# COVID-19 BCG Perspectives

Facts, scenarios, and actions for leaders

Future of Global Trade and Supply Chains

9 June 2020

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

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

# COVID-19 BCG Perspectives

Objectives of this document

# COVID-19 is a global societal crisis

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

# Leaders need to drive an integrated response to navigate the crisis

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

# Executive Summary | COVID-19 BCG Perspectives

#### COVID-19 accelerates ongoing global trade shifts; strengthening supply chain resilience is critical in the new reality

- While global trade grew to a record value of \$18 trillion in 2019, COVID-19 is likely to negatively impact future trade
- Total trade volume may potentially recover to pre-COVID level only by 2023; however, with substantial shift in volumes across corridors
- Companies should act to improve supply chain resilience; drive end-to-end visibility, streamline complexity, and implement shock absorbers
- It is also critical to evaluate supply chain tradeoffs to rebalance priorities; secure access to resources, respond to demand shifts, and improve sustainability
- Many companies are already starting to adapt supply chains; global, migrated, and regionalized designs have emerged as distinct models

#### Across countries, efforts to flatten curve and ramp-up testing continue; equity markets and industry sectors show signs of recovery

- Globally, 2.8 million patients have recovered from COVID-19, but growth rate of daily new cases has increased to ~2%1
- Global increase in daily new cases is propelled by South America, Asia, and Africa, while Europe and North America continue to improve
- Vaccine and therapeutics development continues to move at unprecedented pace; nine vaccine candidates in phases I, II & III
- Rebound of global GDP is not expected before 2021; but global equity markets recover rapidly and all sectors show positive TSR<sup>2</sup> trend
- 20-45%+ of employees in major economies continue to be affected; but US report strong decrease in unemployment insurance claims

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 multitimescale in a Flatten-Fight-Future logic

1. Daily new case growth rate is calculated basis 7 day rolling average; daily case growth rate is 2.2% as of 05 June and was 0.9% as of 29 May; 2. Total Shareholder Return Source: BCG





# **Guide for leaders**

Macro view on future of trade Building resilience in supply chains

# Updated analyses and impact

Epidemic progression and virus monitoring Economic and business impact

### COVID-19 Impact dashboard

As of 05 June 2020

Epidemic Progression						
6.8M 2. # of cases # of re	8M ecoveries	96K fatalities				
	22 May	29 May	5 June			
Growth rate <sup>1</sup> of daily new cases	1.5%	0.9%	2.2%			
# of days of case doubling <sup>2</sup>	35	37	36			
# of reported recoveries as % of total cases	39%	42%	41%			
# of tests / case <sup>3</sup>	15	17	18			
# of tests / million <sup>3</sup>	34K	44K	48K			
	Vaccir	ie Trea	ıtment			
Trials in pre-clinical stage and beyond <sup>4</sup>	159	126				
Trials in Phase 1 and beyond <sup>5</sup>	9		53			
Current estimated timeline for approval and scale-up	6-33 month	6 s <sup>6</sup> mo	-21 onths <sup>7</sup>			





#### Total Shareholder Returns<sup>11</sup>

First column: 21 Feb to 20 Mar; Second column: 21 Feb to 05 Ju							
	Ame	ricas	Europe	Asia			
Pharma	- <b>19%</b>	2%	<mark>-20%</mark> -4%	<mark>-22%</mark> 9%			
F&B <sup>12</sup>	<mark>-26%</mark>	<b>-9%</b>	<mark>-24%</mark> -11%	<mark>-12%</mark> 0%			
Telecom	- <b>17</b> %	-6%	<mark>-20%</mark> -14%	<mark>-14%</mark> -7%			
Software	-30%	-3%	<mark>-32%</mark> -9%	-28% -7%			
Retailing	<mark>-42%</mark>	-7%	<mark>-36%</mark> -10%	-24% 10%			
Capital goods	-38%	-7%	<mark>-35%</mark> -11%	-29% -2%			
Auto	- <b>47</b> %	-7%	<mark>-45%</mark> -9%	-32% -7%			
Real Estate	<mark>-42%</mark>	- <mark>22%</mark>	<mark>-26%</mark> -20%	-22% -10%			
Energy	-56%	-23%	<mark>-45%</mark> -20%	-41% -22%			
Banks	-41%	- <b>19%</b>	-44% -28%	<mark>-26%</mark> -9%			

1. Growth rate calculated basis rolling 7 day rolling average of new cases; 2. No. of doubling days based on 7 day average growth rate of total cases; 3. Median of values for top 15 countries by nominal GDP (except China); 4. Ongoing trials including pre-clinical, Phase 1 (first trial in humans), Phase 2, Phase 3, Phase 4; 5. Ongoing trials including pre-clinical; Phase 1 (first trial in humans), Phase 2, Phase 3, Phase 4; 6. 6 month development current "best case" (9 months since Apr 2020), then likely to require time to scale across population; 7. Remdesivir is approved now, could be more widely available by Jul. Sep 2020. For the next wave, estimated timeline is 0 Cot '20 – April '22 (6-21 months). If first round of drugs being tested succesd – then 6 9 months; if not – substantially longer; 8. For India, forecast is for financial year; for others, it is for calendar year; IMF April 2200 forecast; 10. Available data as of 65 June 2020; International were people; down mid of March 2020; US: unemployment name name on the current date people, Pata and employees covered by government's wage support programs; numbers are cumulative from mid of March 2020; US: unemployment nactive people; Pata and othen being reported with a lag from the current date; 11. Performance is tracked for two periods, first from 21 February 2020 (before international acceleration of outbreak) to 20 March 2020 (trough of the marks, not actual used short-term work; Italy: unemployment figures & comments; UK Govt 5/12 (UK), ISTAT 4/30 & FitchRatings 5/18 (Italy), US. Department of Labor 5/21 (US), Ministerio de Trabajo 6/2 (Spain), Ministere du Travail 6/5 (France), Arbeitsagenture 6/3 (Germany)

# Pre-COVID-19, global trade grew, sustaining a record \$18 trillion in value



#### Change in value of global trade of goods from 2015 to 2019 (Major corridors, \$B)

Data on map represent ~30% of global trade; Not shown: Intra EU=~20%, NAFTA=~8%, China/Hong Kong=4%, ASEAN=3%, RoW=~35%



1. Compound Annual Growth Rate; Note: 2019 figure of \$18.2T followed a 2018 record figure of \$18.3T Source: UN Comtrade, OECD, WEF, IHS, TradeAlert, BCG

# US-China dynamic had already shifted import sources in 2019

**US Example** 

% change in go	oods imports ('18–'19)	ASEAN	India	China	JP/KR <sup>1</sup>	EU	Mexico	Brazil	Turkey	<b>RoW</b> <sup>3</sup>	World
Health Cara	Biopharma	-19%	19%	-14%	10%	17%	-6%	-7%	1%	2%	10%
Health Care	MedTech	23%	9%	-2%	-2%	5%	11%	31%	-13%	2%     2%     5%     5%     5%     15%     69%     12%     1% </td <td>6%</td>	6%
Consumer	Consumer Durables	33%	10%	-19%	6%	3%	1%	26%	1%	5%	-4%
Consumer	Fashion & Luxury	12%	5%	-11%	2%	3%	-6%	-3%	8%	5%	0%
Guous	Packaged Food	6%	15%	-36%	11%	6%	10%	-8%	13%	4%	4%
	Consumer Electronics	24%	100%²	-13%	-25%	9%	14%	108% <sup>2</sup>	138% <sup>2</sup>	15%	-8%
Tech, Media & Telco	Equip. & Data Center Solutions	-2%	-12%	-31%	-19%	-2%	-4%	23%	-45%	69%	-13%
	Semiconductor & Materials	14%	36%	-53%	-3%	-7%	-14%	-41%	33%	-3%	0%
Energy	Energy	-40%	18%	-68%	34%	3%	-19%	-2%	10%	-14%	-13%
	Aerospace	-14%	39%	-9%	3%	18%	21%	31%	21%	12%	13%
	Agribusiness	-8%	0%	-23%	9%	3%	10%	6%	-13%	1%	1%
	Automotive - Components	24%	1%	-17%	1%	-1%	2%	-4%	10%	0%	-2%
	Automotive - Vehicles	12%	4%	-19%	1%	-2%	11%	-36%	-12%	1%	3%
Industrial	Chemicals	11%	10%	-16%	4%	-1%	5%	0%	7%	-7%	-4%
Goods	Electrical machinery	10%	21%	-18%	1%	3%	7%	14%	11%	7%	-3%
	Mechanical machinery	13%	6%	-37%	3%	2%	5%	9%	22%	10%	-7%
	Metals	2%	-1%	-15%	-1%	-4%	-2%	-12%	-31%	-8%	-7%
	Mining	-38%	5%	-22%	10%	-27%	30%	16%	-2%	2%	2%
	Non-metal building materials	45%	38%	-29%	6%	0%	6%	3%	21%	0%	-4%

% change

< -20%

-2% to -20% -2% to +2% +2% to +20%

7

>+20%

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# COVID-19 is accelerating previous trends toward more restrictive trade



Responding to COVID-19, governments are rolling out measures to protect domestic industries, localize supply chains, and attract private investment flows

As of 05 June 2020



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### Total trade can potentially recover to previous level by 2023; however, with substantial shift in trade volumes across corridors



Sector impact example | Future biopharma supply chain may change given government mandates and impetus for diversification

#### Illustrative

Today – highly globalized



Future – depends on product type and local government actions

1. Figures represent trade volumes between selected geographies only, and exclude API 2. Vaccines, antibiotics, anti-virals, etc. 3. Essential-biopharma supply chain highly dependent on occurrence and nature of government policies; reality of supply chain design highly dependent on details of country-specific regulation and may not resemble the example shown 4. Wide range of products w/o national security implications

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Companies should take immediate actions to increase current supply chain resilience, and evaluate design tradeoffs to rebalance priorities in the new reality



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# Immediate action | Five focus areas support more efficient supply chain ops

A



For further reading, please refer to 13 The New Reality for Chief Supply Chain Officers A central control tower can aid complete end-to-end visibility of the supply chain, and supplement informed decisions





Build a central "control tower" to gain visibility into end-to-end data from customer to supplier **Establish a governance structure** to address immediate and midterm issues

Use newfound visibility to make more effective decisions and resolve

decisions and resolv outstanding issues

#### **Potential value impact**

8-15%

Service improvement

# 10-15%

Savings across end-to-end supply chain and cost of quality

# 5-20%

Working capital improvement

Digital twin can help simulate scenarios, and model supply chain performance to manage demand and supply volatilities

#### Illustrative

#### What it is

#### Virtual replica to simulate SC performance

• Model multiple configurations to manage volatility of demand and supply

#### Probability-based view of future flows

• Scenario creation for different demand patterns and order-book

#### Value add

#### Dynamic reconfiguration of flows

- Optimize manning/warehousing/logistic cost
- Improve service levels and inventory
- Reconfigure demand mix and allocation

#### Example - European steel production company

Risk of warehouse capacity limiting production utilization identified four weeks in advance



Source: BCG



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### Companies are leveraging category and supplier intelligence to understand exposure and manage supply chain risks

Supplier intelligence

As of 15 May 2020

Global metals & mining company example

Illustrative

#### Mitigation plan

Pull forward orders of critical materials



Increase lead times on orders and shipping

Establish alternative vendors

Category intelligence

Assess exposure

Determine **focus categories** (failure criticality)

Analyze **supply risk** of categories (origin and failure probability)

Quantify **value at risk** (inventory, substitution, etc.)

Prioritize focus categories with their suppliers



Companies should holistically evaluate supply chain tradeoffs to rebalance priorities for the new reality

issions: e green egrity
igs to am, otprint
edesign

1. Capture factor cost differentials from scale effects, inventory levels; 2. Environment, Health & Safety Source: BCG

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# Build a resilience dashboard to guide actions across the supply chain

# B

Specific KPIs depend on industry & value chain position

Illustrative



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# Increase resilience by pulling a comprehensive set of levers

#### Supplier ecosystem Source



Reallocate supply mix between existing suppliers in alternate geographies

Influence suppliers to shift mfg. base in alternate geographies

Qualify new suppliers to increase diversification

Source from new suppliers in alternate geographies

#### Manufacturing network Make



Expand manufacturing capabilities to increase flexibility

Resize existing plant network to increase backup capacity

Re-shore or regionalize own manufacturing facilities footprint

Rethink make vs. buy strategy

#### Channels & customers Deliver



Add new distribution partners

Rethink transportation modalities mix (e.g., air vs. ocean)

Rethink distribution strategy (e.g., outsource vs. insource)

s s

Shift warehousing/DCs closer to end market

Speed of change depends on specific company and industry and may vary between few months and several years

# Example | Advanced analytics capabilities can boost supply chain goals

**Advanced** Network **Optimization** 

### **Design dimensions**

Resilience	Concentration of suppliers	<40% of key components sourced from selected geographies
	Supplier distance	>75% of key components with lead delivery time of 2 days to mfg. sites
	Size of plant	<85% of plant network utilization given demand scenarios
	Mfg. redundancy for key products	>30% of key products qualified in 2+ mfg. sites, in different geographies
	Make vs. buy strategy	<15% outsourced production for selected key products
	Inventory levels in end-market	>21 days of inventory of finished goods in selected sales markets
Sustainability	Carbon footprint	10% reduction in overall carbon footprint

B

Illustrative example for a firm traditionally manufacturing in Asia and selling globally<sup>1</sup>

#### **Global supply chains**

Limited footprint changes due to cost and access constraints; digital enablement for agility

#### **Migrated supply chains**

Shift manufacturing to new location to reduce geopolitical risk exposure

#### Regionalized supply chains

Move closer to end-markets, due to government restrictions/ incentives



#### Degree of change

1. Starting point and speed of change will vary significantly between industries, i.e. some industries will start and/or finish within few months, others within the next years Source: BCG

# Outcomes will look very different across these models



#### **Global supply chains**

What resilience \_ may look like

#### **Migrated supply chains**



#### **Regionalized supply chains**

Diversified networks Regional footprint including • Large-scale footprint shift Back-up suppliers across Rebalance supplier mix, to less Supplier mix across multiple \_\_\_\_ exposed geographies geographies regions Alternate qualified Moving manufacturing Manufacturing sites, incl. backfacilities up capacity sites • Cost-efficient sites (14.0) • Large automated sites (14.0) Large automated sites (14.0) • E2E visibility to react quickly E2E visibility to react fast E2E visibility across network • Strong risk management Trained and upskilled workforce Trained and upskilled workforce Low-value electric motors mfg. **Apparel** manufacturer moving footprint **Biopharma** firm reshoring part of with global SC and automated from one Asian country to another drug production to the US

Illustrative

sites

examples





### **Guide for leaders**

Macro view on future of trade Building resilience in supply chains

# Updated analyses and impact

Epidemic progression and virus monitoring Economic and business impact

# ~2.8M reported recoveries globally so far; growth rate of daily new cases has worsened to ~2%

EPIDEMIC PROGRESSION & VIRUS MONITORING

As of 05 June 2020



Note: Continued cases and fatalities are subject to different testing, propensity, reporting standards and hence are imperfect measures

1. # of daily new cases calculated as 7-day rolling average; growth rate calculated basis 7-day average; 2. No. of doubling days calculated basis 7-day average growth rate of total cases; 3 Basis Johns Hopkins CSSE; 4. Daily growth rate basis 7-day average

Sources: Johns Hopkins CSSE; Our world in data; WHO situation reports; BCG

# Daily new cases are increasing globally; propelled by South America, Asia, and Africa

#### As of 05 June 2020

Several European and North American countries continue to improve doubling rate...



# ... but countries in South America, Asia, and Africa witness an increase in daily new cases



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# Epidemic progression snapshot

#### EPIDEMIC PROGRESSION & VIRUS MONITORING

#### As of 05 June 2020

	Daily cases					
	Growth of dail	y new cases <sup>1</sup>	Daily Cas	ses/M	Tota	
			New case million pop	s per ulation <sup>2</sup>	In th	
S Africa		7.1%		32		
Brazil		4.7%		119		
India		3.7%		6		
Mexico		1.5%		27		
US		0.6%		65	1	
Russia		0.1%		61		
Indonesia	-0.3%			2		
Argentina	-0.6%			14		
Germany	-2.0%			5		
Turkey	-2.0%			11		
KSA	-2.2%			53		
Canada	-4.5%			20		
UK <sup>4</sup>	-5.2%			26		
France	-5.2%		<b>I</b>	7		
Italy	-6.8%			5		

Data shown only for G20 countries with 100+ daily new cases





1. Growth rate calculated basis 7-day rolling average of new cases; 2. 7-day rolling average; represented scale rounds up daily case/m to next 10<sup>th</sup> place; 3. Test/case data is not updated daily for few countries, data represented is within last 1 week; 4 UK recovery data not available; Source: Our World in Data, John Hopkins, Worldometers, BCG

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

As of 05 June 2020

#### As countries ramp-up testing capacity..

Daily new cases per million population<sup>1</sup>



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

Overall testing level required



**Non-exhaustive** 

# Vaccine fast movers | 9 vaccine candidates already into clinical trials

EPIDEMIC PROGRESSION & VIRUS MONITORING

#### As of 05 June 2020

#### **1** Phase II/III Oxford Univ. & AstraZeneca

Phase III recruitment underway; concerns<sup>1</sup> over effectiveness on rhesus macaque monkeys in May 2020

2		
4	Phase	П

#### **CanSino Biologics**

Phase II advancement since Apr 2020; follow-up expected by Oct 2020

#### Moderna

Positive signs<sup>2</sup> from Phase I trials in May; further wide-scale trials being planned

# 4 Phase I/II

#### **BioNTech & Pfizer**

Trial ongoing in Germany; if approved, distribution possible by Oct-Dec 2020

#### Novavax

Trial started in Apr 2020; expected completion of final trials by Nov 2021

# 2 Phase I

1

Chinese AMS<sup>4</sup>

#### Inovio

Sinovac

Aug 2020

(☆

Trial started in Apr 2020; larger studies possible in Jun-Aug 2020

China National Biotec<sup>3</sup>

Trial started in Apr 2020;

expected completion of

final trials by Nov 2021

Trial started in Apr 2020;

expected completion by

# 150 Pre-clinical

159

Total

"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

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1. Trial of the vaccine on rhesus macaque monkeys did not stop the animals from catching the virus and has raised questions about the vaccine's likely human efficacy and ongoing development; 2. Vaccine showed signs of creating immune-system response to fend off the virus – on a small sample designed to look at safety of the shot on human volunteers; 3. Listed as two candidates by WHO: Beijing institute of Biological Products / Sinopharm & Wuhan Institute of Biological Products / Sinopharm; 4. Academy of Medical Sciences and Institute of Medical Biology Source: WHO (June 2nd), Citeline Pharma Project (June 5th), Milken Institute (June 2nd), ClinicalTrials.gov (May 19th), Telegraph, Bloomberg, BCG



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

As of 05 June 2020

#### **GDP** growth forecast vs. baseline



Note: As of reports dated 31 March 2020 to 05 June 2020, YoY forecasts 1. Range calculated with 25th & 75th percentile values of forecast range 2. For India, forecast is for financial year; for other countries, the forecast is for calendar year; 3. Range from forecasts (where available) of International Monetary Fund, Goldman Sachs, JP Morgan Chase; Morgan Stanley; Bank of America; Fitch Solutions; Credit Suisse; Danske Bank; ING Group; HSBC; Source: Bloomberg; IMF; BCG

#### **GDP level forecast<sup>1</sup>** EOY 2021 vs. EOY 2019

**ECONOMIC &** 

**BUSINESS IMPACT** 

# Global equity markets recover rapidly; US unemployment insurance claims have declined

As of 05 June 2020

#### Global equity markets recover rapidly; NASDAQ already at all-time high

Cumulative returns until 05 June (%)



# Weekly number of seasonally adjusted US unemployment insurance claims have declined

Initial US unemployment insurance claims (millions per week)



# Industrial production and global trade disrupted due to COVID-19 crisis

ECONOMIC & BUSINESS IMPACT

As of 31 March 2020



1. Industrial production is a measure of output of industrial sector which includes manufacturing, mining & utilities; 2. Merchandise trade is trade of SITC revision 3 commodities and is taken as the sum of exports & imports Source: World bank, WTO, BCG

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# All sectors with positive momentum; semiconductors and pharma back on pre-crisis TSR-level globally

ECONOMIC & BUSINESS IMPACT

#### As of 05 June 2020

#### Order based on TSR & net debt/enterprise value<sup>1</sup>

		TSR performance <sup>2</sup>		Companies with p	Companies with probability of default >15% <sup>3</sup>		
		21 Feb 2020 - 20 Mar 2020	21 Feb 2020 - 05 June 2020	22 May 2020 - 05 June 2020	21 Feb 2020	05 June 2020	22 May 2020 - 05 June 2020
	Semiconductors	-30%	3%	7	0%	0%	$\rightarrow$
Healthier sectors	Pharma	-20%	0%	7	0%	0%	7
	Tech Hardware	-26%	-1%	7	0%	0%	$\rightarrow$
	Household Products	-16%	-3%	7	0%	0%	$\rightarrow$
	Food/staples Retail	-10%	-3%	7	0%	0%	$\rightarrow$
	Health Equipment	-31%	-4%	7	0%	0%	$\rightarrow$
	Materials	-32%	-5%	7	4%	9%	7
	Software	-30%	-5%	7	9%	8%	$\rightarrow$
	Retailing	-40%	-5%	7	0%	29%	ア
Prossured sectors	Prof. Services	-30%	-6%	7	0%	0%	$\rightarrow$
Pressured sectors	Auto	-41%	-7%	7	0%	10%	7
	Financials	-35%	-8%	7	0%	0%	$\rightarrow$
	Food & Beverage	-23%	-8%	7	0%	0%	$\rightarrow$
	Capital Goods	-35%	-8%	7	2%	4%	7
	Transport	-34%	-9%	7	0%	36%	$\rightarrow$
	Telecom	-17%	-9%	7	0%	8%	7
	Media	-36%	-9%	7	0%	0%	7
	Durable Goods	-39%	-12%	7	0%	5%	$\rightarrow$
	Utilities	-30%	-12%	7	0%	0%	7
Vulnerable sectors	Insurance	-39%	-17%	7	0%	0%	$\rightarrow$
Valiferable Sectors	Real Estate	-39%	-19%	7	0%	17%	$\rightarrow$
	Banks	-39%	-19%	7	0%	4%	$\rightarrow$
	Hospitality	-44%	-20%	7	7%	29%	7
	Energy	-52%	-21%	7	0%	21%	$\rightarrow$

Note: As of 05 June 2020; Based on top S&P Global 1200 companies; Sectors are based on GICS definitions; 1. From latest available balance sheet 2. Performance is tracked for two periods, first from 21 February 2020 (before international acceleration of outbreak) to 20 March 2020 (trough of the market) and from 21 February 2020 through 05 June 2020 based on median; 3. 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%

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# Additional perspectives on COVID-19

#### **COVID-19 BCG Perspectives**



Edition #8 Galvanizing nations for the new reality



Edition #5

<u>Revamping</u> <u>Organizations for the</u> <u>New Reality</u>



**Edition #2** Preparing for the restart



Edition #7 Sensing Consumer Behavior & seizing Demand Shifts



Edition #4

Accelerating Digital & Technology Transformation



Edition #1 Facts, scenarios, and actions for leaders



Edition #6

Restructuring Costs, and managing Cash and Liquidity



Edition #3 Emerging stronger from the Crisis

### Selected publications



Leadership & People How to Lead in a Time of Crisis



Operations Redefining Customer Service for the Future



Technology Is Your Technology Ready for the New Digital Reality?



Supply chain The new reality for Chief Supply Chain Officers



Operations Restarting Work Safely and Under Control



Retail

<u>The \$2.5 Trillion</u> <u>Opportunity for Grocers</u> That Are First to the Future



Supply Chain Building the Bionic Supply Chain



Automotive <u>COVID-19's Impact on</u> the Automotive Industry



Health Care

<u>The Timelines and</u> <u>Implications for COVID-</u> <u>19 Vaccines</u>

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