

A decorative graphic on the left side of the slide features a dark grey background with a grid of small, semi-transparent teal and green squares. Overlaid on this are several circles and lines in various shades of green and teal, some with white outlines, creating a complex, abstract pattern.

COVID-19

BCG Perspectives

Facts, scenarios, and actions for leaders

Publication #2 with a focus on:

- Preparing for the restart

Version: 20 April 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 wellbeing 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 jointly. 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

The **COVID-19 disease progression** continues to be a global challenge to societies, but interventions are starting to show positive effects

- Government measures to mitigate the spread are largely effective in slowing cases (doubling every ~10 days a week ago, to every ~15 days now)
- Testing is increasing, giving more transparency and control; in several countries, this is complemented by digitally enabled contact tracing
- While some countries are extending lockdowns and social separation, a few countries have started to progressively lift restrictions

Impact on sectors and business depends on intensity and shape of the health and economic recovery, especially in an extended fight phase

- Economic indicators and forecasts signal a severe downturn; global equity markets continue to be challenged and unemployment rates are rising
- The last weeks showed a bounce in equity markets and in Total Shareholder Returns (TSR), but credit risks remain in many sectors
- It remains critical to understand the specific context and environment (e.g. geography, sector) to distill implications for future pathways of companies
- There will likely be an extended phase of 'fighting' the virus with many investments to bring forward therapies/vaccines in the next ~12-18 months
- Young consumers are largely worried about financial implications, but share positive sentiment about recovery across many geographies

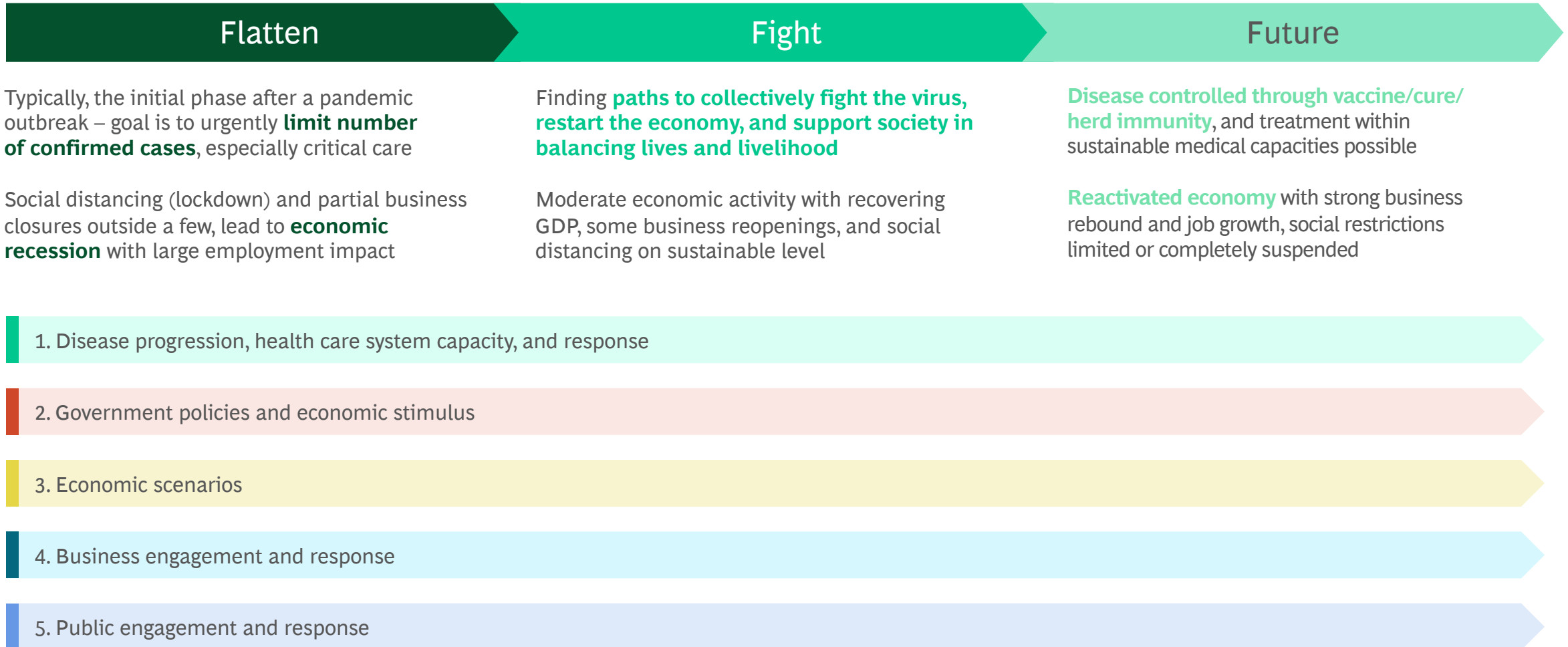
Navigating the COVID-19 crisis, particularly an extended 'fight' the virus phase requires integrated action by governments and business leaders

- Governments need to ensure that reopening activities are guided by national health, and economic and social priorities, allowing for local adaptation
- Reopening requires careful preparation, for governments as well as business; e.g. Managing for a safe workplace also requires managing risks outside work
- Business leaders and governments can use this crisis as an opportunity to strengthen their cooperation for a united fight against the virus

We believe during this crisis, leaders need to be able to think along two dimensions:

- (1) Taking an integrated perspective on health/medical progression, governmental responses, societal reactions, and economic implications to understand business/sector impacts and**
- (2) Thinking multi-timescale (the now, near, and long-term future—in a flatten-fight-future logic).**

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



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



1

COVID-19 Context and Development

Disease progression, health care system capacity, and response

Government policies and action

2

Economic and Business Impact and Scenarios

Economic response

Scenarios and key drivers

Business impact

3

Guide for Leaders

Determining government action

Considering ecosystem interdependencies

Navigating businesses through the crisis



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COVID-19 Context and Development

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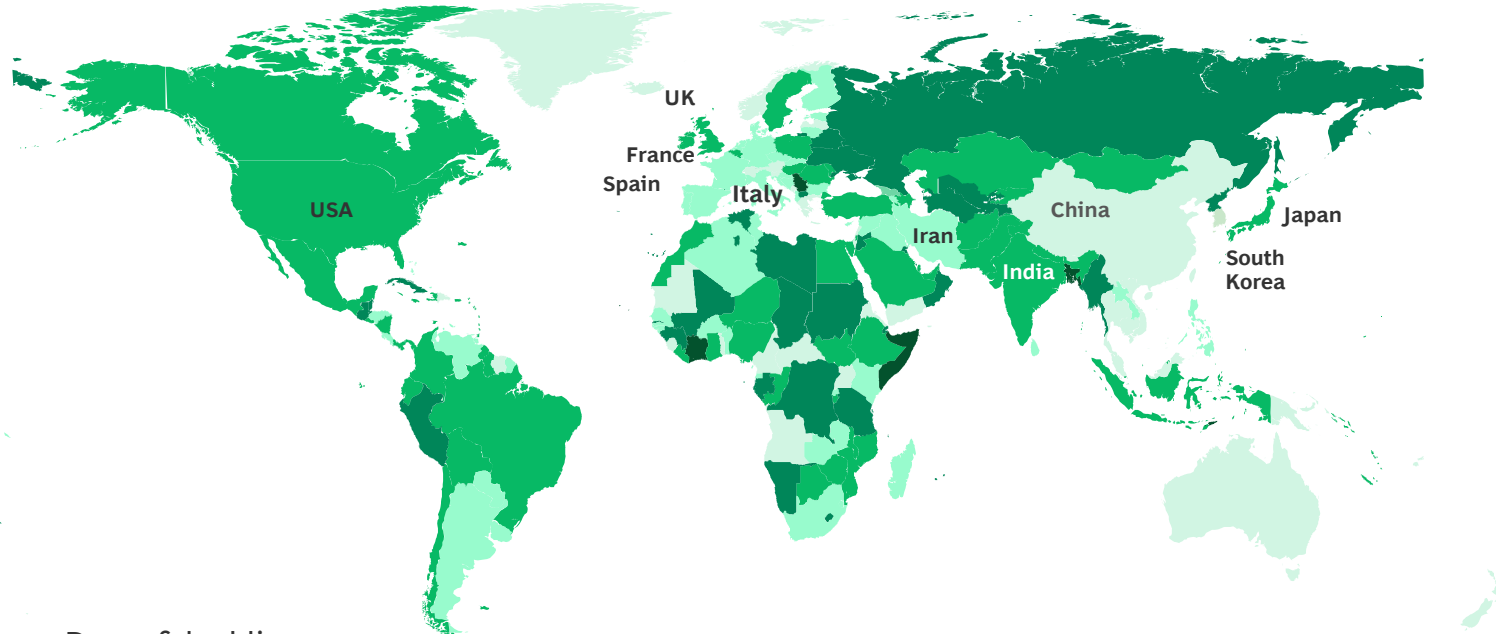
Considering ecosystem interdependencies

Navigating businesses through the crisis

COVID-19 pandemic spread: Cases doubling every ~15 days¹ globally

DISEASE PROGRESSION,
HEALTH CARE SYSTEM
CAPACITY, AND RESPONSE

As of 16 April 2020



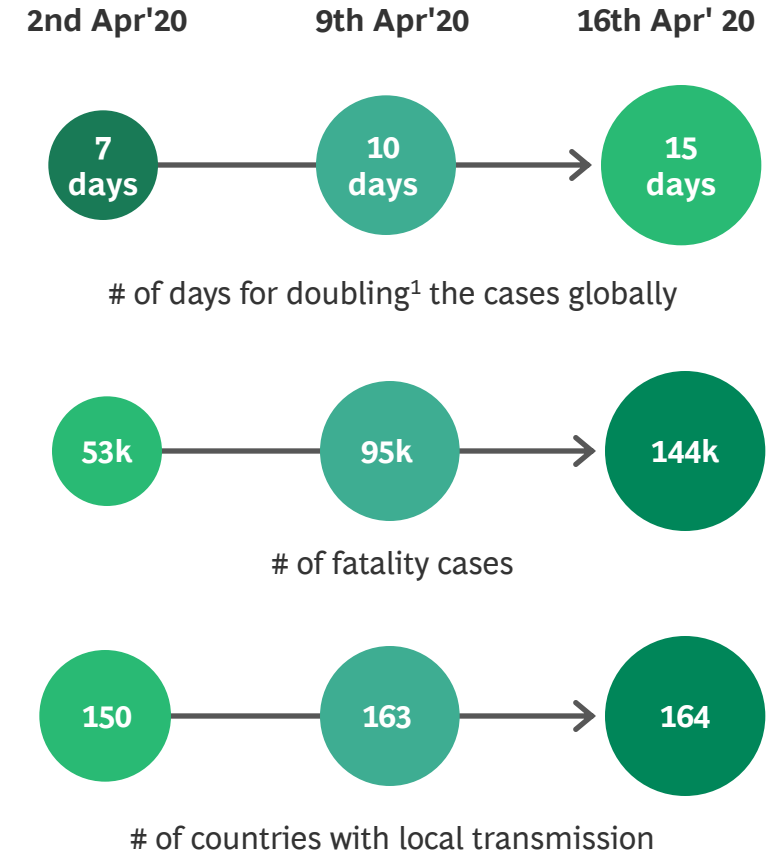
Days of doubling cases:



183
Countries with cases²

2.2M [$\Delta 5\%$]³
Confirmed cases globally

144k [$\Delta 6\%$]³
Fatality cases globally



Note: Continued cases and fatalities are subject to different testing, propensity, reporting standards and hence imperfect measures
 1. No. of doubling days based on 7 day CAGR 2. Basis Johns Hopkins CSSE ; 3. Daily growth rate basis 7 day CAGR
 Sources: Johns Hopkins CSSE, Our world in data, WHO situation reports, BCG analysis

The week that was...

From 11 to 17 April 2020

Report: Covid-19 patients recovering quickly after getting experimental drug remdesivir

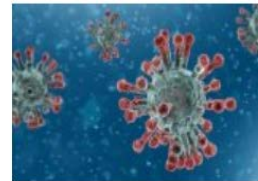
By Maggie Fox, CNN
Updated 1456 GMT (2256 HKT) April 17, 2020



April 17, 2020

The Korea Times

74→91→95→111→116: S. Korea unnerved by increasing reinfection cases



South Korea has confirmed 116 cases of coronavirus reinfection (as of Monday noon) with most cases reported in Daegu and North Gyeongsang Province, two epicenters of the domestic...

Posted : 2020-04-14 13:17

Macron extends lockdown in France until May 11th as coronavirus death toll nears 15,000

13 April 2020



THE LOCAL fr



14 April 2020



Austria set to ease coronavirus lockdown with reopening of shops

Around 0.33 per cent of population were infected early April, according to research

Asian countries fear coronavirus resurgence as cases in China hit 6-week high

April 14, 2020, 7:20 AM



CBS NEWS

The Boston Globe



The Latest: 2 large drug companies work together on vaccine

April 14, 2020, 6:14 p.m.



THE HINDU



NEW DELHI, APRIL 14, 2020 11:27 IST

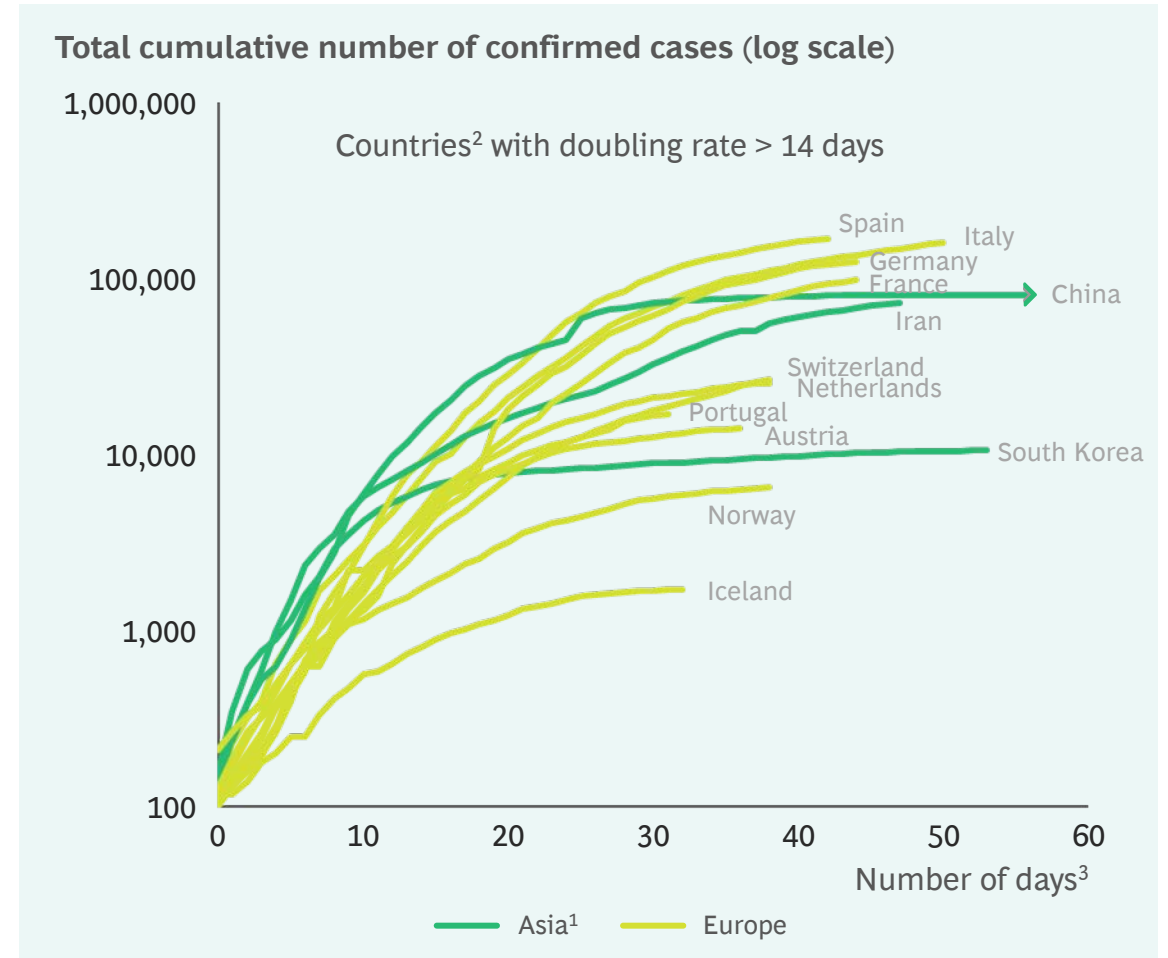
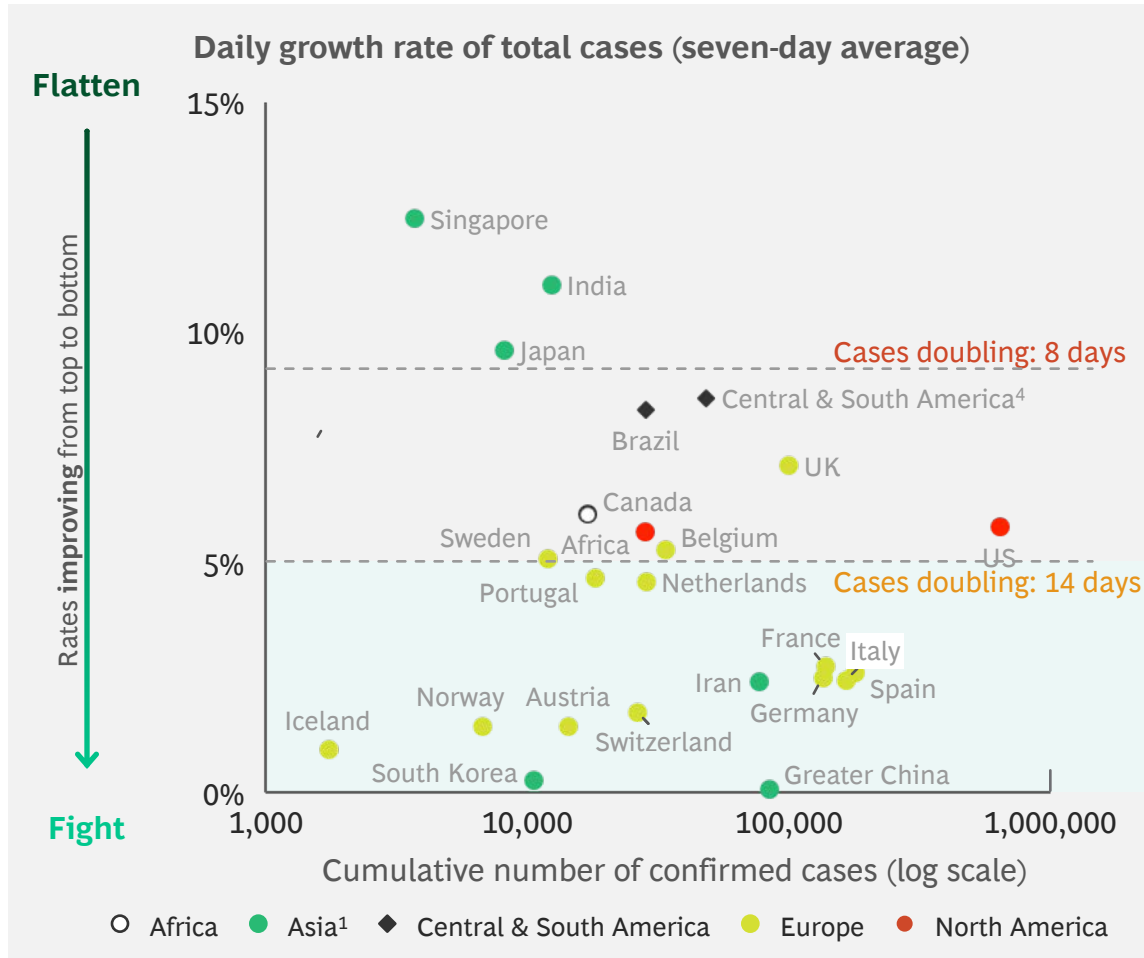
Lockdown extended till May 3, says PM Modi

NISTULA HEBBAR

Intensive containment measures will be in place at hotspots till April 20

Doubling days is an early indicator of the phase a country is in; flattening of the curve now evident in several countries

As of 15 April 2020



1. Includes Middle East 2. Countries selected from the chart on the left 3. # of days after exceeding 100 confirmed cases 4. Excludes Brazil
Source: Johns Hopkins CSSE, Our World in data, WHO situation reports

Testing ecosystem is proliferating—across both high-throughput in-lab and rapid near-patient tests

DISEASE PROGRESSION, HEALTH CARE SYSTEM CAPACITY, AND RESPONSE

As of 16 April 2020

Not exhaustive

Test purpose

Available for last 3+ weeks

Becoming available now (over last 1-2 weeks)

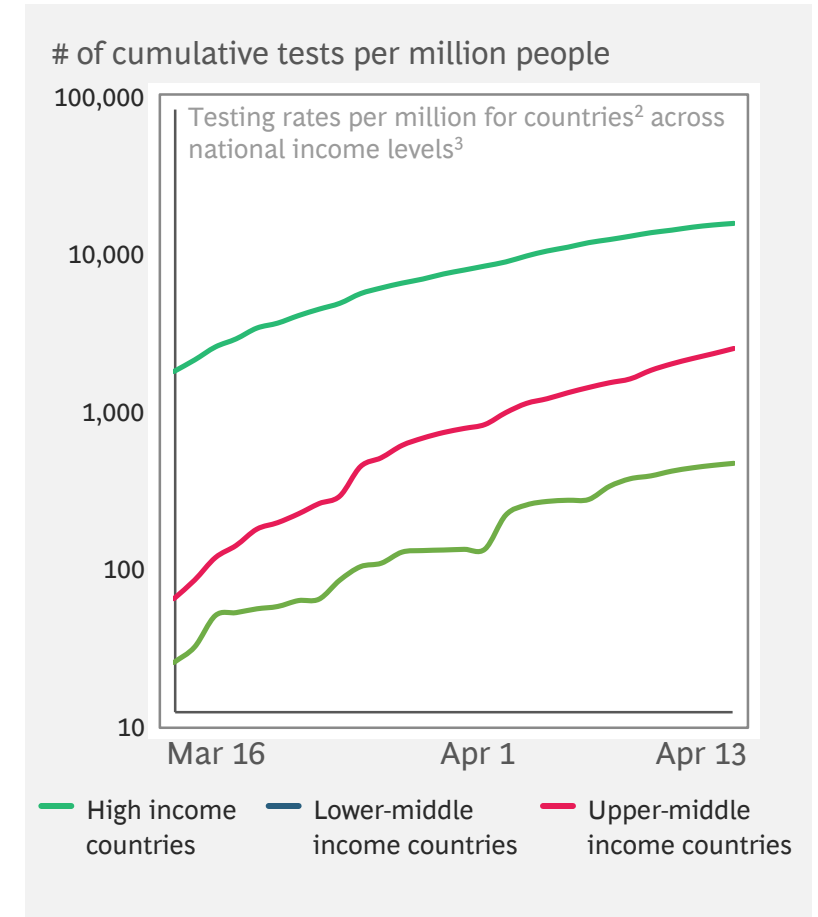
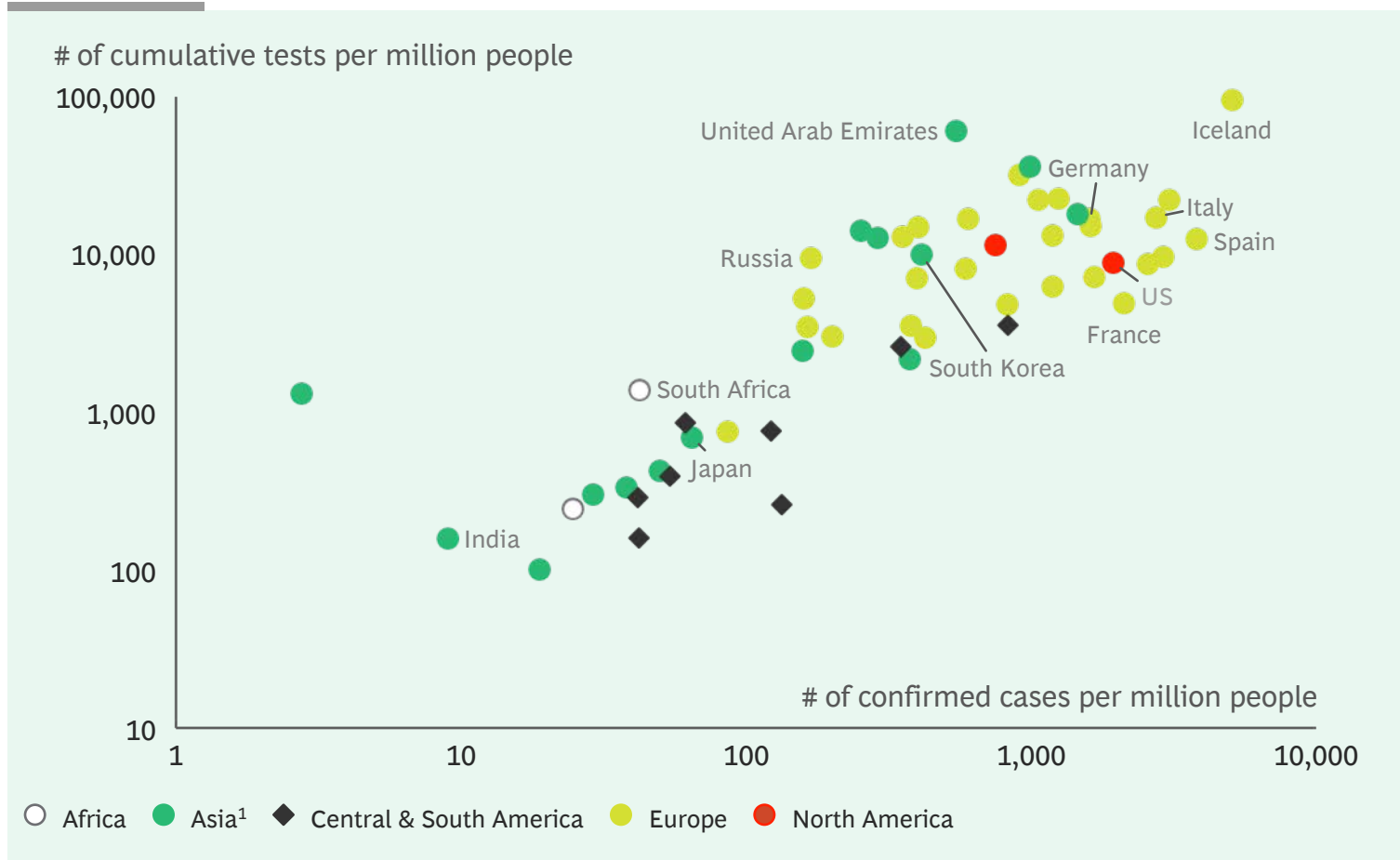
In development

Test purpose	Available for last 3+ weeks	Becoming available now (over last 1-2 weeks)	In development
Presence of viral genome	Lab-based <i>Examples</i> Roche, ThermoFisher Scientific, Abbott, QIAGEN, HOLOGIC	BD, BioGX, BIOMERIEUX, SIEMENS Healthineers, Luminex, NeuMoDx	FLUIDIGM, CASPR BIOTECH, LexaGene
	Near-patient/Point-of-Care Cepheid, Abbott, mesabiotech	BOSCH, Spartan, anitoo <i>Rapid, on-site portable test</i>	Nuclein, MOBIDIAG, Biomeme, lumiraDx, 1DROP DIAGNOSTICS <i>Handheld digital PCR</i>
Immune response to virus	Lab-based Ortho Clinical Diagnostics, DI, EUROIMMUN, Abbott, DIAZYME		CDC, Roche, Beckman Coulter, DiaSorin
	Near-patient/Point-of-Care BD, BioMedComics, CHEMBIO DIAGNOSTIC SYSTEMS, INC., Cellex™, 丽珠医药, LIVZON		<i>Many players announced development plans¹</i>
Presence of viral particle			<i>Biosensor, 1 min result (early stage of development)</i> PINPOINT SCIENCE

1. More than 90 serology test makers have notified FDA that they have serology tests available for use as of April 16, 2020
Source: CDC website, FDA website, company websites

Continued ramp-up of testing across countries

As of 15 April 2020



1. Includes Middle East 2. Data corresponds to 37 of 56 countries represented in the chart on the left 3. As per World Bank classification
Source: World Bank, Worldometers.info, Our World in Data, Johns Hopkins

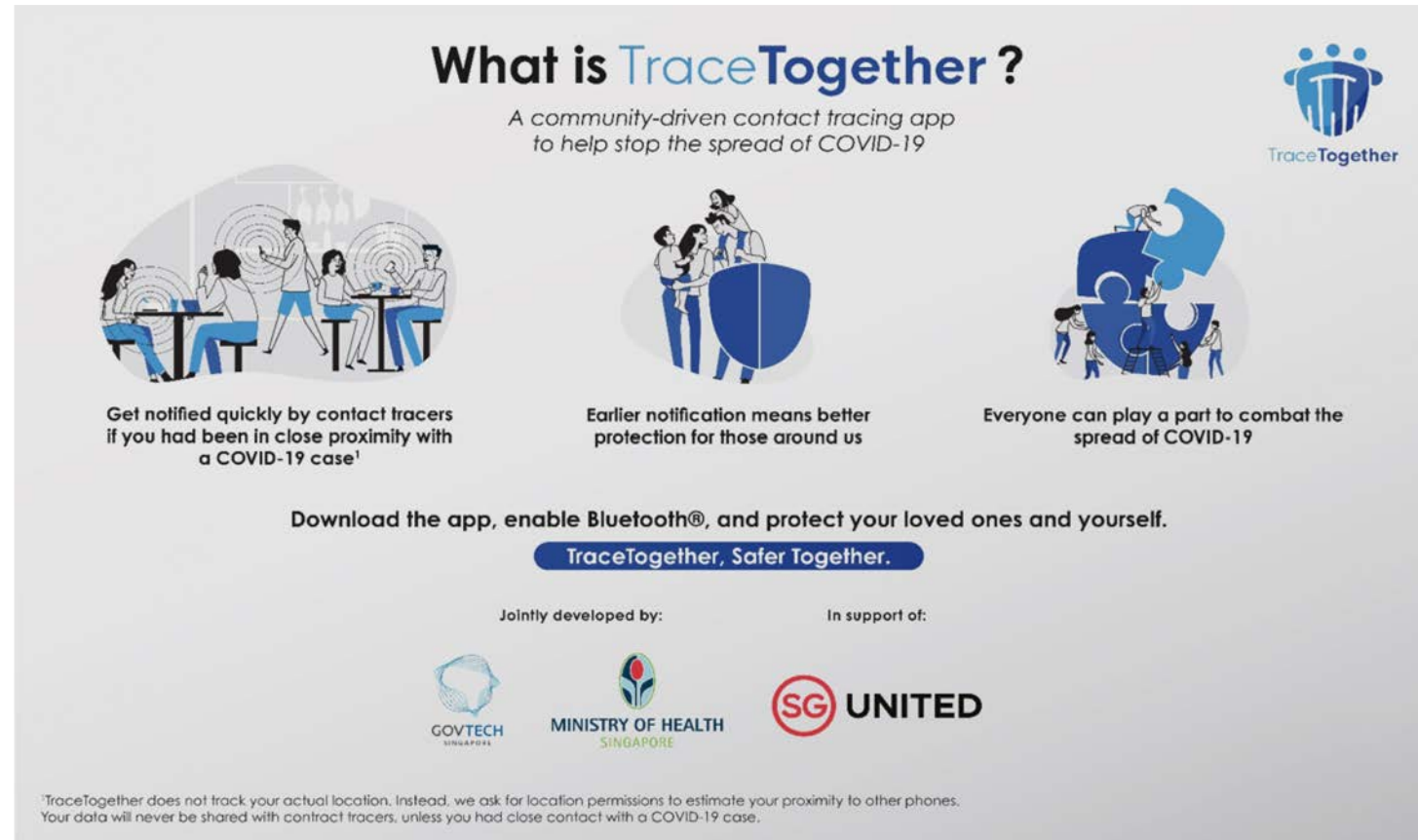
Several countries drive digitally enabled contact tracing to increase speed to detect outbreak and protect people

DISEASE PROGRESSION,
HEALTH CARE SYSTEM
CAPACITY, AND RESPONSE

As of 14 April 2020

Example: Singapore's TraceTogether

Developed by Government | Voluntary | 1M+ downloads



What is TraceTogether?
A community-driven contact tracing app to help stop the spread of COVID-19

Get notified quickly by contact tracers if you had been in close proximity with a COVID-19 case¹

Earlier notification means better protection for those around us

Everyone can play a part to combat the spread of COVID-19

Download the app, enable Bluetooth®, and protect your loved ones and yourself.

TraceTogether, Safer Together.

Jointly developed by: **GOVTECH SINGAPORE** and **MINISTRY OF HEALTH SINGAPORE**

In support of: **SG UNITED**

¹TraceTogether does not track your actual location. Instead, we ask for location permissions to estimate your proximity to other phones. Your data will never be shared with contract tracers, unless you had close contact with a COVID-19 case.

Non-exhaustive list

Various contact tracing apps launched:

Country	App	Down-loads	% of Population ⁴
India	Aarogya Setu	50M ¹	4%
Israel	Hamagen	1.5M ¹	17%
Singapore	TraceTogether	1M ¹	18%
South Korea	Corona 100M	1M ²	2%
Iceland	Rakning C-19	150k ¹	40%
Austria	Stopp Corona	100k ³	1%
Czech Republic	eRouška	50k ³	0.5%

Germany, Australia, and several others are in advanced stages of launching a contact tracing application

1. Basis Press Research 2. Google play link no longer available 3. Basis App Annie data base 4. Downloads as a percentage of population
Source: App Annie data base; Google Play store; Press research, BCG

Select developing economies are leading the way in driving containment

As of 16 April 2020

DISEASE PROGRESSION,
HEALTH CARE SYSTEM
CAPACITY, AND RESPONSE

Vietnam

Population:
~96 Million

Area:
331,210 sq. km

First patient: 23 January

Total cases: 268

Tests: 120k+

Recovered Cases: **177 (66%)**

Deaths: **0 (0.0%)**

- Early border control (e.g. China as early as 3 January, Korea, Europe)
- National risk assessment exercise in early January; guidelines issued when Wuhan reported 27 infections
- Strict govt. facilities/home quarantines leading to effective tracing and monitoring
- Early precautions: Schools closed since 17 January
- Entered nationwide “Strict Social Distancing Rule” on April 1

Kerala (India)

Population:
~34 Million

Area:
38,863 sq. km

First patient: 30 January (first to report infections in India)

Total cases: 394

Tests: 10k+

Recovered Cases: **245 (62%)**

Deaths: **3 (0.8%)**

- Mandatory quarantines weeks before any other state
- Civil society leaders and call centers helped clear doubts and remove stigma
- Monitoring teams in every village; 100,000+ under observation
- Schools and colleges closed since 10 March
- Daily briefings by top political executives ensured information flow and reduced panic movement

Race for a cure: Significant progress being made across preventative measures and treatment (antibodies, antivirals)

DISEASE PROGRESSION,
HEALTH CARE SYSTEM
CAPACITY, AND RESPONSE

As of 17 April 2020

Not exhaustive

Overview

Preventive measures

Vaccines

Prophylactic measure to prevent infection by training the immune system to rapidly eliminate

Treatment of infection

Antibodies

Passive immunity by administering neutralizing antibodies against circulating viral particles in the blood

Antivirals

Act by preventing viral entry to cells or inhibit viral replication within the cell; potential to leverage existing anti-viral Tx

Ongoing research

~80 under development globally, of which three are in preclinical stage

Small-scale early access for a small subset of patients possible in Q3 2020 assuming positive results

>30 under development globally

Early results likely in Q2 2020; use will be limited to small scale/at risk groups

>20 under development globally

Early efficacy signals of Chloroquine based compounds expected in Q2 2020

Companies

Not Exhaustive

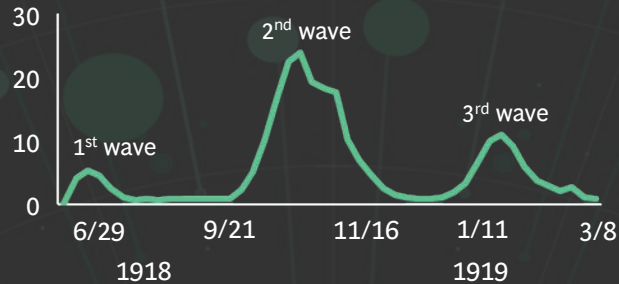


➤ While significant progress is being made, treatments and vaccines may be many months away

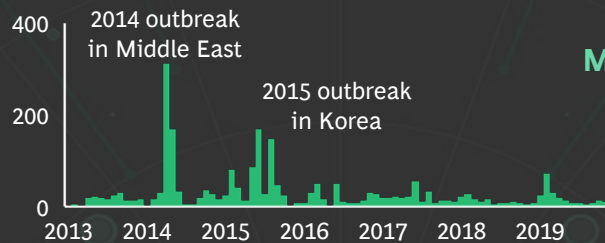
Countries are acting to ensure potential resurgence is contained

Previous pandemics like MERS and the Spanish Flu had disease resurgence two to three times

UK Deaths per 1,000 persons



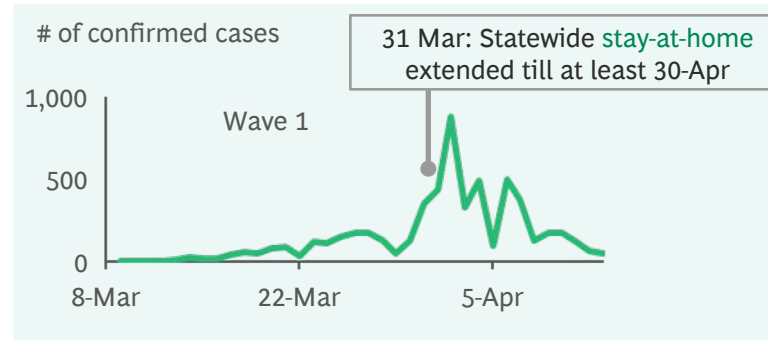
Number of monthly cases worldwide



Source: John Hopkins CSSE, Press Search, BCG Henderson Institute Analysis

As of 12 April 2020

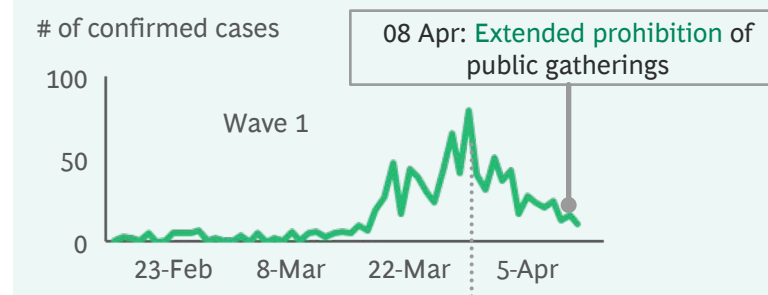
Daily infections by country



Measures to curtail resurgence

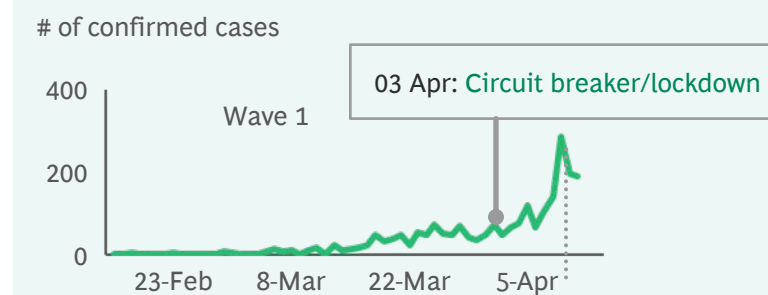
Louisiana (US)

- Ban on public gatherings of 50+ people
- Closure of schools, bars, salons, cinemas, gyms, casinos
- Statewide stay-at-home order until at least 30 April



Hong Kong

- Continuing of shutdown/containment measures
- Closure of bars, salons, cinemas, public places till 23 April



Singapore

- Lockdown/shut downs for one month with hefty fines for violators
- Shifting of healthy migrant workers to "floating hotels"
- Masks mandatory for anyone leaving home

Government measures continue to be enforced

US gets stricter in hard-hit areas; China, Spain, Denmark, Iran selectively opening up

As of 16 April 2020

	School closure	Restricted assembly	Non-essential business closure	International travel restrictions	Domestic travel restrictions ²	Non-essential local mvmt. restrictions
China	➤	➤	⊗	➤	⊗	➤
Spain	➤	➤	⊗	➤	➤	➤
France	✔	✔	✔	✔	✔	✔
Switzerland	➤	➤	➤	➤	➤	➤
Italy	➤	➤	➤	➤	➤	➤
Iran	➤	➤	⊗	➤	➤	➤
Denmark	⊗	➤	➤	➤	➤	➤
Germany	➤	➤	➤	➤	➤	➤
US	➤	➤	➤	➤	➤	✔
South Korea	➤	➤	➤	➤	➤	➤
Japan	➤	➤	➤	➤	➤	➤
UK	✔	✔	✔	➤	✔	✔
Turkey	✔	✔	✔	✔	✔	✔
India	✔	✔	✔	✔	✔	✔

Stricter social distancing norms imposed in hard hit areas of US; New York, California, New Jersey, Connecticut

Spain begins lifting restrictions on 13 April with construction and manufacturing workers resuming work

Denmark announces concrete plan to lift restrictions; primary schools to reopen from 15 April

Iran allowed government offices and business outside the capital Tehran to open from 11 April

China lifted the lockdown restrictions on Hubei allowing people movement subject to green code classification

✔ Extensions / New interventions post 31 Mar ⊗ Relaxation measures ➤ Continuing interventions

1. Includes nationwide actions and actions taken by major local or regional governments. 2 Some German + US rail services are being reduced but not through government mandate International travel restrictions flagged if any bans put in place or limits in place; Internal travel restriction includes reductions in public transport, or restricted access; Non-essential businesses include at least restaurants, entertainment venues; School closures are any mandatory state closures; Assembly restrictions include mandatory and advised restrictions on large groups, restrictions on e.g. faith based gatherings; Non-essential local mvmt includes stated restrictions on being outside or curfews | Source: Government and media reports 2. France, India and UK have extended the lockdowns starting week ending 18 April; whereas Turkey has a weekend lockdown. Denmark has allowed primary school to reopen; Spain has allowed non-essential businesses like construction and manufacturing workers to go back to work; US has instituted stricter social distancing norms; Iran has allowed government offices and businesses outside Tehran to turn operational; China has lifted Hubei lockdown allowing people movement



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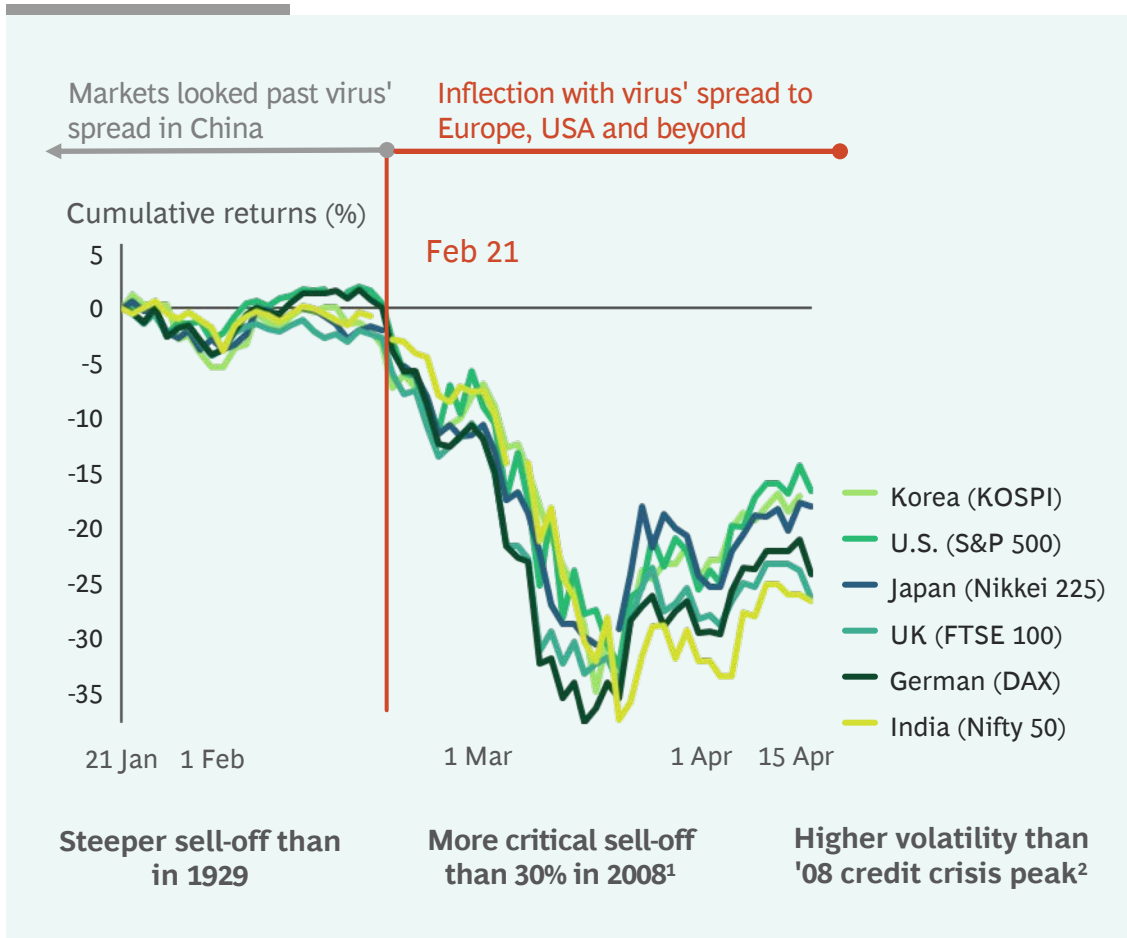
Considering ecosystem interdependencies

Navigating businesses through the crisis

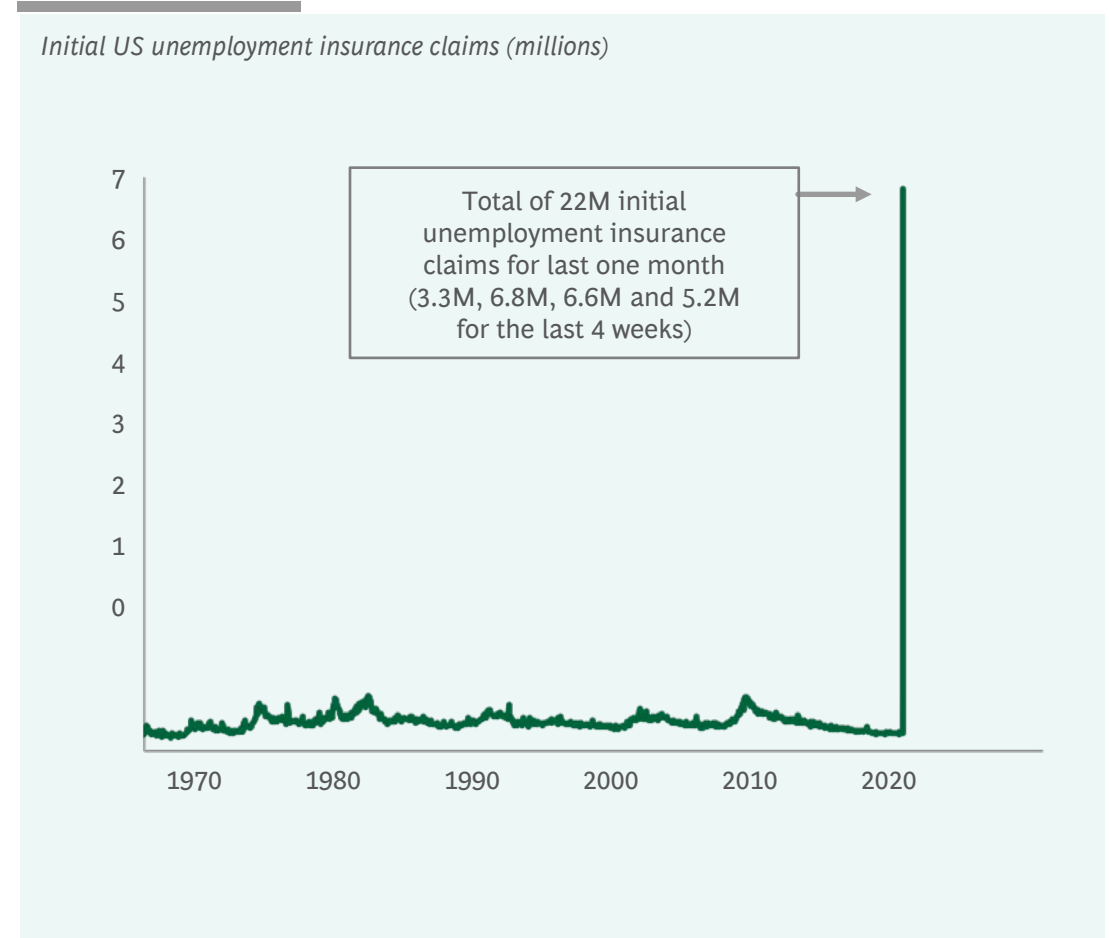
Global equity markets trending upward but still at a lower mean; unemployment rates rise

As of 15 April 2020

Global equity markets varying around a lower mean



Highest level of seasonally adjusted unemployment claims in history



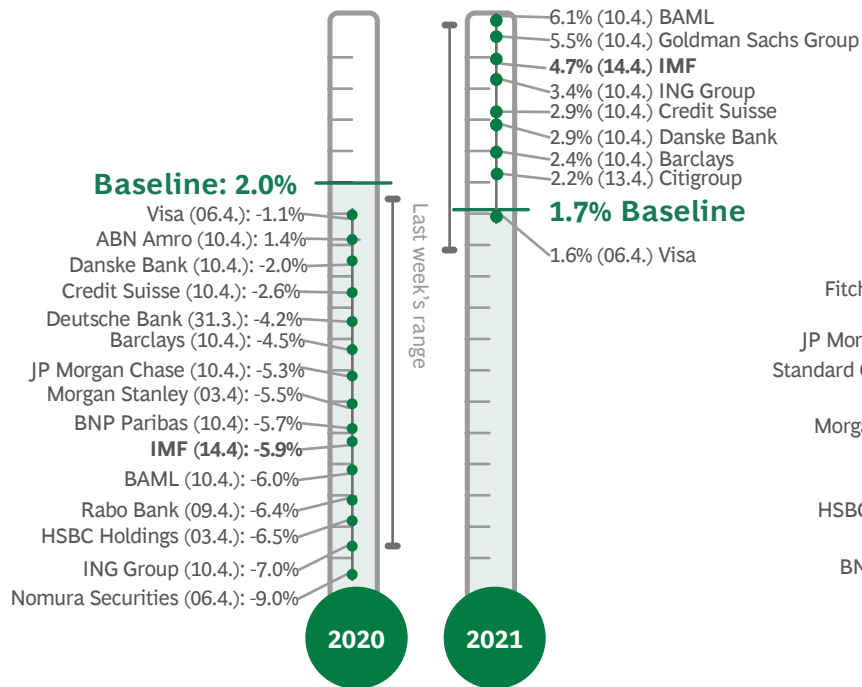
1. Financial Crisis S&P sell-off at comparable time frame: 26/09/2008 – 27/10/2008 and 19/02/2020 - 23/03/2020 2. Peak VIX recorded 16/03/2020
Source: OECD, Impact of the COVID-19 pandemic on global FDI and GVCs, UNCTAD, US Bureau of Labor Statistics, BCG

Economic forecasts point toward severe downturn

As of 14 April 2020

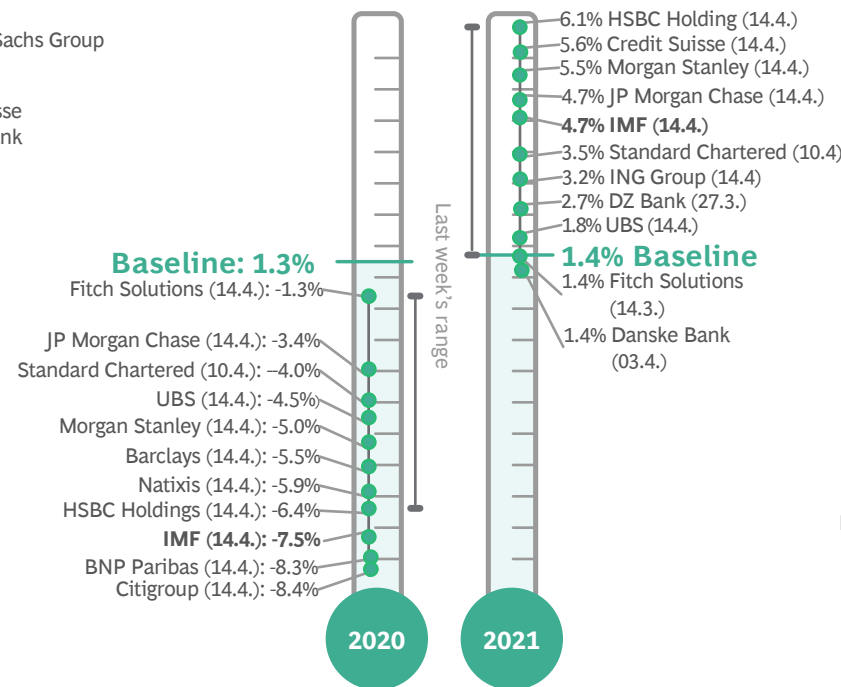
US

Forecast GDP growth vs. baseline before COVID-19



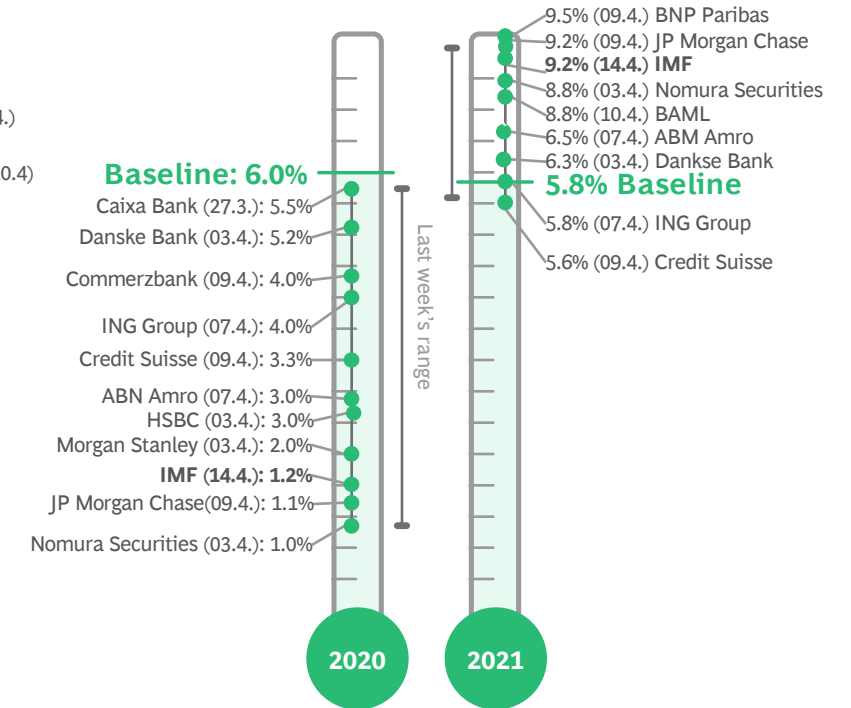
Europe

Forecast GDP growth vs. baseline before COVID-19



China

Forecast GDP growth vs. baseline before COVID-19



(DD.MM) format used

Note: As of reports dated 27 March 2020 to 14 April 2020

1. Estimated since GDP growth mentioned for second half of 2020 as average

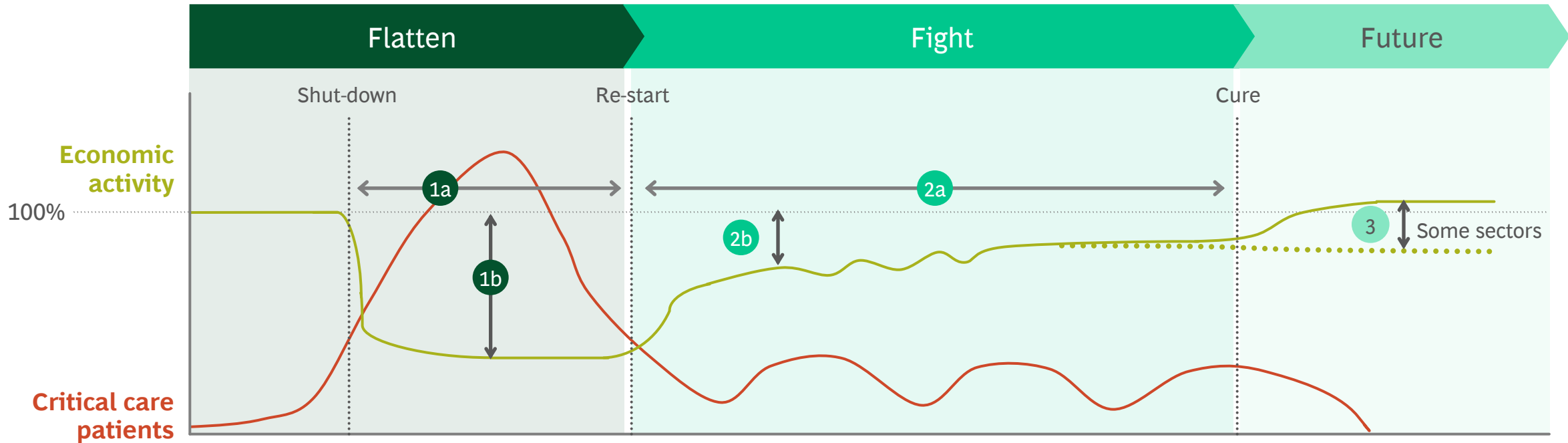
Source: Bloomberg, IMF, BCG analysis

Scenarios and potential outcomes driven by five key questions

Shape may vary in depth and duration depending on country and sector composition of the economy

As of 14 April 2020

Illustrative



Five questions will shape the economic outcomes

- 1a What will be the **LENGTH** of "Flatten"?
What are the preconditions to transition? When will we achieve them?
- 1b To what **DEPTH** does the economy drop in "Flatten"?

- 2a What will be the **LENGTH** of "Fight"?
What are the preconditions to transition? When will we achieve them?

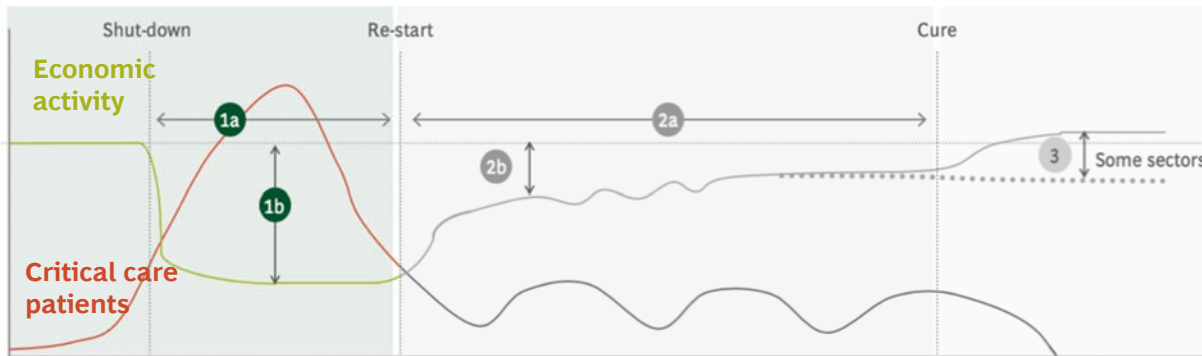
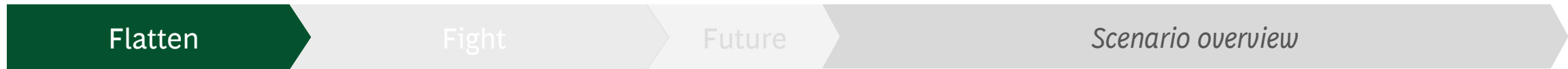
- 2b What **LEVEL** of recovery does the economy achieve in "Fight"?

- 3 **Where does the economy return to relative to the pre-COVID era in "Future"?**

Flatten: Key scenario inputs and implications

As of 14 April 2020

Prelim figures for USA



	1a	1b
Scenario parameters	LENGTH of "Flatten"	DEPTH of economic drop
Key scenario drivers	<ul style="list-style-type: none"> Disease progression² Government response³ Sector composition of economy Employment 	<ul style="list-style-type: none"> Revenue loss/week Hospital capacity Societal adherence to physical distancing
Potential outcomes	<ul style="list-style-type: none"> Mid May (~7 wks) Mid June (~10 wks) Mid July (~13 wks) 	<ul style="list-style-type: none"> 15-20% loss 20-25% loss 25-30% loss

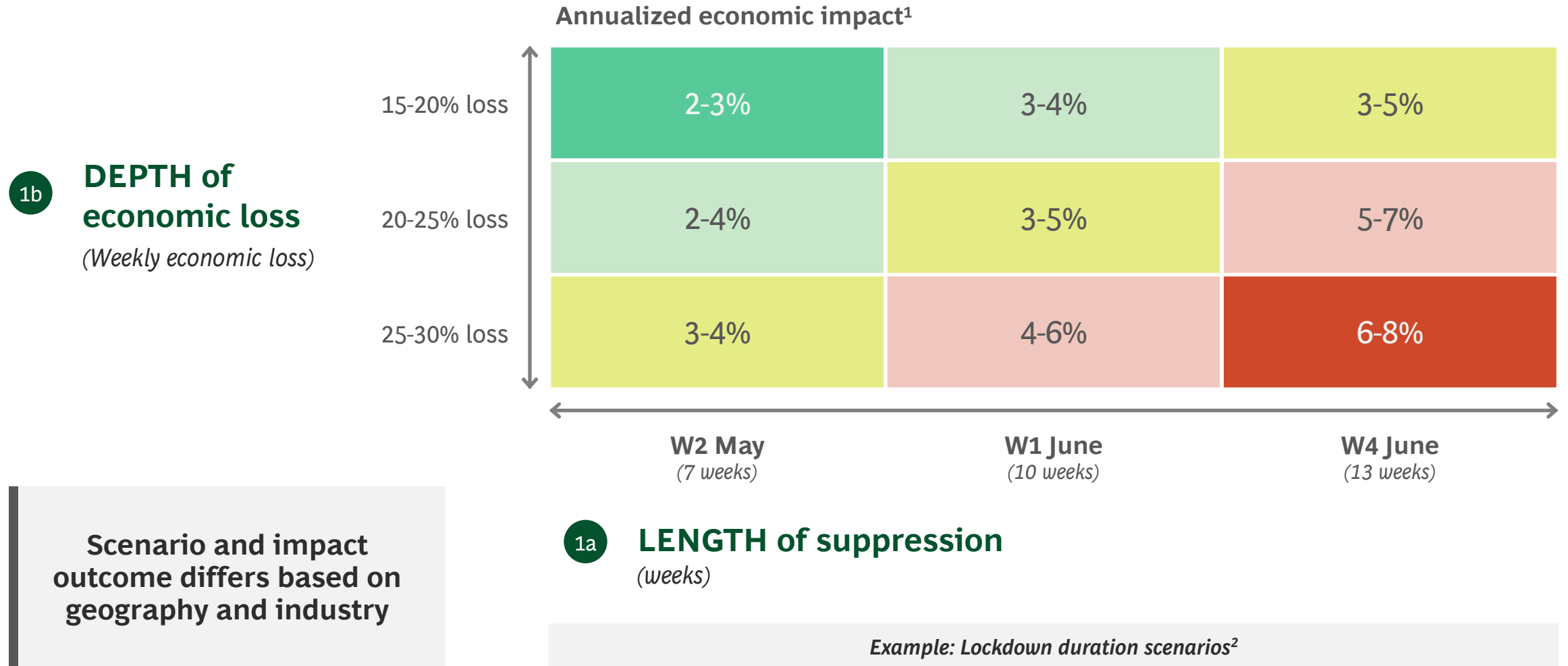
Example: Lockdown duration scenarios¹

1. Lockdown duration based on empirically observed 4-8 weeks from peak infection. Does not reflect impact from peak infection per capita rate, local health care capacity, local testing/monitoring capability or local government policies. Duration varies by state, but duration reflects March W3 start
 2. Disease evolution, infection rate, fatality rate, mutation, etc. 3. Social/economic policies, immigration, fiscal and monetary stimuli, etc.

Flatten: Scenario selection and impact driven by localized geography and sector factors

As of 14 April 2020

Prelim figures for USA



1. Lower end of ranges rounded down and upper end of ranges rounded up to reflect uncertainty. 2. Lockdown duration based on empirically observed 4-8 weeks from peak infection. Does not reflect impact from peak infection rate, local health care capacity, local testing/monitoring capability or local government policies.

Total shareholder return (TSR) rebound over last 15-20 days across markets and sectors

Two time periods from 21 February 2020 to 15 April 2020

Decline reflects economic scenario and consumer sentiment

	TSR performance ¹	Americas		Europe		Asia		Observations
		2/21-3/20	3/20-4/15	2/21-3/20	3/20-4/15	2/21-3/20	3/20-4/15	
Healthier sectors	Food/staples Retail	-10%	6%	-15%	3%	-8%	3%	Non-discretionary/essential service less hit but still had recovery
	Pharma	-19%	21%	-20%	13%	-22%	26%	
	Household Products	-19%	16%	-16%	5%	-5%	12%	
	Food & Beverage	-26%	20%	-24%	8%	-12%	13%	
	Telecom	-17%	8%	-20%	2%	-14%	10%	
Pressured sectors	Semiconductors	-30%	29%	-43%	27%	-27%	21%	Broad set of industries experiencing pressure, with some regions particularly affected for certain sectors (e.g. transport in Europe) Utilities and health equipment generally better off in Asia
	Utilities	-33%	23%	-30%	4%	-6%	14%	
	Health Equipment	-33%	26%	-31%	19%	-11%	12%	
	Software	-30%	22%	-32%	12%	-28%	22%	
	Materials	-34%	23%	-31%	15%	-30%	15%	
	Tech Hardware	-29%	14%	-25%	16%	-23%	13%	
	Prof. Services	-30%	12%	-29%	7%	-31%	15%	
	Transport	-37%	22%	-38%	5%	-13%	3%	
	Capital Goods	-38%	21%	-35%	12%	-29%	14%	
	Retailing	-42%	25%	-36%	13%	-24%	18%	
Vulnerable sectors	Financials	-36%	19%	-35%	13%	-19%	12%	Hardest hit sectors have rebounded, but still negative TSR YTD
	Media	-36%	18%	-47%	9%	-14%	9%	
	Insurance	-42%	17%	-40%	15%	-27%	12%	
	Real Estate	-42%	23%	-26%	8%	-22%	16%	
	Auto	-47%	19%	-45%	16%	-32%	13%	
	Banks	-41%	9%	-44%	-6%	-26%	7%	
	Hospitality	-49%	28%	-47%	12%	-23%	5%	
	Durable Goods	-49%	20%	-32%	10%	-21%	13%	
	Energy	-56%	26%	-45%	24%	-41%	19%	

Note: As of 15 April 2020; Based on top S&P Global 1200 companies; Industries are based on GICS definitions 1) Performance is tracked for two periods, first from 21 February 2020 (before international acceleration of outbreak) to 20 March 2020 (trough of the market) and from 20 March 2020 through 15 April 2020

Source: S&P Capital IQ; BCG Henderson Institute; BCG

Credit risk continues to be a concern for majority of sectors

As of 21 February 2020 to 15 April 2020

		Median 5-year CDS ¹ implied probability of default ¹	Number of companies with 5-year CDS probability of default >15%	Companies in distress (%) ³
Healthier sectors	Food/staples Retail	5%	0	0%
	Pharma	3%	1	5%
	Household Products	4%	0	0%
	Food & Beverage	4%	0	0%
	Telecom	6%	4	15%
Pressured sectors	Semiconductors	6%	0	0%
	Utilities	4%	0	0%
	Health Equipment	5%	0	0%
	Software	5%	0	0%
	Materials	6%	7	15%
	Tech Hardware	4%	0	0%
	Prof. Services	5%	0	0%
	Transport	3%	8	32%
	Capital Goods	5%	6	10%
	Retailing	8%	8	47%
Vulnerable sectors	Financials	6%	0	0%
	Media	8%	2	14%
	Insurance	6%	0	0%
	Real Estate	8%	5	20%
	Auto	12%	7	33%
	Banks	6%	2	4%
	Hospitality	12%	6	43%
	Durable Goods	6%	1	5%
	Energy	13%	9	26%

Observations

Hospitality, energy, retailing industries facing greatest risk of default based on current credit profile

Less discretionary sectors are largely at lower risk of default in current climate

Other sectors may have individual companies in specific default risk as well

Note: As of 15 April 2020; Based on top S&P Global 1200 companies; Industries are based on GICS definitions

¹ Credit Default Swap; ² Performance is tracked for the period 21 February 2020 (before international acceleration of outbreak), through 15 April 2020 ³. Distressed comprises over 15% implied probability of default Source: S&P Capital IQ; BCG Henderson Institute; BCG

Governments stepping in to provide impetus to stressed sectors

As of 15 Apr 2020

	Loans/Guarantees/ Direct payments	Scrapping of charges	Grants for salaries	Other Benefits
Example: Aviation				
US	~\$30B for airlines and cargo carriers (excluding grant for salaries) \$10B in grants for Airports	Grants to ensure continued operations; have to maintain 90% employment	~\$30B grant to continue salaries for airlines and cargo employees	Fund for emergency loans; deferral of taxes
Australia	\$3.2B 15-month incentive loan	Relief from airport fees Forego fuel excise, air service charge and regional security fees		Lowered bank ratios to improve liquidity
UK	Guarantee of 80% of loan upto £5M		80% of the wages of any employee	100% business rates holiday for 12 months
Singapore	Carriers and airport operators to defer fee payment to government amounting to ~\$140M	Rebate on landing charges, parking charges, and office rentals at the airport	75% of the first ~\$4,600 of employees monthly pay	Rental relief for ground handlers, cargo agents scrapping of property tax
Hong Kong	HK\$2 billion purchase scheme for half-million air tickets, as well as buying back airport services equipment	Waiver of aeronautical charges reduction on landing charges		HKAA (Public Airport Authority) allowed 70% discount on rent for airport concessionaires; subsidy of HK\$1M for each large aircraft, HK\$0.2M for smaller planes

Focused support to small industries and services

As of 16 April 2020

	Loans/Guarantees/ Direct payments	Tax rebates/extension	Grants for salaries/ Employee Retention	Other Benefits
Example: Services				
US	SBA ¹ to pay all principal, interest and fees on all existing SBA loan products for 6 months	Deferred tax payments until December	\$349B paycheck –protection program - 100% federally backed loans of up to \$10M	Loan advance up to \$10k to affected businesses without a need to repay
Australia	Guarantee of 50% for new, unsecured loans	Deferred tax payments by up to 4 months (ATO ²) Instant asset write-off threshold increased to \$150k	\$1,500 per fortnight per employee for up to 6 months 50% wage subsidy of an apprentice for up to 9 months	Moratorium on evictions over next 6 months for commercial tenants
UK	Guarantee of 80% of loan up to £5M by British Business Bank	Additional 3 months to file accounts with Companies Deferred VAT payments by 3 months	HMRC ³ to reimburse employers up to 80% of the salary costs	£10k one-off grant to businesses Commercial tenants to be protected from eviction
Singapore	Guarantee of 80% of loan up to \$1M at 5% interest rate	25% tax rebate capped at \$15k and 15% property tax rebate	8% rebate of the wages for 3 months (\$1.3B program)	1 month of rental waiver to stallholders and .5 months to other tenants
Japan	Up to 100% loan guarantee under a framework of up to 280M Yen	Deferred tax payments by up to 1 year	Increase in subsidies from 66.7% to 90% for part-time pay and wages	Subsidies for capital investments up to 10M Yen
India	INR 10M emergency working capital loans within 48 hours; 3 month deferment of loan EMI ⁵ repayments	Tax payments deadline extended by 3 months	Pay 12% EPF ⁴ contribution of employer for 3 months	Waiver of minimum account balance; reduced bank charges for digital transactions

1. SBA refers to Small Business Administration 2. ATO refers to Australian Tax Office; 3. HRMC refers to Her Majesty's Revenue and Customs;

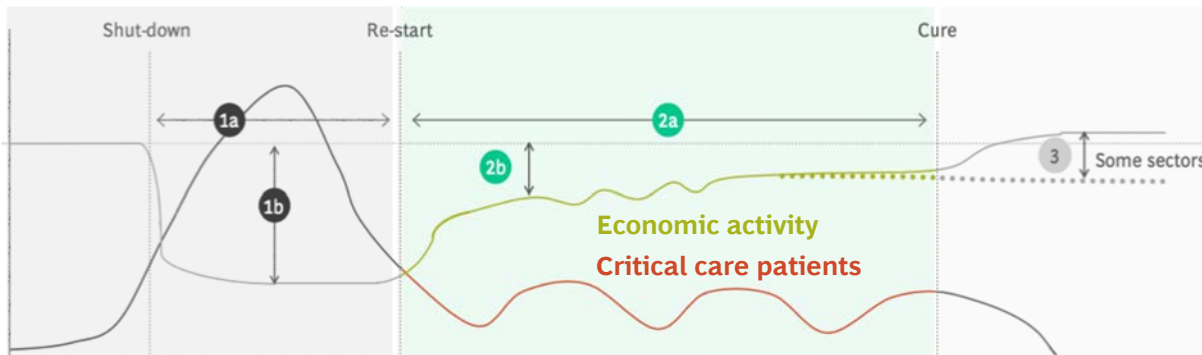
4. EPF is Employee Provident Fund 5. Easy monthly instalments

Source: OECD. (2020); Press Search; SME Policy Responses

Fight: Key scenario inputs and implications

As of 14 April 2020

Prelim figures for USA



Scenario parameters

2a

DURATION of "Fight"

2b

LEVEL of economic recovery

Key scenario drivers

- Cure development/deployment timeline
- Health care, testing, and monitoring capacity
- Continued government response
- Societal response to social distancing measures
- Economic result
- Consumer behavior
- Output of different industries

1. Based on vaccine treatment implemented; 2. Level of economic openness

Duration of Fight: Aggressive movement toward vaccine in 12-18 months

As of 15 April 2020

Timeframe (years)

0

1

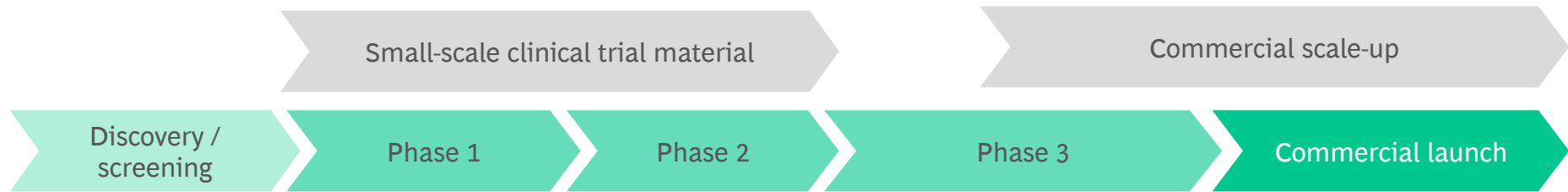
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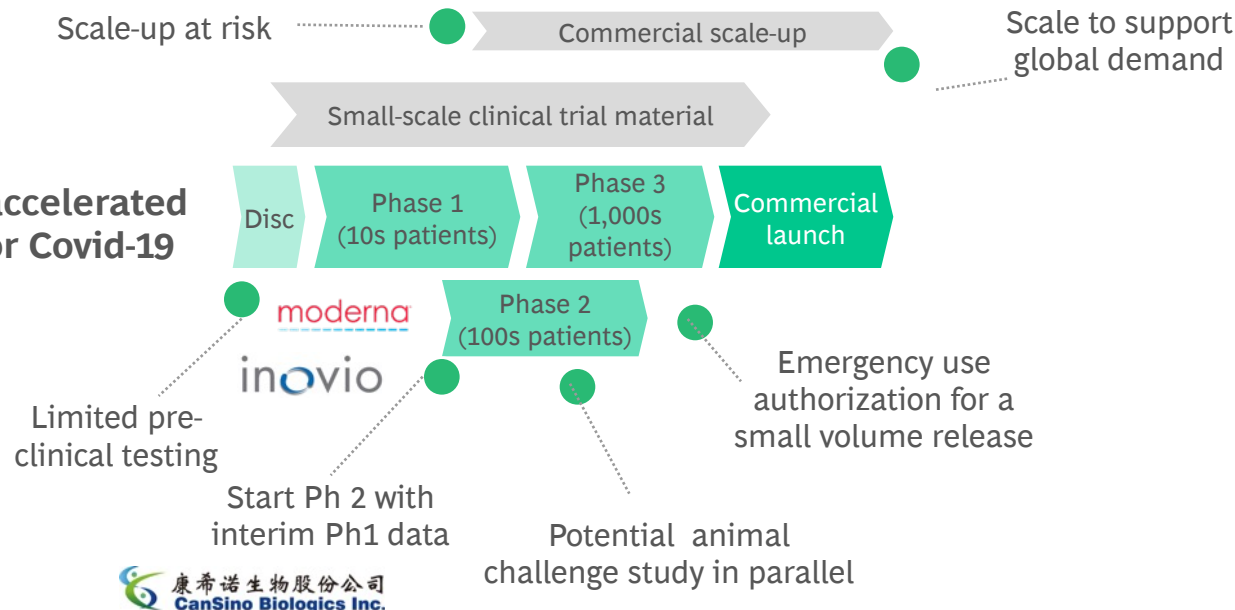
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5

Traditional paradigm takes > 5 years



Potential accelerated pathway for Covid-19 vaccine

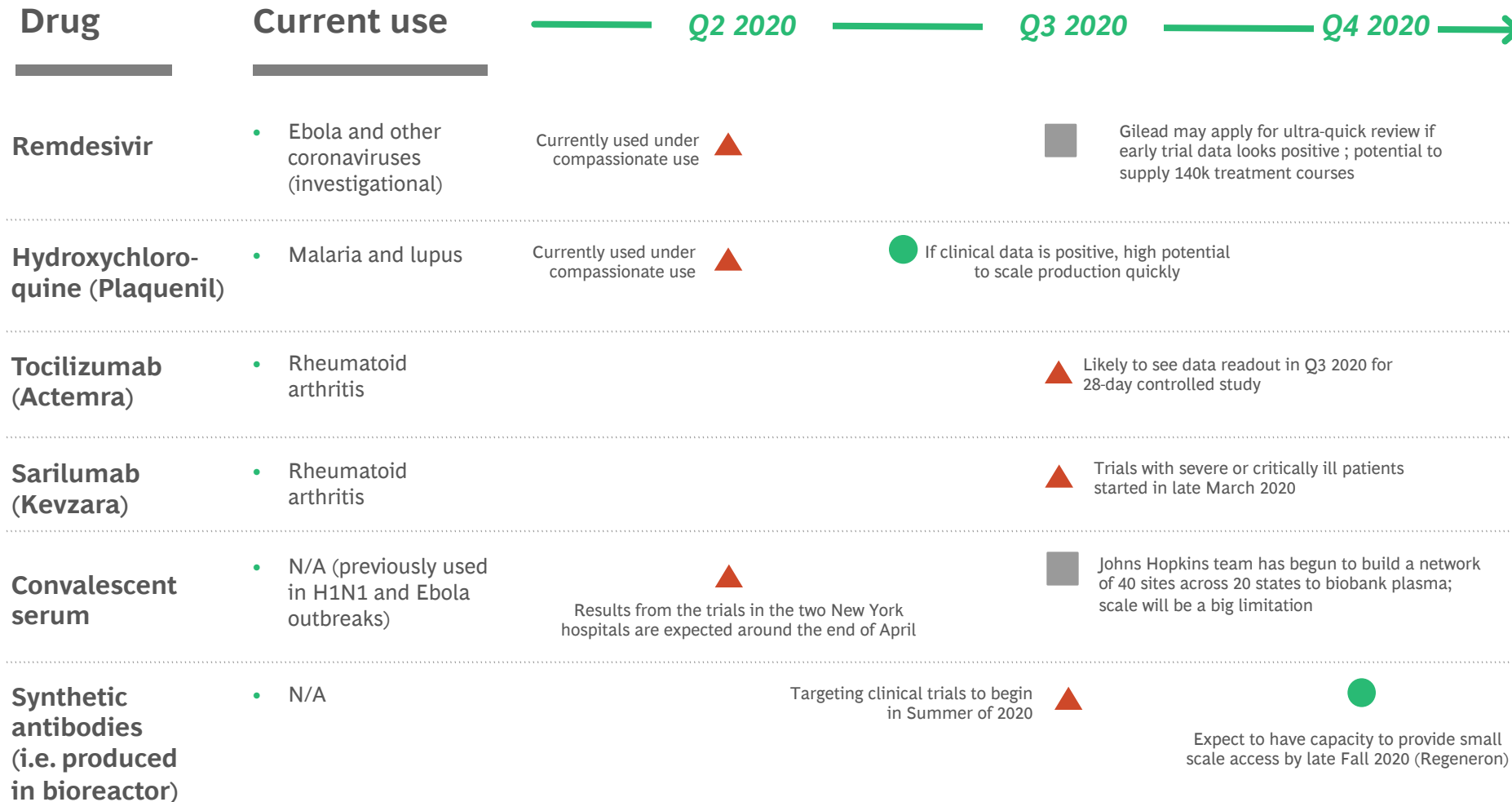


Key success factors/indicators:

- Published safety data to show vaccine has been well tolerated in healthy volunteers
- Manufacturing scale-up beginning immediately (expected ~6-12 month lead time)
- Expansion of clinical trials to include volunteers over 60 years old
- Established a clear view on a surrogate of efficacy (e.g. challenge model)

Duration of Fight: Data from therapeutics will likely emerge in a few months; drugs will likely reduce severity of infection

As of 15 April 2020



Key success factors/ indicators:

- Clinical data from controlled trials showing reduced hospitalization time or infection level
- Demonstrated safety profile at the dose required to achieve efficacy
- Bio-banking infrastructure to support convalescent plasma

Key: ▲ Prelim. data ■ Early access ● Broad availability

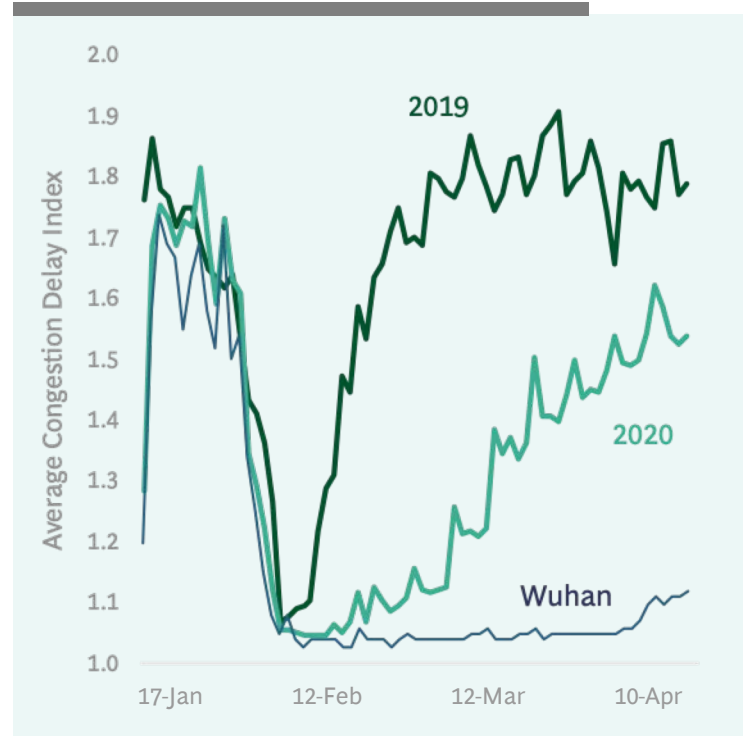
Fight: Likely very different ramps by geography and by sector

China example

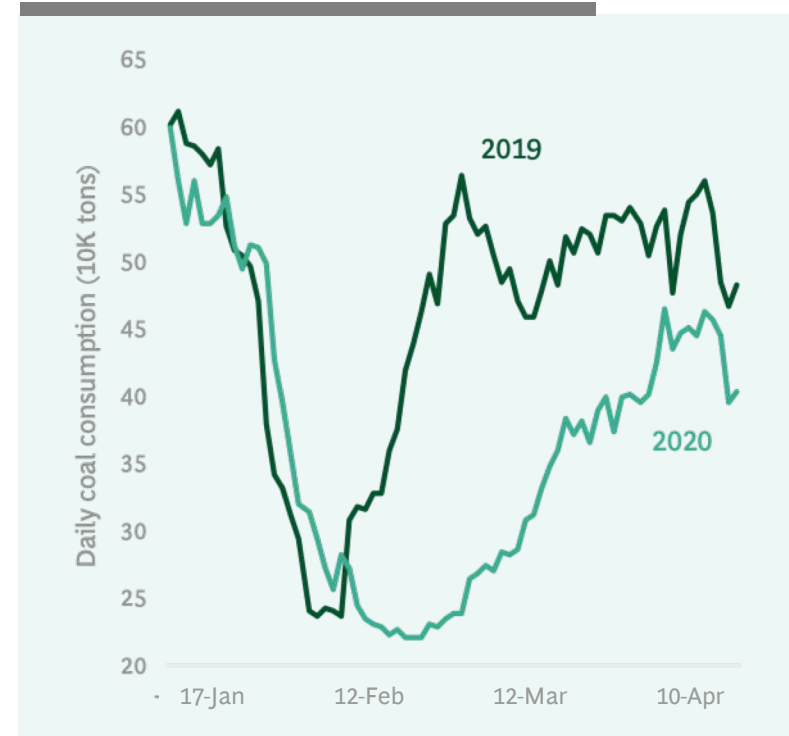
As of 07 April 2020

Figures for China

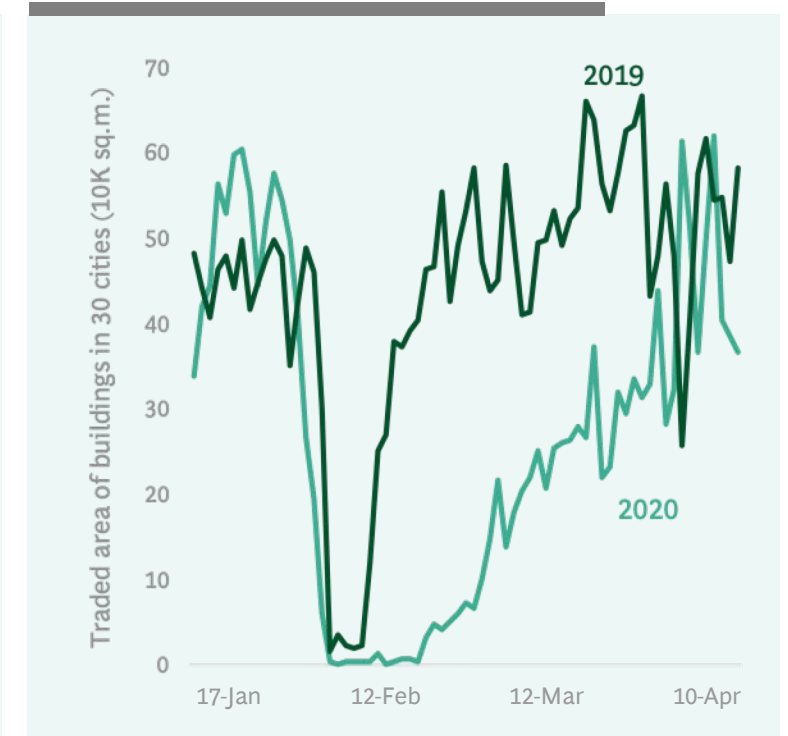
People and goods are starting to move again



Coal consumption moving higher



Property transactions are restarting



Areas with early intervention show signs of V-shaped ramp;
Wuhan/Hubei trending toward U shape

Note: China data re-based for weekdays excl. weekends relative to start of Chinese New Year. Congestion delay index average include Beijing, Shanghai, Guangzhou, Shenzhen, and Wuhan; Daily coal consumption of major power plants = sum of daily average coal consumption of Jerdin Electric, Guangdong Yudean Group, Datang International Power Generation, and Huaneng Power International, Inc. Source: Wind, www.cqcoal.com, and BCG Center for Macroeconomics

In developed markets, younger consumers are concerned about virus's financial impact, but confident about restart and recovery

As of 30 March 2020

■ US ■ Canada ■ UK ■ Germany ■ France ■ Italy

Financial security

More worried ← -20 pp Less worried →
Average 20 pp

Strength in savings

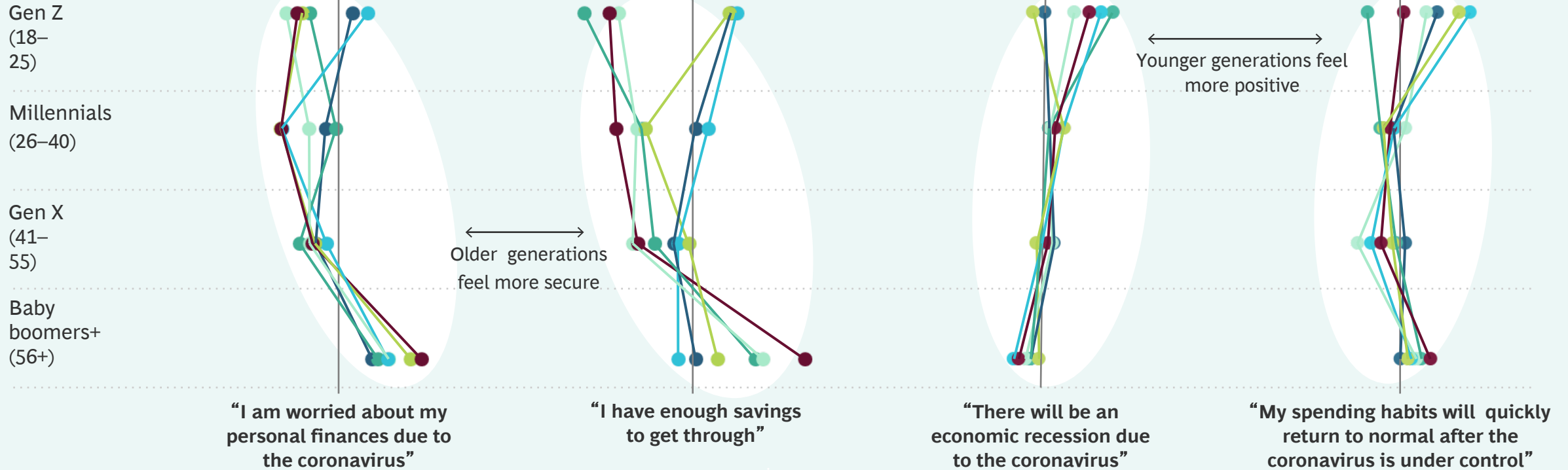
Weaker ← -20 pp Stronger → 20 pp
Average

Economic outlook

Negative ← -20 pp Positive → 20 pp
Average

Return to normalcy

Slower ← -20 pp Faster → 20 pp
Average





1

COVID-19 Context and Development

Disease progression, health care system capacity, and response
Government policies and action

2

Economic and Business Impact and Scenarios

Economic response
Scenarios and key drivers
Business impact

3

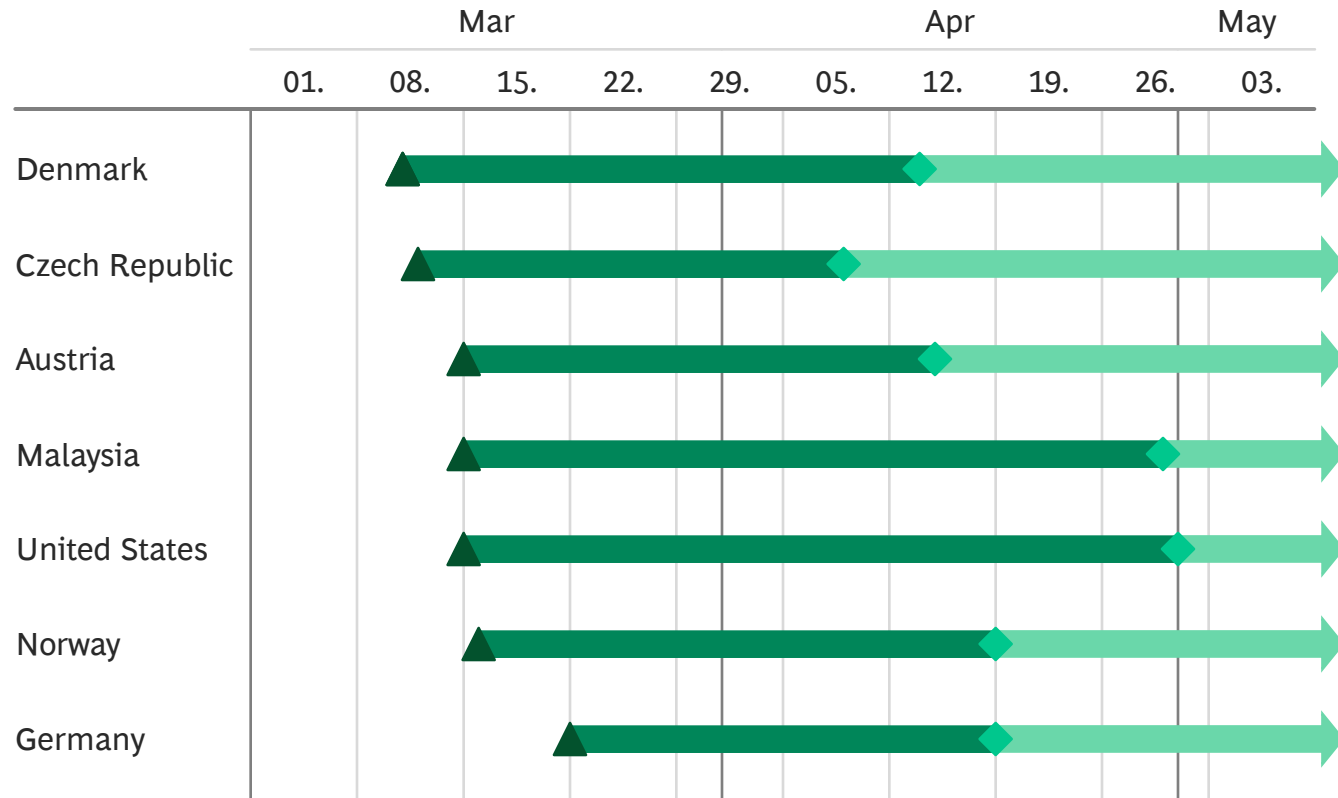
Guide for Leaders

Determining government action
Considering ecosystem interdependencies
Navigating businesses through the crisis

Several countries have already announced restart ambitions

As of 09 April 2020

Transition timeline from 'Flatten' to 'Fight' phase for selected countries



Initial details of restart

Denmark: Proposing to lift some restrictions on business and schools, ban on gatherings until 10 May

Czech Republic: Planning to lift restrictions on some home repair and household goods shops

Austria: Proposing to reopen small shops, large shops to remain closed until May

Malaysia: Proposing to reopen selected economic sectors in phases, following strict hygiene rules

United States: State-led reopening potentially starting beginning of May

Norway: Proposing to resume some businesses, schools, and travel

Germany: Planning to begin lifting restrictions for some businesses and shortly after for schools

Proposed re-entry plans dependent on disease evolution in each country

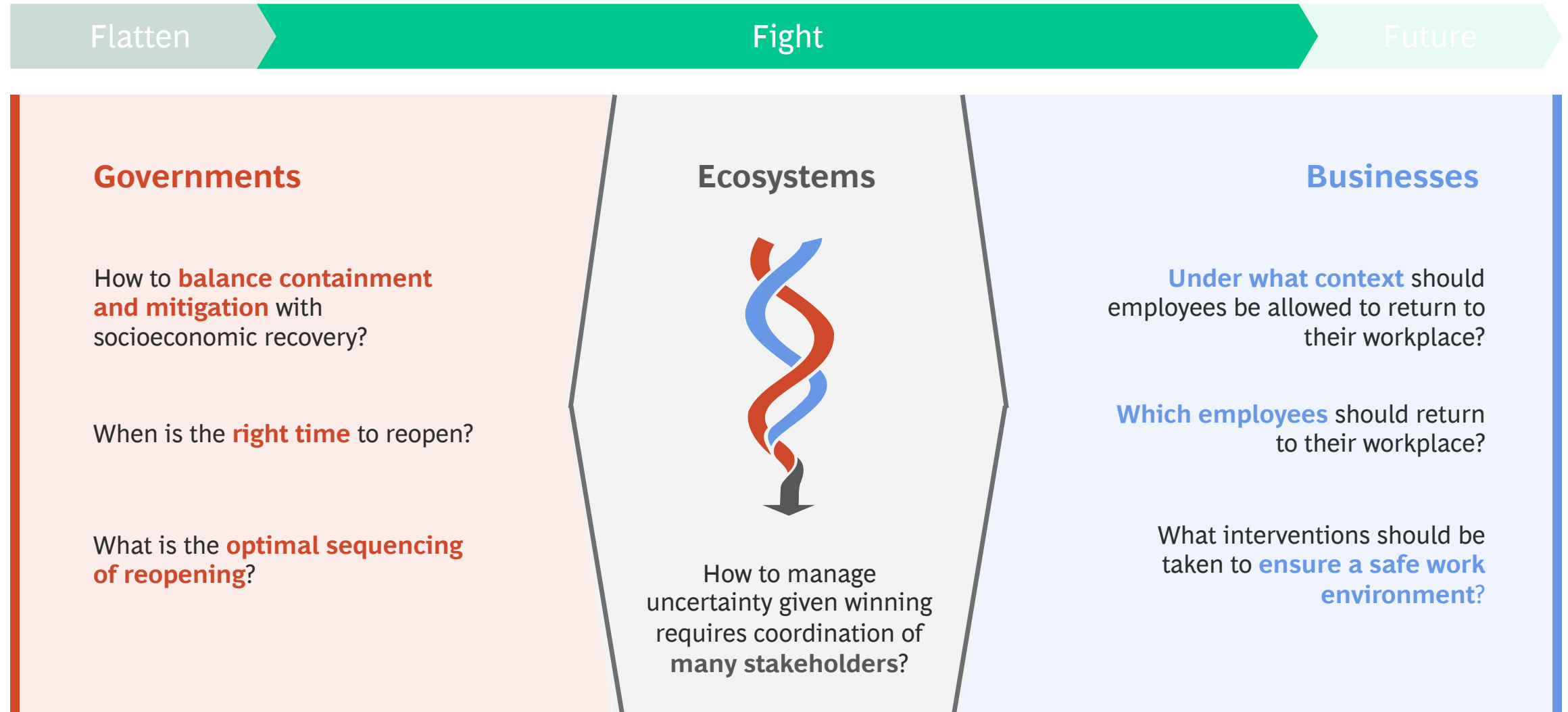
Notes: '(Began...)' refers to the start date of a country's lockdown, lockdown definition varies between countries; Italy, Spain have announced some intention to lift some restrictions in April, but without specific dates stated

Source: Lit search; BCG analysis

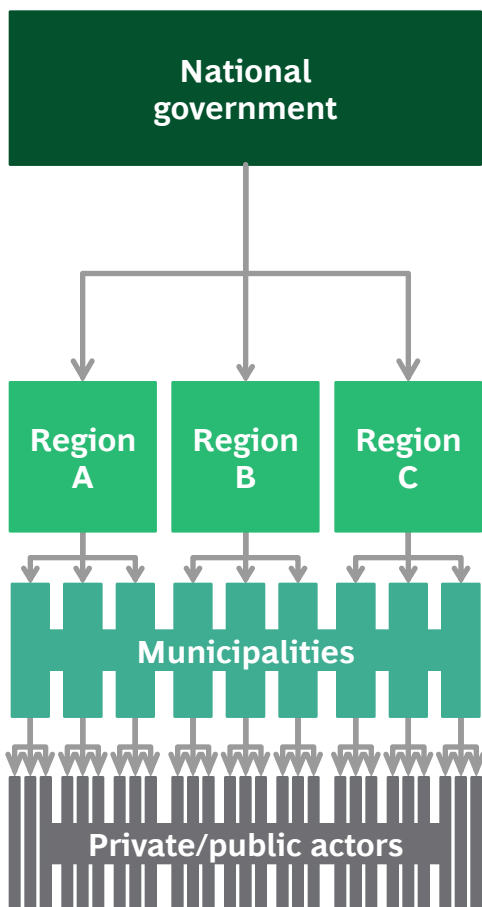
▲ Start of lockdown

◆ Potential start date of 'Fight' phase

To transition from 'Flatten' to 'Fight' phase, leaders need to think through multiple key questions



Reopening activities need to be guided on a national level and adapted to local realities



- 1 Establish and assign risk levels to local regions
- 2 Develop discretionary guidelines by risk level
- 3 Regions establish oversight and 'control tower'
- 4 Set specific policies at local level
- 5 Private and public actors develop unique playbooks



National advisory guidelines articulate a common framing of risk levels and provide practical advice on actions to take for each risk level (transportation, gathering size, PPE, etc.)

- Federal public health officials advise on disease management activities by risk level
- Risk levels a function of health care readiness (and in some instances public engagement)



Actual sequence of reopening activities needs to go from **de-averaged** and responsive to **locally driven**, customized to on-the-ground facts

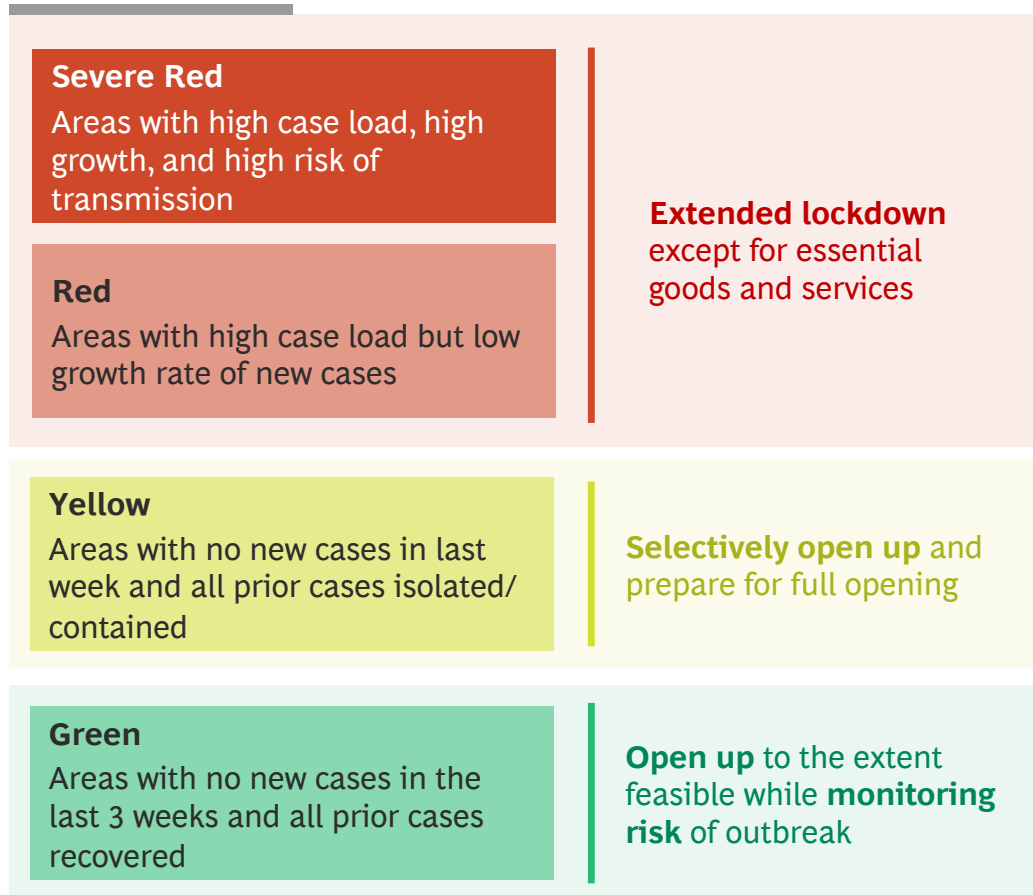
- Result is decision-makers adopting different strategies for recovery by locality based on how to best meet requirements for the local risk level, and tailored to their local conditions



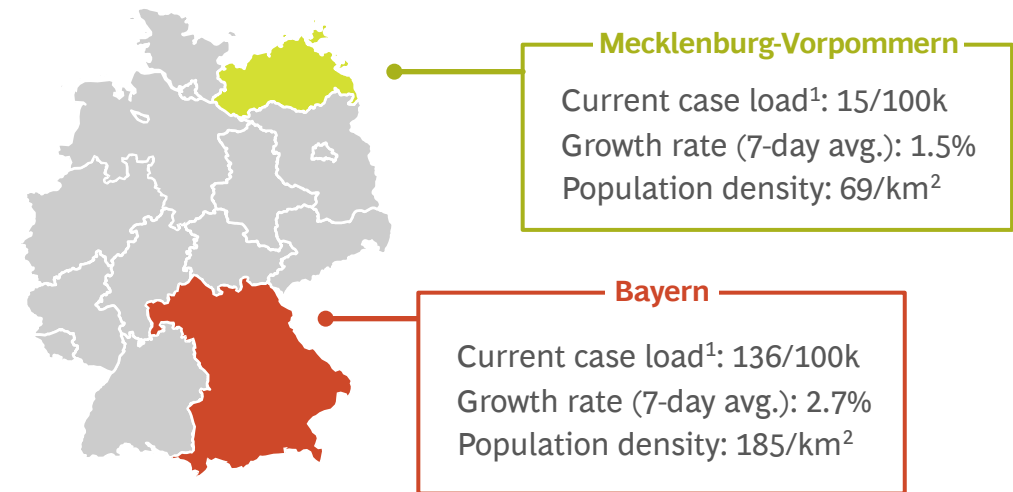
Governments should actively **involve the private sector** in creation of sector-specific playbooks to achieve guidelines including industry associations, trade and labor unions, chambers of commerce

Local risk assessments determine need for application of differentiated guidelines

Each area is to be categorized into four risk clusters with varying degrees of openness



Case study: National guidelines in Germany vary by region based on assessed risk



➤ In Bayern, an area with a comparatively higher current caseload, growth rate, and population density, **restrictions are tighter and reopening of shops and schools will happen later** than in the rest of Germany, such as Mecklenburg Vorpommern

1. Not all recovered cases get reported; Source: Bayerisches Landesamt für Statistik, Regierung Mecklenburg Vorpommern, Zeit, BCG analysis

Governments need to get the preconditions for opening right

Health care readiness

Disease conditions

Control of virus impact in terms of **case growth** and **disease impact** (e.g. high risk populations)



Leading indicator that measures are effective, public health is protected

Health care capacity

Adequate **supply of hospital supplies**, trained workers, treatment spaces



Capacity sufficient to care for COVID-19 and other health needs

Virus monitoring system

Widespread virus testing relative to new case volume, serological testing, and contact tracing



Testing to inform decisions, resource allocation, and outbreak resolution

Public/economic readiness

Business preparation

Workplace **health protocols** and business readiness



Businesses ensure workplace safety for those returning to work

Public response

Training and availability of **hygiene products** and PPE; high compliance rates



Public educated and empowered to adhere to guidelines, play role in containment

Government preparation

Federal framework for public health, sectors, and global politics



Clear guidance, expectations, and legal protection for system actors

Five different factors should inform the sequencing decision

Example Country

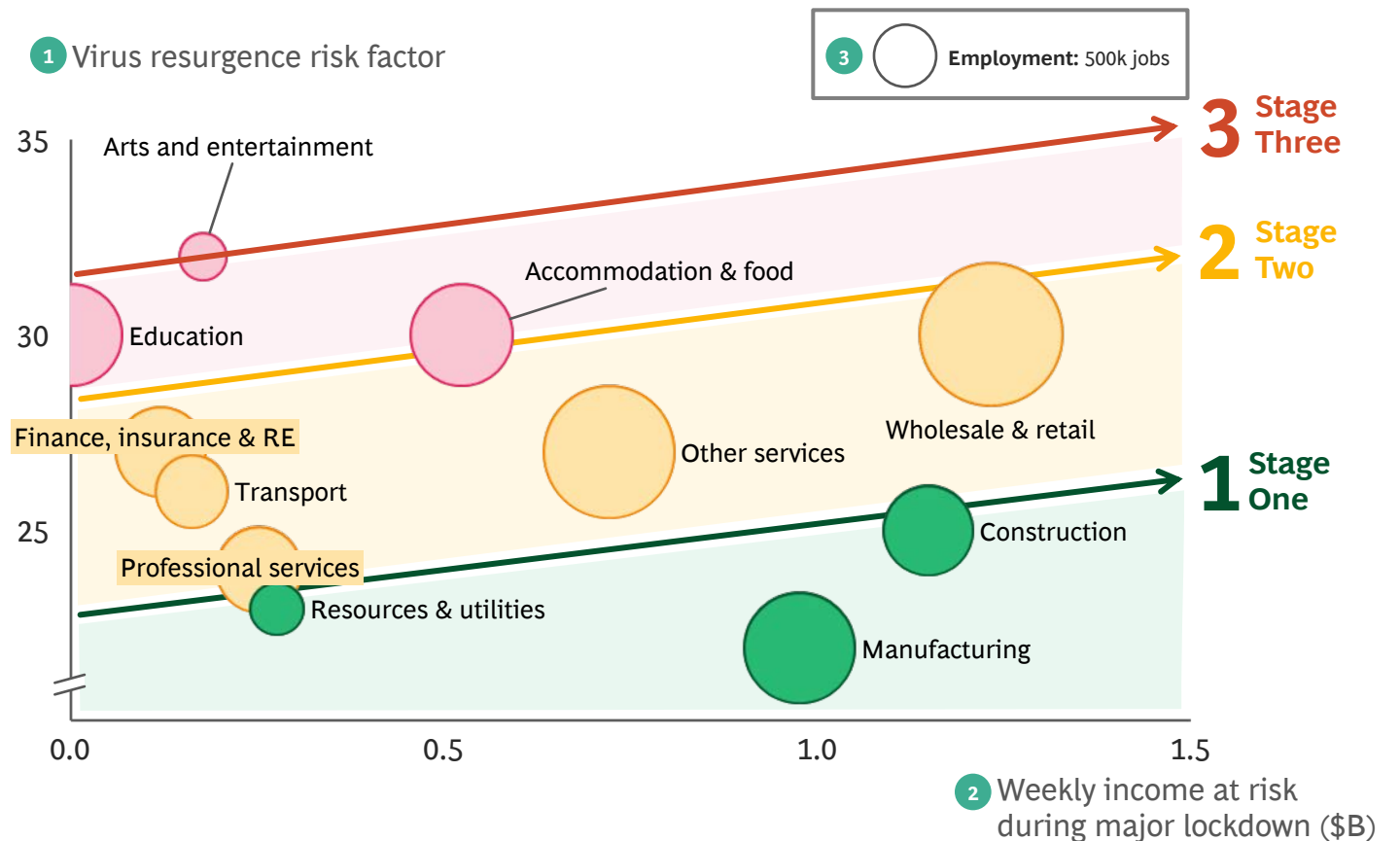
Three factors are primary determinants for country-specific sequencing

- 1 Virus resurgence
- 2 Income at risk
- 3 Employment

However, additional considerations play an important role, too

- 4 Geographical specificity
- 5 Sector interconnectedness

Weekly income at risk and virus resurgence risk factors are two starting considerations



Note: The virus resurgence risk factor takes into account frequency of contact, contact with external customers, physical proximity during interactions, likelihood of exposure to illness Source: BCG analysis

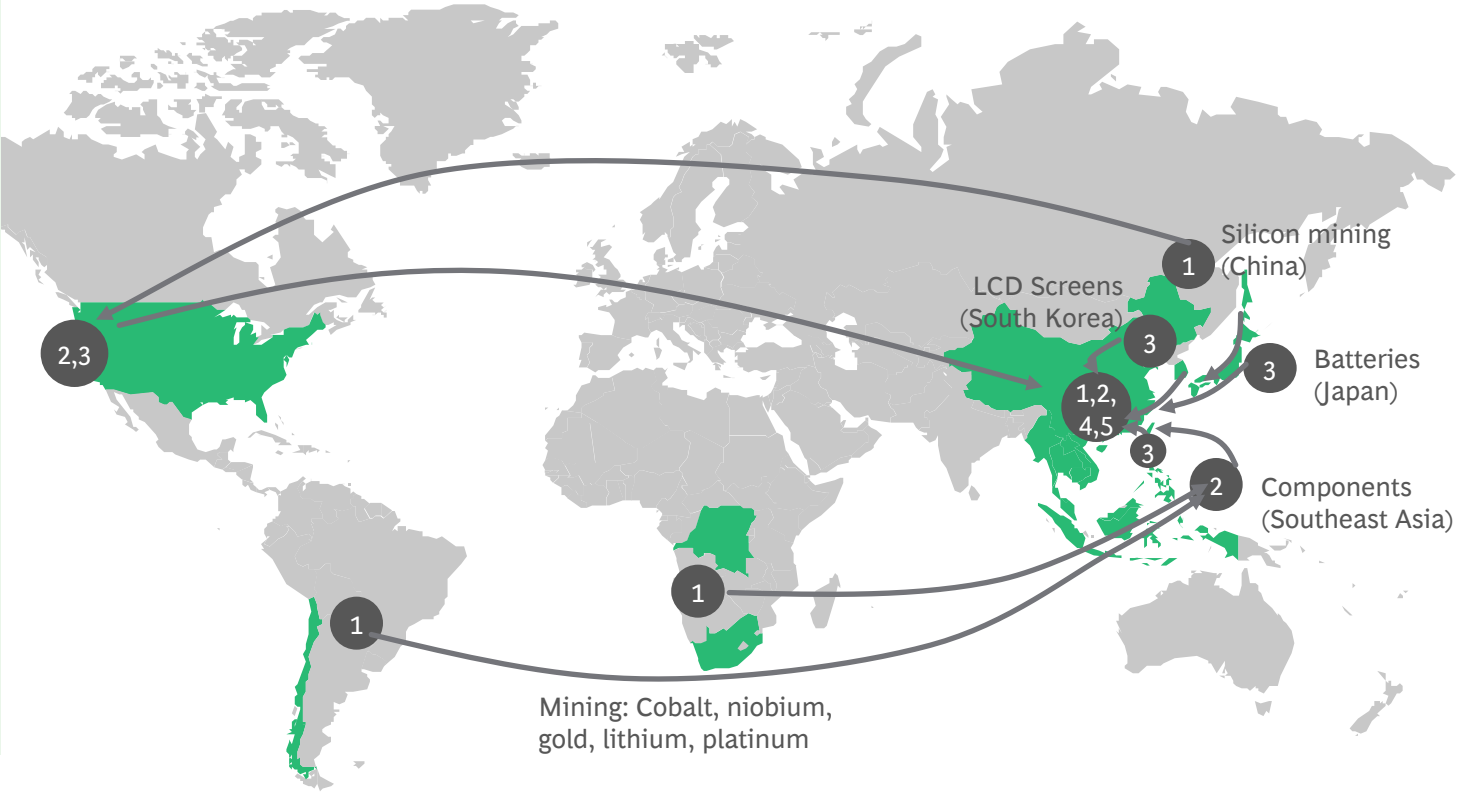
Ecosystems and a global view will be required as economies open

CONSIDERING
ECOSYSTEM INTER-
DEPENDENCIES

Illustrative

Global integration of **electronics** supply chain – key regional steps

- 1 Metals imported, rare earth metals mined in China
- 2 Components like silicon wafers, chips, and PC boards made in SEA, China, and US
- 3 Larger assemblies fabricated in the US, Taiwan, Japan, and Philippines
- 4 Final assembly and testing in Chongqing
- 5 Products shipped through Chongqing Port/Shenzen Port worldwide



Note: Based on Dell/Apple laptop supply chains
Source: BCG research

Existing industry associations can bridge the gap between governments and companies to set standards

CONSIDERING
ECOSYSTEM INTER-
DEPENDENCIES

Business for South Africa: Companies across sectors joining forces to define COVID response

Business for South Africa (B4SA) is a conglomerate of businesses and leaders

Its purpose is to jointly develop a strategic and sustainable response to COVID-19

B4SA works in close collaboration with the government, the media, and NGOs

It consists of four workstreams:

Health care

Economics

Labor

Communications

Suraksha stores: Public/private partnerships to ensure safety and hygiene practices

Government sets up 2 million 'Suraksha Stores' to provide daily essentials to citizens

The initiative will convert small shops to retail outlets selling daily essentials

India's top 12 packaged consumer goods companies support the implementation

Each company will be given one or two states to execute this plan effectively

Companies include:



Johnson-Johnson



gany
CONSUMER PRODUCTS



Mondelēz
INTERNATIONAL



TATA CONSUMER PRODUCTS



BRITANNIA

Guiding principles for leadership in crisis

“THESE are the times that try men's souls. The summer soldier and the sunshine patriot will, in this crisis, shrink from the service of their country; but he that stands by it now, deserves the love and thanks of man and woman. Tyranny, like hell, is not easily conquered; yet we have this consolation with us, that the harder the conflict, the more glorious the triumph.”

Thomas Paine, The Crisis

Be visible, purposeful, and authentic

Communicate in ways that engage and increase the relevance of your teams and clarify the reasons underlying your communications

Use multiple clock-speeds

Think on multiple timescales by considering the now, the next, and the later. Ensure that leadership teams look ahead and prepare for the future

Cut through bureaucracy

Assemble a multi-functional task force that is empowered to make decisions and suspend normal decision protocols

Leverage the principle of “commander’s intent”

Share only key objectives and rationale of required actions to allow the organization to be flexible and adaptive, and allow a focus on execution

Engage externally

Communicate with customers and stakeholders to gather frequent, fresh, firsthand information to adapt and respond effectively

Keep imagination alive

Look out for new needs and opportunities to serve clients now and beyond the crisis. We will not be reverting to a 2019 reality

Business leaders need to consider their employees' risk profile holistically, not take an isolated view of the workplace



Home environment/ community

Employees might have **exposure to other people in their home environment** like family, roommates, or people they have to care for (like grandparents); or live in more densely populated communities

Employees **commute to work via public/group transport** where they are exposed to other commuters in confined space like buses

Commute from/ to work

Employees **interact with their colleagues or clients** at the workplace depending on the type of work and workplace

Workplace



To know more about the

9 action areas for business leaders

refer to the previous edition

Flatten

Fight

Future

Establish crisis management

1 Develop **Scenario-Based Planning Approach** to manage uncertainty

2 Create a **Rapid Response and Transformation (RR&T)** team

Navigate through **Flatten, Fight, and Future**

3 **Revamp Organization and People** for the new normal

6 Manage **Cost, Cash, and Liquidity**

4 Drive **Topline Security and Customer trust**

7 **Emerge Stronger**; drive advantage in adversity

5 Stabilize and restart **Supply Chain, Manufacturing**

8 **Accelerate Digital and Technology** transformation

9 **Help Society** during COVID-19

Note: RR&T = Rapid Response and Transformation Team
Source: BCG

Detailed measures across priority action areas (1/3)

Establish crisis management

1 Develop Scenario-Based Planning Approach to manage uncertainty

2 Create a Rapid Response and Transformation (RR&T) team

Navigate through Flatten, Fight, and Future

3 Revamp Organization and People for the new normal

Flatten

- Deep-dive into possible outcomes of disease spread, demand shifts, supply/ops issues, regulatory requirements, and potential operations restart; adjust for sector-specific issues
- Perform scenario stress tests around cash-flow
- Establish preconditions for what it will take to get workforce back to offices, factories, etc.
- Set up teams to work on different time horizons (flatten, fight, future) to avoid reverting to crisis management across all

- Establish nimble cross-functional Rapid Response & Transformation team (RR&T)
- Refine processes to manage the crisis situation, remote working, disruption in supply
- Ensure smooth transition of operations and workforce to the 'new reality'
- Shift to digital/remote customer interactions

- Define policies to keep employees safe with high morale
- Engage across levels to retain talent
- Move to online/remote working; redefine rosters and train for efficiency/effectiveness
- Establish preconditions for coming back to the working environment; clearly communicate
- Build SWAT teams to address critical business areas, such as product launch, digital channel redesign, retail delivery models

Fight

- Frequently run scenarios and update plan; focus on understanding the de-averaged impact by geography and line of business, depth of demand drop, duration of Fight phase
- Develop recommendations for daily planning, resources, supply chain, workforce, and other stakeholder management as per modeled scenarios

- To manage the massive complexity of "restarting", enhance Rapid Response & Transformation team structures
- Develop approach for how to bring people back to work, how/when to engage customers
- Establish governance and standardization to effectively coordinate other areas from the RR&T

- Get ahead of the curve on team to manage policies to get teams back to work safely
- Take a clear view of forward demand and the new normal: manage/restructure organization to fit capacity needs
- Create dedicated focus to accelerate digital, process automation, new ways of working

Future

Detailed measures across priority action areas (2/3)

Navigate through Flatten, Fight and Future

4 Drive Topline Security & Customer Trust

Flatten

- Reach out to customers for their situation and needs,
- Drive actions to inspire confidence and ensure ability to deliver (e.g., multichannel, people-light approaches)
- Manage volatility in demand, and refine sales motions (e.g. to virtual) and objectives

Fight

- Assess changes in customers' behaviors
- Adapt and transform channels (e-commerce), sales, marketing spend, pricing, and support
- Ramp up commercial efforts significantly to seize market shifts; leverage learnings to accelerate digital capabilities

Future

5 Stabilize & restart Supply Chain, Manufacturing

- Take measures to ensure operations continuity: Workforce safety and management, stop-gap measures for supply chain, site readiness (access, maintenance, services, suppliers)
- Ensure open and direct communication with employees
- Explore solutions to retain key talent

- Ensure quick and safe restart of facilities; drive centrally driven efficiency measures
- Set up capabilities (org, control tower) to manage unstable supply chain; explore alternate networks, dual/multiple suppliers for critical goods and services, delivery methods, etc.
- Accelerate production as demand rebounds; account for product shifts

6 Manage Cost, Cash, & Liquidity

- Build forecasts for COVID-19 impact on P&L, balance sheet, investor base
- Review capital sufficiency scenarios and possible effects on credit risk
- Manage credit and debt commitment for short term
- Create agile FY20-21 business plans and budgets to deal with uncertainty

- Build central team to simulate financials as per evolving scenarios; drive agile working ways
- Decisively take structural actions: TURN PMO, zero-based budgets, delaying/restructuring, re-base tech portfolio, etc.; deploy rapidly as speed is predictive of success in downturns

Detailed measures across priority action areas (3/3)

Flatten

Fight

Future

Navigate through Flatten, Fight and Future

7

Emerge stronger; drive advantage in adversity

8

Accelerate Digital & Technology transformation

9

Help Society during COVID-19

- Stress-test current value proposition and business offerings, and scan crisis impact on key customer/market trends

- Plan for new projects to shift the portfolio and leverage the 'new normal'; plug capability gaps
- Identify white spaces in own industry and ecosystem
- Selectively invest in areas where opportunistic M&A can be conducted
- Develop and implement strategy to exploit greater talent availability

- Address and serve immediate workforce needs for remote working
- Leverage tools for conducting key processes online
- Adapt traditional processes to become digitally viable

- Identify and implement key digital use cases and adapt to agile way of working
- Accelerate use cases to meet demand shifts
- Redesign key customer journeys with emphasis on digital interventions

- Ensure immediate support to employees, suppliers, communities, etc.
- Team with government/local communities/across industries to address crisis
- Leverage assets, supplier relationships, logistics networks, and employees to help adjacent communities
- Work across industry boundaries to identify cross-sectoral synergies to deploy solutions

- Determine how to contribute in the crisis to employees, customers, through medical response, supply of essential items for society, or by playing a positive economic/employment role
- Allocate innovation resources where possible to focus on solutions to COVID-19 crisis
- Leverage expertise developed to support government policies and responses, rebuild business for local customers, suppliers, etc.

Additional perspectives on COVID-19

Selected overarching publications



People & Organizations

[How to protect your workforce during the COVID-19 pandemic](#)



Strategy

[Sensing and shaping the post-COVID era](#)



Economic Impact

[Understanding the economic shock of coronavirus](#)



Crisis Response Checklist

[Checklist](#)



Operations

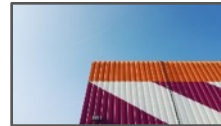
[Building the Bionic Supply Chain](#)



Technology & Digital

[The Rise of the AI-Powered Company in the Postcrisis World](#)

Selected sector publications



Transportation & Logistics

[Transportation and logistics companies must adapt to keep supplies moving](#)



Airlines

[The post-COVID-19 flight plan for airlines](#)



Public Sector

[Governing in the time of coronavirus](#)



Health Care

[COVID-19 Is Stressing the Finances of Even the Strongest US Health Systems](#)



Consumer

[COVID-19 Consumer Sentiment Snapshot #5](#)



Telecommunications

[Time for action: In times of COVID-19 Telcos need to move rapidly to be part of the solution](#)



Energy

[How Uncertainty Is Hitting M&A in Oil and Gas](#)



Financial Institutions

[How Should FIs navigate the COVID-19 Crisis](#)



Automotive

[COVID-19's Impact on the Automotive Industry](#)

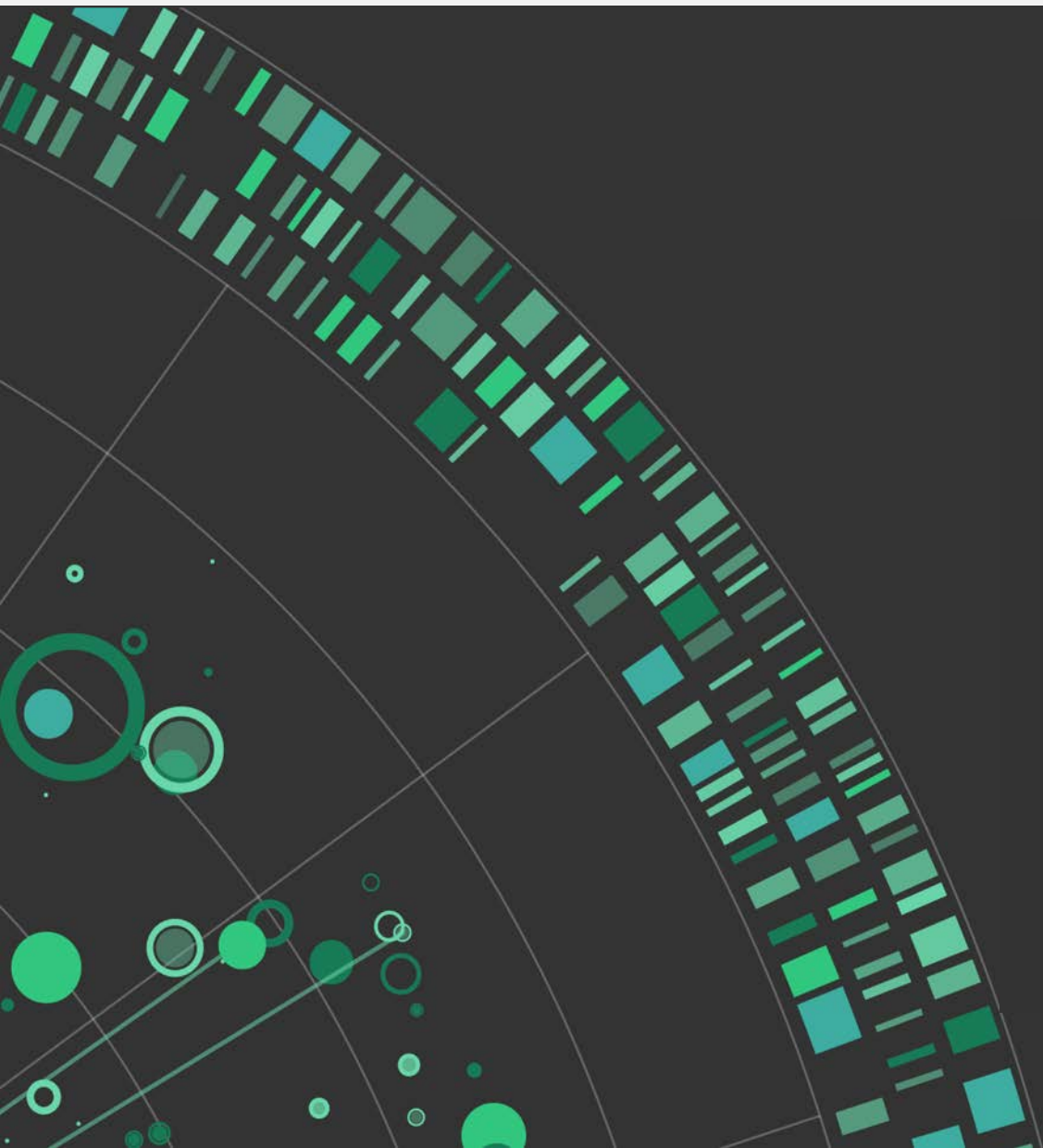
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