COVID-19 BCG Perspectives Series

Facts, scenarios, and actions for leaders

Global Restart: Key Dynamics

21 July 2020

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 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.

Source: BCG

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

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

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

Source: BCG

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

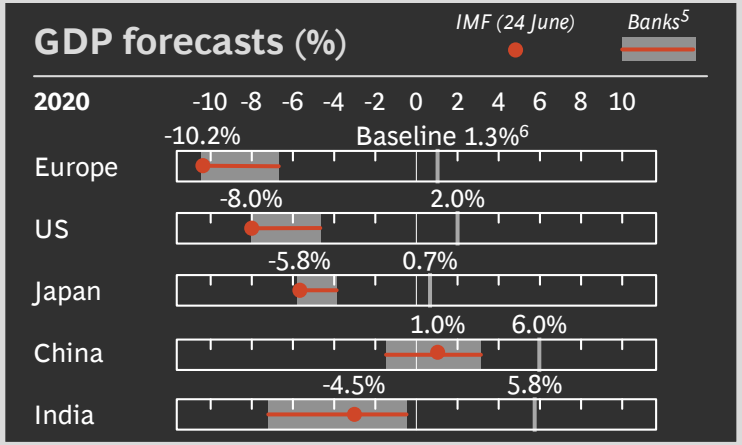
Global epidemic snapshot

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

		April	May	June	July[4]
Month-on-month growth of new cases[2]	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 (%)



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

1. Calculated as seven day rolling average; 2. Calculated as monthly average of daily cases as compared to previous month; 3. Includes Middle East and Oceania; 4. As of 17 July 2020; 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; Goldman Sachs, Morgan Stanley; Bank of America; Fitch Solutions; Credit Suisse; Danske Bank; ING Group; HSBC; As of reports dated 12 April 2020 to 17 July 2020; 6. IMF June 2020 forecast; 7. Mobility values are calculated as the average of mean monthly mobilities in workplace, public transit and retail & recreation and compared to a baseline from 03 Jan – 06 Feb 2020; EU mobility values are calculated as the average of Germany, France, UK, Spain, and Italy; 8. Calculated as change in last 14 days rolling average value as compared to same period last year; 9. Retail goods sales includes online & offline sales and comprise food & beverages, apparel, cosmetics & personal care, home appliances, general merchandise, building material; does not include auto, fuel & food services; 10. Figures represent the difference in new passenger car registrations for the respective month in 2020 compared to 2019 baseline; EU value calculated based on registrations in Germany, France, UK, Spain, and Italy; 11. Calculated as average occupancy rates compared to month of previous year in regions Asia Pacific, Americas, Europe, Middle East, and Africa; 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; 14. Values calculated as monthly average; 15. 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); 16. Data corresponds to G-20 countries. Sources: JHU CSSE; Our World in Data; WHO; World Bank; IMF; Bloomberg; Google Mobility; US Census Bureau; Eurostat; PRC National Bureau of Statistics; ACEA actuals; Wards Automotive; just auto; Marklines; China Assoc. of Automobile Manufact. (CAAM); ARC ticketing data; STR; Statista; CBOE; OECD; Integrated Carbon Observatory System; Mature Climate Change; Global Carbon Project; The New York Times; BCG

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

1.5x cases in June[1]

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

(Our World in Data)

Disease hotspots

30% cases from new hotspots[2]

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)

(JHU CSSE, Our World in Data)

Lockdown strategies

Localized

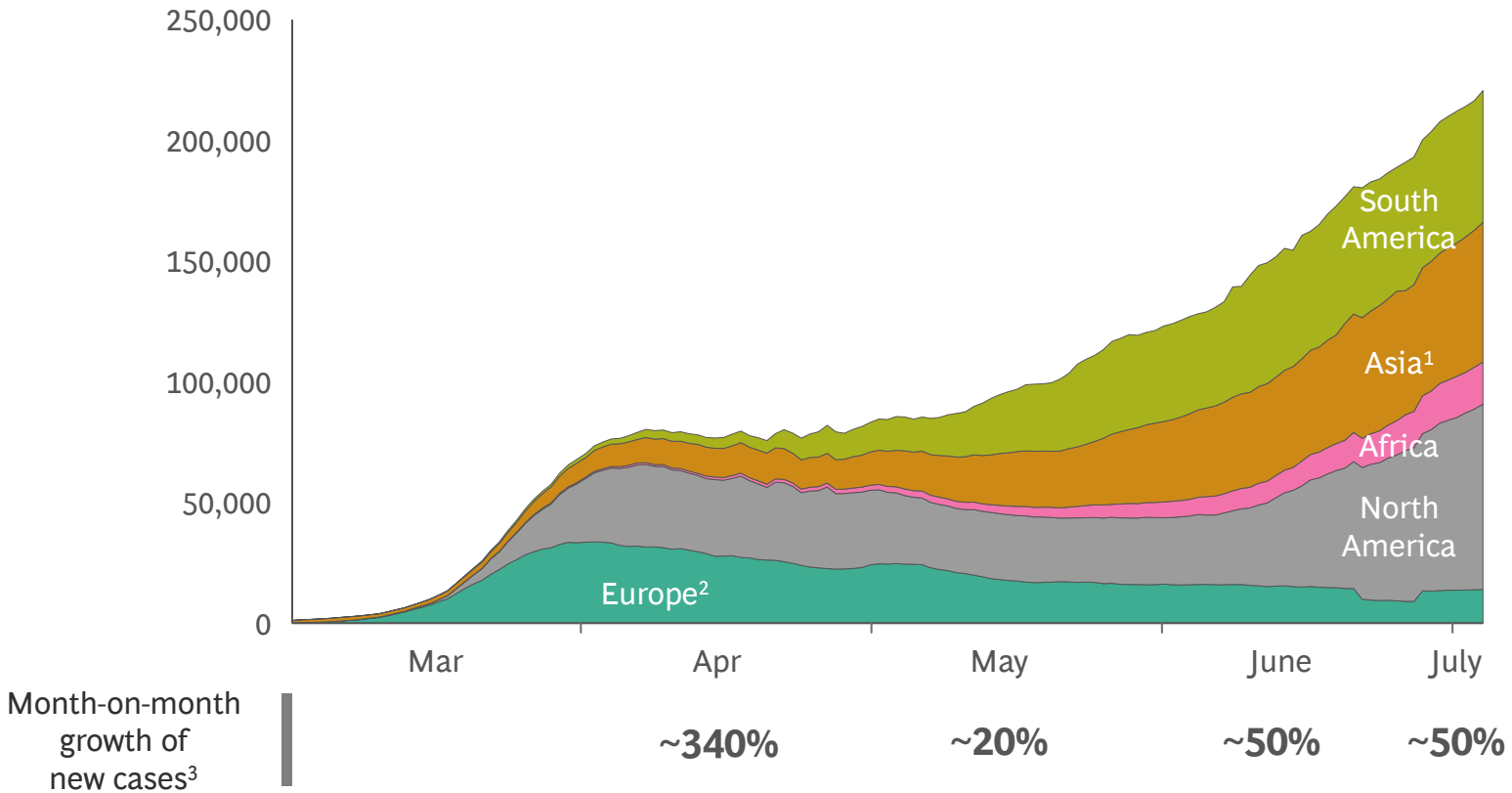
Countries (e.g., Australia, India, Spain) shifting from national to localized lockdowns to control the progression

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)



Key observations

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

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

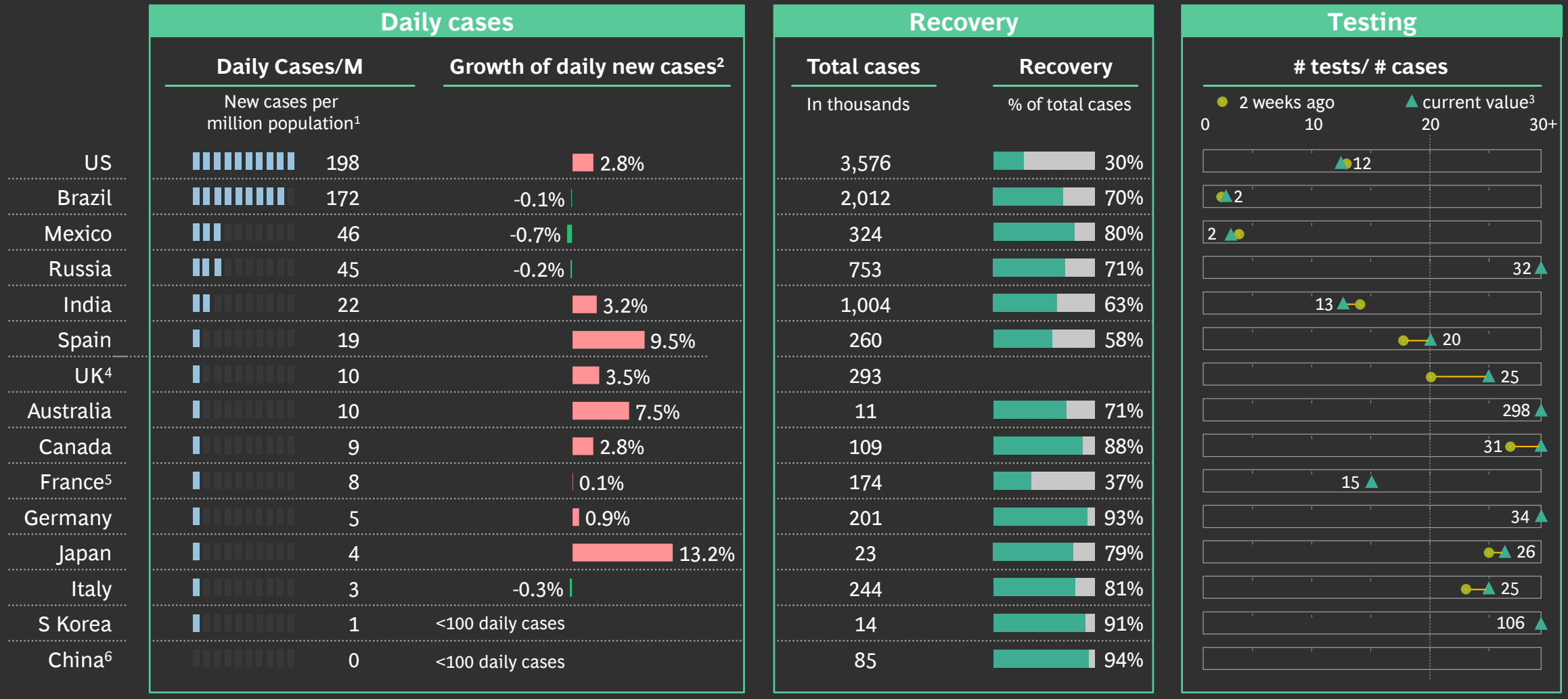
596k (Δ0.9%)[4]
Fatalities globally
(daily growth rate %)

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

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

Top 15 economies by GDP
As of 17 July 2020



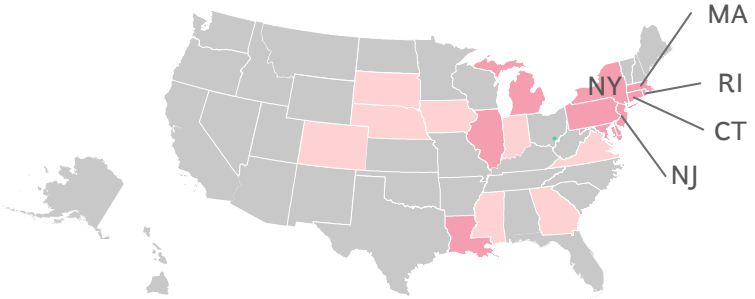
1. 7-day rolling average; represented scale rounds up daily case/M to next 20th place; 2. Growth rate calculated basis 7-day rolling average of new cases; values calculated only for countries with 100+ daily cases; 3. Test/case data is not updated daily for a few countries, data represented is within 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

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

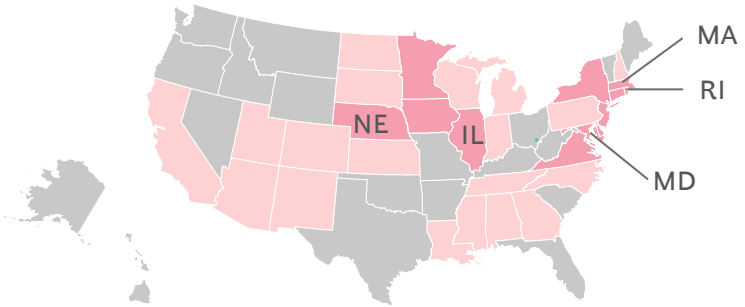
As of 17 July 2020

US Example

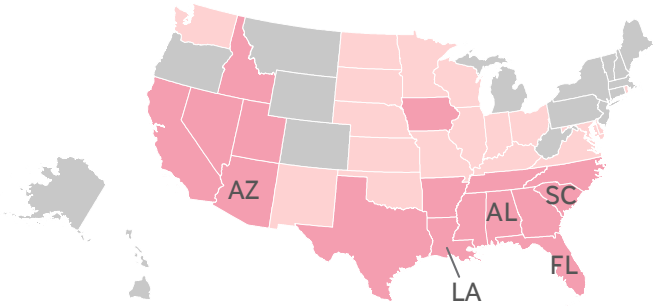
April



May

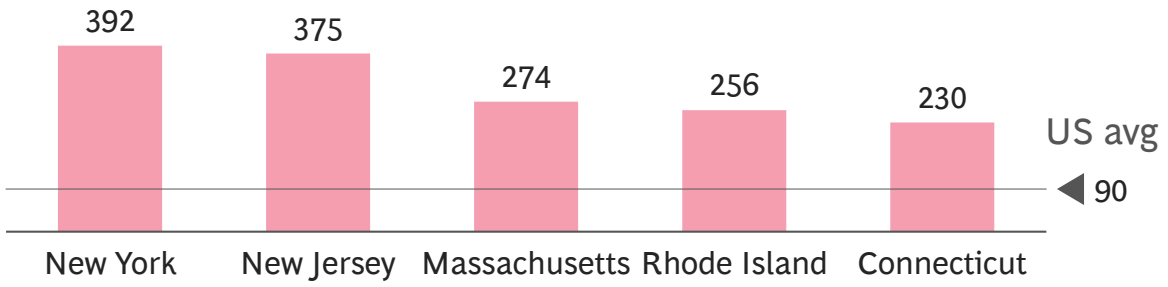


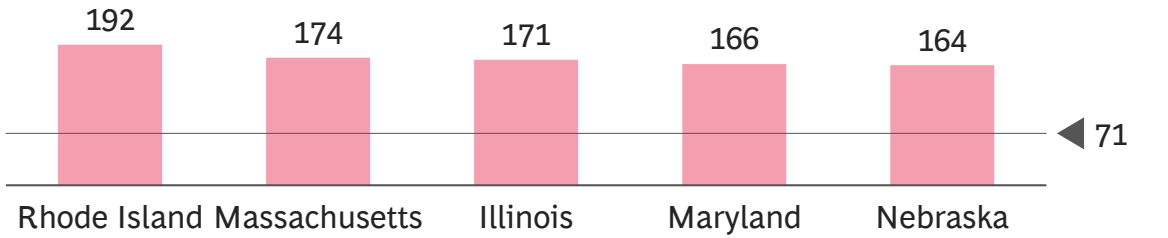
June and July[2]

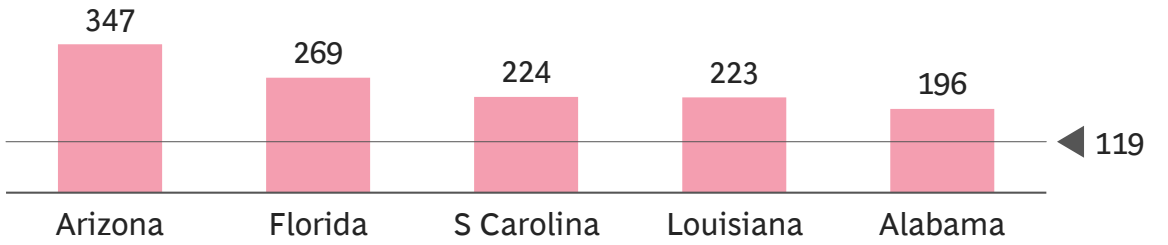


Daily cases per M population[1] <50 50-100 >100

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







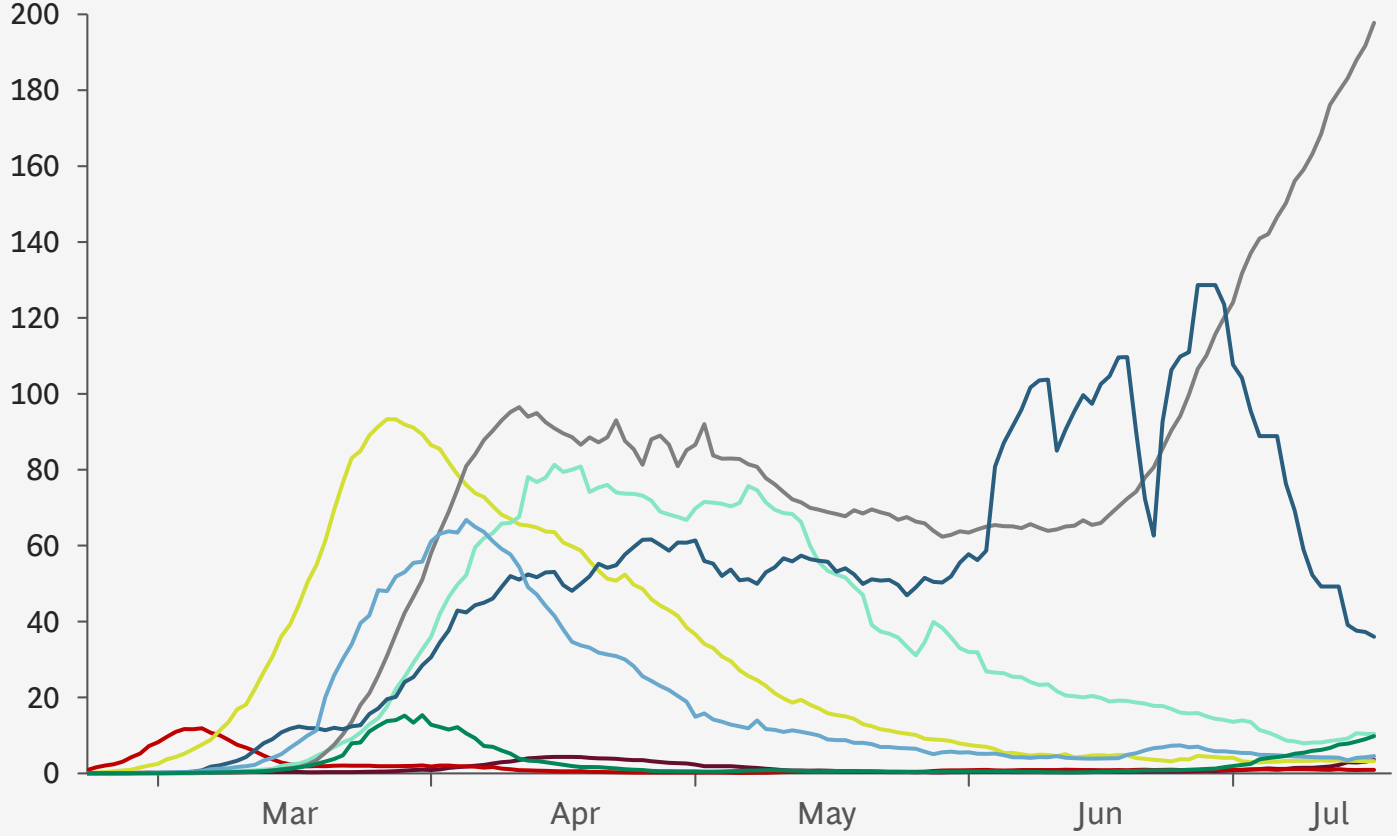
Current top 5 states contribute **30% of new cases[2];**
while top 5 states from April contribute only **4% of new cases**

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

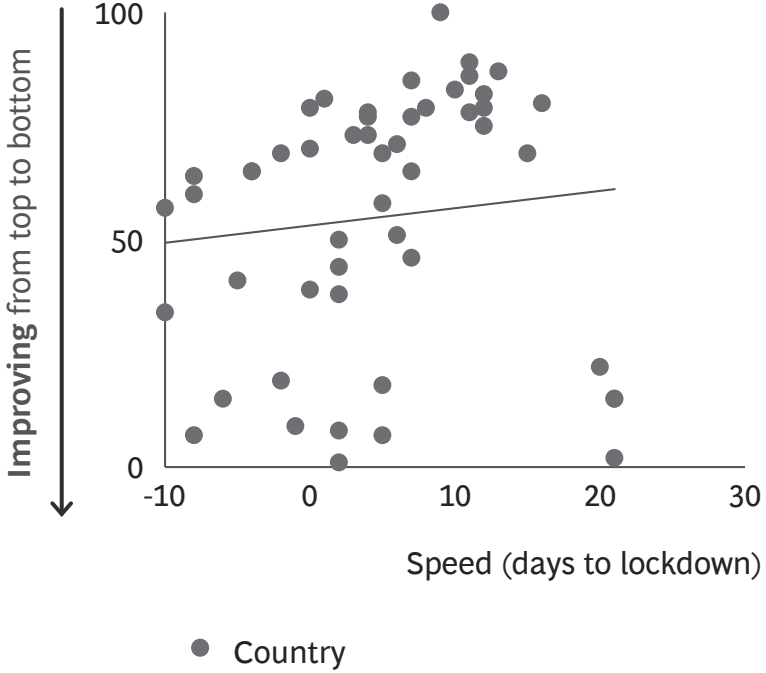
1. Calculated as a 7-day rolling average; 2. 4TIQ = Test, trace, track, technology, isolate, and quarantine
Source: JHU CSSE, BCG

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)

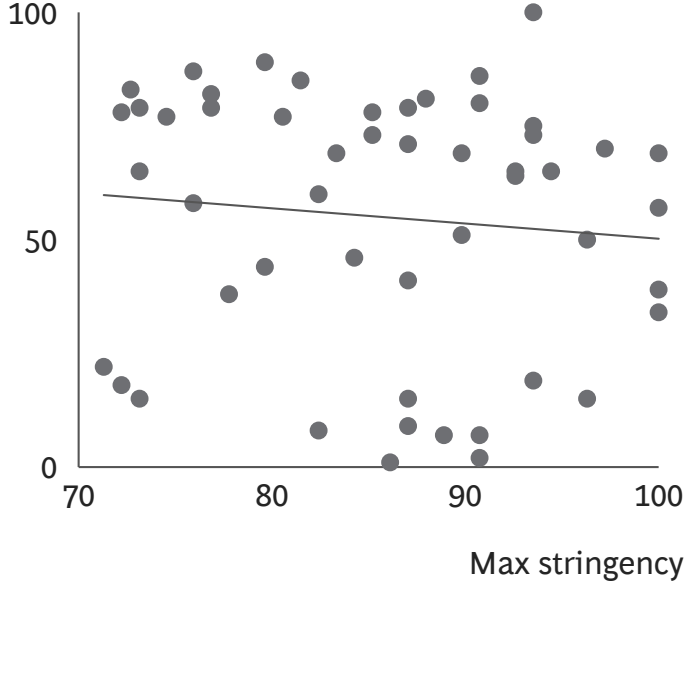
Outbreak length (# days fatalities/M > 0.1)



Stricter lockdown alone does not shorten outbreak

Not statistically significant (P-value: 0.48)

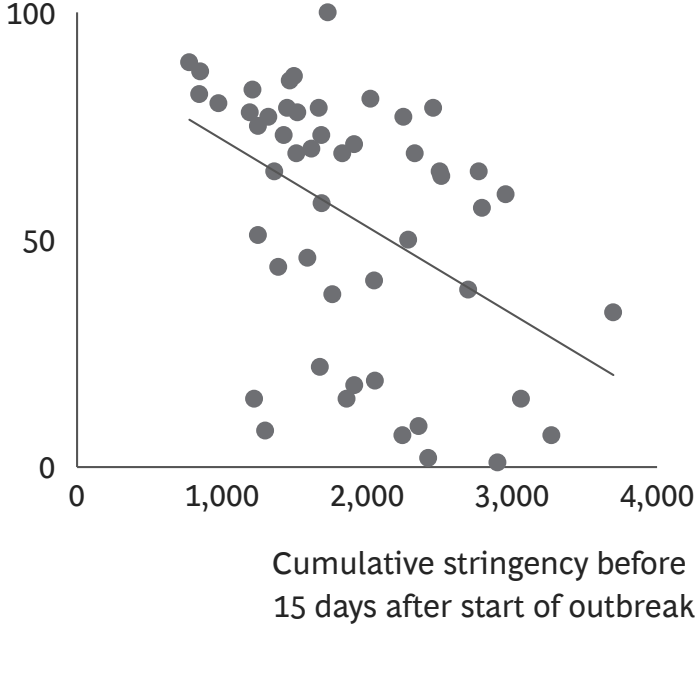
Outbreak length (# days fatalities/M > 0.1)



Strict lockdown early on shortens length of outbreak

Statistically significant (P-value: 0.00)

Outbreak length (# days fatalities/M > 0.1)



Country

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.

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

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

Australia

Lockdown in large city re-imposed after second wave emerged

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

Spain

From national to proactive lockdowns in small regions/provinces

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

▲ 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

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

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

Japan, Singapore widely distributed face masks

including pooled testing solutions to prevent and detect outbreaks

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

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

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

New Zealand, Australia released guidelines on safe work practices

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

As of 16 July 2020

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

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

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

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

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

Italian retail sales surge 24% after lockdown eased

Thermometers in Hand, Dubai Opens for Tourists Amid Pandemic

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

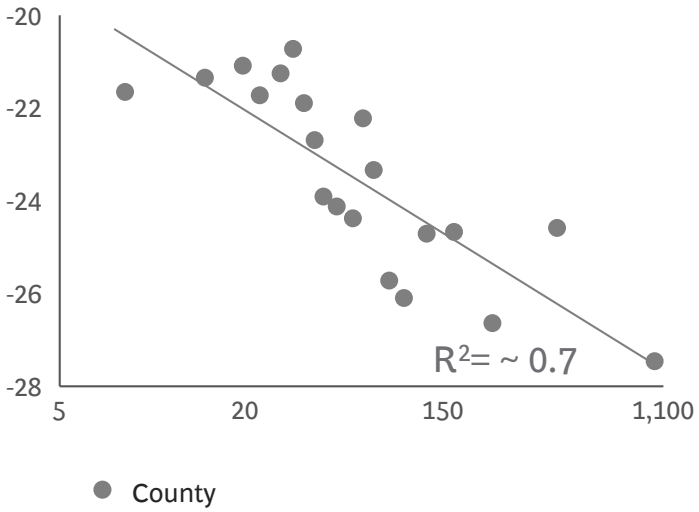
Defeating virus is critical to economic recovery | Strong correlation between local infection level and consumer spending; limited correl. with govt. restrictiveness

As of 26 June 2020

US Example

Consumer spending decreases as local cases increase

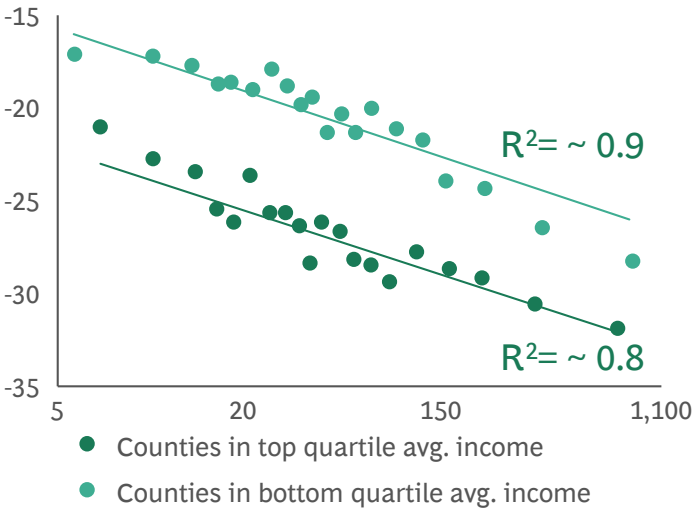
Change in consumer spending[1] (%) vs. Jan 2020



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

More affluent likely to stay home, driving decline in spending

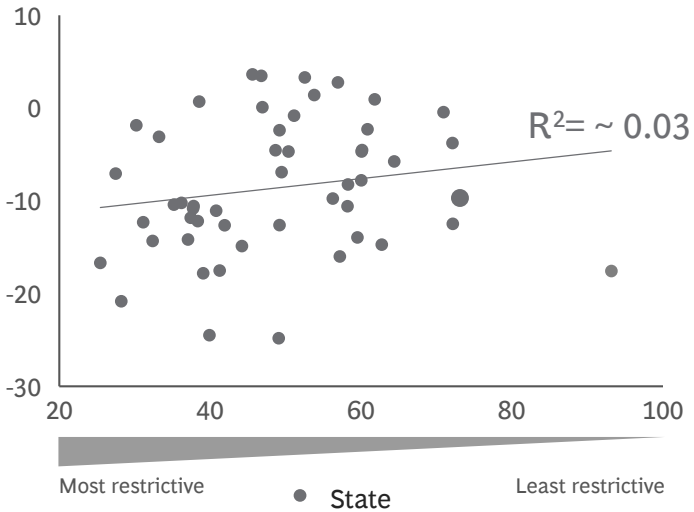
Change in mobility[2] (%) vs. Jan 2020



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



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

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

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)

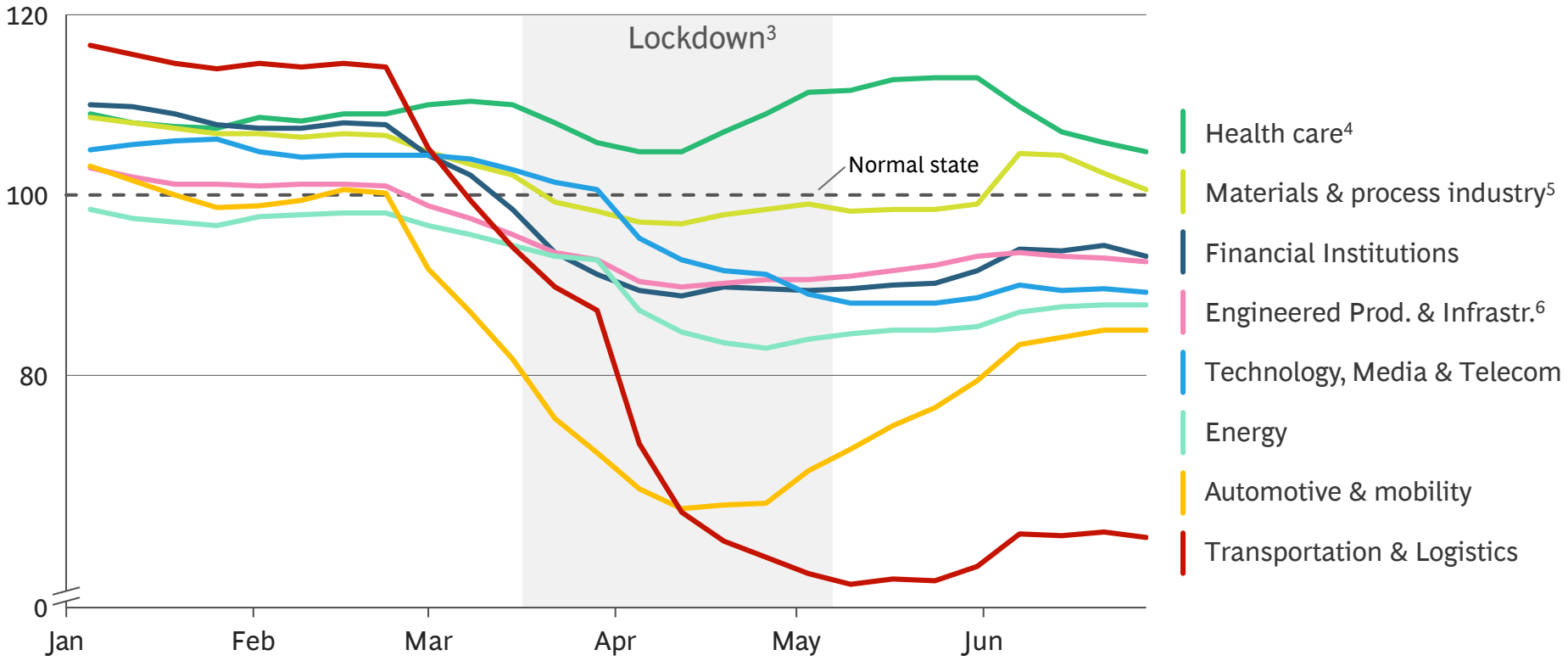
Methodology

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]



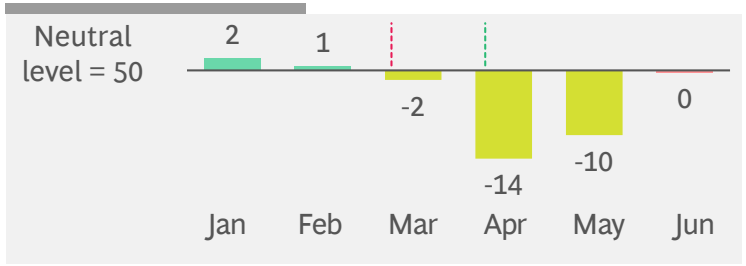
Note: ERPC tracks industries in EU5 (GER, FR, UK, ITA, SPA), US, Brazil, China and Japan. Index value of 100 indicates a normal activity compared to previous year's period. Current activity and at normal state are computed with a 4-week exponential smoothing; 1. Germany, France, UK, Italy, Spain; 2. 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

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

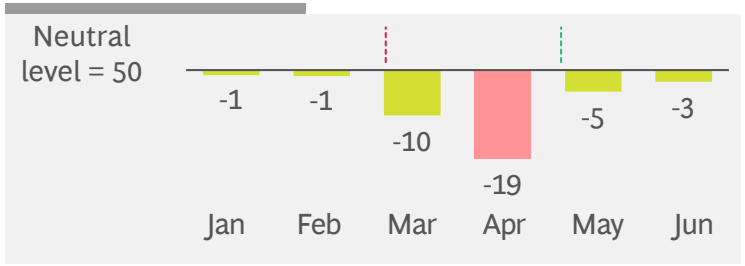
As of 01 July 2020

Manufacturing PMI before, during, and after the crisis

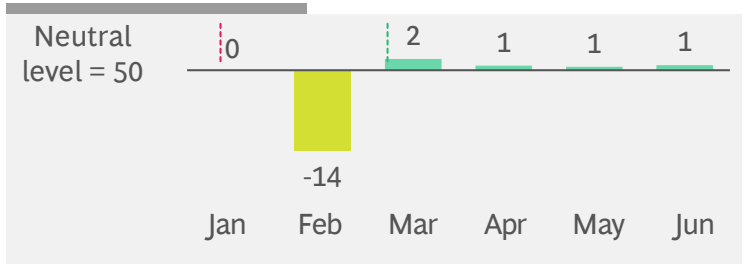
US



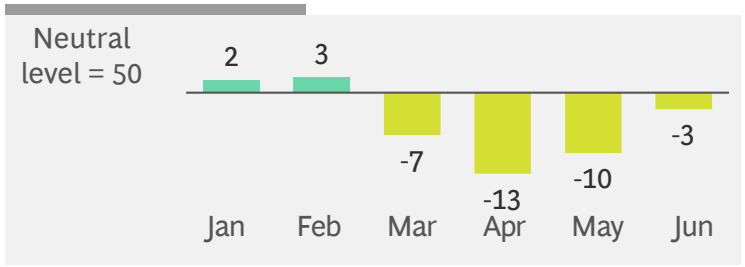
Italy



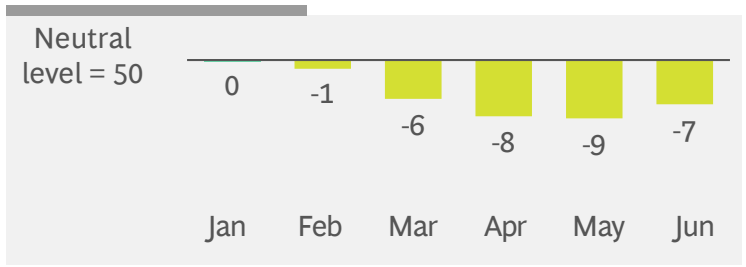
China[1]



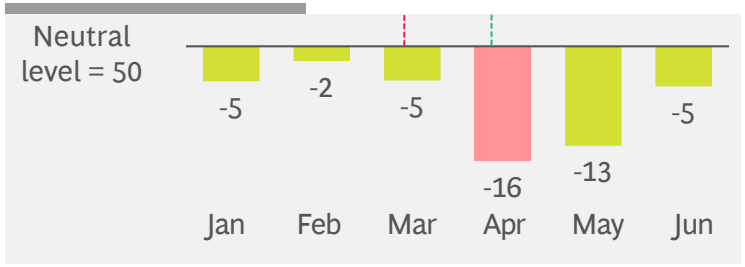
Sweden



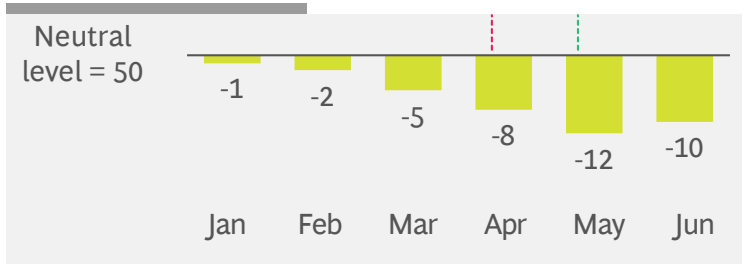
South Korea

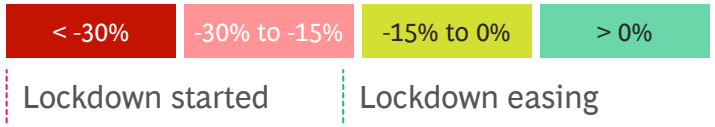


Germany



Japan





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

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%	

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

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

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

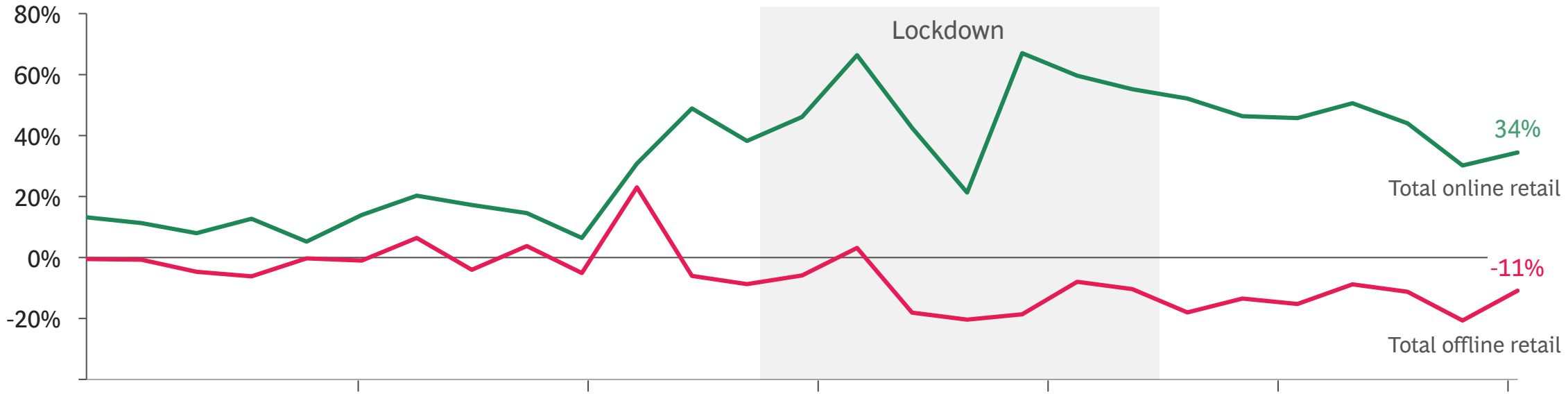
Shift to online retail goods sales (excluding auto and fuel) accelerated during lockdown period and is continuing

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



	Jan	Feb	Mar	Apr	May	Jun
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

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%	

< -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

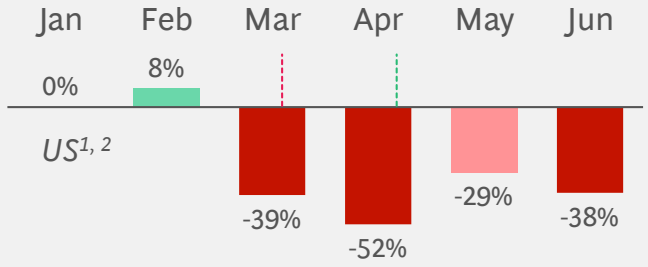
Note: For US, share in retail store sales in Q4 2019: F&B ~25%, personal care & cosmetics ~12%, apparel ~6%, home appliances ~3%, general merchandising ~25% and building material & gardening equip ~13%. Sector classification & mix may be different across countries; 1. For China, Feb data includes both 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

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

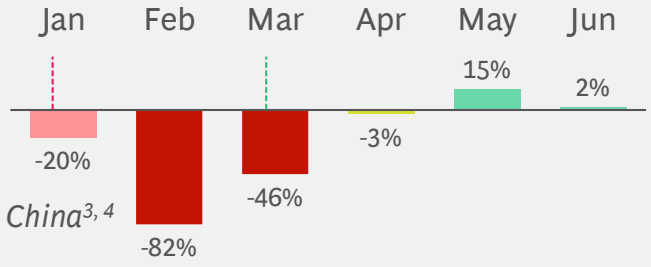
As of 16 July 2020

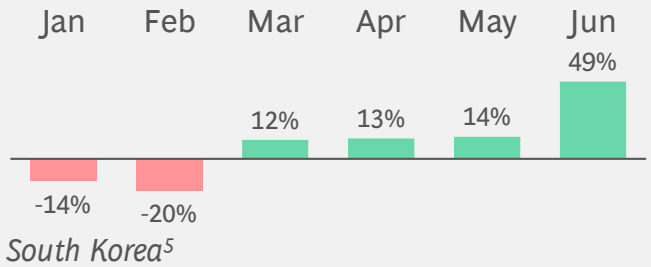
Monthly passenger car sales, YOY % change vs 2019

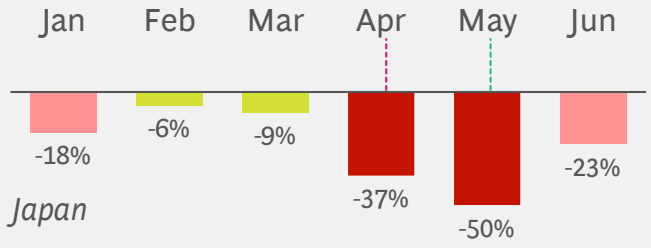
US



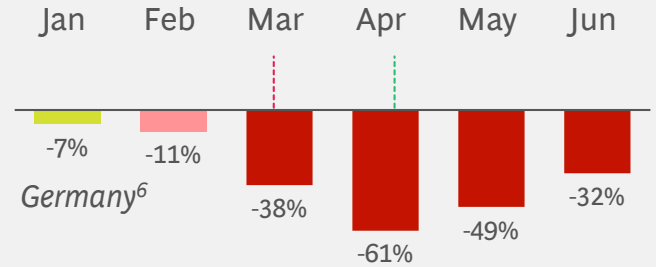
China, South Korea, and Japan

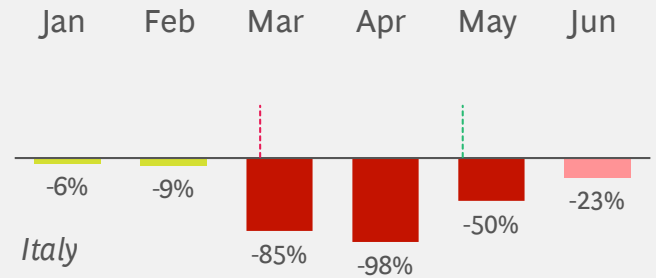


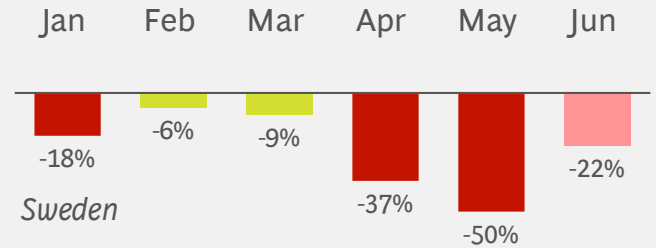




Germany, Italy, and Sweden







< -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%

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

Current mobility levels are below January 2020 for all countries

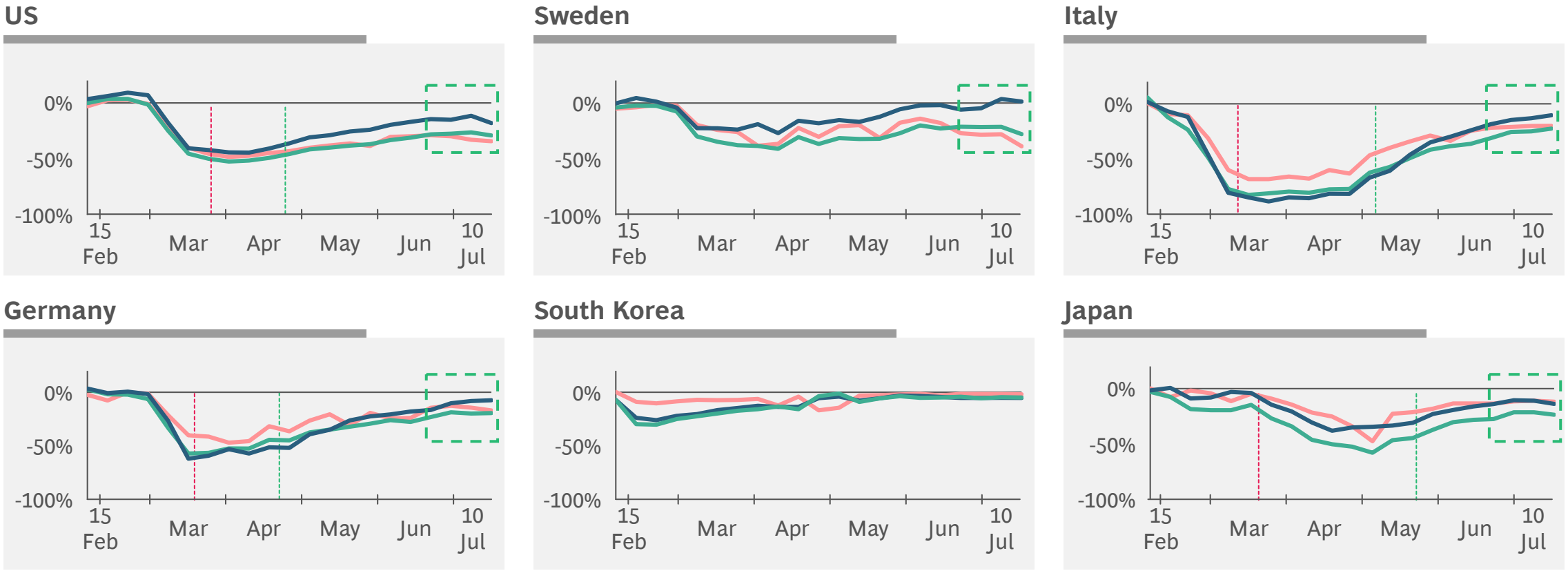
Many countries showed a 50% reduction in mobility in April, the month of widespread lockdowns across geographic areas

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



Further reading

How COVID-19 Will Shape Urban Mobility

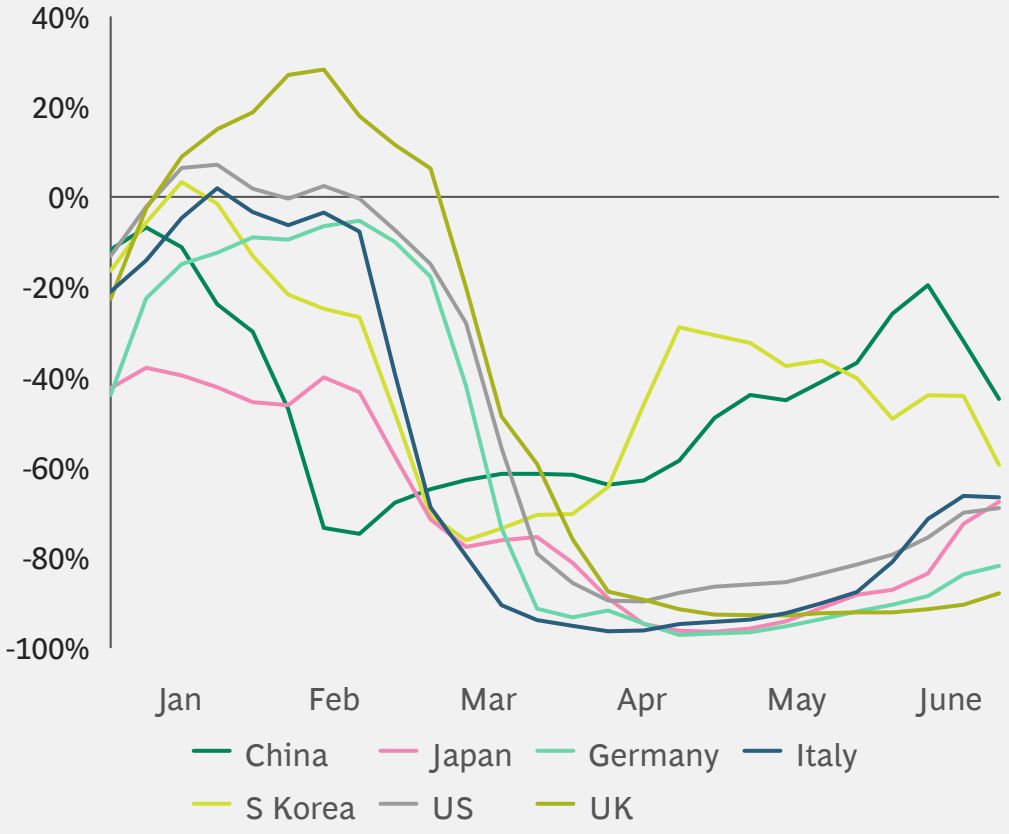
1. Tracked as changes in visits to workplaces; 2. Tracked as changes in visits to public transport hubs, such as underground, bus and train stations; 3. Tracked as changes for restaurants, cafés, shopping centers, theme parks, museums, libraries and cinemas; Note: Data taken as weekly average compared 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]



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 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

Source: BCG

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

Source: Microsoft; BCG

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

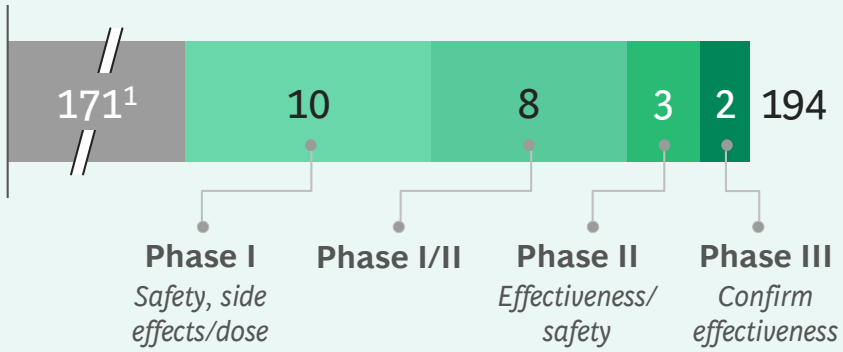
Epidemic progression; economic and business impact

Vaccines and Treatments | Development at unprecedented pace

As of 17 July 2020

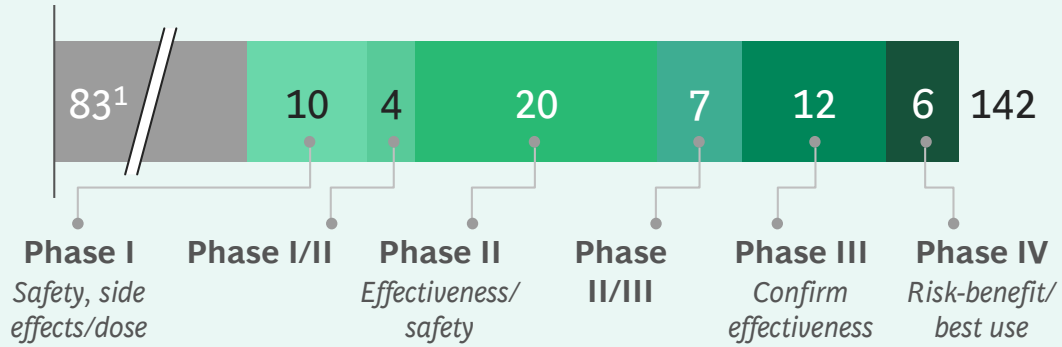
Vaccines

23 candidates in clinical trials



Treatments

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



> ***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

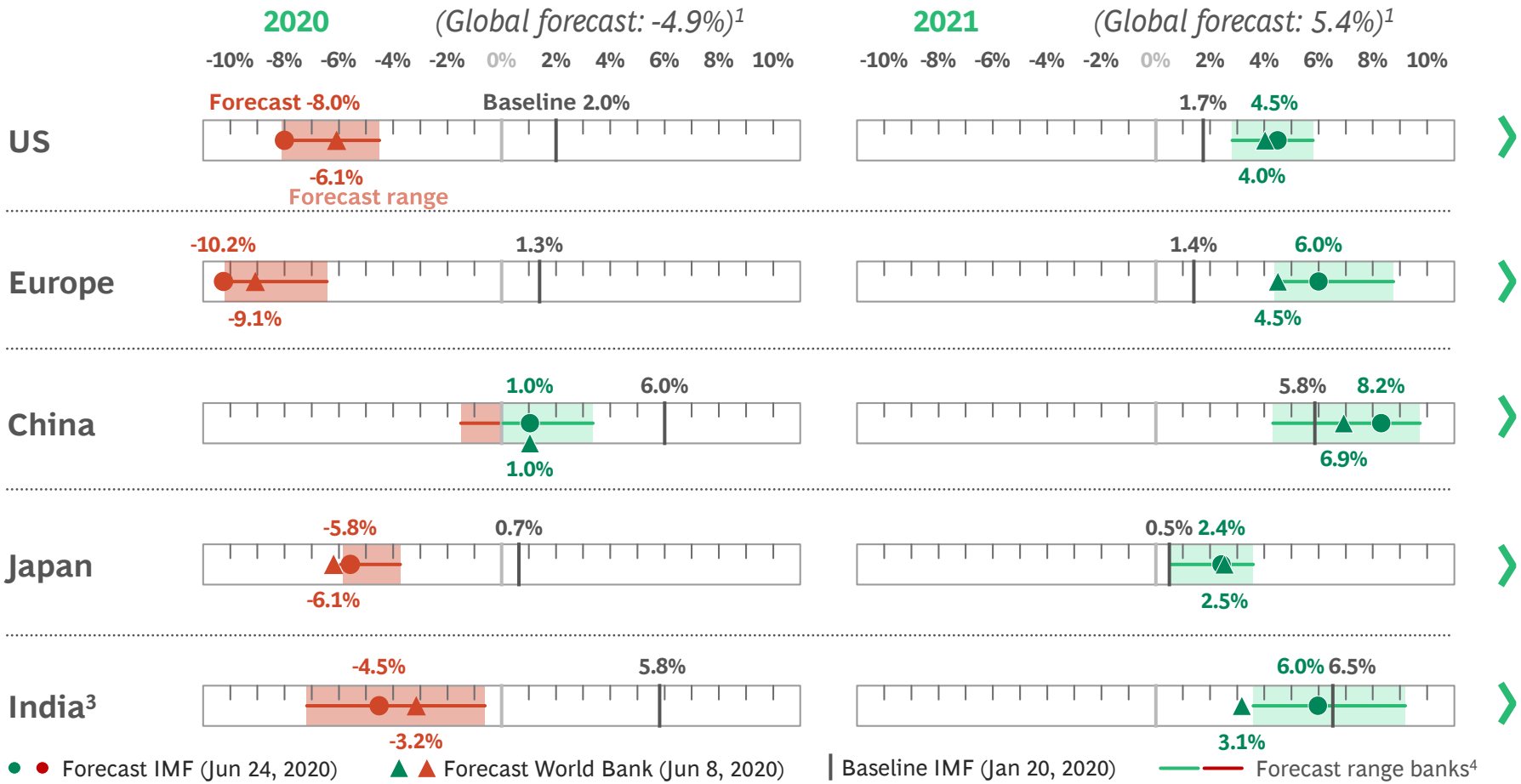
> ***We have made amazing progress in the treatment of COVID-19. Two therapies – steroids and Remdesivir – have already been shown to help.***
>
> - Dr. William Petri, Professor of Medicine, University of Virginia

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

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]

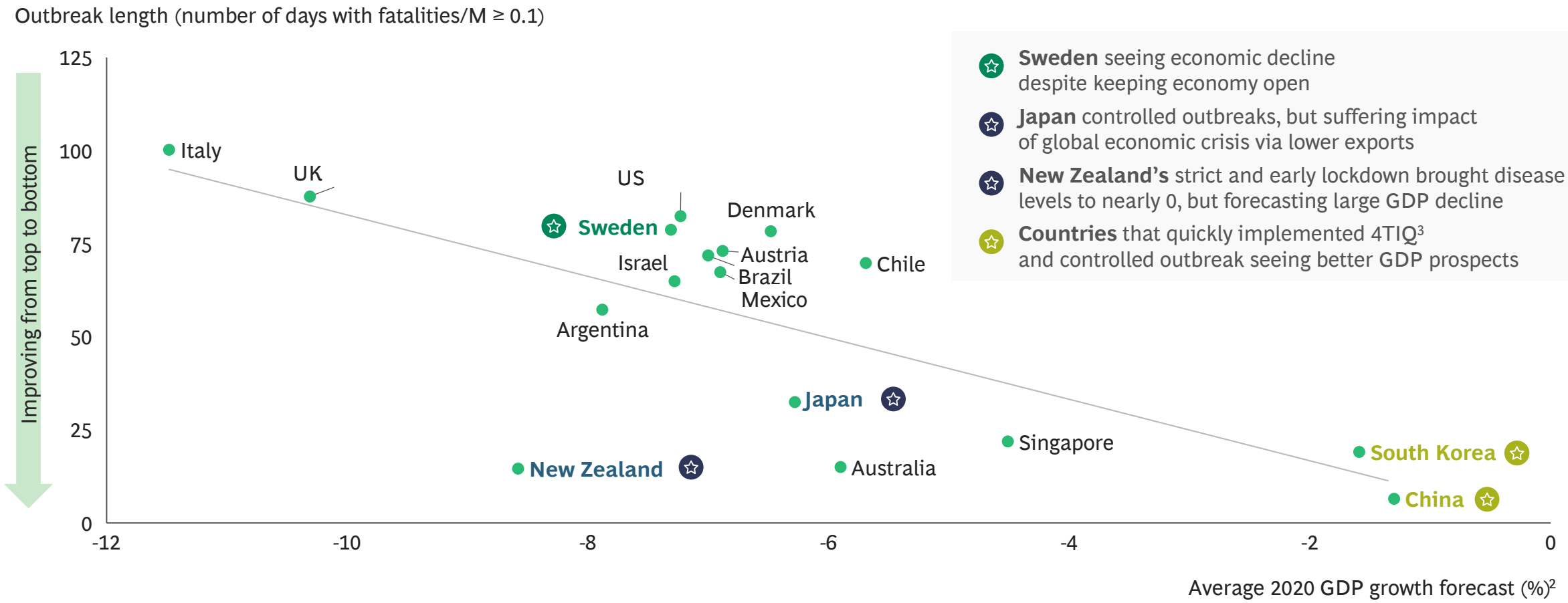
EOY 2021 vs. EOY 2019

US	97-100%
Europe	96-99%
China	107-112%
Japan	95-98%
India[3]	100-107%

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

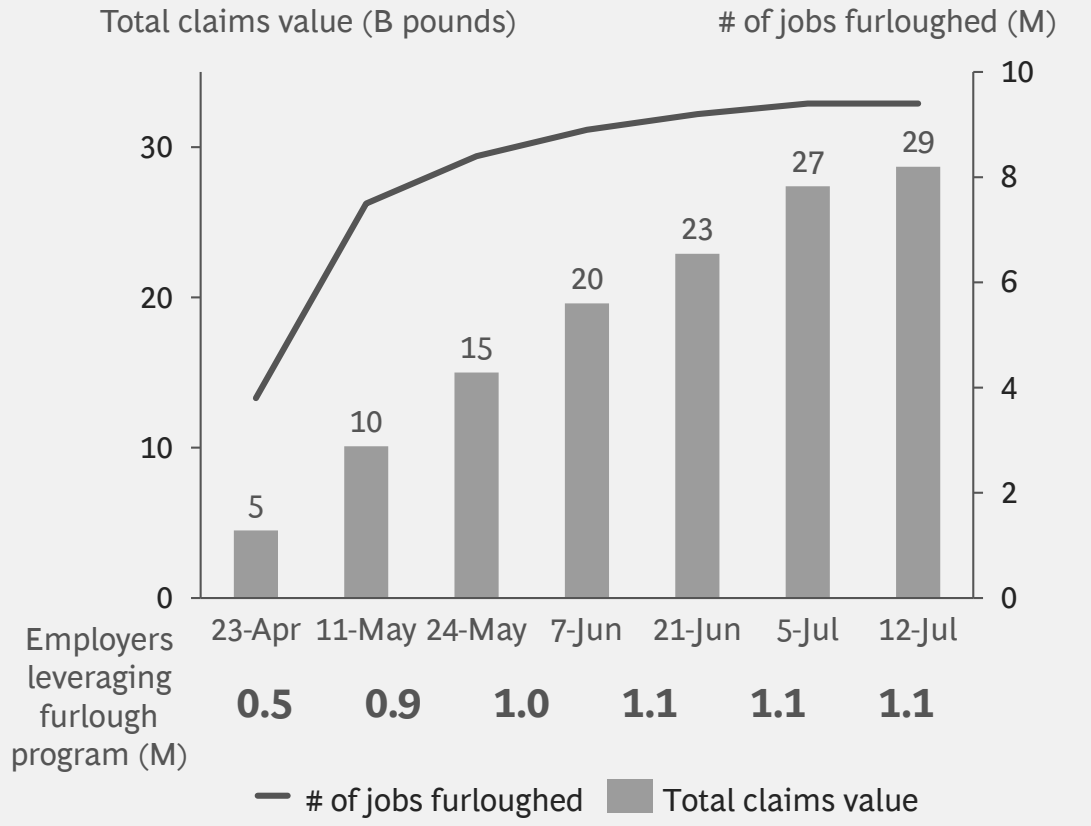


1. Outbreak length defined as Number of Days with Fatalities/M greater than or equal to 0.1; 2. Calculated as the mean of available forecasts by OECD, World Bank, Euromonitor, IMF, and Oxford Economics; 3. Policies with focus on test, trace, track, tech, isolate, quarantine; Note: Brazil, Argentina, 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

In UK, number of jobs furloughed is flattening out



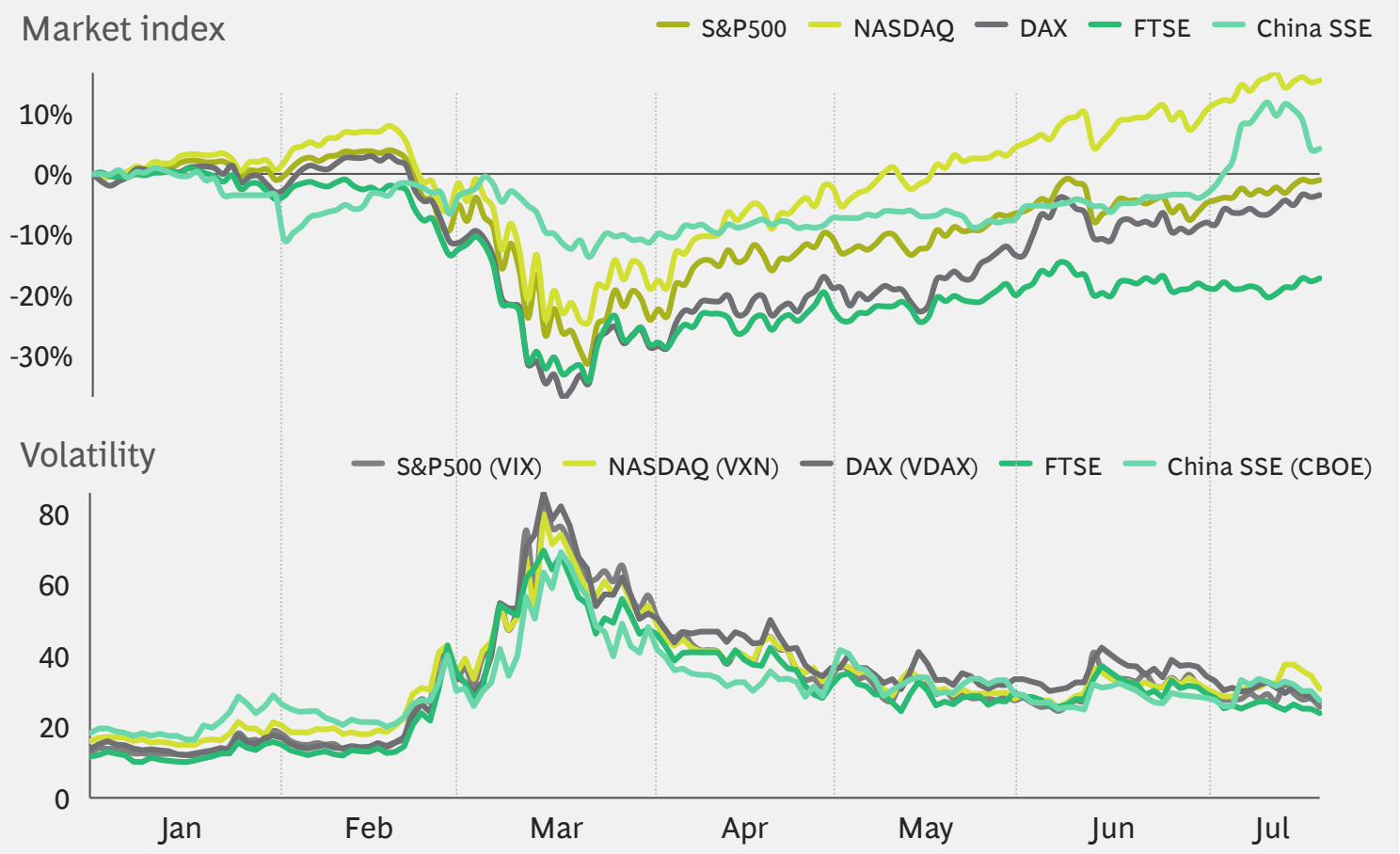
As of 02 July 2020 — US Example

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

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



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

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%	↗

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

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

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

Source: BCG

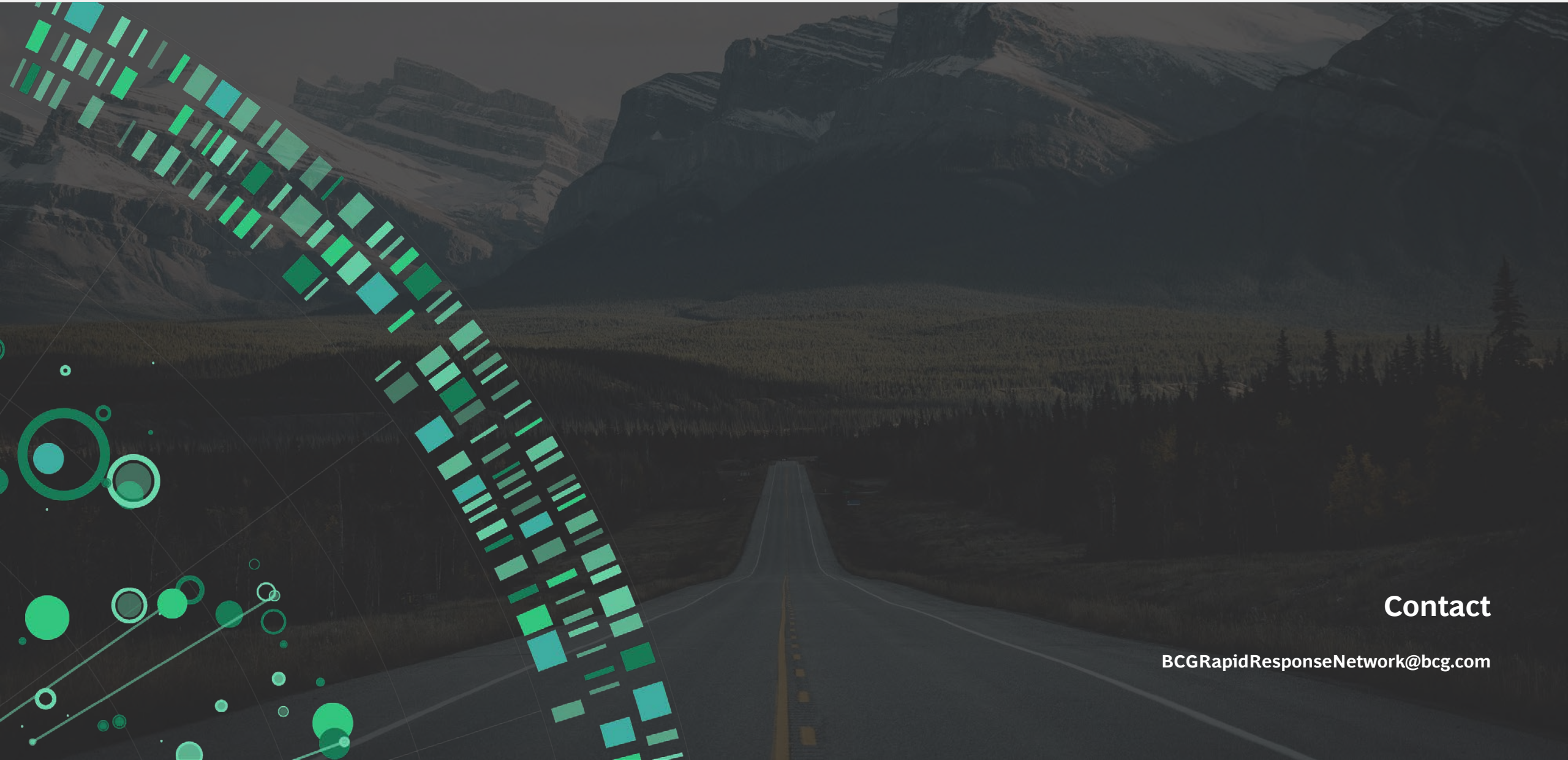
Disclaimer

The services and materials provided by Boston Consulting Group (BCG) are subject to BCG's Standard Terms (a copy of which is available upon request) or such other agreement as may have been previously executed by BCG. BCG does not provide legal, accounting, or tax advice. The Client is responsible for obtaining independent advice concerning these matters. This advice may affect the guidance given by BCG. Further, BCG has made no undertaking to update these materials after the date hereof, notwithstanding that such information may become outdated or inaccurate.

The materials contained in this presentation are designed for the sole use by the board of directors or senior management of the Client and solely for the limited purposes described in the presentation. The materials shall not be copied or given to any person or entity other than the Client ("Third Party") without the prior written consent of BCG. These materials serve only as the focus for discussion; they are incomplete without the accompanying oral commentary and may not be relied on as a stand-alone document. Further, Third Parties may not, and it is unreasonable for any Third Party to, rely on these materials for any purpose whatsoever. To the fullest extent permitted by law (and except to the extent otherwise agreed in a signed writing by BCG), BCG shall have no liability whatsoever to any Third Party, and any Third Party hereby waives any rights and claims it may have at any time against BCG with regard to the services, this presentation, or other materials, including the accuracy or completeness thereof. Receipt and review of this document shall be deemed agreement with and consideration for the foregoing.

BCG does not provide fairness opinions or valuations of market transactions, and these materials should not be relied on or construed as such. Further, the financial evaluations, projected market and financial information, and conclusions contained in these materials are based upon standard valuation methodologies, are not definitive forecasts, and are not guaranteed by BCG. BCG has used public and/or confidential data and assumptions provided to BCG by the Client. BCG has not independently verified the data and assumptions used in these analyses. Changes in the underlying data or operating assumptions will clearly impact the analyses and conclusions.

The situation surrounding COVID-19 is dynamic and rapidly evolving, on a daily basis. Although we have taken great care prior to producing this presentation, it represents BCG's view at a particular point in time. This presentation is not intended to: (i) constitute medical or safety advice, nor be a substitute for the same; nor (ii) be seen as a formal endorsement or recommendation of a particular response. As such you are advised to make your own assessment as to the appropriate course of action to take, using this presentation as guidance. Please carefully consider local laws and guidance in your area, particularly the most recent advice issued by your local (and national) health authorities, before making any decision.



Contact

BCGRapidResponseNetwork@bcg.com