: Google LLC "Google COVID-19 Community Mobility Reports". https://www.google.com/covid19/mobility/ Accessed: 14 July 2020; Press search; BCG
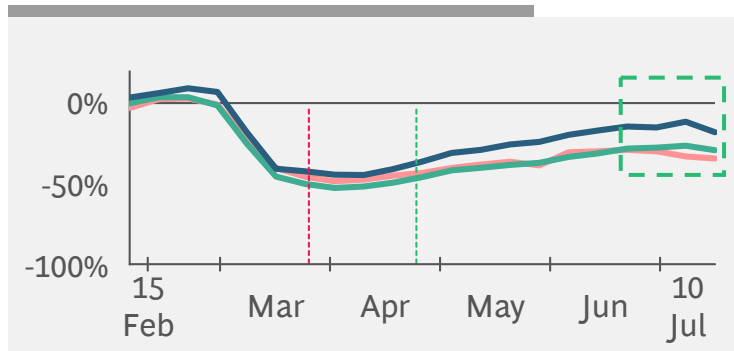
Retail and recreation mobility recovered fastest; lower recovery of workplace mobility indicates continued adoption of work from home
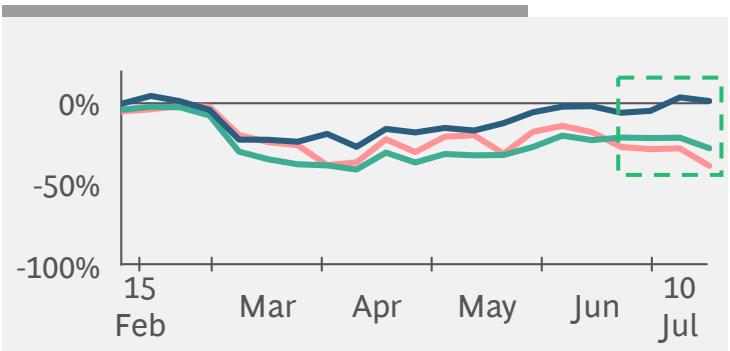
As of 14 July 2020

Workplace[1], public transit[2] and retail & recreation[3] mobility as compared to baseline of January to mid-February 2020
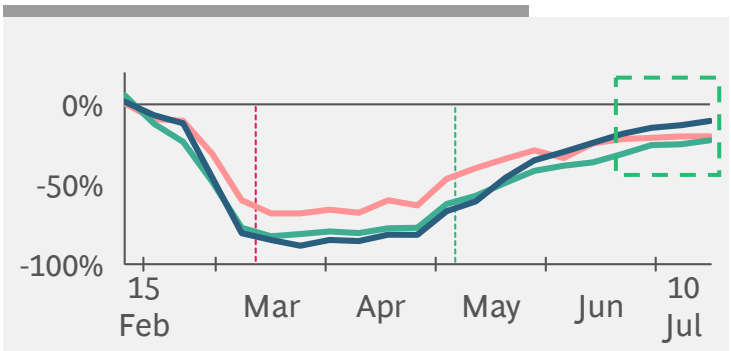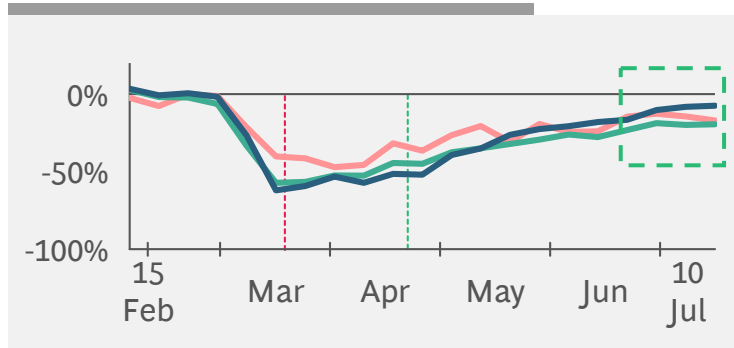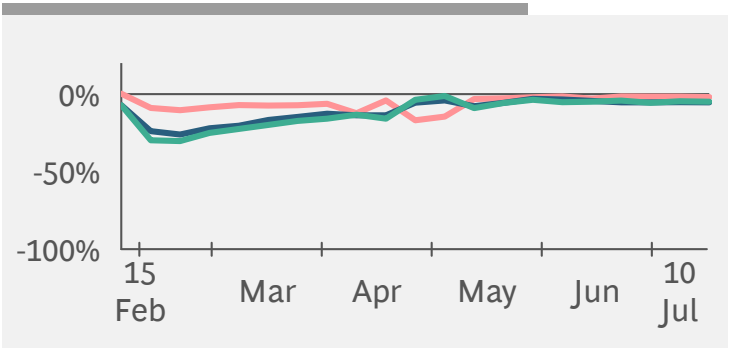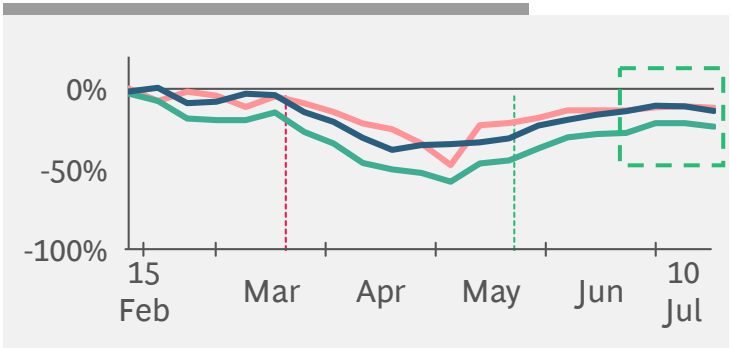
Legend:
- Lockdown started
- Lockdown easing
- Workplace mobility
- Public transit mobility
- Retail+recreation

Further reading
How COVID-19 Will Shape Urban Mobility

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; Note: Data taken as weekly average compared with baseline (average of all daily values of respective weeks during Feb 15–Jul 10 2020); Source: Google LLC "Google COVID-19 Community Mobility Reports". https://www.google.com/covid19/mobility/ Accessed: 14 July 2020; Press search; BCG

Current and future flight ticket bookings across countries show that recovery in air travel is far away

As of 30 June 2020

Domestic flight booking trends

YoY comparison of 14-day rolling average of domestic ticket volume[1]

Legend:
- China
- Japan
- Germany
- Italy
- S Korea
- US
- UK

Domestic flight tickets booked by departure month

YoY comparison of ticket volume by departure month

	June-Jul	Aug-Oct	Nov onwards
China	-40%	-86%	-47%
S Korea	-58%	-54%	-64%
Japan	-85%	-75%	-92%
US	-75%	-64%	-54%
Germany	-86%	-78%	-79%
UK	-90%	-78%	-61%
Italy	-76%	-64%	-77%

Decline as compared to last year: 40%-60% | 60%-80% | >80%

1. % changes in rolling 14 days value as compared to same period last year for one way tickets; Source: ARC ticketing data; BCG
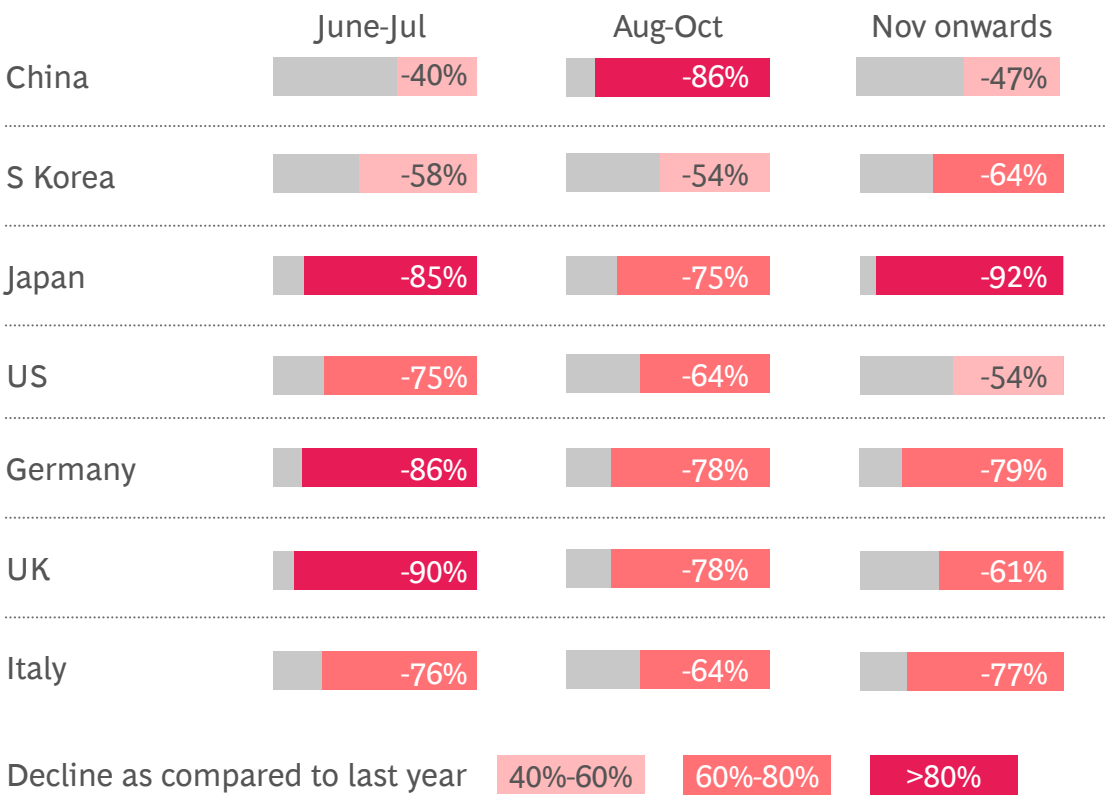
Companies will need to augment their capabilities to win in the new reality

Build greater systemic resilience

Develop demand-sensing capabilities

Scale omnichannel and digital experiences

Evaluate future scenarios

Build greater systemic resilience to absorb stress, recover critical functionality, and thrive in altered circumstances

Build advanced analytics capabilities (including Lighthouse) to use high-frequency data to sense demand shifts and consumer sentiments

Scale up e-commerce and omnichannel capabilities; invest in personalization and digital sales and marketing

Leverage the power of data and technology to develop potential scenarios for changing shape of demand and structural shifts

More on following pages

Building greater systemic resilience

Organizations need to build greater systemic resilience to absorb stress, recover critical functionality, and thrive in altered circumstances

Further reading:
A Guide to Building a More Resilient Business

1 | **Seek advantage in adversity**
Aim to create advantage in adversity by effectively capturing opportunities in the new reality

2 | **Look forward**
Shift the organization's time horizon outward to identify new needs and create opportunities in the incapacitation of competitors

3 | **Take a collaborative, systems view**
Foster collaboration among employees, customers, and stakeholders to enable systemic solutions

4 | **Measure beyond performance**
Build a sustainable business by measuring flexibility, adaptation, and other components of resilience

5 | **Prize diversity**
Champion the prizing of cognitive diversity and appreciate the value of variation and divergence

6 | **Change as the default**
Build organizations and supporting systems predicated on constant change and experimentation

Source: BCG

Pace and de-averaged nature of change make rapid sensing capabilities a key imperative for leaders

Change is coming at a fast pace and in different shapes

The pace of change has increased by multiples

"*We have seen two years' worth of digital transformation in two months.*"

– Satya Nadella, CEO of Microsoft

Change in consumer behavior is not uniform

Geography

Sector

Sales channel

Target group

…

Imperative to build rapid demand-sensing capabilities to capture a de-averaged recovery across sectors

Short-term sensing

Sensing short-term trends in demand based on high-frequency data

Medium-term scenarios

Understanding scenarios for changing shape of demand and structural shifts

Further reading
Sensing Consumer Behavior and Seizing Demand Shifts

Key dynamics of the restart

Restart progression and early indicators

Trends in industrial, consumer activity, and mobility

Updated analyses and impact

Epidemic progression; economic and business impact

Vaccines and Treatments | Development at unprecedented pace

As of 17 July 2020

Vaccines

23 candidates in clinical trials

171[1]	10	8	3	2	194

Phase I
Safety, side effects/dose

Phase I/II

Phase II
Effectiveness/safety

Phase III
Confirm effectiveness
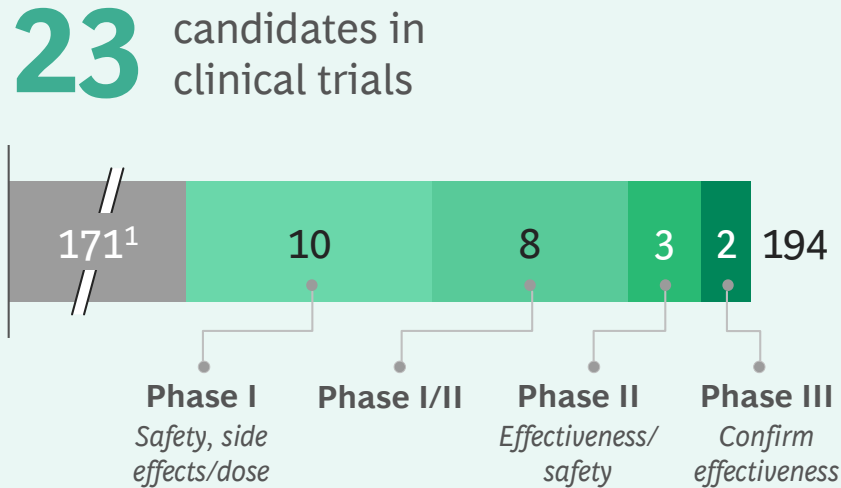
> *By the beginning of 2021, we hope to have a couple of hundred million doses. I'm cautiously optimistic with the multiple candidates we have with different platforms.*
>
> - Dr. Anthony Fauci, Member, White House Coronavirus Task Force

Treatments

59 candidates in clinical trials › Of which, **3 have been approved[2] for treatment**

83[1]	10	4	20	7	12	6	142

Phase I
Safety, side effects/dose

Phase I/II

Phase II
Effectiveness/safety

Phase II/III

Phase III
Confirm effectiveness

Phase IV
Risk-benefit/best use
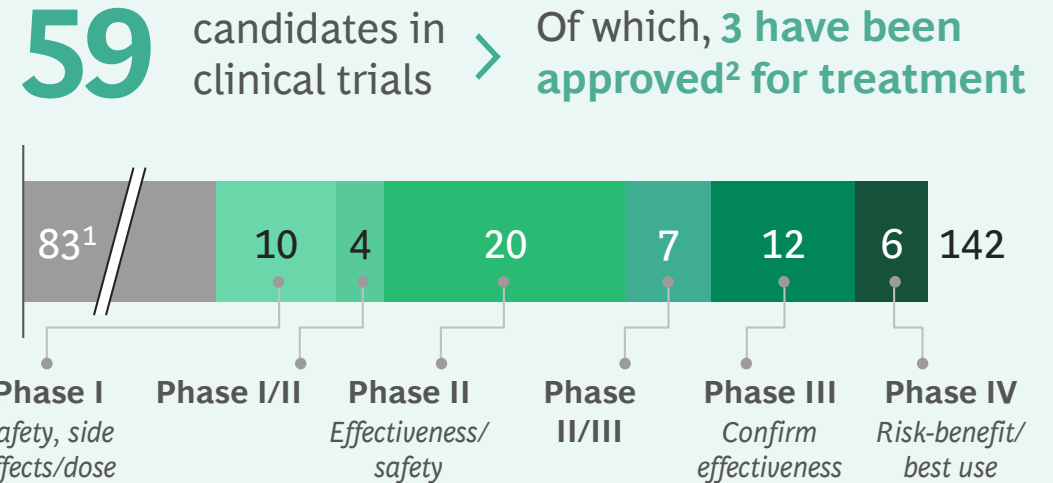
> *We have made amazing progress in the treatment of COVID-19. Two therapies – steroids and Remdesivir – have already been shown to help.*
>
> - Dr. William Petri, Professor of Medicine, University of Virginia

1. Pre-clinical trials; 2. Three treatments are approved to treat COVID-19: Dexamethasone in the UK; Avigan (favilavir) in China, Italy and Russia + emergency use in India; and Veklury (Remdesivir) in Japan + emergency use in US, India, South Korea and EU; in addition, Itolizumab has emergency use authorization in India
Source: WHO (July 15); Milken Institute; Press search; BCG

30

Economic forecasts point toward severe downturn in 2020 with rebound in 2021

As of 20 July 2020

GDP growth forecast vs. baseline
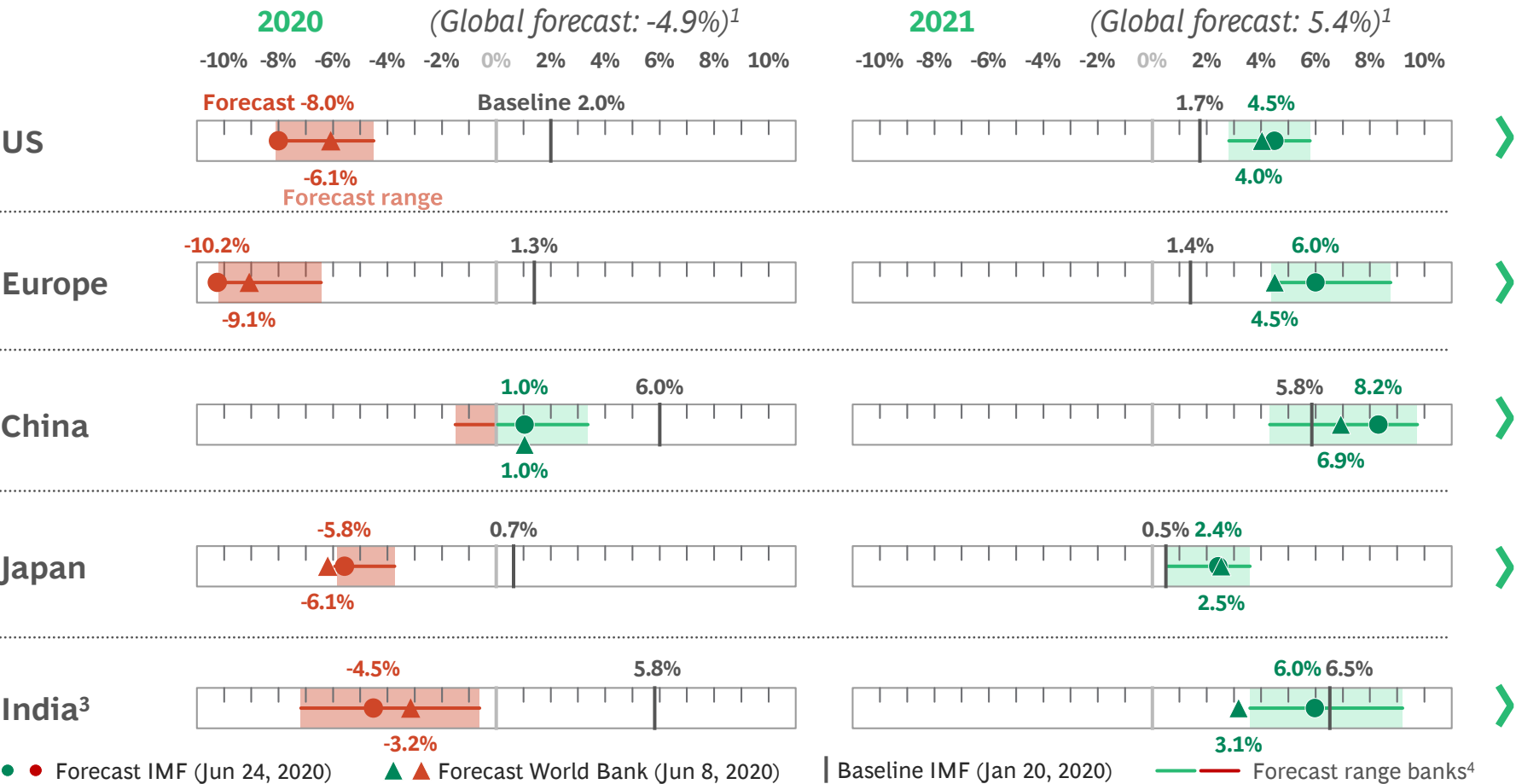
GDP level forecast[2]
EOY 2021 vs. EOY 2019

2020 *(Global forecast: -4.9%)[1]*

-10% -8% -6% -4% -2% 0% 2% 4% 6% 8% 10%

2021 *(Global forecast: 5.4%)[1]*

-10% -8% -6% -4% -2% 0% 2% 4% 6% 8% 10%

	2020	2021	GDP level
US	Forecast -8.0% / -6.1% Forecast range / Baseline 2.0%	1.7% / 4.5% / 4.0%	97-100%
Europe	-10.2% / -9.1% / 1.3%	1.4% / 6.0% / 4.5%	96-99%
China	1.0% / 1.0% / 6.0%	5.8% / 8.2% / 6.9%	107-112%
Japan	-5.8% / -6.1% / 0.7%	0.5% / 2.4% / 2.5%	95-98%
India[3]	-4.5% / -3.2% / 5.8%	6.0% / 6.5% / 3.1%	100-107%

● ● Forecast IMF (Jun 24, 2020)   ▲ ▲ Forecast World Bank (Jun 8, 2020) | Baseline IMF (Jan 20, 2020)   ── ── Forecast range banks[4]

Note: As of reports dated 31 March 2020 to 24 June 2020, YoY forecasts; 1. Based on IMF forecast June 24 2020; 2. Range calculated with 25th & 75th percentile values of forecast range; 3. For India, forecast is for financial year; for other countries, the forecast is for calendar year; 4. Range from forecasts (where available) of Goldman Sachs, JP Morgan Chase; Morgan Stanley; Bank of America; Fitch Solutions; Credit Suisse; Danske Bank; ING Group; HSBC.; Source: Bloomberg; World Bank; IMF; BCG

Countries with shorter outbreaks are forecasted to have better economic performance

Outbreak length[1] vs. average 2020 GDP growth forecast

Outbreak length (number of days with fatalities/M ≥ 0.1)

Improving from top to bottom

- **Sweden** seeing economic decline despite keeping economy open
- **Japan** controlled outbreaks, but suffering impact of global economic crisis via lower exports
- **New Zealand's** strict and early lockdown brought disease levels to nearly 0, but forecasting large GDP decline
- **Countries** that quickly implemented 4TIQ[3] and controlled outbreak seeing better GDP prospects

Average 2020 GDP growth forecast (%)[2]

1. Outbreak length defined as Number of Days with Fatalities/M greater than or equal to 0.1; 2. Calculated as the mean of available forecasts by OECD, World Bank, Euromonitor, IMF, and Oxford Economics; 3. Policies with focus on test, trace, track, tech, isolate, quarantine; Note: Brazil, Argentina, Mexico, Chile, India still having outbreaks at the time of the data pull. Trend line R2 = 0.49, P-value = 0.00. Data as of 15 June, 2020; Source: OECD Economic Outlook June 2020; World Bank Global Economic Prospects June 2020; Euromonitor Global Economic Forecasts Q2 2020; IMF World Economic Outlook April 2020; Oxford Economics June 2020; John Hopkins CSSE; BCG

Unemployment numbers declining or flattening out;
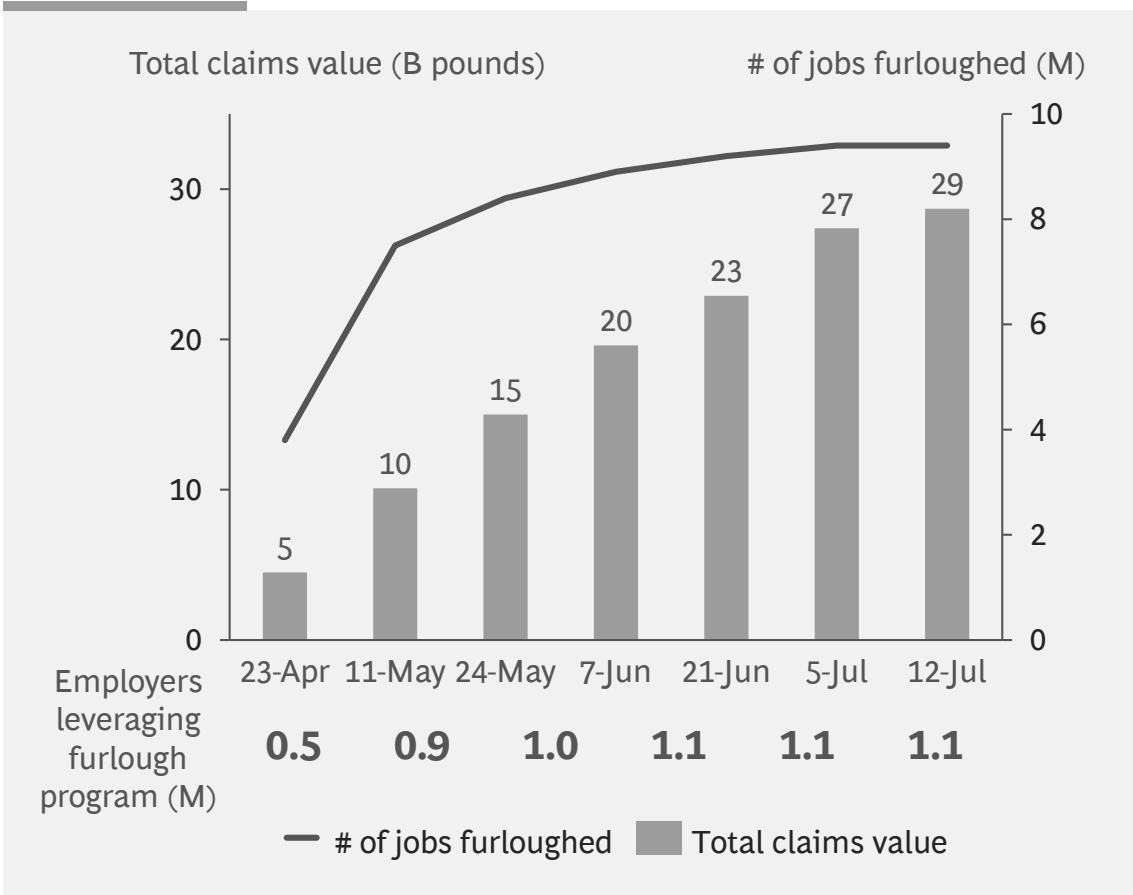# for US, temporary jobs coming back, permanent job losses increase

As of 12 July 2020   **UK Example**   **As of 02 July 2020**   **US Example**

In UK, number of jobs furloughed is flattening out

Total claims value (B pounds)   # of jobs furloughed (M)

Legend: — # of jobs furloughed   ▮ Total claims value

Employers leveraging furlough program (M): 0.5 0.9 1.0 1.1 1.1 1.1

X-axis: 23-Apr, 11-May, 24-May, 7-Jun, 21-Jun, 5-Jul, 12-Jul

Bar values: 5, 10, 15, 20, 23, 27, 29

In US, temporary jobs coming back; however, permanent job losses increasing

Number of unemployed people (millions in every month)

Legend: — Temporary job losses   — Permanent job losses

Data points: 18M (Apr'20), 11M (Jun'20), 3M (Jun'20)

X-axis: Nov'19, Dec'19, Jan'20, Feb'20, Mar'20, Apr'20, May'20, Jun'20

Source: US Department of Labor – Employment Situation Report (02 July 2020); HMRC Coronavirus Statistics – UK Government

Global equity markets have been highly volatile through the crisis, including their recovery since March lows

As of 17 July 2020

Market index — S&P500 — NASDAQ — DAX — FTSE — China SSE

Volatility — S&P500 (VIX) — NASDAQ (VXN) — DAX (VDAX) — FTSE — China SSE (CBOE)
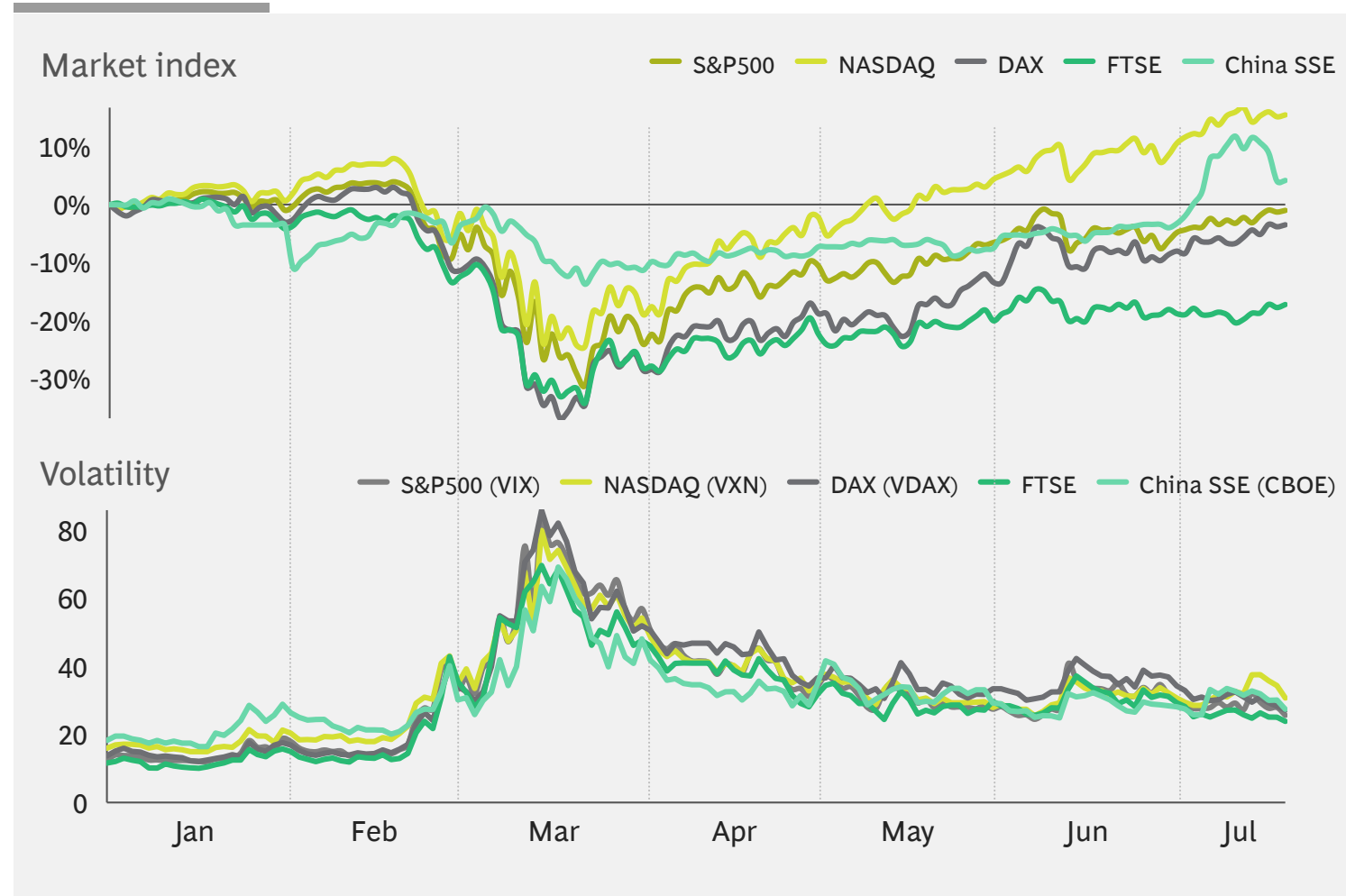
Most stock market indices currently recovering rapidly; NASDAQ crossed all-time high recently[1]

Volatility index[2] (~27[3]) is higher than pre-COVID-19 levels (15[4])

1. On 10 July 2020; 2. Volatility Index is a real-time market index that represents the market's expectation of 30-day forward-looking volatility; it provides a measure of market risk and investors' sentiments; 3. Median volatility of the 5 indices on the chart on 17 July 2020; 4. Median volatility of the 5 indices over the month of January 2020; Source: Bloomberg, BCG

34

4 sectors currently at pre-crisis TSR levels; 6 sectors with significant share[1] of companies with >15% default risk

As of 17 July 2020

Categories based on TSR and net debt/enterprise value[2]

	TSR performance[3]			Companies with probability of default >15%[4]		
	21 Feb 2020 - 20 Mar 2020	21 Feb 2020 - 17 July 2020	03 July 2020 - 17 July 2020	21 Feb 2020	17 July 2020	03 July 2020 - 17 July 2020
Healthier sectors						
Semiconductors	-30%	7%	↗	0%	0%	→
Pharma	-20%	2%	↗	0%	5%	→
Food/staples Retail	-10%	1%	↗	0%	0%	→
Household Products	-16%	0%	→	0%	0%	→
Tech Hardware	-26%	-1%	↗	0%	0%	→
Pressured sectors						
Retailing	-40%	-1%	↗	0%	35%	→
Software	-30%	-2%	→	9%	0%	→
Health Equipment	-31%	-2%	↗	0%	0%	→
Materials	-32%	-5%	↗	4%	9%	↗
Prof. Services	-30%	-7%	↗	0%	0%	→
Telecom	-17%	-8%	↗	0%	8%	→
Food & Beverage	-23%	-8%	↗	0%	0%	→
Media	-36%	-9%	↗	0%	8%	↘
Capital Goods	-35%	-9%	↗	2%	5%	→
Financials	-35%	-12%	↗	0%	0%	→
Vulnerable sectors						
Auto	-41%	-12%	↗	0%	24%	→
Utilities	-30%	-13%	↗	0%	3%	↘
Transport	-34%	-13%	→	0%	28%	→
Durable Goods	-39%	-16%	↗	0%	5%	↘
Insurance	-39%	-20%	↗	0%	0%	→
Banks	-39%	-27%	→	0%	4%	→
Hospitality	-44%	-27%	↗	7%	36%	→
Real Estate	-39%	-28%	↘	0%	17%	→
Energy	-52%	-31%	→	0%	18%	↗

Legend:
- ↗ Pos. trend ≥ 2%
- → No sig. change
- ↘ Neg. trend ≥ 2%

Note: Based on top S&P Global 1200 companies; Sectors are based on GICS definitions; 1. Retailing, Transport, Auto, Real Estate, Energy, Hospitality with > 10% of companies with probability of default > 15%; 2.Net debt & enterprise value from latest available balance sheet; Categories defined based on comparison with S&P Global 1200 median: healthy = TSR & debt/EV > median, pressured = TSR or debt/EV < median, vulnerable = TSR & debt/EV < median; 3. 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 17 July 2020 based on median; 4. Implied by 5-year Credit Default Swap based on median
Source: S&P Capital IQ; BCG ValueScience Center; BCG

35

Additional perspectives on COVID-19

Edition #12

Ensuring an Inclusive Recovery

Edition #11

Accelerating Climate Actions in the New Reality

Edition #10

Value Protection and Acceleration Roadmap to Win in the New Reality

Edition #9

Future of Global Trade and Supply Chains

Edition #8

Galvanizing Nations for the New Reality

Edition #7

Sensing Consumer Behavior and Seizing Demand Shifts

Edition #6

Restructuring Costs, and Managing Cash and Liquidity

Edition #5

Revamping Organizations for the New Reality

Edition #4

Accelerating Digital & Technology Transformation

Edition #3

Emerging Stronger from the Crisis

Edition #2

Preparing for the Restart

Edition #1

Facts, Scenarios, and Actions for Business Leaders

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