

COVID-19 in Latin America and the Caribbean

A High Toll on Lives and Livelihoods¹

Latin America and the Caribbean (LAC) has been hard hit by the COVID-19 crisis both in terms of lives and of livelihoods. An early and prolonged lockdown in some countries helped prevent the rapid explosion of deaths that Western Europe and the eastern US experienced. However, the lockdowns only slowed the epidemic but did not stop it, and over time their effectiveness declined. Combined with initial vulnerabilities associated with high informality, low access to health services, low government effectiveness, high poverty and densely populated urban areas, the outcome has been a high toll on lives and livelihoods in many countries.

Introduction

The LAC region was hit later than some other hot spots by the COVID-19 pandemic but, after struggling to contain it, has become among the hardest hit regions in the world in terms of health outcomes. With only 8.2 percent of the world population (640 million people), the region had 36 percent of all deaths (369 thousand) by early October; and the economy suffered the largest recession on record. The first case in Brazil was confirmed on February 25, and by late March the country had had only 5 thousand cases. Nonetheless, since then the region saw a long and steady climb in cases and deaths with peaks appear to have been reached only recently, in late August. The region currently has a higher rate of new deaths per million people than the United States and the European Union (Figure 1 and Annex 1). South America and Mexico have been hit harder than Central America and the Caribbean (Figure 2). The Caribbean has been the region with the lowest death toll, and some islands have completely eradicated the epidemic (although some that reopened to travel subsequently saw rebounds). In terms of individual countries, the death toll per million has been highest in Peru, followed by Brazil, Bolivia, Chile, Ecuador, and Mexico (Figure 3 and Annex Table 1.1). Official statistics are likely to understate cases and deaths, as testing is low in many countries, and “excess deaths” in a number of countries significantly exceed official COVID-19 deaths (Box 1).

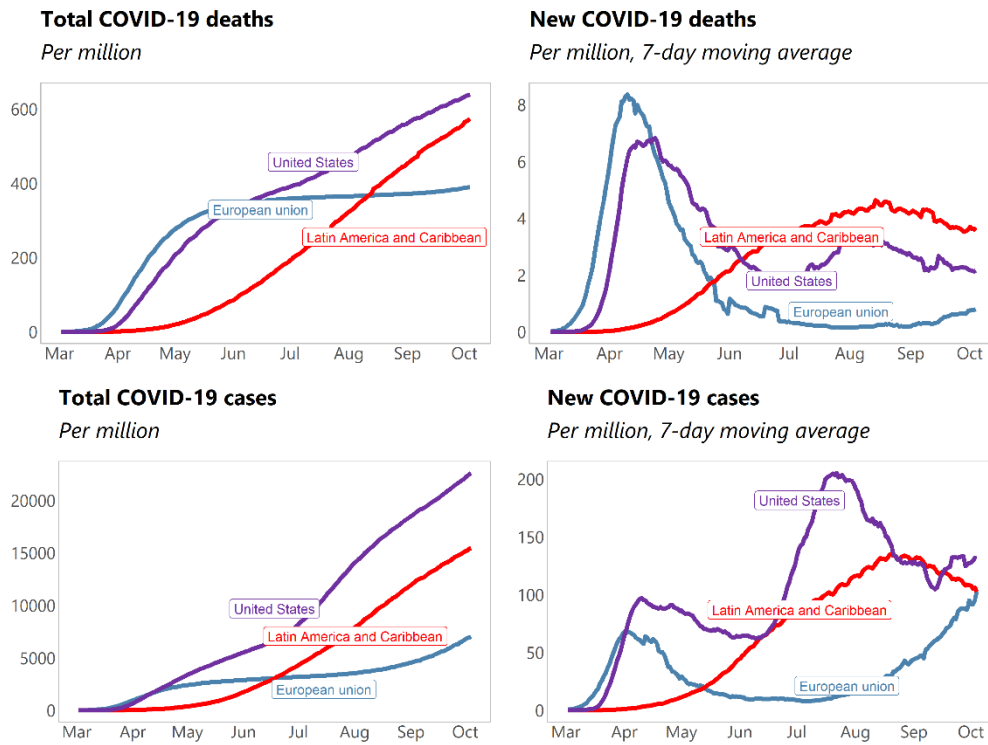
The COVID-19 crisis has also had a significant economic impact in the LAC region. The LA5 countries experienced larger quarterly GDP contractions than in any recession on record. LAC economic activity is expected to contract by 8.1 percent in the current year, which will surpass both the global growth contraction of 4.4 percent and that in emerging countries (of 3.3 percent).

Against this background, the chapter explores the COVID-19 pandemic with an eye on understanding LAC’s simultaneously poor health and economic outcomes. In particular, we focus on the following questions: First, how has the pandemic evolved in LAC, compared to other regions? Second, what factors have contributed to the partial ineffectiveness of lockdowns in LAC? Third, what factors may have explained the significant economic contractions observed in LAC during the first semester of 2020?

The rest of the chapter is organized as follows. In section 2 we discuss a taxonomy to classify the different patterns of the pandemic observed in the world—which we identify as forest fires, slow burns, and put-outs. We use that taxonomy to understand the factors that may explain the distinctive pandemic pattern observed in LAC countries. Section 3 discusses the impact of the pandemic on the economy and the relative contributions of lockdown and voluntary behavioral changes as well as the developments since the reopenings started. Section 4 concludes.

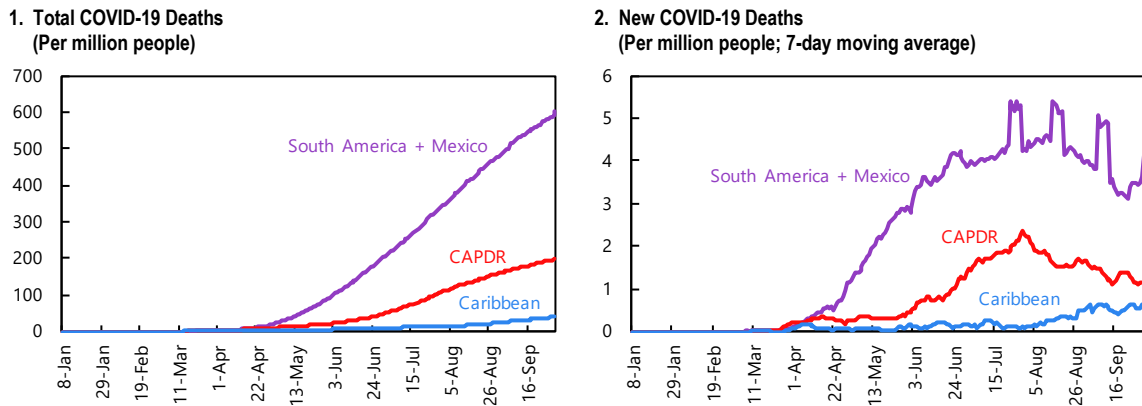
¹This chapter was prepared by a WHD team headed by Bas Bakker and Carlos Goncalves, and including Pedro Rodriguez, Mauricio Vargas, Dmitry Vasilyev, Carlo Pizzinelli, Vibha Nanda, and Alain Brousseau.

Figure 1. COVID-19 Global Overview



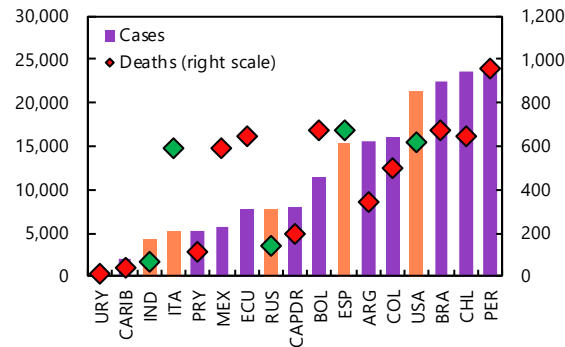
Sources: Johns Hopkins University; and IMF staff calculations.
 Note: Regional aggregates are weighted averages. Latest data are as of October 1, 2020.

Figure 2. COVID-19 in Latin America and the Caribbean



Sources: Johns Hopkins University; and IMF staff calculations.
 Note: Regional aggregates are weighted averages. Latest data are as of October 1, 2020. CAPDR = Central America, Panama, and the Dominican Republic.

Figure 3. Cases and Deaths in Selected Countries
(Per million)

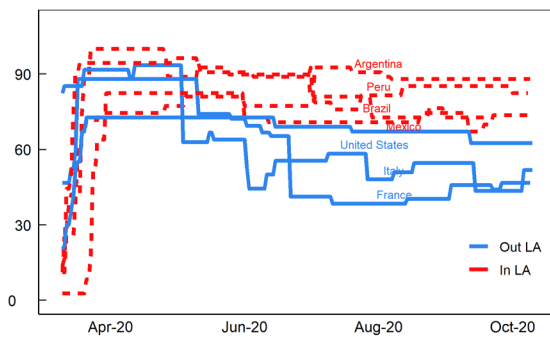


Sources: Johns Hopkins University; and IMF staff calculations.
Note: Data labels use International Organization for Standardization (ISO) country codes. CAPDR = Central America, Panama, and the Dominican Republic; CARIB = Caribbean.

Early and Stringent Lockdowns, but High Death Toll

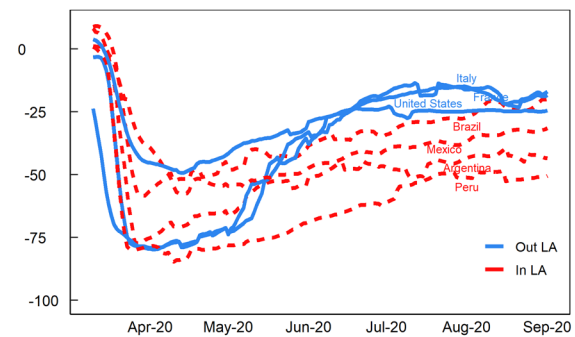
Many countries in Latin America have had stringent and protracted lockdowns, which have been associated with an initial sharp decline in mobility (Figures 4 and 5). They typically started around the same time as the lockdowns in Europe but have been more stringent (according to the Oxford stringency indicators) and longer-lived. At the peak, mobility in Peru was 80 percent below normal.² Other countries in the region also saw very large declines.

Figure 4. Lockdowns in Latin America and Elsewhere
(Oxford Stringency Index, maximum = 100)



Source: Google COVID-19 hub.
<https://storage.googleapis.com/COVID-19-open-data/v2/main.csv>

Figure 5. The Decline in Mobility in Latin America and Elsewhere
(Percent)



Source: Google COVID-19 hub.
Note: Mobility measures are based on aggregated, anonymized sets of data from mobile device users who have turned on the location history setting. Since the behavior regarding turning on location history may be different across countries, mobility measures may not be comparable.

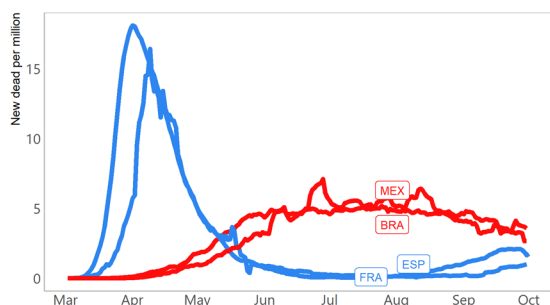
The early and stringent lockdowns in Latin America were successful in preventing an explosion of *daily* cases and deaths, which would have been disastrous for LAC given the weak capacity of the health systems.

²Mobility measures are based on aggregated, anonymized sets of data from mobile device users who have turned on the location history setting. Since the behavior regarding turning on location history may be different across countries, mobility measures may not be strictly comparable across countries.

But they have been less successful in containing the *total* number of deaths. Peru has the highest death toll per capita in the world, and Brazil, Mexico, and Chile have a death toll similar to Spain and the US. The pattern of daily deaths was different from that observed in several western European countries. France and Spain saw an explosion in daily deaths in March and April, followed by a rapid decline (a “forest fire”). Latin America instead saw a “slow-burn.” In Brazil and Mexico, daily deaths increased steadily between March and June, and then plateaued for several months (Figures 6 and 7).

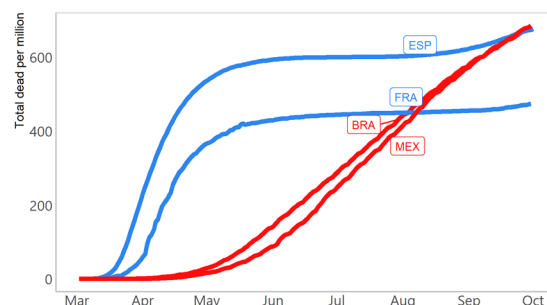
What explains this difference? Why has much of Latin America seen a “slow-burn,” while Western Europe saw a “forest-fire”? And why did some countries see a “put-out” (as occurred, for example, in many Caribbean islands)?

Figure 6. Daily COVID-19 Deaths: Brazil and Mexico Compared with France and Spain
(Per million, 7 day moving average)



Sources: Google COVID-19 hub; and IMF staff calculations.

Figure 7. Total COVID-19 Deaths: Brazil and Mexico Compared with France and Spain
(Per million)



Sources: Google COVID-19 hub; and IMF staff calculations.

Europe Had Forest-Fires; Latin America Had Slow Burns—Why Has Latin America Been Different?

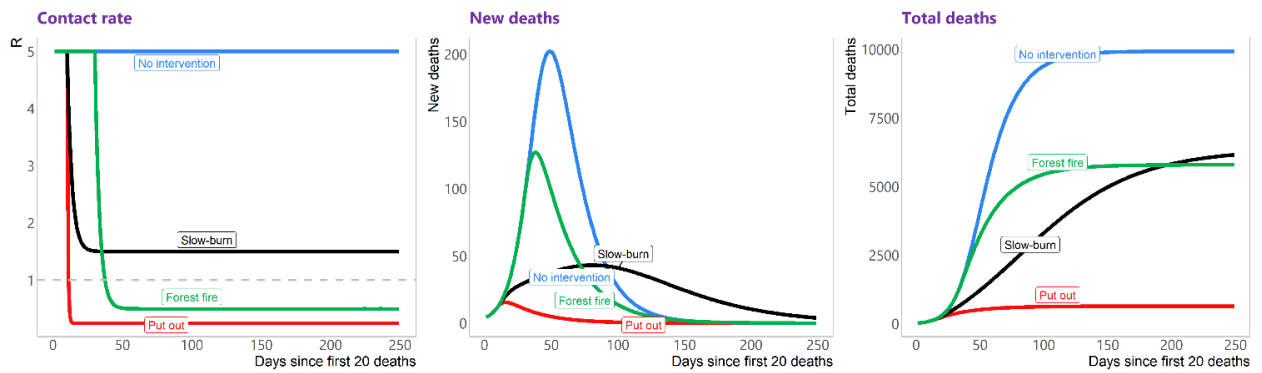
The pattern of the COVID-19 pandemic in LAC appears to have been shaped by interaction of government policies, individual actions, and structural factors. The effectiveness of the government policies depends to a large degree on their interaction with individual actions—such as mobility patterns—and with structural factors (such as working and living conditions, among others).

The timing and partial effectiveness of the lockdowns seems to be behind the slow burn pattern

We can illustrate the patterns and the dependence of the pandemic dynamic on the timing and effectiveness of the lockdowns using an SEIR model (Figure 8.) In the absence of any action or behavioral change, an explosion of deaths followed by rapid decline will ensue. An early reduction of the contact rate below a threshold will eradicate the disease (“put-out”).³ An early reduction of the contact rate but to a level above a threshold results in a slow burn. Late intervention resembles a forest fire. According to the SEIR model, the later the intervention occurs, the more severe the forest fire is, and the higher the number of peak deaths. The evolution of new and total deaths looks remarkably similar to those in Figures 6–7.

³The contact rate is one of the three components of the basic reproduction number (R_0). The other two are the duration of contagiousness after a person becomes infected, and the likelihood of infection per contact between a susceptible person and an infectious person. The effective reproduction number R is similar to R_0 but does not assume complete susceptibility of the population and, therefore, can be estimated with populations having immune members. When R -effective is greater than one, the epidemic is expanding while if it is lower than one the epidemic is dying out. See P.L. Delamater, E.J. Street, T.F. Leslie, Y. Yang and K.H. Jacobsen, Complexity of the Basic Reproduction Number (R_0), *Emerging Infectious Diseases* (2019), 25(1):1-4.

Figure 8. Modeling Lockdown Types Using the SEIR Model



Source: IMF staff calculations.

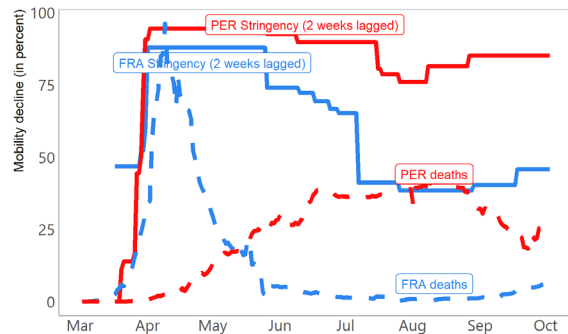
Early lockdowns helped prevent forest fires...

Latin America locked down early. In Peru, the daily number of deaths two weeks after the lockdown—a proxy of the spread of the disease at the time of the lockdown—was still very low.⁴ In a number of European countries, by contrast, the daily death toll two weeks after the lockdown was much higher (Figure 9). As a result, Latin America did not experience forest fires, which likely would have overwhelmed a poorly prepared health system, leading to even higher death numbers.

... but did not stop the epidemic altogether

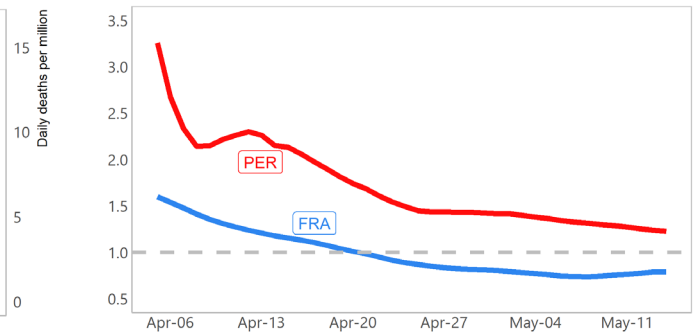
However, lockdowns in Latin America did not manage to bring the number of people infected by each patient (the “R-effective”) to below 1. In Peru, for example, R-effective fell, but remained above 1 (Figure 10). But why did LAC’s lockdowns not manage to be fully effective? The key factors relate to the behavioral and structural aspects that we explore below.

Figure 9. Stringency and Daily COVID-19 Deaths: Peru and France



Sources: Google COVID-19 hub; and IMF staff calculations.

Figure 10. R-effective: Peru and France (R < 1: pandemic on retreat, R > 1: pandemic expanding)



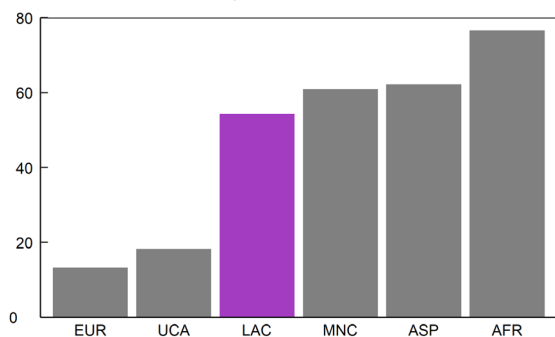
Sources: Google COVID-19 hub; and IMF staff calculations.

⁴We measure the timeliness of a lockdown by looking at how widespread the disease was at the time of the lockdown. If the number of daily new cases per million people is already high, the lockdown is late, if the number of daily new cases is still low, it is early. As the number of new cases is often several underestimated because of lack of testing, we look instead at the number of deaths two weeks after lockdown. Given the lags, this is a good proxy for the number of new cases at the time of lockdown. And because of the lag, the number of deaths two weeks after lockdown is not yet affected by the lockdown itself.

Structural factors and government policies may have hampered the effectiveness of lockdowns

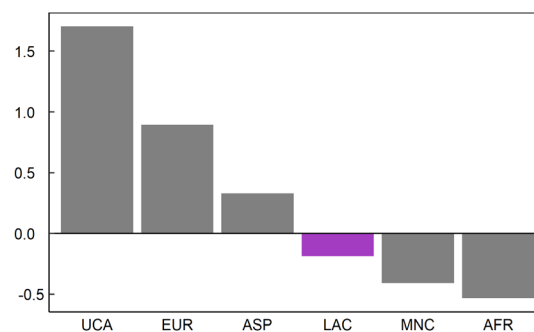
The nature of work (informal) and living conditions (densely populated poor communities) as well as weak institutional capacity in Latin America may have hampered the effectiveness of lockdowns. As discussed in Box 2, flattening the curve may be a challenge for countries with high degrees of economic informality and low government effectiveness—two features that are symptomatic of LAC region (Figures 11 and 12). Other empirical work has identified that higher population density and weak health systems may also be a factor hampering the effectiveness of containment policies (Deb, Furceri, Ostry, and Tawk, 2020).

Figure 11. Informality
(Percent, average by region)



Source: International Labour Organization; and IMF staff calculations.
Note: AFR = Africa; ASP = Asia and Pacific; EUR = Europe; LAC = Latin America and the Caribbean; MNC = Middle East, North Africa, Central Asia; UCA = United States and Canada.

Figure 12. Government Effectiveness
(Higher is better, average by region)



Source: Worldbank, Worldwide Governance Indicators database; and IMF staff calculations.
Note: AFR = Africa; ASP = Asia and Pacific; EUR = Europe; LAC = Latin America and the Caribbean; MNC = Middle East, North Africa, Central Asia; UCA = United States and Canada.

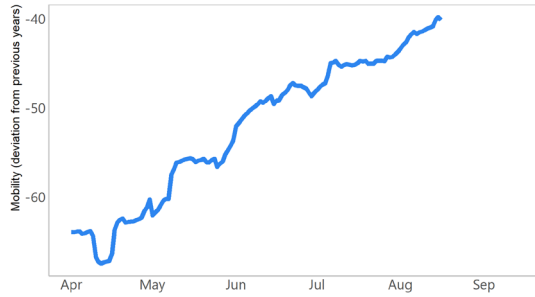
Anecdotal evidence from Peru provides some indication of how these factors may have operated in practice and also points towards possible additional factors. In particular, crowded living conditions and agglomerations in food markets and banks may have contributed to the spread of the virus and diminished the effectiveness of the lockdowns. Limited financial inclusion and informal working conditions may have also contributed, as a nontrivial share of households needed to go to the banks in person to receive the government’s cash transfers and also to do food purchases in cash in food markets.

Lockdown fatigue and the necessity to work have likely contributed to the only partial effectiveness of lockdowns

A further reason for the only partial effectiveness of lockdowns may have been “lockdown fatigue” and the necessity of low-income households to engage in economic activity, i.e. overcoming the fear of infections. The result was an increase in mobility in Latin America from April onwards (Figure 13). This increase in mobility may have further contributed to the spreading of the disease. As Figure 14 illustrates, the rebound in mobility in Latin America occurred when the daily death toll was still rising. By contrast, the rebound in Europe occurred when daily deaths were in clear retreat.⁵

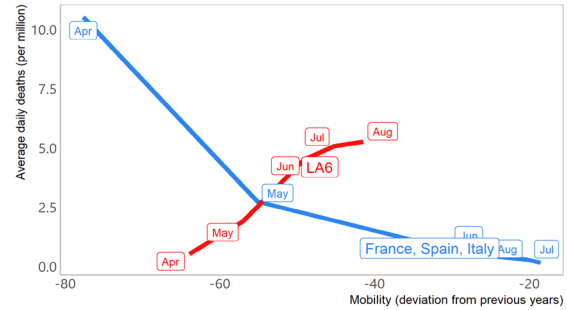
⁵More recently, Europe has seen a surge in new cases, although new deaths have remained more subdued. The pickup in Europe may be associated with increased mobility.

Figure 13. Mobility in LA6
(Deviation from previous years, percent)



Sources: Google COVID-19 hub; and IMF staff calculations.

Figure 14. Mobility and Daily Death Toll
(Unweighted country averages)

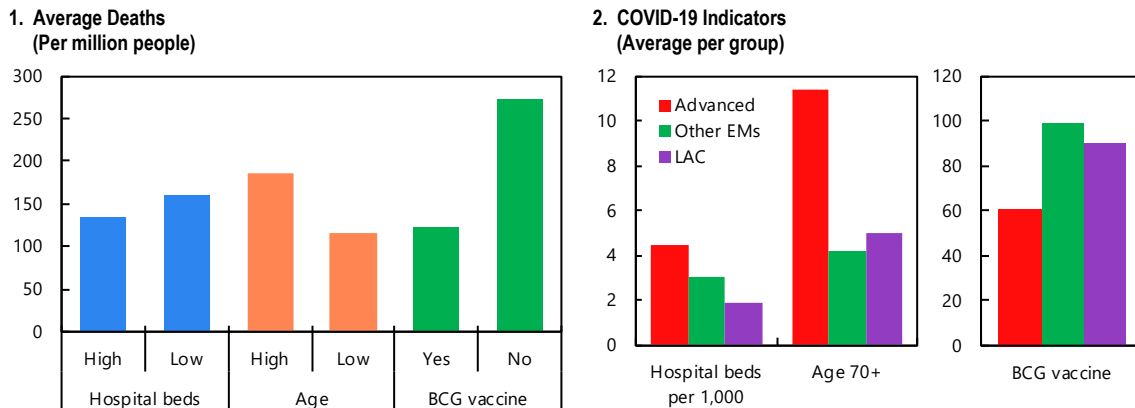


Sources: Google COVID-19 hub; and IMF staff calculations.

Factors that affected the death toll

In addition to the factors that hamper the effectiveness of lockdowns and facilitate the spread of the disease, there are other factors that affect the death toll from COVID-19 more directly. Box 3 explores the role of “fundamentals” in COVID-19-related deaths. Population size,⁶ low hospital capacity, aging population, and the lack of routine BCG vaccination are on average associated with higher COVID-19 deaths.^{7,8} (Figure 15) Although the region as a whole has a relatively young population and routine BCG vaccination, its health system was poorly prepared to the task. What the evidence from Box 3 suggests is that even controlling for these “deep-determinants”, too many deaths happened in many countries in the region. In particular, the regressions residuals are excessively large for Peru, Brazil, Chile, Bolivia, and Mexico.

Figure 15. Factors that Influenced COVID-19 Deaths in LA Countries



Sources: Johns Hopkins University; Our World in Data database; and IMF staff calculations.
Note: Hospital beds: high/low = above/below world median; Age: high/low = above/below 6.5 percent of elderly; BCG = Bacille Calmette-Guérin; EMs = emerging market economies; LAC = Latin America and the Caribbean. Age 70 + (share in total population); BCG vaccine (share in group total).

⁶In cross-country regressions, population size is significant while population density and the share of people living in urban areas are not. We suspect population size may be a better proxy for the degree of actual connectedness amongst citizens since a geographically large country can feature both large voids and some densely packed areas. Population size may also capture the degree of logistical challenges involved in ensuring compliance with the lockdowns by a larger number of people. Finally, the reach of central governments might be more limited in larger polities.

⁷We interpret the variable “Hospital beds per 1,000 people” as a reasonable proxy for the quality of the whole health system.

⁸Other authors have reached similar conclusions. For example, Banik, Naq, Chowdury and Chatterjee (2020) conclude that “our study reveals that factors such as public health system, population age structure, poverty level and BCG vaccination are powerful contributory factors in determining fatality rates.”

Using data on individual municipalities in Latin America, we also find that the total death toll is higher in more densely populated municipalities, where the contact rate is likely to be higher, as well as in locations further away from the equator likely reflecting that climate plays a role in the virus' ability to reproduce itself.

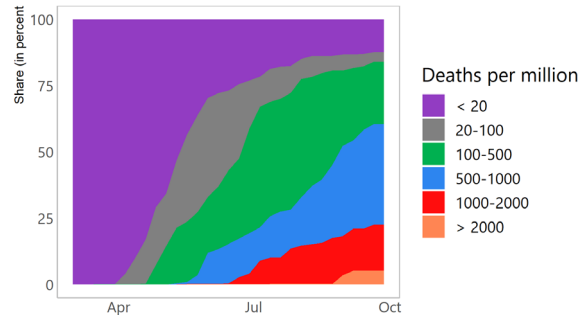
The geographical spread of COVID-19 in LAC

The increase in COVID-19 deaths over time does not just reflect an increase in deaths in already affected areas, but also a geographical spread to areas that had previously not been infected.

Subnational Level

Figure 16 shows the spread at the *subnational* level (typically states) of all countries in Latin America. In late April about three quarters of Latin America regions had less than 20 deaths per million inhabitants; by July it was less than a quarter. There were sharp geographical differences; some regions have now more than 2 thousand deaths per million while others have less than 20.

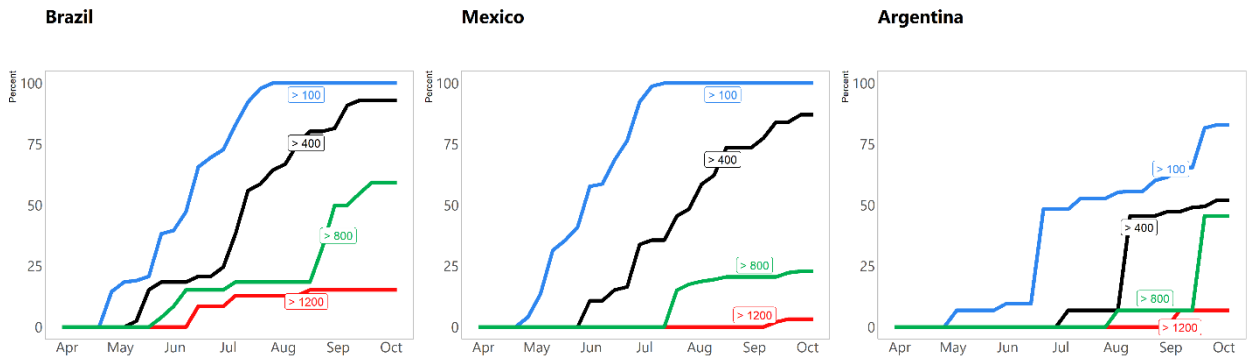
Figure 16. Latin America: Spread of COVID-19 at the Subnational Level
(Distribution of total COVID-19 deaths per million, population weighted)



Source: IMF staff calculations.
Note: Areas show the share of subnational regions (population weighted) that fall within each bracket.

Turning to regions in individual countries, in mid-May, only 20 percent of Brazil had a death toll of more than 100 per million; by mid-July, this had increased to 100 percent (Figure 17)

Figure 17. Percentage of Country where COVID-19 Death Toll Exceeds 100, 400, 800, and 1,200 per Million
(Percent; population weighted)



Sources: Google COVID-19 hub; and IMF staff calculations.
Note: Lines show the population share of the states within a country where total deaths per million exceeded the threshold.

Local Level

Figure 18 shows the spread at the *municipality* level in Mexico. In April, almost all of Mexico had less than 20 deaths per million. By July, it was less than 10 percent. There are large geographical differences within Mexico as well: a tenth of municipalities has between one and two thousand deaths per million, while 7 percent has less than 100 deaths per million.

The Impact of Lockdowns and Behavioral Changes on Economic Activity and Mobility

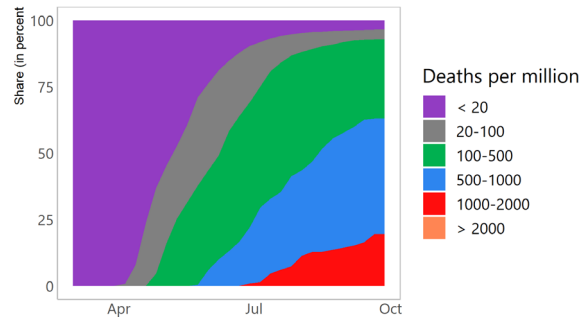
The significant economic impact of the COVID-19 pandemic in LAC is a result of the government policies (lockdowns) as well as the behavioral response, though the impact of both factors has diminished over time.

The COVID-19 pandemic has had a major impact on the economies in LAC and elsewhere: year-on-year growth in 2020Q2 was well below previous quarters (Figure 19) and the variation in growth rates among countries has increased notably. In this section, we formally analyze the factors behind the sharp slowdown in growth, trying to disentangle the role of policies from “purely” behavioral responses. We address the issue using two different approaches.

First, we look at a cross-section of countries globally and, controlling for a number of factors—including deaths per million (aimed at capturing behavioral reactions to the pandemics) and stringency (de jure impediments to mobility)—investigate the determinants of GDP growth during the second quarter of 2020. This initial approach using quarterly data does not explore the time dimension and hence cannot answer questions like: does the grip of the de jure measures on the economy change over time? Or, what happens to the economy when people start to get isolation fatigue or overcome the fear of the pandemic due to the necessity to work? Additionally, questions such as “to what extent has the behavior of people been influenced by what happens in other countries?” are hard to tackle with a restricted time dimension. We will come back to these questions in the following section on mobility.⁹

To complement the first, the second approach resorts to a panel dataset comprised of 17 Latin American countries and monthly economic activity indices in lieu of GDP. This allows us to better understand the

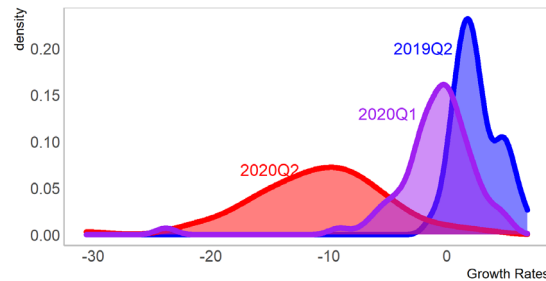
Figure 18. Mexico: Spread of COVID-19 at the Municipal Level
(Distribution of total COVID-19 deaths per Million, population-weighted)



Areas show the share of municipalities (population weighted) that fall within each bracket.

Source: IMF staff calculations.
Note: Areas show the share of municipalities (population weighted) that fall within each bracket).

Figure 19. Distribution of GDP Growth
(Density of year-on-year GDP growth in WEO Database)



Sources: IMF, World Economic Outlook database; and IMF staff calculations.

⁹For example, it could well be that behavior was also influenced by what was happening in Spain or the United States. However, as in the cross-section we try to explain differences in growth across countries, a variable like the number of deaths in Spain would be the same for each country, and hence could not help explaining cross-country differences.

dynamics of the relationship of interest and how elasticities to the stringency of lockdowns and behavioral factors vary over time (February to June).

In this second exercise, a fixed-effects estimator is applied, which means that all time-invariant factors are absorbed by the country dummies (not reported). The advantage of this approach is twofold: (i) given that the fixed effects act as a surrogate for the full set of country-specific variables, omitted variables bias is much less of a concern and (ii) perceptions, beliefs about the future, fatigue, and other common trends that might be hard to quantify¹⁰ but are nevertheless relevant, can be captured by the time dimension.

Cross-Country Regressions

A simple way to embed “growth fundamentals” in our cross-section analysis is to add average past growth rates (2016Q1-2019Q4) to the set of control variables. This is arguably a good proxy for a myriad of factors ranging from countries’ human capital to the quality of their institutional frameworks and ease of doing business, all of which might help mitigate the adverse impact of the pandemics. Controlling for the set of variables in the table,¹¹ we are able to explain more than half of the variation in 2020Q2 year over year growth rates, even with a relatively short sample of countries.¹² Most variables and interactions are highly significant and have the expected signs.¹³

Estimated elasticities are high: a tightening of the Oxford stringency index from 50 to 100 would in itself be expected to cause a drop of 6 percentage points in GDP growth.¹⁴ An increase in the daily death toll from 2 to 5 per million reduces year-on-growth by almost 2.5 percentage points according to column (b).¹⁵

Table 1. Growth and Pandemics: Cross Section
(Dependent variable is year-on-year growth of 2020Q2 GDP)

| | Year-on-year GDP growth in 2020Q2 | | | | |
|---------------------------|-----------------------------------|-----------|-----------|-----------|-----------|
| | (a) | (b) | (c) | (d) | (e) |
| Past Growth | 1.599*** | 1.395*** | 0.959** | 0.611 | 0.583 |
| | 0.383 | 0.38 | 0.406 | 0.384 | 0.398 |
| Stringency | -0.179*** | -0.157*** | -0.145*** | -0.125*** | -0.120** |
| | -0.048 | -0.047 | -0.046 | -0.043 | -0.046 |
| GDP per capita | 0.00001 | 0.00003 | -0.0001 | -0.0001* | -0.0001* |
| | 0.00004 | 0.00004 | -0.00005 | -0.00004 | -0.00004 |
| New Deaths | | -0.829** | -3.686*** | -4.788*** | -4.615*** |
| | | -0.364 | -1.228 | -1.163 | -1.291 |
| New Deaths*GDP per capita | | | 0.0001** | 0.0001*** | 0.0001*** |
| | | | 0.00003 | 0.00003 | 0.00003 |
| Stringency*Tourism | | | | -0.003** | -0.003** |
| | | | | -0.001 | -0.001 |
| LAC | | | | | -0.775 |
| | | | | | -2.415 |
| Constant | -3.7 | -4.192 | -1.001 | 1.354 | 1.155 |
| | -4.05 | -3.91 | -3.968 | 3.695 | 3.779 |
| Observations | 59 | 59 | 59 | 58 | 58 |
| R ² | 0.353 | 0.41 | 0.469 | 0.566 | 0.567 |
| Adjusted R ² | 0.318 | 0.366 | 0.419 | 0.515 | 0.506 |

Source: IMF staff calculations.

Note: Includes all countries for which quarterly GDP data are available in the *World Economic Outlook* database. * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$.

¹⁰As discussed before, it is likely that behavior may have been influenced by other factors than the death toll. Since this would in principle affect all countries, the time interactions should be able to isolate these type of effects

¹¹We experimented with other variables such as trade/GDP, the share of self-employed and population structure, but none proved to be statistically significant.

¹²Quarterly GDP data are available for a small group of economies only.

¹³An important difference between our analysis and that in WEO chapter 2 is that our explained variable is actual GDP growth in the second quarter, whereas in WEO the object of analysis is forecast errors for the first quarter. Reassuringly, both empirical analyses arrive at very similar results.

¹⁴The Oxford Stringency Index is calculated from ordinal scores on 7 indicators: school closings, workplace closings, canceling of public events, closing of public transport, public info campaigns, restrictions on internal movement and international travel controls. Each indicator is rescaled to a maximum of 100; and the average of all indicators then yields the stringency index. A required closing of schools, targeted closings of workplaces, required cancelling of all public events, and a ban on international travel from high-risk regions would raise the index by 52 points.

¹⁵Of course, disentangling the behavioral effect (proxied by quarterly deaths/million and its interactions) from the policy effect is not easy, as policy is not exogenous to how the epidemics evolves. But the fact that both variables are significant at 1 percent suggests that they are not capturing the same thing.

Interestingly, as columns (c)-(e) show, the impact of deaths on activity varies according to the country’s GDP per capita. In poorer countries, the impact of an increase in deaths on activity is more pronounced than in richer economies (the interaction coefficient is positive, so the richer a country the less the negative impact of deaths, *ceteris paribus*). This result is robust to using a different indicator of development such as human development index.

Finally, the dummy for LA6 countries in this sample is not significant. This suggests that the large drop in GDP in the region is not an idiosyncratic, region-related phenomenon.¹⁶

LAC Panel Regressions

In this section we report the results from the second exercise that now incorporates a time dimension. The specification in the fixed-effects regression is similar to the previous one, but the inclusion of country dummies and time interactions give some reassurance our coefficients are not inflated by omitted variable biases. The model now explains around 80 percent of the variation in monthly real activity growth rates in the region and the results suggest that both policy (stringency) and behavioral (deaths) factors had significant impacts on economic growth.

Importantly, though, the death-toll and the stringency index’s effect on growth appear to diminish with time, particularly in the case of the former. Using the point estimates in column (4), we see that by June this proxy for the behavioral effect becomes indistinguishable from zero: $-2.8*(T=6) - 16.9 = -0.1$.

The impact of stringency diminishes more slowly: its impacts in April ($T=4$), May($T=5$) and June($T=6$) are, respectively: -0.25 , -0.22 , -0.20 . These are again high elasticities. Moving from a stringency index of 50 to a very restrictive 100 would cause a growth decline of approximately 10 percent.

Table 2. Growth and Pandemics: Panel
(Dependent variable is year-on-year growth rate of monthly activity in first six months of 2020)

| | Year-on-year growth rate of monthly activity | | | |
|-------------------------|--|------------|------------|------------|
| | (1) | (2) | (3) | (4) |
| Stringency | -0.264*** | -0.231*** | -0.348*** | -0.336*** |
| | -0.026 | -0.032 | -0.057 | -0.065 |
| New Deaths | | -18.881*** | -16.586*** | -16.884*** |
| | | -4.5 | -4.349 | -4.46 |
| New Deaths*T | | 3.291*** | 2.791*** | 2.835*** |
| | | 0.752 | 0.739 | 0.755 |
| Stringency*T | | | 0.023** | 0.023** |
| | | | 0.009 | 0.01 |
| Stringency*Tourism | | | | -0.001 |
| | | | | -0.002 |
| Observations | 61 | 57 | 57 | 57 |
| R ² | 0.701 | 0.779 | 0.809 | 0.809 |
| Adjusted R ² | 0.592 | 0.674 | 0.710 | 0.704 |

Source: IMF staff calculations.

Note: Includes data for 17 countries in the region. * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$.

¹⁶In econometrics jargon, the average residual for the region (again, represented by the LA6 economies) is very close to zero.

What Explains the Sharp Drop in Mobility in Latin America—Policies or Behavior?

One drawback of using economic activity indicators is that they are available at a low frequency only, and with significant delays. For many Latin American countries, they are only available at a *monthly* frequency, and only up until June. Moreover, *sub-national* data are available only with much longer delays.

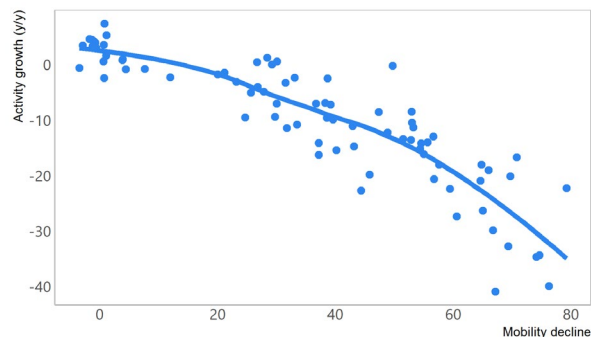
An alternative for using economic activity data is using *mobility* data. These are available at a *daily* frequency, with only a few weeks delay; they exist for subnational levels; and they are a good proxy for economic activity. Figure 20 shows that in the first half of 2020, there was a close link between the decline in mobility and the decline in economic activity.

It is difficult to disentangle whether the sharp decline in mobility in Latin America was the result of the lockdown or of behavior change. Did mobility drop because people were *ordered* to stay at home, or because they *opted* to stay home, as they were afraid to get infected? Our findings suggest that *both* factors mattered, a finding that is consistent with global cross-country findings (October 2020 WEO, chapter 2). We also show that the impact of both variables seems to have weakened over time, suggesting that populations experienced some degree of “fatigue” towards policies and pandemic developments or because the economic necessity forced the people to overcome their fear of infections.

In countries with stricter lockdowns, mobility declined more (Figure 21). However, that does not necessarily mean that the sharp mobility declines were the result of the lockdowns. It could well be that the same fear that led countries to impose strict lockdowns, also resulted in a sharp decline in mobility that would have occurred even in the absence of lockdowns.

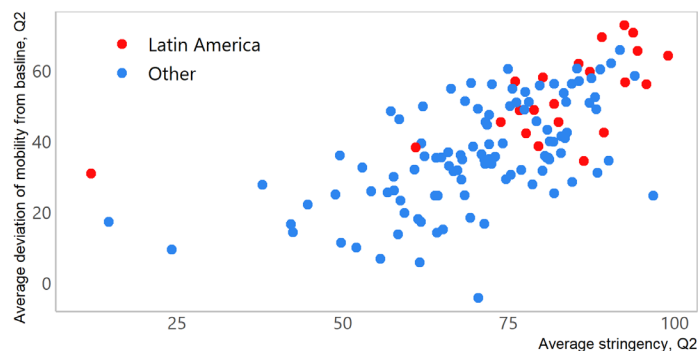
Figure 20. Latin American Countries: Mobility and Growth in First Half of 2020

(Data points are values for individual countries in individual months)



Source: Google COVID-19 hub; Haver Analytics; and IMF staff calculations.

Figure 21. Stringency and Mobility Decline, 2020Q2



Sources: Google COVID-19 hub; and IMF staff calculations.

Note: Chart shows average deviation of mobility in the second quarter from baseline days. Baseline days represent a normal value for that day of the week, given as median value over the five-week period from January 3rd to February 6th, 2020.

Regression analysis of *cross-country* differences cannot settle this issue either. The death toll was very low when Latin America locked down, but fear must have been high—otherwise countries would not have locked down.¹⁷ Moreover, it is likely that the link between the daily death toll and mobility changed over time. In many Latin American countries, mobility picked up over time, even as daily deaths *increased* and stringency did not change much, suggesting that fear diminished, or people had to overcome their fear due to the necessity to work to provide for their living.

Regression analysis of mobility differences *within* countries can shed some light on the importance of the behavior factor. To mitigate endogeneity concerns, we perform the analysis on the data from three countries that introduced *nation-wide* lockdowns early on in the pandemic when the new cases and deaths were still low, namely, Peru and Argentina. We compare weekly mobility of regions *within* these countries over time and assume that the stringency index for each region was the same as the nation-wide stringency index.¹⁸ We are particularly interested in two questions. First, has mobility been lower in regions with higher daily deaths? Second, why did mobility pick up even though daily deaths tolls continued rising? Has the impact of stringency on mobility declined over time, or has the strength of the behavioral component diminished? We test this through the interaction of a time index with the stringency index and the interaction of a time index with the daily death toll. In all regressions, we use region fixed-effects, so all possible omitted variables that are not time-varying are accounted for and do not have a bearing on the estimated coefficients.

Table 3. Weekly Mobility in Regions in Countries

| | Peru | | | | Argentina | | | |
|-------------------------|-------------------|-------------------|-------------------|-------------------|------------------|--------------------|-------------------|-------------------|
| | Model 1 | Model 2 | Model 3 | Model 4 | Model 1 | Model 2 | Model 3 | Model 4 |
| New deaths (lag) | -0.74*** -0.16 | -3.06*** -0.39 | -1.01*** -0.14 | -0.53*** -0.13 | -1.18** -0.66 | -24.58*** -3.05 | -5.78*** -1.69 | -2.97*** -0.95 |
| New deaths (lag) * T | | 0.19*** 0.03 | 0.09*** 0.01 | 0.02* 0.01 | | 1.25*** 0.16 | 0.37*** 0.09 | 0.05 0.05 |
| Stringency | | | -0.84*** -0.01 | -0.88*** -0.01 | | | -0.70*** -0.02 | -0.86*** -0.01 |
| Stringency * T | | | | 0.01*** 0.00 | | | | 0.02*** 0.00 |
| Observations | 645 | 646 | 647 | 648 | 608 | 609 | 610 | 611 |
| R ² adjusted | 0.00 | 0.05 | 0.89 | 0.90 | 0.01 | 0.10 | 0.74 | 0.91 |
| R ² | 0.03 | 0.09 | 0.90 | 0.91 | 0.05 | 0.10 | 0.75 | 0.92 |

Source: IMF staff calculations.

Note: * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$.

The results suggest that the behavioral component mattered, but its impact declined over time.

Regions with higher daily deaths per million had lower mobility (column 1).¹⁹ The coefficient on the interaction of a time index with daily deaths (column 2) is positive, which implies that the impact of new deaths on mobility declined over time.²⁰ This conclusion does not change when we add stringency to the equation—a variable that in itself is highly significant (column 3). The impact of stringency also declined

¹⁷We tried adding other variables to capture fear, such as the daily death toll in the US and Spain, and combinations of them, but they had little explanatory power.

¹⁸For Latin American countries, the stringency index is only available at the national level. The October 2020 WEO followed a similar approach.

¹⁹New deaths (lag) = previous week’s average daily deaths per million.

²⁰For Peru, the impact of new deaths on mobility is $(-3.06 + 0.19 * T) * \text{New deaths (lag)}$. Over time, the impact became less pronounced.

over time. The coefficient of the interaction of a time index with stringency is positive and highly significant (column 4).²¹

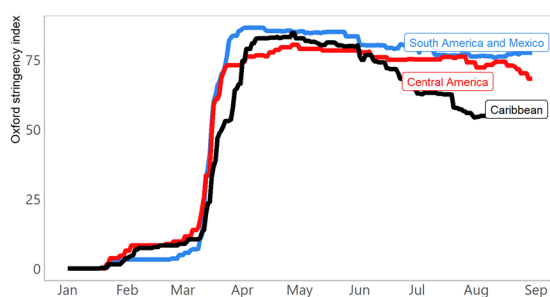
In summary, both the lockdowns and the behavioral component had an impact on mobility, but their importance seem to have diminished over time. The diminishing effects of the lockdowns and of the behavioral component on mobility may both reflect the necessity of the low income households to engage in economic activity. The result was that that for any given level of stringency or daily deaths, people were less likely to remain at home. Hence, over time, lockdowns became less effective in containing mobility.

Reopenings

LAC countries have been gradually easing their lockdown restrictions, but they remain elevated in most of the region (Figure 22). Stringency indicators in South America, Mexico, and Central America, have remained elevated given the difficulties in containing the pandemic. Strikingly, for the last five months, stay-at-home requirements in the LA6 have been as stringent as they were in France in April and May. The only region where stringency indicators have come down sharply is the Caribbean, where in many islands the epidemic has been subdued.

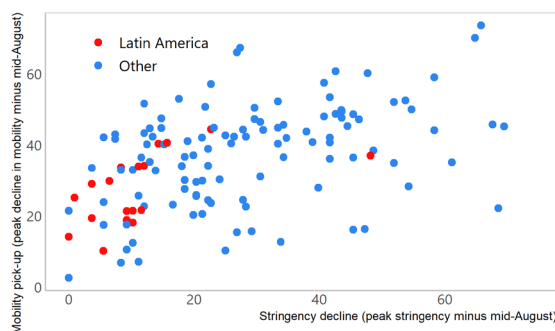
The easing of lockdown restrictions and economic reopening have been associated with a pick-up in mobility and economic activity (Figure 23). For example, in Brazil, in mid-August, the stringency index was 17 points lower than at the peak, the deviation of mobility from the baseline in mid-August was 35 percentage points less than at the peak. This pattern is similar across other LAC countries and worldwide. In line with the mobility-activity link identified in the previous section, economic activity has recovered along with the pick-up in mobility. For instance, for a sample of 17 LAC countries, average mobility recovered from -60 percent (year-over-year) in April to -44 percent (year-over-year) in June, while the average economic contraction eased from -20 percent to -10 percent (year-over-year).

Figure 22. Stringency in Latin American Regions



Sources: Google COVID-19 hub; and IMF staff calculations.
Note: Unweighted average by region.

Figure 23. The Decline in Stringency and Increase in Mobility

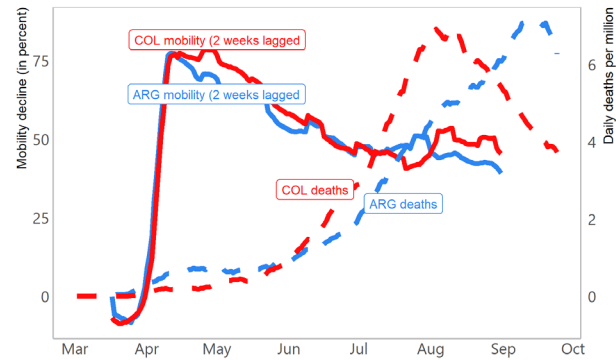


Sources: Google COVID-19 hub; and IMF staff calculations.

²¹We also investigated whether the “fear” component would perhaps be better captured by other variables such as daily deaths in Spain or in the United States—two countries that are closely followed in Latin America. However, while they were often statistically significant, they did not add much explanatory power.

However, the flipside of the reopening process has been a pick-up in new COVID-19 deaths, which highlights the still difficult trade-offs faced by policymakers. The rebound in mobility may help explain why some countries that had initially been less affected, subsequently saw a surge. This was, for example, the case in Argentina and Colombia (Figure 24), as well as in Paraguay, Costa Rica, and Suriname. While this problem has not been exclusive to LAC—e.g., countries such as the U.S., and Indonesia (which recently reimposed lockdown restrictions) have also seen resurgences after a period of easing. This would also be in line with the findings of the October 2020 *Regional Economic Outlook: Europe*, which suggests that reopening measures in Europe led to a recovery in mobility but at the cost of some uptick in infections. The LAC region may have been particularly vulnerable to it given that its containment strategy relied primarily on stringency and was weak in terms of testing (Figure 25). These limitations in terms of testing and tracing also make the region vulnerable to second waves of the pandemic.

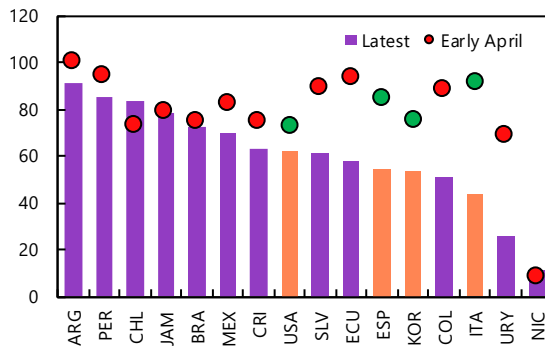
Figure 24. Argentina and Colombia: Mobility and Daily Deaths



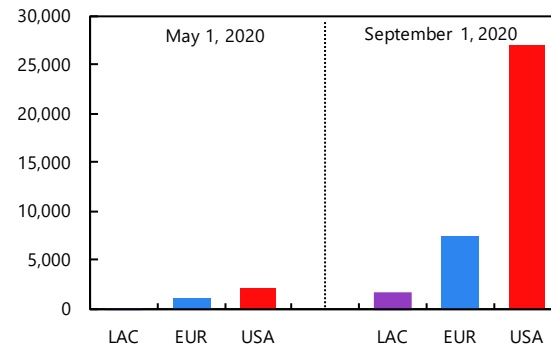
Sources: Google Mobility; Johns Hopkins University; and IMF staff calculations.

Figure 25. Containment Measures and Testing Capacity

1. Containment Stringency (Index)



2. Tests over 100,000 People (May and September 2020)



Source: Hale, Thomas, Sam Webster, Anna Petherick, Toby Phillips, and Beatriz Kira (2020). Oxford COVID-19 Government Response Tracker, Blavatnik School of Government; Our World in Data database; and IMF staff calculations.

Conclusion

The early and stringent lockdowns in LAC were initially successful in that they helped reduce mobility sharply and prevent the rapid explosion of infections at the onset, which would have overwhelmed weak medical capacity in the region.

However, the lockdowns were not fully effective in containing the spread of the pandemic and the total death toll. The lockdowns only slowed the pandemic but did not stop it and over time the effectiveness of lockdowns declined as mobility started to pick up when new cases and deaths were still on the rise. This resulted in a “slow burn” death pattern, which in some cases led to a total death toll that by now exceeds that in countries that experienced a rapid explosion of daily deaths (e.g., Spain, Italy)

Structural factors, not fully effective government policies as well as “lockdown fatigue”, likely due to the necessity of low-income households to engage in economic activity have likely contributed to the

ineffectiveness (or partial effectiveness) of the lockdowns and to a very high death toll in the region. A high degree of informality, high poverty and living conditions in some densely populated urban areas as well as weak capacity of the health systems, low government effectiveness more generally and the inability to ramp up testing and tracing capacity, in particular, while in some cases the lack of fiscal resources have likely contributed to the continued stream of new infections and a resulting very high death toll in LAC.

The significant economic impact of the COVID-19 pandemic in LAC is a result of the government policies (lockdowns) as well as the behavioral response though the impact of both factors has diminished over time. It is difficult to say from empirical analysis, which factor contributed more.

LAC remains vulnerable to a resurgence in infections if reopening happens too quickly. The structural factors remain intact and government policy weaknesses persist, including the fact that some LAC policymakers have not utilized the time of the lockdowns efficiently to prepare for a safe reopening. For example, testing capacity remains weak in several countries, suggesting that the strategies of testing and tracing needed to contain the spread of the virus are still weaker than in other regions.

Box 1. Lack of COVID-19 Testing, Underestimation of Cases and Excess Deaths

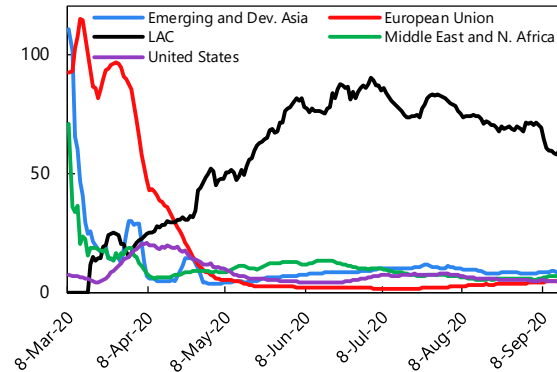
Lack of testing

The number of COVID-19 cases and of COVID-19 deaths may be significantly underestimated in Latin American countries, which may have implications for the assessment of the impact of the pandemic. This underestimation is likely related to the limited testing capacity, which in LAC has been well below other regions. The lack of testing is evident in the positive cases to tests ratio. When there is limited testing, only sick people get tested, and the ratio of positive cases to tests is high. In the U.S., in Asian, MENA, and European countries, the ratio of the number of positive cases to the number of tests performed is below 20 percent. In LAC, on the other hand, this ratio hovers between 50 and 100 percent.

Low testing seems to have been especially an issue in Mexico, Peru, Ecuador, Argentina, and Bolivia, while only Chile appears to have achieved an appropriate testing capacity. (Box Figure 1.1)

Box Figure 1.1. Testing Capacity

(New infection cases as share of new tests, 7-day m.a.)



Sources: Our World in Data database; and IMF staff calculations.

Underestimation of deaths

The lack of testing capacity may also lead to an underestimation in the number of deaths. In Peru, the number of “excess” deaths—i.e., the number of deaths in the current year in excess of the average of the previous few years—has been almost 3 times the number of the official deaths (Box Figure 1.2). The problem is not uniform: in Chile, excess deaths are close to the official figure.

Available data from the Economist suggest that in Mexico, Peru and Ecuador, there has been a significant undercounting of COVID-19 deaths. In Mexico, excess deaths as of end July were almost 3 times as high as the official number of COVID-19 deaths. For Brazil and Chile, by contrast, the number of excess deaths is close to the official COVID-19 death count.

The combination of underestimated cases and deaths points towards an even more significant health impact of the pandemic in Latin America than the official figures would suggest.

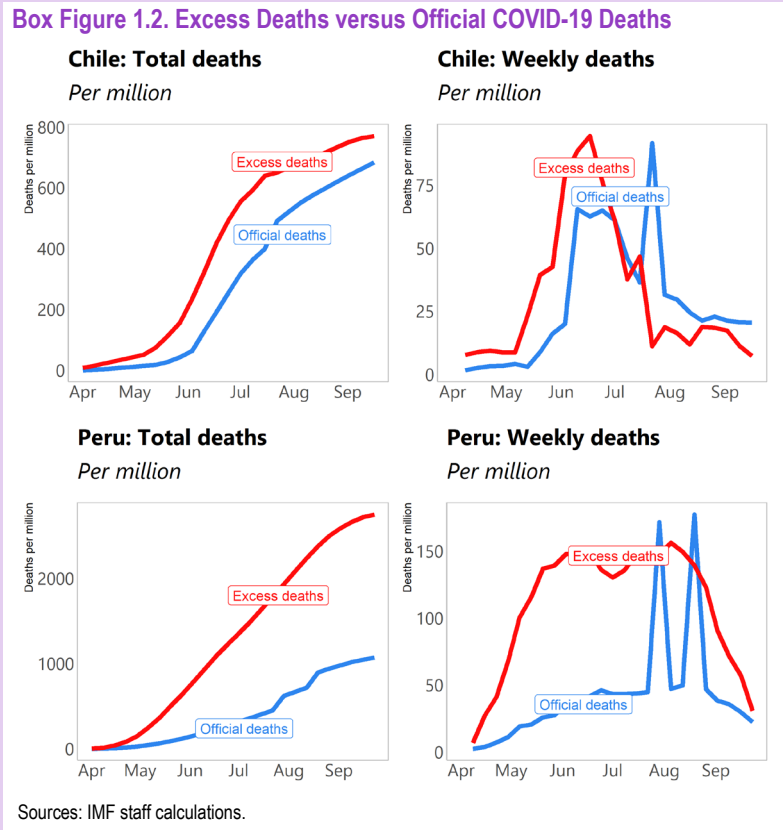
Box Table 1.1. COVID-19 Excess Deaths
(Per million)

| Country | Dates | Excess deaths | Covid Deaths | Difference |
|---------|-------------------|---------------|--------------|------------|
| Brazil | Mar 21st-Aug 14th | 500 | 514 | -14 |
| Mexico | Mar 28th-Jul 31st | 1,000 | 369 | 631 |
| Peru | Mar 31st-Aug 30th | 2,110 | 882 | 1,228 |
| Chile | Apr 7th-Sep 14th | 620 | 678 | -58 |
| Ecuador | Feb 29th-Aug 30th | 1,830 | 381 | 1,449 |

Sources: Economist, COVID-19 Excess Deaths Tracker; and IMF staff calculations.

This box was prepared by Bas Bakker and Mauricio Vargas.

Box 1 (continued)



Box 2. On the Effectiveness of Containment Measures in Controlling the COVID-19 Pandemic: The Role of Informality and Government Effectiveness

The local projection method is used to study the effectiveness of containment measures in slowing the spread of the disease, as in David and Pienknagura (forthcoming). The typical state-dependent specification takes the following form:

$$c_{i,t+h} - c_{i,t-1} = (1 - F(z_{i,t-1})) [\alpha_{high,i}^h + \beta_{high}^h p_{it} + \delta_{high} X_{i,t}] + F(z_{i,t-1}) [\alpha_{low,i}^h + \beta_{low}^h p_{it} + \delta_{low} X_{i,t}] + \varepsilon_{i,t+h}$$

with $F(z_{i,t-1})$ being a smooth function of the state variable (high/low informality or high/low government effectiveness). c denotes the natural logarithm of total cases; p_{it} is an index capturing the stringency of containment policies at time t country i ; and h denotes the time horizons considered. X_{it} denotes a set of control variables, including lagged value of the stringency index, the evolution of cases (the growth of cases in the days preceding the implementation of containment policies), weather variables, and country-specific time trends (linear, squared and cubic) which capture the evolution of the virus. The specification also includes country (α_i^h) fixed effects to capture time-invariant country characteristics.

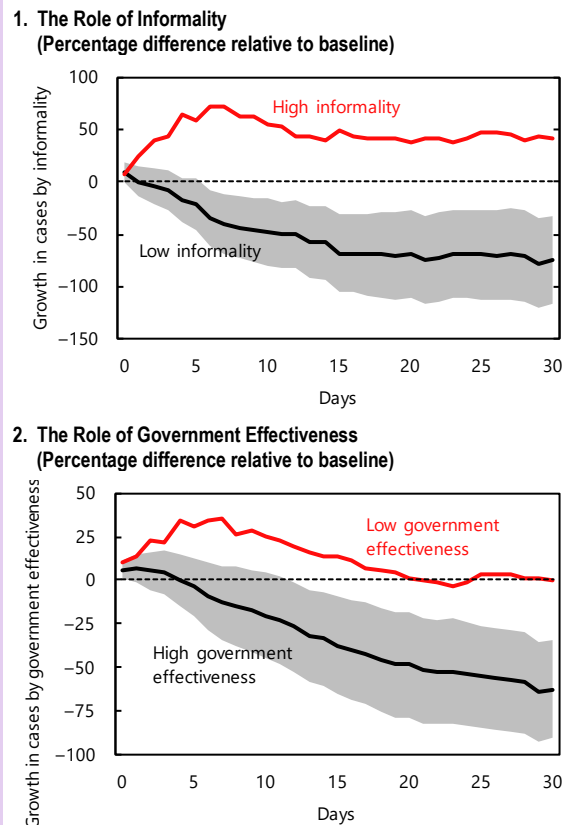
Estimation results show starkly the difficulty of containing the virus in high-informality settings (Box Figure 2.1, panel 1). Countries with low informality see a gradual decline in total cases to about 70 percent of the baseline after 30 days of increasing containment. By contrast, countries where informality prevails experience no reduction in total cases relative to baseline levels.

Low government effectiveness is also associated with lower effectiveness of containment policies. The slowdown in the spread of the virus after implementing stricter containment policies is more pronounced in countries with higher government effectiveness compared to those with low effectiveness (cases remain 65 percent below baseline levels 30 days after an increase in the stringency of containment measures)—in the latter case the impact is not statistically different than zero (Box Figure 2.1, panel 2).

These results highlight the challenges of “flattening the curve” of COVID-19 cases in countries with high informality and low government effectiveness.

This box was prepared by Antonio David and Samuel Pienknagura (WHDRS), and is based on David, A. and S. Pienknagura (forthcoming).

Box Figure 2.1. The Effect of Containment Policies on Total Cases



Source: IMF staff calculations.
Note: Shaded area refers to the 90 percent confidence interval. Dashed line refers to the baseline.

Box 3. Differences in COVID-19 Related Deaths: The Role of “Fundamentals”

The death toll of COVID-19 depends on the dynamics of the pandemic, which is driven by the timeliness and effectiveness of lockdowns, as well as structural factors. This box explores structural determinants of total deaths per capita in a cross-section of countries and of municipalities.

Across countries

In the cross-country regressions, we tested a multitude of variables proxying for agglomeration, health capacity, state capacity and linkages to the world. The best specification, which is depicted in the Box Table 3.1 and explains around 30 percent of the variation when a LAC dummy is added. The non-significant variables were: (i) trade to GDP, (ii) geographic latitude, (iii) population density, (iv) percentage of urban population, (v) number of cities with more than 1 million inhabitants, (vi) total death rate in 2018, (vii) diabetes prevalence in the population, (viii) government effectiveness index (and corruption), (ix) social trust—a

variable of the World Value Survey that measures the share of survey respondents agreeing with the statement “most people can be trusted.” Other variables, including GDP per capita and Human Development Index had the wrong sign, with higher GDP per capita and higher HDI associated with more deaths. Robustness checks dropping very small countries and LICs, do not alter our results significantly.

The median in the region for hospital beds per 10 thousand people is 1.5 only. In Argentina, the number is 5. Having 5 beds per 10 thousand people instead of 1.5, makes a difference in total deaths of roughly 50 per million after 150 days. Age structure matters as well. The regional median for the share of people over 70 years old is 4.5 percent. In Uruguay, it is 10 percent. This difference would, *ceteris paribus*, amount to 85 more deaths per million people.

Uruguay, however, has the lowest death toll in the region and this is not solely due to other variables offsetting age. In econometric parlance, the error term for the country is quite large (significantly fewer deaths than predicted). This hints that other (possibly non-observable) country-level variables are relevant.

Therefore, we redo the exercise using municipal level data, which allows us to add country dummies to our specifications (eliminating the biases generated by omitted factors at the country level). In addition, we include population density, which may not be a good indicator of how densely together people actually live at the country level but may better capture this aspect at the municipal level as well as geographic latitude, a variable that is hard to capture at the country level (e.g. an average of Chile or Brazil would not capture a significant variation across regions).

Box Table 3.1. Total Deaths per Million in Countries

| | 90 days after 100th case | 150 days after 100th case |
|--------------------------|--------------------------|---------------------------|
| Population over 70 | 14.8*** [2.93] | 15.7*** [4.73] |
| BCG dummy | -117*** [30.9] | -107*** [47.6] |
| Hospital beds per 10,000 | -12.5*** [5.14] | -14.3** [7.10] |
| Log(total population) | 10.20* [2.68] | 20.05** [8.90] |
| LAC Dummies | n.sig | 153.2*** |
| Constant | Y | Y |
| R2 | 0.35 | 0.27 |
| # of countries | 152 | 124 |
| # of countries in lac | 22 | 17 |

Source: IMF staff calculations.

Note: Population density at the country level is not significant.

This box was prepared by Carlos Goncalves.

Box 3 (continued)

Across municipalities

We perform a similar analysis using municipality-level data available from Google. The advantages are: (i) a larger sample, (ii) possibility of controlling for country-effects. Our sample is comprised of more than 1,000 municipalities for which the share of elderly, density, and total population are available. From these, about 45 percent are from Latin America. Hospital beds per capita are not available at this level of disaggregation and BCG vaccination is a constant across cities in a given country.

As Box Table 3.2 shows, both population density and geographic latitude are statistically significant now. Interestingly, the coefficient linking population over 70 to deaths per million increase significantly through time. Quantitatively, population density is very important. Cuajimalpa de Morelos, in Mexico, has 2,322 inhabitants per km², whereas the municipality of Sao Paulo, Brazil, has 7,940. This difference alone accounts for 202 deaths per million.

Across states

Using state level data, we arrive at similar results as those for municipalities, though the estimations are of lower overall quality. For instance, population structure has the correct sign, but is not statistically significant (likely because after controlling for country dummies, age structure does not vary much across states). (Box Table 3.3)

Box Table 3.2. Total Deaths per Million in Municipalities

| | 30-May | 30-Aug |
|------------------------------|--------------------|---------------------|
| Population over 70 | 17.90*** [1.62] | 80.28*** [6.22] |
| Population density | 0.02*** [0.003] | 0.04*** [0.006] |
| Geographical latitude | 19.50*** [2.68] | 17.15** [7.76] |
| Log (total population) | 47.50*** [7.45] | 94.03*** [21.57] |
| Country Dummies | Y | Y |
| Constant | Y | Y |
| R2 | 0.26 | 0.38 |
| # of municipalities | 1185 | 1150 |
| # of municipalities from LAC | 533 | 521 |

Source: IMF staff calculations.

Box Table 3.3. Total Deaths per Million in States

| | 30-May | 30-Aug |
|------------------------|--------------------|--------------------|
| Population over 70 | 15.66 [16.52] | 2.69 [2.20] |
| Population density | 0.04 [0.03] | 0.12** [0.05] |
| Geographical latitude | 12.32*** [4.08] | 13.05*** [5.32] |
| Log (total population) | 46.72** [21.97] | 42.90 [29.89] |
| Country Dummies | Y | Y |
| Constant | Y | Y |
| R2 | 0.23 | 0.19 |
| # of states | 225 | 215 |
| # of states from LAC | 72 | 80 |

Source: IMF staff calculations.

Annex 1. COVID-19 at the Country Level

Annex Table 1.1. COVID-19: A Snapshot
(Per million people)

| Country/Region | Total Deaths (Oct-01) | Total Cases (Oct-01) | Daily new deaths (Sept 01-Oct 01) | Daily new cases (Sept 01-Oct 01) | Mobility (Sept 01-Oct 01) | Mobility (March-July) |
|--------------------------|--------------------------|-------------------------|--------------------------------------|-------------------------------------|------------------------------|--------------------------|
| Latin America | 577 | 15,479 | 3.8 | 110 | -26 | -48 |
| South America and Mexico | 638 | 16,757 | 4.2 | 119 | -23 | -50 |
| Central America | 204 | 8,111 | 1.3 | 63 | -32 | -53 |
| The Caribbean | 94 | 4,975 | 0.7 | 32 | -28 | -44 |
| USA | 633 | 22,172 | 2.3 | 128 | -29 | -32 |
| European Union | 389 | 6,768 | 0.8 | 91 | -18 | -31 |
| Peru | 965 | 23,465 | 3.7 | 176 | -41.0 | -56.0 |
| Bolivia | 662 | 11,350 | 3.4 | 48 | -29.6 | -54.0 |
| Brazil | 649 | 21,533 | 3.6 | 145 | -8.8 | -43.0 |
| Chile | 648 | 23,548 | 2.5 | 87 | -35.3 | -46.0 |
| Ecuador | 638 | 7,276 | 1.5 | 64 | -26.5 | -22.0 |
| Mexico | 576 | 5,469 | 3.0 | 33 | -24.6 | -34.0 |
| Panama | 532 | 25,010 | 3.1 | 150 | -46.2 | -58.0 |
| Colombia | 481 | 15,198 | 3.6 | 138 | -25.4 | -42.0 |
| Argentina | 290 | 14,049 | 5.4 | 241 | -22.4 | -32.0 |
| Honduras | 224 | 7,348 | 1.5 | 56 | -33.9 | -48.0 |
| Dominican Republic | 191 | 10,084 | 1.1 | 62 | -31.8 | -42.0 |
| Guatemala | 188 | 5,146 | 1.4 | 30 | -31.5 | -42.0 |
| Suriname | 177 | 8,314 | 0.7 | 24 | na | na |
| Costa Rica | 140 | 12,622 | 3.3 | 234 | -31.2 | -41.0 |
| El Salvador | 126 | 4,269 | 0.6 | 14 | -33.2 | -35.0 |
| Paraguay | 94 | 4,758 | 2.7 | 116 | -12.9 | -52.0 |
| Belize | 54 | 4,168 | 0.7 | 54 | NA | -18.0 |
| Trinidad and Tobago | 47 | 2,796 | 1.2 | 88 | -29.4 | -35.0 |
| Antigua and Barbuda | 31 | 988 | 0.0 | 1 | -31.0 | -32.0 |
| Barbados | 24 | 658 | 0.0 | 4 | -25.1 | -40.0 |
| Jamaica | 23 | 1,692 | 1.2 | 59 | -28.1 | -42.0 |
| Nicaragua | 22 | 758 | 0.1 | 3 | -17.6 | -21.0 |
| Haiti | 20 | 765 | 0.0 | 2 | -21.3 | -26.0 |
| Uruguay | 13 | 554 | 0.0 | 4 | -5.9 | -25.0 |

Sources: Johns Hopkins University; Google Mobility Report; and IMF staff calculations.

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