

# Restarting national economies during coronavirus



For weeks, most governments have focused on controlling the spread of the coronavirus, many of them by implementing a full lockdown strategy. That's starting to change; in recent days, a few have moved to strike a better balance between "flattening the curve" and reviving the economy. But uncertainty is rampant. In our previous article, we outlined a selective lockdown strategy, in which certain regions and sectors can gradually return to work. Such a strategy makes it possible to define the optimal number of people allowed on the streets, making sure that lives are protected, while also minimizing the cost on livelihoods.

In this article, we explain the elements required for the selective lockdown approach to work: a fine-grained understanding of the virus's spread in every part of a country; the economic relevance of every sector in every region; capabilities for testing, tracing, and isolation compliance (TTC); and protocols for physical distancing and safety. In some cases, expanded intensive-care unit (ICU) capacity is another key element. If governments can master these requirements and build the information systems needed to understand in real time what is working and what is not, then they will have found a way out of our collective nightmare.

### **Not all strategies are equal**

Countries have used a wide array of physical-isolation strategies to fight the pandemic. Although each is unique, they can be grouped into two macro strategies, with different mindsets:

- *Full lockdown:* a blanket nationwide lockdown to contain the virus and decrease rates of transmission where only essential sectors are allowed to operate, while citizens circulate only for basic needs, such as food and medicine.

Several countries have followed this approach, including France, Argentina, and Colombia.

- *Selective lockdown:* a partial lockdown with both essential sectors and some others allowed to operate, each with specific protocols. Countries have implemented this strategy in several ways; the most effective seems to feature a virus-

tracing capacity that allows governments to isolate people who test positive and trace their movements to find corresponding chains of contagion. South Korea has used this strategy successfully.

While both strategies seek to manage the rate of contagion given a country's healthcare capacity, they involve very different mindsets. Countries pursuing a full, prolonged lockdown are possibly betting on the development of a vaccine or an effective treatment; until one of those comes along, they seek to minimize rates of infection and expand healthcare capacity. A selective lockdown reflects the belief that a large percentage of the population will be infected before a vaccine becomes available. As we explain later, a selective lockdown strategy may require brief periods of full lockdown either to increase healthcare capacity, or if the speed of viral transmission becomes too fast to control.

If we plot the contagion curve over time, it becomes clear that in the absence of a vaccine or a cure, the number of people infected and of cases needing medical attention will be similar in all three scenarios: no response, full lockdown, or selective lockdown (Exhibit 1). But the cost in lives and livelihoods will differ significantly.

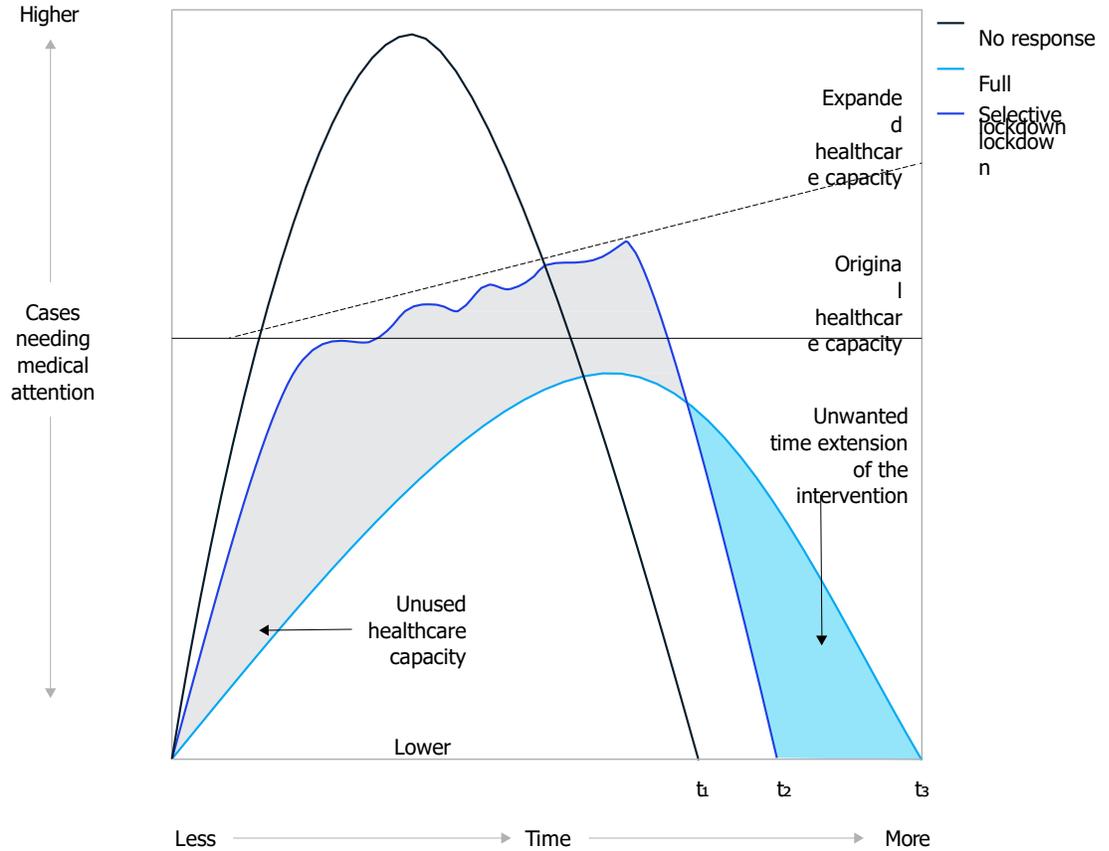
The idea of flattening the curve has become well established, but the two macro strategies do it in different ways. A prolonged, full lockdown could be very effective in flattening the curve, but it will also result in significant unused healthcare capacity (blue area of Exhibit 1) when compared with a selective lockdown, and will result in unnecessary costs to livelihoods due to excessive restrictions on economic activity.

Additionally, a prolonged full lockdown will increase the total time economic activity is restricted, which also represents an unnecessary cost in livelihoods (grey area in Exhibit 1). In our modeling for several countries, our directional estimates suggest that the economic cost of full lockdowns is at least twice as high as that of selective strategies. Furthermore, if a full lockdown strategy persists for several months, it could cost up to 20 percent of a country's GDP. In

Exhibit 1

**The costs of selective- and full-lockdown strategies vary considerably.**

Illustrative gap between different lockdown strategies



many cases, that would undo decades of economic and social development.

A selective lockdown, on the other hand, allows countries to reduce the duration of government mandated restrictions on economic activity by incorporating and optimizing the elements we describe in this article.

Even though a selective lockdown seems to be a smarter approach, many countries still remain in full lockdown, because too much remains unknown about how to transition successfully, and because each country's context varies widely from others.

These uncertainties can be overcome. We argue that if countries strategically define who can be on the streets at any given time and have adequate tools to control the virus spread and manage the infected population, they will be better prepared to address the pandemic.

**Who should be on the streets? The uncomfortable middle ground**

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a lockdown states that infected people and their chain of contagion must quarantine during the time of infection. It also advises that the more vulnerable populations (the elderly, people with preexisting health conditions), as well as others with a high risk of transmitting the virus (such as children), should stay at home until the rate of contagion is low enough to safely interact with other people. However, mandating physical isolation for everyone else is more difficult, as these people represent most of

the economically active population. Isolating them has a severe effect on the general livelihood of the area. If we leave aside those people who can work remotely, the question becomes what to do with the rest: in-person workers in nonessential sectors, who typically represent the majority of the population, particularly in emerging and often highly informal economies. Activities such as manufacturing, construction, commerce, professional services, and other key sectors can represent up to 80 percent of GDP in a given country. When should they go back to work? How many jobs will be lost if no action is taken early on?

In our recent article, we introduced the local response matrix, a framework to help leaders transition out of a full lockdown. Many countries have opted for full lockdown because of the difficulties encountered in preventing the spread of the virus in their major cities. A full lockdown buys time, to build health-system capacity and avoid country-wide collapse. The local response

framework champions the idea that a country's regions will differ in their rate of contagion and their healthcare capacity. A local response matrix, populated with projections based on real-time data to keep up with the virus's exponential growth, allows leaders to unwind a full lockdown, region by region, and minimize the negative externalities of stringent blanket measures. Exhibit 2 shows an illustrative view of a given country's regions.

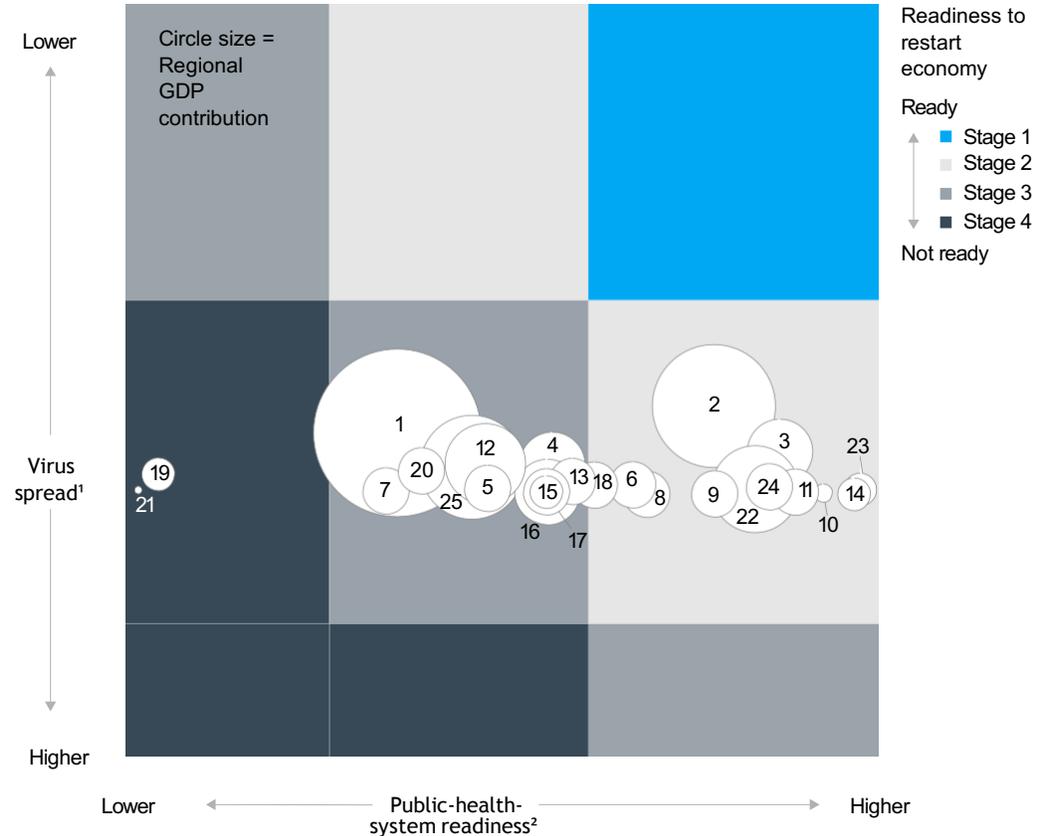
Within each region, countries can prioritize sectors to reactivate gradually, according to their inherent risk of transmitting the virus and their economic relevance. The lower the risk and higher the economic relevance, the faster the sector could be reactivated.

After sectors have been earmarked for reactivation, they can be grouped together, and leaders can prepare them for a gradual economic restart—a process that will be rolled out in stages. Leaders will, at the same time, determine the health and behavioral protocols required for these groups of sectors to operate. Countries following this approach will have a structured and orderly ebb and flow of people on the streets. However, as more people return to their daily activities, the risk of virus spread will naturally increase—and, if ignored, might generate a new peak of contagion, requiring a return to full lockdown measures. This is where TTC and health and behavioral protocols come in: they are the tools that allow selective lockdowns to be sustainable over time.

Exhibit 2

**A local-response matrix can suggest the regions that are closest to restarting.**

Illustrative local-response matrix



<sup>1</sup> Virus spread is measured as the maximum of the rate of growth of number of confirmed cases and the rate of growth of hospitalized cases for the past 5 days.

<sup>2</sup> Health-system readiness is measured as the ratio between number of ICU beds occupied by COVID-19-related patients, as of the date of analysis, and the number of ICU beds available in the region. It is assumed that available ICU beds account for 20% of total installed ICU beds.

**Why are testing capacities and protocols so important?**

In addition to physical distancing, two variables could help to reduce the rate of contagion: TTC and strict, enforceable health and behavioral protocols that govern personal interactions in public spaces.

Testing allows for targeted containment of contagion chains. However, its deployment presents challenges, especially in capacity management.

So far, many countries do not have adequate capacity to deploy an effective testing strategy. This, combined with the race for supplies and equipment in international markets, leads to a conundrum for leaders: how to allocate scarce testing capacity.

Countries pursuing the selective lockdown could implement a testing strategy targeting specific segments of the population and expand it as more capacity becomes available. Segments could be defined based on the following logic:

- *Focused testing.* Countries should use current testing capacity mainly for symptomatic patients and essential workers (especially medical personnel). This alone will exhaust available tests for countries in early stages of capacity building.
- *Selective testing for tracking.* As more tests become available, countries should quickly identify and test people in contagion chains, thus preventing further infection among the population. This will eventually become the backbone of tracing and enforcement efforts during the pandemic, including the use of smart isolation through apps and georeferencing.
- *Random testing at large scale.* Finally, as full capacity is reached, countries can randomly select inhabitants for testing with the aim of developing an early-warning system. This kind of testing can prevent high-volume outbreaks in the future.

In the second stage, governments would need to trace and contain the contagion chain. Best practices include a combination of manual tracing with the use of georeferenced applications that increase the scope of effective tracking.

Governments might need to communicate to the population the collective and individual benefits of cooperating and participating in these efforts to increase its effectiveness.

Finally, enforcing the isolation of people required to stay at home is essential to limiting the contagion. Compliance poses difficult questions for governments. What should governments do about people who cannot comply? And what should they do about those individuals who are willing to comply but cannot quarantine at home, either because they don't have one or they share it with several people (including vulnerable populations like children or grandparents)? Providing a government-sponsored hotel or apartment for isolation could be an effective solution, especially for people who are known to be infected and must be closely monitored to break the chain of contagion.

It goes without saying that all human interactions pose a risk of virus transmission. In this sense, general protocols like universal mask-wearing while outside from home and establishing minimum distances in public places like parks and grocery stores could become a requirement for all societies.

However, given that some activities involve higher levels of risk, authorities should develop customized health and behavioral protocols for some of them. If these are developed and implemented effectively, they could substantially decrease the rate of transmission (Exhibit 3).

In order to complement the strategy of decreasing the virus spread, governments might want to ensure every infected person gets the medical attention that they require, therefore a region should also have a clear understanding of how to strengthen its healthcare system.

How much ICU capacity should we build? Available capacity of ICU beds is an important variable for policy makers. Each new unit added to the health system translates to potential lives saved. Further, the more ICU capacity a country adds, the less time it will need to be in lockdown, reducing the cost in livelihoods.

Yet, expanded ICU capacity, as important as it might seem, only addresses the problem partially given that it is not a cost-effective solution.

Deploying new ICU beds across a region requires significant investments in both time and money, not to mention a heavy call on other resources such as medical staff, medical supplies, and infrastructure, all of which are already limited.

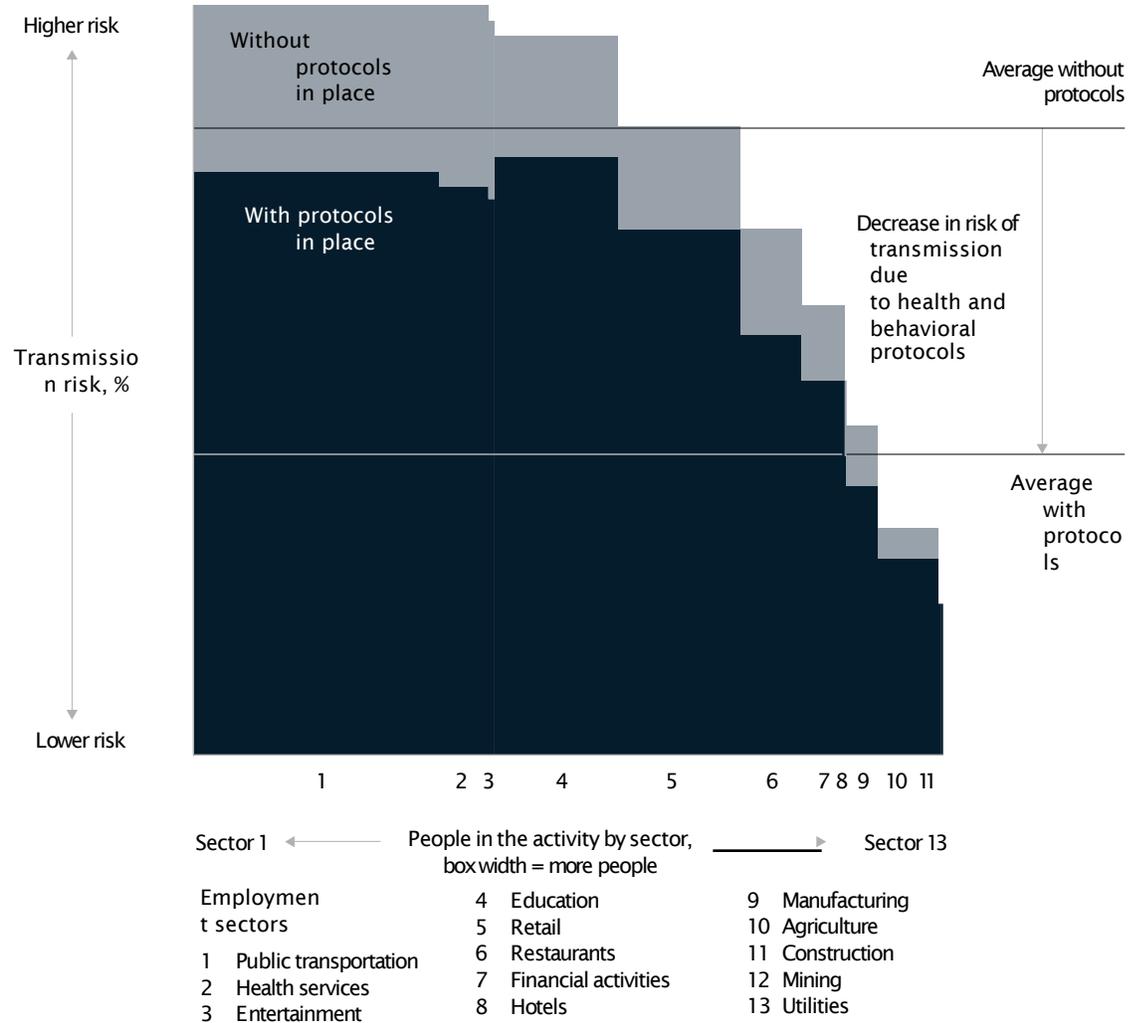
Policy makers must understand this dynamic to know the limits of their ICU-expansion policy and complement it with

other measures. Rather than betting on significant increases in ICU capacity, the safest approach will be to clearly understand the maximum degree of virus spread that a region's expanded ICU capacity can handle—and ensure that the increase in virus spread associated with economic restart stays within it.

Exhibit 3

**New behaviors can reduce the risk of transmission in every activity.**

Illustrative health and behavioral protocols that can reduce the rate of transmission



**The economic cost of lockdown strategies**

With all variables in place, governments can deploy their resources to save both lives and livelihoods.

Lives matter more. We define lives saved as those that might be lost if healthcare systems were

to become saturated and some patients could

not access the critical care they need. In other words, the objective should be to guarantee that all lives that can be saved are actually saved with appropriate medical attention—and that is achieved by avoiding the collapse of the healthcare system. No economic-reopening strategy should tolerate even a single life lost in this way.

Defining livelihoods is a more complex exercise, as it goes beyond the economic impact of chosen measures. It could involve all the negative externalities, both physical and mental on people's lives, for instance. But for practical purposes, we define the impact on livelihoods as the associated economic cost to the region of implementing a lockdown strategy. This could be estimated as the weekly GDP lost in a given region. That being said, as our colleagues recently noted, this economic impact may not be constant over time: prolonged and intense lockdowns might even break the social contract and send consumer expectations plummeting, leading to a deep economic recession. Exhibit 4 shows how these definitions allow us to estimate the impact of each type of measure in each region. By definition, the impact on lives should be zero for any level of selective lockdown if properly implemented. If a full lockdown (stage 4, in our scheme) is needed as a response to either exhaustion of healthcare capacity and/or uncontrolled virus spread, then the number of patients without ICU access could be very high. In stages 1, 2, and 3, the spread of the virus is under control and healthcare capacity is guaranteed. Regions should use all available tools to move quickly to less stringent stages (3, 2, 1) to lessen the impact on livelihoods.

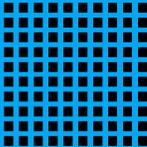
By calculating the *weekly* cost of any strategy, governments can more readily understand the

direct effect of strategic changes to reduce the impact on livelihoods, while preserving lives.

Using different scenarios for healthcare capacity and virus spread, leaders can plot the days that a region will spend in each stage. Governments could also plot the effectiveness of their actions (such as expanding ICU capacity, or greater investment in measures to control virus spread) to minimize the time spent in critical stages, particularly in stage 4. For instance, in the region analyzed in Exhibit 5, the government's strategy centered on actions to improve both variables. But the analysis showed that implementing measures such as TTC to control the virus spread would be more effective in the short term than expanding ICU capacity. Arguably, this should be the case for most countries with reasonably good healthcare capacity—which, in turn, highlights the importance of having good TTC systems and correctly enforcing health protocols. With this information, governments can allocate resources and provide guidance to leaders on what to do in each region. This might mean creating ICU capacity in regions with a higher at-risk population, enhancing TTC capacity at scale, enforcing health and behavioral protocols, or strengthening physical isolation when needed (as a last resort to control virus spread); most certainly, it would be some combination of all the above.

**By definition, the impact on lives should be zero for any level of selective lockdown if properly implemented.**

**Lockdown measures have different costs on lives and livelihoods.**

Illustrative lockdown measures and costs <sup>1</sup>	More ready	Readiness to restart the economy			Less ready
		Stage 1	Stage 2	Stage 3	
People on the streets, % of total population	 100%	 45%	 30%	 15%	Full lockdown
Weekly estimated GDP loss given the measures adopted <sup>2</sup>	<b>0.07%</b>	<b>0.35%</b>	<b>0.70%</b>	<b>1.40%</b>	
Patients without ICU access	None	None	None	Many	
Population Vulnerable	Restrictions to transit in specified zones, times, and days of the week	Stay at home or at designated location	Stay at home or at designated location	Stay at home or at designated location	
Others	No restrictions, but remote work is recommended	No restrictions but remote work is highly recommended	Restrictions to transit in specified zones, times, and days of the week	Required to stay home in mandatory isolation	
Economic sectors	Essential	All sectors are allowed to operate, and key supply chains operate on a market basis	Government begins to prepare the management of key supply chains in partnership with the private sector	Government partially manages essential supply chains in partnership with the private sector	Government ensures the management of essential supply chains in partnership with the private sector
	Others	All sectors are allowed to operate	Most sectors are allowed to operate but they need to comply with specific physical distancing and health protocols	Only a few sectors are allowed to operate and they need to comply with specific physical distancing and health protocols	Only those that can operate on an online basis are allowed
Transport	No restrictions to intraregional mobility; interregional mobility is allowed but only between regions in Stage 1	Some restrictions to intraregional mobility, no interregional mobility allowed	High restrictions to intraregional mobility, no interregional mobility allowed	Intraregional mobility is limited to exceptional cases, no interregional mobility allowed	
Social gatherings	Events of up to 200 people are allowed in public and private spaces	Events of up to 50 people are allowed in public and private spaces	Events of up to 10 people are allowed in public and private spaces	Events are limited to household members and caregivers if required in	

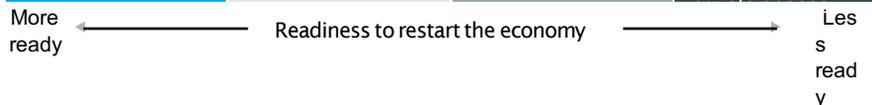
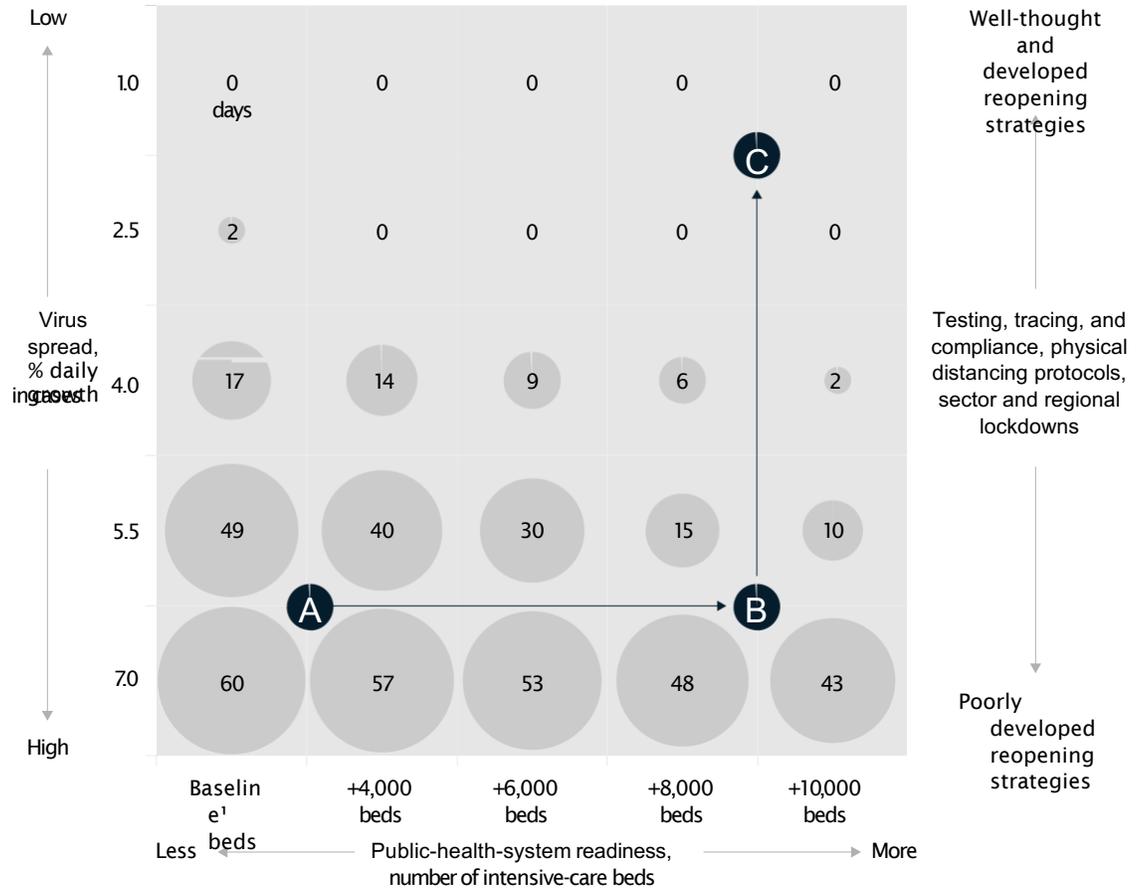


Exhibit 5

**Strategies can have different impact on days required for full lockdown.**

Illustrative impact of different strategies on time spent in full lockdown, days



**A** Without any response, this region is expected to spend up to 60 days in full lockdown given its high virus spread and low public-health-system readiness

**B** To reduce the expected days in full lockdown, the region could expand its public-health-system readiness by installing intensive-care beds to meet the expected demand at the peak of contagion

**C** To minimize days in lockdown, the region should implement strategies to contain the virus spread such as testing, tracing and compliance, protocols, and targeted lockdowns

<sup>1</sup>Baseline represents the number of intensive-care beds available in a region without any capacity-expansion policy.

Effective decision making requires timely and accurate information

A basic requirement for responsible and timely decisions is accurate and real-time data. Policy makers need multiple sources—such as data

from full-scale testing (once capacity is built) and systems for tracing contacts—to estimate the spread of the virus in different regions. And they need to rapidly collect, aggregate, visualize, report, and understand these data.

On that point, policy makers will benefit from a world-class information-management system, likely as part of their "nerve centers." Such systems can feed a management dashboard, which can help to build projections for the next seven to 45 days (Exhibit 6). Delays in collecting and processing information could have massive negative consequences on virus control and could very quickly make the rate of transmission

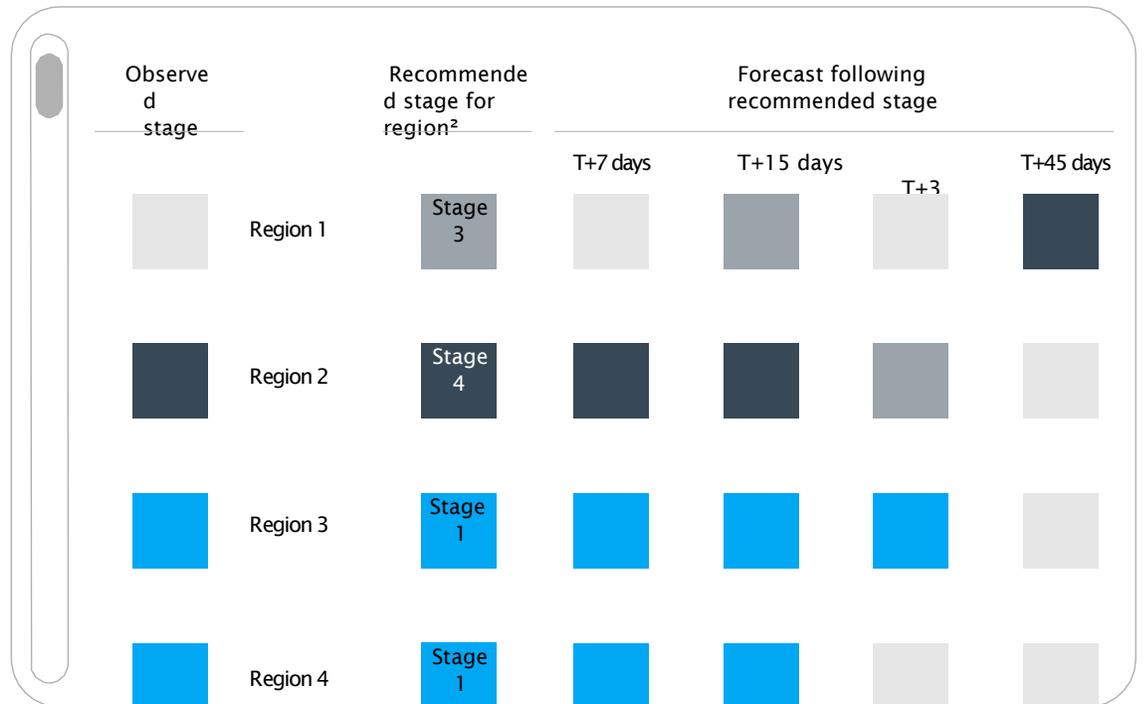
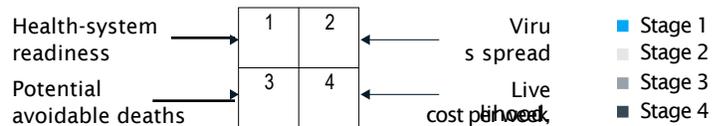
unmanageable. The ability of governments to quickly understand the effectiveness of their actions, learn what's working, and improve methodologies and processes will be essential.

The selective lockdown strategy aims to jumpstart economic recovery while saving every life. To

Exhibit 6

**Governments will need a world-class information-management system that allows them to collect, centralize, report, and visualize data daily.**

Illustrative dashboard that can support effective decision-making at the regional level, by key indicators<sup>1</sup>



<sup>1</sup> Health-system readiness is measured as the ratio between number of ICU beds occupied by COVID-19-related patients, as of the date of analysis, and the number of ICU beds available in the region. It is assumed that available ICU beds account for 20% of total installed ICU beds.

<sup>2</sup> "Recommended stage for region" can be a decision rule based on a desired state in the next 15 days. As an example, "Recommended stage for region" is the stage that secures a Stage 2 or Stage 3 scenario in T+15 days.

achieve this, resources and capabilities must be effectively implemented, and decisions must be based on robust information.

By proactively addressing the crisis and informing people of the expected future stages, governments can manage expectations and slowly restore consumer confidence, the key for economic recovery.

Leaders will need confidence, resilience, and grit to steer through this phase, as well as the next normal. Having a structured and well-thought-out approach to restarting the economy while continuing to protect lives will be critical. After all, this is only the beginning of our new reality.