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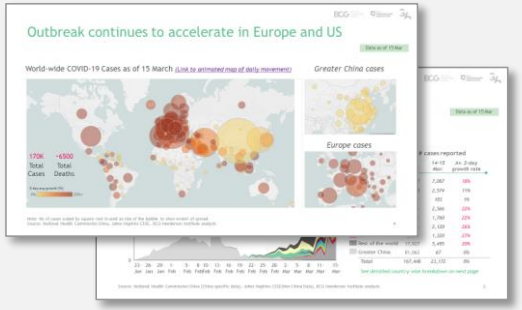
BCG HENDERSON INSTITUTE

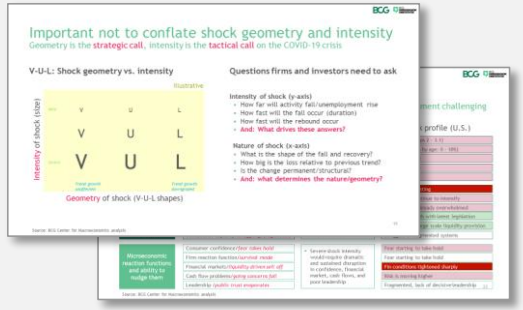
COVID-19 Outbreak Update: Dynamics and implications

Mar 17, 2020 update

Available BCG perspectives on COVID-19



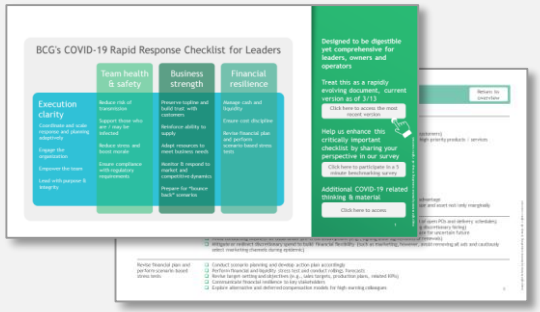
Outbreak dynamics and developments



Economic impact scenarios



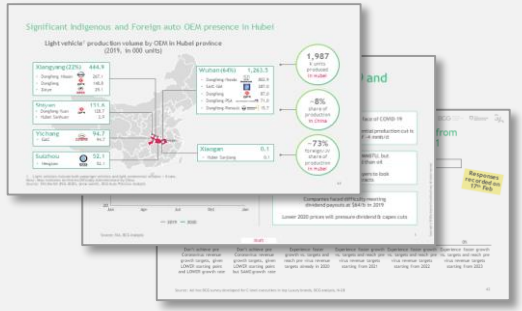
Survey of company responses



Rapid-response checklist



Leading through the crisis



Sector-specific perspectives

Executive summary – Update as of 17 Mar

Dynamics: COVID-19 confirmed cases accelerating exponentially in several epicenters, particularly Europe and North America

- Reported cases growing steadily in US as many localities are taking increasingly strong lockdown measures
- Continued acceleration in most European countries; many EU countries now on lockdown (e.g. France, Spain, Germany)
- Some countries have slowed the outbreak with major interventions to enforce social distancing or isolation: Trajectory has flattened in China and Korea

Economic impact scenarios: Business leaders are forced to make two macroeconomic calls: The geometry of the shock (V-U-L growth paths), a critical *strategic* call; and the intensity of the shock (depth, speed, duration), a *tactical* call

- The COVID-19 shock's *geometry* likely skewed towards a V-shape, though a bad path tilts to a U-shape. That said, we feel comfortable dismissing the L-shape, which is worth emphasizing in current context of gloom.
- Its *intensity* is exceedingly challenging to assess, particularly for the U.S., where testing has been insufficient to generate a disease baseline, and mitigation plans are only unfolding

Company response survey: According to our survey of more than a hundred companies, most companies have taken actions to protect employee health and safety, but fewer have adopted measures to stabilize supply chains or modify forecasting and tracking.

- Get in touch with your BCG contact to participate and see full insights

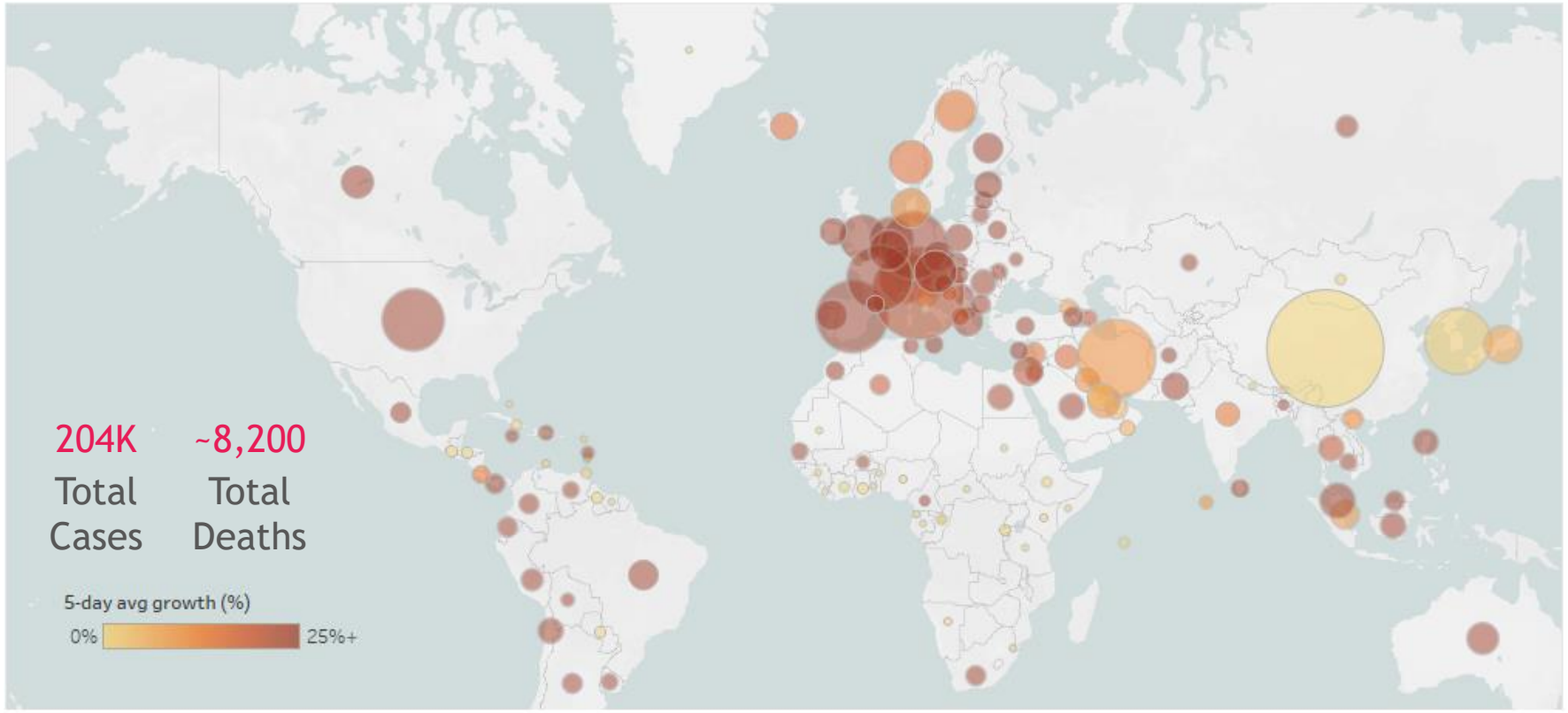
Leadership perspectives: Leaders ultimately need to navigate the crisis on 3 fronts: immediate crisis response priorities; preparing for the near-term; and pursuing structural enhancements for the new post-crisis world

COVID-19 dynamics

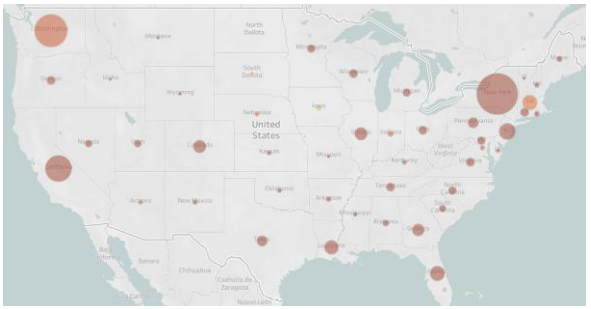
Outbreak continues to accelerate in Europe and US, early

Data as of 17 Mar

World-wide COVID-19 Cases as of 17 March *(Link to animated map of daily movement)*



US cases



Europe cases

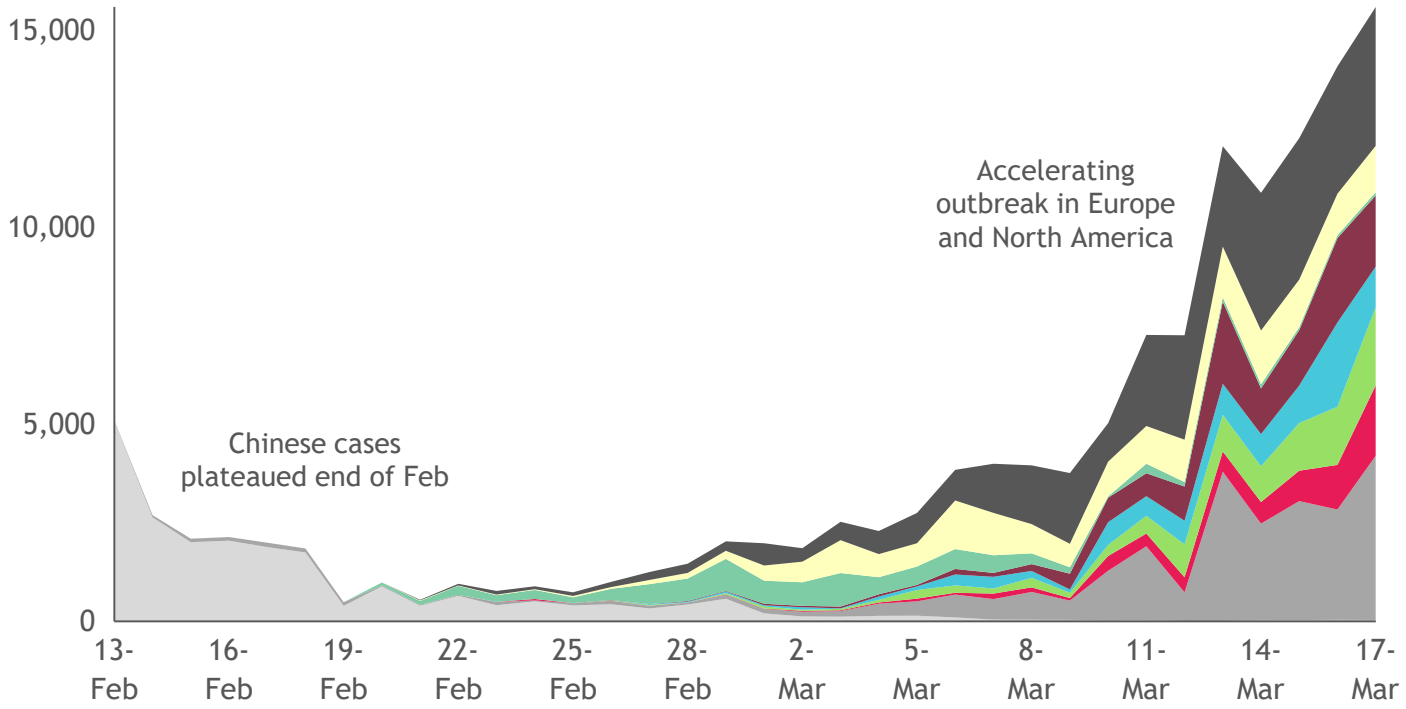


Note: No of cases scaled by square root is used as size of the bubble to show extent of spread
Source: National Health Commission China, Johns Hopkins CSSE, BCG Henderson Institute analysis

Reported case count growing rapidly

Data as of 17 Mar

Daily number of new cases detected



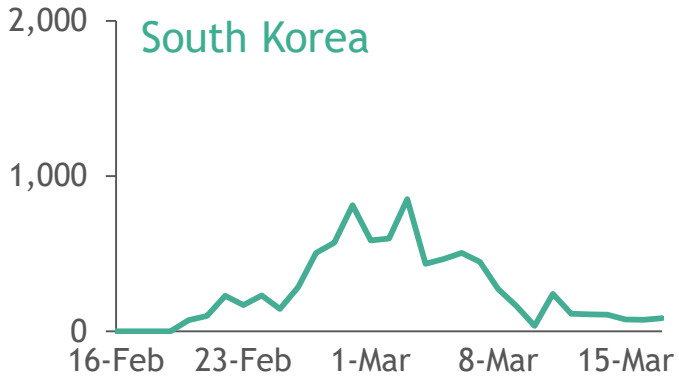
# cases reported	Total	New 15-16 Mar.	Avg. daily growth
Italy	31,506	6,759	13%
Iran	16,169	2,231	8%
South Korea	8,320	158	1%
Spain	11,748	3,950	23%
France	7,699	3,176	30%
Germany	9,257	3,462	26%
US	6,421	2,921	35%
Rest of the world	24,876	6,951	18%
Greater China	81,135	73	0%

Source: National Health Commission China (China-specific data), Johns Hopkins CSSE(Non-China Data), BCG Henderson Institute analysis

Most-affected countries are at different phases of outbreak cycle

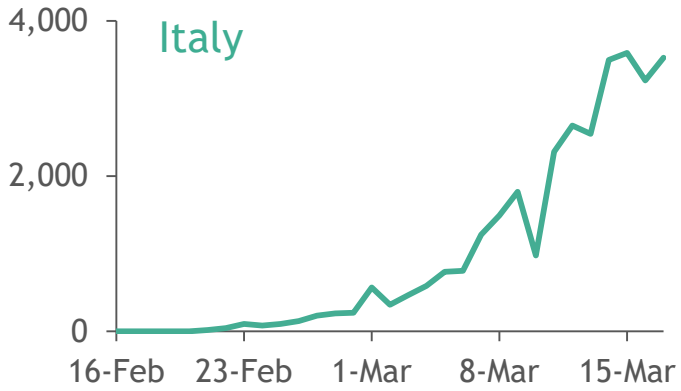
Sustained decline in new cases

#of new cases



Mixed signals in last 2-3 days

#of new cases



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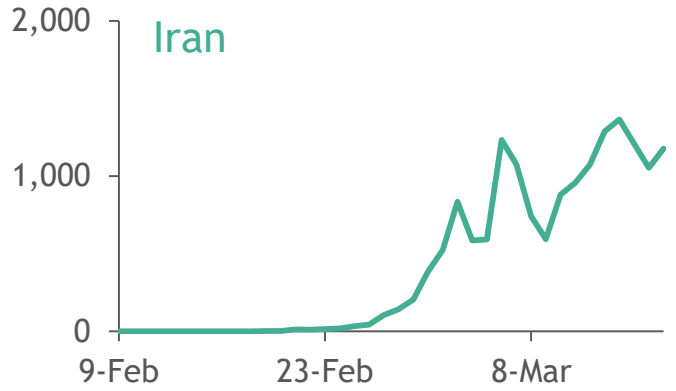
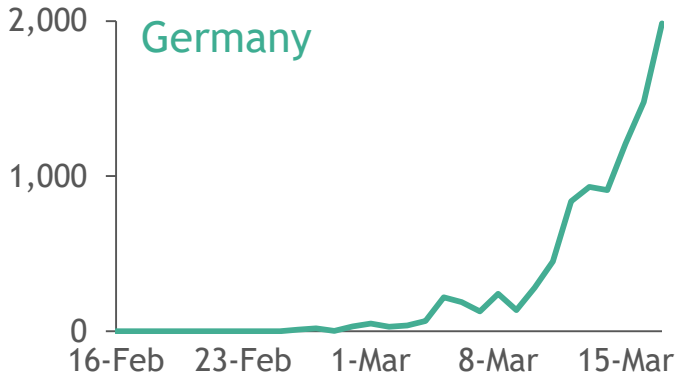


Data as of 17 Mar

Steady acceleration so far

#of new cases



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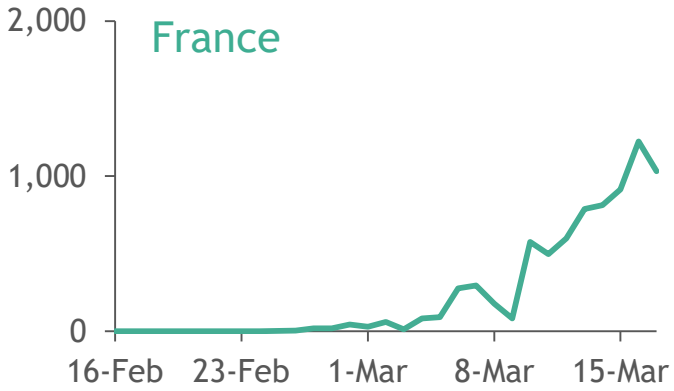
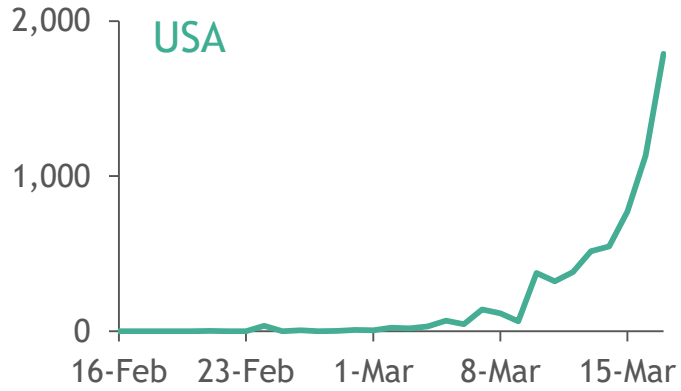
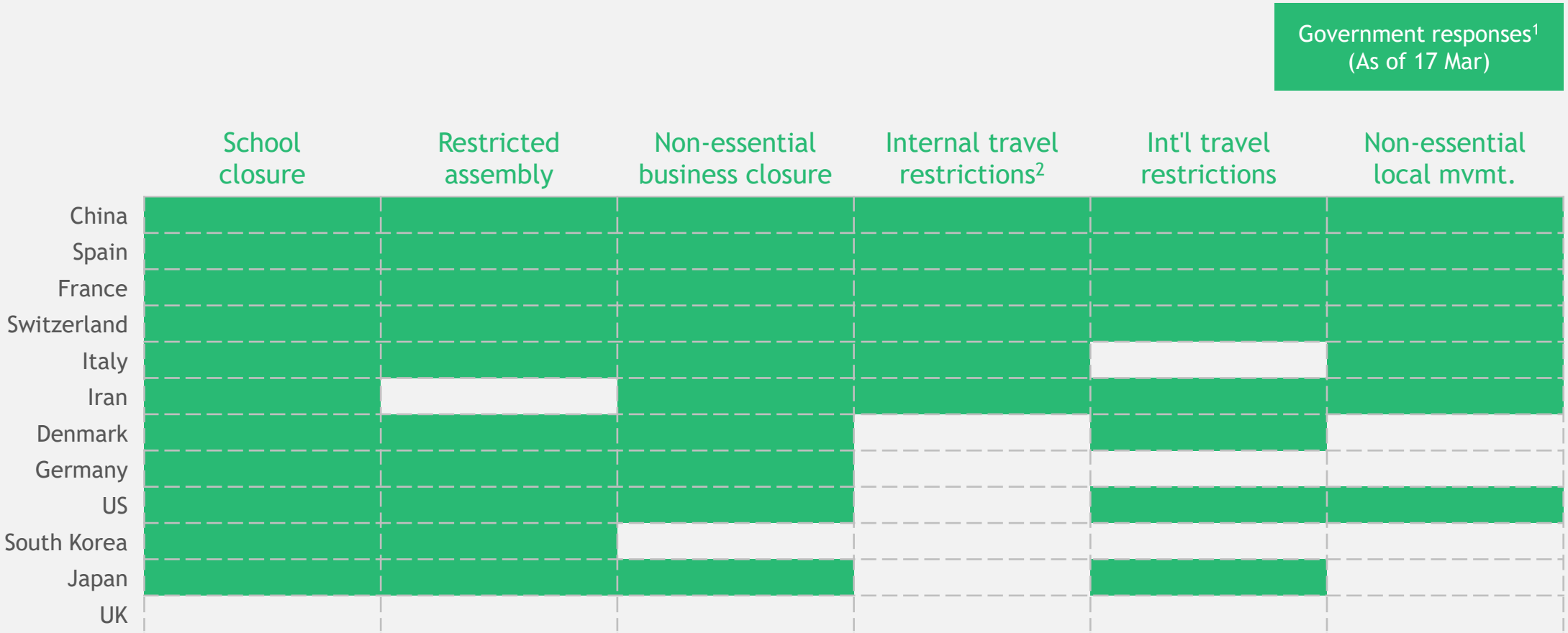


#of new cases



Source: Johns Hopkins CSSE, BCG Henderson Institute analysis

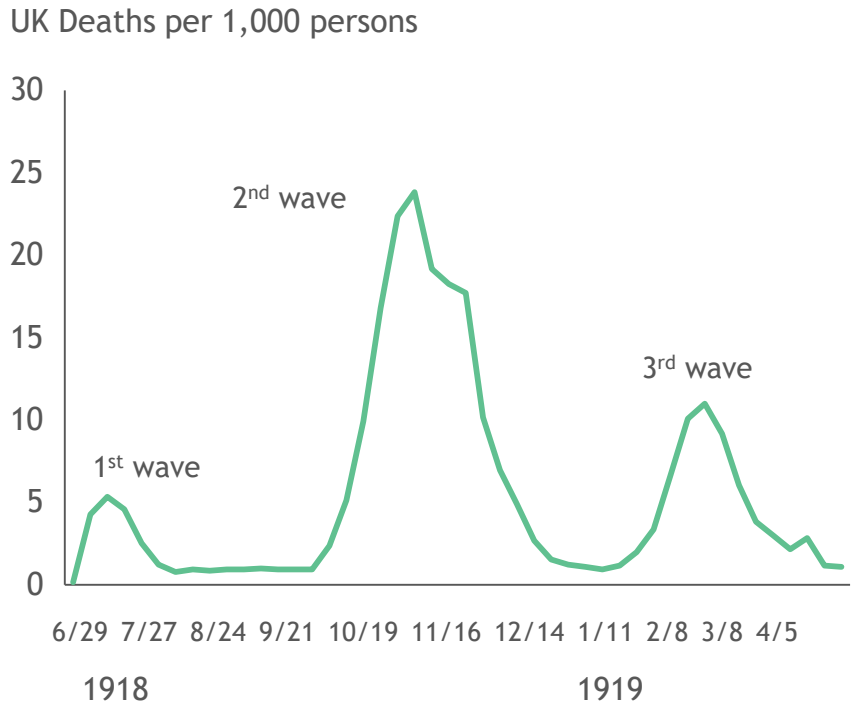
Most countries now responding strongly to outbreak



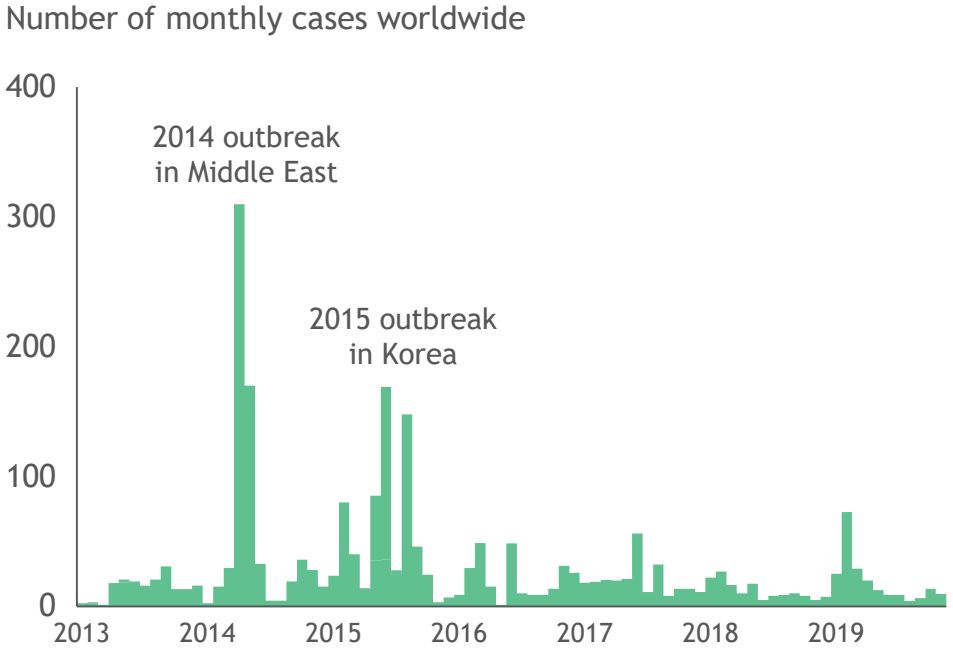
Note: includes nationwide actions and actions taken by major local or regional governments. 2 Some German + US rail services are being reduced but not through government pressure
International travel restrictions flagged if any bans put in place or limits in place; Internal travel restriction includes 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

Longer view: Historically, many outbreaks experienced multiple waves – risks remain until vaccine in hand

Example: Spanish Flu



Example: MERS (caused by a coronavirus)



Source: US Centers for Disease Control; World Health Organization; BCG Henderson Institute analysis

Strategic and tactical impact scenarios for the COVID-19 crisis and recovery

For more detailed economics coverage please see also:

Read More



Harvard Business Review article (published 3 March) by Philipp Carlsson-Szlezak, Martin Reeves, and Paul Swartz

Discussing financial market signals, recession risk, likely growth and recovery paths, structural legacy, and what leaders can do

Companion deck also available



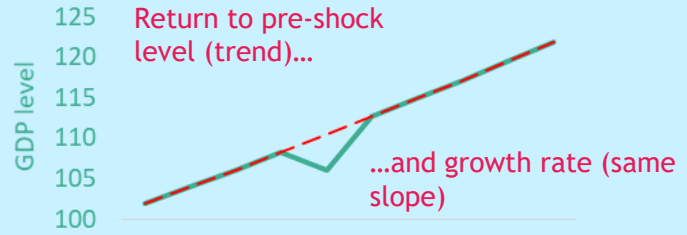
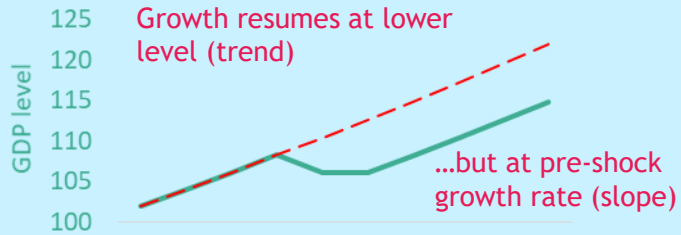
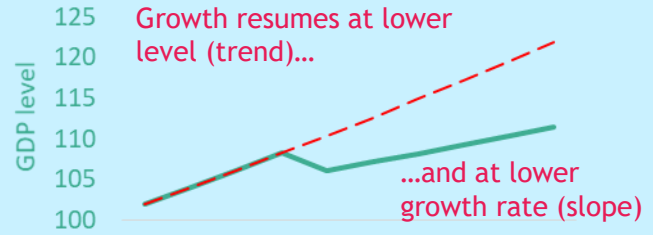
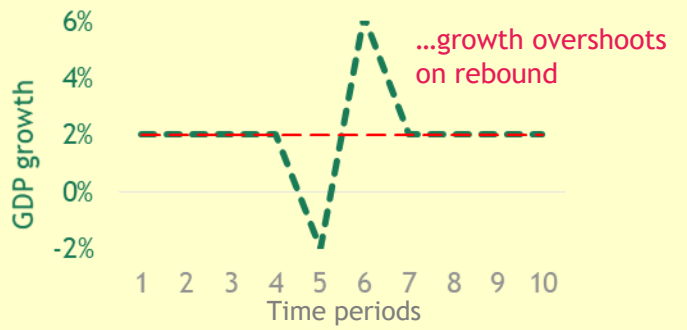
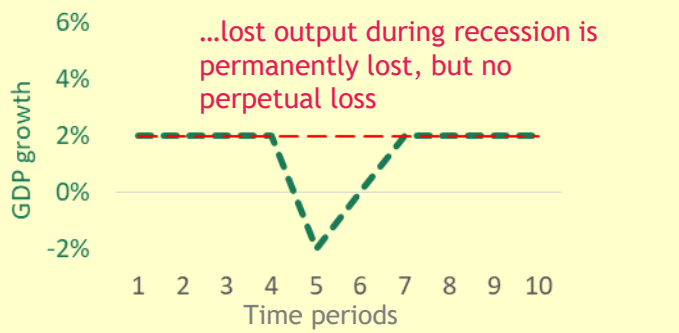
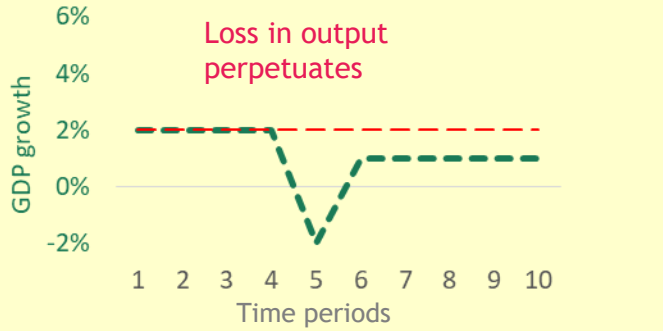
Deck on strategic and tactical scenarios for a potential COVID-19 recession and recovery

1. How to think about strategic and tactical scenarios in the COVID-19 crisis
2. Core scenarios and what you would have to believe for each
3. From macro to micro: Translating to firm level

Basic shock scenarios can be described as V-U-L-shaped

With some technical details

Illustrative

	V	U	L
Levels			
Growth			
	Classic economic shock leading to an intertemporal displacement of demand, resume orig. output path	Shock that breaks growth trend, even as trend growth remains same – typically financial recession or major policy error	Shock that perpetually breaks a part of the growth model. A structural impact that shifts the output path lower as well as establishing a lower growth rate

Source: BCG Center for Macroeconomics analysis

Empirically, flu shocks have all been V-shape

Historical precedents interesting, not deterministic

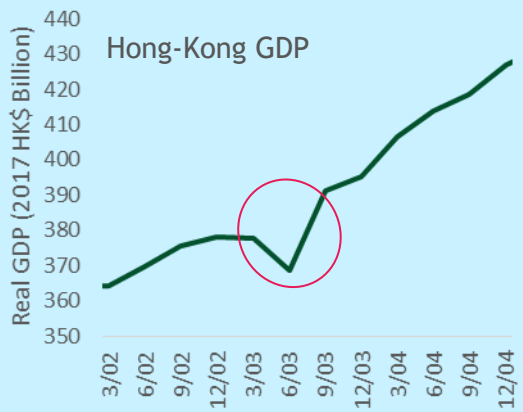
2003 SARS
(299 deaths in Hong Kong)

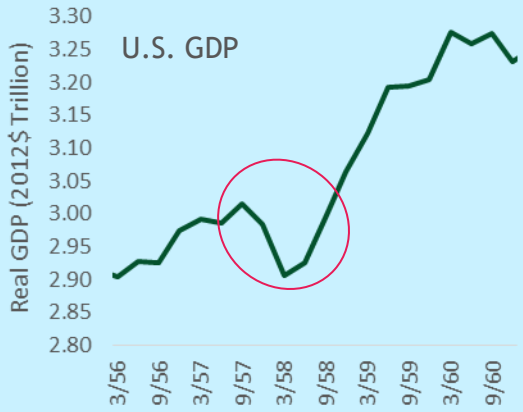
1957/58 H2N2
(116k deaths in U.S.)

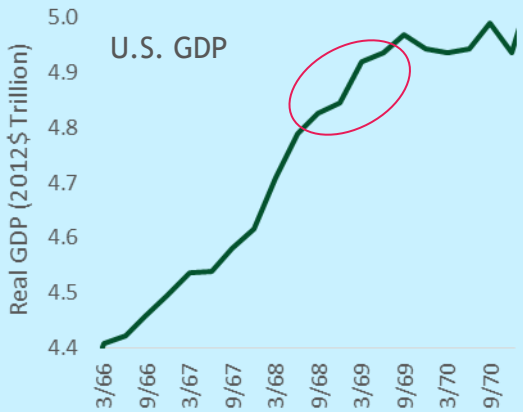
1968 H3N2
(100k deaths in U.S.)

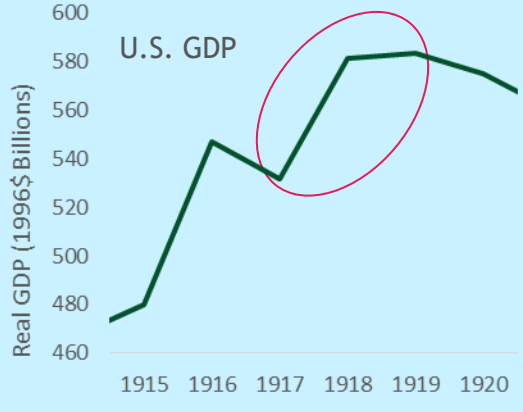
1918 Spanish Flu
(675k deaths in U.S.)

Levels

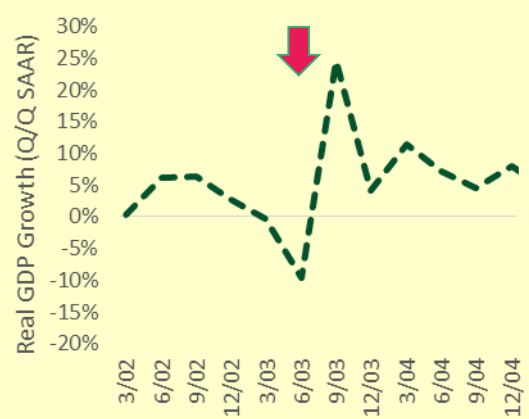


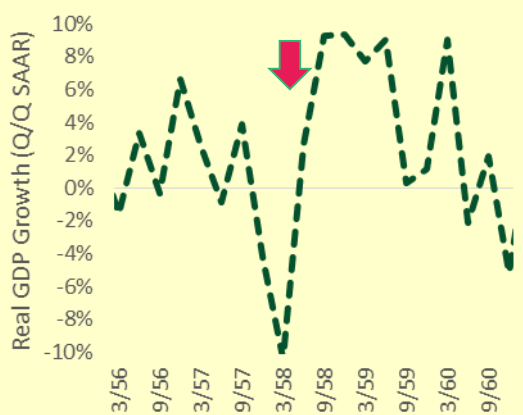


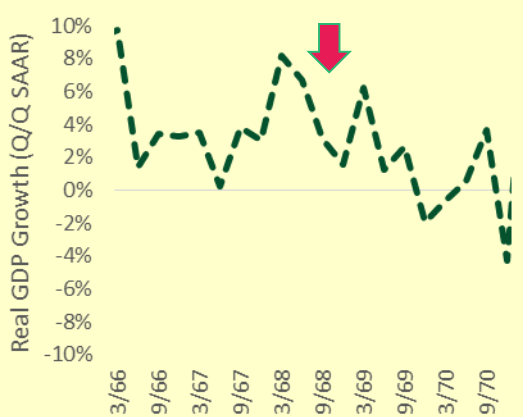


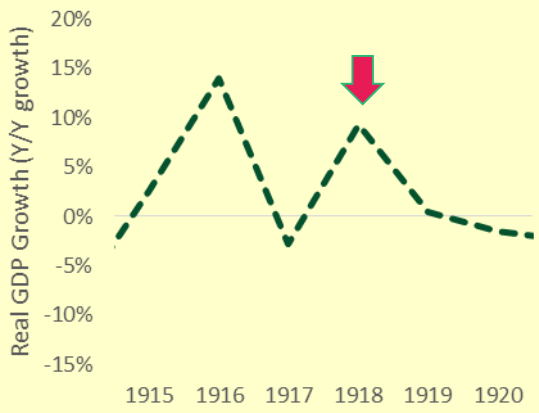


Growth









Source: U.S. Census, BEA, CDC, Census and Statistics Department (Hong Kong), BCG Center for Macroeconomics analysis

Leaders forced to make two macro calls in COVID crisis

Strategic macro call

What will be the present value of future growth under COVID-19?

I.e. "geometry" of the shock: will it be a V, U, or L shape and what does it imply

Will be basis for strategic response (capex decisions, business model adjustments,…)

Tactical call

What will be the depth, speed, and duration of COVID-19 shock?

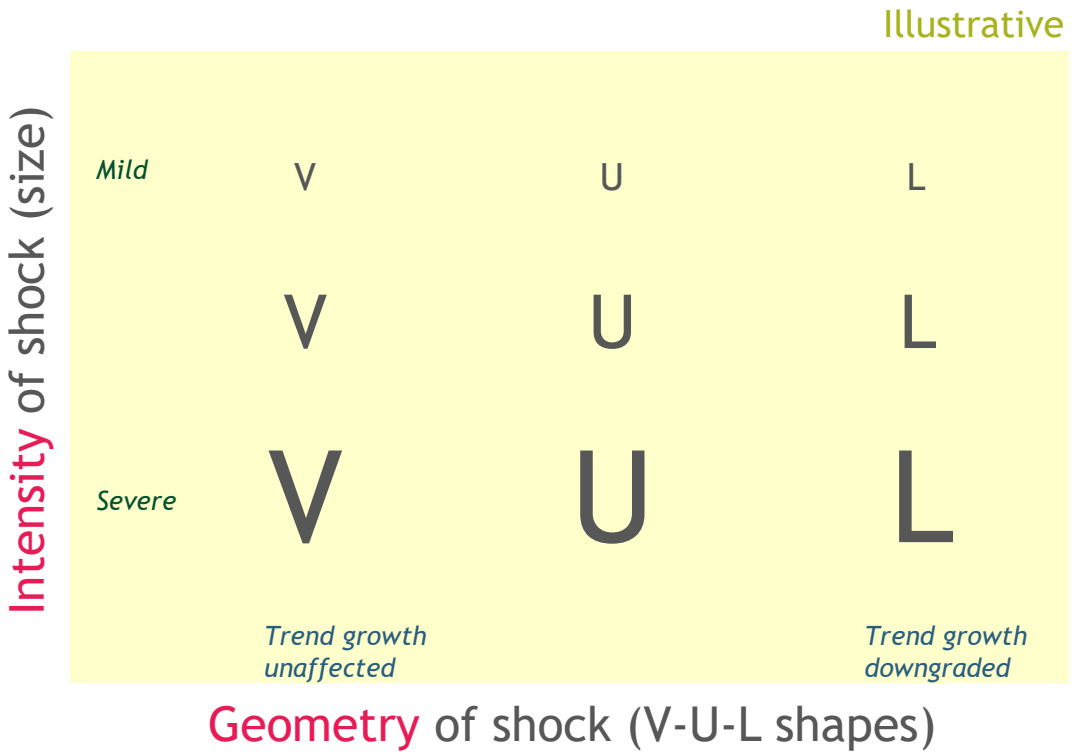
I.e. "intensity" of the shock, a different dimension from "geometry"

Will be basis for near-term response (activity, output, staffing, suppliers, etc)

Important not to conflate shock geometry and intensity

Geometry is the strategic call, intensity is the tactical call on the COVID-19 crisis

V-U-L: Shock geometry vs. intensity



Questions firms and investors need to ask

Intensity of shock (y-axis)

- How far will activity fall/unemployment rise
- How fast will the fall occur (duration)
- How fast will the rebound occur
- **And: What drives these answers?**

Nature of shock (x-axis)

- What is the shape of the fall and recovery?
- How big is the loss relative to previous trend?
- Is the change permanent/structural?
- **And: what determines the nature/geometry?**

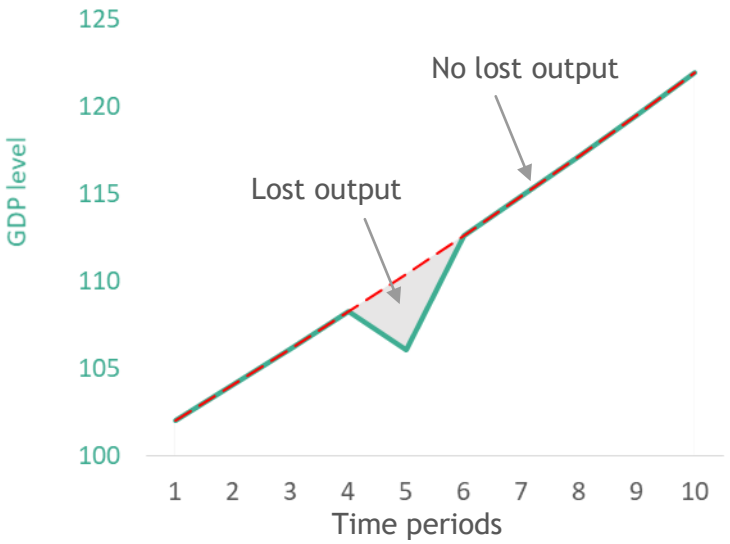
Source: BCG Center for Macroeconomics analysis

Geometry – be clear what the shapes *really* mean

Ask this question: what can present value of future output be under COVID-19?

V

Contained loss



V shape leaves *de minimis* impact on the present value of future output

U

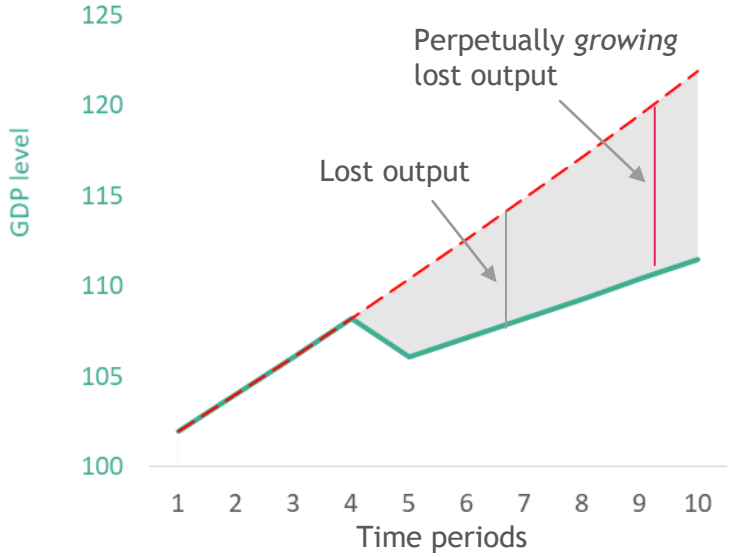
Significant lost value



U shape results in dramatically more and perpetual loss of present value of future output

L

Significant and perpetually growing lost value



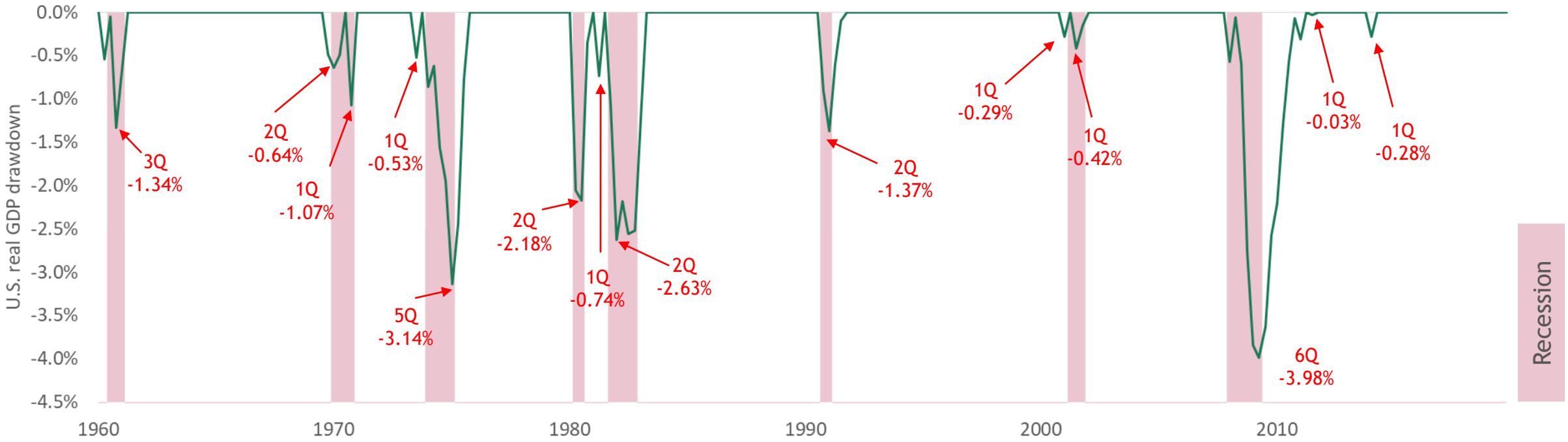
L shape results in even more and ever growing loss in future output, potentially infinite loss of future value

Source: BCG Center for Macroeconomics analysis

Intensity – be clear what GDP drawdowns *can* be

Ask this question: What can depth, speed, and length of COVID drawdown be?

U.S. recession and GDP drawdowns over the past 60 years – notated with drawdowns length (qtrs) and depth

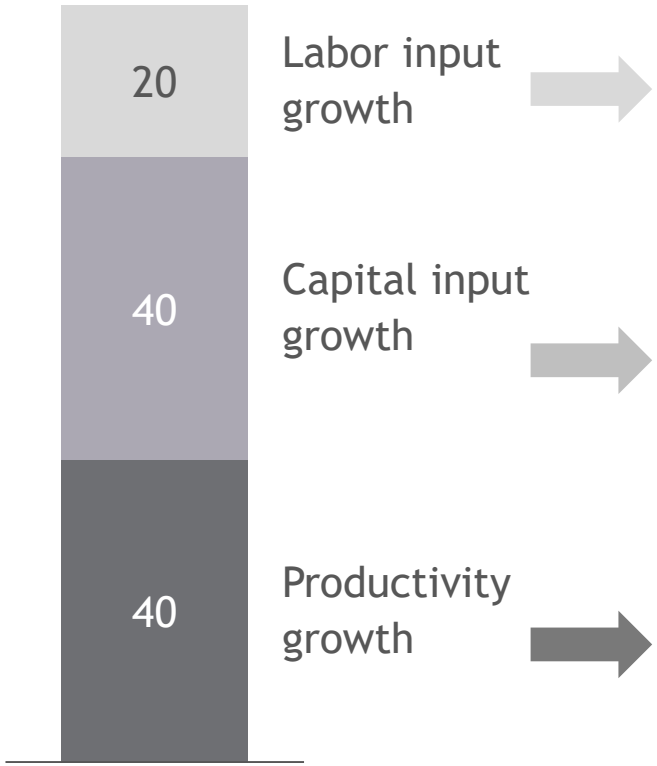


- The intensity drawdown (peak to trough) can very widely – 0.03bps (2011) to 4% (2008/9)
- The intensity duration (peak to trough) of shock can very widely – 1Q to many (6Q in 2008/09)

Source: NBER, BEA, BCG Center for Macroeconomics analysis

Assessing shock geometry: Why V is likely, U plausible but unlikely, and L possible but not plausible

Drivers of US potential growth over the last 10 years (%)



What you have to believe for COVID-19 crisis to have…

…for V-shape	…for U-shape	…for L-shape
No change to labor input growth	The mortality rate is such that the labor supply shifts down (one-off)	To permanently change the labor input dimension of an economy's supply side, the virus' mortality would have to recur each year to reduce labor supply growth (i.e. no vaccine, and no conclusive mitigation, indefinitely)
No change to capital stock growth	Investment is delayed and not caught up, shifting down the capital stock (one-off)	To permanently change capital input growth on supply-side, the virus would have to impair the credit intermediation system in a way that perpetually depresses credit formation and investment
No change in productivity growth	Opportunity for learning are lost and knowledge atrophies shifting down productivity (one-off)	To permanently change productivity growth, would requite a) enduringly disrupt existing business processes (e.g. by diverting resources to Covid-related mitigation activities) or b) institutional degradation/collapse
Likely	**Plausible but not likely**	**Possible in theory but less plausible**

Source: CBO, BCG Center for Macroeconomics analysis

Assessing shock intensity: What you'd want to know

Insufficient testing and slowly unfolding mitigation efforts in U.S. make assessment challenging

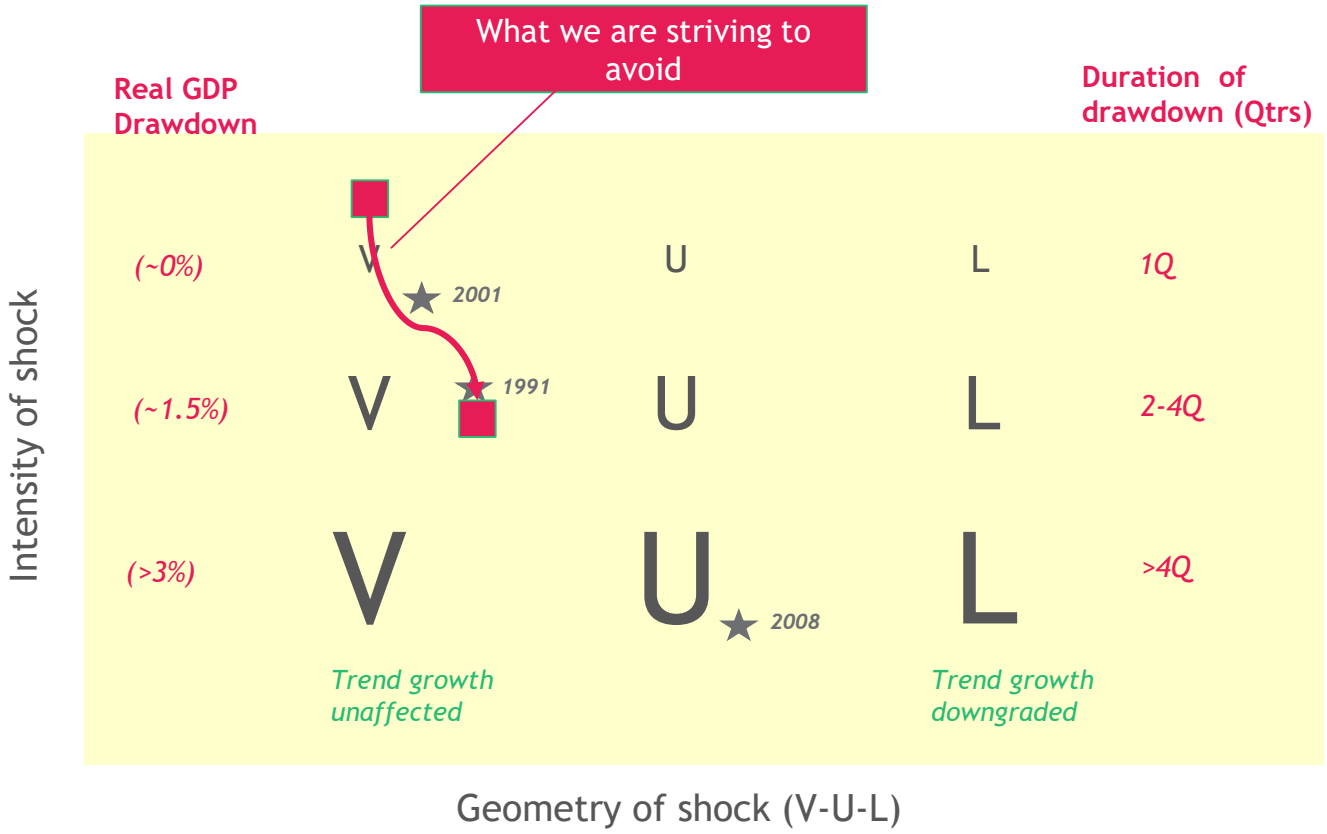
Drivers of shock intensity	Drivers/*Risk*	Impact on intensity	Current risk profile (U.S.)
Virus properties (SARS-CoV-2)	Contagion/*Higher R0 rate*	• Even current profile of virus has the potential for highest shock intensity • Risks describe further downside(s), e.g. mutation	Debated (perhaps 2 - 3.1)
	Mortality/*Higher than assumed death rate*		Debated (varies by age: 0 – 18%)
	Virus resilience/*Longer survival period*		Widely debated
	Weather/*Risk of late spring/no seasonal eff.*		Too early to say
	Mutations/*Risk of worse virus*		Unknown
Mitigation Efforts	Testing/*too little testing*	• Mild shock intensity consistent with strong and successful mitigation • Failed mitigation which escalates in form and length would drive up shock intensity	Far too little testing
	Social distancing/*insufficient measures*		Started will continue to intensify
	Health care system capacity/*breaking points*		Some systems already overwhelmed
Policy response	Fiscal policy/*too little, too late*		On the right path with latest legislation
	Monetary policy/*policy ineffectiveness*		Rate cuts and large scale liquidity provision
	Institutional capacity/*struggling, fragmented*		Struggles in fragmented systems
Microeconomic reaction functions and ability to nudge them	Consumer confidence/*fear takes hold*	• Severe shock intensity would require dramatic and sustained disruption in confidence, financial market, cash flows, and poor leadership	Fear starting to take hold
	Firm reaction function/*survival mode*		Fear starting to take hold
	Financial markets/*liquidity driven sell off*		Fin conditions tightened sharply
	Cash flow problems/*going concerns fail*		Risk is moving higher
	Leadership /*public trust evaporates*		Fragmented, lack of decisive leadership

Source: BCG Center for Macroeconomics analysis

A plausible scenario is a deep V-shape that tilts towards U

Illustrative

Scenario description



What you have to believe

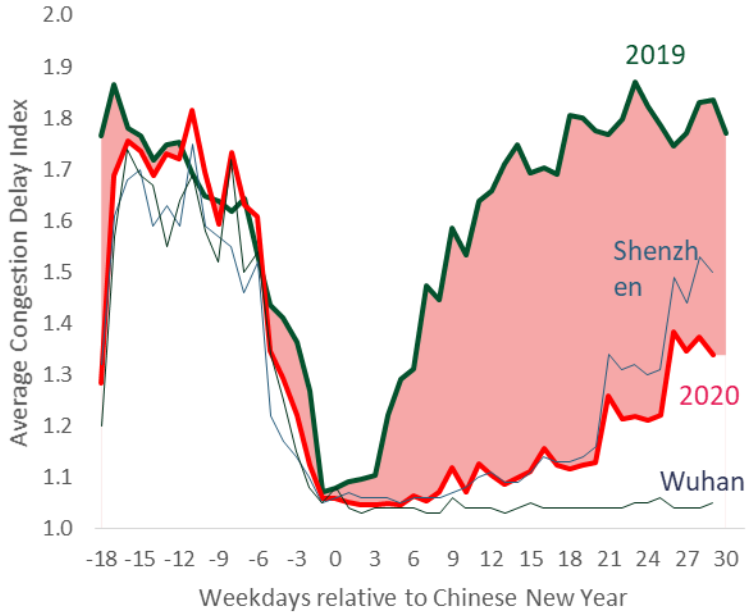
- As the crisis accelerates we fear a deep "V-shape" tilting toward U-shape
- This assumes:
  - Virus properties stay or worsen
  - Mitigation efforts are slow and unsuccessful
  - Mitigation effort have to be sustained for an extended period (>3 months)
  - Policy response is too late and timid
  - Household and business confidence fall and stay depressed
- The shift *toward* a U-shape is driven by one-off losses in labor potential, capital formation and productivity

Source: BCG Center for Macroeconomics analysis

China's path indicative of what a strong response can deliver

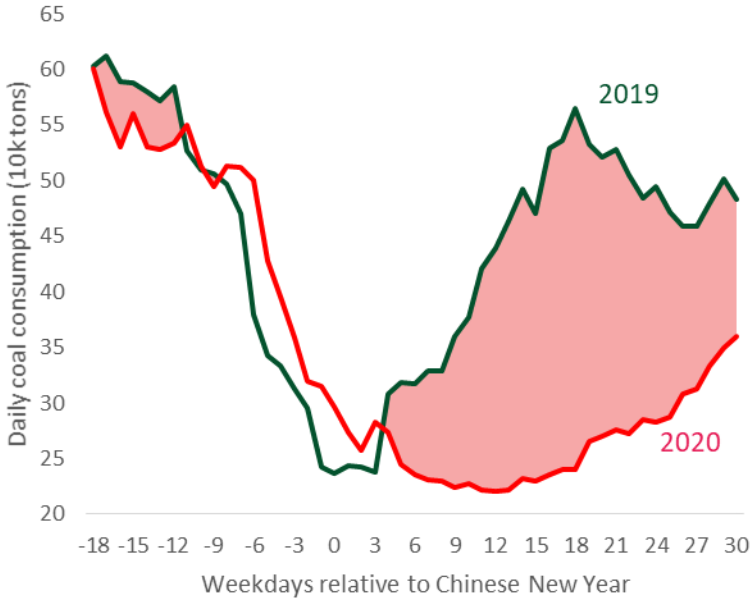
China data re-based for weekdays excl. weekends relative to start of Chinese New Year

People and goods are starting to move again



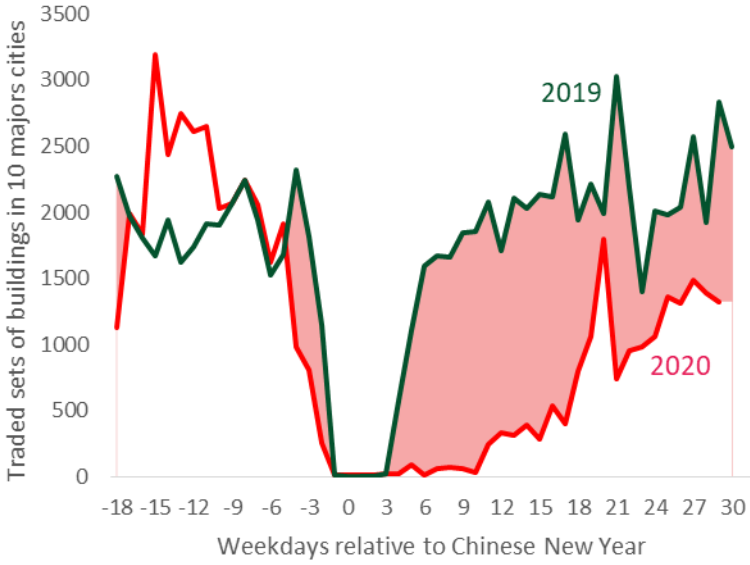
Congestion delays have recovered from 62% of 2019 levels to currently 73%, indicating that the movement of people and goods is resuming

Inputs are being used as coal consumption moves higher



Consumption of coal appears to be recovering, from 43% of 2019 levels to 75% of 2019 levels

Confidence isn't broken as property transaction restart



Confidence appears to be coming back as seen in real estate transactions, which had fallen to 1% of 2019 levels but have since bounced back to 47%.

Note: 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, Guangdon Yudean Group, Datang International Power Generation, and Huaneng Power International, Inc.
Source: Wind, www.cqcoal.com, and BCG Center for Macroeconomics

COVID-19 has potential for microeconomic legacy

SARS

2002-2003 SARS outbreak is widely credited with accelerating the adoption of online shopping in China, and specifically with Alibaba's commercial inflection

Comprehensive broadband rollout was a necessary but insufficient pre-condition, and SARS epidemic triggered and accelerated the shift in consumer behavior

COVID-19

What could be COVID-19 knock-on effects in terms of technology adoption or new processes?

- e-schooling and e-delivery of learning materials? (Think Japanese school closures; some New York schools have drawn up e-learning capabilities)
- **"Digital crowd control"** (smart phone-based enforcement of Wuhan quarantine enables political will to permit digital surveillance)

Future crisis?

What current technologies could mature by time future epidemic hits?

- Automated/robotic delivery? (taking "infected" humans out of equation)
- Digital nursing assistants, reducing humans' greater liability as disease transmitters
- Automated temperature screening at public transport nodes?

Source: BCG Center for Macroeconomics analysis

How companies are responding

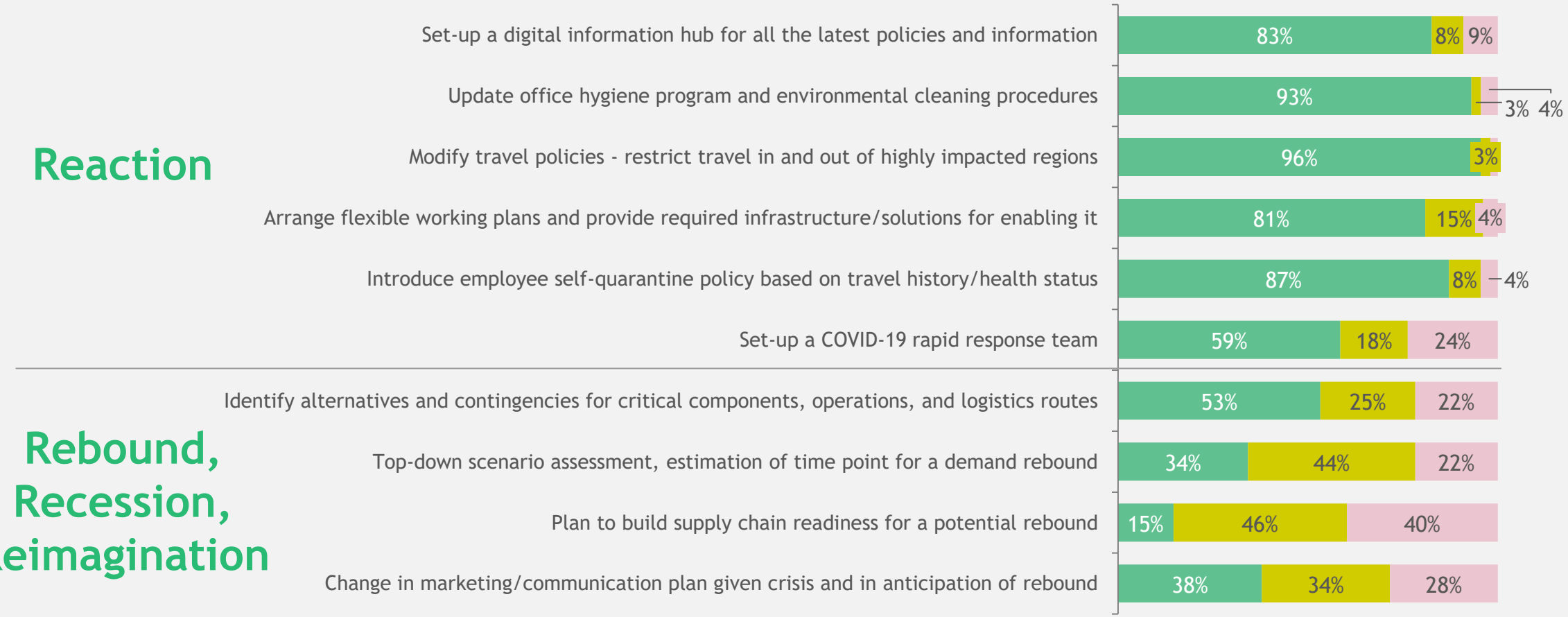
BCG is surveying companies globally on 5 dimensions of Covid-19 response strategy



- Current and prospective impact
- Major pain-points for businesses
- Health & safety measures taken
- Business continuity measures taken
- Long-term structural enhancements

Companies are currently mostly still in reactive mode

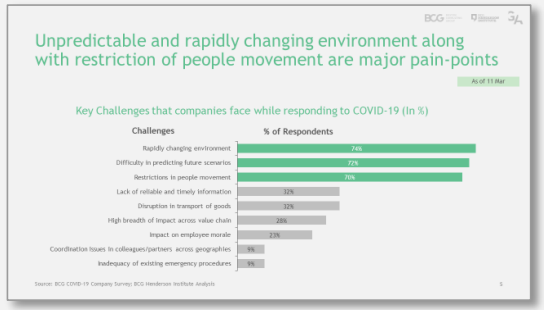
Extract from benchmarking survey (as of 17 Mar)



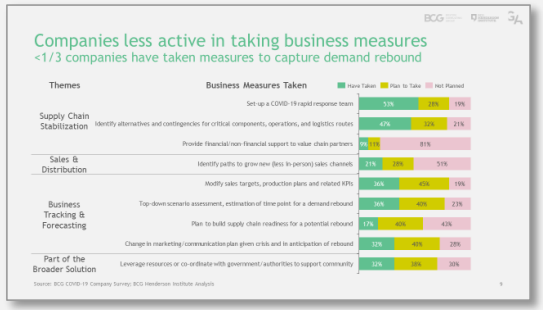
Source: BCG COVID-19 Company Survey; BCG Henderson Institute Analysis

Full survey insights available to participants

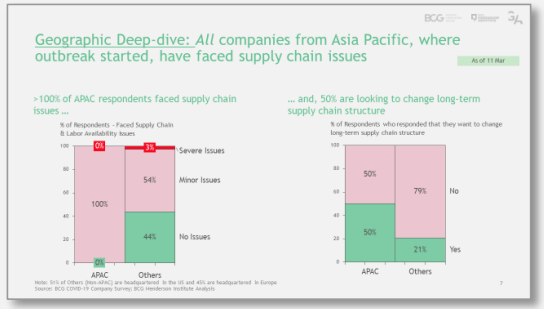
Top challenges being faced worldwide



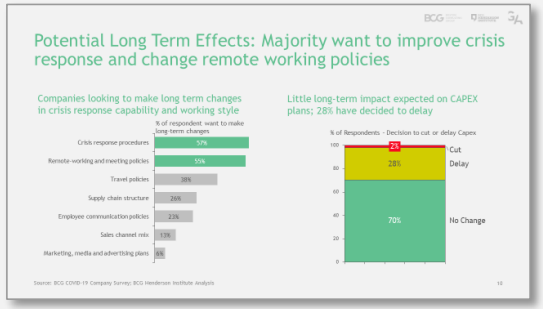
Crisis & recovery strategy benchmarks



Differences in experiences by region



Ambitions for long-term structural changes



Email nanda.saumeet@bcg.com if you want to participate

The responses to this survey will be used only for analyzing broad patterns of response strategy towards COVID-19 and will only be shared in an aggregated form.

Perspectives on leading through the crisis

How leaders can navigate the crisis



Read More



Crisis Strategy: Tackle immediate priorities

Protect your people, ensure continuity, and mitigate short-term losses



Recovery Strategy: Prepare for the rebound

Pro-actively seize demand rebound and bring business back on track



Post-crisis Strategy: Pursue structural enhancements

Build advantage by making strategic enhancements and building resilience

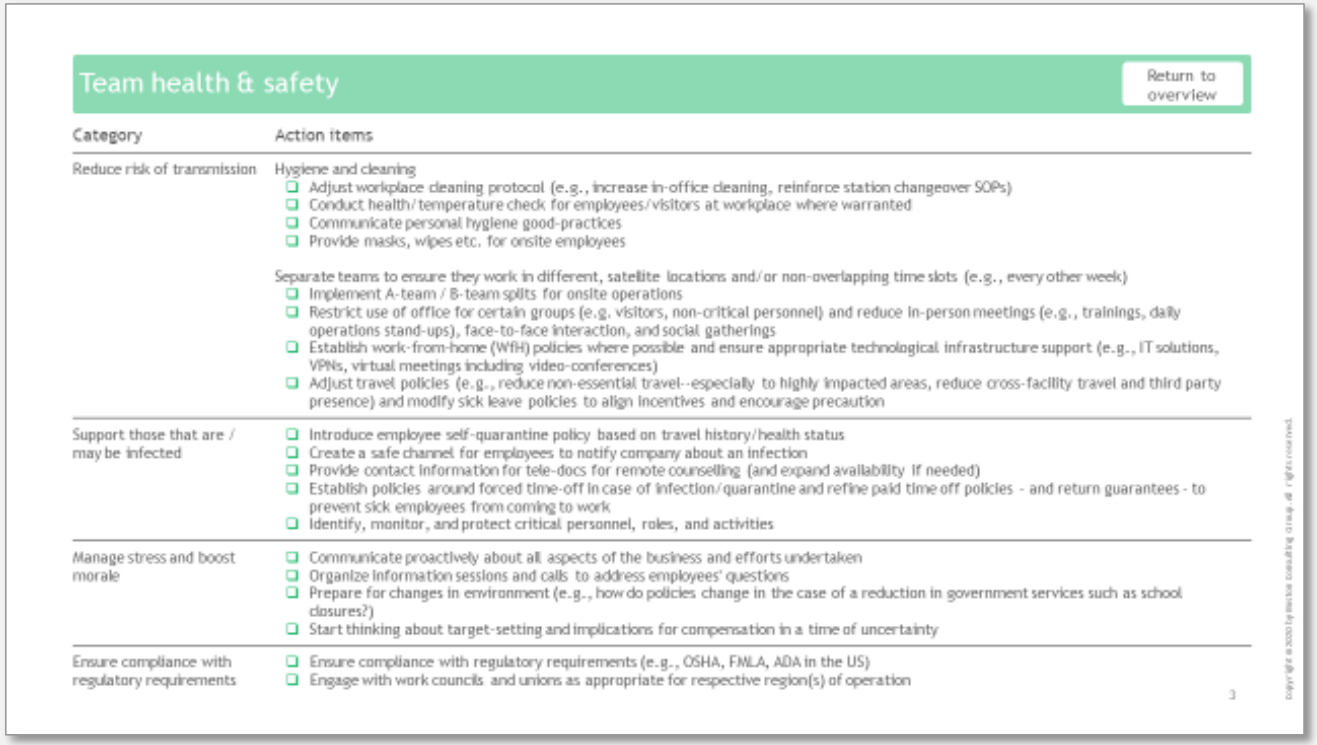
Overall Approach: Day-to-day agile approach to navigate changing environment

Crisis strategy: BCG has developed a COVID-19 Rapid Response Checklist

Key response dimensions

- Team health & safety
- Business strength
- Financial resilience
- Execution clarity

Action items



Team health & safety — Return to overview

Category	Action items
Reduce risk of transmission	Hygiene and cleaning ❑ Adjust workplace cleaning protocol (e.g., increase in-office cleaning, reinforce station changeover SOPs) ❑ Conduct health/temperature check for employees/visitors at workplace where warranted ❑ Communicate personal hygiene good-practices ❑ Provide masks, wipes etc. for onsite employees Separate teams to ensure they work in different, satellite locations and/or non-overlapping time slots (e.g., every other week) ❑ Implement A-team / B-team splits for onsite operations ❑ Restrict use of office for certain groups (e.g. visitors, non-critical personnel) and reduce in-person meetings (e.g., trainings, daily operations stand-ups), face-to-face interaction, and social gatherings ❑ Establish work-from-home (WfH) policies where possible and ensure appropriate technological infrastructure support (e.g., IT solutions, VPNs, virtual meetings including video-conferences) ❑ Adjust travel policies (e.g., reduce non-essential travel--especially to highly impacted areas, reduce cross-facility travel and third party presence) and modify sick leave policies to align incentives and encourage precaution
Support those that are / may be infected	❑ Introduce employee self-quarantine policy based on travel history/health status ❑ Create a safe channel for employees to notify company about an infection ❑ Provide contact information for tele-docs for remote counselling (and expand availability if needed) ❑ Establish policies around forced time-off in case of infection/quarantine and refine paid time off policies - and return guarantees - to prevent sick employees from coming to work ❑ Identify, monitor, and protect critical personnel, roles, and activities
Manage stress and boost morale	❑ Communicate proactively about all aspects of the business and efforts undertaken ❑ Organize information sessions and calls to address employees' questions ❑ Prepare for changes in environment (e.g., how do policies change in the case of a reduction in government services such as school closures?) ❑ Start thinking about target-setting and implications for compensation in a time of uncertainty
Ensure compliance with regulatory requirements	❑ Ensure compliance with regulatory requirements (e.g., OSHA, FMLA, ADA in the US) ❑ Engage with work councils and unions as appropriate for respective region(s) of operation

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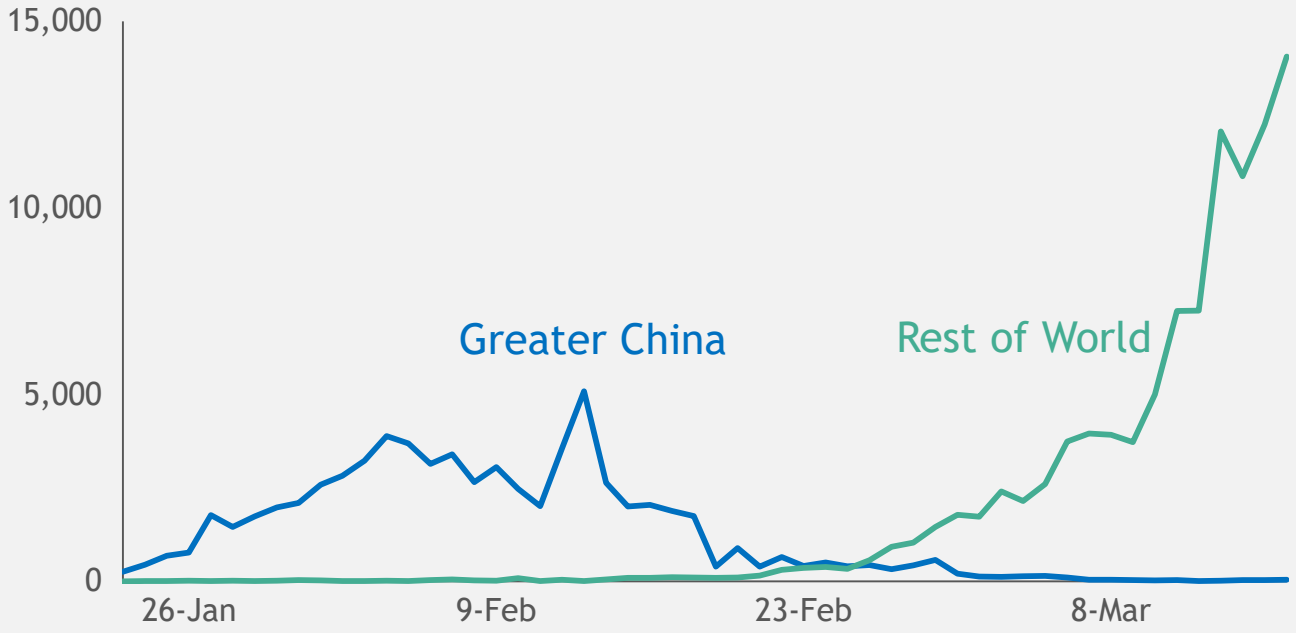
Use as a starting point for planning or a robustness check against your existing plans

Preparing for a rebound: Activity starting to pick back up in China

Daily number of new cases detected[1]



1. Excludes Greater China spike on 12 Feb driven by change in reporting methodology
Source: National Health Commission China (China-specific data), Johns Hopkins CSSE(Non-China Data), BCG Henderson Institute analysis

"As of today, all of our stores in Greater China have reopened […] and we will be closing all of our retail stores outside of Greater China."
—Tim Cook,
Apple CEO (13 Mar.)

12 lessons from Chinese companies' experience



Read More

Overall approach

1. Look ahead and constantly reframe your efforts
2. Use an adaptive, bottom-up approach to complement top-down efforts

Crisis strategy

3. Proactively create clarity and security for employees
4. Reallocate labor flexibly to different activities
5. Shift your sales channel mix
6. Use social media to coordinate employees and partners

Recovery strategy

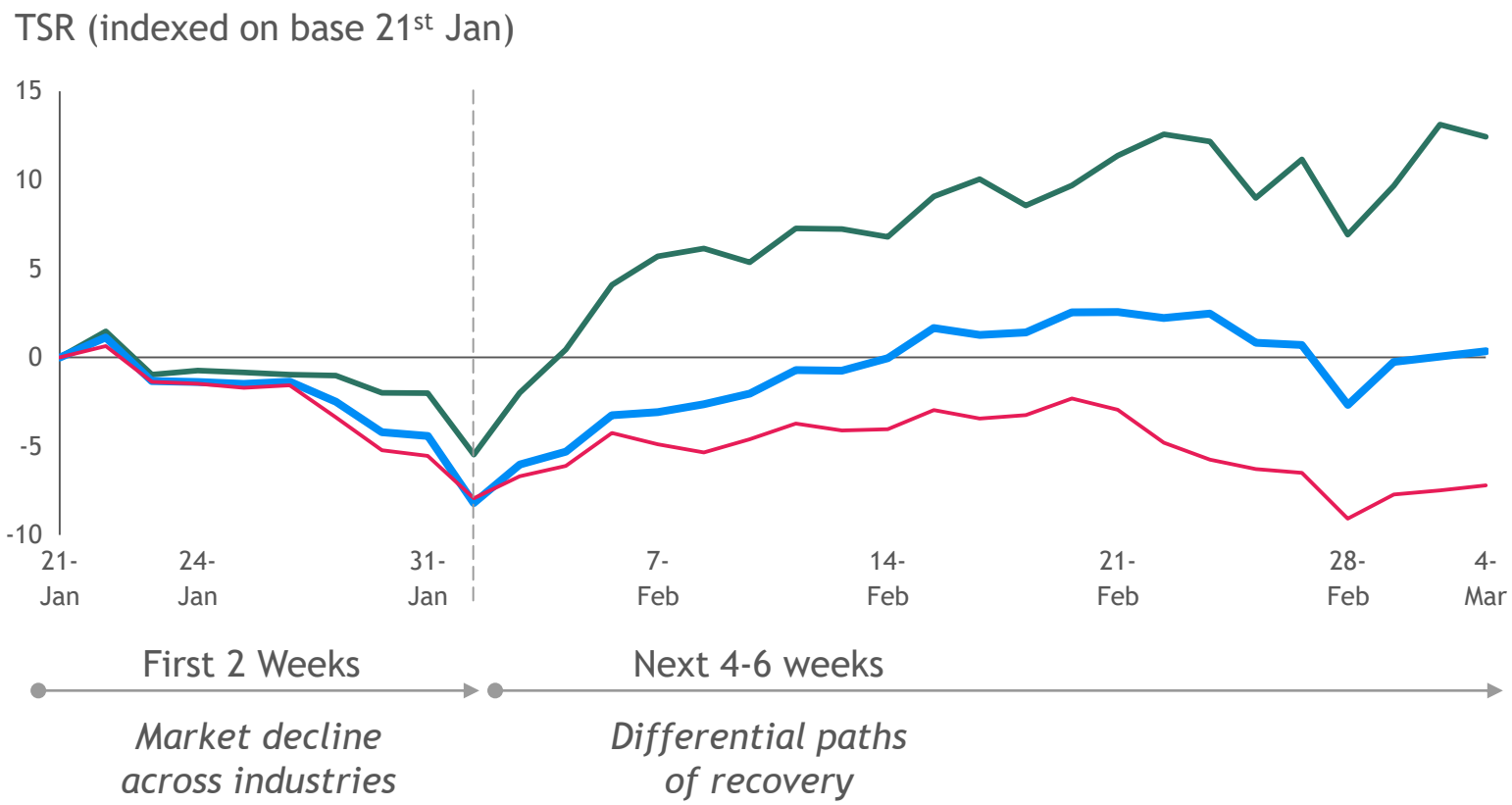
7. Prepare for recovery to come faster than you might expect
8. Expect different recovery speeds for different sectors
9. Look for opportunity amid adversity
10. De-average the recovery strategy by region
11. Rapidly innovate around new needs

Post-crisis strategy

12. Spot the new consumption habits being formed in the crisis

China's rebound trajectories different across sectors

Average TSR movement of Chinese industry groups



High Performing industries (+12%)

Software & services, Healthcare equipment & services, Food & staples retailing

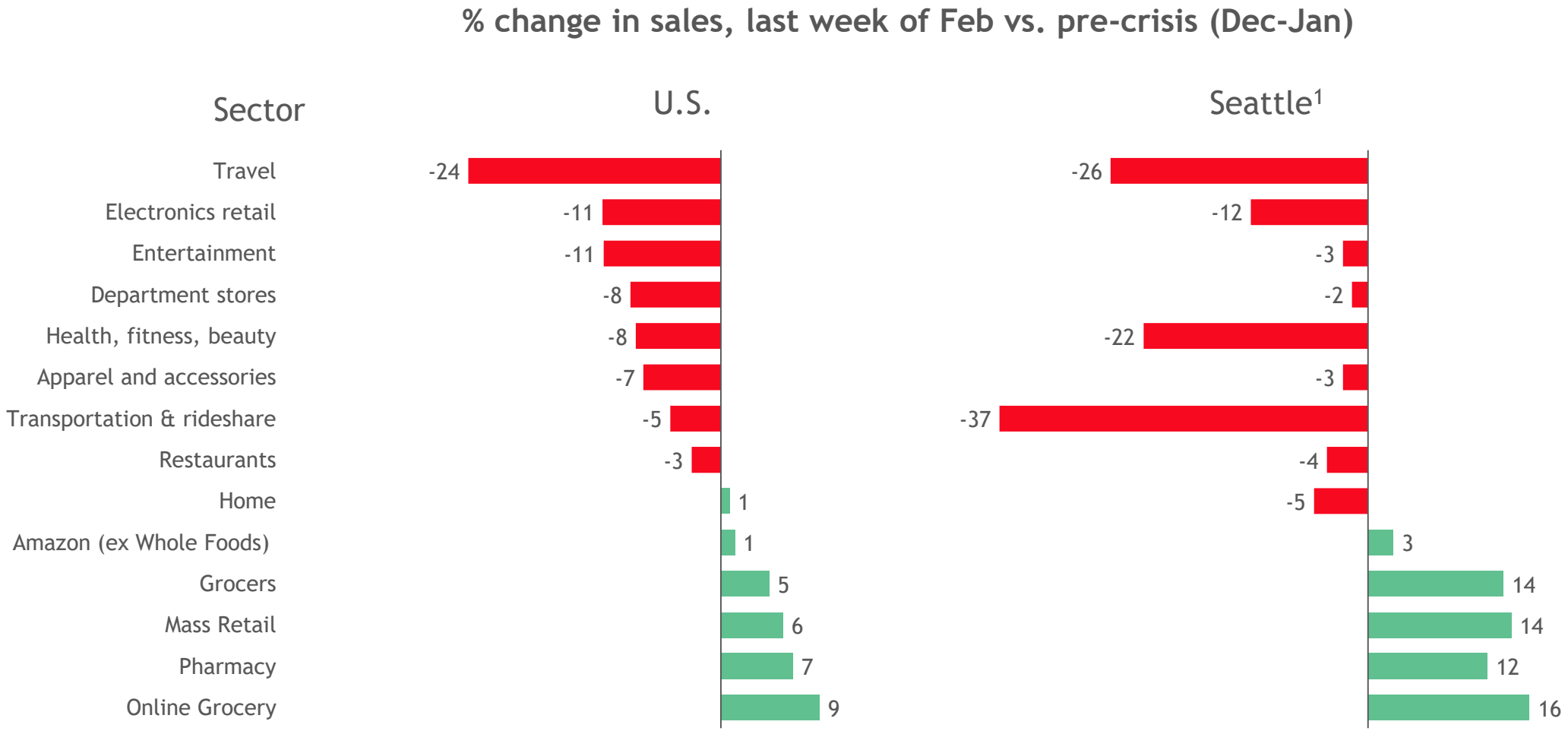
Others (0%)

Low Performing industries (-7%)

Transportation, Consumer durables and apparel, Utilities, Insurance, Retailing, Energy

Note: Top 500 Greater China companies as of 1st Jan 2020 considered for analysis; High Performers comprise 6%, low performers comprise 21% and others comprise 73% of the 500 companies in the consideration set; Average TSR of the three clusters – High Performers, Low Performers and Others is the simple average of all TSR of all companies in the cluster
Source: Capital IQ; BCG Henderson Institute Analysis

Early signs of sector-level differences also emerging in US



1. Seattle was one of earliest metros hit by outbreak | Source: Earnest Research credit card data as of 3/4/20; BCG MSP-Gamma-CCI analysis

Post-crisis strategy: How might things be different after the outbreak?

Read more



Lessons learned:

- Crisis management?
- Scenario planning?
- Supply chain resilience?



Consumer shifts:

- Health & hygiene?
- Online purchasing?
- Communication behaviors?



New behaviors:

- Remote working?
- Distance learning?
- Reduced travel?



Unmet needs

- Health insurance categories?
- Collaboration platforms?
- Delivery models?

Read our perspectives in HBR



[Read More]

Published 27 February

Discussing 12 lessons for companies to make sense of the crisis, respond to it in a balanced manner, prepare for the world post-crisis and carry important lessons forward



[Read More]

Published 10 March

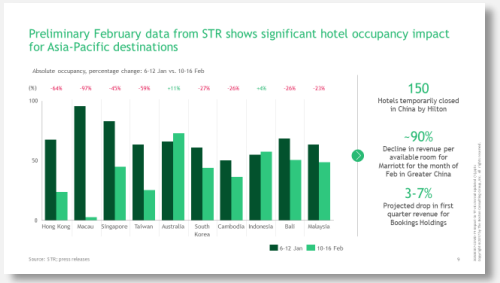
Discussing early signs of economic rebound in China & successful epidemic response strategy from Chinese companies including crisis strategy, recovery strategy and post-crisis strategy

BCG's expertise

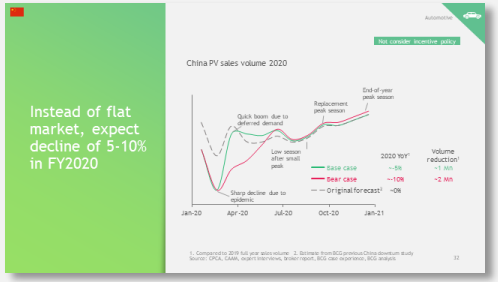
BCG has sectoral views on impact of COVID-19

Sample content from BCG's sectoral deep-dives

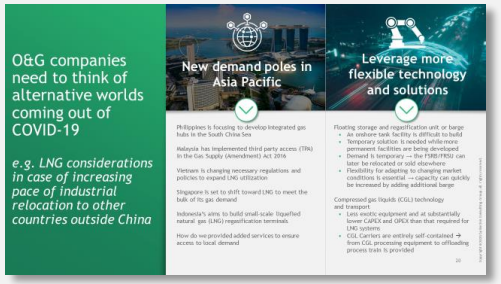
COVID-19 Impact on sector
(Ex: Transport & Logistics)



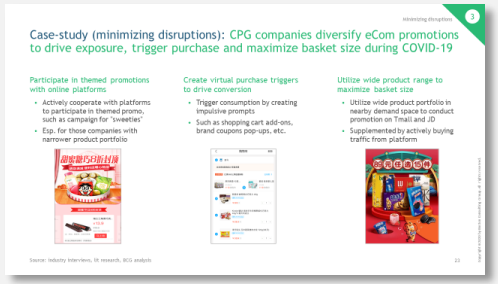
Possible future scenarios
(Ex: Automotive)



Recommended actions
(Ex: Energy)



Case studies from China
(Ex: FMCG)



Get in touch with your BCG contact for sector-specific perspectives

We can support you through this time of change & uncertainty



Rapid Response Room

Set up and run team to take control of overall situation, incl. rapid assessment, contingency plans, communication plans & execution, liquidity forecast and management, spend rationalization



Commercial Response

Define and execute on optimization levers to mitigate revenue impact / ensure rapid rebound, incl. digital/ eCommerce push, sales force activation, distribution relationship mgmt, marketing, inventory planning



Operations Continuity

Ensure business continuity and stabilize operations/supply chain, incl. criticality assessment, contingency planning, inventory recalibration, alternative supplier sourcing

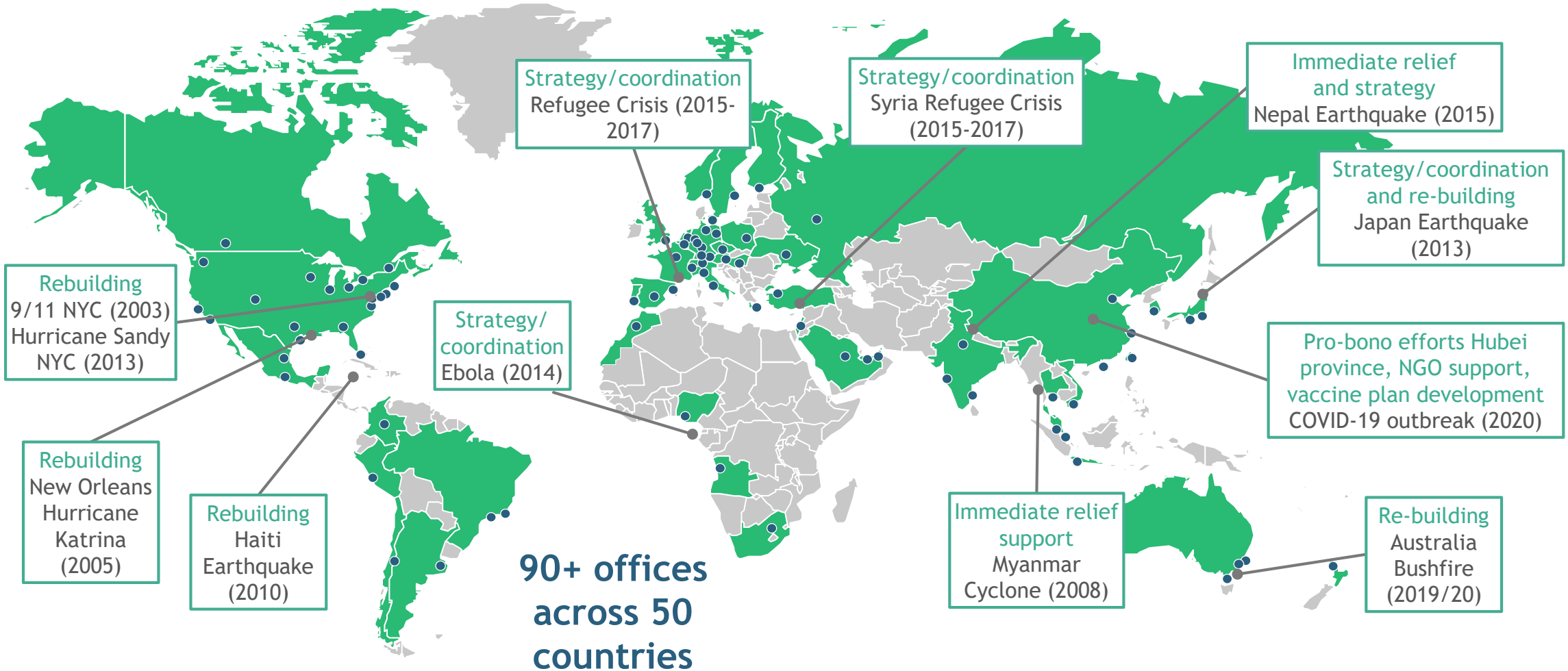


Global Coordination

Define and assess global response for multinational groups, incl. scenario definition and stress testing by geography, portfolio optimization, situation analysis, communication strategies

We have the footprint to support you in all impacted areas

Besides supporting private sector clients, we work across many cross-sector humanitarian emergencies and pandemics



BCG's expertise

Our expertise

- Global health
- Contingency planning & crisis response
- Strategy
- Macroeconomics
- Sector-specific responses

Who to reach out to



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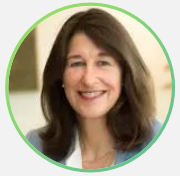

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Senior Partner & Managing Director
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Key data sources and references

BCG perspectives:

- Lead Your Business Through the Coronavirus Crisis
- What Coronavirus Could Mean for the Global Economy
- How Chinese Companies Have Responded to Coronavirus
- How Will Things Be Different When It's All Over?
- The Leader's Duty to Think Ahead and Beyond
- Detect, Develop, and Deliver: A Holistic Approach to Managing Outbreaks
- Coronavirus Impact for the Luxury Industry
- The Global Auto Industry Responds to the Coronavirus
- Challenges and Opportunities for the Chinese Insurance Industry during the COVID-19 Outbreak

Dashboards:

- Johns Hopkins CSSE COVID-19 tracker
- HealthMap visualization

Key data sources and references:

- China National Health Commission
- Global Health Security Index
- World Health Organization updates on coronavirus

Disclaimer

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


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