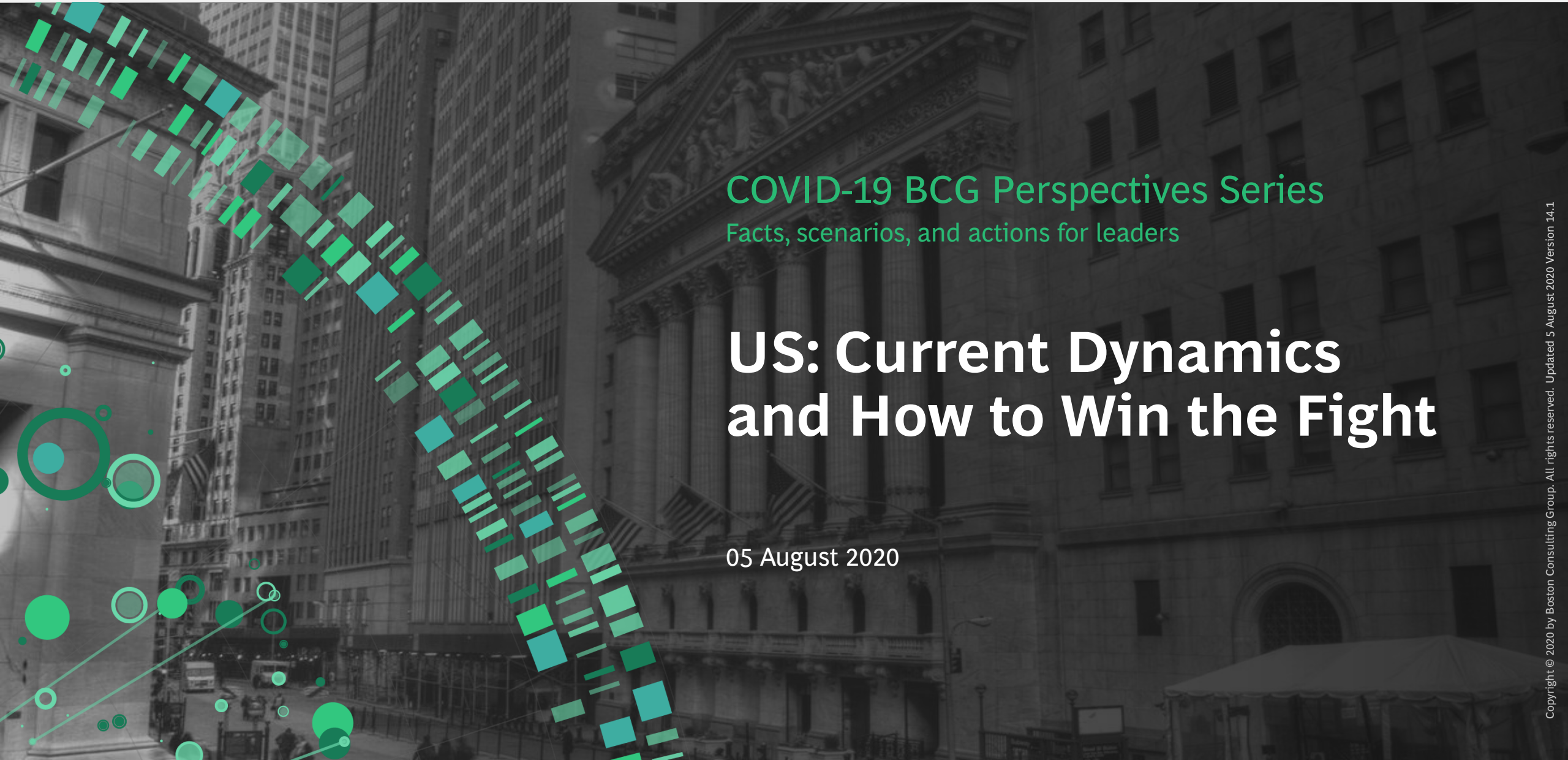


COVID-19 BCG Perspectives Series

Facts, scenarios, and actions for leaders

US: Current Dynamics and How to Win the Fight

05 August 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

The US saw a massive surge of new cases in July, putting stress on the recent rebound in economic and business activity

As of 01 August 2020

Infections swamp the U.S., which recorded 42% of all its coronavirus cases in July

Disadvantaged groups including those with health conditions and the poor hit hardest by COVID in the US

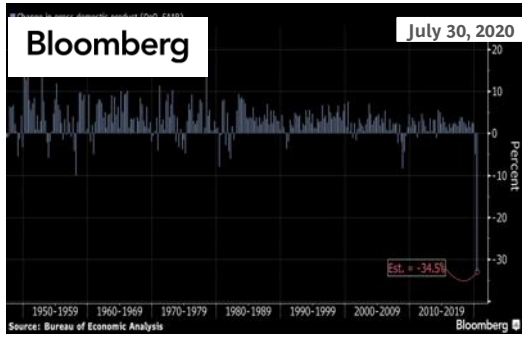
Businesses hit hard by pandemic drive US jobs recovery, recalling millions of laid-off workers

U.S. manufacturing sector regaining momentum, but surging virus cases threaten recovery

27 states have paused or rolled back their reopening plans and imposed new restrictions due to rise in cases

World's largest coronavirus study begins final phase of vaccine testing in the US

US business activity hits six-month high in July, but seeing a drop in new orders as number of new cases rises



U.S. economy suffered its sharpest downturn since at least the 1940s; GDP shrank 9.5% in the 2nd quarter

US summary snapshot | Current dynamics at a glance

As of 03 August 2020

Epidemic Progression

Epidemic snapshot

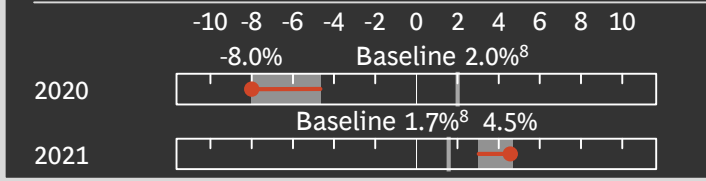
4.7M	60K	2.3M	155K
total cases	new cases[1]	active cases	fatalities

	May	June	July
MoM growth of new cases[2]	0.8x	1.2x	2.2x
# of tests / cases[3]	10	12	12
MoM growth of hospitalizations[4]	0.6x	1x	1.6x
ICU beds availability[5]	40%	38%	39%

Economic Impact

Employment impact	May	June	July
Unemployment claims (M)	10.3	6.3	4.9
Permanent job losses (M)	2.3	2.9	N/A
Job vacancies (YoY change)[6]	-37%	-29%	-23%

GDP forecasts (%)



Consumer Activity

Mobility[9]

Month vs. Jan–mid-Feb '20 baseline	May	June	July
Workplace	-37%	-30%	-33%
Public transit	-38%	-29%	-28%
Retail & recreational	-27%	-16%	-15%

YoY changes	May	June	July
Domestic air travel bookings[10]	-82%	-69%	-77%
Hotel occupancy	-52%	-42%	-36%

Consumer spending

Month vs. Jan'20	May	June	July
Overall spending[11]	-15%	-8%	-6%
Online spending[12]	35%	27%	21%

YoY changes	May	June	July
Retail goods (excl. auto & fuel)	3%	6%	N/A
Passenger vehicle sales	-31%	-27%	N/A
Restaurant sales[12]	-32%	-9%	-6%
Out-of-home entertainment[12]	-93%	-87%	-86%

Business Impact

Purchasing manager's index (PMI)[13]

Base = 50	May	June	July
Manufacturing PMI	40	50	51
Services PMI	38	48	50

Industrial production

YoY changes	May	June	July
Manufacturing index	-17%	-11%	N/A
Mining index	-14%	-17%	N/A
Utilities index	-7%	1%	N/A

Trade[14]

YoY changes	May	June	July
Total exports	-33%	N/A	N/A
Total imports	-27%	N/A	N/A

Stock market performance

Month end vs. Jan 02, '20	May	June	July
S&P500	-12%	-5%	0%
NASDAQ	-4%	6%	18%
Volatility Index (S&P500)[15]	37	28	25

1. Calculated as seven day rolling average; 2. Calculated as monthly average of daily cases as compared to previous month; 3. Number of cumulative tests conducted and number of cumulative cases till the month end; 4. Calculated as number of individuals hospitalized with COVID-19 at end of month vs. end of previous month; 5. End of month values; for July, last available data point (14 July 2020); 6. Data as of 29 July; vacancies in terms of job postings; 7. YoY forecasts; range from forecasts (where available) of World Bank, International Monetary Fund, JP Morgan Chase, Morgan Stanley, Bank of America, Fitch Solutions, Credit Suisse, Danske Bank, ING Group, HSBC; As of reports dated 12 April 2020 to 03 Aug 2020; 8. IMF June 2020/21 forecasts; 9. Mobility values are calculated as the average of monthly mobility changes compared to a baseline from 03 Jan – 06 Feb 2020; 10. Calculated as change in last 14 days rolling average value as compared to same period last year, July data as of 15 July; 11. Change in average consumer credit & debit card spending based on data from Affinity Solutions; 12. Change in average consumer credit & debit card spending based on data from Earnest Research; 13. 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); 14. Includes trade of merchandise & services; 15. 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; Source: Johns Hopkins CSSE; CDC; Our World in Data; Worldometers; The COVID Tracking Project; US Department of Labor; Financial Times; Bloomberg; World Bank; IMF; Google LLC "Google COVID-19 Community Mobility Reports"; ARC ticketing data; STR; Opportunity Insights Economic Tracker; US Census Bureau; Earnest Research; Marklines; IHS Markit; US Federal Reserve; OECD; Comtrade, Capital IQ, BCG

Executive Summary | Current dynamics in the US & how to win the fight

Epidemic, economic & business impact

We are at a critical moment in the fight against COVID-19: The US is at an all-time high in daily new cases; representing ~25% of daily cases globally whilst accounting for 4% of global population

Two key population segments remain most impacted:

1) ***Health vulnerable*** *(e.g., >65 years age)* who are 10x to 30x more likely to be hospitalized than healthy adults
2) ***Exposure vulnerable*** who are disproportionately lower-income and people of color

Economic activity remains well below pre-crisis levels; GDP contracted ~9.5% (Q2'20 vs Q1'20), unemployment rate at 12%

Mobility, consumer & industrial activity saw some rebound in May & June '20, but impeded by the case surge in **July**

Controlling the virus is critical to restoring consumer spend; reopening policies have limited stand-alone impact

Action areas for leaders

Winning the fight will require an integrated *epinomics* strategy; an approach that would save lives, strengthen the economy, and promote a more equitable recovery

Action areas for government leaders

- In geographies where the virus may soon overrun healthcare capacity; govts. could trigger 5-8 weeks stringent lockdowns
- For the rest, pursue a set of high priority policies[1] to reduce hospitalizations, & enable reopening of schools & businesses
- Target stimulus packages to sectors and individuals most impacted; invest in initiatives driving a more equitable recovery

Action areas for business leaders

- Protect employees & customers, adopt proven prevention methods, & support virus response efforts[2]
- Continue to build financial & operational resilience; transform to win the future by reimagining core offerings

1. Policies for the broad public (e.g., use of face coverings, limiting large indoor gatherings) could reduce hospitalizations up to 40% at low cost; protecting the vulnerable by distributing quality face masks, skewing testing resources, supporting shelter-in-place, enabling the most vulnerable employees to work from home, and applying best practices to congregate living settings could reduce hospitalizations 40-65%
2. Scale up virus monitoring via sentinel and pooled testing—testing must be strategic vs. reactive; and where possible, redeploy resources to support virus response efforts

Source: BCG

Epidemic, economic and business impact

Population segments most impacted by the disease

Economic and business indicators

Action areas for leaders

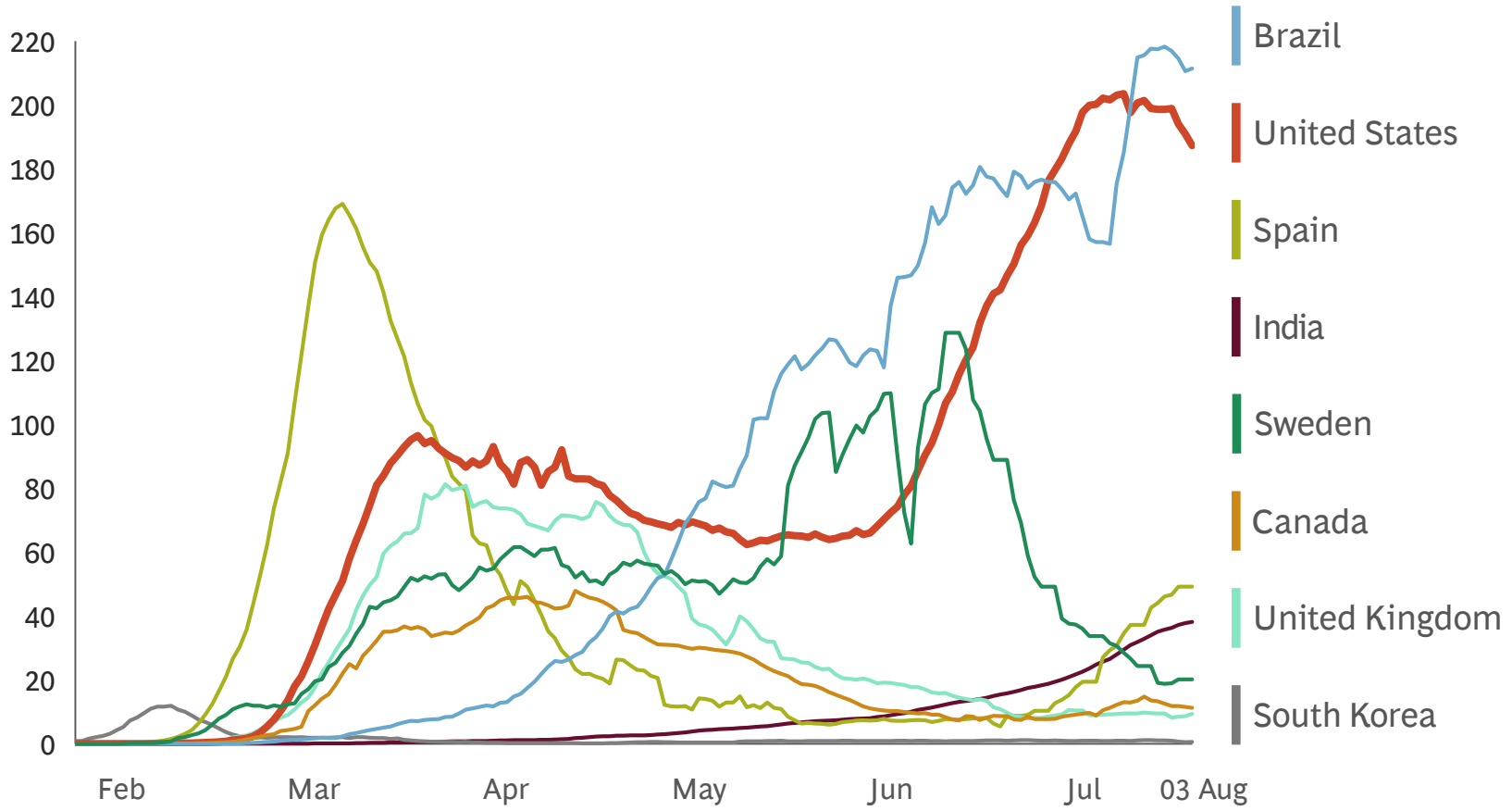
Public policies for safe reopening

Implications for business leaders

Cases on the rise | US witnessing increased number of daily cases

As of 03 August 2020

Daily new cases per M population (7-day rolling average)



Key observations for the US

4.7M
Total confirmed cases

60K (Δ-1.0%)[1]
Daily new cases
(daily growth rate %)

2.3M (48%)
Active cases
(% of total confirmed cases)

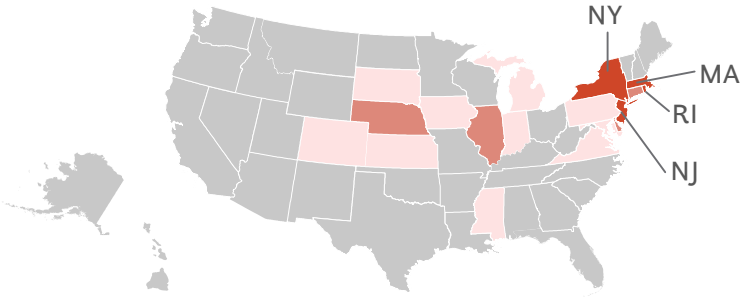
155K (Δ1.9%)[1]
Fatalities
(daily growth rate %)

1. Growth calculated based on 7-day average
Source: Johns Hopkins CSSE; CDC; Our World in Data; BCG

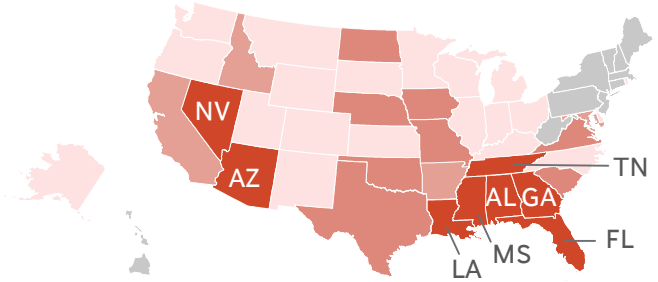
COVID-19 hotspots[1] are changing | Shift from Northeast in April to rest of the country by end of July

As of 31 July 2020

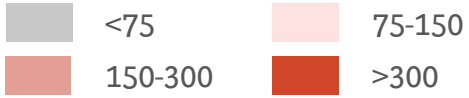
April



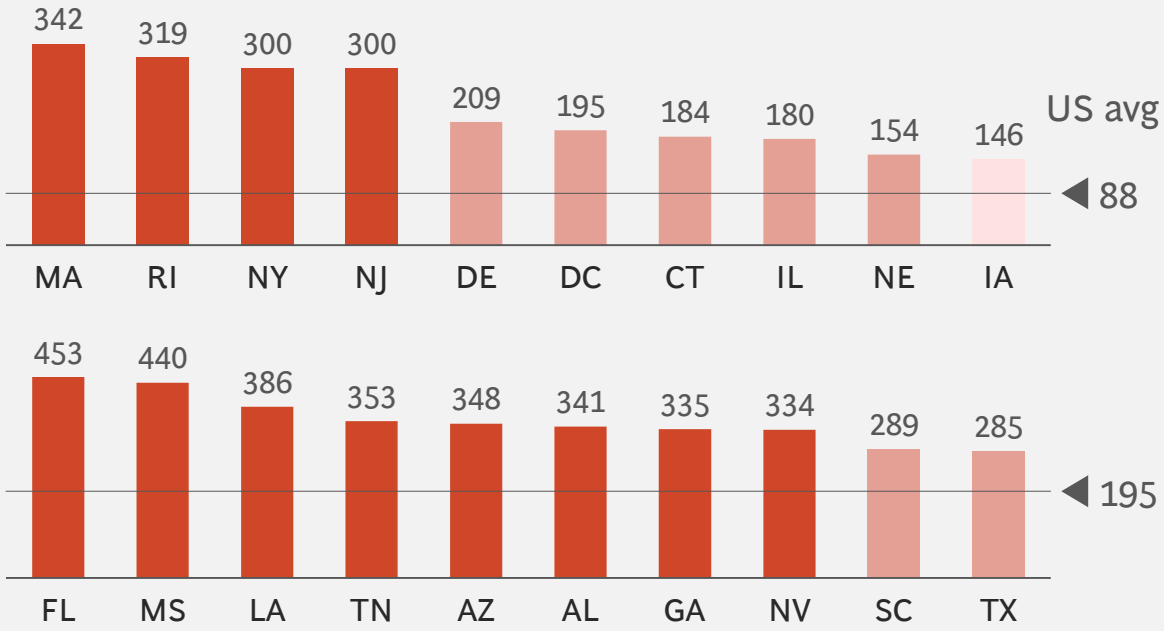
July



Daily cases per M population[3]



Top 10 US states[2] with highest daily cases per M population[3]



- Current top 10 states contribute **53% of new cases[4]**; while top 10 states from April contribute only **7% of new cases[4]**
- **~2x increase[5] in daily cases** from April to July

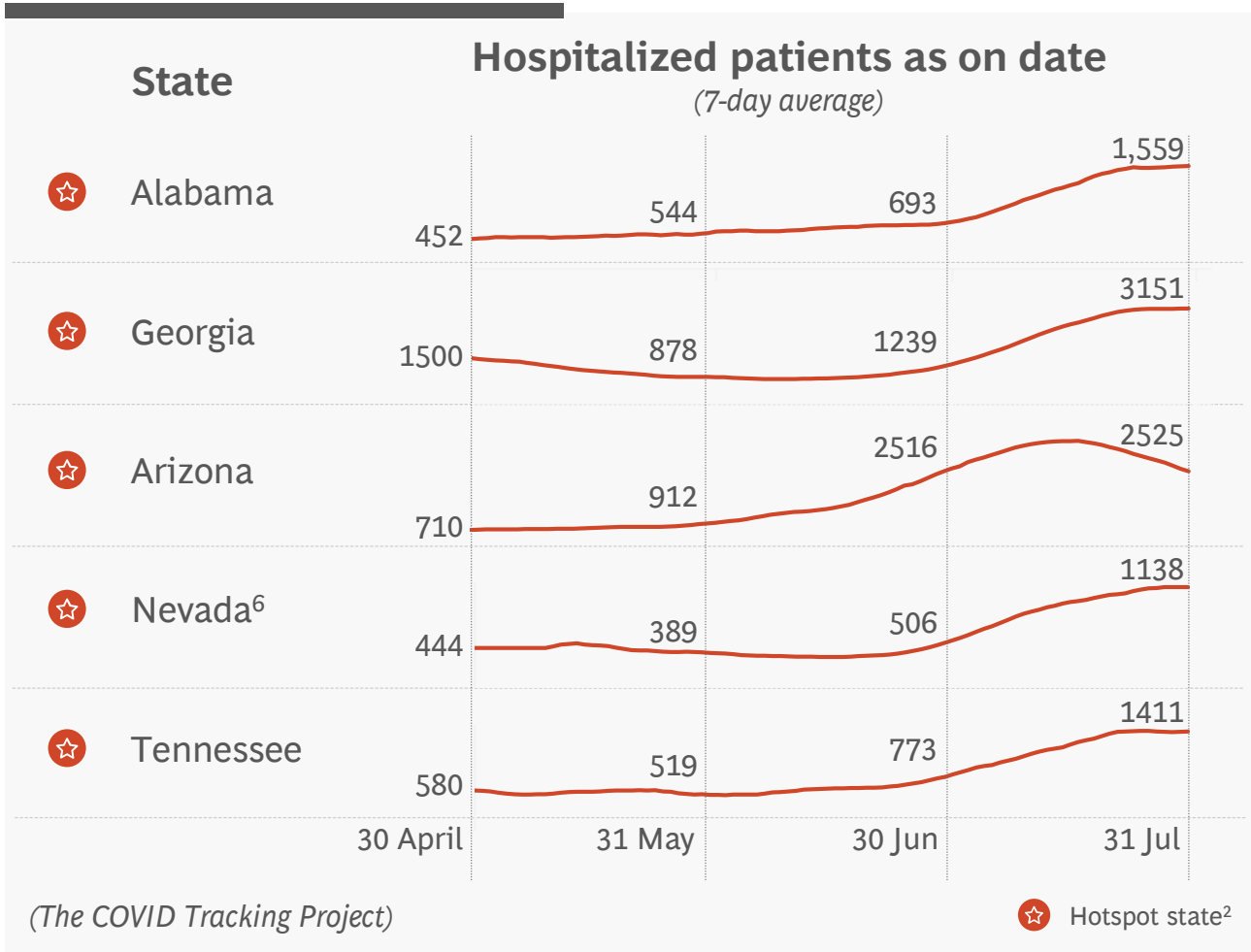
1. >300 daily cases per M population; 2. Including District of Columbia; 3. Taken as average of last 7 days of the month; 4. Total US cases in July; 5. From 88 in April to 195 in July (last 7 days rolling average for each month). Source: JHU CSSE; BCG

Several current hotspots face the risk of reaching healthcare capacity limits, including ICUs

As of 31 July 2020

As of 07 July 2020

Top five states[1] reaching ICU capacity limits are also current hotspots[2]



Note: Last quartile states in terms of number of beds are excluded from the analysis; 1. Top five states selected in terms of lowest remaining ICU capacity, descending; 2. >300 daily cases per M population as of 31 July 2020; 3. 31 July vs. 30 June; 4. ICU = Intensive care unit; ICU capacity remaining implies ICU beds currently available for admission as a percentage of total ICU beds in state; data as of 07 July 2020; 5. Beds refer to hospital beds; beds capacity remaining implies hospital beds currently available for admission as a percentage of total hospital beds in state; data as of 07 July 2020; 6. Data from 1-10 May is not available; is considered to be same as data on 10 May. Source: The COVID Tracking Project; CDC; JHU CSSE; BCG

Two segments most impacted by COVID-19

Health vulnerable

People older than 65 **and/or** with underlying conditions

up to
30x

Higher **hospitalization rate** for those older than 65 with preconditions vs. healthy adults under 65

Exposure vulnerable

Living in dense settings or unable to work from home, especially in **communities of color**

~2-3x

Higher **infection rate** for persons of color vs. white Americans

Source: CDC; BRFSS; COVID Tracking Project; BCG

Health vulnerable | COVID-19 most lethal for elderly with underlying conditions

SEGMENTS MOST IMPACTED BY DISEASE

As of 04 July 2020

Underlying condition status	Age	Share of US population (%)	Share of US workforce (%)	Estimated hospitalization rate among those infected (%)[2]	Estimated fatality rate among those infected (%)[2, 3]
With underlying conditions[1]	≥ 65	7	2	17–25	4–7
	50-64	6	6	3.4–5.0	0.4–0.8
	18-49	6	9	2.4–3.6	0.1–0.2
	< 18	2	0	1.0–1.6	0.1–0.2
Without underlying conditions	≥ 65	10	4	2.0–3.0	0.4–0.9
	50-64	14	21	1.3–1.6	0.1–0.2
	18-49	37	55	0.3–0.4	<0.02
	< 18	18	3	<0.05	<0.01

Higher risk groups

1. Underlying conditions are those that are identified by the CDC as making people more vulnerable to coronavirus. The underlying conditions include obesity (a body mass index that is greater than 40), diabetes, chronic heart disease, respiratory disease, and kidney and liver disease;
2. Derived using the CDC's data on COVID-19 net hospitalizations, South Korea's hospitalization data, and data from the New York City Department of Health and Mental Hygiene; 3. Rates do not account for the impact of limited hospital capacity
Source: Centers for Disease Control (CDC); New York City Department of Health and Mental Hygiene; South Korean government; BCG

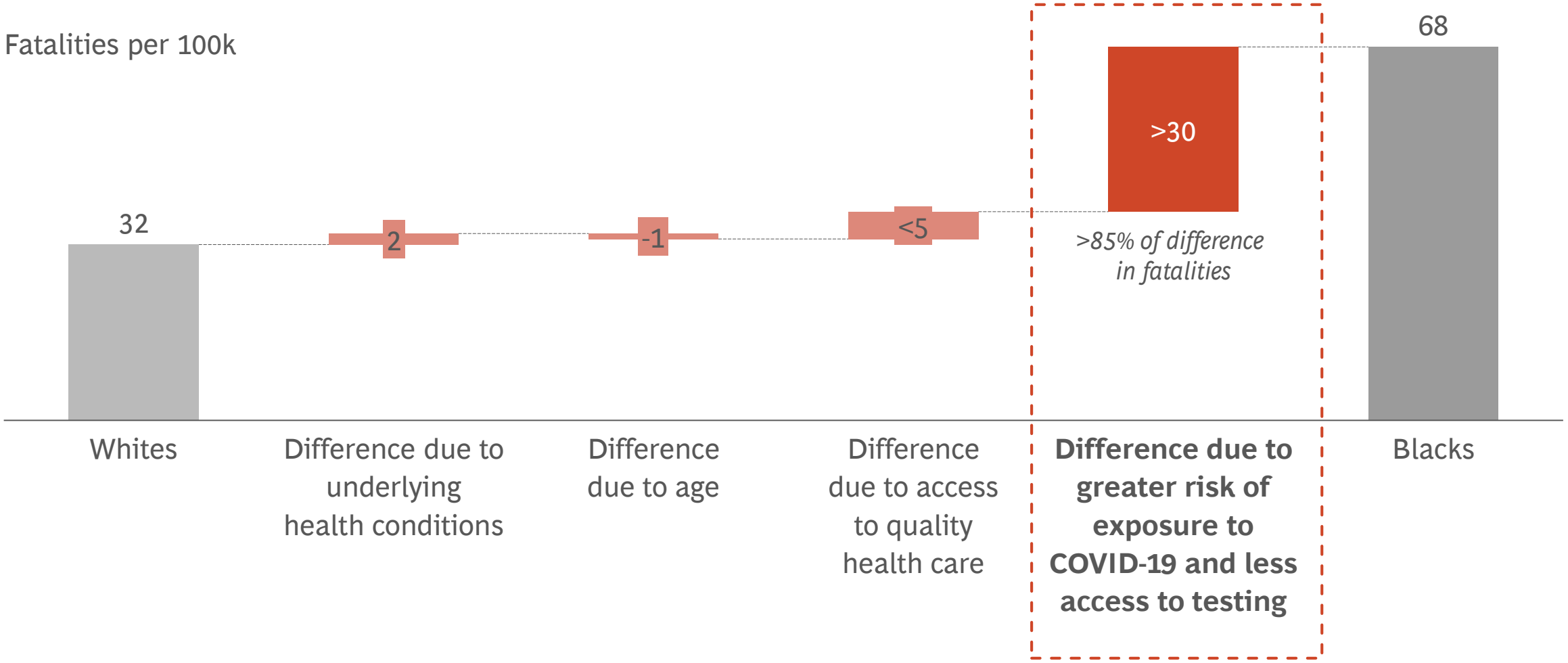
Further reading

Protect the Vulnerable—Protect Us All

Exposure vulnerable | >85% of disparate COVID fatalities among Black Americans driven by increased exposure or decreased testing access

SEGMENTS MOST IMPACTED BY DISEASE

As of 15 July 2020



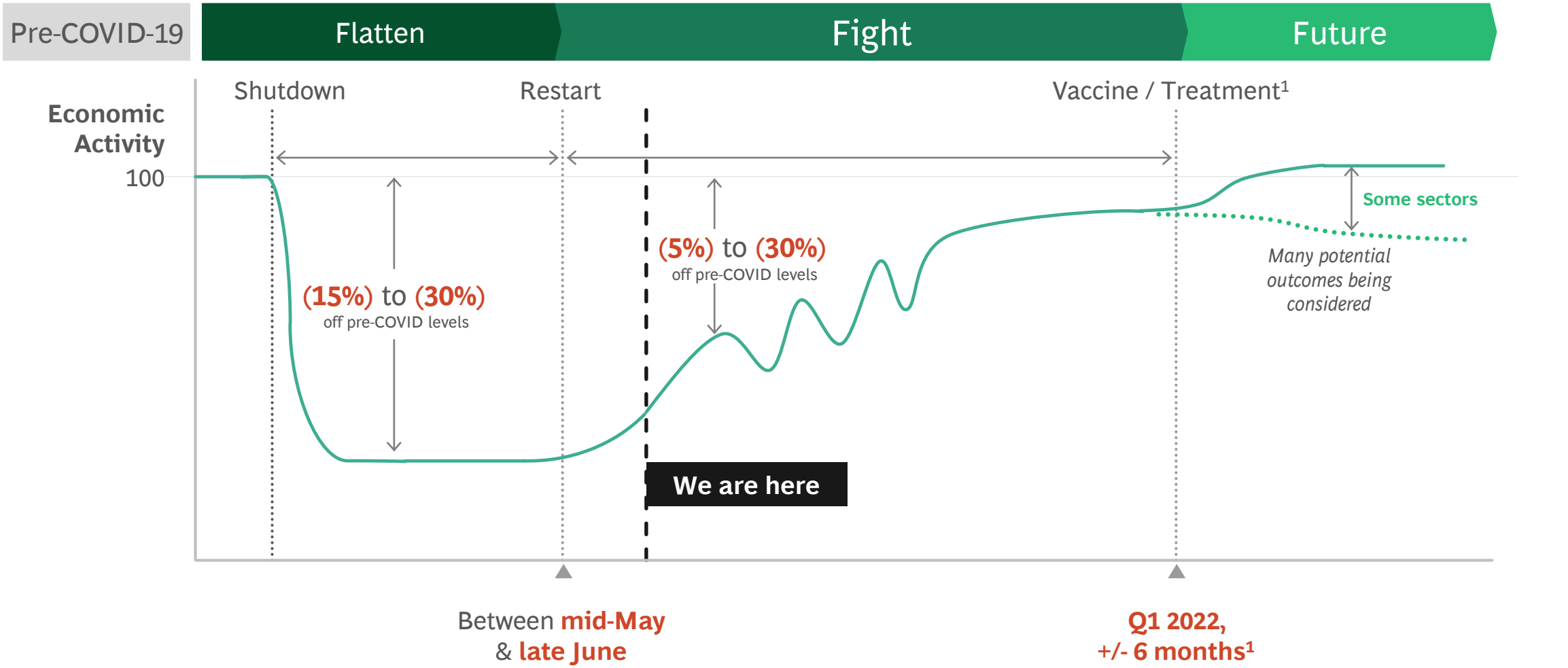
Source: BRFSS (2017) survey data; American Institute of Economic Research; CDC as of 07/15/2020; BCG

Further reading
Bridging COVID-19's Racial Divide

We are now early in the Fight phase of the economic rebound

As of 31 July 2020

Illustrative

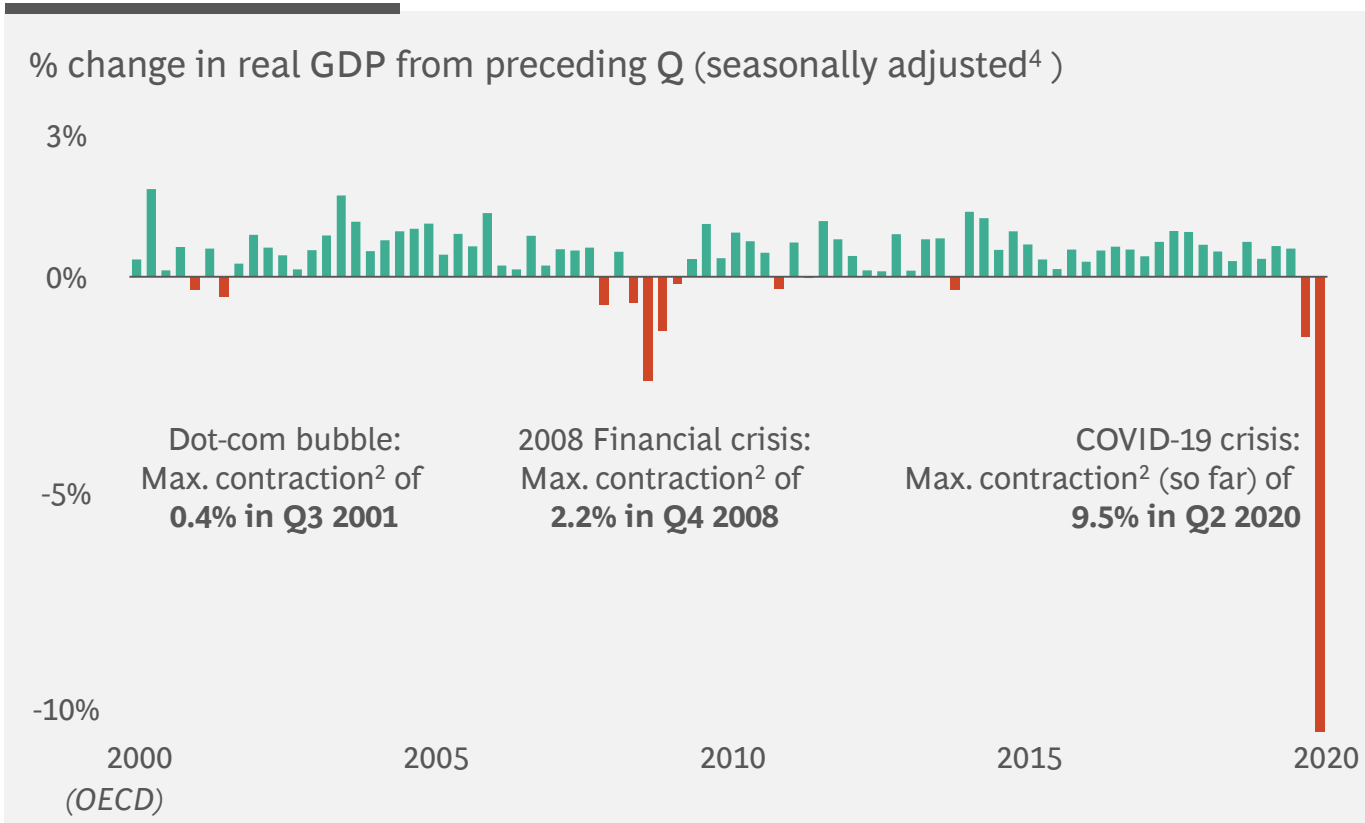


1. Estimated timeframe for a safe and effective vaccine to be developed, manufactured, and delivered on a wide scale to broader population
Source: BCG

GDP expected to contract by ~6-8%[1] in 2020 with some rebound in 2021

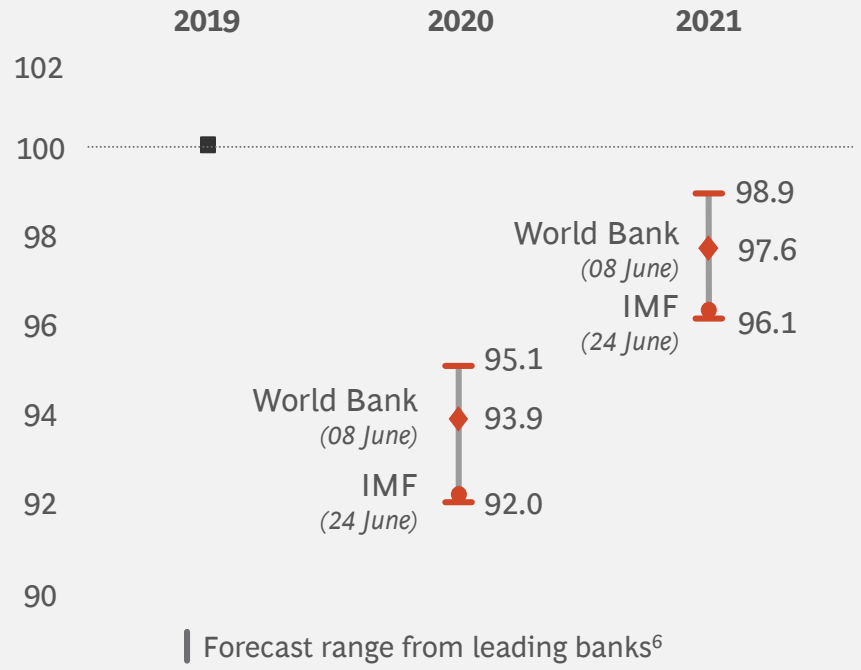
As of 31 July 2020

Largest quarterly GDP contraction[2] in past 70 years[3]



As of 03 Aug 2020

Current forecasts point toward a severe downturn in 2020



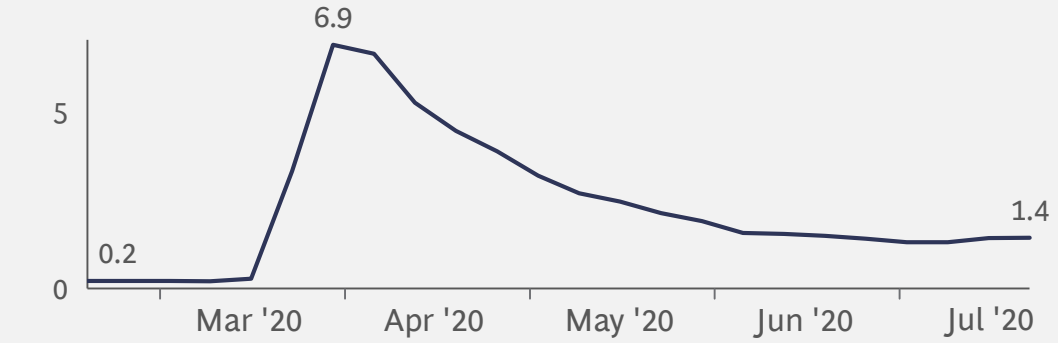
1. Range basis latest forecasts from IMF and World Bank; 2. % change in real GDP from preceding quarter seasonally adjusted; 3. Dataset period from 1950 to 2020, represented only for last 20 years; 4. Seasonality adjustment is done to even out periodic swings in the data; adjustment is done by dividing unadjusted value by seasonality factor; 5. As per World Bank, 2019 US GDP in terms of current US$ is $21.4T; 6. Range from forecasts (where available) of JP Morgan Chase; Morgan Stanley; Bank of America; Fitch Solutions; Credit Suisse; Danske Bank; ING Group; HSBC; Source: Bureau of Economic Analysis, OECD, World Bank, IMF, Bloomberg, BCG

Unemployment continues to remain high across several industries

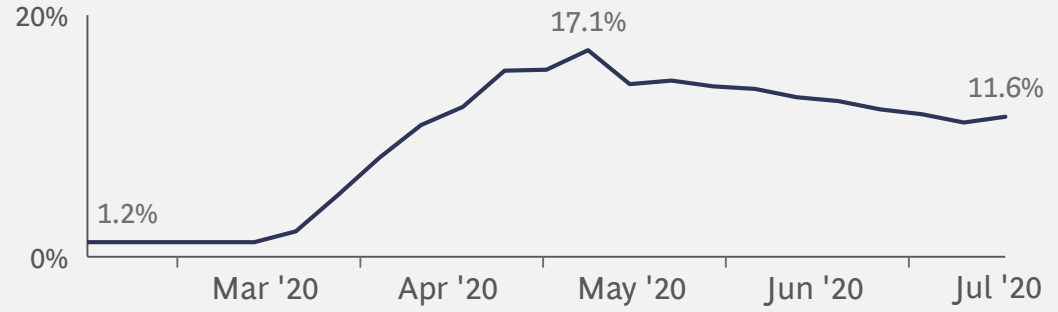
As of 25 July 2020

Unemployment remains high, with continued (but declined) new claims

New weekly unemployment claims (M), seasonally adjusted[1]

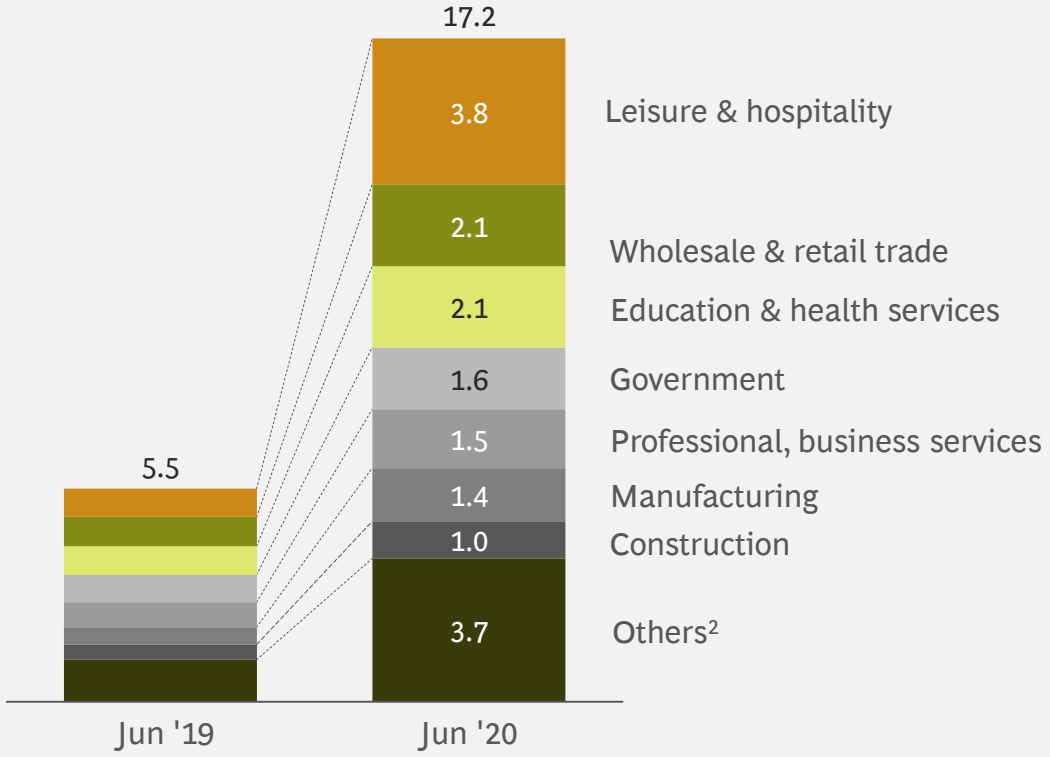


% unemployed weekly (%), seasonally adjusted



Leisure and hospitality among the hardest hit industries

Unemployment by industry, compared to June 2019 (M)



1.Seasonality adjustment is done to even out periodic swings in the data; adjustment is done by dividing unadjusted value by seasonality factor and then multiplying it by 52; 2. Others include transportation and utilities, other services, self-employed workers, unincorporated and unpaid, family workers, financial activities, mining, quarrying and oil and gas extraction, agriculture and related private wage and salary workers;
Source: US Employment & Training via St. Louis Fed, Bureau of Labor Statistics, BCG

Business activity across most sectors witnessed early signs of rebound in May and June

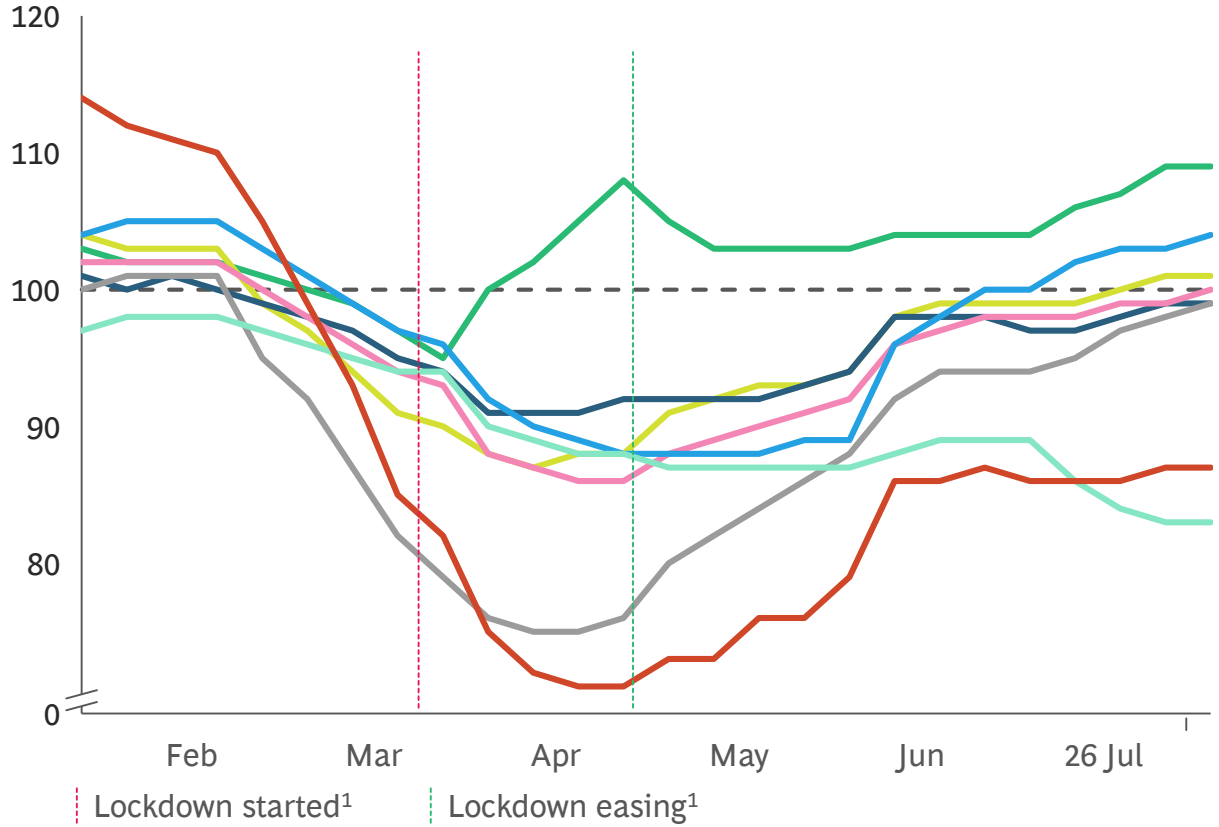
BUSINESS IMPACT

As of 26 July 2020

Non-exhaustive

BCG Economic Recovery Pulse Check (ERPC)

Activity across time for US (year-on-year)



- Healthcare[2]
- Tech, media & telecom
- Financial institutions
- Engineered prod & infra[3]
- Auto & mobility
- Materials & process[4]
- Transportation & logistics
- Energy

- Activity in healthcare and tech, media & telecom have improved year-on-year
- Financial institutions; engineered prod & infra; auto & mobility; materials & process saw moderate recovery; currently flat compared to previous year activity
- Transportation & logistics moved from highest to lowest activity industry – early signs of rebound seen in May and June; still far from recovery

Note: ERPC is a high-frequency index capturing sector activity based on 100+ sector specific data sources. It tracks industries in US, EU5 (GER, FR, UK, ITA, SPA), 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 4-week exponential smoothing; 1. No uniform state-wide lockdown imposed, most states were in lockdown from 19 March to 25 April; 2. Medical Tech, Biopharma, Consumer Health (excluding Hospitals); 3. Aerospace & Defense, Infrastructure, Machinery & Industrial Automation; 4. Chemicals, Metals and mining, Building Materials, Forest Products, Paper and Packaging; Source: BCG

Mobility, consumer spending and industrial activity still below pre-COVID-19 levels

As of 31 July 2020

Mobility

~20% lower

mobility[1] in Jul '20 compared with Jan to mid-Feb '20 baseline

(Google Mobility)

Consumer spending

~6% lower

consumer spending[2] (online + offline) in Jul '20 compared with Jan '20

(Opportunity Insights Economic Tracker)

Industrial activity

~11% lower

total industrial production in Jun '20 vs. Jun '19 (seasonally adjusted)

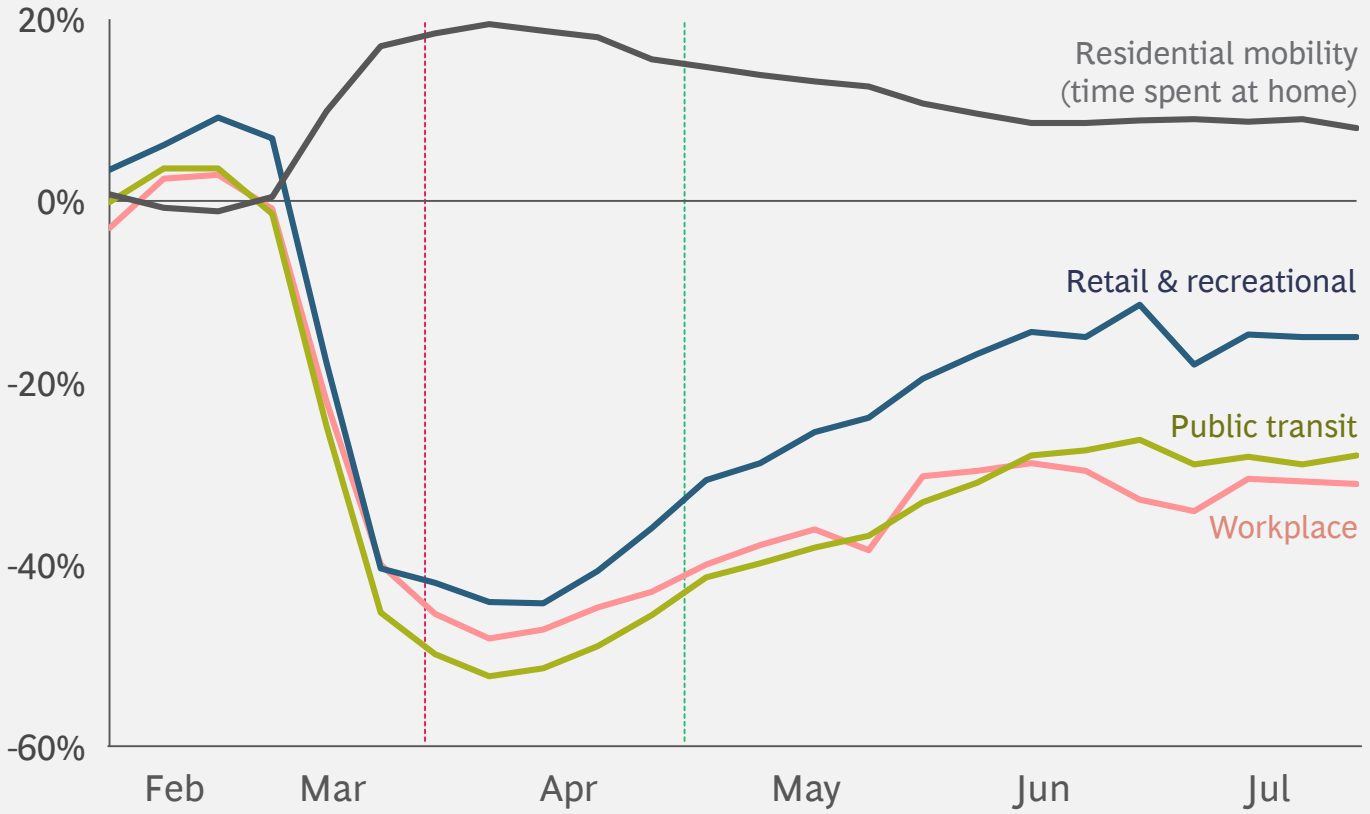
(US Federal Reserve)

1. 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; excludes residential, parks mobilities;
2. Change in average consumer credit & debit card spending, seasonally adjusted
Source: US Federal Reserve, Google COVID-19 Community Mobility Reports, Opportunity Insights Economic tracker

Workplace and public transit mobility showing slower recovery

As of 31 July 2020

Workplace[1], public transit[2], retail & recreation,[3] and residential[4] mobility compared to baseline of Jan to mid-Feb'20



Current mobility levels are below Jan to mid-Feb'20 for all mobility categories except residential mobility

US showed a >40% reduction in mobility from end to March to end of April, the month of most state lockdowns

Retail & recreational mobility has recovered faster than workplace and public transit 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 centres, theme parks, museums, libraries and cinemas; 4. Tracked as changes in terms of time spent at places of residence; 5. No uniform state-wide lockdown imposed, most states were in lockdown from 19 March to 25 April; Note: Data taken as weekly average compared with baseline (average of all daily values of respective weeks); Source: Google LLC "Google COVID-19 Community Mobility Reports"; Press search; BCG

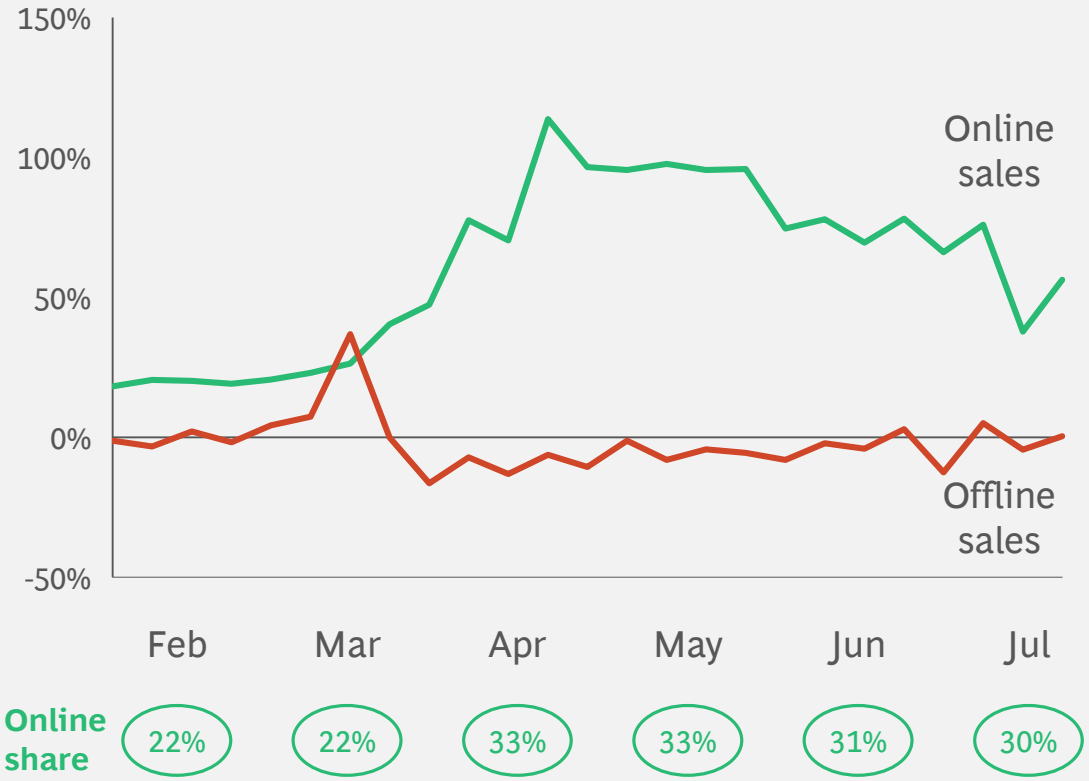
Shift towards online purchase continues; lower in-store purchase frequency & increased transaction size sustaining beyond initial spike

BUSINESS IMPACT

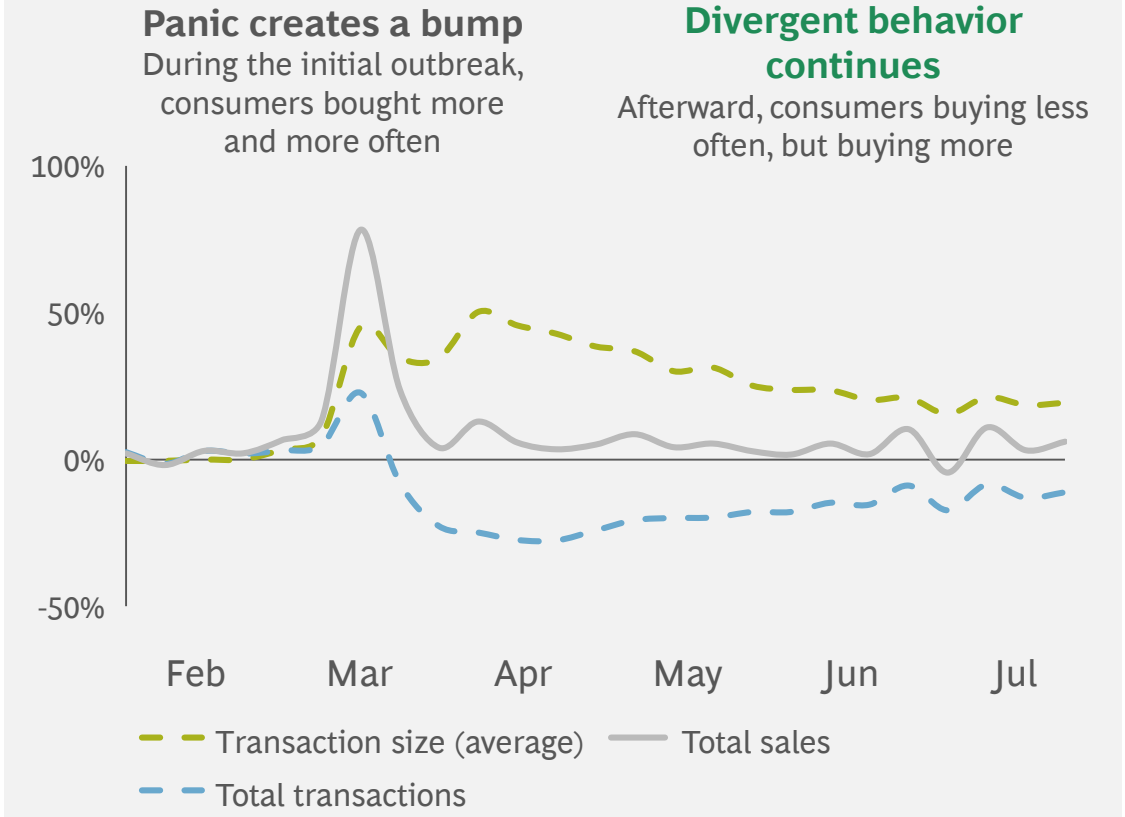
As of 22 July 2020

BCG Lighthouse high frequency data

Online[1] vs offline[2] retail goods sales | YOY % change vs 2019



Offline sales - Grocery | YOY % change vs 2019



Note: Tracked based on spending data based on consumer credit card/debit card/checking account activity from a panel of US consumers from Earnest Research (tracked responses exclude cash/other); 1. Online sales include sales of above categories through online channels plus sales of Amazon & online grocery; 2. Offline sales includes store sales of Apparel and Accessories, Beauty, Club Chains, Convenience Stores, DIY, Department Stores, Dollar & Discount Stores, Electronics, Grocers, Hobby, Home, Mass Retail, Pharmacy; Source: Earnest Research; BCG Lighthouse

On average, retail goods' sales (excl. auto & fuel) have recovered; retail services continue to be impacted

As of 17 July 2020

Retail goods' sales (excl. auto & fuel), YOY % change

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

	Feb	Mar	Apr	May	June
Retail goods (online + offline)	4%	7%	-6%	3%	6%
Store sales					
Food & beverage stores	4%	29%	12%	15%	12%
General merchandise stores	2%	9%	-6%	0%	3%
Personal care & cosmetics stores[2]	0%	6%	-10%	-9%	-6%
Apparel stores[3]	1%	-49%	-86%	-62%	-23%
Home appliance stores[4]	0%	-18%	-53%	-37%	-13%

Retail services' sales, YOY % change

Includes online & offline bookings/payments of B2C services and comprises out-of-home entertainment, restaurant services, hotels, airline booking, other online travel bookings, ride sharing

	Feb	Mar	Apr	May	June
Out-of-home entertainment	10%	-46%	-89%	-93%	-87%
Restaurants[5]	3%	-13%	-15%	-32%	-9%
Hotels	7%	-30%	-78%	-73%	-50%
Online travel agency	1%	-44%	-77%	-57%	-17%
Airlines	-2%	-45%	-88%	-85%	-69%
Ride sharing	11%	-27%	-85%	-88%	-77%

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

Note: Services sales data based on spending data of consumer credit card/debit card/checking account activity from a panel of US consumers from Earnest Research; 1. Share in overall goods sales based on Q4'19 sales: F&B stores-20%, general merchandise stores-20%, personal care & cosmetics stores-12%, apparel stores-6%, home appliances stores-3%; other major categories are online sales (~20%), building materials (~10%); 2. Includes pharmacies & drug stores; 3. Includes accessories; 4. Includes electronics stores; 5. Doesn't include food delivery; Source: US Census Bureau, Earnest Research, BCG Lighthouse

Manufacturing production rebound in June driven primarily by electronic products, motor vehicles[1] and machinery

BUSINESS IMPACT

As of 27 July 2020

Manufacturing production, YOY % change vs 2019

	Share[2]	Feb	Mar	Apr	May	June
Manufacturing		**0%**	**-5%**	**-20%**	**-17%**	**-11%**
Durables						
Electronic products[3]	14%	7%	5%	-1%	-3%	2%
Motor vehicles & parts[1]	7%	2%	-27%	-83%	-62%	-25%
Fabricated metal products	7%	0%	-4%	-15%	-12%	-11%
Machinery	6%	-3%	-7%	-22%	-21%	-15%
Non-durables						
Chemical products	16%	-2%	-2%	-8%	-7%	-6%
F&B products[4]	12%	2%	0%	-8%	-6%	-4%
Petroleum & coal products	6%	2%	-6%	-21%	-20%	-18%

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

Total manufacturing production is **slowly recovering** from April lows

Motor vehicles and parts[1], machinery are **seeing an uptick**; however, still far from recovery

Fabricated metal products, petroleum and coal products **continue to be flat at low levels**

1. Motor vehicles, bodies and trailers, and parts ; 2. Share based on 2019 contribution to GDP (as a percentage of Manufacturing contribution to GDP); Categories on the page total 69% - other major categories under durables are: other transportation equipment (7%), Miscellaneous manufacturing (5%), others (12%); other major categories under non-durables are: Plastics and rubber products (4%), others (6%);
3. Computer and Electronic products; 4. Food and beverage and tobacco products; Source: US Federal Reserve, U.S. Bureau of Economic Analysis, BCG

Epidemic, economic and business impact

Population segments most impacted by the disease

Economic and business indicators

Action areas for leaders

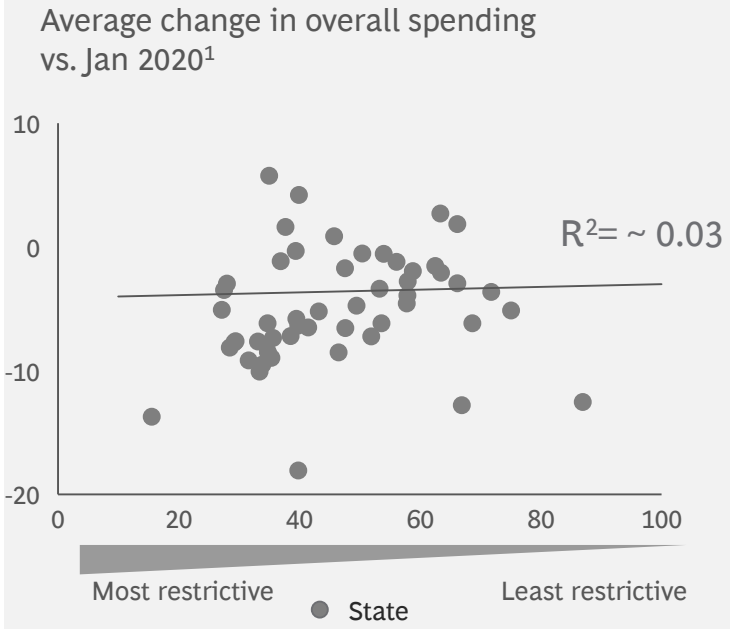
Public policies for safe reopening

Implications for business leaders

Epinomics challenge | Reopening policies do not drive return in consumer spending; controlling virus critical to restoring economy

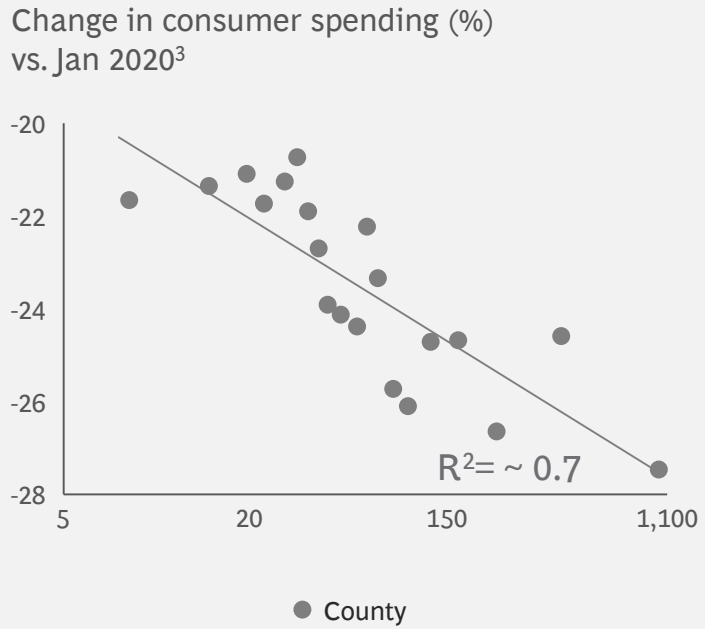
As of 21 July 2020

Spending not correlated with government restrictiveness



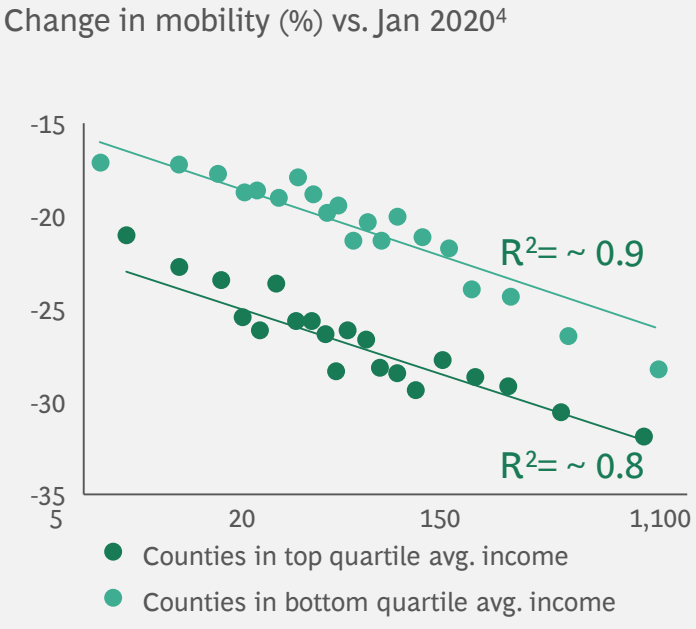
State-level composite score of level[2] of government restrictions

Consumer spending declines as local cases increase



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

Affluent more likely to stay home, driving decline in spending



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

1. Based on data from July 21, 2020; 2. Composite score of restrictions includes, e.g., requirement to wear a mask in public, travel restrictions, large gathering restrictions; 3. Based on data from April 1 to April 14, 2020; 4. Based on data from March 25 to April 14, 2020; Source: Anity Solutions; Google COVID-19 Community Mobility Reports; Chetty, Raj, et al; Opportunity Insights; New York Times, The COVID Tracking Project; CDC; WalletHub; BCG

Epinomics action areas for leaders | Requirements to ensure a safer, stronger recovery

	Public sector leaders	Private sector leaders
Disease reduction	Where healthcare capacity is at imminent risk, **crush** disease via swift, stringent lockdowns Where possible, move quickly to **contain case growth** via high ROI policies that **protect the vulnerable** and reduce spread	**Protect employees and customers,** especially those who are health vulnerable Use platform to **promote adoption of proven prevention methods** Actively screen employees and where possible **redeploy resources to support virus response effort**
Economic recovery	Target **stimulus packages** on sectors, individuals, and geographies most impacted Invest in new reality, sustainability & initiatives that lead to a **more equitable recovery**	Build financial and operational **resilience** **Transform to win the future** by reimagining offerings and operations, and accelerating digital

Source: BCG

Deep-dive on following pages

Two strategies to reopen the economy and schools at a reasonable level, dependent on local virus growth and capacity to control

Only in dire situations:

Crush through short-term lockdown when healthcare capacity at risk

Consider reentering a stringent lockdown: regardless of infection level, any region can crush the virus with a 5-8 week lockdown with 80%+ reduction in contacts[1]

Build up virus monitoring capabilities and health infrastructure for reopening

Set strategy to **protect borders upon reopening**

For as many places as possible:

Contain to keep cases stable or manageable

Implement **policies to protect vulnerable** and **general public to reduce transmission**

Optimize virus monitoring strategy (e.g., skewing tests, pooled testing)

Cautiously proceed with phased reopening, following customized guidelines

Further reading

It's Not Too Late to Crush and Contain the Coronavirus

1. Contact levels must be 80%+ below pre-pandemic levels
Source: BCG

Crushing the virus | Regardless of current infection levels, any region can crush the virus in 5-8 weeks by reducing contacts by at least 80%

Weeks at lockdown required to "crush[1]" the virus at given infection level & contact reduction

(in weeks)

Starting infection levels (as % of pop.)	Contact reduction vs. pre-pandemic levels			
	70%	75%	80%	85%
1%	> 30	11	5	2
10%	> 30	15	8	5
20%	25	14	7	5
30%	16	9	6	5
40%	12	9	6	5

Contact reduction lower than 80% results in unsustainable period of lockdown for 9+ weeks

1. Crush defined as keeping lockdown in place until new case growth falls to below 1 per 100,000; 2. Gallup survey of Americans reporting 'always' practicing social distancing over last day when surveyed.
Source: BCG SIR model; Master Scenario framework; Gallup polling and analysis; BCG

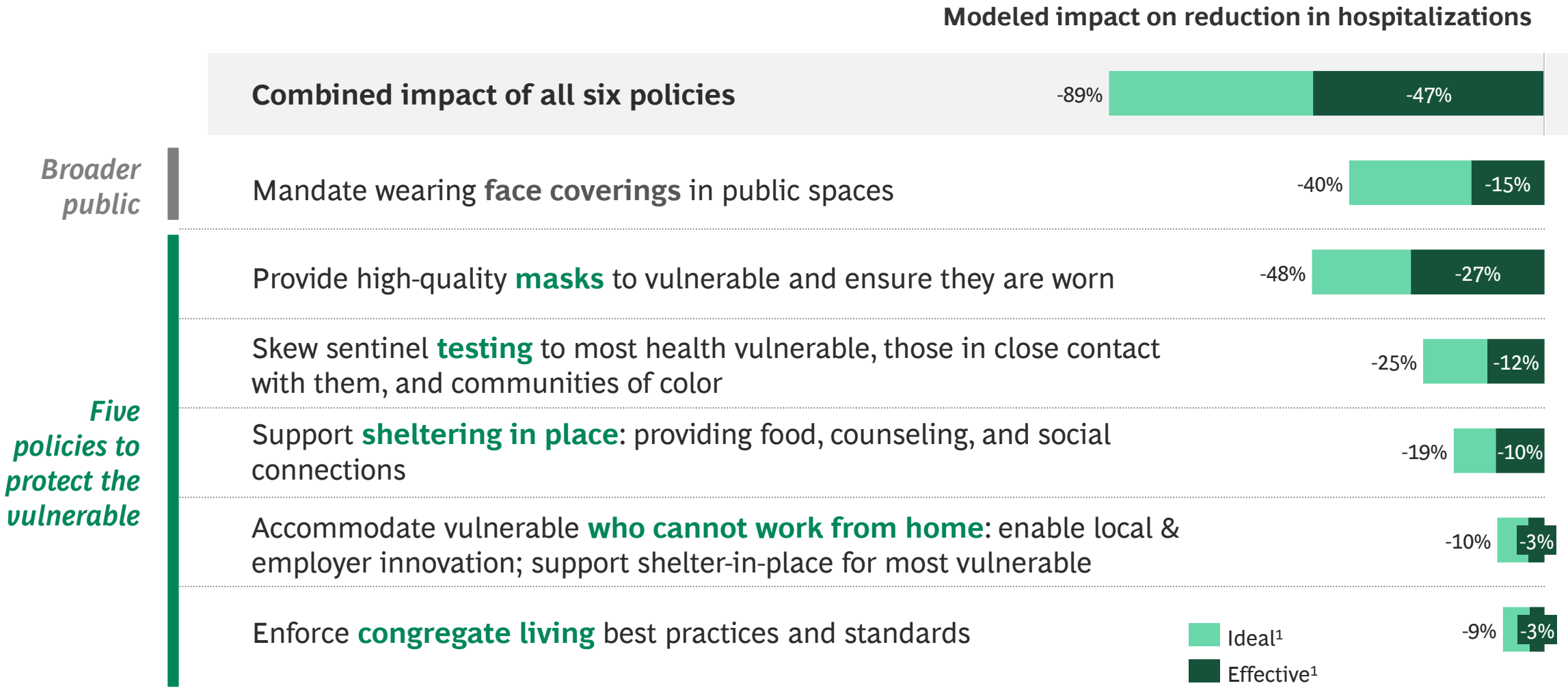
Why did initial lockdowns in the US not crush the virus?

US never locked down sufficiently and relaxed social distancing too soon in many areas:

~ 65% of Americans reported social distancing in April …

… but **only ~40%** continued social distancing by mid-June[2]

Containing the virus | Implementing these six policies could reduce hospitalizations by 50-90%



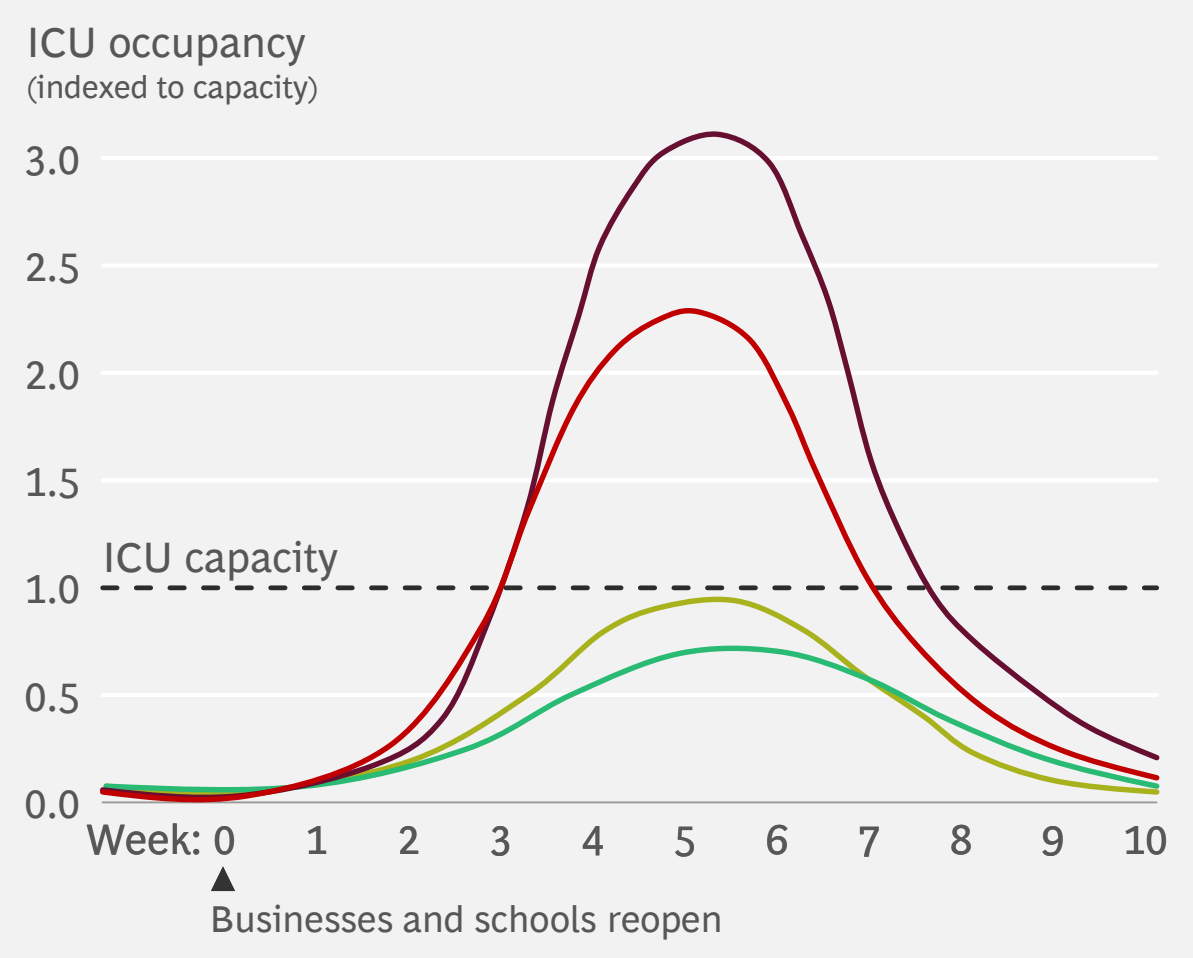
1. Ideal represents 80% compliance of a given intervention for vulnerable (50% for broader public), while effective represents 50% compliance for vulnerable (33% for broader public); studies suggest current compliance range of 33%-50% for mask wearing
Source: BCG

Further reading

A High-Return Strategy for a Safer Reopening

Containing the virus | Protecting the vulnerable *and* broad uptake of masks could allow most states to open schools and businesses

Example of a "US average state" that has contained the virus



Reopening requires some restrictions on general public and high compliance levels

Full reopening
Including mass gatherings

Reopening[1] schools and some businesses, no mass gatherings

Five policies to protect health-vulnerable[2]
While reopening schools and some businesses, no mass gatherings

Five policies to protect vulnerable, plus general face-covering mandates[2]
While reopening schools and some businesses, no mass gatherings

No time to wait – must act quickly

1. Assumes that schools and businesses reopen but basic social distancing measures (for example - limiting interactions to less than pre-pandemic levels and banning mass gatherings) remain in place throughout the duration of pandemic; this is a US average; 2. At 50% compliance. Studies suggest that current compliance with mask wearing ranges from 33% to 50%.
Source: BCG

Safely reopening schools is paramount | To reopen schools, critical to get local spread under control & take steps to limit infections at school

Virtual learning means some students may fall behind, increasing urgency for school reopening

17% of students **don't have home internet**

13% pts less likely for schools with more students of color & students in poverty to have a **distance learning plan**[1]

14% of students require **special education services**

If safe for schools to reopen, these 6 levers can reduce virus transmission significantly

- Compulsory face coverings
- Protecting vulnerable students, teachers, and their families
- Weekly screening of all students (e.g., via pooled testing)
- Classes split into bi-weekly A/B teams
- Staggered class start times
- Providing safe transportation alternatives to-and-from school

In a European country with low levels of transmission, these levers estimated to reduce transmission >80% based on models

1.. 32% of largest non-CGCS (Council of the Great City Schools) districts vs 19% of largest CGCS districts have a distance learning plan.; as of 26 May'20
Source: Learning English VOA news, ITU, WFP, BCG

Private sector leaders also need to lead the way in fighting the virus; three imperatives emerge

IMPLICATION FOR BUSINESS LEADERS

As of 30 July 2020

Select examples

Protect employees and customers, especially those who are health-vulnerable

Global food processing player is **providing paid leave** to nearly 3,000 health vulnerable employees[1]

Telecom conglomerate identified task force to **redeploy vulnerable to work-from-home roles**

Leading 'Big Tech' companies take **temperature checks of employees** before each shift

Use platform to **promote adoption of proven prevention methods**

Several large retail and food companies established **company-wide mask mandates**

Large consumer goods company released print ads urging people to **use sanitizers and masks**

Not-for-profit health org. provided clear **COVID-19 fact base to employees**, including targeted outreach to communities of color

Actively screen employees and where possible, redeploy resources to **support virus response effort**

Large American industrial goods players are **producing ventilators** through Defense Production Act

Global food player to establish on-site **weekly sentinel testing**[2]

Leading supermarket chain providing **at-home testing kits to symptomatic workers**

1. Offered to all employees aged 60 and above, and/or at higher risk for serious complications from COVID-19, as defined by CDC guidelines; 2. Sentinel testing involves testing people randomly across community, including those who are apparently well, in order to discover unseen transmission.
Source: Washington Post, CEO letters, Presidential Remarks on July 28, 2020; BCG

Additional perspectives on COVID-19

Edition #13

Global Restart:
Key Dynamics

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

Source: BCG

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