

Opportunities for Stronger and Sustainable Postpandemic Growth

Coordinated by
Eduardo Cavallo and Andrew Powell



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Preface

The COVID-19 shock was a significant and traumatic crisis for Latin America and the Caribbean. The pandemic dealt the region what I previously described as an unprecedented triple sudden stop, with major simultaneous disruptions in human mobility, trade, and capital flows. This was immensely dangerous. As human mobility was paralyzed by lockdowns and fear of contagion, investments fell, and trade was upended, the triple sudden stop challenged the region like few things in the past. Undoing the damage it has caused will require astute policymaking, as well as discipline and creativity, in the months and years ahead. The 2021 edition of the *IDB Latin American and Caribbean Macroeconomic Report* identifies opportunities for policymakers to lead their economies out of this crisis and toward stronger, inclusive, and sustainable growth.

This crisis began to unfold as countries were already facing a complex set of preexisting conditions, including low levels of productivity and simmering social discontent. Perhaps a fitting analogy to describe the situation would be that, in 2019, the region was flying with one broken engine. In 2020, its other engine also took a hit. The challenge we now face is to fly this aircraft to safety, rescue the passengers, and prepare for the necessary repairs. Getting the region back off the ground will require greater spending on healthcare, government transfers to the poor, and loans to struggling firms. Meanwhile, tax revenues have plummeted due to unemployment and a drop in consumption, and fiscal balances and public debt have deteriorated considerably since the 2008/09 global financial crisis. Against this backdrop, public outlays and stimulus will be extremely difficult to achieve.

One lesson from previous crises is that this is not the time to turn inward and erect barriers. Instead, the region must seek greater integration through stronger trade agreements and the removal of obstacles such as excessive customs controls at borders, which harm the free flow of goods and services just when it is most needed. It is time to tap the opportunities provided by a better, smarter integration into global and regional value chains. It is also time to consider how Latin America and the Caribbean can leverage the reallocation of resources across sectors to drive productivity growth, promote formal employment, and achieve a greener future that defies the false dichotomy of economic growth and environmental sustainability.

Countries will have to become a lot more efficient, making cuts in public spending and eliminating the inefficiencies that account for an average of more than 4% of GDP in the region. Further down the road, they will have to find ways to increase resilience

through wise capital spending that boosts productivity and spurs growth. Governments must implement policies to make the recovery much more inclusive, which will mean raising taxes to improve income distribution through social safety nets and better provision of public services such as education and healthcare. At the same time, many small and medium-sized enterprises that entered hibernation must be supported so they can join the recovery and contribute to stronger growth in the aftermath of the pandemic.

This year's Macroeconomic Report covers more than the standard issues because the dangers of triple sudden stops make it imperative to act on multiple fronts. We are going to emerge from this crisis poorer, more indebted, and with economies that will look very different in terms of their productive structures. Enforcing key health measures is essential to saving lives until vaccines are rolled out to everyone and we can leave the public health crisis in the rearview mirror. But equally important is getting economies back on track to ward off crises and their crippling effects. COVID-19 is a wake-up call to reform and change the status quo so we can arrive not at the old normal, but a new and better normal. I hope this report will help policymakers in this endeavor.

Eric Parrado

Chief Economist

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Executive Summary

While Latin America and the Caribbean has just 8% of the global population, it accounts for 25% of global deaths from COVID-19. The 7.4% loss of GDP in 2020 was the largest in a single year since 1821. Long overdue reforms are required to spur recovery and boost medium-term growth. Growth friendly policies will help the region reduce poverty and ease the fiscal risks brought on by the pandemic.

To slow the spread of the virus, governments were forced to severely restrict mobility and deliberately shut down large parts of their economies. The region is recovering, but many external and domestic risks remain.

Growth is expected to be 4.1% for 2021 for the region and then revert to modest trend growth of about 2.5% per annum. This recovery assumes countries continue to open up, vaccine rollouts proceed smoothly, and advanced economies achieve widespread immunity to the virus in the second quarter of 2021, followed by Latin America and the Caribbean in the second half of the year or early 2023.

However, a negative scenario based on lower growth in the United States and Europe amidst new outbreaks, a slower vaccine rollout, and new mutations would allow for only 0.8% growth in selected countries in 2021, falling back to -1.1% in 2022 before recovering to 1.8% in 2023—a *W* recovery rather than a *V* or a *U*.

Labor markets were severely impacted by both external shocks and domestic lockdowns. An estimated 10% of total jobs were lost between February and October 2020 falling to 7% by February 2021 as economic activity recovered somewhat. That is a loss of 26 million jobs in 12 countries in the first period in 12 countries.

Given the shock, extreme poverty is projected to increase from 12.1% to 14.6% while moderate poverty is projected to rise from 11.7% to 14.6%. Only a strong recovery will allow these rates to decline significantly.

Country authorities responded with fiscal measures to help households and firms. The size of fiscal relief packages largely reflected available fiscal space and varied across countries. The average package was 8.5% of GDP compared to 19% of GDP in advanced economies. But two-thirds of countries in the region implemented more modest packages of around 3% of GDP.

Fiscal relief included higher transfers to households and reduced taxes for both families and firms.

Several countries introduced loan guarantee programs and other types of off balance sheet support measures, particularly aimed at small and medium-sized enterprises.

Country authorities encouraged banks to reprogram loans with grace periods and longer maturities for repayment; some countries mandated loan deferrals.

Overall fiscal deficits rose by 5.3% of GDP, from 3.0% in 2019 to 8.3% in 2020. On average, public debt is estimated to have increased from 58% in 2019 to 72% of GDP in 2020 and in a central scenario will continue to rise to reach 76% by 2023. But a strong recovery coupled with reforms would allow debt to stabilize at around 72% and then begin to fall.

For tourism dependent economies, debt rose to an estimated 80% in 2020 from 63% of GDP in 2019 and in a central scenario could rise to 87% of GDP by 2023. The unique position of countries dependent on tourism highlights the international nature of this crisis.

Inflation remained under control in the majority of countries, and inflation expectations are well anchored. Central banks expanded their balance sheets to provide liquidity, largely to banks and governments.

Bank balance sheets also expanded with more deposits given the high demand for liquidity, and credit rose. But current policies hide risks; the full impacts of the pandemic will be revealed as guarantee programs fade out and deferred loans mature.

Policies for a Stronger Recovery and to Boost Medium-term Growth

Countries with high tax takes and high spending would benefit significantly from greater efficiency in both taxation and spending. Better targeting of social transfer programs, matching public wages with private sector ones, and improving government procurement could yield up to 4.4% of GDP per year on average and more in some countries. Countries with low tax takes should focus on increasing revenues without sacrificing growth. Higher revenues and savings should be spent on well-considered projects with high social and growth benefits.

Given the fiscal challenges and high debt levels, improving fiscal institutions should be a high priority. Better institutions would enhance credibility and allow for a more gradual adjustment with lower interest rates to ensure debt sustainability.

Most countries retained access to financial markets; that access will be important in the months ahead to finance a stronger recovery. Countries will want to rebuild fiscal buffers, limit dollarization, and ensure ample reserves to reduce capital-flow volatility.

Countries should take advantage of opportunities to reduce interest payments given low international interest rates. International financial institutions (IFIs) have already boosted their flows to the region, and further flows can help countries with additional resources or to lower interest payments by replacing more expensive debt. These flows and IFI expertise can be employed to design reforms and identify projects to boost growth. Still, some countries may need to restructure commercial debts. Many countries now have new generation collective action clauses which should make such restructurings easier. If

this proves to be necessary, it is best to act preemptively and seek a fast and consensual agreement.

Central banks will have to navigate hazardous and uncharted waters in the months ahead. With policy rates at historic lows and expanded balance sheets, they have less ammunition. Assuming a smooth recovery, the demand for liquidity should fall and balance sheet expansion can be reversed. Rollover risks should be monitored carefully. Policymakers should respect and maintain central bank independence while central banks resist the temptation to take on private credit risk or provide persistent monetary deficit financing. History suggests that will lead to economic uncertainty and high inflation, which is then costly to reverse.

Policies to smooth the shock in financial sectors are hiding risks, and a disconnect between balance sheet and market indicators of risk appears to be growing. In the months ahead, authorities may wish to allow banks to dip into buffers, write off non-viable loans and establish recovery plans for banks where required. Ensuring balance sheets provide a true appreciation of risks would build confidence in the financial sector. Maintaining financial stability is needed for banks to play a constructive role in providing credit to viable and new firms and for a healthy and sustainable economic recovery.

Recovery in the region will depend critically on the health and behavior of firms. Leverage has risen and stock markets indicate a substantial reallocation across sectors. Some firms may not survive, others may need assistance to realize potential opportunities. Loan guarantee programs have been useful, but new instruments should be considered to assist viable firms.

The region has not taken full advantage of regional or global value chains. The crisis has provoked a reevaluation of value chains with potential opportunities for firms in the region. Regional integration can be deepened through a bottom-up approach, making current trade agreements consistent, and boosting regional value chains. Other policies can help firms take advantage of global value chains, particularly small and medium-sized firms, that find it difficult to participate on a consistent basis.

While economic recovery from COVID-19 may be already underway, previous crises demonstrate that the pace of recovery may be uneven and biased against high productivity sectors. Enhancing productivity through innovation and reallocation, and investing efficiently in quality infrastructure with high spillovers on other economic sectors, will help the region seize the opportunities for stronger post-pandemic sustainable growth.

The region faces a growing environmental crisis as well as the health crisis. Adopting ambitious climate goals does not entail any sacrifice in terms of jobs or growth. Countries should invest for a greener and more sustainable future aimed at zero net carbon emissions over a reasonable period of time. The right policies can create 15 million jobs by 2030 in the region, and boost growth by more than 1 percentage point per year.

While the months ahead will be challenging, this report details a set of policies that should help countries realize a stronger recovery. The path out of the health crisis need not lead back to the low growth rates of the prepandemic period but to higher rates of growth that will benefit all, with more efficient public policies, higher productivity in the private sector, and more sustainable economies.

CHAPTER 1

The Global Economy and Latin America and the Caribbean

While 2020 started with the expectation that Latin America and the Caribbean would grow by 1.6%, recovering from almost zero growth in 2019, these hopes were dashed by the novel Coronavirus. COVID-19 has cost hundreds of thousands of lives in the region and destroyed livelihoods. GDP fell by an estimated 7.4% in 2020, the largest loss in output in a single year for the region since at least 1821.¹ The crisis has brought economic crisis to virtually all countries around the globe. The vast majority of countries in the world recorded higher growth than that estimated for 2020 in about 80% of all years in a well-known historical dataset.² The uniqueness of this crisis is that to slow the spread of the virus, governments were forced to severely restrict the mobility of their people and deliberately shut down large parts of their economies. Consequently, trade collapsed, capital flows dried up, and commodity prices sank. All these factors took a toll on Latin America and the Caribbean.³ This chapter reviews the international experience, focusing largely on selected advanced economies and China, and develops a set of scenarios depicting possible recovery paths for the region.

The International Context

The coronavirus first emerged in Wuhan, a city of 11 million people in China's central Hubei province.⁴ After two phases of mild restrictions on mobility, a third phase that enforced a strict lockdown brought the outbreak under control.⁵ Other countries, such as Singapore

¹ This statement is based on an index created from the Maddison Project Database 2020. The loss of GDP in the period 1930–1932 was larger for the region but no single year reached a loss of 7.4%. In 1914 with the outbreak of the first world war, the region lost about 6.5% of GDP and the crisis of 1890 resulted in a 6% loss in output. Data before 1890 become increasingly sparse but there were recessions in 1821 with the wars for independence; the area defined as Peru at that time is estimated to have lost 17% of GDP in that year.

² For 90% of the countries in the Maddison sample, growth was above that of 2020 for 79% of the time. See Neumeyer, Restrepo-Echavarría, and Belmudes (2020).

³ Parrado (2020) argues there was a triple sudden stop affecting capital flows, trade, and mobility.

⁴ A cluster of pneumonia of unknown origin was reported to the Wuhan office of the World Health Organization on December 31, 2019, <https://www.who.int/csr/don/05-january-2020-pneumonia-of-unknown-cause-china/en/>.

⁵ See Fang, Wang, and Yang (2020) on the role of mobility restrictions on the spread of the coronavirus in Wuhan.

and South Korea, also succeeded in controlling the spread of the virus with a combination of lockdowns, large-scale testing, and contact tracing.⁶

In January 2020, growth for the year in China was projected to be around 6%, but the estimate was revised down to 1% by June, given a steep fall of GDP in the first quarter following mobility restrictions across much of the country. But as the virus was reined in and new cases fell, cities and provinces were allowed to open. Recovery was stronger than expected and the year closed with growth of 2.3% (see Figure 1.1). Growth projected for 2021 is 8.1%.

COVID cases grew strongly in most countries across the globe in the first quarter of 2020 and into the second quarter.⁷ GDP plummeted dramatically in the second quarter in advanced economies as fear of the virus grew and lockdown policies were implemented. In general, the lockdowns were successful in slowing the spread of the virus and reducing the number of new cases.⁸ Many advanced economies then started to reopen in the third quarter and growth recovered. However, as countries opened, new outbreaks emerged, and some implemented new restrictions to stop the virus from spreading.

The United States was expected to grow at around 2% for 2020 coming into the year, but with the virus and its associated lockdowns those projections fell dramatically. In June 2020, the IMF projected growth of -8%. However, the third quarter was stronger than expected thanks to large fiscal support packages, the Federal Reserve's expansionary monetary policies, and many states beginning to reopen. Growth in 2020 finally came in at -3.4% for the year. Good news on vaccines, strong corporate earnings' reports, the continued expected backing from the Federal Reserve, and new fiscal support inspired US stock market indices to soar to record levels.

Growth projections for 2021 were around 2% in February 2020; but as economic activity plummeted, projections for 2021 started to indicate a strong recovery underlying the expectation that the COVID crisis would be temporary (see Figure 1.2). The median of a set of private forecasters suggested growth of about 4.2% for 2021 while IMF projections are somewhat more optimistic, at 5.1%.

In January 2020, growth was projected to be 1.3% for 2020 for the Eurozone, but this slid to -10.3% by June, as COVID cases ballooned and restrictions on movement and economic activity were put in place. Projections then improved thanks to supportive fiscal and monetary policy actions and as countries began to reopen. But opening sparked new outbreaks and some countries in the Euro area reimposed strict restrictions. Growth for 2020 is estimated at -7.2% (see Figure 1.1).

The Eurozone's relatively more severe loss in 2020 GDP compared to the United States was accompanied by a larger expected rebound in 2021 (see Figure 1.2). However,

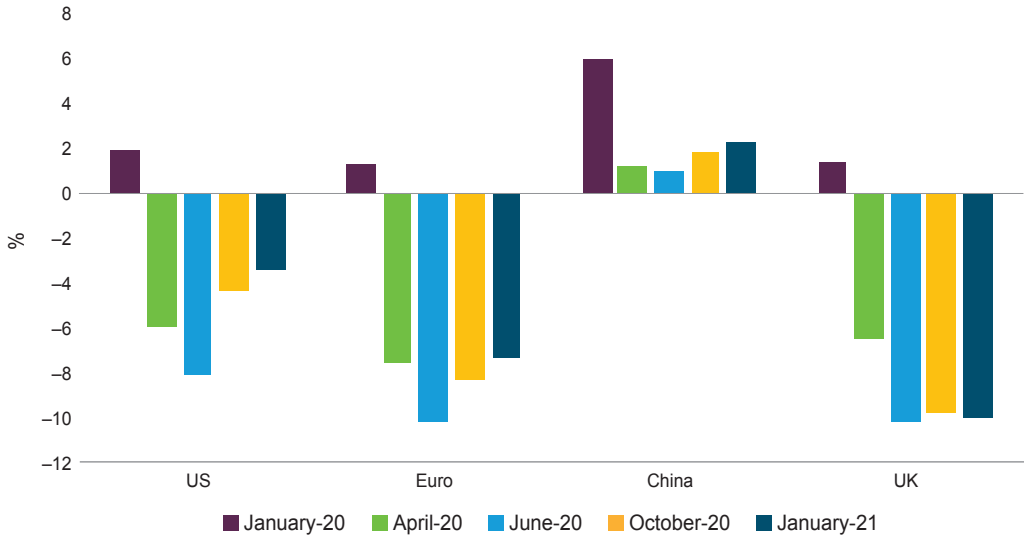
⁶ See, for example, <https://www.forbes.com/sites/kenrapoza/2020/03/26/how-singapore-and-south-korea-deal-with-coronavirus-quarantine-measures/>.

⁷ See Stein and Valencia (2020).

⁸ See Chapter 2, IMF (2020d).

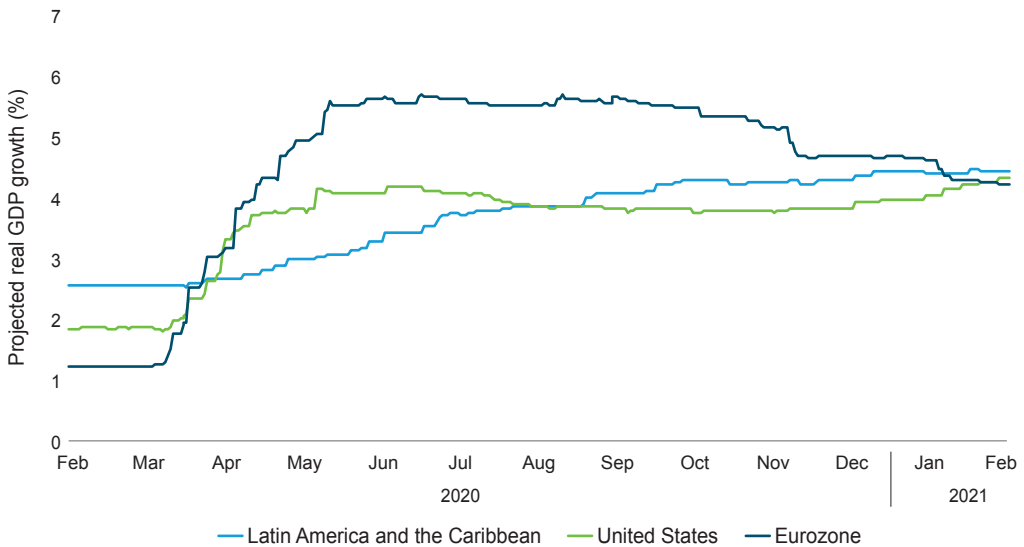
recently these more favorable expectations have been downgraded, and median private sector 2021 growth projections converged to those of the United States at around 4.2%—similar to that of the IMF.

FIGURE 1.1 • The Rise and Fall of 2020 Growth Projections



Source: IDB staff calculations based on IMF (2020c, 2020d, 2020e, 2020f, 2021b).

FIGURE 1.2 • 2021 Growth Projections for Latin America and the Caribbean and Selected Trading Partners



Source: IDB staff calculations based on Bloomberg data.

Note: Median projections for 2021 growth across those analysts included in the Bloomberg growth survey.

The economy of the United Kingdom suffered not only from the COVID shock, but also from Brexit uncertainties. An initial growth projection of 1.4% fell to -10.2% by June. The economy started to open but outbreaks provoked new lockdown measures, first in certain regions but then extended to the entire country. In December 2020, a Brexit deal was brokered, reducing uncertainties; but while the deal covers goods, it leaves open questions about services. A new and more contagious strain of the Coronavirus originally detected in Kent, to the south east of London, spread to other regions and has now been detected in several other countries. The economy is estimated to have lost 10% of GDP in 2020. Growth is projected to be 4.5% in 2021.

Changes in the 2020 and 2021 growth projections highlight the difficulty of making forecasts at this time. All growth projections are subject to errors, which may be even larger when predicting turning points and when the previous year's growth was negative.⁹ The ongoing health crisis makes projections particularly prone to errors. While a rebound is expected this year, it is highly dependent on success in fighting the virus. The economic recovery that has taken place in the United States and Europe occurred without reducing the number of COVID cases to low levels; in fact, cases, hospitalizations, and deaths continued to climb.¹⁰ As outbreaks and fears over dwindling hospital capacity grew, policymakers introduced new measures that impacted economic activity. The new restrictions will impact economic activity and it remains uncertain how long they will remain in place.

At the same time, vaccines developed in record time have proven to be both safe and effective in providing immunity against contracting COVID-19 and even more so against serious disease, if infection does occur. This positive news at the end of 2020 sparked spikes in stock markets around the world and surely upgraded many firms' investment plans. But the logistics of vaccinating a large proportion of the population are daunting, especially as some vaccines require storage at very low temperatures before use. It will take considerable time to vaccinate enough people for there to be sufficient immunity to significantly slow the spread of the disease—what is sometimes referred to as herd immunity. The vaccine rollout in some advanced economies, including the United States, has been considerably slower than was hoped. With excess demand for vaccines in most countries, delays to date have been due to whether countries acquired enough vaccine and the logistics of rollout programs. But as more and more doses become available, doubts about the safety and efficacy of vaccination in the general population may become more important issues.

Concern is also growing over mutations of the virus. The Coronavirus has been around for more than a year and well over 100 million cases have been reported

⁹ See, for example, An, Jalles, and Loungani (2018).

¹⁰ A limited number of cases allows for large testing and contact tracing programs to truly limit the spread.

worldwide. Some individual patients appear to suffer from the disease for months. It would be surprising indeed if mutations had not occurred, but many countries do not routinely test for such changes in the virus. Mutations normally create more contagious virus strains (as they are more contagious, they will tend to dominate in a population) but not necessarily more deadly (if they kill the host too quickly then they will not become dominant). The new strain detected in the United Kingdom appears to follow this pattern. The so-called South African strain also appears to be more contagious; its virulence is still under debate. Scientists believe a new strain in Brazil is also more contagious than the original virus.¹¹ A critical question is whether mutations might render vaccines less effective and if so, whether vaccines can be updated quickly to restore efficacy. In particular, there is concern that vaccines will be less effective against the South African strain. As vaccines reduce the spread of existing strains, the fear is that further mutations may create more contagious strains with greater resistance to vaccines. If this happens, the result could be more hospitalizations, more deaths, and a delayed economic recovery. While such negative developments may have adverse implications for financial markets, they would also likely lead to low interest rates for a prolonged period of time; in turn, low rates would support equity valuations, particularly for technology and so-called stay at home stocks that have become major parts of the standard indices.

Still, prospects for China appear to be less uncertain given that country's success in taming the Coronavirus. This is good news for the region, in particular for metals and agricultural producers given China's demand for these goods. But if China's exports to the United States and Europe remain subdued, then gains, particularly for metals, may be limited as a significant proportion of China's imports are re-exported.

There are also upside risks to the baseline. For example, the new US government has made strides to speed up the vaccine rollout and is proposing a new US\$1.9 trillion relief program. Some analysts have even expressed concern regarding overheating and predicted a significant consumption boom that could reverse the higher savings of consumers that have spent much more time at home than usual.¹² This stimulus might create higher demand than currently expected in the United States and elsewhere, and while this impetus would be positive for growth, it might also provoke inflationary fears. If so, central banks may revise current forward guidance on keeping interest rates very low for a considerable period of time.

Undoubtedly, such a statement would elicit a strong response from financial markets including rises in market interest rates and declines in equity prices. How far equities fall may depend on the perceptions of whether current values reflect fundamentals or a

¹¹ See, for example, AAMC (2020) on new strains and whether vaccines will be effective.

¹² See, for example, Washington Post, February 4, 2021, <https://www.washingtonpost.com/opinions/2021/02/04/larry-summers-biden-covid-stimulus/>.

bubble.¹³ To the extent equity prices are above fair values, then a change in central bank messaging to indicate that rates could rise over a shorter time horizon, could provoke a steep fall in prices.

Prospects for Latin America and the Caribbean

The COVID-19 health crisis and measures to contain the spread of the virus provoked steep declines in GDP across all countries in the region. While the region lost over 7% of GDP, a quarter of IDB borrowers lost over 10%. COVID cases, hospitalizations, and deaths grew steadily from March 2020 and while some countries succeeded in reducing the number of new cases, many saw new cases rise and then stabilize at high levels. Hundreds of thousands of lives have been lost due to COVID-19; at the time of writing, deaths were running more than 2,000 per day and several countries were reporting greater than 60% occupancy of intensive care beds.¹⁴ While the region has just 8% of the global population, it accounts for 25% of global deaths from COVID-19.

Indeed, a notable positive correlation exists between countries that suffered high COVID-19 death rates in 2020 and economic growth in that year. Figure 1.3 plots these two variables focusing on the quadrant in which growth is negative and deaths are high. Thus, there is no real trade-off between growth and the severity of the health crisis across countries. Unfortunately, many countries in Latin America and the Caribbean are located towards the bottom left of this quadrant, implying relatively low growth and a relatively high rate of deaths. Levels of informality, health system capacity, the effectiveness of nonpharmaceutical interventions, and limited capacity for telework may be part of the explanation for the low-growth high-death outcome. However, many other country characteristics may also be at play.

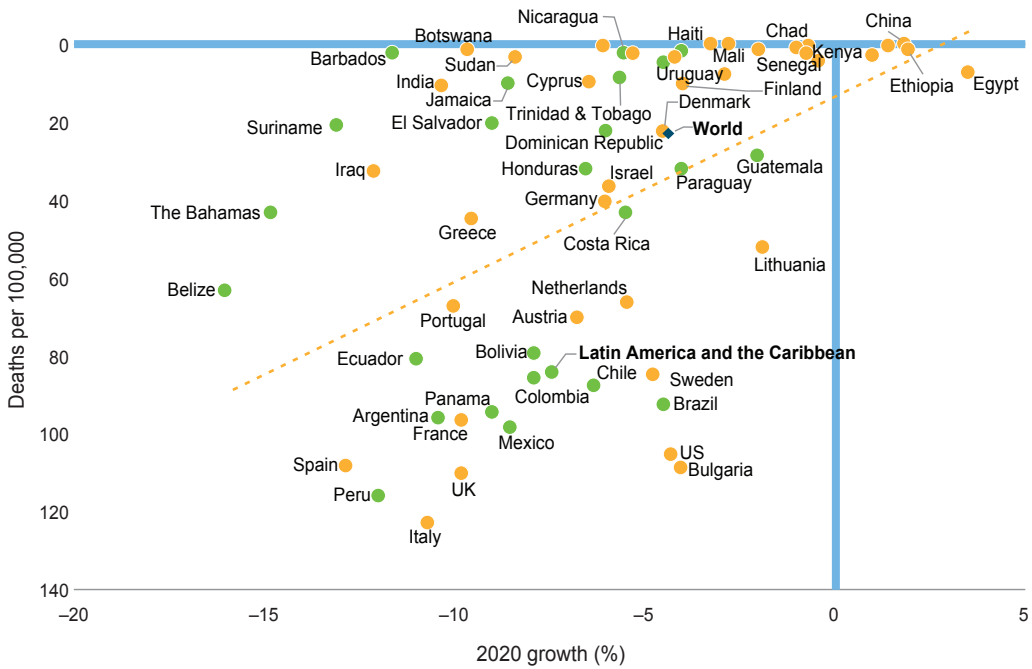
Tourism dependent countries such as The Bahamas, Barbados, and Belize, tend to lie above the trend line, meaning their 2020 growth is even lower than their death rates might suggest. On the other hand, Argentina, Brazil, Colombia, Ecuador, Mexico, and Peru had higher death rates than would have been anticipated given their 2020 growth.

Economies were impacted through several different channels. Lockdown policies to slow the spread of the virus affected employment, the demand for goods and services, and production. These policies varied in their effectiveness across countries. The impacts on trading partners reduced the demand for exports and disrupted supply

¹³ See Financial Times, January 25, 2020, <https://www.ft.com/content/a790c796-f0c4-4cf9-8c7a-3b52daff89e4>, which recounts increasing anxiety regarding a bubble in stocks. Some argue record volumes in option markets are fueling the bubble. See New York Times, January 25, 2021, <https://www.nytimes.com/2021/01/25/business/stocks-options-bubble.html>.

¹⁴ IDB staff calculations based on Johns Hopkins University and national sources.

FIGURE 1.3 • COVID-19 Deaths and 2020 Growth Rates Across Countries



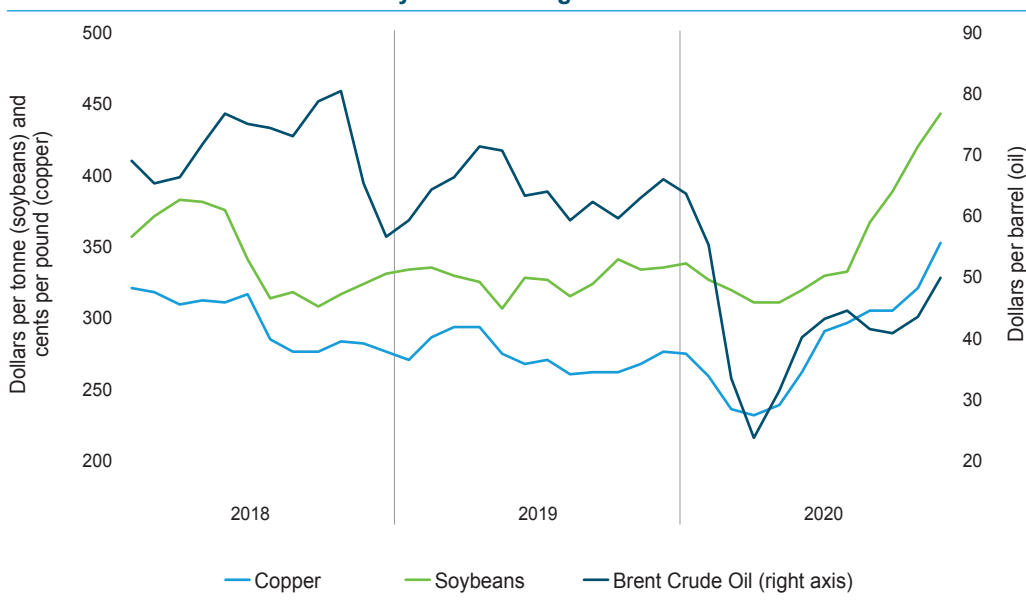
Source: IMF (2020d, 2021b) and Center for Systems Science and Engineering (CSSE) at Johns Hopkins University.

chains (see Chapter 7). Economies that rely on tourism were particularly hard hit, as international travel came to a halt. Commodity producers suffered falling prices, but metals and agricultural export prices came back relatively quickly. For example, copper and soya prices finished the year well above pre-crisis levels (see Figure 1.4). Given weak demand, particularly from the transport sector, oil prices remain below pre-crisis levels, prompting producers including Saudi Arabia to announce export limits in an attempt to prop up prices.

Exports fell by more than 10%. In aggregate, this was outstripped by the decline in imports given reduced demand and supply constraints. Remittances recovered, assisted by the recovery in advanced economies, particularly the United States, and government transfers to households, which boosted disposable income; interest payments—held down by low international interest rates—also cushioned the blow.

Current account balances improved somewhat in aggregate, from a deficit of 1.8% of GDP in 2019 to a smaller deficit of 0.5% of GDP in 2020. However, performance varied considerably across countries. Fiscal support packages implied a sharp decline in public savings, but private savings rose such that total savings were roughly constant. At the same time, lower investment was compensated by the improvement in net exports. Chapter 3 provides a more detailed analysis of trade and financial flows across the region.

FIGURE 1.4 • Selected Commodity Prices during the Pandemic



Source: IMF Commodity Price Data System.
 Note: Monthly commodity prices in different units as indicated on the figure.

Labor markets were severely impacted by both the external shocks and domestic lockdowns. An estimated 10% of jobs were lost between February and October 2020, with that figure falling to 7% by February 2021.¹⁵ Informal workers have been particularly hard hit; about 3.5 informal jobs were lost for each formal one.¹⁶ Many countries in the region do not have a system of unemployment benefits per se, and even in those with coverage, benefits are limited. In Brazil, a country with one of the most developed systems in the region, prior to the crisis only about 13% of unemployed workers received this benefit.¹⁷

Poverty has also been significantly impacted. Extreme poverty is projected to increase from 12.1% to 14.6% while moderate poverty is projected to rise from 11.7% to 14.6%.¹⁸ The various dimensions of inequality will surely be exacerbated by the economic crisis.¹⁹

Country authorities responded with support that included fiscal, financial, and monetary measures to help households and firms. Fiscal relief included enhanced transfers to

¹⁵ This percentage was 26 million jobs lost in the first period, falling to 15 million by February 2021 in 12 countries. Data from the IDB’s Observatorio Laboral at <https://observatoriolaboral.iadb.org/>.

¹⁶ See Pagés, Rodríguez-Clare and Stein (2021) for a discussion of developments in labor markets and policy responses in Latin America and the Caribbean.

¹⁷ See Alaimo et al. (2015).

¹⁸ These estimates are taken from scenario B in Acevedo et al. (2020).

¹⁹ See Busso and Messina (2020) and Bottán, Hoffmann, and Vera-Cossío (2020).

households and reduced taxes for both families and firms. On average, the fiscal packages were around 8.5% of GDP, but that average reflects large packages in a few countries and smaller packages of 3% or less in many others. In contrast, advanced economies implemented packages of 19% of GDP on average. Chapter 2 provides a more detailed analysis of the impacts of the crisis on countries' fiscal balances.

Several countries introduced loan guarantee programs and other types of support measures, particularly aimed at small and medium-sized enterprises. On the financial side, many countries encouraged banks to reprogram loans with grace periods and longer maturities for repayment, and some countries mandated loan deferrals (see Chapter 5). Currency depreciations boosted the net worth of central banks that found ways to provide liquidity to banks and governments. Monetary policy interest rates and reserve requirements were reduced, allowing banks to withdraw liquidity held at central banks (see Chapter 4). All these measures helped to soften the shock.

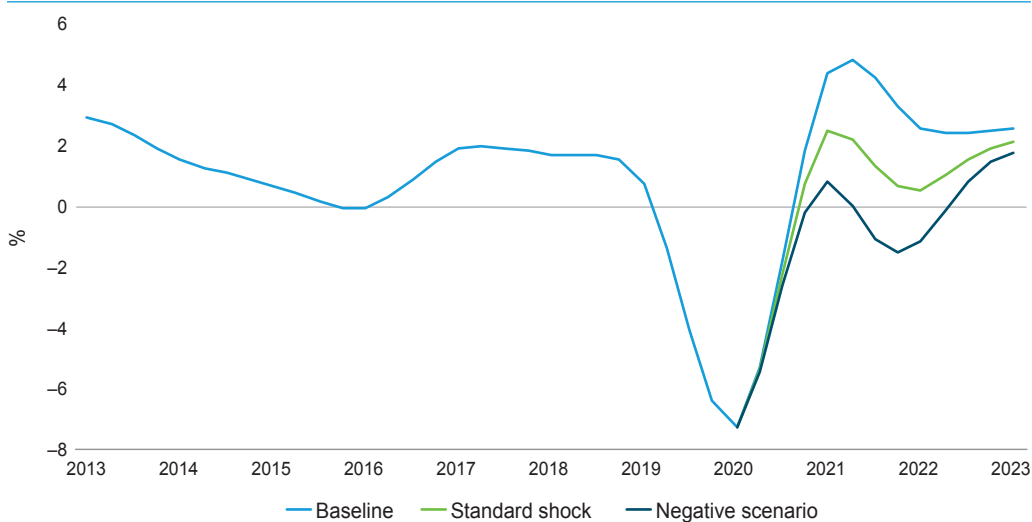
Fiscal deficits are spurring higher public debt ratios. In a central scenario, public debt will rise from 58% in 2019 to 76% of GDP for the average country in 2023. The future trajectory will be highly dependent on growth and forthcoming policies. Firms' leverage ratios also rose. They issued bonds abroad, but real investment has been limited and consequently liquidity ratios have risen (see Chapter 6).

Projections for 2021 growth in the region also increased through 2020, but much more gradually than in the Eurozone or the United States (see Figure 1.2). The baseline projection for 2021 is a rebound in growth to 4.1%.²⁰ Growth is then projected to revert to the long-run trend of around 2.5% per annum. In a statistical model that includes 14 countries in the region, baseline growth is 4.4% for 2021. This scenario assumes countries around the world and in the region can open and grow in the second half of the year despite a significant number of new COVID cases in most countries; it also assumes that vaccine rollout programs advance as planned, bringing widespread immunity by the middle of the year for most advanced countries and for the majority of emerging economies, including in Latin America and the Caribbean.

There are significant risks associated with this projection. As countries open, increases in new cases and hospitalization rates could prompt authorities to return to more restrictive measures, thereby impacting economic activity.

The logistics of vaccine rollout programs may prove more complex than anticipated, delaying the point at which countries reach sufficient levels of immunity to open up even more beyond the end of 2021. Virus mutations may produce strains that render vaccines less effective, necessitating new vaccines and requiring continued restrictive measures. The region, like the rest of the world, is in a race between the spreading virus (including

²⁰ The median of private analysts in Bloomberg is about 4.2% while the IMF projects 4.1% for the region or 4.4%, excluding Venezuela from the aggregate.

FIGURE 1.5 • Growth Scenarios for Latin America and the Caribbean

Source: IDB staff calculations based on IMF (2020d, 2021b).

Note: Baseline is taken from IMF projections. Scenarios are generated using a Global Vector Auto-Regression Model, or G-VAR, with assumptions as indicated in the text. For further details on the G-VAR see Rebucci et al. (2012) and Powell (2012). Latin America and the Caribbean includes Argentina, Bolivia, Brazil, Chile, Colombia, Costa Rica, Ecuador, El Salvador, Jamaica, Mexico, Nicaragua, Paraguay, Peru, and Trinidad and Tobago.

new strains and perhaps even new mutations) and the rollout of existing vaccines (and the race to develop new ones effective against new strains).²¹

In a negative scenario, lower growth in important trading partners such as the United States and the Eurozone would hurt Latin America and the Caribbean. Figure 1.5 illustrates baseline growth and two negative scenarios. The first, labelled standard shock, considers a shock of one standard deviation of the growth rates for the United States and the Eurozone respectively during 2021. The second, labelled negative scenario is based on more pessimistic assumptions for the United States and the Eurozone considered in a negative scenario, as outlined in IMF (2020d).

The loss of GDP relative to the baseline is 4.5% for the standard shock scenario, or a loss of 1.5% per year for the 3 years, and 8.1% for the negative scenario considering the period 2021 to 2023, or a loss of 2.7% per year for 3 years (see Table 1.1).

The shock to growth in the United States and the Euro area impacts the entire region, albeit differently across countries. The shock to the United States is particularly

²¹ The Bloomberg vaccine tracker claimed countries in Latin America and the Caribbean had contracts for over 60% of the population as of January 2021. However, this average reflects a small number of countries with contracts representing doses of more than 100% of populations (most vaccines require two doses) while several countries have considerably less than the 60% average. See <https://www.bloomberg.com/graphics/covid-vaccine-tracker-global-distribution/contracts-purchasing-agreements.html>.

TABLE 1.1 • Annual Loss in GDP Relative to Baseline (average 2021–23, in % of GDP)

	Baseline growth	Standard negative shock			Negative scenario		
		US	Euro	Combined	US	Euro	Combined
Latin America and the Caribbean	3.2	-0.8	-0.7	-1.5	-1.3	-1.4	-2.7
Southern Cone except Brazil	3.5	-1.0	-0.8	-1.8	-1.7	-1.6	-3.2
Central America and the Caribbean	2.9	-1.1	-0.7	-1.8	-1.8	-1.4	-3.2
Brazil	2.7	-0.5	-0.5	-0.9	-0.8	-1.0	-1.8
Mexico	2.9	-1.1	-0.7	-1.9	-1.9	-1.5	-3.4

Source: IDB staff calculations.

relevant for Mexico, Central America, and the Caribbean. The Southern Cone is impacted by the shock to the Euro area as well as to the United States. Brazil is the country least affected.

Both scenarios imply lower growth in 2021 compared to the baseline, falling back further in 2022 before recovering to approach trend growth in 2023. In the standard shock scenario, growth in 2021 is 2.5%, 0.5% in 2022, and then 2.1% in 2023. In the negative scenario, 2021 growth is 0.8%, falls to -1.1% in 2022, and then recovers to 1.8% in 2023. The recovery is then more of a “W” than a “V” or even a “U.”

As noted above, there is also upward risk. New vaccines are being rolled out and efforts are now underway to speed up vaccination programs. If the logistical problems are solved, then immunity may build up faster than anticipated in the baseline assumed for this report. The simulations illustrated in Figure 1.6A and B include a positive one standard deviation shock to growth to U.S. and Euro area growth to illustrate the potential impacts of higher growth in these advanced countries on the region.

However, a positive scenario of this nature also carries the risk that inflation exceeds targets and that central banks feel forced to adjust their forward guidance to keep interest rates at very low levels for an extended period of time. Just a statement of this nature, let alone an actual change in rates, would likely have a substantial impact on equity valuations and bond markets across the world. To illustrate, the impacts of a one standard deviation fall in equity values and a larger decline calibrated to be an event with a 10% probability (or approximately 1.64 standard deviations) are incorporated in the positive scenarios in Table 1.2.

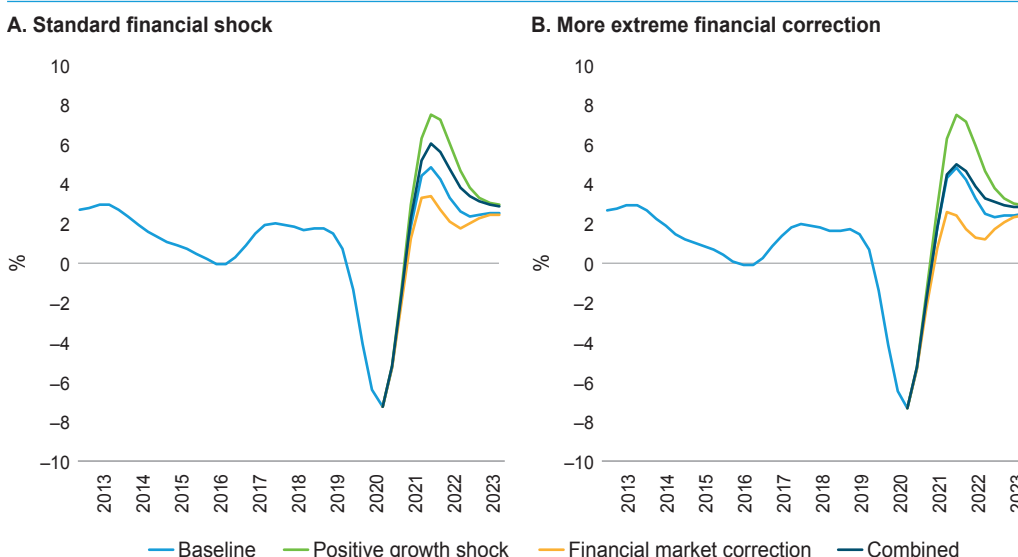
The resulting growth rates for the region are also provided in Table 1.2. In the case of only a mild financial market correction, growth in the region could be as high as 5.2% in 2021, falling to 3.9% in 2022, and 2.9% in 2023. In this case, the positive growth shock outweighs the mild decline in global equities and associated financial market developments. However, if the financial market correction is more marked, the benefits of the positive growth shock are reduced. Growth is 4.5% in 2021 (just 0.1% higher than the baseline), 3.3% in 2022, and 2.9% in 2023.

TABLE 1.2 • Regional Growth Rates in the Shock Scenarios

A. Growth rates for the standard and negative shock		
2020		-7.3
2021	Baseline growth	4.4
	Standard shock	2.5
	Negative scenario	0.8
2022	Baseline growth	2.6
	Standard shock	0.5
	Negative scenario	-1.1
2023	Baseline growth	2.6
	Standard shock	2.1
	Negative scenario	1.8
B. Growth rates for positive shock with financial markets correction		
2020		-7.3
2021	Baseline growth	4.4
	Positive growth, mild financial correction	5.2
	Positive growth, strong financial correction	4.5
2022	Baseline growth	2.6
	Positive growth, mild financial correction	3.9
	Positive growth, strong financial correction	3.3
2023	Baseline growth	2.6
	Positive growth, mild financial correction	2.9
	Positive growth, strong financial correction	2.9

Source: IDB staff calculations.

FIGURE 1.6 • Positive Growth but a Negative Financial Shock



Source: IDB staff calculations based on IMF (2020d, 2021b).

Note: Baseline is taken from IMF projections; scenarios are generated using a Global Vector Auto-Regression Model, or G-VAR, with assumptions as indicated in the text. For further details on the G-VAR see Rebucci et al. (2012) and Powell (2012).

TABLE 1.3 • Positive Growth Shock and a Financial Market Correction**A. Average annual baseline growth and impact of the positive growth shock (% of GDP, 2021–2023)**

	Baseline growth	Positive growth shock
Latin America and the Caribbean	3.2	1.5
Southern Cone except Brazil	3.5	1.8
Central America and the Caribbean	2.9	1.8
Brazil	2.7	1.0
Mexico	2.9	1.9

B. Impact of a financial market correction (annual average loss/gain as % of GDP, 2021–2023)

	Mild financial correction	Positive growth, mild financial correction	Strong financial correction	Positive growth, strong financial correction
Latin America and the Caribbean	–0.7	0.8	–1.1	0.4
Southern Cone except Brazil	–0.8	1.0	–1.3	0.4
Central America and the Caribbean	–0.9	0.9	–1.5	0.2
Brazil	–0.4	0.6	–0.6	0.3
Mexico	–1.0	0.9	–1.6	0.2

Source: IDB staff calculations.

In the case of the one standard-deviation positive growth shock to the United States and the Eurozone, the GDP of the region would gain a total of 4.5% over the three years (2021 to 2023). If the financial shock is relatively mild (a one standard deviation decline in equity prices or a drop of about 9%), then the resulting net benefit would be some 2.4% of GDP over the three years. Naturally, a deeper correction in financial markets would reduce these benefits. A correction in equity markets representing a 10% probability event (a fall of 1.64 standard deviations or a slide of around 14%) would provide a net benefit of just 1.2% of GDP for the region over the three years. A more dramatic collapse in financial markets could even turn a positive growth shock into a negative one for the region.

Again, there are differences across the region. Mexico benefits the most from a positive growth shock (largely coming from the United States) while Brazil benefits the least. The Southern Cone, excluding Brazil, also receives relatively strong benefits from the positive growth shock. However, Mexico and the Southern Cone excluding Brazil are also hit relatively hard by the financial market correction.

Road Map of the Report

The COVID-19 crisis is unprecedented in recent history for the region, both in terms of the associated loss of life and the economic crisis it has provoked. This chapter has provided

a brief and selective introduction, including a review of the international experience and growth scenarios for the region.

The remainder of this report analyzes specific themes that will impact the economies of the region and presents policy recommendations to aid in the recovery. Again, the idea is not to be comprehensive but to provide deeper analysis in certain areas.

In Chapter 2, the fiscal response to the crisis and its impact on fiscal balances and public debt is analyzed. The chapter also considers how countries may want to reform both tax and public spending structures, improve institutions, and maintain fiscal sustainability while providing support during the recovery phase.

Chapter 3 focuses on external accounts, particularly capital flows. The situation is nuanced and while a minority of countries suffered sudden stops according to the traditional definitions, others faced a sharp withdrawal of certain types of capital. The chapter concludes with a policy discussion on how to enhance protection against further impacts from international markets.

Central banks have been active in the region both in terms of interest rate policy and more direct monetary policy actions. Chapter 4 details these actions and traces the impacts on central bank balance sheets, concluding with an assessment of the risks going forward.

The health of financial sectors generally reflects that of underlying economies. Authorities were swift to act to support firms and families, which allowed for greater access to credit. At the same time, loan deferral programs may be hiding risks and increase eventual losses. Chapter 5 reviews bank balance sheets and what can be learned from market indicators of risk.

Recovery in the region will depend critically on the health and behavior of firms, and whether they are in a position to invest and hire such that employment returns to pre-crisis levels. An important open question is whether economies will return to their pre-crisis composition or whether there will be significant reallocation, which in turn would impact the health of firms. Chapter 6 analyzes firm balance sheets and considers how market valuations can suggest potential reallocation.

Chapter 7 provides further analysis of a rich dataset of firms in the region. The focus is on trade, the impacts of the crisis on exports, and the participation of firms in the region in global value chains. The results are used to distill potential policy lessons of how to boost trade and growth.

Growth and reallocation are also the focus of Chapter 8. The crisis has particularly impacted labor-intensive sectors due to required social distancing. Firms in Latin America and the Caribbean tend to use more labor-intensive technologies than in other countries, perhaps given the desire to remain more flexible in the face of economic volatility. This chapter draws lessons for policy, given the experience during the COVID crisis compared to what happened in and after previous crises.

The region faces not only an economic crisis but also a potential environmental one given the deepening impacts of climate change. An important question is whether investing

in economic recovery means sacrificing climate goals or whether a recovery plan can be detailed that creates jobs and growth while allowing the region to meet ambitious climate and environmental goals. This is the central question tackled in Chapter 9.

Chapter 10 draws conclusions of the report, focusing on the policy lessons derived from each chapter. The region faces unprecedented challenges, but ample space is available for good policy to make a significant difference to boost recovery and ensure a more sustainable future.

CHAPTER 2

Fiscal Policy for a Sustainable Recovery

Latin American and Caribbean countries mobilized sizeable fiscal resources to address the health crisis and provide economic relief, reversing the gradual fiscal consolidation of prior years. Fiscal packages totaled US\$485 billion—greater than the annual GDP of Colombia, the fourth largest economy in the region.¹ The average fiscal package across countries in the region was 8.5% of GDP (see Figure 2.1, Panel A) but this average is heavily influenced by a few large packages; packages were larger in countries in the Andean region and in the Southern Cone (Figure 2.1, Panel B). In contrast, advanced economies implemented fiscal packages of 19% of GDP on average.² Fiscal support in the region included additional spending and policies that reduced revenues and items that are off balance sheet, or sometimes referred to as below the line (Figure 2.1).³

Government current expenditure increased on average from 21% of GDP in 2019 to 24% in 2020, while capital expenditure decreased by 0.2% of GDP over the same period. At the same time, fiscal revenues declined by 1.9 percentage points (pp) of GDP on average to roughly 22% in 2020, due to both the economic contraction and policy measures. The fall in revenues was due to slower growth (an estimated 0.9% of GDP on average) and actual policy changes (about 1% of GDP).⁴ As fiscal revenues declined and spending increased, the region's average primary balance fell an estimated 4.9 pp of GDP to -5.4% in 2020 (Figure 2.2, Panels A and B). Over the same period, the overall fiscal balance declined 5.3 pp, from -3.0% to -8.3%. Box 2.1 details the fiscal plans of countries for 2020 and their outcomes.

The increase in fiscal deficits contributed to higher debt levels, which rose from 58% of GDP in 2019 to 72% in 2020 for the average country. However, debt ratios rose

¹ Colombia's 2019 GDP was US\$324 billion (IMF, 2020d).

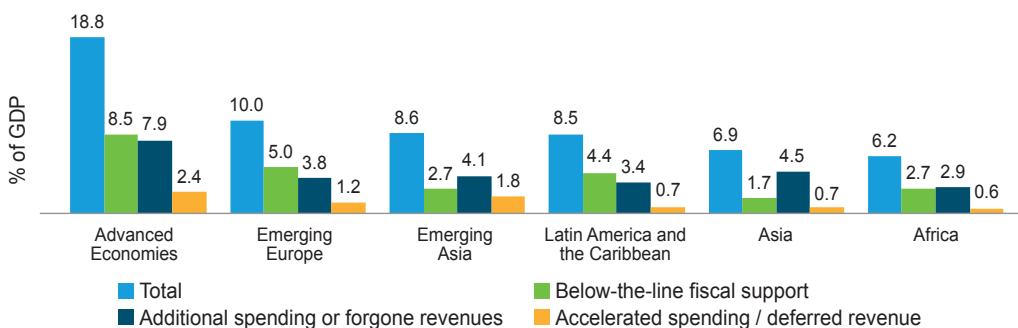
² These fiscal packages do not include various other measures including those implemented by central banks or some other public entities. Chapter 4 considers changes in central bank and consolidated financial sector balance sheets.

³ Below-the-line fiscal instruments include guarantees, capital injections, loans, asset purchases, and acquisitions of debt.

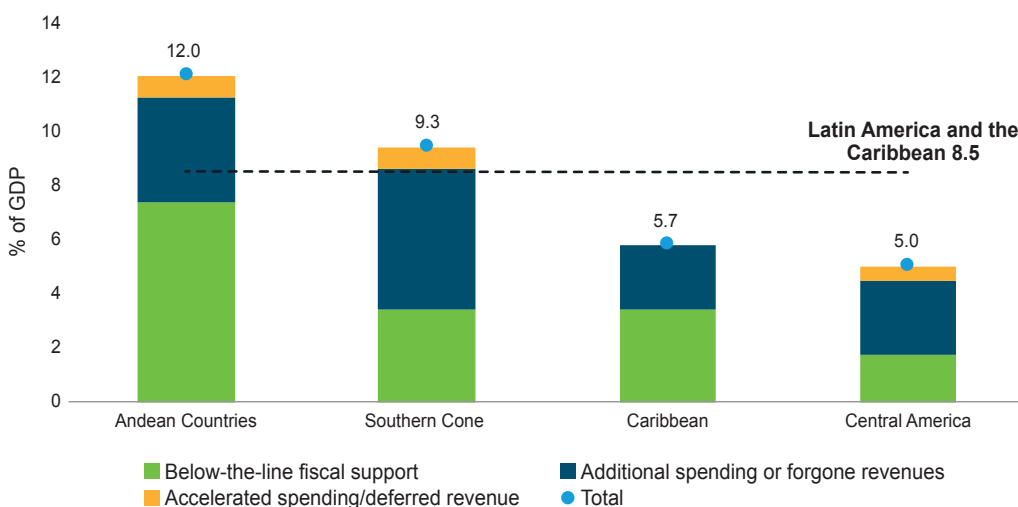
⁴ Interestingly, revenues tend to rise faster with GDP in booms (with an elasticity or "tax buoyancy" of 1.3 for the region) than they fall in busts (with an estimated elasticity of about 0.9).

FIGURE 2.1 • Fiscal Measures to Address the Pandemic

A. Regions



B. Disaggregating fiscal support measures in Latin America and the Caribbean

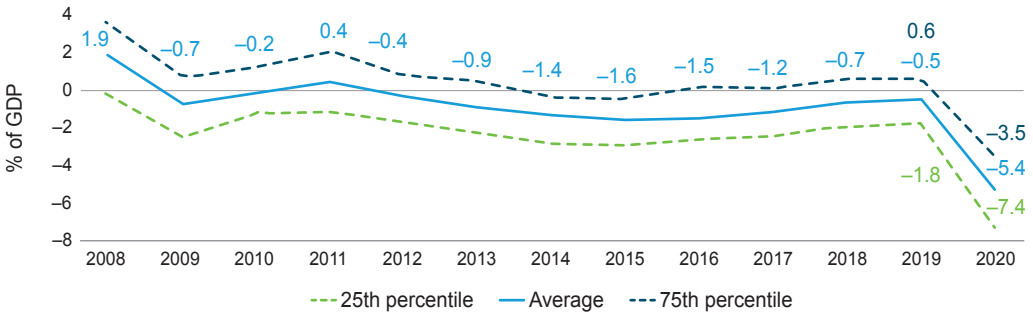


Source: IDB staff calculations based on IMF-COVID tracker and national data, given data availability.

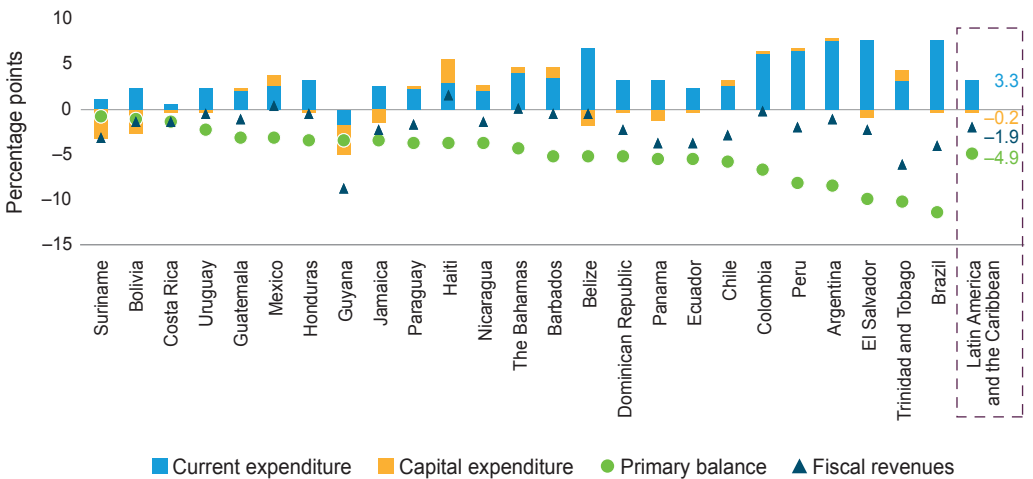
due to other factors as well. The decline in GDP contributed 4.4 pp of the total 14 pp rise in the debt-to-GDP ratio of the average country (see Figure 2.3). Real exchange rate depreciation increased debt by more than 3.2 pp of GDP for the average country, and by 3.6 pp for tourism dependent countries. The rise in interest payments accounted for an additional 3 pp rise in debt ratios in the average country, and about 3.7 pp for tourism dependent economies. Inflation acted to reduce debts, but given the relatively low inflation rates (see Chapter 4), only by some 3 pp on average and less than 1 pp among the tourism dependent countries. Debt ratios increased by less (about 10 pp), in commodity exporting countries. Among commodity exporters, the increase in debt was driven by higher primary deficits, (contributing 4.8 pp of GDP), higher interest payments (2.3 pp), and lower growth (2.1 pp).

FIGURE 2.2 • Primary Balance, General Government

A. Primary balance as % of GDP



B. General government change, 2019–20 (percentage points)



Source: IBD staff calculations based on IMF (2020d) and national data.
 Note: Current expenditure excludes payment of interests.

Financing Resource Mobilization

In general, countries’ fiscal support measures reflected the fiscal space and financing options available. Many countries issued external debt. In addition, governments drew down deposits at central banks, or other savings, and issued domestic debt. Central Banks increased government bond holdings or made emergency loans for fiscal purposes (see Chapter 4 for a discussion of central bank balance sheets). Multilateral financing complemented commercial financing for many countries.

Implications for Debt Sustainability

Interest payments have increased alongside debt ratios, from 10.7% of fiscal revenues in 2019 to 13.5% in 2020 for the average country (see Figure 2.4, Panel A). This ratio

BOX 2.1 • Fiscal Plans versus Outcomes

The COVID crisis has had a marked impact on countries' fiscal plans and outcomes. This box analyzes the explicit plans and outcomes available from national sources for a set of countries in the region. At the start of 2020, the average country of those analyzed expected a primary deficit of 0.7%. The deep declines in GDP plus policy measures impacted both spending and revenues.

Revenues ended up as 20.1% of 2020 GDP for this set of countries, but that is only 18.3% of the GDP that was projected before the pandemic. This implies an effective fall in revenues of 4.4% of GDP projected for 2020.

On the spending side, the original goal for the average government was to spend 4.3% of projected GDP on investment, but in the end, this became 3.2% of outturn GDP, which is just 2.9% of projected GDP, or a fall of 1.4% of projected 2020 GDP. This highlights how spending on investment, including infrastructure, loses out relative to current spending in times of stress.

Countries benefitted from low interest rates. Interest payments were planned to be 2.7% of GDP for the average country but ended up at 3.0% of outturn GDP or 2.7% of projected 2020 GDP. Thus, despite rising debt levels, interest payments actually did not increase, and the rise was largely due to the fall in GDP.

Looking forward, the average country is planning to collect 22.5% of GDP in revenues and primary spending is planned to be 24.7% for a deficit of 2.2% in 2021. Instead, countries would need a surplus of 2.7% to keep debt constant, implying a planned rise in the level of debt. Most governments expect growth of 4.5% in 2021; fiscal outturns will depend on whether that is realized.

In terms of fiscal institutions, 11 countries with fiscal rules all have an escape clause and ten of the 11 used that flexibility during the pandemic. The average deviation from the primary deficit stipulated in the rule was some 3.4% of GDP. Most countries have an explicit target to return to the fiscal rule in 2021, with a few planning to return in 2022 and later years.

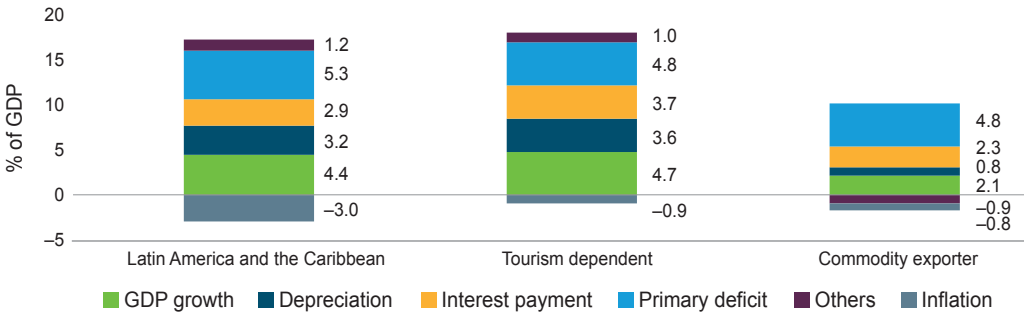
Seven countries with specific programs to reduce debt levels, announced explicit adjustment programs that reduce the fiscal deficit by 1.4% each year for the following six years. Notably, the adjustment is planned more on spending (0.9% of GDP per year) than on revenues (0.5% of GDP per year). Notably, the spending cut is planned entirely in current spending and not in investment spending. Some 12 countries are considering a significant tax reform to boost revenues.

is higher now than during both the Global Financial Crisis (GFC) and the period of low commodity prices. For a quarter of IDB borrowing countries, this ratio has increased to 17% or greater.

Debt service, which includes interest payments and debt amortizations, is expected to be about 5% of GDP in 2021 for the average country and about 6.5% of GDP for about a quarter of countries analyzed (see Figure 2.4, Panel B). Considering the amortization schedule of today, total debt service will be stable in the years ahead for the average country, but will increase to over 8% of GDP in 2023 for a quarter of countries.⁵ Interest payments represent about 3.2% of GDP per annum for the average country in the years ahead.

⁵ These are likely underestimates as the figures reflect the amortization schedules of debt actually issued; this analysis does not contemplate the roll-over of liabilities within the period.

FIGURE 2.3 • Drivers of Average Changes in Gross Debt to GDP, 2019–20

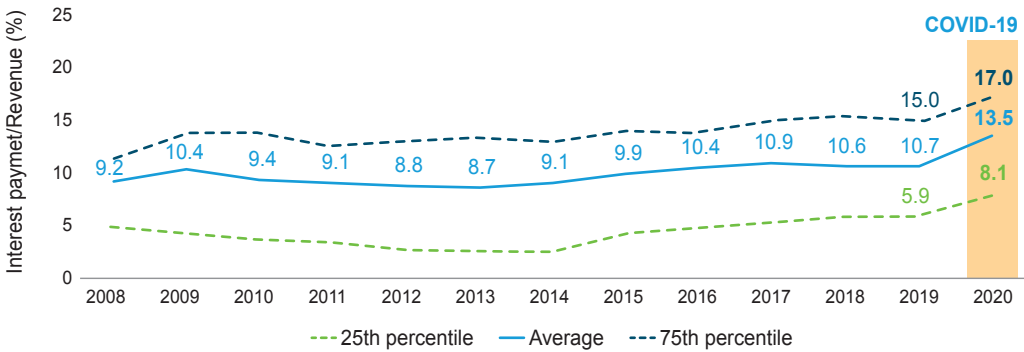


Source: IDB staff calculations based on IMF (2020d, 2021b) and national data.

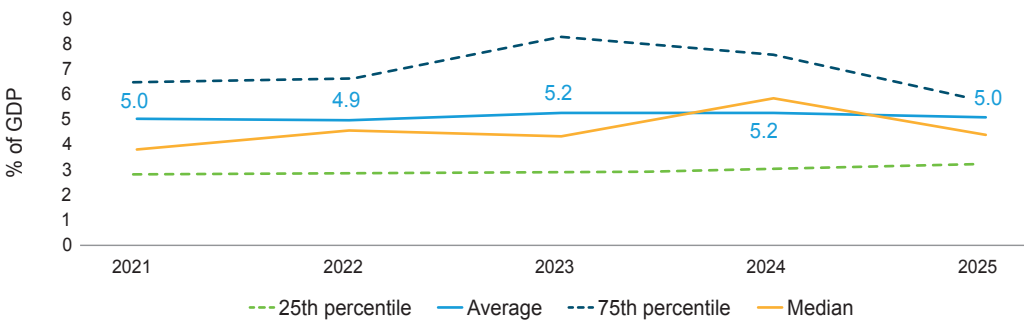
Note: Latin America and the Caribbean includes the IDB’s borrowing countries except Venezuela. Commodity exporters include Guyana, Bolivia, Ecuador, Colombia, Trinidad and Tobago, Peru, Chile, and Mexico. Tourism dependent countries include The Bahamas, Belize, Costa Rica, the Dominican Republic, and Panama.

FIGURE 2.4 • Debt Affordability and Debt Service

A. Interest payments as a percentage of fiscal revenues



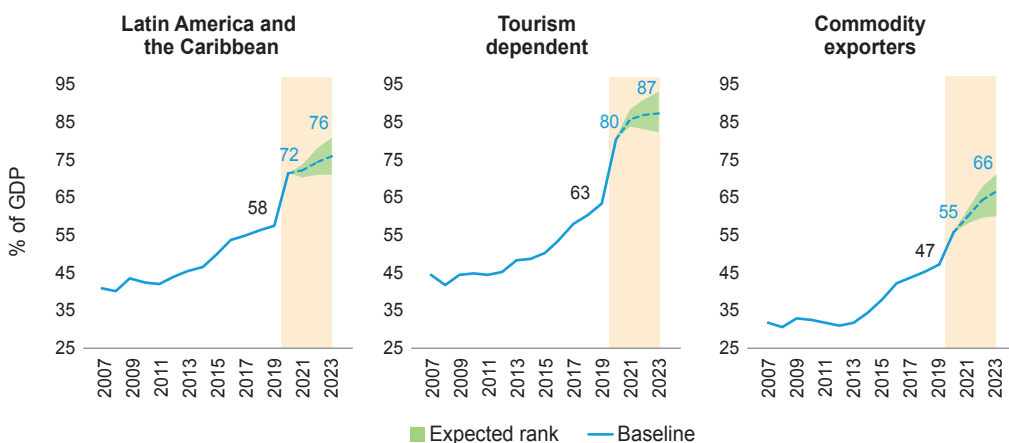
B. Debt service as a percentage of GDP



Source: IDB staff calculations based on IMF (2020d), Bloomberg data, and national sources.

The future trajectory of the debt-to-GDP ratio will hinge on the speed of economic recovery, the pace of fiscal adjustment, interest rates, and commodity prices. In a central scenario, the average ratio of debt to GDP rises from 58% in 2019 to 76% by

FIGURE 2.5 • Scenarios for Gross Debt



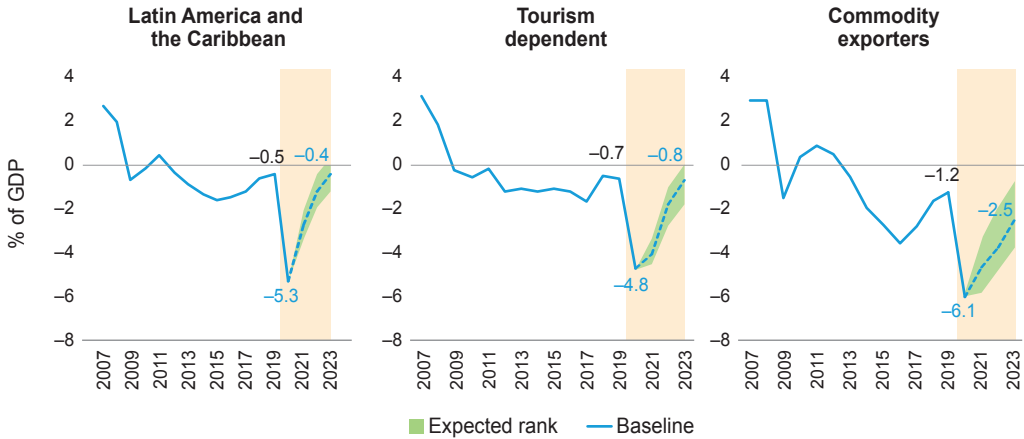
Source: IDB staff calculations and IMF (2020d, 2021b).
 Note: The shaded area indicates the COVID-19 crisis and future scenarios (2020–23).

2023. This scenario assumes lower growth than the baseline in Chapter 1, but it also assumes that countries implement fiscal adjustments.⁶ If growth rates match those of the negative scenario in Chapter 1, then debt to GDP would rise further to around 80% by 2023. The analysis underscores the need for countries to adjust without sacrificing growth. For example, if the region grows according to the baseline in Chapter 1, and fiscal adjustment resembles historical patterns, then debt should stabilize at around 72% of GDP.

Debt trajectories vary given different starting positions, growth projections, and other variables. Tourism dependent economies have higher initial debt levels (80% of GDP in 2020), and in the central scenario, debt is projected to rise to 87% of GDP. In the negative scenario, debt could rise to 93% of GDP. Commodity exporters start from lower initial debt (55% of GDP in 2020), but that is projected to rise rapidly to 66% in the central scenario and could reach 70% in the negative scenario. Again, if countries can grow according to the baseline in Chapter 1 and adjust, then lower debt-to-GDP ratios close to 80% of GDP can be maintained for tourism dependent countries and 59% of GDP for commodity exporters.

All projections assume a fiscal adjustment starting in 2021 at a pace consistent with past behavior. For the average country, the primary fiscal deficit declines to 0.4% of GDP by 2023, for tourism dependent economies it falls to 0.8%, and for commodity exporters, which have the most persistent fiscal deficits in the data, primary fiscal deficits shrink to 2.5% of GDP (see Figure 2.6).

⁶ For further details of the model and assumptions please refer to Appendix A.

FIGURE 2.6 • Scenarios for Primary Balances

Source: IDB staff calculations and IMF (2020d, 2021b).

Note: The shaded area indicates the COVID-19 crisis and future scenarios (2020–23).

Improving Fiscal Outcomes

While the above scenarios assume fiscal adjustment, there may be resistance to paring back spending. Countercyclical policies were implemented to sustain aggregate demand during the global financial crisis, but additional social spending proved difficult to revert, implying persistent increases in deficits, rather than true countercyclicality (Powell, 2012). Two-thirds of the expansion in spending at that time was to boost salaries and transfers, and left the region in a weaker fiscal position, even as the COVID crisis began (Izquierdo and Ardanaz, 2020). This time around, much needed transfers to households have been expanded and the region will face a persistent increase in the poverty headcount and jobs lost; therefore, it may be difficult to reverse the measures. Most countries have resisted increases in public sector wages even though they have fallen in terms of purchasing power; unions may pressure to increase wages once recovery takes hold.

Enhancing growth would significantly improve fiscal outcomes by boosting revenues. The timing of these interventions for recovery and growth will be key.⁷ It will also be critical to design both expenditure and tax policies that are efficient in terms of growth and distributional impacts.

Towards an Efficient Spending Strategy

Now more than ever, finding the right expenditure strategy is an exercise in optimization under severe constraints. Seeking greater efficiency should become a mantra for expenditure

⁷ See Izquierdo et al. (2020) for a discussion of reforms to boost growth and Chapters 7, 8, and 9 of this report for a more detailed analysis of specific growth strategies.

policy. Temporary expenditure increases introduced to face the COVID emergency should be removed as the health crisis dissipates and their rationale fades. The region also needs to reallocate expenditures from inefficient to more efficient uses, and create fiscal space to boost growth and seek greater equity.

Identifying significant technical inefficiencies is easier than assessing every expenditure item. Three areas likely to offer low hanging fruit are:

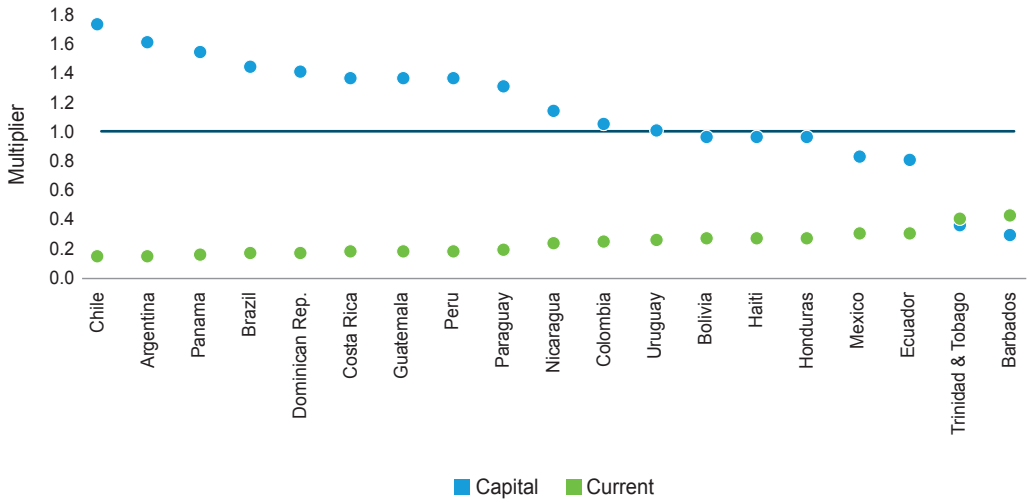
- *Leakages in social transfers and tax expenditures.* The relatively common practice of reducing value added taxes on some critical items holds the record in terms of leakages. No less than 84% of these “tax expenditures” end up benefiting others rather than the poor. Energy subsidies also account for large leakages, with 81% benefiting the nonpoor. Conditional cash transfers and noncontributory pensions have leakages in the neighborhood of 43%. On average across IDB countries, these three types of leakages alone amount to about 1.7% of GDP—resources that could be put to better use.
- *High public sector wages relative to those in the private sector.* Accounting for skills levels and experience, low-skilled public sector workers receive 23% higher wages than similar workers in the private sector. This amounts to about 1.2% of GDP of expenditure.
- *Waste in government procurement.* An estimated 1.4% of GDP is wasted on procurement processes for goods, services, and public investment (see Izquierdo, Pessino, and Vuletín, 2018).

Overall, savings in these three budget items alone could liberate the equivalent of almost 4.4% of GDP for pro-growth spending or for more efficient ways to promote equity.⁸

Pension and health spending has also risen steadily, driven by the rapid aging of the population and exacerbated by the COVID crisis. Reforms to improve efficiency and ensure a reasonable and affordable health and pension system are badly needed. Taking into account age distributions, spending on the elderly in Latin America and the Caribbean even surpassed that of several developed countries (see Pessino and Ter-Minassian, 2021). Pension systems with defined contributions and guaranteed minimum pensions combined with the current low interest environment has heightened sustainability risks.

How could savings from more efficient spending help economies? In addition to freeing up resources for more productive investments, efficiency could help reduce distortions that hobble growth and welfare:

⁸ However, the figures are very different across countries: leakages range from 1.8% of GDP in Chile to 7.2% of GDP in Argentina.

FIGURE 2.7 ● Capital and Current Expenditure Multipliers, 2019

Source: IDB staff calculations based on Izquierdo et al. (2019).

- Additional high-quality public investment has growth multipliers as high as 2, meaning that for every peso spent, GDP may grow by up to 2 pesos (see Figure 2.7).⁹ Moreover, the region has a long-standing deficit in infrastructure and infrastructure services. The share of capital expenditure in total spending has fallen by more than 10% relative to 1980. Pre-COVID investment in infrastructure was less than 3% of GDP (with the public sector contributing 2% of GDP) and has fallen further given the crisis, while it should represent at least 5% of GDP (see Cavallo, Powell, and Serebrisky, 2020). Chapter 8 provides further arguments for greater spending on infrastructure.
- Reducing labor taxes would increase formal employment and reduce informality. Informality takes a toll on productivity and lowers the base for many taxes.
- Reductions in import tariffs on capital goods would help boost much needed private investment.
- Enhancing spending on quality health and education projects would boost human capital, particularly for poorer families with longer-term growth and equity benefits.
- Well-targeted additional transfers would help address higher poverty rates in the aftermath of COVID-19.

Optimizing Taxation

The region suffers from relatively low tax revenues. At 22% of GDP, they are considerably lower than in developed countries, including the OECD's 34%. Still, countries vary widely

⁹ Izquierdo et al. (2019).

with relatively high levels in Argentina, Barbados, Belize, and Uruguay (between 29% and 34% of GDP) and low levels in the Dominican Republic, Guatemala, Panama, Paraguay, Mexico, and Peru (between 16% and as low as 12% of GDP).

High taxation countries also tend to be high spending countries; the focus there should be on improving efficiency in both spending and taxation rather than raising revenues. In low-taxation countries, assuming a minimum level of efficiency, expanding the tax base could lead to significant benefits. While increasing overall taxation tends to negatively impact economic growth, multipliers are low in low-taxation countries.¹⁰

Unfortunately, Latin America and the Caribbean continues to suffer from inefficient tax design and implementation, with considerable avoidance and evasion. The tax effort (defined as the percentage of effective tax collection as a share of GDP relative to potential tax collection) is estimated to be about 60%, compared to 77% in advanced economies.¹¹ If the region could match the tax effort of advanced economies, then revenues would increase by about 7% of GDP.

Informality is one reason for the low tax effort, but simply increasing tax rates may induce greater informality and yet greater inefficiencies. Rather, the focus must be on tax and benefit structures coupled with better enforcement, to reduce the incentives for informality.¹² One useful way to deal with informality is through programs that reward formal employment, particularly for low-income groups, such as the Earned Income Credit (EIC), while phasing out noncontributory social programs for informal workers (see Box 2.2 for further details).

Although working to increase the tax effort by reducing tax evasion and informality is key, particularly for high taxation countries, is there any room for raising taxes, and which taxes should be raised? Twelve countries are planning a tax reform to increase revenues (see Box 2.1). Increasing value-added-taxes (VAT) tends to damage growth less than raising income taxes. But increasing VAT is normally considered regressive. Governments frequently exempt specific goods (e.g., basic food) to lessen the effect on inequality. But as much as 70% of the forgone revenue in current VAT systems in the region accrues to the nonpoor and is thus a very inefficient way to transfer resources (see Izquierdo, Pessino, and Vuletín, 2018). Applying a unified VAT tax rate without exemptions and raising more revenues, but then using those resources for a well-targeted system of transfers to the poor, would be a more efficient policy combination.¹³

¹⁰ See Gunter et al. (2019).

¹¹ Fenochietto and Pessino (2013).

¹² There is a strong relationship between tax evasion and informality. High informality restricts information to third parties allowing for higher evasion. Income tax evasion is estimated to be more than 50% for the self-employed or for those whose income stems from informal sources, while it is less than 5% for dependent workers. See Slemrod (2019).

¹³ See Nuguer and Powell (2020a) for further discussion on this point. Note also that a tax credit to low-income households is a more effective tool for improving the progressivity of consumption taxes than the zero-rating of basic groceries (Godbout and St-Cerny, 2011; Barreix, Bès, and Roca, 2010). While this compensated VAT is more progressive in theory, the availability of a good digital system to target beneficiaries accurately is necessary to implement it—a condition not yet met by most countries.

BOX 2.2 • Formalizing the Economy: Now is the Time^a

Addressing informality in Latin America and the Caribbean is urgent. About 58% of workers in the region have an informal job, compared to less than 20% in advanced economies and about 50% in some countries in Asia. The region has the second highest average level of informality in the world, only below Sub-Saharan Africa at 90%. Within Latin America and the Caribbean, 80% of workers in the poorest decile are informal, and in some cases (Guatemala, Honduras, and Haiti), more than 80% of all workers are informal. In the aftermath of the pandemic crisis, most of the recovery in employment will likely be in informal jobs, exacerbating already high levels of informality.

Three main reasons explain high informality in Latin America and the Caribbean. First, the low level and quality of human capital among the poor makes it difficult for the least skilled to enter formal labor markets. Second, labor taxes averaging 28% discourage formal hiring.^b Third, to overcome the lack of social protection in the informal sector, well-intentioned governments created a parallel network of social protection for informal workers; these programs included Progresa in Mexico, and Bolsa Familia in Brazil. These programs reduced poverty and inequality, but acted as a subsidy on informality, since the benefit is lost when obtaining a formal job.

While it is true that any social program aiming at redistribution creates disincentives to work, if society agrees to redistribute, schemes such as the negative income tax (NIT) are among the best in that they are a minimally distorting solution. The great challenge for Latin America and the Caribbean is to devise a scheme of “formal workfare” instead of “welfare” that rewards those who work formally, gradually replacing subsidies for informality with minimum income benefits for the poor that are not lost entirely if the individual lands a formal job. The secret to these “formal workfare” systems is that the total reward for working formally (formal income plus transfers) is always higher. When individuals start working formally, transfers do not disappear; rather, they gradually decrease so that net income is always higher when working formally, thereby rewarding formality.

Various systems in use in several countries could be adapted to the Latin American reality. The Earned Income Credit (EITC) program, introduced in the United States in 1975, has substantially increased formal employment and reduced poverty, reaching around 28 million workers while spending only 0.3% of GDP. The overwhelming consensus in the literature is that the EITC has raised labor force participation—particularly for single mothers, which is the group that previously faced the largest work disincentives.^c In 2018, the EITC lifted about 5.6 million people out of poverty, including about 3 million children, by supplementing the earnings of low-wage workers and by rewarding work. Moreover, it reduced the participation of men in the informal sector by between 5.8 and 7.3 percentage points.^d Different labor income tax credit programs in at least 18 developed countries, including Canada, New Zealand, United Kingdom, Sweden, and South Korea, with budgets ranging from 0.3% to 2.1% of GDP, could be adapted to the different realities of Latin American and Caribbean countries.

^a Based on Pessino, Pineda, and Rasteletti (forthcoming).

^b After the 2012 tax reform, Colombia reduced payroll taxes by almost 50% and managed to increase formal employment by 18%. See Fernández and Villar (2017).

^c Hoynes and Patel (2018).

^d Gunter (2013).

Among income taxes, there is less scope for raising either the personal income taxes (PIT) rate or the corporate income tax (CIT) rate. PIT rates are already at levels similar to advanced economies and, on paper, they are progressive. CIT rates at 27% on average in

Latin America and the Caribbean are higher than in advanced economies (22.6%), although revenues are similar (3% of GDP) because of smaller bases in the region. Moreover, when adding other forms of corporate taxation, including labor contributions and other taxes, the “effective” taxation on profits of firms for compliers can reach close to 60% in Latin America, while it is 40% in advanced economies, and 30% in emerging Asia (PwC/World Bank, 2019).¹⁴ With CIT statutory tax rates falling across the globe, it would be unwise to increase them. However, there may be room to lower CIT exemptions. A significant problem in many countries is that only formal firms pay the relatively high CIT rates, which creates disincentives for formality.¹⁵ Increasing formality, rather than the tax rate, would be more effective in raising revenues.

Taxation of wealth is receiving much attention in the United States and more recently in Latin America and the Caribbean (see Saez and Zucman, 2019 and Summers and Sarin, 2019). While wealth taxes have been widely discussed, few countries have implemented them, perhaps because they are easy to avoid and difficult to enforce. An alternative is property taxation. Many countries in the region have such taxes but at low rates, and only about 0.4% of GDP is collected, which is roughly half the amount collected in other developing countries, and one-sixth that in the OECD (Corbacho, Fretes Cibils, and Lora, 2013). Property taxes appear to impact growth less and are progressive, and could thus be increased significantly in the region.¹⁶

Governments also have new opportunities to tax activities that are detrimental to health or the environment. Imposing carbon taxes to lower the pervasive effects of climate change could be beneficial and opportune (see Chapter 9). The region has ample room to increase fuel taxes (or alternatively, diminish subsidies) in a context of relatively low oil prices.¹⁷

The crisis is prompting both reallocation and innovation. Tax authorities need to ensure that taxes are applied fairly across sectors. Digital services, for example, have enjoyed a surge in demand, yet taxation is low for this sector. Only a few countries such as Argentina, Chile, and Ecuador, already tax digital platforms; taxation should be expanded throughout the region.

Another revenue-raising possibility is to reduce the relatively high level of tax expenditures, currently about 3.9% of GDP; these are not only distortionary, favoring some

¹⁴ PwC/World Bank (2019).

¹⁵ The effective taxation on profits for a medium-sized firm is 58.2% in South America and only 28.5% in Emerging Asia (PwC/World Bank, 2019).

¹⁶ One reason for this comparatively modest property tax collection is that it is typically imposed by subnational governments, which usually have less capacity and fewer incentives to pursue this source of tax revenue.

¹⁷ For instance, a carbon tax of US\$75 per ton—necessary to meet the Paris climate objectives—has been estimated to generate between 1% and 2% of GDP in the medium term for several countries (de Mooij et al., 2020).

activities over others, but they also negatively impact redistribution, due to their generally regressive nature.¹⁸

Finally, the crisis may tempt governments to increase rates on other taxes (or introduce new taxes) like, for example, on gross receipts, wages (including payroll taxes), exports, and financial transactions, all of which are easy to collect and, therefore, can be used to raise revenues quickly. These taxes are, however, highly distortionary and therefore, should be avoided. Moreover, distortionary taxes should be replaced by less distortionary options to avoid the perilous effects on much needed investments (see Box 2.3).

BOX 2.3 • Tax Policy and Incentives to Invest

Recovery from the crisis will require investment, but high corporate taxes may discourage foreign direct investment (FDI).^a Hence, governments seek to offer fiscal regimes that appeal to foreign investors. Tax incentives have been prevalent to attract investment but pose a dilemma for policymakers. On the one hand, they may boost growth and employment, and attract new technologies (see OECD, 2018). On the other hand, they negatively impact government revenues and may introduce distortions, administrative costs, and corruption (see ECLAC/Oxfam, 2020; World Bank, 2018).

TABLE 2.3.1 • Fiscal Cost of Tax Incentives to Invest in Latin America and the Caribbean (2016–19)

	% of GDP	% of tax revenue	% of social spending
Argentina	1.2	4.4	8.1
Bolivia	0.9	5.0	7.7
Brazil	1.3	6.6	8.4
Chile	2.4	13.8	15.6
Costa Rica	1.9	14	15.3
Dominican Republic	1.5	10.9	19.6
Ecuador	1.4	11.7	16.0
El Salvador	1.8	10.3	19.6
Guatemala	0.7	6.8	13.4
Mexico	0.9	6.5	11.1
Paraguay	0.6	5.7	6.6
Peru	0.9	6.5	10.4
Uruguay	2.5	12.8	15.5

Source: IDB staff calculations based on ECLAC/Oxfam (2020).

Note: Social spending includes central government spending on health, education, and social protection.

(continued on next page)

¹⁸ Tax expenditures are revenues forgone by the state when it grants incentives or benefits that reduce the tax burden for certain taxpayers in relation to a reference tax system (Pecho, 2014). In Latin America and the Caribbean, nearly four-fifths of tax expenditure on these items benefit nonpoor households (Izquierdo, Pessino, and Vuletin, 2018).

BOX 2.3 • Tax Policy and Incentives to Invest *(continued)*

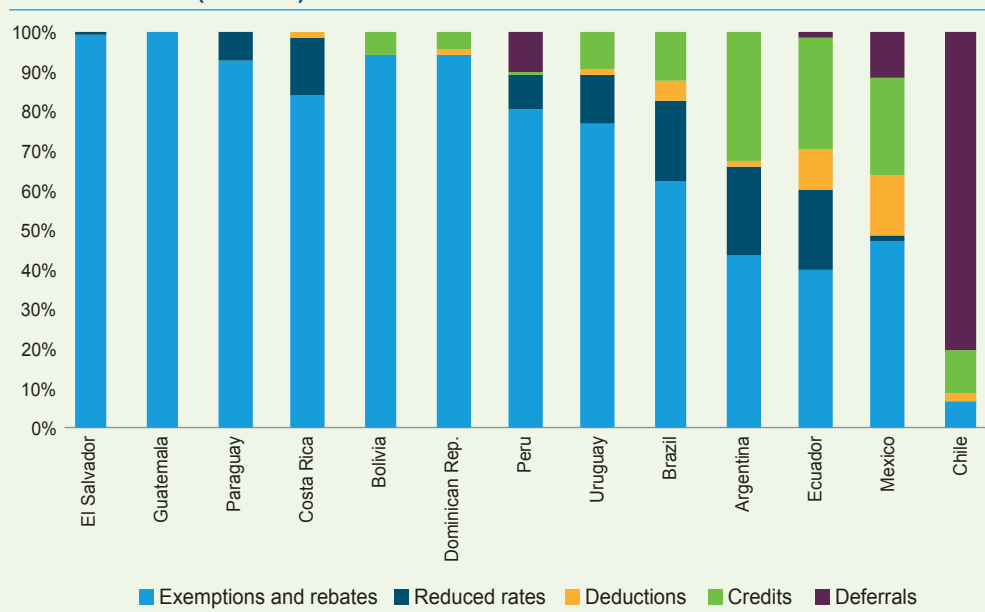
The evidence on the efficacy of incentives for FDI attraction is mixed.^b Several studies find tax incentives have limited effects on investment at the aggregate level. First, taxes are not the main determinant of investment decisions. Other variables such as political stability and security, legal and regulatory environment, and domestic market size influence investors more than taxes^c Thus, it is essential to consider these factors when designing fiscal strategies to attract investment. Second, the efficiency of tax-incentive regimes also plays an important role. Incentives should target investors whose decision is most likely influenced by these incentives, instead of firms that would have invested anyway.

Frequently, incentive regimes lack of transparency reduces their efficiency and generates economic distortions and indirect costs. In the region, tax incentives have continued to play an important part in the region’s strategy to attract investment. Between 2009 and 2015, the average corporate tax rate decreased from 29% to 27% and a large proportion of countries increased their tax incentives, a pattern similar to the one observed in other developing nations.^d FDI for countries in the region remained around 3% of GDP, while tax expenditure from incentives to invest averaged 1.4% of GDP (see OECD, 2019 and ECLAC/Oxfam, 2020).

Chile and Uruguay (2.4% and 2.5% of GDP) had the highest tax expenditures associated with investment incentives, and Paraguay and Guatemala (0.6% and 0.7% of GDP) had the lowest (see Table 2.3.1). On average, tax expenditures in the region were almost 9% of total tax revenue and 13% of social spending.

Preferential tax measures, such as exemptions (including tax holidays), tax rebates, and reduced rates, remain the most widely used incentives in the region (Figure 2.3.1). These types of

FIGURE 2.3.1 • Tax Incentives to Invest in Latin America and the Caribbean, by Type (2016–19)



Source: IDB staff calculations based on ECLAC/Oxfam (2020).
 Note: Values expressed as a percentage of total investment incentives.

(continued on next page)

BOX 2.3 • Tax Policy and Incentives to Invest *(continued)*

measures are profit-based, which implies that they are less effective than others as their use is typically unrelated to the amount invested.^e In general, cost-based measures, such as tax allowances, tax credits, and tax deferrals (e.g., accelerated depreciation), are preferable, as these instruments directly lower the cost of investment and, hence, are likely to be more effective. In the region, Chile employs the most cost-based incentive measures, followed by Mexico, Ecuador, and Argentina.

In summary, fiscal incentives can play an important role, but to be effective they need to be considered as part of a broader set of measures to attract investment. There is considerable scope to reform the design of the tax incentive regimes used by countries in the region. These reforms should focus on shifting tax incentives towards cost-based instruments, while also including measures to improve their administration and transparency, with the objective of lowering the indirect cost of tax incentives and enhancing their beneficial impact on investment.

^a See, for example, Abbas and Klemm (2013), Bénassy-Quéré, Fontagne, and Lahrière-Révil (2005), Desai, Foley, and Hines (2006), and Djankov et al. (2010).

^b See Van Parys and James (2010), Klemm and Van Parys (2012). Available evidence specifically on Latin America and the Caribbean is scarce.

^c See the Global Investment Competitiveness Survey in which the share of respondents that considered political stability and security (87%), legal and regulatory environment (86%), and domestic market size (80%) as either critically important or important was significantly larger than for low tax rates (58%) (World Bank, 2018).

^d During this period, 35% of countries in the region increased incentives in at least one sector, whereas 22% reduced them. This compares to an average of 46% and 24%, respectively, in developing countries (World Bank, 2018).

^e For instance, a 10-percentage-point decrease in the corporate income tax rate only reduces the likelihood of firms considering taxes as an obstacle by 3.6%-4%. Additionally, while empirical research shows that tax holidays also decrease this likelihood (3.3%-6.9%), the link disappears in countries with poor transport or investment climates (World Bank, 2018).

Institutions Matter: Improving Taxation and Spending

To implement the described strategies requires a set of appropriate institutions. In particular, three institutions have proven to be exceptionally useful in different countries.

- *A Quality of Spending Unit within the Government.* A unit of this type can ensure that i) all procurement processes are competitive and transparent, and all government purchases, including infrastructure, are bid out; ii) public sector wages are kept in line with private sector wages, taking skill levels into account; and iii) transfers and subsidies have good coverage but are also well-targeted to the poor. Such units can also evaluate the ex-ante and ex-post rates of return of different expenditures, and through cost-benefit analysis help reallocate expenditure to quality infrastructure and human capital, while providing well-targeted and efficient transfers to the vulnerable, thereby minimizing their welfare dependence.
- *Congressional Budget Office (CBO).* An independent fiscal institution serving elected members of government such as the CBO in the United States and, more recently, similar offices in Brazil and Argentina can play an important role in providing objective evaluations of reforms or projects, free of political or interest group pressure.

- *Productivity or Evaluation Commission (PC)*. Institutions that blend government and other actors such as the PC's in Australia, New Zealand, and Chile, or the newly created Commission of Quality of Spending in Paraguay and Chile can help governments evaluate programs and prioritize spending, drawing on experts from civil society, academia, and other qualified independent members.

Several countries have made concerted efforts to improve their spending planning institutions. In the sphere of infrastructure investment, for example, perhaps the most important innovation has been the development of national systems of public investment regulated by an agency that is usually hosted in the finance ministry.¹⁹ To enhance the quality of spending, these institutions regulate the processes of public investment that guide projects from the early stages of formulation and feasibility to post-completion evaluation. Improving their efficacy and lengthening the planning horizons would probably require shielding them from political interference.²⁰

In addition, smart spending reviews should be conducted regularly to analyze whether spending is efficient or can be improved, including through reallocation. Well-prioritized results-based budgeting should help to reassign resources every year to the best programs while reducing, or even eliminating, those programs that are not performing.

Critically, tax authorities must also work efficiently and closely coordinate with the relevant ministry or secretary in charge of revenues. Information systems that aggregate the different sources of income and assets of individuals are key to allocate transfers and subsidies, or to determine who should be paying taxes and to detect anomalies worthy of further investigation. Smart digital fiscal systems should be put in place to integrate administrative data from public and private sources.²¹ These systems will be necessary to help rapidly formalize the economy and develop an efficient system of taxes, while controlling and auditing informality.

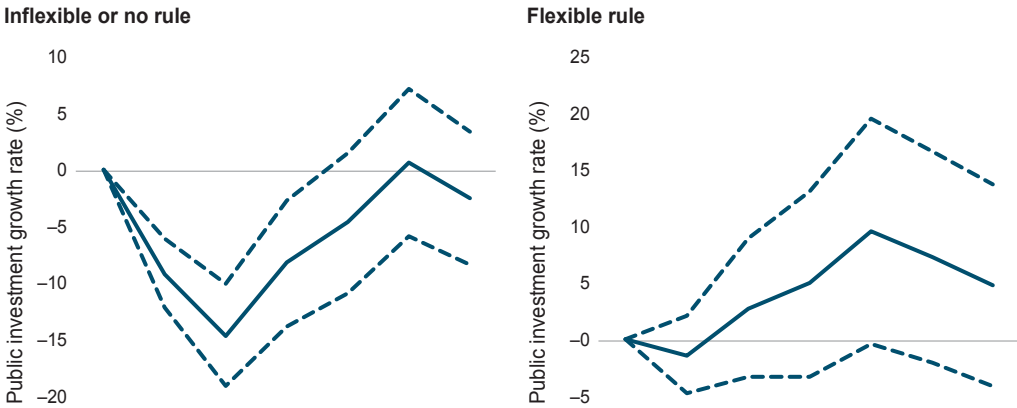
Fiscal Rules for Greater Credibility

Given the uncertainty about fiscal sustainability, well-designed fiscal rules can enhance the credibility of future plans. For countries that already have fiscal rules in place, several have communicated an explicit path to return to compliance (see Box 2.1). Assuming those commitments are credible and maintained, this should improve the conditions to finance the transition.

¹⁹ As of 2019, several countries set up National Systems of Public Investment (SNIPs; “Sistemas nacionales de inversión pública” in Spanish): Argentina, Bolivia, Chile, Colombia, Costa Rica, Dominican Republic, Ecuador, El Salvador, Guatemala, Honduras, Mexico, Nicaragua, Panama, Paraguay, Peru, and Uruguay.

²⁰ See Cavallo, Powell, and Serebrisky (2020) and references therein.

²¹ Pessino (2017) and Izquierdo, Pessino, and Vuletin (2018) explain how to implement these systems with the example of Argentina, which could cut 1% of GDP in inefficient spending by targeting energy subsidies, while fueling third-party data to tax administrations to diminish tax evasion.

FIGURE 2.8 • Impact of Fiscal Consolidation on Public Investment

Source: Ardanaz et al. (2021).

Note: The figure shows the estimated dynamic effects of a fiscal rule on the growth rate of real public investment, based on a regression model. Year 1 is the year of the start of a fiscal consolidation episode. Dashed lines are the 90 percent confidence intervals.

A few countries have an explicit target to reduce debt (see Box 2.1) with a gradual adjustment program. There may be benefits to including explicit debt limits within the fiscal rules.

Fiscal rules should be evaluated and revised as necessary. In some cases, lax targets on structural fiscal balances following expansionary policies during a crisis, or over-optimistic assumptions regarding revenues, including from natural resources, allowed debt ratios to rise despite abiding by the rule.

Another useful revision would be to ensure rules protect public investment during downturns. Flexible fiscal rules can significantly safeguard public investment under fiscal consolidation either directly through investment-friendly provisions (i.e., rules that exclude capital expenditures from targets imposed on fiscal aggregates) or indirectly through cyclically adjusted fiscal targets, or well-defined escape clauses. In countries with either no fiscal rules or rigid ones, a fiscal consolidation of at least 2% of GDP is associated with an average 10% reduction in public investment. Instead, in countries with flexible fiscal rules, the negative effect of fiscal adjustments on public investment vanishes (see Figure 2.8).²²

Alternatives to Deal with High Debt

The COVID-19 crisis has dramatically impacted growth and fiscal outcomes. Countries face difficult choices and walk a narrow path of maintaining fiscal sustainability while providing support to economies.

²² See Ardanaz et al. (2021).

The most appropriate strategy to maintain sustainability depends on each country's characteristics. Countries with low tax revenues have space to boost tax revenues without damaging growth. Countries with high tax takes, generally accompanied by high spending, can improve efficiency by revising expenditure decisions and moving towards a more efficient tax structure. Finding ways to reduce informality to increase the tax base may allow for lower tax rates in many cases.

Governments also face a difficult tradeoff regarding the speed of adjustment. Rapidly removing support measures, introduced to face the crisis, and other adjustment policies, should reduce debt more quickly, but may significantly impact the speed of recovery. However, if adjustment is too slow, then more adjustment is actually required and sustainability may be put at risk. Financing costs and access to financing may rise and roll-over risks may grow. Good fiscal institutions are extremely valuable in such circumstances as they provide greater credibility for a more gradual adjustment, lowering the cost and reducing the risks. While reforms to improve institutions may seem like a medium-term strategy, they could have significant benefits today (see Powell and Valencia, 2020).

In the scenarios developed in this chapter, debt rises, peaks, and then starts to fall. These scenarios are based on the assumption that growth resumes and the subsequent fiscal adjustment follows historical patterns. These scenarios are fraught with much uncertainty and many risks and individual countries are in different positions.

The deep crisis, higher government spending given the health crisis and to support families and firms, and losses in public revenues have led to calls for action from the international community. Through 2020, the IMF disbursed to Latin America and the Caribbean over US\$5.4 billion in emergency lending and arranged backstops and traditional IMF arrangements for over US\$60 billion since the start of the pandemic.²³ The IDB group disbursed a record US\$18 billion in 2020 and the World Bank arranged some US\$7.4 billion of specific COVID-related lending from April 2020 to January 2021.²⁴ These efforts have surely helped countries confront the crisis and reduce sustainability concerns.

Still, a spirited debate raged in academic and policy circles over whether there should be "debt relief," including a debt standstill, or whether providing new resources should be the top priority.²⁵ The majority of countries in Latin America and the Caribbean are middle and high income and their borrowing from the private sector dwarfs loans from official sources.²⁶ Recent research suggests that both debt relief on commercial debt and

²³ Emergency financing includes the Rapid Financing Instrument and other emergency lines and readjustments; back stops include the Flexible Credit Line, Precautionary Liquidity Line and Extended Fund Facility.

²⁴ See <https://www.worldbank.org/en/news/factsheet/2020/04/02/world-bank-response-to-covid-19-coronavirus-latin-america-and-caribbean>.

²⁵ For example, Reinhart and Rogoff (2020) argue for a debt standstill while Cárdenas and Guzmán Ayala (2020) put the emphasis on new money.

²⁶ Among IDB borrowers, the World Bank classifies The Bahamas, Barbados, Chile, Trinidad and Tobago, and Uruguay as high income, Haiti and Nicaragua as low income, and the remainder are in the middle-income category.

new resources from multilaterals would be valuable (Arellano, Bai, and Mihalache, 2020). The benefits of debt relief on commercial debt depends critically on the assumed costs of restructuring. If renegotiating existing debt is not too costly, then the benefit of relief, compared to the alternative of restructuring, declines.

Some research suggests countries face a difficult choice if they need to renegotiate commercial debts. They may “reprofile,” which means pushing out maturities, but with no principal haircut and a limited present value haircut on the amounts owed. This reprofiling may be done relatively quickly, may be voluntary (in the sense of reaching an agreement with creditors), and buys time, but it may not always solve the underlying problem. If it doesn’t, then the country may have to reprofile again, or multiple times. Belize and Jamaica have reprofiled debts several times over the last decade or so.²⁷ Alternatively, a country might seek a deeper restructuring, with a larger principal haircut and greater likelihood of solving the underlying debt overhang. However, that option carries a greater likelihood of disagreements with some creditors, provoking legal actions in international courts that may complicate and delay the process. The international financial system had favored “bipolar debt restructurings,” meaning the distribution of haircuts had twin peaks with most countries reprofiling and a few seeking deeper restructurings (Powell, 2011). However, recent innovations in bond contracts known as the new Collective Action Clauses (CACs) may have provided a more efficient and faster route for countries to restructure.²⁸ Argentina and Ecuador have successfully renegotiated debt aided by CACs.²⁹ Still, it is perhaps too soon to conclude that the new generation CACs have solved all the underlying issues in the international financial architecture.

Low-income countries have rightly been a focus of discussion regarding international support as debt tends to come from official sources—from countries (bilateral debt) and multilateral institutions. The G20 has agreed on a framework for assistance and countries have been encouraged to extend debt relief on bilateral debt (World Bank, 2020b). An issue has arisen with debt owed to countries outside of the usual Paris club of creditor countries. Some loans are not strictly bilateral, are structured more akin to commercial lending, and are extended by a variety of institutions in creditor countries.³⁰ The international community has been working towards greater transparency regarding all types of creditors and encouraging creditor countries to include all types of lending into any relief arrangements.

The 1980s was a lost decade in terms of growth for Latin America and the Caribbean, in part as a result of a string of sovereign defaults commencing with Mexico in 1982. Given

²⁷ In the case of Jamaica, only domestic debt was reprofiled; in Belize, actions focused on external debt.

²⁸ On the new Collective Action Clauses see IMF (2020b).

²⁹ See Mariscal et al. (2015) and IMF (2020b) on debt restructuring choices. IMF (2020b) argues that preemptive restructurings (which are mostly reprofilings in the data) are less costly.

³⁰ In Latin America and the Caribbean, principally the loans from China’s official banks and other agencies and those within the context of Petrocaribe (Venezuela) are outside the usual Paris club bilateral debt.

the growth in debt, there is a natural concern that this could happen again. A relatively small number of large international banks accounted for much of the external lending at that time. One theory suggests that renegotiations should have been straightforward as there were relatively few creditors. But bankers and their regulators were reticent to recognize the losses on lenders' balance sheets and dragged the process out. The debt and the specter of default persisted, affecting investment and growth. In several countries, sovereign defaults were accompanied by domestic banking crises. Arguably, the lost decade did not result from the defaults per se, but rather the long delays in resolving them and complications in the interim (see Cavallo, Fernández-Arias, and Powell, 2014). Countries only escaped the default trap when the debt was converted to bonds and sold through the so-called Brady deals (see Cavallo, 2020). The policy lesson is, if restructuring is required, resolving the debt overhang quickly is less costly than delaying the inevitable. The good news today is that more countries have new generation CACs in their bond contracts. Therefore, if bad scenarios arise and debt has to be restructured, it may happen more swiftly.³¹

The next few years will be challenging as countries seek to boost growth and bring debt ratios down. The risks are very real. The war against the virus is not yet won in Latin America and the Caribbean and a serious second wave in the United States or Europe could hurt global recovery. Getting the adjustment policies right and maintaining financial stability will be critical for a healthy recovery.

³¹ See IMF (2020b) for an updated list of countries that have adopted the new generation CACs.

CHAPTER 3

The External Sector: Focus on Financial Flows

The COVID-19 pandemic hit the region directly via supply and demand shocks, and indirectly through its impact on the rest of the world. When the pandemic struck, external demand fell and financing conditions tightened, particularly at the peak of the crisis. But the impacts of the shock on external accounts varied across countries.

This chapter explores how the COVID-19 shock impacted the current and financial accounts of the balance of payments. The results highlight the importance of fundamentals: countries with better initial conditions including lower fiscal deficits, lower liability dollarization, and higher levels of international reserves were more resilient.

The COVID-19 Shock to External Accounts

The pandemic hit the region through many channels including trade and financial links. Tourism dependent economies, for example, were hurt by the sharp decline in international travel, and commodity exporters suffered the slump in prices.

Table 3.1 reports the median annual growth rates of goods, services, total exports, and imports for different country groups. Countries were classified into three groups according to their export composition. *Tourism dependent* includes the top third (7 of 22 countries) employing a Tourism Dependence Index.¹ The *commodity dependent* countries comprise the top half of the non-tourism countries with the highest share of commodity exports to total exports. The *diversified countries* are the remaining 8 economies.² By the second quarter of 2020, exports of goods fell across the board, but countries in the commodities group experienced larger declines. Tourism dependent countries suffered the greatest drop in exports of services although other countries also registered significant declines. Exports of goods and services plus interest earned on external assets plus remittances

¹ See Mooney and Zegarra (2020) for further details on the tourism dependency index.

² The countries included in this analysis were those with available 2020 external accounts' data at the time this chapter was prepared. Guyana was excluded given the large increase in oil production. Appendix B describes the methodology in detail and presents information for each economy and the classification for 26 Latin American and Caribbean economies.

TABLE 3.1 • Annual Change in Current Account Flows (Second Quarter 2020, %)

	Total CA credits	Exports: total	Exports: goods	Exports: services	Imports: total
Tourism group^a	-11.83	-14.53	-6.47	-18.25	-13.69
Commodities group^b	-10.41	-10.56	-10.33	-16.38	-10.81
Diversified group^c	-3.70	-5.21	-0.23	-14.50	-7.90
25th percentile	-11.46	-13.48	-10.85	-20.86	-15.20
Median	-9.17	-10.28	-6.95	-16.45	-10.64
75th percentile	-3.76	-6.59	-0.57	-12.56	-6.83

Source: IDB staff calculations based on BOPS database (IMF).

Note: Countries for which all variables are available are included. Values for tourism, commodities, and diversified groups are medians. Total CA credits are the sum of goods and services exports, and the credits of primary and secondary income. Total exports are the exports of goods and services. Total imports refers to the imports of goods and services. Data for Haiti are for first quarter 2020. For a more detailed explanation of the construction of the series see Appendix B, Section 1.

^a Tourism group is the top half of non-tourism economies ranked according to the Tourism Dependence Index (from Mooney and Zegarra, 2020). Includes: The Bahamas, Belize, Costa Rica, Dominican Republic, Haiti, Jamaica, and Panama.

^b Commodities group contains the top third of economies ranked according to the fraction of commodities in its total merchandise exports (from UNCTAD, 2019). Includes: Bolivia, Chile, Colombia, Ecuador, Paraguay, Peru, and Uruguay.

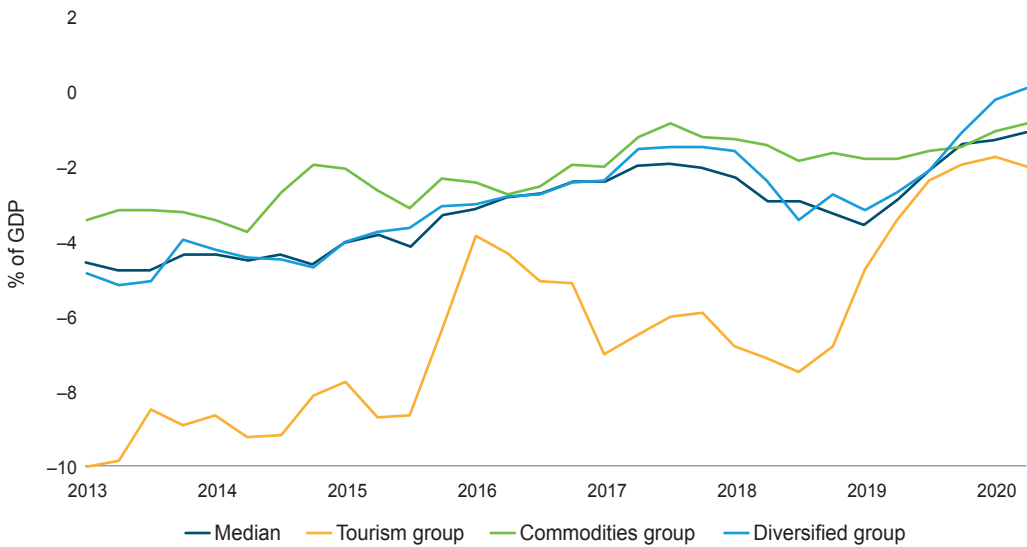
^c Diversified group includes: Argentina, Brazil, El Salvador, Guatemala, Honduras, Mexico, Nicaragua, and Suriname.

add up to total current account (CA) credits, which fell more than twice as much for the tourism and commodity dependent countries as for the diversified group.

Imports declined in all countries. The median country suffered a 10.6% drop in imports, outstripping the 9.2% decline in total current account credits. The diversified group saw a larger fall in imports relative to exports and relative to total current account credits, and hence watched their current accounts narrow the most. But tourism dependent and commodity dependent countries underwent larger absolute declines in imports and for both groups, the drop in imports surpassed the median.

Remittances to the region have proven resilient during the COVID-19 shock. Among the countries for which annual remittances exceed 5% of GDP, including Belize, the Dominican Republic, El Salvador, Guatemala, Haiti, Honduras, Jamaica, and Nicaragua, the annual growth rate of remittances fell to 4.9% in the first quarter of 2020, down from 7% in 2019 and 8.9% in 2018. However, they recovered to an annualized growth rate of 6.2% in the second quarter and 7.8% in the third quarter. For the region, remittances slipped by only 0.2% in 2020, which is less than the decline in other regions (World Bank, 2020b) and better than expected given the severity of the shock (Parrado, Armangué, and Herrera, 2020). The U.S. economy's better than expected performance (see Chapter 1) as well as the U.S. government's income support and direct transfers to households may have buoyed remittances. Currency devaluations and expanded financial inclusion may also have played a role, not only in Latin America and the Caribbean but across the globe.³ Irrespective of the drivers, remittances proved to be a source of strength for external accounts in 2020.

³ For further analysis, see World Bank (2020b).

FIGURE 3.1 ● Evolution of Current Account Balances in the Region

Source: IDB staff calculations based on BOPS database (IMF).

Note: Countries for which all variables are available are included. Values for tourism, commodities, and diversified groups are medians. Total CA credits are the sum of goods and services exports, and the credits of primary and secondary income. Total exports are the exports of goods and services. Total imports refers to the imports of goods and services. Data for Haiti are for first quarter 2020. For a more detailed explanation of the construction of the series see Appendix B, Section 1.

As a result of these fluctuations, the median CA balance remained nearly unchanged at the pre-crisis level, although countries varied significantly.⁴ The median tourism economy widened its current account deficit 0.7% of GDP between fourth quarter 2019 and second quarter 2020, while the median diversified economy narrowed it 0.6% of GDP in the same period. Regionally, about two-thirds of the countries *reduced* their CA deficits during the COVID crisis.

The movements in current accounts are driven by various factors including external shocks to commodity prices and tourism. Given such large negative shocks, countries would be expected to try to smooth domestic consumption and either borrow from abroad or draw down external savings and run significant negative current account deficits. However, the story appears to be more nuanced.

A constraint may relate to financial markets that tend to be procyclical; governments and firms may be unable to access external resources precisely when they are needed. A more extreme possibility is that countries suffer a sudden stop in capital flows (which in turn may be a result of nonresidents withdrawing their investments or residents wanting

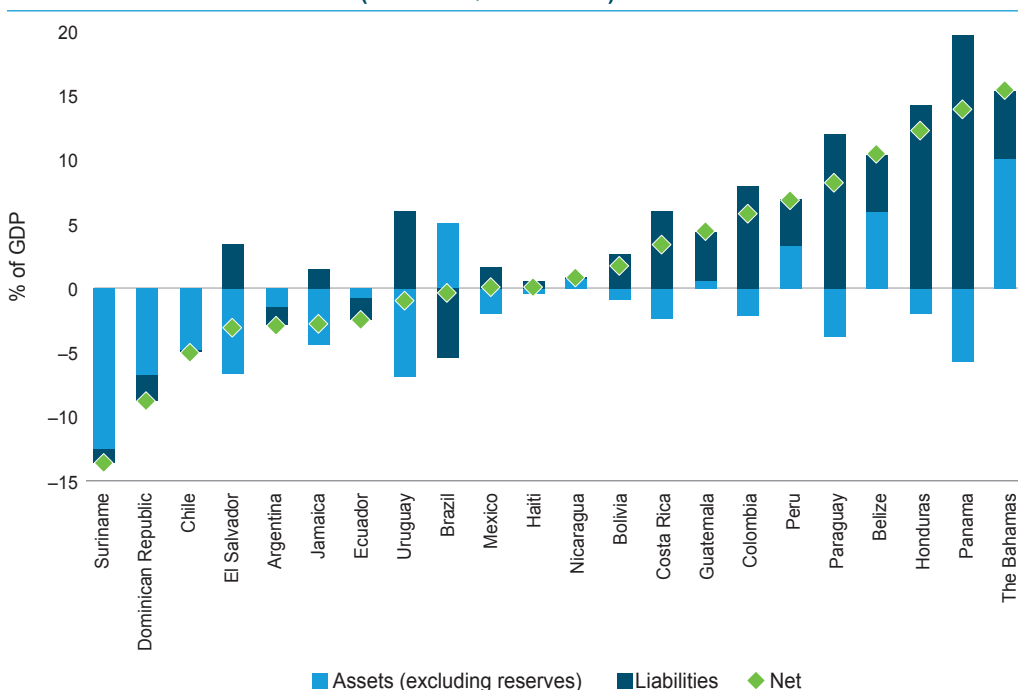
⁴ Current Account (CA) balances in the region had been improving since 2013, as shown in Figure 3.1. The median commodities group economy had the highest overall balance, while the tourism one had the lowest throughout this period.

to build savings abroad) precisely when additional financing would allow import levels to be maintained. The following section explores developments in capital flows and which countries suffered sudden stops.⁵

Capital Flows and Sudden Stops in Times of COVID-19

Most countries were able to borrow from nonresidents during the critical first two quarters of the pandemic (see Figure 3.2).⁶ The figure provides a snapshot of financial flows up to the second quarter of 2020. The convention in this chapter is that a positive number means an inflow of funds to the economy—either an increase in external

FIGURE 3.2 • Financial Flows (Second Quarter 2020)



Source: IDB staff calculations based on BOPS database (IMF).
 Note: Countries for which all variables are available are included. Data are the annualized flow: the US\$ quarterly flow times four divided by the annual GDP. Annual GDP is from 2019. Assets exclude reserve-related items. Haiti data are available up to first quarter 2020. For a comprehensive description refer to the Appendix B, Sections 2 and 3.

⁵ See Cavallo (2019) for a recent review of the literature on capital flow events including sudden stops.
⁶ At the time of writing, data for second quarter 2020 was available for 23 of 26 IDB borrowing member economies. Brazil, Chile, Colombia, Costa Rica, Dominican Republic, Ecuador, El Salvador, Guatemala, Honduras, Mexico, Nicaragua, Paraguay, and Suriname also had data available for third quarter. This analysis employed the IMF’s Balance of Payments’ Statistics (BOPS) database. As standard in the literature, the focus is on financial account flows excluding reserve related items, as presented in the analytic version of the balance of payments. More details about the database are in Appendix B.

liabilities, or a decrease in external assets. Dark blue bars in Figure 3.2 represent the flows of nonresidents (often referred to as inflows). Since most dark blue bars in the figure are positive, that means those countries had positive net borrowing with the rest of the world (i.e., they were able to borrow more than they had to pay back to nonresidents during this period). Light blue bars represent the flows of residents, that is, the net changes in residents' foreign asset holdings (often referred to as outflows). Netting inflows and outflows indicates that 12 countries received net positive flows (i.e., green dots in Figure 3.2 are positive).

However, most countries in the region were already net borrowers before the pandemic hit, meaning they were receiving net positive financing flows prior to COVID-19. Countries may have been forced to engineer a current account adjustment even if net flows remained positive. The question becomes whether financing flows kept up with the pre-crisis pace.

Sudden stops in net flows (SS) are defined taking into account the existing level of flows. This chapter draws on Calvo (1998) to define a sudden stop as an event in which the annual change in net capital flows is more than two standard deviations below the mean for at least one quarter.⁷ In terms of timing, the event starts in the quarter when the yearly change in capital flows falls below one standard deviation, and finishes once the capital flows are restored back to the one standard deviation threshold.

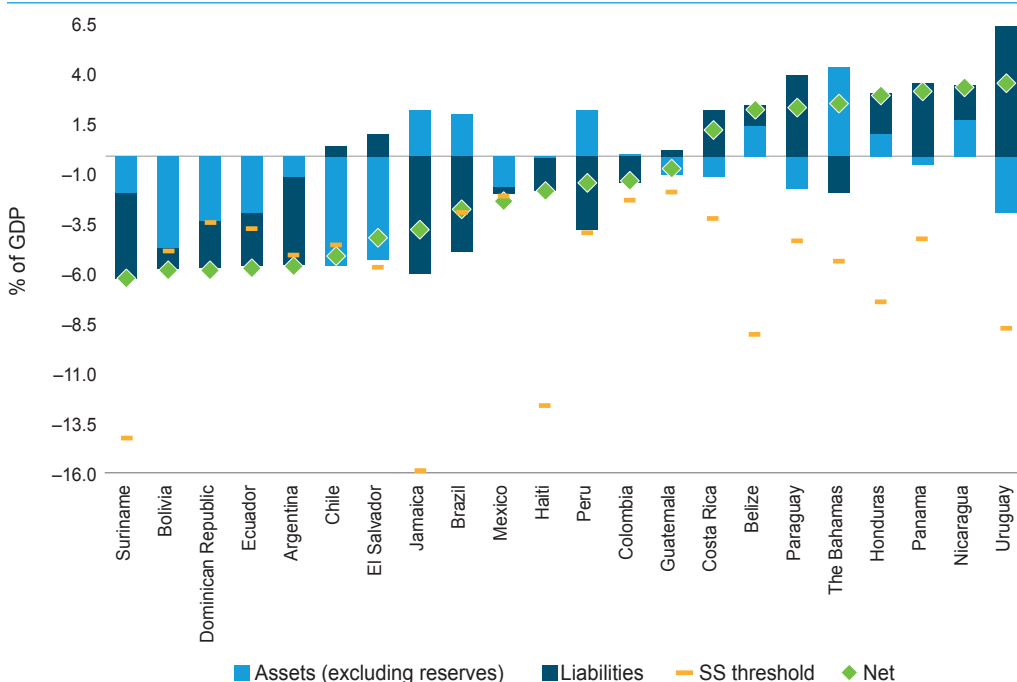
Perhaps surprisingly, only 7 of 22 countries analyzed suffered a sudden stop during the first three quarters of 2020 (see Figure 3.3 and Table 3.2). In Figure 3.3, a green dot below the line marking the country specific threshold indicates a sudden stop in that quarter.⁸

The episodes are listed in Table 3.2 along with the start date (i.e., when the annual change in net flows fell below one standard deviation of the mean) and the effective date (i.e., when the annual change in net flows fell below two standard deviations of the mean). The final column indicates whether there was a sudden stop in inflows (SSI) or outflows (SSO), following the taxonomy outlined in Cavallo et al. (2015).

In four of the cases listed in Table 3.2, the sudden stop start date is before 2020, meaning external financing conditions had already begun to weaken *before* the pandemic hit, with some countries in a more vulnerable position than others. In all cases, except Argentina, the sudden stops became effective when the pandemic hit the economies in

⁷ The SS threshold for an economy is defined as the mean net flow minus two standard deviations of the country's flows. Forbes and Warnock (2012) is used for dating sudden stops.

⁸ In several countries, residents increased savings abroad from previous levels (i.e., the light blue bars in Figure 3.2 representing annual changes in asset flows are mostly negative). Several countries suffered a reduction in external liabilities from the previous trend (i.e., some dark blue bars are negative). Suriname is the only country in an SS in second quarter 2020 where the SS threshold is not breached in that period. It breached the threshold in third quarter 2020, triggering a sudden stop. The event is then determined to have started in second quarter 2020.

FIGURE 3.3 • Annual Change in Capital Inflows (Second Quarter 2020)


Source: IDB staff calculations based on BOPS database (IMF).

Note: Countries for which all variables are available are included. See note on Figure 3.2 for the data description. Figure shows the annual change in yearly flows: the difference between the sum of the four quarters and the sum of the previous four quarters. The sudden stop threshold is defined as the mean minus two standard deviations of the annual change in the capital flow. The threshold for Nicaragua is -20% . For a comprehensive description refer to Appendix B, Sections 2 and 3.

TABLE 3.2 • Economies Facing a Sudden Stop (SS) in 2020

Country	Started	Effective	Also SSO or SSI
Argentina	2018 Q3	2018 Q3	SSI
Mexico	2019 Q3	2020 Q2	None
Bolivia	2019 Q4	2020 Q2	SSO
Ecuador	2019 Q4	2020 Q1	SSI, SSO
Chile	2020 Q2	2020 Q2	None
Dominican Republic	2020 Q2	2020 Q2	SSO
Suriname	2020 Q3	2020 Q3	SSI

Source: IDB staff calculations based on BOPS database (IMF).

Notes: SSO: Sudden Stop in Outflows (assets). SSI: Sudden Stop in Inflows (liabilities). Sudden stop events are triggered when the annual change of the yearly flow (net, asset, liability) is two standard deviations below its mean. The sudden stop begins once the annual change goes one standard deviation below its mean. The sudden stop threshold is defined as the mean minus two standard deviations of the yearly capital flow.

full force, in either the first, second, or third quarter of 2020. In the Dominican Republic, the sudden stop lasted only one quarter because in the third quarter, the government was able to issue sovereign debt, which resulted in inflows of 3.5% of GDP.⁹

In Argentina and Suriname, a sudden reduction in foreign lending (SSI) triggered the sudden stops in net flows (see Table 3.2, last column). In Bolivia and the Dominican Republic, the trigger was an outflow from domestic residents (SSO). In Ecuador, SSI and SSO combined to cause the sudden stop in net flows. And in Chile and Mexico, neither SSI nor SSO were to blame; less severe fluctuations in foreign lending and residents increasing foreign asset holdings combined to trigger a sudden stop in net flows.

Were Sudden Stops Predicted?

The literature on the causes of sudden stops identifies specific domestic characteristics that interact with external conditions to increase the likelihood of sudden stops in net capital flows. Those features are: the current account and the fiscal deficit—both of which are proxies for the country’s demand for external financing; and the amount of hard currency-denominated debt, which affects the country’s ability to undergo real exchange rate depreciations without triggering private and public bankruptcies. On the flip side, foreign reserves increase resilience against sudden stops.

Table 3.3 compares these factors in 2007, before the Great Financial Crisis (GFC), and in 2019, before the COVID-19 pandemic. The comparison is relevant because in the aftermath of the GFC, the region was able to successfully navigate through the crisis, avoiding sudden stops in net flows, likely thanks to strong initial conditions. Was this the case prior to the pandemic? The answer is nuanced. Compared with the pre-GFC period, by the end of 2019 the region had weaker fiscal balances and lower current account deficits,¹⁰ while liability dollarization levels had improved in some countries and were worse in others.¹¹ International reserves were higher across the board.¹²

Table 3.4 employs the economic model of Calvo, Izquierdo, and Loo-Kung (2012) to explore whether the sudden stops that countries experienced were predicted by the initial conditions in Table 3.3. The table places 14 countries into one of four quadrants: whether a

⁹ See Appendix B for data on government external debt issuance in 2020.

¹⁰ The median current account deficit in the region was lower in 2019 than in 2007, suggesting that the external positions were stronger. But countries varied widely in this area, especially among commodity exporting countries whose current account balances have deteriorated significantly since 2007.

¹¹ Domestic liability dollarization, which measures the share of dollar denominated debt as a fraction of total debt, was identified by Calvo, Izquierdo, and Mejía (2008) as a key external vulnerability indicator. A decade of ultra-low interest rates by central banks of advanced economies fueled an increase in this indicator.

¹² Terms of trade were favorable for the commodity group, and several tourism economies benefited from a steady flow of remittances, enabling all of them to accumulate reserves.

TABLE 3.3 • Select Indicators: Pre-COVID versus Pre-Global Financial Crisis

(% of GDP)	Fiscal balance		Current account balance		Liability dollarization		Reserves	
	2007	2019	2007	2019	2007	2019	2007	2019
Tourism group	-0.8	-2.3	-5.6	-2.0	6.3	11.0	9.3	14.4
Commodities group	1.7	-3.0	3.7	-1.4	20.0	18.1	13.8	16.4
Diversified group	-0.8	-2.7	-3.0	-1.1	17.2	18.7	13.3	17.6
Latin American and Caribbean median	-0.2	-2.8	-2.9	-1.4	19.7	17.8	13.8	16.1

Source: IDB staff calculations based on IMF (2020d).

Note: Figures are the medians across countries with available data for that variable.

sudden stop was predicted and happened (top left); whether a sudden stop was not predicted, and it did not happen (bottom right);¹³ whether a sudden stop was predicted but did not occur (bottom left); and whether a sudden stop was not predicted but actually happened.

The model predicts the outcomes well: three countries had sudden stops that were predicted and eight countries that were predicted not to have a sudden stop did not have one. The exceptions are Costa Rica and Uruguay where the model gives a false positive—it

TABLE 3.4 • Sudden Stops in Net Flows: Predicted versus Realized

	Predicted SS	Predicted no SS
SS	Bolivia, Chile, Dominican Republic	Mexico
No SS	Costa Rica, Uruguay	Brazil, Colombia, Guatemala, Honduras, Jamaica, Nicaragua, Peru, Paraguay

Source: IDB staff calculations based on national sources, IMF and World Bank data.

Note: Countries for which all variables are available are included. The model-based analysis could not be done for Argentina, The Bahamas, Belize, Ecuador, El Salvador, Guyana, Haiti, Panama, and Suriname due to missing data on one or more of the model's components. For a comprehensive description of the data and the model see Appendix B, Section 4.

predicted a sudden stop that did not materialize—and Mexico, which suffered a sudden stop that was not predicted.¹⁴

Most sudden stops that occurred during 2020 could be successfully predicted using a parsimonious model that relies on a small set of key domestic factors before the crisis. The conclusion is that initial conditions played a significant role in determining who suffered a sudden stop and who did not, despite the global nature and the magnitude of the COVID shock.

¹³ These 14 countries had all the data available to perform this analysis.

¹⁴ The model calculates the probability of a sudden stop which is then transformed into a prediction applying a threshold. The threshold that maximized the signal-to-noise ratio was employed.

Sudden Stops in Gross Inflows and Outflows

About a third of countries experienced a sudden stop in net flows in 2020 (see Table 3.2). Other countries, however, experienced either a reduction in net lending from foreigners—what is known as a sudden stop in inflows (SSI)—or a sudden increase in net savings from residents abroad—also known as a sudden start in outflows (SSO)—but did not experience sudden stops in net capital flows. While sudden stops in net flows are likely to be painful due to the required adjustment in the current account, gross flows sudden stops are not painless and may cause financial instability.¹⁵

Before the global financial crisis, a majority of the sudden stops affecting emerging countries, including in Latin America and the Caribbean, were triggered by variations in the flows from foreigners (gross inflows). Since then, gross inflows have remained significant, and the importance of external asset flows (gross outflows) has increased.¹⁶ As gross flows become relatively more important in the overall external financing picture, their behavior during the COVID-19 shock is worth considering.

The algorithm employed to identify sudden stops in net flows can be applied to identify sudden starts in outflows (SSO) on the asset side, and sudden stops in inflows (SSI) on the liability side, and their respective start and effective dates.

Table 3.5 shows which countries experienced either an SSO or an SSI during COVID that were not sudden stops in net capital flows. Costa Rica, El Salvador, Guatemala, and Paraguay twice, had SSOs that did not become sudden stops in net flows because residents' capital flight was compensated at least in part by capital inflows from foreigners (see dark blue bars in Figure 3.3). Conversely, Brazil and Peru experienced SSIs that did not become sudden stops in net flows, meaning that resident investors repatriated foreign-held assets and offset the reduction in foreign lending (see light blue bars in Figure 3.3).

The Asset Side of External Financing

Figure 3.4 shows the annual change in gross outflows (green dot), decomposed according to specific asset classes, along with the SSO threshold (yellow line) for 22 Latin American and Caribbean economies. Eleven of the 12 countries with the highest outflow as a percentage of GDP (aligned to the left of the figure) experienced either a sudden stop in net flows (SS), or an SSO, or both at the same time. The other countries presented more nuanced

¹⁵ See Cavallo et al. (2015) for discussion on sudden stops in gross and net flows and which ones are most painful.

¹⁶ See Forbes and Warnock (2012) and Broner et al. (2013) for earlier examples of literature on sudden stops and gross flows and Cavallo (2019) for a more recent literature survey.

TABLE 3.5 • Gross Flow Sudden Stops with Compensating Flows

Country	Started	Effective	Type
El Salvador	2019 Q4	2019 Q4	SSO
Guatemala	2020 Q1	2020 Q1	SSO
Paraguay	2020 Q1	2020 Q1	SSO
Brazil	2020 Q1	2020 Q2	SSI
Peru	2020 Q2	2020 Q2	SSI
Costa Rica	2020 Q3	2020 Q3	SSO
Paraguay	2020 Q3	2020 Q3	SSO

Source: IDB staff calculations based on BOPS database (IMF).

Note: SSO: Sudden stop in outflows (assets). SSI: Sudden stop in inflows (liabilities). Sudden stop events are triggered when the annual change of the yearly flow (net, asset, liability) is two standard deviations below its mean. The sudden stop begins once the annual change falls one standard deviation below its mean. The sudden stop threshold is defined as the mean minus two standard deviations of the yearly capital flow.

movements in gross outflows. Regarding the asset types driving the fluctuations, “other investments” (dark blue bars) contributed the most to the fall in asset flows in 9 of the 14 countries where the green dot is below zero. Volatility in other investments, which are mostly banking flows, are more likely to be tied to financial instability than fluctuations in other types of flows (Cavallo, et al., 2015).¹⁷

At the other end of the spectrum, to the far right of Figure 3.4, Brazil and Peru are among the countries with the largest increases in asset related flows, meaning there was capital repatriation on net (i.e., the green dot is above zero).¹⁸ Brazil and Peru simultaneously experienced a sudden stop in inflows. Therefore, the offsetting repatriation helped prevent the SSI from becoming a sudden stop in net flows.¹⁹ Argentina and Suriname, on the other hand, also faced SSI during that period. However, those countries had no capital repatriation on the asset side to prevent the SSI from becoming sudden stops in net flows.

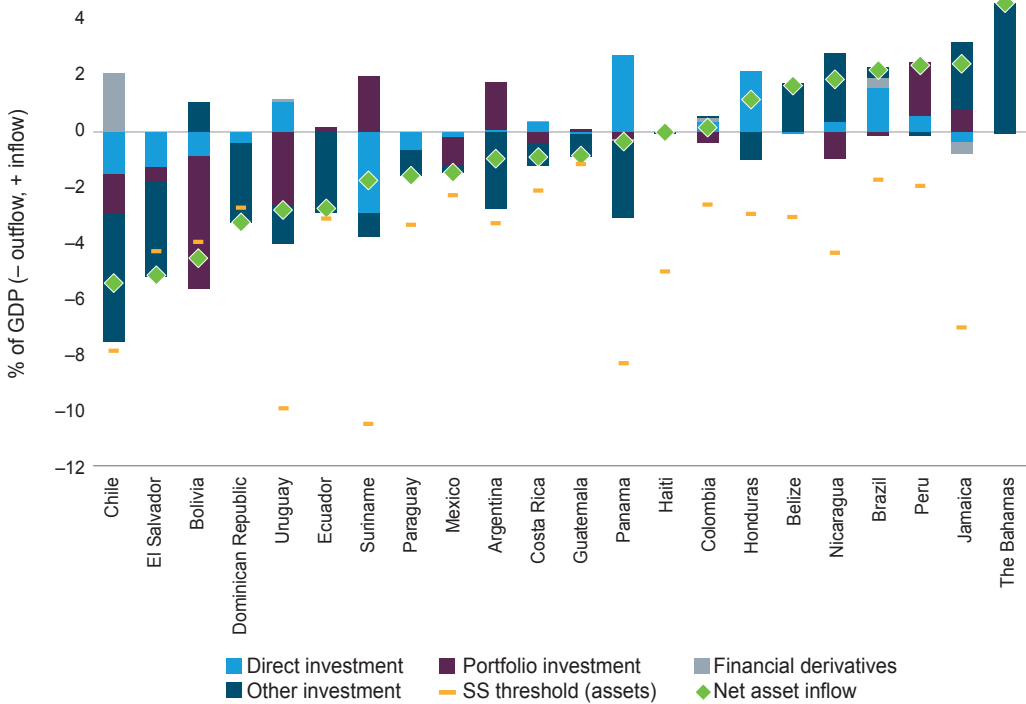
The factors behind the asymmetric response of outflows amidst SSIs has been the focus of recent research. Cavallo, Izquierdo, and León-Díaz (2020) argue that sudden stops in net capital flows are more likely to be prevented in countries with strong and credible macroeconomic frameworks. Computing the correlation between the exchange rate regime and gross capital flows during COVID-19 helps determine if that was the case

¹⁷ Almost all asset-related outflows are savings from the private sector that are mostly channeled through financial institutions. A small fraction of Chile and Colombia’s flows are related to sovereign wealth funds from commodity export proceeds. A small portion of Ecuador’s outflow comes from government cash deposits.

¹⁸ The Bahamas had strong asset inflows, likely due to compensatory flows linked to the offshore banking industry. The correlation between asset and liability flows in The Bahamas is 0.99, hence the SSO and SSI thresholds are large.

¹⁹ Prevented sudden stops is the term coined by Cavallo, Izquierdo, and León-Díaz (2020) for situations in which SSIs do not coincide with SSOs.

FIGURE 3.4 ● Annual Change in Asset Flows (Second Quarter 2020)



Source: IDB staff calculations based on BOPS database (IMF).

Note: Countries for which all variables are available are included. Haiti data are available up to first quarter 2020. See note on Figure 3.2 for the data description. Sudden stops in outflows (assets) are effective when the annual change of the yearly flow in assets is two standard deviations below its mean. The Bahamas threshold is -299%.

during the COVID crisis.²⁰ Countries with stronger and more credible macroeconomic frameworks are more likely to allow the exchange rate to float (Calvo and Reinhart, 2002). When gross outflows, inflows, and net flows are standardized, a positive rank correlation (+0.27) emerges between gross outflows and exchange rate flexibility. Moreover, a negative correlation exists between exchange rate flexibility and gross inflows (-0.15). Together, the correlation between exchange rate flexibility and net flows is close to zero (-0.08).²¹ Thus, countries with greater exchange rate flexibility during COVID were more likely to see gross inflows and outflows moving in opposite directions, which in turn resulted in more stable net capital flows.

²⁰ This analysis uses the 2019 Annual Report on Exchange Arrangements and Exchange Restrictions AREAER from the IMF, which classifies the exchange rate regime of each country into one of ten categories, ranging from the least flexible fully dollarized economies (no separate legal tender) to the most flexible fully floating exchange rates (free floating).

²¹ Since AREAER category numbering is meant to be ordinal, the Spearman rank correlation is reported.

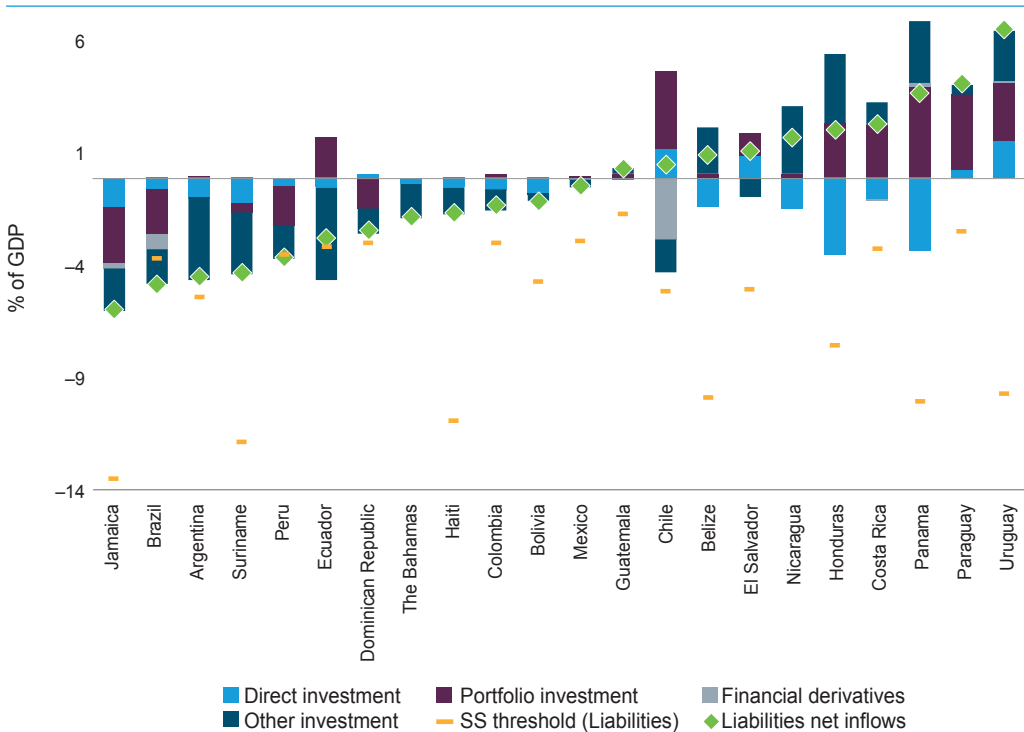
In summary, residents’ external asset accumulation during the pandemic created significant outflows in the financial account of the balance of payments. Those flows were critical in driving extreme events (SSOs) in some countries and, in a few cases, outright sudden stops in net flows. However, in other countries, residents repatriated foreign-held assets, which helped stabilize external accounts in those countries.

The Liability Side of External Financing

While residents’ external asset flows varied widely during the COVID-19 shock, developments on the liabilities side were also important.

Figure 3.5 shows the annual change in gross inflows by type of flow. The country on the far left side of the figure is Jamaica, which suffered a significant drop in inflows; however, given the volatility of Jamaica’s inflows, the fall did not trigger a sudden stop. The four countries with the next largest contractions in inflows as a percentage of GDP

FIGURE 3.5 • Annual Change in Liability Flows (Second Quarter 2020)



Source: IDB staff calculations based on BOPS database (IMF).
 Note: Countries for which all variables are available are included. Haiti data are available up to first quarter 2020. See note on Figure 3.2 for the data description. Sudden stops in inflows (liabilities) are effective when the annual change of the flow in liabilities is two standard deviations below its mean. The Bahamas and Nicaragua thresholds are -299% and -19%, respectively.

experienced only a sudden stop in inflows (Brazil and Peru) or sudden stops in inflows and net flows (Argentina and Suriname).

At the other end of the spectrum, on the right side of the figure, countries experienced an increase in inflows. In Guatemala, El Salvador, and Paraguay, the surge was enough to offset a concurrent increase in foreign asset holding by residents that classify as SSOs (Table 3.5). Guatemala's liability inflows remained about the same as during the preceding year, which was enough to offset the capital flight on the asset side. In El Salvador and Paraguay, gross inflows expanded significantly during the crisis which implies these countries were able to boost foreign borrowing while resident investors were increasing foreign asset holdings.

The most significant variation on the liability side of the financial account comes from portfolio and other investment flows (purple and dark blue bars in Figure 3.5). Net portfolio liability inflows contracted significantly in Brazil and Peru during COVID-19. Instead, in Chile and Colombia, net portfolio flows remained steady due to large private debt issuances (see Chapter 6). In smaller countries, the government and the central bank account for almost all portfolio liability inflows.²²

Other investment liabilities include private flows (i.e., commercial bank loans) and official lending to countries (bilateral and multilateral). Official lending increased during COVID-19, especially among the countries with more limited market access. Instead, the commercial bank loans portion of the other investment liabilities declined and was procyclical, thereby contributing the largest share of the decline among the countries where other investment liabilities dropped. The volatility of the private flows component of other investment liabilities should be monitored because it has been the source of financial instability in the past (Brunnermeier et. al, 2012).

Policy Lessons and Prescriptions

As the pandemic hit the region, both exports and imports fell and financial conditions deteriorated, especially during the critical first half of the year. Current account balances remained broadly stable, but experiences varied widely across the region. On the financing side, governments that could, borrowed heavily, including from nonresidents, to finance higher fiscal deficits. Households, facing negative income shocks, also borrowed to smooth consumption. Firms, facing lower demand, invested less, but some issued bonds abroad, thereby increasing liquid assets (see Chapter 6). While external financing was available for some countries, about one-third of all countries analyzed experienced sudden stops in net flows. Interestingly, most of the sudden stops that materialized were successfully predicted with a model that considers the state of key macroeconomic factors at the end of

²² See Appendix B for data on government external debt issuance in 2020.

2019. Thus, while the COVID-19 shock affected all countries, those with weaker pre-existing conditions, including higher fiscal and current account deficits, higher levels of liability dollarization, and low international reserve buffers, suffered greater outflows of capital.

Going forward, countries will need to roll over external debt and finance fiscal deficits that may require additional external financing. As economic recovery gathers steam, investment is likely to increase, leading to greater external financing needs (see Chapters 8 and 9). Countries that lacked buffers before the pandemic, and those that depleted those buffers during COVID-19, should rebuild them to prevent painful capital flow volatility in the future as well as to finance the recovery. External financing may become a constraint, especially if global interest rates start to rise. Official financing from international financial institutions will likely be in high demand in the coming years.

CHAPTER 4

An Array of Monetary Policies to Fight the COVID Crisis

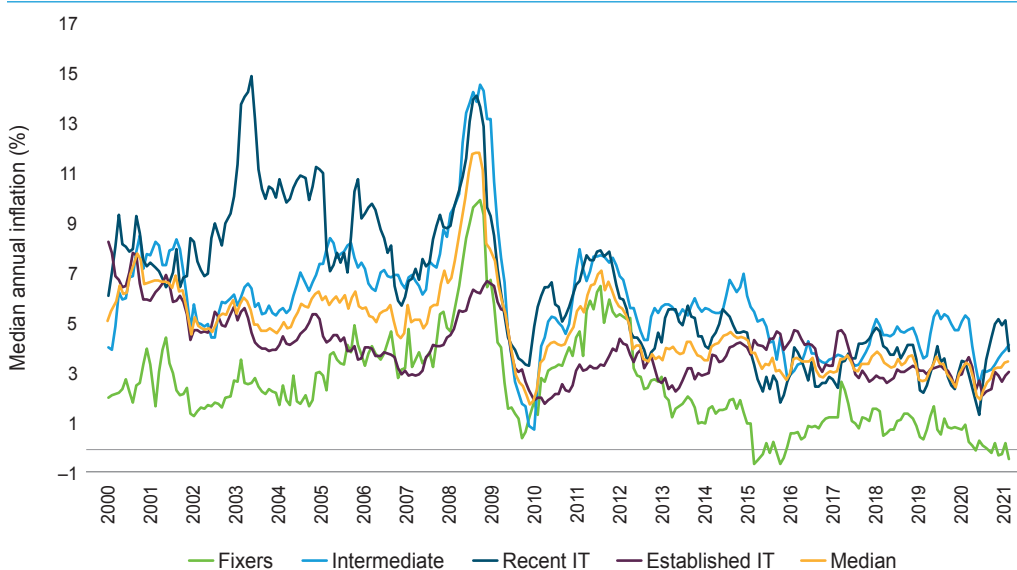
Central banks in the region reacted swiftly to the challenges posed by the COVID-19 crisis. They reduced policy interest rates and reserve requirements and provided liquidity assistance, principally to banks and governments. These policies helped meet the demands for greater liquidity and assisted families and firms without compromising monetary and financial stability. Inflation remained low, with expectations well anchored in the vast majority of countries.

Central bank balance sheets expanded considerably through 2020, and with policy interest rates at record lows, the space to provide more stimulus going forward is limited. Moreover, the full impacts of the various policy measures are yet to be fully realized and uncertainty remains over future demand for liquidity. Further challenges to ensure consistency between fiscal and monetary policy measures may arise. Central banks will have to navigate through potentially hazardous and uncharted waters in the aftermath of the pandemic.

Inflation: Anchored in Most Countries but Risks Ahead

Most central banks in Latin America and the Caribbean maintained low inflation rates through 2020 (see Figure 4.1). Amidst the COVID crisis and the wide range of policy responses, the median inflation rate in the region remained stable at around 3% per year. The countries that are either fully dollarized or adopted a hard peg to the US dollar (fixers in Figure 4.1) continued to record the lowest inflation, whereas the group of established inflation targeters (established IT) and those with intermediate regimes converged to similar, slightly higher rates. Recent inflation targeters (countries that adopted inflation targeting regimes within the last 15 years) saw inflation drift up above 5% per annum for the first time since 2014 by the end of 2020, although in January 2021, inflation came back down to 3.9%. In four other countries (Argentina, Haiti, Suriname, and Venezuela) inflation exceeded 20% in 2020.¹

¹ Venezuela remains in a deep economic crisis with a further large loss of output in 2020 and very high inflation.

FIGURE 4.1 ● Inflation Rates across Monetary Regimes

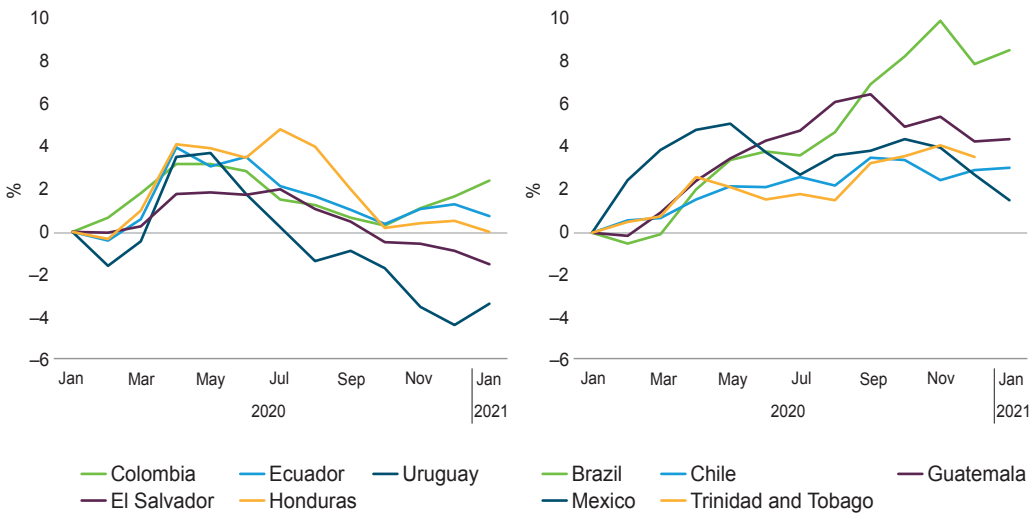
Source: IDB staff calculations based on central banks' data and Haver Analytics.

Note: This figure depicts median inflation rates for different exchange regimes. Established IT: Brazil, Chile, Colombia, Mexico, and Peru; Recent IT: Costa Rica, Dominican Republic, Guatemala, Jamaica, Paraguay, and Uruguay; Intermediate: Argentina, Bolivia, Haiti, Honduras, Nicaragua, and Trinidad and Tobago; Fixers: The Bahamas, Barbados, Belize, Ecuador, El Salvador, Guyana, Panama, and Suriname.

The crisis and associated lockdowns provoked a steep fall in demand but also a set of supply constraints that varied across products. Government support measures also impacted demand. Still, with lockdowns in many countries, the drop in demand was most pronounced in the second quarter of 2020, producing record low inflation. Supply disruptions appeared, particularly for perishable goods such as food. Moreover, some consumers may have reduced demand for nonessential goods and attempted to purchase larger quantities of essential items to prepare for possible supply restrictions, and reduce the number of visits to stores. Government transfers, particularly to poorer families, also helped buoy the demand for essential goods. The result was that while general inflation was subdued, inflation for some categories, particularly for food, was higher.²

Figure 4.2, Panels A and B show that the difference between food inflation and overall inflation became substantial for some Latin American and Caribbean countries. For the group of countries in Figure 4.2, Panel A, this difference was temporary and vanished by the end of the period analyzed. For the group of countries in Panel B, however, the difference has been persistent and even expanded throughout the year. In Brazil and Guatemala, for example, food inflation rates were around 9pp and 4pp higher than overall inflation rates, respectively. In these cases, central banks and governments will need to consider

² See Nuguer and Powell (2020b), Ebrahimi, Igan, and Martinez Peria (2020), and Lino and Braz (2019).

FIGURE 4.2 • Food Inflation versus Overall Inflation

Source: IDB staff calculations based on central banks' data and National Statistical Agencies.

Note: The figure shows the difference in annual inflation in % from January 2020.

the distributional implications of these divergent inflation rates, because the consumption basket of poorer households became relatively more expensive.

Persistent and rising inflation in certain product categories and in overall inflation for a group of countries at the end of 2020 raises the question of whether inflation will stabilize or continue to rise in 2021. Some of the changes in inflation result from temporary measures due to the pandemic; they should disappear once the health crisis is over and economies recover. The effects of lockdown measures, for example, should be temporary. Some other government policy responses may also fall into this category. For example, many countries injected substantial liquidity. Unless these injections continue, the impacts should also be temporary. A danger, however, is that the expansion in the monetary base persists, especially if central banks become financiers of continuing deficits and the demand for liquidity from the private sector fades. In that scenario, the region's history teaches that inflation could rise, become more persistent, and be costly to bring down.³

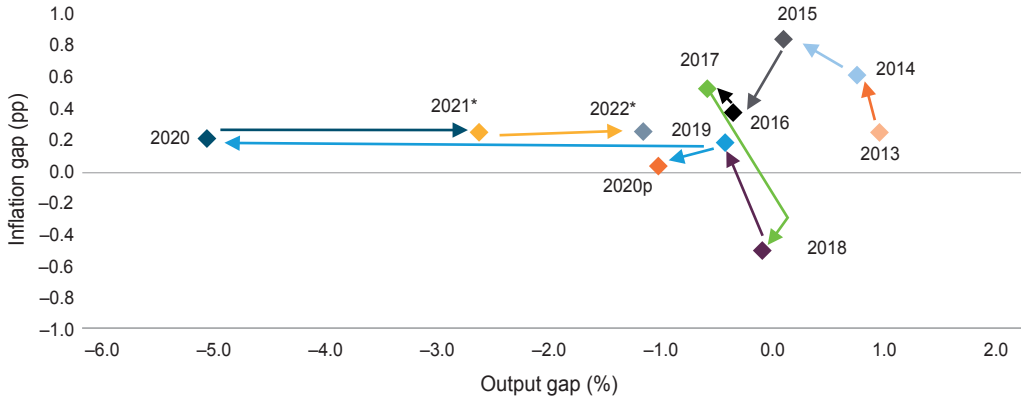
Output and Inflation Gaps among Inflation Targeters

The average output growth of inflation targeters had been below potential since 2016 and that negative gap widened significantly with the pandemic (Figure 4.3, Panel A). By the end of 2019, the average output gap for the inflation targeters was expected to be around -1% in 2020, but by October it had reached -5.5%, reflecting the severity of the

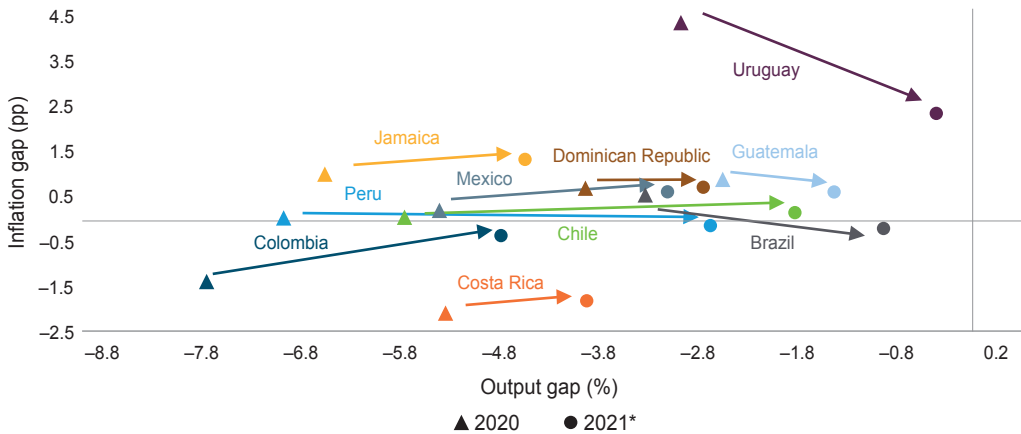
³ See Kehoe and Nicolini (2021) and the various chapters on countries in Latin America.

FIGURE 4.3 • Inflation and Output Gaps

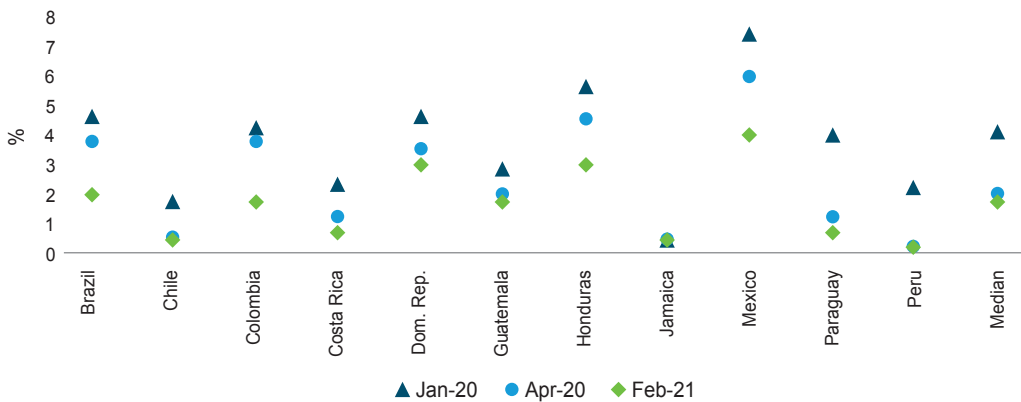
A. Simple mean across inflation targeters



B. Output and inflation gaps: selected countries



C. Policy rates



Source: IDB staff calculations based on IMF (2020d) and central banks' data.
 Note: The inflation gap is the deviation of annual inflation from the target in percentage points; the output gap is the deviation of annual output from its potential level. Paraguay is not included in this chart due to lack of output gap data. (*) denotes projections from IMF (2020d), and (p) denotes projections from IMF (2019).

recession. Figure 4.3, Panel A illustrates the output gap expected in 2020 at the end of 2019 (denoted 2020p in the figure and the outturn inflation rate is labelled 2020). All countries analyzed saw output gaps rise (Figure 4.3, Panel B).

Given the nature of the shock and the lockdown measures, some widening of output gaps was unavoidable. Central banks reduced policy rates and injected liquidity to provide relief to families and firms. Most economies had either negative or small inflation gaps by the end of 2019 and the recession had a deflationary impact, giving central banks space to lower their policy rates and inject liquidity into their economies without fueling inflation. By the end of the year, most central banks had overshot their inflation targets, but most deviations stayed within a 1.5pp range (Figure 4.3, Panel B).

Output gaps are expected to fall in 2021 as economies recover. But recovery is expected to be gradual, with average projected output gaps for 2021 and 2022 of -2.6% and -1.2%, respectively. Under this scenario, central banks may be tempted to pursue further expansionary measures to promote a faster recovery. However, they should bear in mind that average expected inflation gaps for 2021 and 2022, measured as the difference between inflation expectations and inflation targets, are already slightly positive. Thus, the space for further monetary stimulus, without sacrificing inflation targets, may be limited. The danger is that currently anchored expectations may start to drift higher.⁴

The inflation targeters in Latin America and the Caribbean had lowered their policy rates in preceding years and in 2020 their central banks reduced their policy rates even further in response to the pandemic (Figure 4.3, Panel C). Jamaica and Peru approached the zero-lower bound, joining the central banks of many advanced economies. These low rates were unimaginable not long ago, and these countries will have to rely more on other policy measures to promote further monetary easing in the future.

Central Banks' Policy Measures

By the end of 2020, eleven countries in Latin America and the Caribbean had adopted inflation targeting regimes and used interest rates as their main policy instrument. Notwithstanding, the implementation of alternative monetary policy tools in 2020 was the rule rather than the exception (see Table 4.1). Despite having space to lower interest rates further, even the more established inflation targeters (Brazil, Chile, Colombia, Mexico, and Peru) used policy instruments other than reducing their policy rates to inject liquidity in their economies. In fact, Latin America and the Caribbean is well known for using a diverse set of monetary policy tools in the past and 2020 was no different.

⁴ See Powell, Mariscal, and Tavella (2018) on the credibility of inflation targeting regimes in the region and the potential costs of allowing inflation to exceed targets.

Among the policies listed in Table 4.1, reducing reserve requirements was the most common tool used by central banks in the region to respond to COVID-19. All inflation targeters cut reserve requirements in addition to lowering policy rates, which suggests

TABLE 4.1 • Central Banks' Policy Measures against COVID-19

Countries grouped by monetary policy regimes	Reduction in policy interest rates	Reduction in reserve requirements	Intervention in the foreign exchange market	Provision of liquidity in dollars through repos	Purchase of public and/or private securities
Established IT					
Brazil	X	X	X	X	
Chile	X	X ^a	X	X	X
Colombia	X	X	X	X	X
Mexico	X	X	X	X	
Peru	X	X	X	X	
Recent IT					
Costa Rica	X		X		X
Dominican Republic	X	X	X	X	
Guatemala	X				X
Jamaica			X		X
Paraguay	X	X	X		
Uruguay		X	X		
Intermediate					
Argentina		X	X		
Bolivia		X			X
Haiti	X	X			
Honduras	X	X			
Nicaragua	X	X			
Trinidad and Tobago	X		X		
Fixers					
The Bahamas			X		X
Barbados	X		X		
Belize		X			
Ecuador		X ^b			
El Salvador		X			
Guyana		X			
Panama					
Suriname		X			

Source: IDB staff calculations based on IDB (2020), Central Banks, and IMF.

^a Chile expanded the set of eligible currencies for meeting reserve requirements in foreign currencies.

^b Ecuador reduced the banks' contribution rate to the Liquidity Fund by three percentage points of deposits.

that central banks interpret the two tools as complements rather than substitutes. The transmission channels for these different policy tools may be quite different. In addition, some central banks directed the “freed” reserves be used in specific ways, attempting to provide more and cheaper credit to micro, small, and medium-sized enterprises and to households in financial distress. The interest rate channel, on the other hand, is indirect as central banks have little control over how banks and other financial institutions will change their behavior and to what degree lower policy rates will translate into more/cheaper credit to those targeted firms and households. In countries that are either fully dollarized or have adopted a hard peg, lowering reserve requirements was among the few instruments available.

Foreign exchange rate interventions were also common in 2020, as many countries tried to reduce exchange rate volatility (see Table 4.1). Central banks also used repos to provide liquidity in foreign currency to banks and firms, especially among established ITs. Finally, many central banks provided liquidity directly to banks, firms, and government by purchasing public and private securities.

Table 4.1 presents many central bank policy measures implemented in 2020, but it is not fully comprehensive. Chapter 5 includes data and discussion on other policy measures such as the easing of bank loan classifications, imposing grace periods for principal and interest payments on bank loans, and easing bank provisions. Additional policies to guarantee that banks remained healthy included loans to banks and creating and/or expanding special credit and liquidity lines.

Purchasing public securities was not the only way in which central banks provided financing to governments. In some cases, central banks made direct transfers to governments. For example, the Central Bank of Brazil used the expansion of its net worth due to its currency depreciation and the resulting valuation of its foreign reserves to transfer profits to the government.

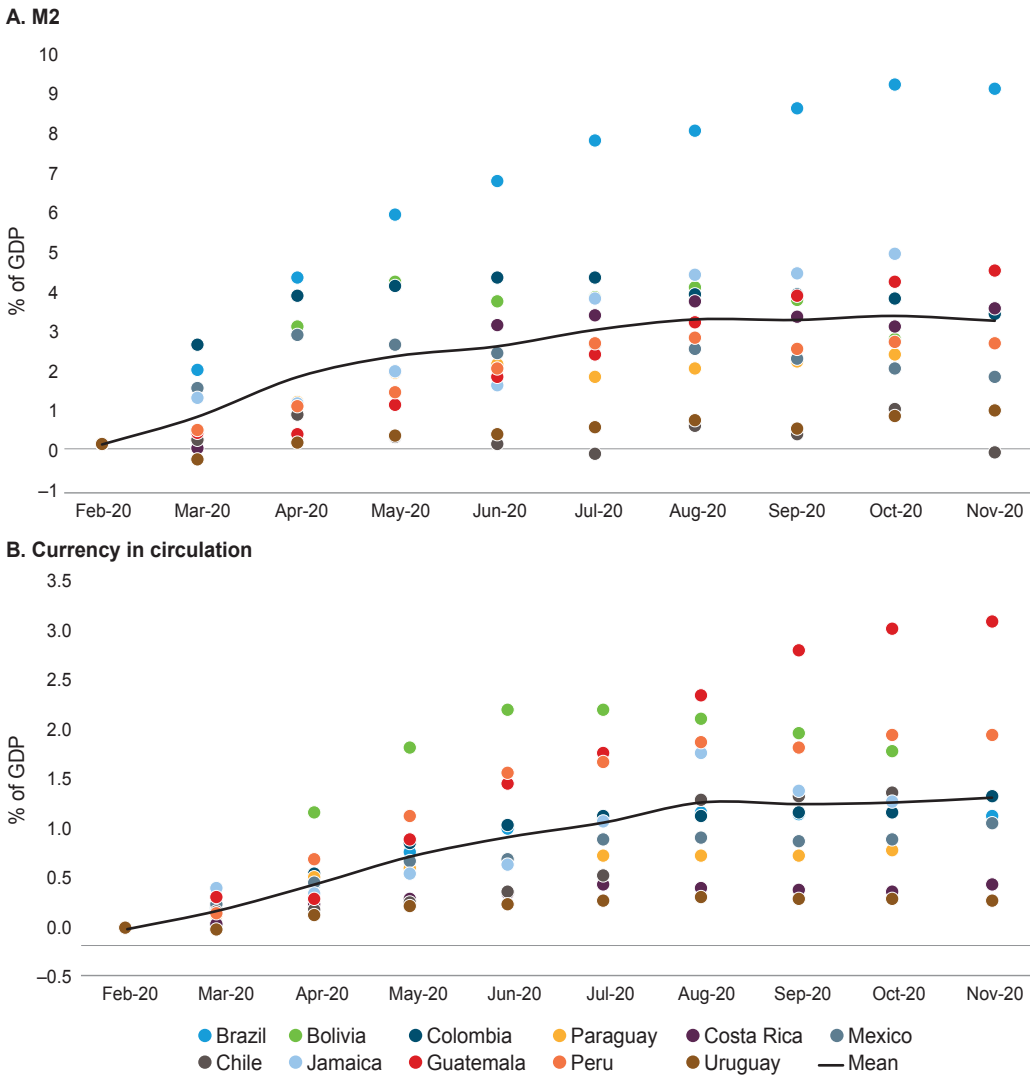
To sum up, the wide range of policy measures cited above show that central banks in the region did not hold back on using their toolkits to face the pandemic. These measures certainly helped keep businesses afloat, banks healthy and provided greater liquidity to governments. The consequence was an expansion of central bank balance sheets and the emergence of several potential risks.

Changes in the Balance Sheets of Central Banks and Banking Sectors

The aforementioned policy measures allowed central banks to address some of the higher demand for liquidity in 2020. On the one hand, lower policy rates reduced the opportunity cost for agents to hold liquid assets. On the other hand, amid the economic uncertainty surrounding the pandemic, households, firms, and banks sought to exchange their illiquid assets (e.g., long-term investments) for liquid assets (e.g., cash

and short-term deposits) to keep these funds safe and make sure they could meet their financial obligations as needed. All these forces resulted in a pronounced increase in the stock of liquid assets in Latin America and the Caribbean throughout 2020 (see Figures 4.4A and B).

FIGURE 4.4 ● Monetary Aggregates



Source: IDB staff calculations based on IMF and central banks' data.
 Note: The figures plot the estimated residuals in each country from the regression

$$\ln\left(\frac{Y_t}{GDP_t}\right) = bt + \sum_{i=1}^{12} c_i d_i + \epsilon_t,$$

relative to the estimated error in February 2020, where Y_t is the dependent variable (M2 in Panel A, currency in circulation in Panel B), d_i are monthly dummies. The sample period in each country starts in December 2008.

The stock of M2 over GDP increased roughly 3.5 percentage points of GDP on average by July 2020 (see Figure 4.4A). That monetary aggregate comprises currency outside banks as well as demand, savings, and some time deposits. Using a narrower definition of money such as currency in circulation, the pattern is the same (Figure 4.4B). Governments in the region expanded their transfer programs in response to the crisis, which by itself increased the demand for currency because poorer households keep a larger fraction of their assets in the form of cash.⁵

The policy measures, together with greater demand for liquidity, not only increased the stocks of M2 and currency in circulation, they also resulted in additional changes in the balance sheets of central banks and banking sectors as a whole across the region. Table 4.2 ranks a group of countries by the cumulative change in their central bank's balance sheets in 2020, computed as the cumulative variation in total assets/liabilities in 2020 over 2019 GDP.

Overall, all central banks expanded their balance sheets in 2020. The central banks of the established inflation targeters (Brazil, Chile, and Peru) recorded the largest expansion—more than 10% of GDP in each case—while Costa Rica and Mexico recorded the smallest variation. In both Peru and Chile, the central bank provided liquidity to the financial system in the form of loans guaranteed by the treasury, financed mostly by

TABLE 4.2 • Cumulative Variation in the Balance Sheets of Central Banks in 2020 (% of 2019 GDP)

Country	Assets			Liabilities			Total assets= liabilities
	Net credit to foreigners	Net credit to banks	Net credit to government	Monetary base	Sterilization liabilities	Other liabilities + net worth	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Peru	11.0	8.0	-2.8	2.8	9.8	3.6	16.1
Chile	-0.4	12.3	0.4	6.0	5.6	0.6	12.3
Brazil	6.9	1.1	2.9	1.8	6.2	2.9	10.9
Uruguay	9.4	0.3	-3.0	-1.4	6.6	1.5	6.7
Bolivia	-2.2	1.8	5.3	3.4	-0.1	1.6	4.9
Jamaica	-0.7	0.0	5.4	2.1	2.7	0.0	4.8
Colombia	4.3	0.5	-0.6	0.5	0.7	3.1	4.3
Paraguay	4.9	0.3	-1.4	0.0	1.3	2.5	3.7
Mexico	3.0	-0.3	-0.2	0.7	0.6	1.1	2.5
Costa Rica	0.1	0.0	0.4	0.6	-0.9	0.8	0.5

Source: IDB staff calculations based on IMF and central banks' data.

Note: The last observation is October 2020, except for Brazil (November 2020) and Jamaica (September 2020).

⁵ Álvarez and Argente (2021) suggest that the pandemic itself created incentives for households to hold more cash so they could make fewer trips to banks and ATMs, thereby reducing the risk of contagion.

expanding the monetary base and issuing sterilization liabilities (e.g., repos and central bank debt). Overall, net credit to banks in Peru and Chile increased by 8% and 12.3% of GDP, respectively.

In Brazil, the dynamics were more complex. The government implemented a substantial fiscal package to alleviate the effects of the pandemic; one of the main components of this package was the expansion of transfers to poorer households (see Chapter 2). To finance this package, the government drew down its deposits at the central bank, which explains the increase in net credit to the government by 2.9% of GDP in Table 4.2. However, that was not the total amount financed by the central bank, because it transferred profits of 4.4% of GDP to the government during 2020 based on the revaluation of the international reserves. The liquidity injection through the change in government deposits and the profit transfers would have resulted in a monetary expansion and so the central bank responded with an increase in sterilization liabilities (e.g., repurchase agreements or repos). Table 4.2A provides the figures on this sizeable variation on both sides of the central bank's balance sheet.

The crisis illustrates that central banks may face limits to the use of monetary policy in a deep recession. Interest rates are a useful tool but are normally thought to be subject to a zero or lower bound. Moreover, while a central bank can inject liquidity, in the end it is banks, firms, and households themselves that decide how much liquidity they are willing to hold.⁶

In 2020, central banks in Brazil, Chile, and Peru injected significant liquidity into their economies, but some of that liquidity then returned to central bank balance sheets in the form of sterilization liabilities. This contrasts with countries that have a fixed exchange rate; in these cases, excess liquidity tends to fall by outflows of capital and a reduction in international reserves. Not surprisingly, Table 4.2 shows that the decline in net foreign assets was more pronounced in Bolivia (-2.2% of GDP), which holds a peg to the US dollar.

Table 4.3 shows that the expansion of the balance sheet of central banks was accompanied by an expansion of the balance sheets of the banking sector.⁷ In particular, net credit to firms and households (net credit to the private sector) increased in all countries, which can be interpreted as a measure of policy success. Again, Brazil, Chile, and Peru were the countries with the largest variation: 6.1%, 4.6%, and 6.2% of GDP, respectively. Costa Rica and Mexico again showed the smallest expansion: 0.7% and 1.0% of GDP, respectively. This pattern demonstrates that central banks that followed more expansionary

⁶ This discussion relates to the idea that at some point monetary policy becomes like “pushing on a piece of string,” a phrase often ascribed to both Keynes and Federal Reserve Governor Eccles in the 1930s, and to the continuing discussion regarding the efficacy of quantitative easing. While overall measures of liquidity may eventually be endogenous, there may be impacts on specific markets and on credit (see for example Kapoor and Peia, 2021).

⁷ Banking sector refers to depository institutions other than the central bank.

**TABLE 4.3 • Cumulative Variation in the Balance Sheets of Banks in 2020
(% of 2019 GDP)**

Country	Assets				Liabilities				Total assets= liabilities
	Net credit to foreigners	Net credit to central bank	Net credit to government	Net credit to private sector	Demand deposits	Other deposits included in broad money	Securities included in broad money	Other liabilities + net worth	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Peru	0.2	6.6	0.4	6.2	4.3	3.8	0.1	5.3	13.4
Chile	0.8	-5.6	3.6	4.6	5.3	1.1	-3.6	0.5	3.3
Brazil	-2.9	8.0	4.6	6.1	1.1	4.3	7.5	2.9	15.7
Uruguay	6.4	3.6	0.5	2.4	10.9	0.3	0.3	1.5	12.9
Bolivia	-0.3	2.1	0.4	4.1	1.1	3.4	0.3	1.6	6.3
Jamaica	-0.1	3.1	1.1	3.3	6.5	1.1	0.0	-0.3	7.3
Colombia	0.3	-0.8	0.9	3.3	0.5	3.0	-0.2	0.4	3.7
Paraguay	3.4	1.9	-0.6	2.9	3.1	1.9	0.4	2.0	7.5
Mexico	0.7	-0.4	2.3	1.0	1.0	1.6	0.0	0.9	3.6
Costa Rica	2.1	1.2	3.3	0.7	7.8	0.1	-0.4	-0.1	7.4

Source: IDB staff calculations based on IMF and central banks' data.

policies provided a larger increase in net credit to the private sector in their economies. This expansion in net credit by banks was financed largely through short-term liabilities, which comprise demand deposits as well as other short-term deposits and securities included in broader definitions of money.

Conclusions

Central banks in the region took rapid and effective action in response to the COVID crisis and implemented a wide range of policy measures. As a consequence, interest rates decreased, the stock of liquid assets increased, and the balance sheets of both central banks and banks expanded. The latter boosted credit to governments, firms, and households, financed mostly through an increase in short-term liabilities, such as deposits. Central banks saw their reserves rise and lent more to governments and banks. Liabilities also increased, especially the monetary base and short-term sterilization liabilities, although many central banks also saw an increase in net worth, in part due to the valuation effects stemming from depreciations.

While food inflation rose in some countries due to both supply restrictions and demand effects, in general, inflation has remained low and inflation expectations well-anchored. Still, central banks have less ammunition now with larger balance sheets and policy rates at low levels, and inflation expectations have already crept slightly above

targets in some cases. One risk is that if demand recovers but supply remains constrained, prices may be pushed higher. If this occurs, it is likely to provoke only a temporary increase in inflation until supply constraints lift. Given economic recovery, fiscal expansion should be reined in to rebuild fiscal buffers, ensure consistency with monetary policy, and contain inflation risks.

Perhaps of greater concern is a scenario in which fiscal deficits remain, and a lack of financing options creates pressure for the monetary financing of fiscal deficits. This already occurred in 2020 in some cases. Still, as emphasized in Chapter 3, most countries continue to have access to other sources of financing at reasonable rates. They should be able to maintain access barring a shock to international capital markets such as a reversal of current central bank forward guidance towards a tighter monetary stance, or if fiscal sustainability is considered to be at risk. Given the region's history, persistent monetary financing of deficits could create the conditions for higher inflation which is then costly to bring back down (Esquivel, Kehoe, and Nicolini, 2019). Central bank independence and the quality of balance sheets going forward are key to avoid these inflationary risks. A further potential risk is the stock of short-term sterilization liabilities, mostly in local currency, on the balance sheets of some central banks. Still, those same central banks appear to have required buffers to back these commitments. But some governments are also faced with considerable debt service obligations for 2021, and central banks may need to resist sharp depreciations (which would improve their balance sheets) given inflation objectives and corporate debts in dollars (see Chapter 6). The dual treasury and central bank roll-over risks should therefore be closely monitored.

CHAPTER 5

Financial Stability: A Must for a Strong Recovery

The region's financial sectors remain dominated by banks. The banking crises of the 1980s, 1990s, and in some countries the early 2000s, continue to influence regulatory and supervisory structures as well as banks' own risk management decisions. The subsequent reforms helped the region weather the Global Financial Crisis relatively unscathed. In addition, supervisors across the region have been adapting local regulations to ensure compliance with Basel III and other recent reforms.¹ Thanks to this history, the sector came into the current crisis in relatively good shape with improved oversight and relatively high capital and liquidity.

But COVID-19 is no ordinary shock and as the health of the banking system reflects that of underlying economies, significant impacts are to be expected. Policy responses have helped smooth the shock, but they also hide underlying risks. Only in the coming months may the full impacts be revealed. This chapter first discusses the policy responses to the crisis and traces the impacts given developments on bank balance sheets. A forward-looking analysis using market information then estimates the likelihood of banks becoming capital deficient. Finally, selective policy recommendations are outlined.

Financial Policy Responses

In response to the COVID crisis, countries provided support to firms and families (see Chapter 2). Central banks reduced policy interest rates, lowered reserve requirements, and provided liquidity to banks in the form of repurchase agreements or collateralized loans (see Chapter 4). These measures assisted banks and their clients and surely helped smooth out the impacts of the crisis on the financial sector.

Financial regulatory authorities were also quick to act and in a new database of policy interventions, no fewer than 467 measures, many relevant to banking sectors, were implemented in the region (see Table 5.1). One hundred and twenty-three measures focused on support to borrowers, 99 related to providing liquidity, and 77 measures aimed to relax or seek greater flexibility on prudential norms or reporting standards.

¹ See Beck and Rojas-Suárez (2019) for a discussion.

TABLE 5.1 • Measures to Address the COVID Crisis

Policy measures	Number of measures	Number of countries
Support banking sector borrowers	123	23
Liquidity	99	17
Prudential regulations	76	17
Policy rate	42	15
Financial market functioning	35	8
Promoting and ensuring availability of digital payment mechanisms	24	13
Nonbank financial intermediaries	16	9
Banking sector integrity	15	9

Source: IDB database on COVID-19 interventions.

Note: The table contains the most commonly used among 467 measures.

Authorities in most countries acted quickly, introducing incentives for banks to defer loans to include grace periods and longer maturities for repayment. Motivations included providing liquidity and allowing banks to continue to report loans as performing and not requiring additional provisions. In a few countries such programs were mandated. The details of the programs vary, some allowing for reprogramming up to 12 months and others extending the programs.²

Such policies have the benefit of giving families and firms more time to repay outstanding loans. But there are also costs: they may eat into bank buffers, and banks and regulatory authorities lose information on the state of borrowers making it more difficult to assess risks. Many actors rely on banks' classification of loans but if they are frozen, then valuable information on borrower creditworthiness is lost.³ It is also hard to discriminate between clients in such programs and frequently, deferrals are granted across the board, or based on only a limited set of criteria; therefore, deferrals may be granted irrespective of need.

If the underlying problem is strictly temporary and the expectation is that borrowers' financial health will bounce back relatively quickly to pre-crisis levels, then deferral policies can be particularly effective. However, the crisis is continuing, the recovery remains uncertain, and the post-COVID economy may be quite different from the pre-crisis one (see Chapters 6 and 8). A high degree of reallocation within economies will significantly impact the ability of borrowers to repay outstanding loans.

A second important policy response has been a set of guarantee programs to backstop private banks extending new loans to firms. While such programs have reached several points of GDP in some countries, implementation has been mixed.⁴ Authorities have

² See Nuguer and Powell (2020b) for further information and discussion.

³ See Powell and Rojas-Suárez (2020) for further information and discussion.

⁴ Powell and Rojas-Suárez (2020) provide information on such programs.

been reticent to provide full guarantees as that would eliminate the incentive of banks to ensure proper risk assessment and could lead to large fiscal losses. On the other hand, without close to a full guarantee, banks have been hesitant to lend and therefore, take up has been low in some cases.

These policies have helped keep credit flowing to firms but again, they carry risks. Guaranteed loans are a useful instrument when there is confidence in the future viability of the borrower and debt is not too high. If a firm's survival is uncertain or it already has high debts, then adding more loans (or even replacing existing ones for guaranteed loans) may not be the best approach.⁵ The greater the uncertainty, the more likely these programs will suffer losses and, the higher the debt levels, then the more likely a debt overhang problem will emerge (see Chapter 6).

Bank Performance during COVID

On average, credit to both the private and public sectors has risen during this crisis (see Chapter 4). Credit to the nonfinancial private sector in real terms grew particularly strongly in 2020 in Brazil and Peru. Credit to firms has been supported by loan guarantee schemes in some countries; the loan deferral programs imply that credit maturities have been pushed out. Thus, loans that might have been repaid are kept on the books, implying that measured credit may be higher than it would have been otherwise. In some countries, the composition of credit also changed, with credit to households falling relative to firms.⁶

The growth in credit to the private and public sectors is reflected in the growth of bank assets, which have increased about 9% for the median bank in the region and 15% for the weighted-average bank from the end of 2019 to September 2020 (see Figure 5.2). The sharp increase in public sector debt implied a greater demand for financing and, thus, an increase in credit to the public sector while the guarantee programs have supported credit to the private sector.

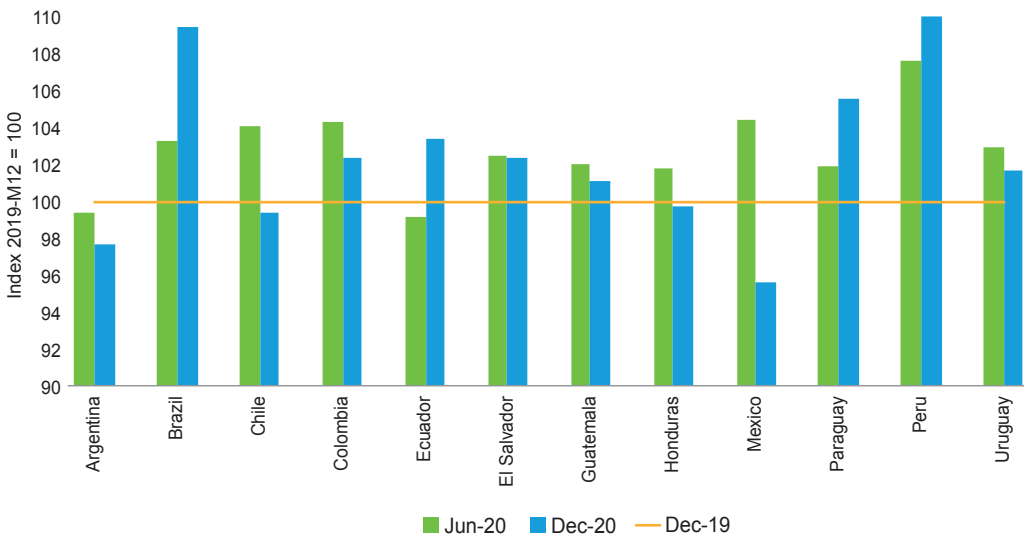
Bank liabilities also grew but perhaps of particular interest was the change in the structure of bank deposits (see Figure 5.3). Time deposits have fallen as a percentage of total deposits while demand deposits grew. As detailed in Chapter 4, the demand for liquidity increased substantially.

The impacts of the crisis are manifest in bank net income, which fell 40% for the median bank and over 90% for the weighted-average bank from the end of 2019 to second quarter 2020. For some countries, including Barbados, Chile, and Peru, average

⁵ In favor of guarantee schemes see Blanchard, Philippon, and Pisani-Ferry (2020) and for a warning see Hanson et al. (2020).

⁶ For example, in Chile credit to households fell from 31% to 28% of total credit and in Mexico it fell from 39% to 36%, according to BIS data and comparing fourth quarter 2019 to second quarter 2020.

FIGURE 5.1 • Credit to the Nonfinancial Private Sector

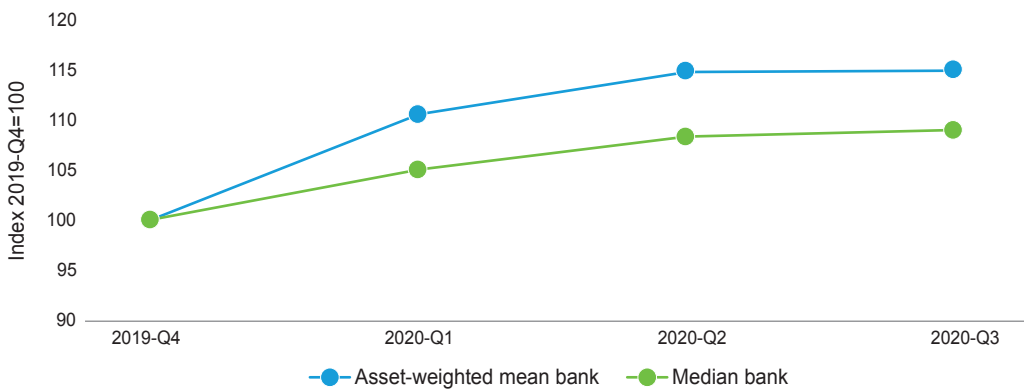


Source: IDB staff calculations based on data from national central banks.
 Note: The figure plots an index of the stock of credit in nominal local currency divided by the consumer price index and with a base of December 2019 equal to 100 for selected countries. The final data point is December 2020, except for Argentina, Honduras, and Paraguay where it is November 2020.

net income for the banks in the sample was negative in the second quarter, but recovered in several countries and for the larger banks in the third quarter. Consequently, the asset-weighted measure rises such that both measures are down by about 35% by third quarter 2020.

Tier 1 regulatory capital ratios were high coming into this crisis at around 13% at the end of 2019, and while they fell initially, they have risen since first quarter 2020. A small

FIGURE 5.2 • Growth of Bank Assets during COVID



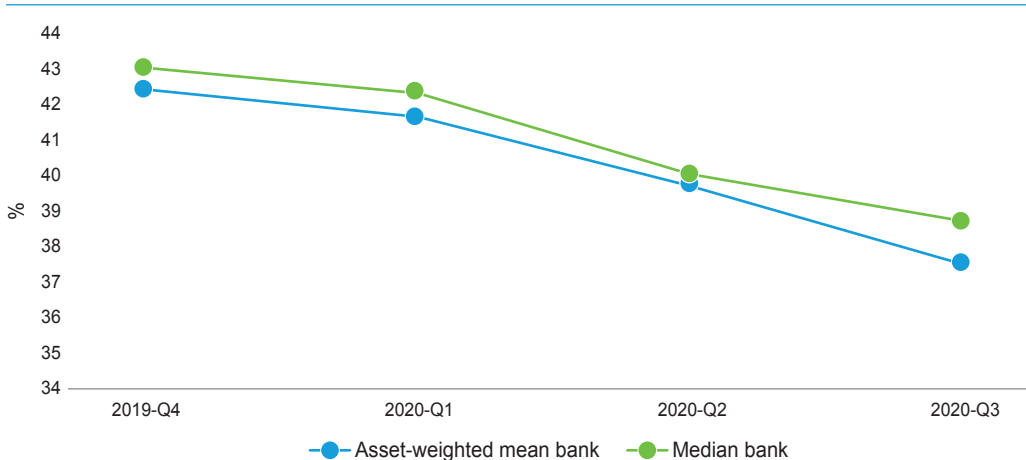
Source: IDB staff calculations based on Standard and Poor’s bank balance sheet data.
 Note: Assets are converted from local currency to an index with fourth quarter 2019 = 100. The figure plots the median across all banks in the dataset and an average of the indices weighted by bank assets.

sample of banks have data to the end of 2020 and the trend of increasing capital ratios continues through then. The median bank in the region had higher tier 1 capital to assets at risk in fourth quarter than in first quarter for this smaller sample.

Interestingly, banks were able to increase capital in nominal terms as dividend payments declined (in some countries dividend payments were restricted). At the same time, the average risk weight of assets declined, reflecting a switch in assets towards government bonds that attract a zero-risk weight in most jurisdictions, thereby pushing regulatory capital ratios higher. Reflecting the switch to securities, the loans to asset ratios fell from 67% to about 63% for the median bank in third quarter 2020.

Given the depth of the crisis, nonperforming loans have moved relatively little. For the median bank, nonperforming loans are about 4% of total loans and about 5% for the weighted-average bank. However, these statistics hide different patterns across countries. The median bank in Brazil, Chile, Mexico, Panama, and Peru has seen nonperforming loans rise while in Argentina, Colombia, and Paraguay they have actually fallen through 2020. These differences likely reflect reporting regulations and the impact and specification of loan deferral schemes. In countries with rising nonperforming loan ratios in the third quarter, this trend was extended to the fourth quarter. Nonperforming loans to total loans for the banks in the sample from Brazil, Chile, Colombia, and Peru were all above 5.0% for the median bank in fourth quarter. As reprogrammed loans start to mature, nonperforming loans will inevitably rise in other countries. Interestingly, banks tended to increase provisions against loan losses, which reached 2.7% of total loans for the median bank and 3.1% of loans for the asset-weighted bank. While banks did not need to set aside provisions

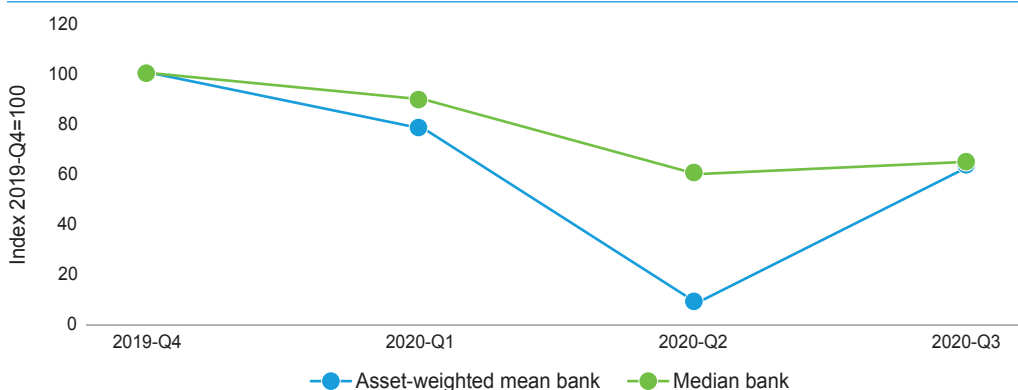
FIGURE 5.3 ● The Changing Composition of Bank Deposits (time deposits as a % of total deposits)



Source: IDB staff calculations based on Standard and Poor's bank balance sheet data.

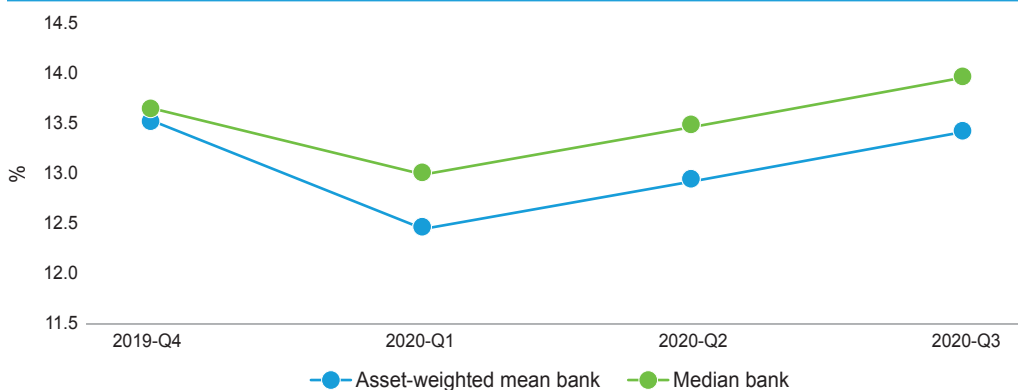
Note: The figure plots the median of the variable across all banks in the dataset and an average of the indices weighted by bank assets.

FIGURE 5.4 • Bank Net Income



Source: IDB staff calculations based on Standard and Poor’s bank balance sheet data.
 Note: Assets are converted from local currency to an index with fourth quarter 2019 = 100. The figure plots the median across all banks in the dataset and an average of the indices weighted by bank assets.

FIGURE 5.5 • Regulatory Tier 1 Capital-to-Assets-at-Risk Ratios

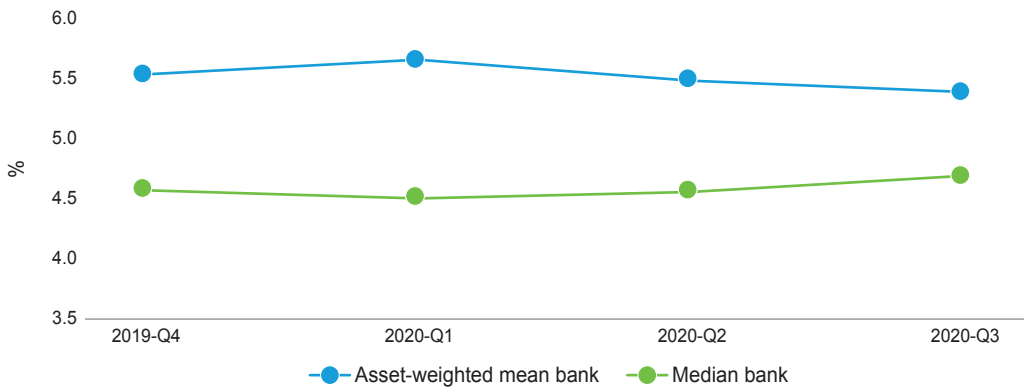


Source: IDB staff calculations based on Standard and Poor’s bank balance sheet data.
 Note: The figure plots the median tier 1 capital ratio across all banks in the dataset and an average of the variable weighted by bank assets.

against deferred loans, some appear to be anticipating the need for larger buffers in the months ahead.

The discussion above focuses on the median or average bank according to assets. But this hides considerable differences across banks. For example, while the median tier 1 ratio was around 13% at the end of 2019, about 20% of banks in the sample had tier 1 ratios of less than 10%; this remained roughly unchanged through third quarter 2020, despite the increase in capital ratios noted above. Figure 5.7 illustrates the distribution of tier 1 capital ratios across the banks in the sample.

The distribution of nonperforming loans is particularly interesting. Banks with few nonperforming loans continued to report low figures, but the number of banks reporting

FIGURE 5.6 ● Nonperforming Loans as a Percentage of Total Loans

Source: IDB staff calculations based on Standard and Poor's bank balance sheet data.

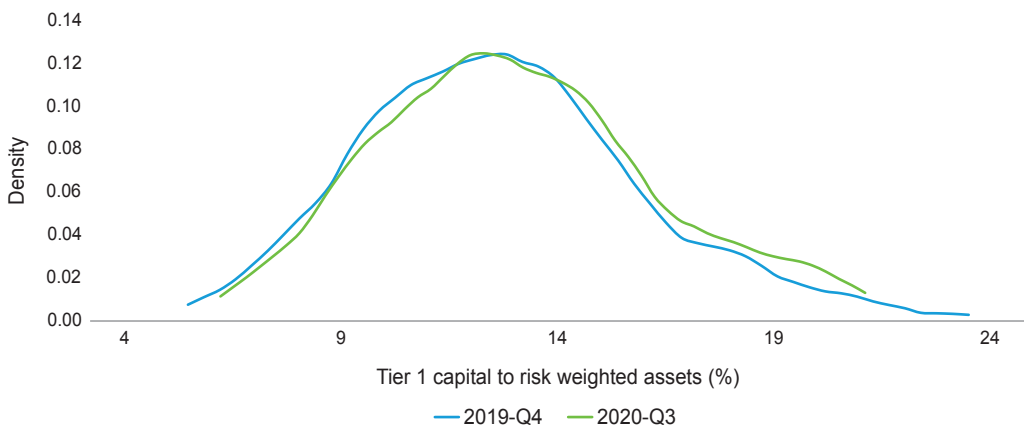
Note: The figure plots the median across all banks in the dataset and an average of the indices weighted by bank assets.

nonperforming loans of around 5% increased (see Figure 5.8). And there was a definite shift in provisioning against nonperforming loans across banks (see Figure 5.9).

While net income recovered for some banks in third quarter 2020, the distribution of return on equity showed a clear downward shift (Figure 5.10). In particular, more banks reported negative returns in third quarter 2020 compared to the end of 2019.

Bank Balance Sheets

The previous section noted specific changes in bank balance sheets. Figure 5.11 gives a schematic representation of the composition of the balance sheet of the median bank

FIGURE 5.7 ● Distribution of Tier 1 Capital Ratios

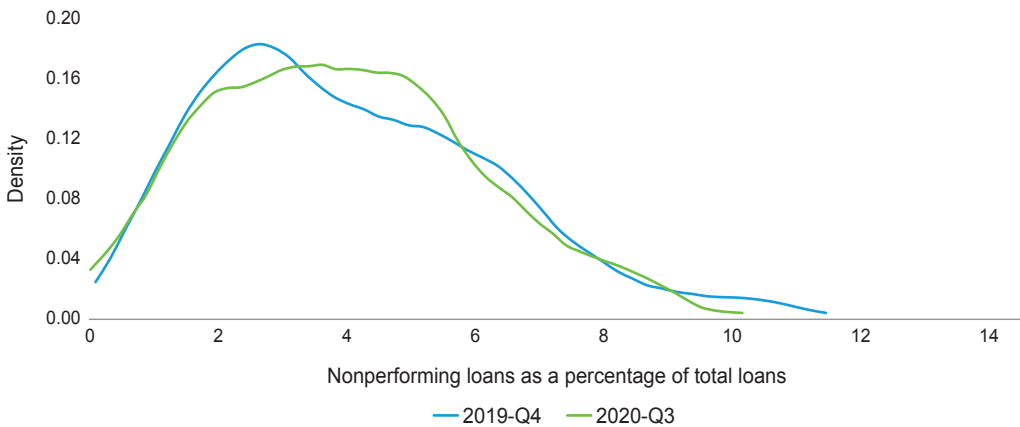
Source: IDB staff calculations and Standard and Poor's data.

Note: The figure plots the distribution of tier 1 capital ratios across individual banks. Distributions are truncated at the mean plus and minus two standard deviations.

and the weighted-average bank (using assets as weights) with all figures expressed as a percentage of assets.

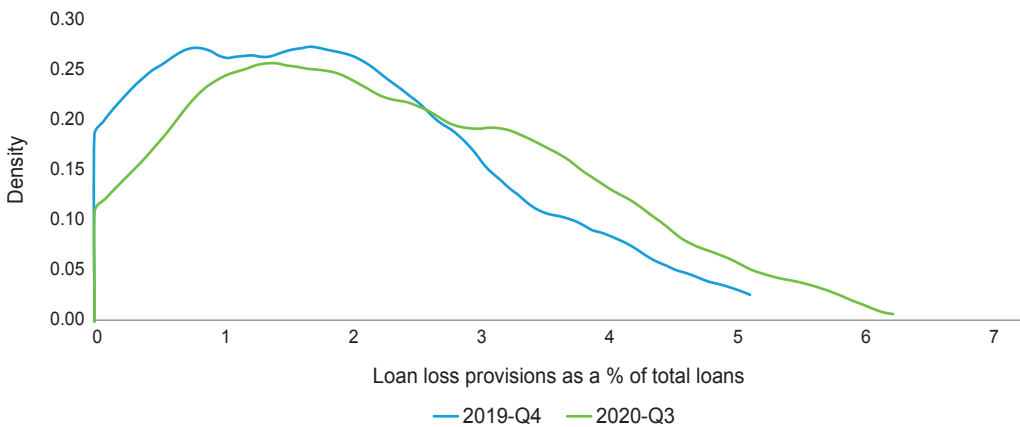
On the asset side, securities relative to loans have increased notably. This rise was largely accounted for by an increase in debt issued by the government of the country where the bank is located, which grew from 14% to 16% of total assets for the weighted-average bank. Total securities for the weighted-average bank represented as much as 30% of total assets by the end of the third quarter.

FIGURE 5.8 • Distribution of Nonperforming Loans across Banks

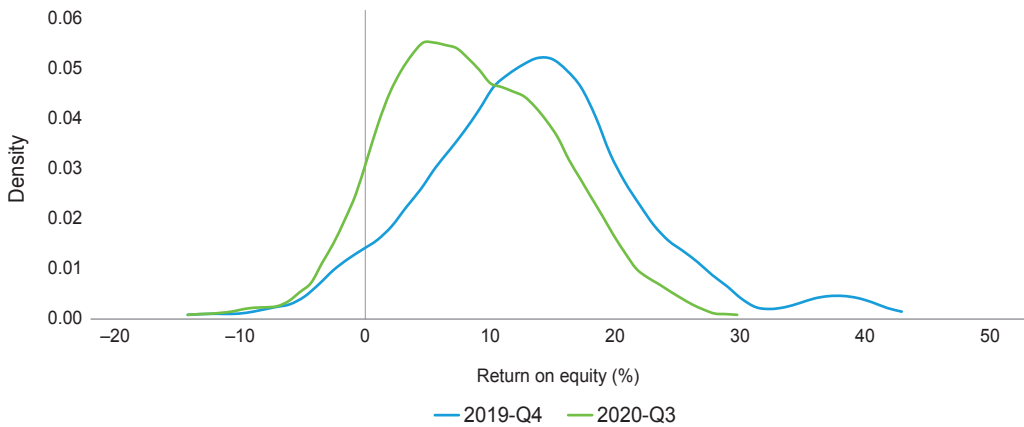


Source: IDB staff calculations and Standard and Poor's data.
 Note: The figure plots the distribution of non-performing loans across individual banks. Distributions are truncated at the mean plus and minus two standard deviations.

FIGURE 5.9 • Distribution of Provisioning for Nonperforming Loans



Source: IDB staff calculations and Standard and Poor's data.
 Note: The figure plots the distribution of loan loss provisions to total loans across individual banks. Distributions are truncated at zero and at the mean plus two standard deviations.

FIGURE 5.10 • Distribution of the Return on Equity across Banks in the Region

Source: IDB staff calculations and Standard and Poor's data.

Note: The figure plots the distribution of return on equity across individual banks. Distributions are truncated at the mean plus and minus two standard deviations.

On the liability side, deposits rose as a percentage of assets and, notably, assets also grew (see Figure 5.11). Debt fell as a percentage of assets for both the median and the weighted-average bank. Equity rose in local currency terms, but as assets also increased, equity as a percentage of assets fell. The composition of capital also shifted with tier 1

FIGURE 5.11 Schematic Representation of Bank Balance Sheets

	Asset-weighted mean bank		Median bank	
	2019-Q4	2020-Q3	2019-Q4	2020-Q3
	(All expressed as a percentage of total assets)			
Cash	7.8	8	11	11.2
Securities	27	30.7	12.5	14.1
Loans	57	54.4	66.1	62.8
Other assets	8.3	6.9	10.4	11.9
Total assets	100	100	100	100
Deposits	61.2	62.3	68.8	69.5
Debt	19.4	18.4	10.8	9
Other liabilities	8.7	9.6	9.5	11.3
Total liabilities	89.3	90.3	89.1	89.8
Equity	10.6	9.7	11.2	10.6
Memo:				
Tier 1 capital (% of total capital)	85.8	84.9	88.9	87.5
Tier 2 capital (% of total capital)	14.8	16	19	20
Risk-weighted assets (% of total assets)	69.6	64.6	70.9	66.5

Source: IDB staff calculations based on Standard and Poor's bank balance sheet data.

capital declining and lower quality tier 2 capital increasing somewhat as a percentage of total capital.

The current environment presents several risks. The increase in government bonds in banks' assets ties the risks of the banking sector more closely to debt sustainability. In countries where fiscal adjustment is required to assure sustainability, doubts about this process may result in concern over bank solvency. Such risks are generally not reflected in the typical calculation of assets at risk, following Basel recommendations, as the assumption is normally that government bonds issued in the country's own currency carry a zero risk-weight.⁷ However, the risk may be reflected in stock markets, bank ratings, and funding costs.

A second risk is the expansion in deposits given rising demand for liquidity and less reliance on longer-term debt. The recent growth in deposits likely reflects uncertainty rather than greater transaction demand. Some investors may be pursuing a carry trade—borrowing at very low rates in dollars and investing at higher local interest rates in local currency. If concerns arise over financial or fiscal risks, or U.S. interest rates rise, then some deposits may leave quickly. Large corporate deposits are of particular concern as they tend to be the most at risk of flight. Depending on developments on the asset side, this could create funding issues for banks that central banks may be forced to address.

A third risk stems from the potential rise in nonperforming loans as growth remains low, guarantee and deferral programs expire, and delayed loan repayments become due. Considering the median bank, the loan book is about 63% of assets while total capital plus provisions amount to about 12%. Many details and parameters must be considered, but assuming a 50% recovery value, a rough calculation suggests that if 10% of loans become nonperforming, this would eat up close to a quarter of bank capital (around 3% of assets). Mitigating this risk, banks may be in a position to continue to build buffers assuming net income is positive and dividend policy remains conservative. It will be important to closely monitor these risks in the months ahead.

Estimating the Likelihood of Capital Deficiency

Balance sheet data can provide a snapshot of the health of a bank at a point in time. However, changing reporting standards and provisioning decisions means that accounting ratios may give a misleading account of the risks that banks are facing. Moreover, balance sheet data is only available with a lag.

Risk indicators can also be generated from market prices. Bank analysts may have better information and if stock market participants act on their rigorous assessment of risks, then equity market data may yield a useful complementary and forward-looking vision of

⁷ See Beck and Rojas-Suárez (2019) for a discussion.

banking sector risk. While market indicators of risk did not do a great job of predicting the global financial crisis, arguably that was an unusual period in which significant risks stemmed from complex, opaque, over-the-counter instruments and banks' exposures were not well-known. The main risks facing banks in Latin America and the Caribbean today are more of a traditional credit variety. Still, these indicators will only be as accurate as the information available to stock market participants.

Equity-based risk models have become a standard part of the toolkit for risk analysts. These models draw on option pricing theory and consider the value of the firm (or the bank in this case) as akin to a call-option on the firm's assets.⁸ A random process is proposed for the bank's asset-to-liabilities ratio, and a formula can be derived for the probability that the value of the bank's assets as a ratio to liabilities will fall below a threshold level in a specified period of time.

Following the finance literature, it is then often assumed that this triggers a default. In what follows, this is referred to as capital deficiency. The probability of such an event is then the likelihood that the value of a bank's assets falls below this threshold. Still, bank management and regulatory authorities will likely react before that point and implement new policies to rectify the situation. Moreover, public financial support may be provided, or the bank may seek assistance from a parent or other banks or be the subject of an acquisition. The estimated probabilities are then best thought of as a market risk indicator of a potential deficiency in capital that could prompt remedial actions. One way to think about them is as a type of real-time rating.

The estimated value of the bank and the likelihood of capital deficiency are functions of a limited set of parameters that can be measured from the data, namely the current market capitalization of the bank, the liabilities of the bank (assumed to be fixed), the volatility of the market capitalization, the interest rate (commonly assumed to be fixed), and the specified time horizon (see Perraudin, Powell, and Yang, forthcoming).

The dataset contains information on 39 banks across six countries. The banks included are the larger banking institutions in those countries and some foreign subsidiaries and public banks that are listed on the domestic equity market. Five-year probabilities are estimated and it is assumed that the trigger value for capital deficiency is when the value of assets falls below 97% of the value of liabilities. The data employed include the daily market capitalization of each bank (derived from the sum of all types of shares outstanding) and the liabilities of each bank, which are taken from the bank balance sheet at the start of the period. The equity series is corrected for dividend payouts.⁹

⁸ See any good finance text such as Hull (2015) for a discussion of option pricing; Merton (1974) is the classic reference on applying such models to corporate valuation.

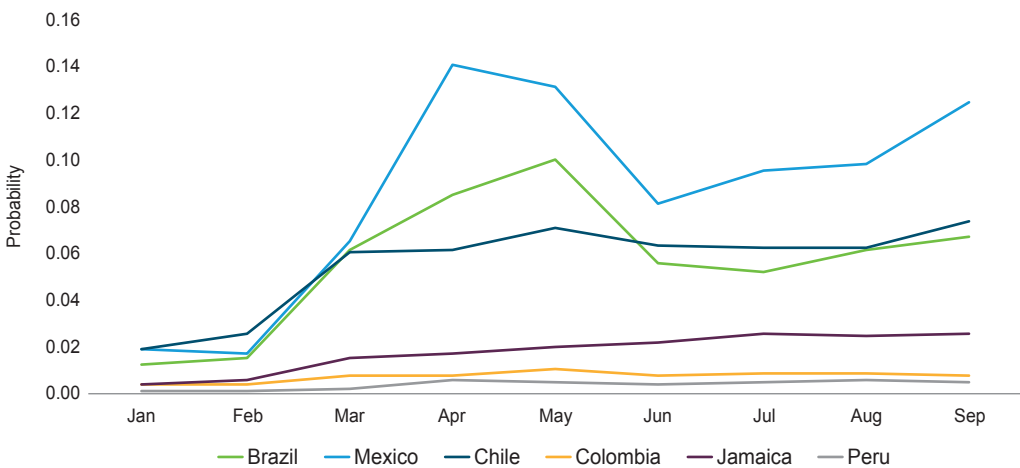
⁹ Drift processes for equity market values are estimated using a capital asset pricing model and employing the MSCI global equity portfolio as the market portfolio. The stochastic processes involved are estimated using Maximum Likelihood techniques (see Perraudin, Powell, and Yang (forthcoming) for further details).

Estimated probabilities of capital deficiency are illustrated in Figure 5.12 for selected countries. Average probabilities are calculated for each country weighted by bank liabilities. By comparison, for a sample of banks in Europe, similar probabilities rose to about 7% in March 2020 and then fell back to about 5%. According to these measures, risk rose significantly as the COVID-19 crisis erupted, especially in Brazil, Chile, and Mexico. Subsequently, these risk indicators decline as stock markets recovered, but they begin to rise again later in the sample.

The estimated probabilities depend on bank characteristics. A notable inverse relationship exists between the size of the bank and the estimated risk. Small banks (less than US\$10 billion in liabilities) have higher estimated risk than medium banks (between US\$10 and US\$50 billion in liabilities) while medium-sized banks have higher estimated risk than large banks (liabilities in excess of US\$50 billion). The three lines display a similar pattern, with a sharp rise in the likelihood of capital deficiency in March 2020, followed by a fall and then a more gradually rising trend towards the end of the sample.

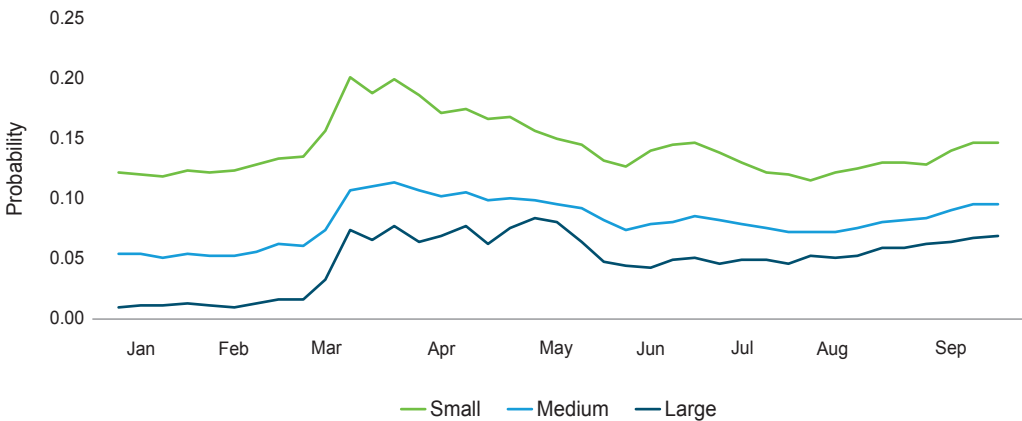
It is unsurprising that these risk indicators rose as the crisis erupted in March given the declines in stock market valuations. Perhaps of more interest is the subsequent fall in those probabilities and the gradual rising trend evident towards the end of the period. It is difficult to assess how accurate these risk measures are as they depend on the information that stock market participants have and the underlying assumption is that stock markets reflect fundamentals. Still, given this upward trend, authorities will want to monitor all indicators of banking sector risk in the months ahead.

FIGURE 5.12 • Risk of Bank Capital Deficiency (2020)



Source: Perraudin, Powell, and Yang (forthcoming).

Note: The figure depicts the liability weighted average for a selection of listed banks in each country, of the probability of capital deficiency following the application of a model similar to that of Merton (1974).

FIGURE 5.13 • Risk of Capital Deficiency by Bank Size (2020)

Source: Perraudin, Powell, and Yang (forthcoming).

Note: The figure illustrates the liability weighted probability of the market value of bank assets falling below a threshold value for selected listed banks categorized by their total liabilities.

Conclusions

The banking system came into the crisis with high capital and liquidity ratios. Supportive policies have helped smooth the shock but are likely hiding the risks. Bank income has taken a considerable hit, although conservative dividend policies have allowed some banks to increase provisioning and capital. Regulatory capital ratios have risen, but this also reflects the switch to government securities on bank balance sheets and, hence, a fall in calculated risk weights, despite the high uncertainty generated by the pandemic.

The combination of support policies and regulatory interventions may be creating a false sense of security with respect to the risks for financial stability. As reviewed in this chapter, market indicators of bank risk have been increasing in recent months despite many banks presenting what appear to be strong balance sheets. This apparent disconnect between balance sheet indicators and market perceptions is worrisome and may grow unless policies adapt.

The experience from many previous episodes (including the savings and loan crisis in the United States, the banking system problems of Japan, as well as previous crises in the region) was that forbearance policies may help smooth out shocks, but they tend to increase the eventual losses.¹⁰ Recent analyses point to the dangers of these policies in the current context in Latin America and the Caribbean and elsewhere.¹¹

¹⁰ See, for example, Brown and Dinç (2011), Caballero, Hoshi, and Kashyap (2008), and Peek and Rosengren (2005).

¹¹ See Baer (2020), Cooper et al. (2020), Fitch Ratings (2020), and Powell and Rojas-Suárez (2020).

Nonperforming loans have started to increase in some countries and will likely rise further as more deferred loans expire. This is to be expected and banks have significant buffers for such situations. The continuation of forbearance will become less productive and more dangerous in the months ahead. Where feasible, it will be preferable to move towards greater transparency and allow losses to be reflected on bank balance sheets. If communicated in a fashion that indicates a recovery plan is in motion, this will be more credible and likely less risky than limiting transparency, which may deepen the eventual problems.

Guarantee programs have helped keep credit flowing but take-up has been mixed; in the months ahead, new instruments should be considered. Guarantees on loans are most appropriate where risk is contained and debt levels are not too high.¹² Where there is significant uncertainty or debt levels are already high, alternative instruments should be considered.¹³ An equity-like instrument would allow the public sector to enjoy upside potential and not only backstop downside risk.¹⁴ Mechanisms of support that leverage bank knowledge of clients, but which do not add more debt to firms' balance sheets, would be a valuable addition to the policy toolkit. Still, countries should carefully consider the appropriate institutions and mechanisms to provide the kind of support that can protect the use of public funds as well as private sector property rights.

Authorities will want to monitor the financial sector risks carefully in the months ahead. Financial instability would only add to the woes facing the region. Maintaining financial stability is a necessity for banks to play a constructive role in providing credit to viable and new firms and for a healthy and sustainable economic recovery.

¹² See Blanchard, Philippon, and Pisani-Ferry (2020) for a discussion of guarantee programs as part of the policy mix.

¹³ Hanson et al. (2020) make this point in the U.S. context.

¹⁴ See Powell and Rojas-Suárez (2020).

CHAPTER 6

Corporate Balance Sheets and Early Indications of Reallocation

The COVID-19 shock suddenly left many firms with limited or no cash flows to cover operating costs, repay debt obligations, or continue with investment plans. Their response was to try to reestablish liquidity by raising cash from available sources and building a cushion to fend-off a crisis of unknown duration. Relief programs deployed by central banks and governments helped smooth out sudden liquidity shortages. In addition to providing much-needed liquidity support, the emergency financing measures prevented a more damaging wave of debt defaults and bankruptcies among the region's corporate sector (see Chapters 4 and 5). However, investment remains subdued and the health of firms' balance sheets has deteriorated.

This chapter provides an overview of how the COVID-19 crisis and firms' responses impacted their balance sheets. The overview is selective because it relies on balance sheet information available only for firms listed in the local stock markets of Brazil, Chile, Colombia, Mexico, and Peru. However, these constitute some of the largest and least financially constrained firms across the region. Therefore, the impacts of the COVID-19 shock on these firms' balance sheets are probably a lower bound for the effects across the broader spectrum of firms.

When the COVID-19 shock hit financial markets in full force in March, stock market valuations in the region plunged. Since then they have recovered, supported by the low-interest rate environment, and the excellent performance of tech companies. But the recovery has varied across sectors. The difference in valuations, in turn, is indicative of the market's perception of possible sector level reallocations after the pandemic, with tech companies emerging as clear winners and other sectors, including mining and capital-intensive manufacturing, expected to perform well in the post-pandemic environment.

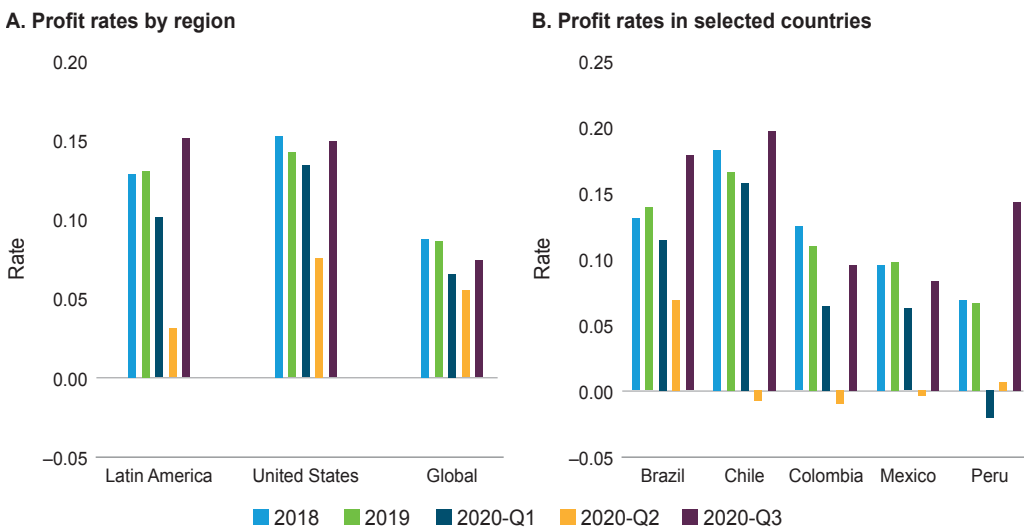
Firm Performance Measures during COVID

The supply and demand shocks brought on by forced lockdowns, induced a large decline in firm-level revenues and profit. Average profit rates across firms declined from 13% in 2018–19 to 10% in first quarter 2020 and 5% in second quarter 2020 before sharply rebounding to 15% in third quarter 2020 (see Figure 6.1, Panel A). However, (asset-weighted) averages are largely driven by Brazilian firms’ relatively better performance. In Chile, Colombia, Mexico, and Peru, profit rates plummeted to virtually 0% or even slightly negative in second quarter 2020, while Brazilian firms averaged 7%. On the positive side, the rebound in the third quarter was strong and common to all five countries analyzed (see Figure 6.1, Panel B).

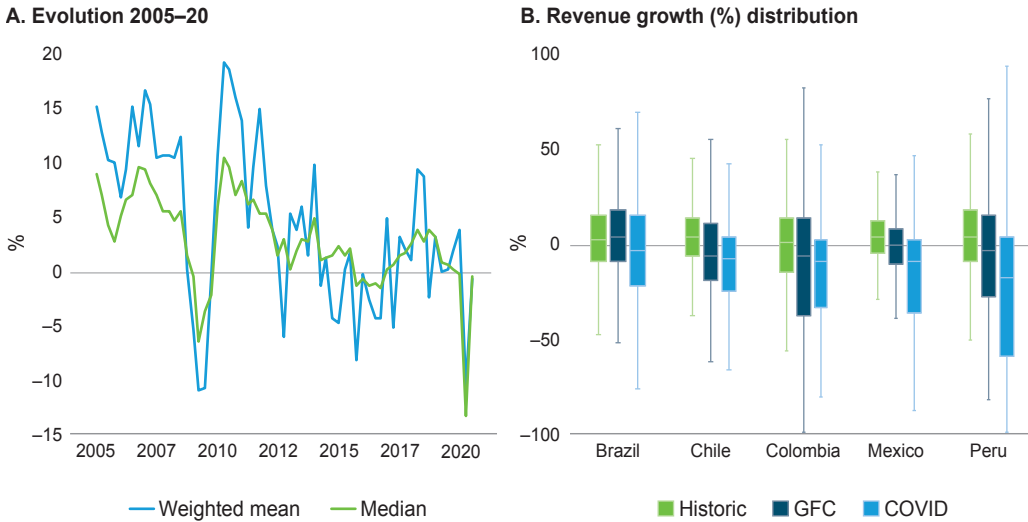
The large decline in profits was driven by the larger decline in sales relative to firms’ variable costs. Arguably, many companies contained some variable costs by laying off workers, cutting intermediate input expenditures, or refinancing loans. Corporate revenues (sales) fell by about 10% in real terms in the second quarter—the worst of the pandemic—which is comparable with the decline during the global financial crisis in 2009 (see Figure 6.2, Panel A).

The impact of the shock on revenues at the firm-level can be illustrated by looking at the distribution (frequencies) of revenue growth during a long historical period (from first quarter 2000 to first quarter 2020) compared with the COVID-19 quarters (second

FIGURE 6.1 • Average Profit Rates across Listed Firms



Source: IDB staff calculations based on data from the S&P Capital IQ database.
 Note: Firms from Brazil, Chile, Colombia, Mexico, and Peru are included. The profit rate is defined as the ratio of profits-to-revenues, where profits are obtained as revenues minus total costs (including cost of goods sold, capital expenditures, and selling, general and administrative expenses). The figures show the (asset-weighted) profit rates across publicly listed nonfinancial firms for each country or group.

FIGURE 6.2 • Revenue Growth: Historic Period vs. COVID Quarters

Source: IDB staff calculations based on data from the S&P Capital IQ database.

Note: Firms from Brazil, Chile, Colombia, Mexico, Peru are included. Firm-level revenue growth (%) is the yearly growth rate of quarterly total revenues, in real (CPI-deflated) local currency units of 2015. Panel A shows the median and asset-weighted mean evolution of profit rates, for publicly listed nonfinancial firms. Panel B shows the distribution for yearly growth rates of quarterly firm revenues in local currency, for publicly listed nonfinancial firms, in each period and country. The box in Panel B represents the middle 50% of growth rates for each group; the median, shown as the line that divides the box into two parts, marks the mid-point of the data. Historic period in Panel B includes the period from first quarter 2000 to first quarter 2020, excluding GFC; GFC includes third quarter 2008 to second quarter 2009; COVID includes second and third quarters 2020.

and third quarter 2020).¹ During the historical period, the annual average growth rate in revenues for five countries was 3.6%; during the COVID-19 quarters, the mean yearly growth was -10%.

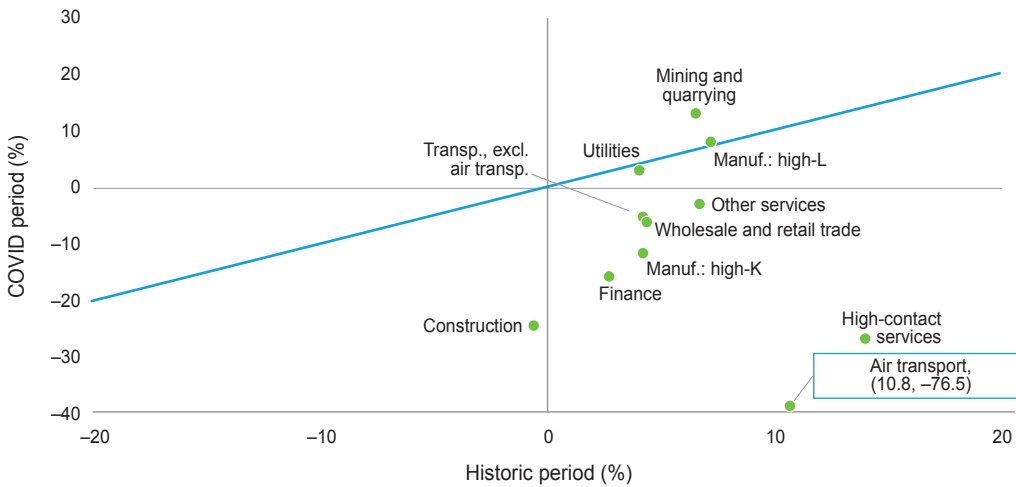
Figure 6.2, Panel B presents analogous results broken down by country. During COVID-19, in all five countries analyzed, there was a noticeable shift down in the distribution of revenue growth and an increase in idiosyncratic risk. The sample median of revenue growth shifted from positive (in normal times) to negative in all five countries, and the middlebox representing firm observations between the 25th and 75th percentiles, shifted almost entirely to negative values, except for Brazil. Compared to normal times, Peru suffered the largest decline in median revenue growth and the greatest spike in uncertainty, while Brazil performed relatively well. Arguably, the way in which the five countries performed reflects the different intensities with which lockdowns were imposed as well as the effectiveness of other health and economic policies. Compared to the global financial crisis, the median decline in revenue growth was larger in all countries during the COVID-19 shock, and the distribution of outcomes

¹ First quarter 2020 is considered in the benchmark period because most countries imposed tight restrictions after the World Health Organization declared the coronavirus a pandemic in March 2020.

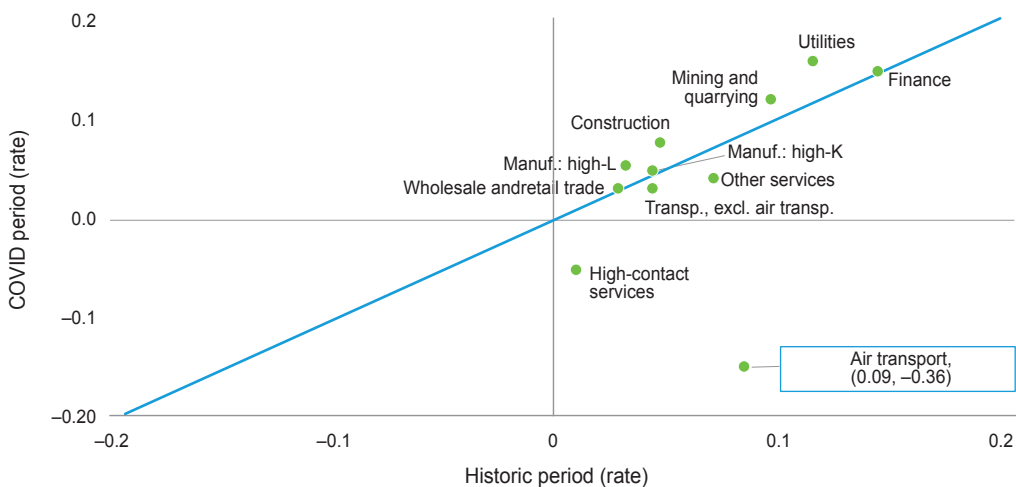
was more dispersed, except in Colombia, suggesting that firms faced more volatility than in the previous crisis.

FIGURE 6.3 • Revenue and Profit by Economic Sector

A. Revenue growth



B. Profits



Source: IDB staff calculations based on data from the S&P Capital IQ database.
 Note: Firms from Brazil, Chile, Colombia, Mexico, Peru are included. The profit rate is defined as the ratio of profits-to-revenues, where profits are calculated as revenues minus total costs (including cost of goods sold, capital expenditures, and selling, general and administrative expenses). Panel A shows period (asset-weighted) revenue growth rate pairs by economic sector. Panel B illustrates period median pairs for firm profit rates by economic sector. Sector classification is based on the 2-digit US SIC code. Panels A and B include a 45-degree reference line. High-contact services include restaurants, hotels, cinemas, museums, recreation, and education; Other services includes business, legal and social services; Manuf.: high-K includes capital-intensive manufactures (chemicals, petroleum, metal, electronics, and transportation equipment); Manuf.: high-L encompasses labor-intensive manufactures (food, textiles, furniture, paper, and others). Agriculture, forestry, and fishing are excluded due to the small sample size. Historic corresponds to the period 2000–first quarter 2020; COVID corresponds to the first two quarters of 2020.

The effects of the health crisis vary widely across economic sectors. Figure 6.3 summarizes the (weighted) average of revenue growth and profit rates across firms within economic sectors, comparing a long historical average (2000–first quarter 2020) against the COVID quarters. Sectors below the 45-degree line, which includes most sectors, performed worse during the COVID quarters, with the noticeable exceptions of mining and quarrying, and manufacturing: high-L. Revenues declined most dramatically in air transport (–77%) and high-contact services (–27%), which include restaurants, hotels, cinemas, museums, recreation, and education. In turn, revenues in construction, finance, and manufacturing: high-K fell 25%, 17%, and 12%, respectively, during the COVID quarters (see Figure 6.3, Panel A).

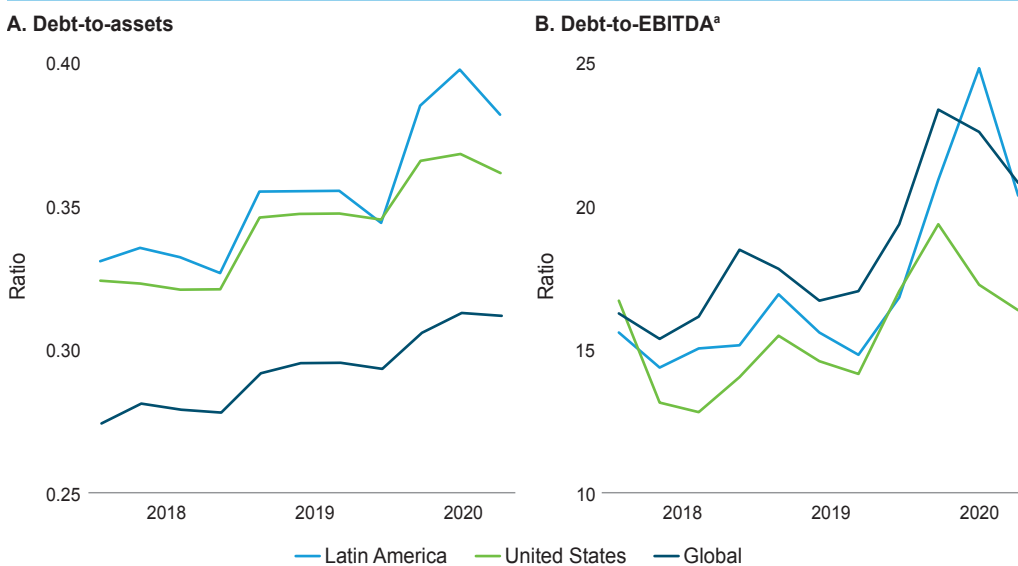
However, the picture looks somewhat brighter through the lens of profit rates because variable costs were also adjusted down. Air transport and high-contact services are still by far the most affected industries, posting negative profits during second and third quarter 2020. However, most of the remaining sectors are located on or close to the 45-degree line. Notably, construction and finance managed to maintain profit rates, on average, which points to the sector’s ability to reduce variable costs vis-a-vis the drop in revenues (see Figure 6.3, Panel B).

Corporate Debt Instruments and the Rise of Leverage

Firms worldwide have raised large amounts of money from public and private sources to face lockdowns without breaking valuable relationships between workers, firms, suppliers, and consumers. As a consequence, corporate debt measures have risen worldwide. Prior to the pandemic, leverage measures in Latin American countries were on average similar to those in the United States. However, during 2020, corporate leverage has grown significantly more in the Latin American countries than in the rest of the world. The average debt-to-asset ratio increased from 0.35 to 0.4 in just two quarters (fourth quarter 2019 to second quarter 2020) while the United States peaked at just 0.32 (see Figure 6.4, Panel A).

Similarly, the debt-to-EBITDA²—an alternative debt ratio normalized by cash flows—rose even more sharply in Latin America relative to the United States or the Global index, from 17x in fourth quarter 2019 to an unprecedented 25x in second quarter 2020, to partially recover to 21x by the end of third quarter 2020 (see Figure 6.4, Panel B). As a long-run reference, the debt-to-EBITDA in those five countries averaged 14x in the period 2000–2019, and the peak during the GFC of 2008–09 was 21x. Financial distress, as measured by the debt-to-EBITDA, rose more in the Latin American countries than in other regions (see Figure 6.4, Panel B).

² EBITDA: Earnings Before Interest, Taxes, Depreciation, and Amortization.

FIGURE 6.4 • Leverage Measures across Listed Firms

Source: IDB staff calculations based on data from the S&P Capital IQ database.

Note: Panels A and B illustrate the asset-weighted ratios across publicly listed nonfinancial firms in Brazil, Chile, Colombia, Mexico, and Peru plus the S&P Global BMI constituents (excluding Latin America).

^a EBITDA: Earnings Before Interest, Taxes, Depreciation, and Amortization.

The rise in leverage is widespread across economic sectors and countries (see Table 6.1). Air transport is by far the sector that entered the pandemic with the highest debt-to-assets ratio (average of 0.42) and is also the industry with the largest increase (50%) between pre-pandemic average and the second and third quarters of 2020. Other sectors with high initial leverage and large increases in leverage during COVID include wholesale and retail trade, other transport and high contact services. With some exceptions, similar sectoral patterns hold for the United States and the Global index in Table 6.1. Comparing regions, the increase in leverage across sectors is generally larger in Latin America than in the rest of the world, especially for the more levered sectors.

To cope with liquidity shortages, firms have used both bank credit and debt securities (bonds). During the last decade, the corporate sector in Latin America has relied increasingly on bond financing (see Powell, 2014), a tendency that deepened during the COVID crisis. Bank loans, covered by a leading international source focusing on syndicated lending, indicated US\$37 billion in new funds, down 37% in 2020 compared to 2019 (see Figure 6.5, Panel A).

³ Consistent credit rating data are available only for a subset of firms in the sample (14%). Among those firms, roughly one in every four had their credit rating downgraded at least once during the COVID pandemic. Most of downgrades were concentrated between March and June of 2020.

TABLE 6.1 • Rise in Leverage (Debt-to-Assets) during COVID-19

	Latin America			United States			Global		
	Historic	COVID	Ratio	Historic	COVID	Ratio	Historic	COVID	Ratio
Air transport	0.42	0.63	1.50	0.44	0.49	1.12	0.36	0.49	1.37
Wholesale and retail trade	0.31	0.39	1.27	0.37	0.40	1.09	0.22	0.26	1.18
Transp., excluding air transp.	0.34	0.41	1.23	0.40	0.41	1.04	0.34	0.37	1.10
High-contact services	0.31	0.35	1.15	0.41	0.53	1.30	0.28	0.36	1.27
Manuf.: high-K	0.29	0.32	1.13	0.25	0.25	1.01	0.18	0.18	1.02
Manuf.: high-L	0.28	0.30	1.08	0.34	0.37	1.10	0.23	0.24	1.04
Elect., gas and sanitary services	0.34	0.34	1.02	0.38	0.40	1.06	0.40	0.43	1.07
Construction	0.31	0.31	1.02	0.33	0.30	0.92	0.20	0.23	1.14
Mining and quarrying	0.21	0.21	1.00	0.27	0.31	1.16	0.21	0.22	1.04
Finance, insurance, real estate	0.22	0.21	0.95	0.15	0.14	0.95	0.26	0.26	1.00
Other services	0.28	0.23	0.82	0.27	0.30	1.12	0.16	0.15	0.91

Source: IDB staff calculations based on data from the S&P Capital IQ database.

Note: Historic covers the first quarter 2018–first quarter 2020 median, COVID includes first quarter 2020–third quarter 2020 median; Ratio is the median of firm leverage ratios for the second and third quarters 2020 over the median of the historic period

$$\left(\frac{\text{leverage}_{t-1} = \frac{2020q2 - 2020q3}{2018q1 - 2020q1}} \right)$$

High-contact services include restaurants, hotels, cinemas, museums, recreation, and education; Other services includes business services like information technology and software, as well as legal and social services; Manufactures: high-K includes chemicals, petroleum, metal, electronics, and transportation equipment; Manufactures: high-L includes food, textiles, furniture, paper, and other labor-intensive manufacturing. Agriculture, forestry, and fishing are excluded due to small sample size.

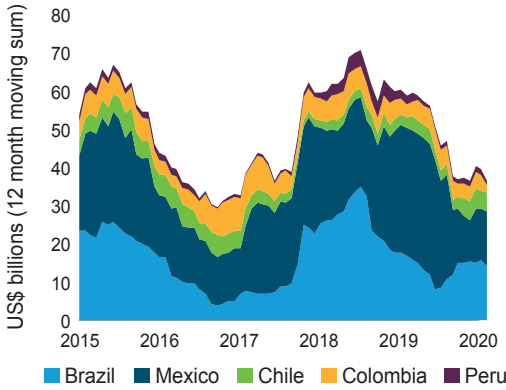
Regarding debt securities, after considerable volatility in March, market conditions gradually improved throughout 2020.³ Between January and December, Latin American firms raised US\$131 billion by issuing bonds—a 12% increase relative to the same period of 2019. In four of the five countries analyzed, firms increased bond issuance in 2020 compared to 2019 (102% in Colombia, 58% in Peru, 38% in Chile, and 3% in Brazil); Mexico is the only country where corporate bond issuance declined (-3%) in the same period (see Figure 6.5, Panel C).

Overall, reliance on bond financing, measured as total bond issuance over bonds plus loans, has increased from a 66% bond share in 2019 to 78% in 2020.

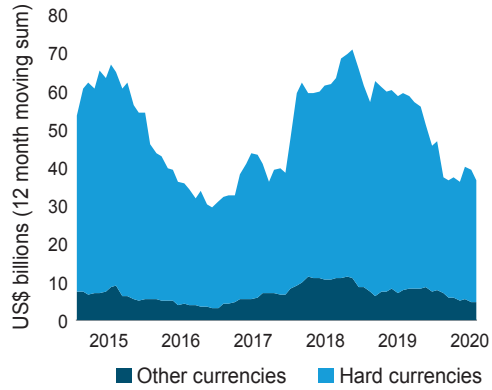
Regarding the amortization schedule for bonds issued through the end of 2020, firms face a debt burden of US\$472 billion maturing before 2025 (US\$763 billion maturing before 2030), of which US\$103 billion are due within a year (see Figure 6.5, Panel E). While smooth access to foreign bond markets is a sign of financial strength, it also raises concern because debt denominated in foreign currency may leave the corporate sector vulnerable to depreciation of domestic currencies (see Figure 6.5, Panels B, D, and F). Approximately 65% of the total amortizations due are in foreign currency (see Figure 6.5, Panel F). In the medium-run, high debt levels can persistently depress investment through a debt overhang problem.

FIGURE 6.5 • Corporate Loan and Bond Issuance and Amortization Schedule

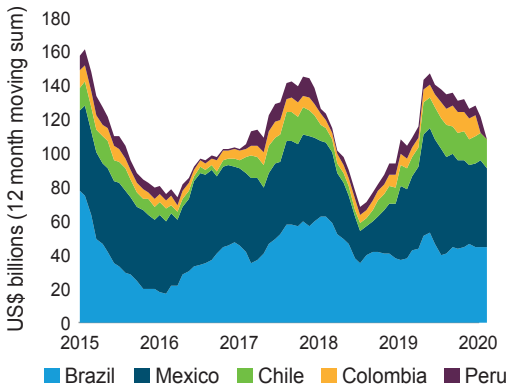
A. Syndicated and other loans by country



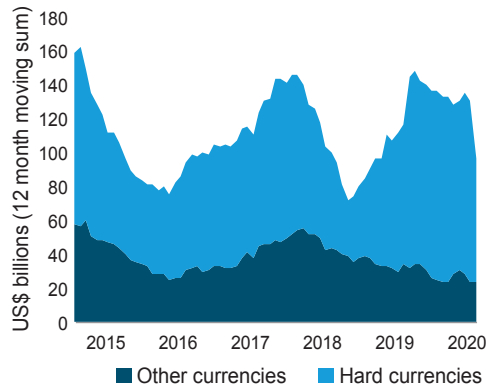
B. Syndicated and other loans by currency



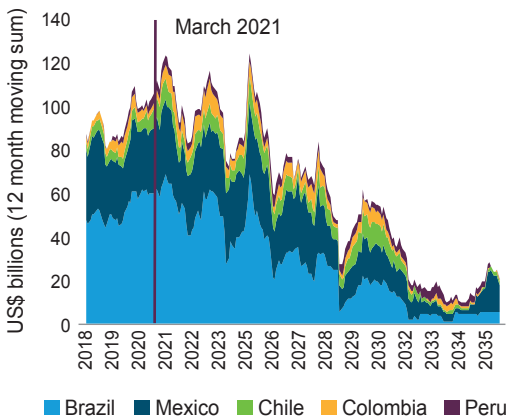
C. Bond issuance by country



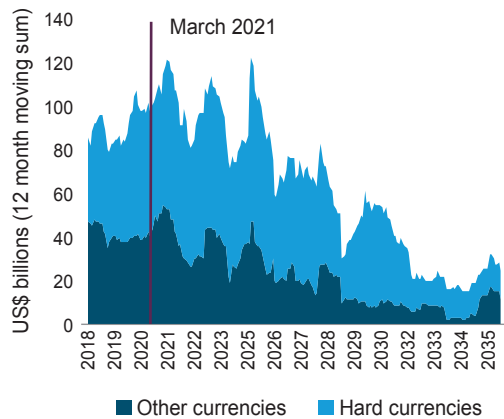
D. Bond issuance by currency



E. Bond amortization by country



F. Bond amortization by currency



Source: IDB staff calculations based on data from the Refinitiv Datastream database.

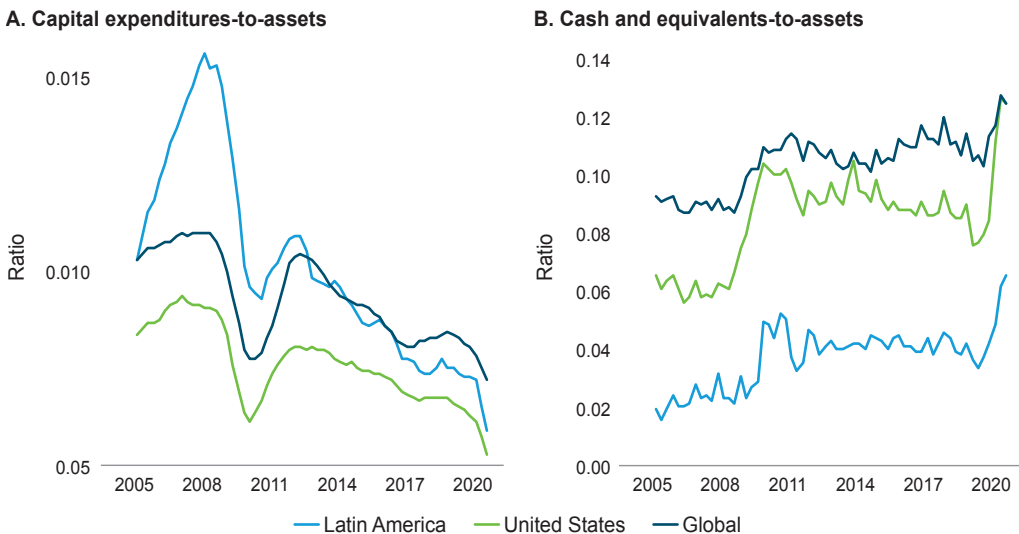
Note: Monthly frequency, last observation available was December 31, 2020. All figures show volumes calculated as the 12-month rolling sum of issued value, by nationality of issuer. Loans include syndicated and other specific types of loans and facilities. Foreign currencies in Panels B, D, and F include U.S. dollar, Euro, British Pound, Swiss Franc, and Japanese Yen. Panels E and F assume all amortizations are at bond maturities.

Corporate Investment and Precautionary Cash

Corporate investment, measured as the ratio of capital expenditures to total assets, has been declining steadily in Latin America and the Caribbean from the high levels reached during the commodity supercycle and is reaching historically low levels during the ongoing pandemic (see Figure 6.6, Panel A). Rather than spending in new capital, throughout 2020, listed firms accumulated significant cash balances to cover operational expenses and prepare for further potential losses in the face of uncertainty over the duration of the shock. Similar behavior occurred worldwide (see Figure 6.6, Panel B). On the one hand, the precaution of accumulating cash and postponing capital expenditures is expected during a highly uncertain recession. On the other hand, some large firms may well decide to hold excess cash for carry trade purposes; in such cases, firms take advantage of interest rate differentials combined with expected appreciation of domestic currencies to make financial gains (see Bruno and Shin, 2017; and Caballero, Panizza, and Powell, 2016).

Across the countries analyzed, Peru reported the largest decline in corporate investment, while Chile performed better than its peers (see Figure 6.7, Panel A). Brazil and Mexico had the most vigorous cash accumulation within the region, with average cash-to-assets ratios rising to around 8%, compared to 6% in Chile and just 4% in Colombia and Peru (see Figure 6.7, Panel B).

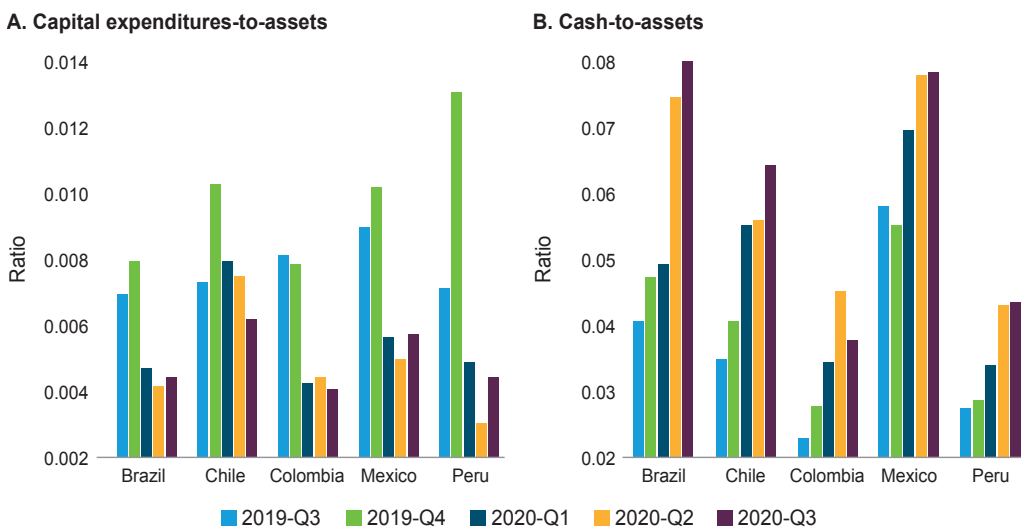
FIGURE 6.6 • Investment Rates and Cash Holdings



Source: IDB staff calculations based on data from the S&P Capital IQ database.

Note: Panels A and B illustrate the median of firm-level ratios across publicly listed nonfinancial firms in Brazil, Chile, Colombia, Mexico, and Peru and S&P Global BMI constituents (excluding the five countries in Latin America). Truncated at 0% and 99% of the distribution. Panel A shows the four-quarter moving average of the investment-to-assets ratio median to smooth out seasonal variation.

FIGURE 6.7 • Investment Rates and Cash Holdings



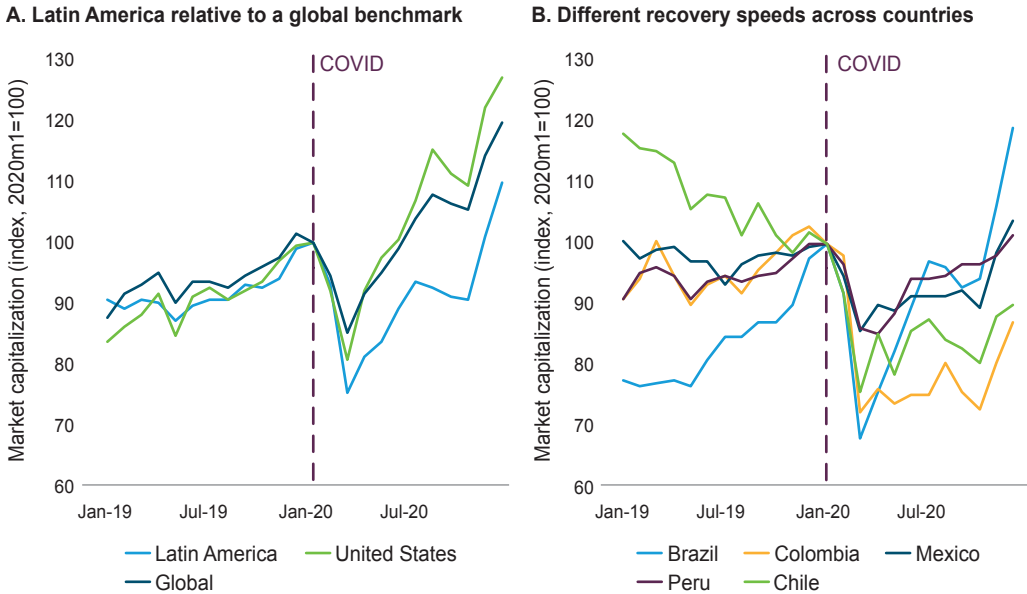
Source: IDB staff calculations based on data from the S&P Capital IQ database.
 Note: Panels A and B illustrate the median of firm-level ratios across publicly listed nonfinancial firms in each country (Brazil, Chile, Colombia, Mexico, Peru) and the median of all pooled firm-level ratios for the five countries. Truncated at 0% and 99% of the distribution.

Winners and Losers: Indications of Sectoral Reallocation

Stock market valuations took an enormous hit in the early stages of the pandemic, and noticeably rebounded towards the end of 2020. Current asset prices are forward-looking estimates of expected future dividends at the firm level and are thus indicative of the medium-run prospects during the post-COVID recovery across countries and economic sectors.

Peaking in March 2020, the market capitalization for firms in the region declined an average 25% relative to January 2020; this compares with a 20% drop in the United States and 15% in the global index (see Figure 6.8, Panel A). The recovery of market valuations in Latin America is systematically weaker than in the rest of the world but still enough to surpass pre-COVID levels by year-end 2020. Within the region, Brazil suffered the greatest peak-to-trough decline (32% from January to March); however, it was also the country with the most pronounced recovery, reaching 20% above pre-COVID levels by December. Colombia recorded the second-worst drop (28%) and the weakest recovery in the group. Stock market valuations have fully recovered in Mexico and Peru, while Chile and Colombia were still 10% or more below pre-COVID levels by the end of 2020 (see Figure 6.8, Panel B).

Asset prices also suggest potential reallocation forces across sectors in the years to come. For instance, asset valuations in air transport and high-contact services plummeted 52% and 46%, respectively, between January and March of 2020 (see Table 6.2).

FIGURE 6.8 • Market Capitalization by Region (Jan.2020=100)

Source: IDB staff calculations based on data from the S&P Capital IQ database.

Note: Sum of market capitalization in local currency units for publicly listed nonfinancial firms in five countries in Latin America and S&P Global BMI constituents (excluding the five countries from Latin America).

These sectors also had the weakest recoveries in the group; they remained 18% and 9% respectively below pre-COVID levels at the end of 2020.

The drop in asset valuations within the finance, insurance, and real estate sectors is also relatively large across regions, and the recovery by the end of 2020 is also weaker than in other industries, especially in the Latin American firms. On the other hand, using asset valuations as forward-looking signals for the shape of the recovery, *manufacturing: high-K* industries, which include chemicals, metal-related manufactures, and electronics have emerged as promising sectors across all regions in the post-COVID economy.

Regarding the relative winners among sectors, other services, which include tech-related and professional services, enjoyed the largest rebound in both Latin America and worldwide, thus pointing to better prospects for the post-pandemic economy. While some regional variations exist, other promising sectors in terms of asset price signals globally are manufacturing sectors and wholesale and retail trade (see columns 4 to 6, Table 6.2).

Debt-Overhang and Corporate Investment

The leverage of firms has risen in the last decade and reached record levels amid the COVID-19 pandemic. High levels of corporate debt are a medium-run concern because they can persistently depress growth through a debt overhang problem in which the debt

TABLE 6.2 • Evolution of Market Capitalization by Sectors (% change)

Sector	Jan-to-March (%)			Jan-to-Dec (%)		
	Latin America	United States	Global	Latin America	United States	Global
Air transport	-52	-41	-29	-18	4	0
High-contact services	-46	-27	-19	-9	17	19
Manuf.: high-K	-38	-19	-16	10	31	22
Finance, insurance, real estate	-30	-28	-18	-7	1	-4
Other services	-23	-17	-11	28	31	39
Elect. gas and sanitary services	-21	-22	-15	-4	-8	5
Manuf.: high-L	-20	-20	-11	-5	5	29
Wholesale and retail trade	-19	-12	-14	5	36	25
Transp., excluding air transportation	-16	-23	-14	-7	14	1
Mining and quarrying	-15	-48	-22	62	-8	15
Construction	-15	-40	-15	-6	18	-10

Source: IDB staff calculations based on data from the S&P Capital IQ database.

Note: January to March represents the percent change in the sum of market capitalization in local currency units (LCU) between January 2020 and March 2020; Jan-to-Dec represents the percent change in the market capitalization in LCU between January 2020 and December 2020. High-contact services include restaurants, hotels, cinemas, museums, recreation, and education; Other services includes business services like information technology and software, as well as legal and social services; Manufactures: high-K includes the manufacture of chemicals, petroleum, metal, electronics, and transportation equipment; Manufactures: high-L includes food, textiles, furniture, paper, and other labor-intensive manufacturing.

burden is too large for firms to take on additional debt to finance profitable investment opportunities (see Brunnermeier and Krishnamurthy, 2020). Debt overhang problems tend to worsen during recessions as bank lending standards tighten and firms' creditworthiness stalls (see Blickle and Santos, 2020).

Results of an econometric analysis suggest that firms with debt overhang, defined as firms with high initial leverage, display significantly lower capital expenditure growth in subsequent periods. The results are obtained by extending the analysis in Blickle and Santos (2020) to a sample of listed firms in 64 countries for the quarterly sample from first quarter 2000 to third quarter 2020.⁴

Considering the full sample of firms worldwide, an increase in the debt-to-assets ratio of 10 percentage points is associated with a 3.1 percentage point decline in the growth rate of capital expenditures. In other words, while a firm with the sample average leverage of 25% invests at an annual growth rate of 5.1%, a firm leveraged up to 35% (10 p.p. above the mean)⁵ invests at an annual rate of only 2%, which corresponds to the sample average of 5.1% minus the debt overhang effect of -3.1%.

Estimating the subsample of Latin American countries yields a similar coefficient (column 2, Table 6.3). However, the debt overhang effect is much worse because the

⁴ Results are robust to the inclusion of firm, sector, and year fixed effects, as well as firm-level controls.

⁵ Since the standard deviation of leverage is 18% for the full sample, an increase of 10 p.p. corresponds to approximately half a standard deviation.

annual average investment growth rate in the region is only 0.7%. Thus, Latin American firms with a debt-to-assets ratio of 39% (which is 10 p.p. above the Latin American mean of 29%) suffered a decline in investment of 2.3%.⁶

The second and third rows of Table 6.3 show the interaction between firm-level leverage and two crisis dummies, one for the GFC and one for COVID. The coefficients measure the incremental debt overhang effect during bad times. As expected, the signs are negative, significant, and economically large, especially for the Latin American firms.

During the GFC, a firm levered up to 35% (again 10 p.p. above the sample mean), invested at an annual rate of -1.3%, which corresponds to the sample mean investment growth (5.1%) for firms with average leverage (25%), net of the overhang effect from being levered up to 35% (-3.1%), and minus the incremental effect of the recession (-3.3%) (column 1). For the Latin American firms (column 2), with debt-to-asset ratios of 39% display investment growth of -9.6% during the GFC. Similarly, investment growth rates during the COVID-19 crisis for firms with a 10 p.p. excess leverage are -1.3% for firms worldwide, and -6.8% for the Latin American firms.⁷

TABLE 6.3 • Debt Overhang for Nonfinancial Firms, by Region

Dependent variable: $\ln\left(\frac{\text{capex}_{it}}{\text{capex}_{it-4}}\right)$	(1) World	(2) Latin America
Leverage _{<i>it-5</i>}	-0.3***	-0.3***
Leverage _{<i>it-5</i>} · D_t^{GFC}	-0.3***	-0.7***
Leverage _{<i>it-5</i>} · D_t^{C19}	-0.2***	-0.5***
Observations	347,844	21,971
Number of firms	9,588	576
Mean of dependent variable (%)	4.9	5.1
R^2	0.04	0.12

Note: Results for regression:

$$\ln\left(\frac{\text{capex}_{it}}{\text{capex}_{it-4}}\right) = \alpha + \beta_1 \text{Leverage}_{it-5} + \beta_2 \text{Leverage}_{it-5} \cdot D_t^{\text{GFC}} + \beta_3 \text{Leverage}_{it-5} \cdot D_t^{\text{C19}} + \gamma Z_{it} + \varphi_{sT} + \varepsilon_{it}$$

where capex_{it} is capital expenditures for firm i in quarter t , Leverage_{it} is the firm's debt-to-assets ratio, D_t^{GFC} is a Global Financial Crisis dummy equal to 1 in the period third quarter 2008-second quarter 2009, and D_t^{C19} is a COVID-19 crisis dummy equal to 1 in second and third quarters 2020. The regressions include firm fixed effects φ_i , industry-year φ_{sT} fixed effects, and (not-reported) firm controls (Z_{it}) including lagged liquid (cash and equivalents) assets and lagged size (measured through total assets). *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. Sample: First quarter 2000-third quarter 2020.

⁶ The number comes from the following calculation: annual average investment growth rate (0.7%) minus β_1 (= -0.3, column 2, Table 6.3) times incremental leverage (10 p.p.).

⁷ A complementary analysis performed on the worldwide data broken down by industry (not reported) reveals a stable debt overhang pattern across big economic sectors. The crisis dummies at the sector level also reveal that the COVID-19 crisis hit the air transport and high-contact services sectors especially hard. Notably, air transport is also the sector worldwide with the largest debt overhang coefficient even in normal times, which is consistent with the evidence of high debt reported above.

Concluding Remarks

COVID-19 has induced sharp swings in firm cash flows and a deterioration in balance-sheet indicators. While cash flows plummeted in mid-2020, many firms followed a precautionary wait-and-see strategy, cutting investment and accumulating liquid assets. With some cross-country variation due to, among other things, different degrees of government intervention, nonfinancial firms in the region were generally able to raise funds from alternative sources.

As a result, leverage has increased for the firms in the Latin American sample by more than in other regions, especially in high contact sectors such as transport, restaurants, hotels, cinemas, museums, recreation, and education. However, the legacy of the crisis may last well beyond the pandemic. The main concern going forward is the high debt level with which the corporate sector will exit the pandemic. High leverage leaves firms vulnerable to further adverse shocks, such as possible new waves of the virus or further depreciation of domestic currencies. Moreover, increasing debt levels implies a more demanding amortization schedule: firms in the five countries considered in the region already have about US\$100 billion coming due within one year, about two-thirds of which is in foreign currency. High debt levels also correlate with low future investment through a debt overhang effect, which prevents firms from raising new funds as the interest rate burden rises. Therefore, while overall risk levels had declined significantly by the second half of 2020, risks may remain for firms with weaker balance sheets.

As the healing process continues in the post-pandemic period, the financial health of firms must be monitored and risks contained to avoid setbacks in the recovery. Still, the COVID-19 shock has meant significant reallocation between economic sectors. Countries should try to tap the opportunities created in those sectors that have emerged as leading sectors according to their stock market valuations and consider policies that would allow labor to move more easily from losers to winners. The latter include tech-related service sectors and some manufacturing sectors, like chemicals, capital intensive manufactures, and electronics. The expansion of those sectors can help turn the recovery into stronger and more sustainable post-pandemic growth.

CHAPTER 7

Global and Regional Value Chains: Risks and Opportunities

Global value chains (GVCs), or the separation of production into stages across borders, provide countries with opportunities to diversify trade and boost productivity and growth by specializing in one stage of the production process. For the most part, however, the region has not taken full advantage of the growth in GVCs, and Regional Value Chains (RVCs) within Latin America and the Caribbean have been limited. The region's participation in GVCs remains low (18%) compared to Asia (28%) and Europe (34%).¹ In particular, Latin America and the Caribbean lags behind other regions when it comes to intraregional supply chains, which represent only 24% of total GVC participation, compared to 56% in Asia, and 74% in Europe (Blyde and Trachtenberg, 2020). Moreover, GVC participation in Latin America and the Caribbean has had less than half the impact on productivity than in other regions.²

The COVID-19 pandemic, plus concerns regarding protectionism and natural disasters, have made countries and companies reassess their positions in global value chains. The crisis has taken a huge toll on trade, but also provides opportunities to boost regional integration and value chains within the Americas, sometimes referred to as nearshoring from the perspective of the United States. Interestingly, despite the crisis, some firms have performed well, even in those sectors where global demand has fallen, while others have lost market share.

This chapter analyzes the performance of individual firms, drawing on the study of rich micro data, to understand their different outcomes. The results are then used to outline potential policies to assist firms in the region. There is much potential for firms to more fully participate in both RVCs and GVCs—a prospect that could significantly benefit the process of recovery from the pandemic.³

¹ GVC participation is measured as the sum of the imported intermediate used in a country's exports plus the country's exports used by another country in the production of its exports, relative to total exports.

² Cross-country estimates indicate that a 1% increase in GVC participation is associated with a 0.33 percentage point increase in the long-run growth of labor productivity. But in Latin America and the Caribbean the estimate is 0.18 percentage points lower. See Appendix C.

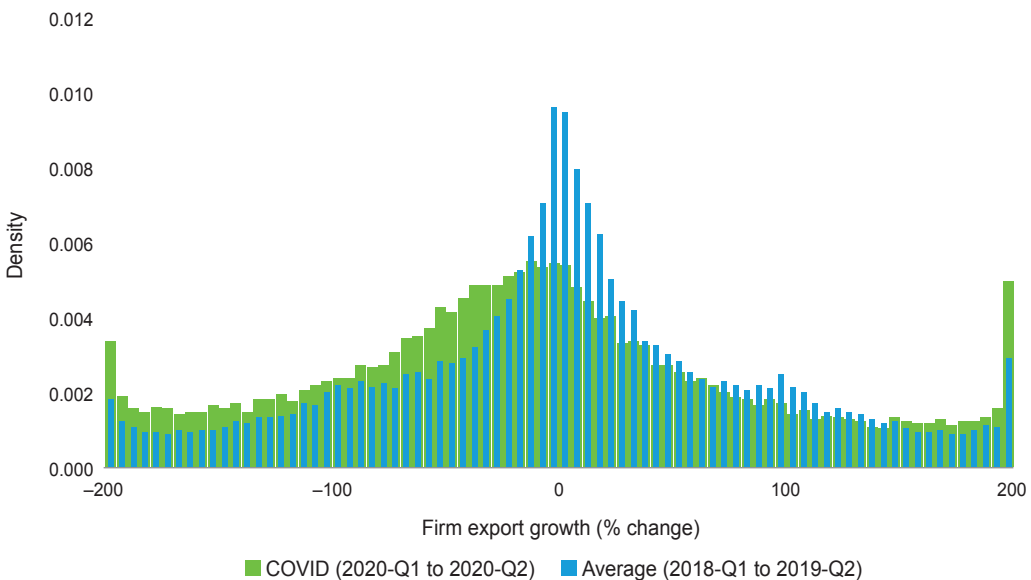
³ The analysis presented in this chapter is based on transaction-level data of imports and exports obtained from the bills of lading (see Alviarez, forthcoming).

Export Growth in Times of Pandemic

During the COVID-19 pandemic, total exports declined sharply in most countries in the region and across the majority of sectors and destinations. Figure 7.1 compares export growth during the first two quarters of 2020 with that in the same quarters of 2019 and 2018, pooling firm level information for six countries in the region: Chile, Colombia, Mexico, Paraguay, Peru, and Uruguay. The downward shift is clear: more firms suffered lower export growth and a greater number posted a decline in exports. Figure 7.1 focuses on continuing exporters; therefore, companies that did not export in the first two quarters of 2019 or 2020 are excluded.

Exports not only fell, but they did so relative to a measure of global demand, which is constructed as a weighted average of the growth of US and European imports of the same products across the world, with weights corresponding to the relative importance of each product in the region’s export basket (see Figure 7.2).⁴ The figure also includes the average export growth in the year before the crisis. Total exports plummeted about 60% between May 2019 and May 2020, while they grew from May 2018 to 2019.

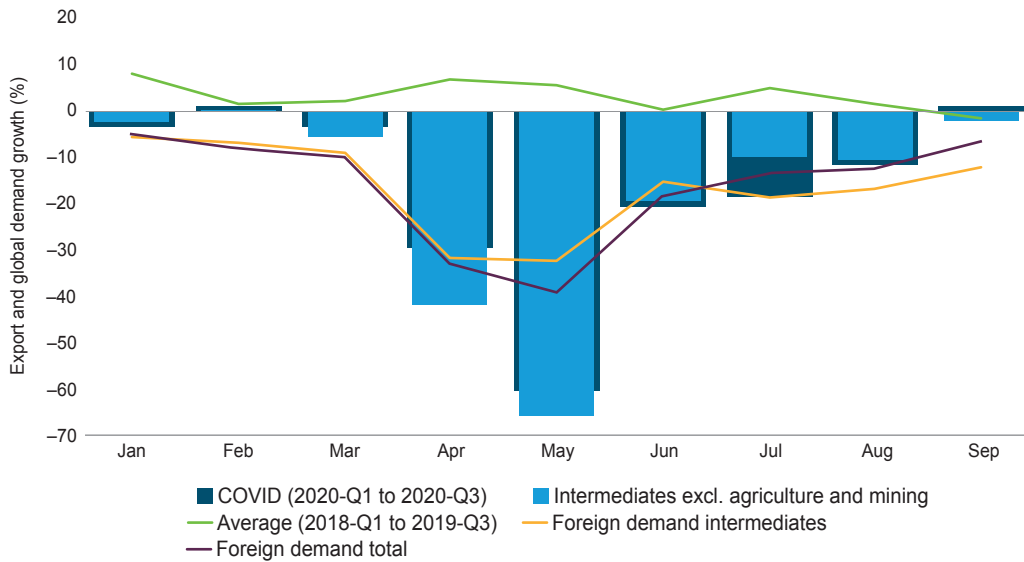
FIGURE 7.1 • Evolution of Firm Exports during COVID-19



Source: Alvarez (forthcoming).

Note: This figure depicts the distribution of firm’s export growth before and during COVID-19 (x-axis). Firm level export growth is calculated using monthly data for the first two quarters of 2020 (green bars), relative to the average during the first two quarters of the period 2018–19 (blue bars), for the countries in the sample: Chile, Colombia, Mexico, Paraguay, Peru, and Uruguay. The figure plots the distribution of growth rates at the firm level. Only firms that exported in 2019 and 2020 are included; the distribution is truncated at -200% and +200%.

⁴ Each product refers to a category of the Harmonized Commodity Description and Coding System (HS) at the six-digit disaggregation level comprising approximately 5,300 products.

FIGURE 7.2 • Aggregate Export Growth versus Global Demand Growth

Source: Alviarez (forthcoming)

Note: The dark blue bars correspond to the growth of total exports and the light blue bars correspond to the growth of intermediate inputs excluding those in mining and agriculture, following the Broad Economic Categories (BEC) classification. The green line shows the average export growth from first quarter 2018 to third quarter 2019. The yellow line shows the growth of foreign demand for intermediates only, whereas the purple line shows the growth of foreign total demand.

Figure 7.2 also plots the export performance in intermediate goods (excluding those in mining and agriculture), and their corresponding global demand. For the six Latin American countries analyzed, the decline in intermediate goods exported was larger than that of total exports. This suggests that participating in value chains may be riskier than exporting finished goods; still, these exports have recovered since June and have grown faster than global demand for the same products.

To investigate the role of value chains, this chapter focuses on manufactured intermediate goods.⁵ These exports are likely to be part of GVCs given their significant backward and forward linkages.⁶ At 38% of total exports, they represent a significant fraction of the export basket for the countries considered.⁷

⁵ The analysis focuses on intermediate inputs excluding those in mining and agriculture, following the Broad Economic Categories (BEC) classification. The conclusions are similar when consumption and capital goods (excluding mining and agriculture) are also considered in the analysis. See Antràs (2020) for a detailed discussion on the different measures of GVCs using data at the country-industry and firm level.

⁶ Backward linkages correspond to the value added of imported intermediates used in producing goods to be exported. Forward linkages represent the domestic value added of intermediate products that are exported and used in producing trade partner exports. Some countries specialize in upstream natural resource activities, with limited backward linkages but with strong forward linkages. Mining and agriculture are excluded since they do not have significant backward linkages.

⁷ Manufactured intermediate goods are 40% of exports in Mexico, 20% in Colombia, 32% in Peru, 34% in Uruguay, and 27% in Paraguay.

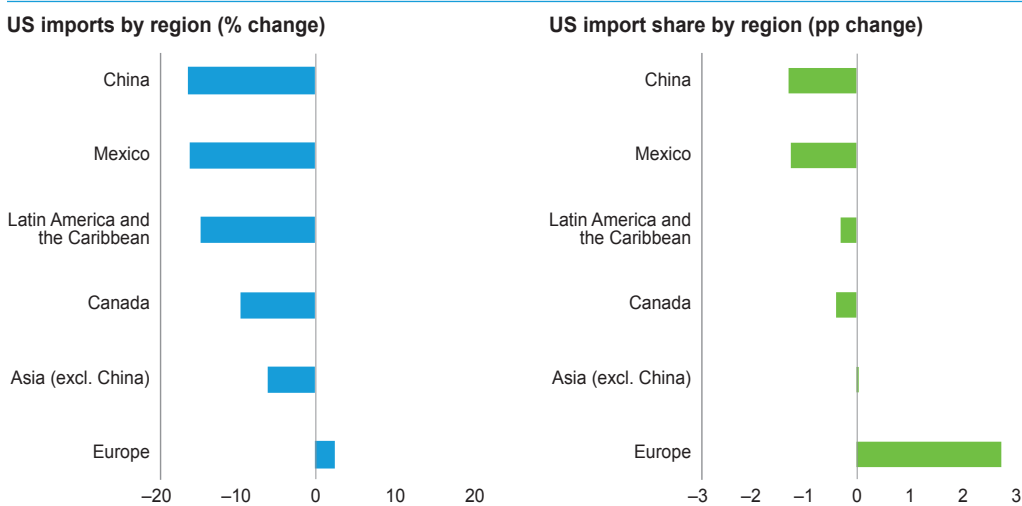
Reallocating US Imports across Regions: Who Benefited the Most?

During the COVID-19 crisis, US imports from China fell more than 18%, followed by a 17% reduction from Mexico and 15% from other countries in Latin America and the Caribbean. Imports from other Asian countries only fell 6% and imports from Europe actually increased 2% (see Figure 7.3, left panel). Around US\$56.5 billion (6.1%) of total US imports switched source countries during the period. This contrasts with the reallocation observed in normal times; for example, in 2016–17, the reallocation of US imports was only 2.6 percentage points, less than half the movement registered during the pandemic.⁸ This represents a considerable opportunity for the region, which exported just US\$26 billion in goods in 2019 to the United States.

For intermediate goods, Europe raised its market share within US imports by 3 percentage points or US\$5.6 billion, while Latin America and the Caribbean’s share fell by 1 percentage point (see Figure 7.3, Panel B). How can the region emulate Europe or other Asian countries and take greater advantage of firms’ reassessment of global value chains in the wake of COVID-19?

Global demand did not fall for all goods. And not all exports from all countries fell. Impacts depended on the sector and the country. Comparing what happened to demand and what happened to exports for each country-sector pair helps identify winners and losers.

FIGURE 7.3 • Reallocation of US Imports by Region



Source: UN Comtrade data.

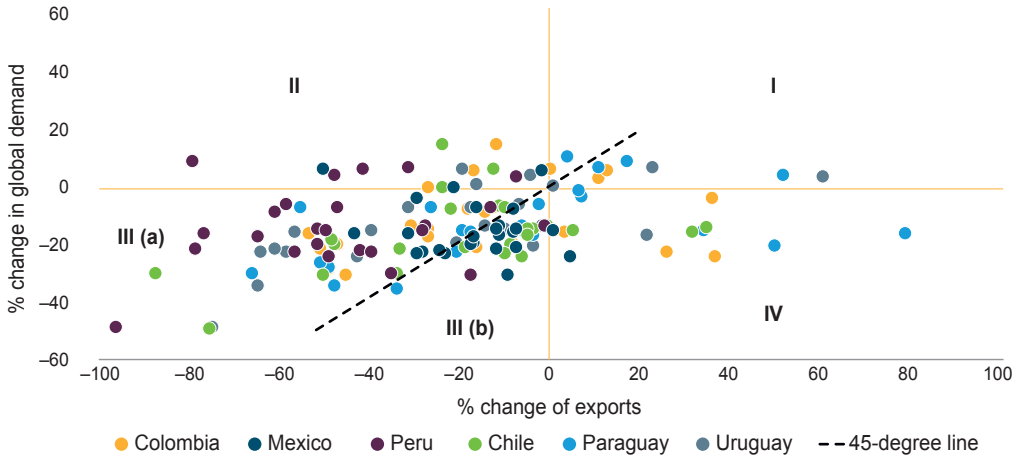
Note: The left panel of the figure shows the percent change in US imports from each of the selected regions. The right panel shows the change in market share of US imported intermediate inputs (in percentage points) from each region. The numbers on top of the bars show the market share of each region in 2019 (left) and in 2020 (right).

⁸ In 2018–19, largely due to the US-China tariff increases, the United States reallocated 8.1 percentage points of imports (See Figure C7.5A and C7.5B in Appendix C).

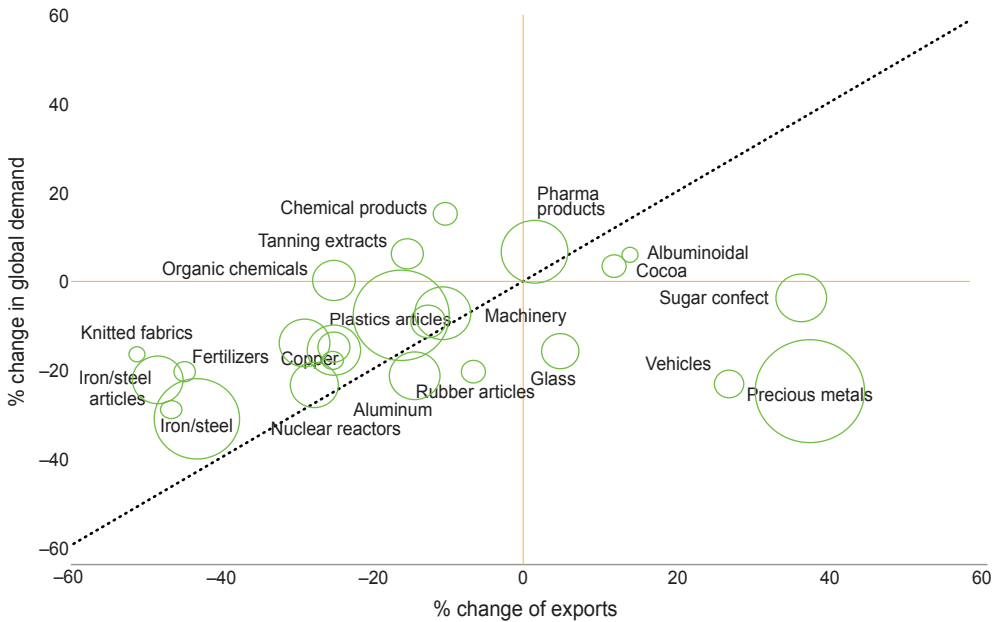
For most sectors in most countries, both global demand and exports from the region fell. This is the bottom left quadrant of Figure 7.4, Panel A, labelled *quadrant III*. But even then, some sectors in some countries did better than others; these are the dots to the right of the 45-degree line in that quadrant where exports (measured along the horizontal

FIGURE 7.4 • Export Growth versus Global Demand

A. Performance for each sector in seven countries



B. Performance for each sector in Colombia



Source: Alvarez (forthcoming).

Note: The top panel of the figure shows the export growth of each country-sector pair and the corresponding global demand growth for each sector classified as intermediate inputs outside mining and agriculture. The bottom panel shows the identity of the sectors in each quadrant for the case of Colombia. The size of the bubble indicates the relative importance of each sector in Colombia's exports of intermediate inputs. Further details and figures for the rest of the countries in the sample can be found in Appendix C.

axis) did better than expected given the fall in demand (measured on the vertical axis). For example, while aluminium and rubber exports from Colombia declined, as did global demand, Colombian exports in these sectors fell by less than the dip in global demand, allowing them to gain in export market share (see Figure 7.4, Panel B).⁹

Quadrant IV in Figure 7.4 is of particular interest as it contains sectors in which exports have increased despite falling global demand. Such was the case for vehicles and precious metals in Colombia, which therefore gained market share for exports in these areas.

Quadrant II contains sectors in countries where exports have fallen even though global demand has risen; in Colombia, this category includes chemicals, implying considerable market share was lost.

Finally, *quadrant I* contains sectors in countries where both global demand and exports rose. In some cases, market share even grew (the sectors to the right of the 45-degree line). In Colombia, cocoa products fall into this category.

Employing individual firm data provide insight on these cases, the drivers of success or failure, and the direction of fruitful policies to consider.

Unpacking Net Export Growth

While exports fell in some sectors, some individual firms may have actually increased their exports. In the same way, some firms may have exported less even though exports from the sector as a whole increased. Exports can rise or fall because firms increase or reduce their level of exports, stop exporting altogether, or enter the export market. In general, there are then four ways in which total exports can change, sometimes referred to in economics as the intensive and the extensive margin (see Box 7.1 for further discussion):¹⁰

- i. Firms reduce exports: the intensive margin of trade destruction
- ii. Firms stop exporting: the extensive margin of trade destruction
- iii. Firms increase exports: the intensive margin of trade creation
- iv. Firms start to export: the extensive margin of trade creation

In quadrants I and IV (where exports rose), interestingly, large firms accounted for the net trade creation; Figure 7.5 considers each quadrant and graphs the four types of trade creation and destruction for large and smaller firms. For small and medium-sized firms, net trade creation was negative in all quadrants. In quadrants II and III, both larger and smaller firms engaged in net trade destruction. Moreover, large firms tended to adjust by increasing or reducing their exports—the intensive margin. In sharp contrast, smaller firms adjust more by stopping exporting altogether, or by starting to export—the extensive margin. Trade destruction

⁹ Further details and figures for the rest of the countries in the sample can be found in Appendix C.

¹⁰ See Alviarez (forthcoming).

TABLE 7.1 • Sectors with the Largest Gaps between Exports and Global Demand

Country	Sector name	Quadrant	Supply growth	Demand growth	Gap = supply growth - demand growth	Share of intermediates
Colombia	Iron/steel	III (a)	-0.44	-0.31	-0.13	0.07
Colombia	Plastic articles	III (a)	-0.17	-0.07	-0.09	0.18
Colombia	Precious metals	IV	0.38	-0.24	0.62	0.29
Mexico	Machinery	III (a)	-0.15	-0.07	-0.08	0.24
Mexico	Vehicles	III (a)	-0.27	-0.23	-0.04	0.17
Mexico	Plastic articles	III (b)	-0.07	-0.07	0.01	0.05
Peru	Precious metals	III (a)	-0.47	-0.24	-0.22	0.46
Peru	Zinc articles	III (a)	-0.40	-0.22	-0.18	0.05
Peru	Res. food indus.	III (a)	-0.26	-0.14	-0.12	0.11
Chile	Wood articles	III (a)	-0.10	-0.06	-0.04	0.09
Chile	Pulp of wood	III (a)	-0.33	-0.30	-0.02	0.09
Chile	Inorg/org chem	III (b)	-0.03	-0.14	0.12	0.08
Paraguay	Machinery	III (a)	-0.53	-0.07	-0.46	0.12
Paraguay	Plastic articles	III (a)	-0.25	-0.07	-0.18	0.05
Paraguay	Res. food indus.	III (b)	-0.05	-0.14	0.09	0.50
Uruguay	Raw hides	III (a)	-0.63	-0.35	-0.28	0.06
Uruguay	Animal hair	III (a)	-0.72	-0.50	-0.23	0.06
Uruguay	Plastic articles	III (a)	-0.16	-0.07	-0.09	0.11

Source: Alvarez (forthcoming).

Note: The table shows per country, the first three sectors (HS2 categories) ordered by the difference between their supply and demand growth and with export market share equal or above 5%.

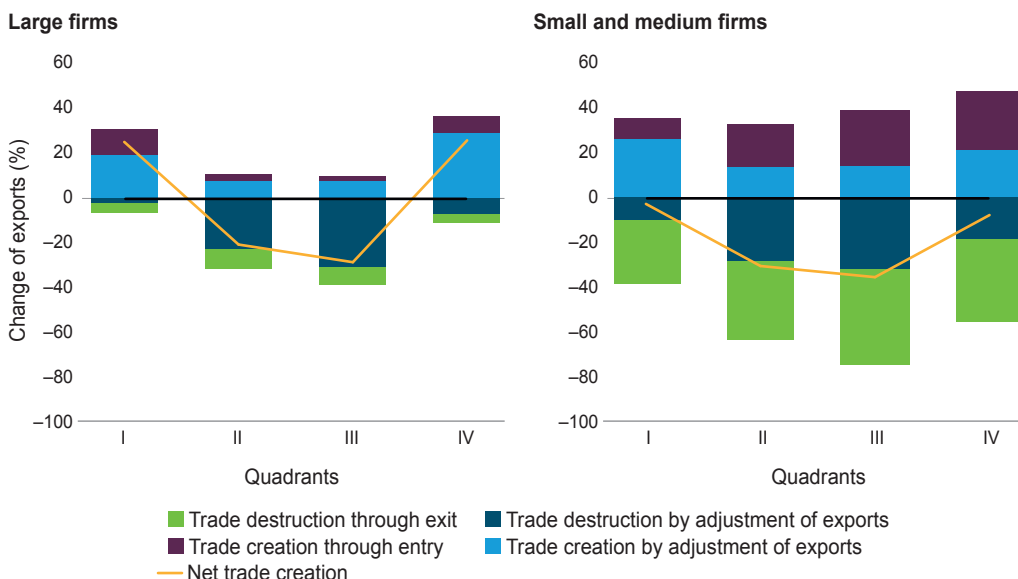
when smaller firms completely stop exporting is particularly worrisome as relationships and links in their trade network may all be destroyed.¹¹ Trade destruction at the extensive margin is not just limited to those sectors in which exports fell (quadrants II and III) but is even present among smaller firms in sectors for which exports rose (quadrants I and IV).

The table in the lower panel of Figure 7.5 shows the net trade creation and each margin but this time weighted by the relative importance of each sector and by firm size. Thus, the figures for net trade creation are not the same as in the figure that illustrates unweighted trade creation. As expected, most of the trade destruction occurs in quadrant III where most sector-country pairs lie. Large firms accounted for most of the trade destruction (as they export more given their size) but this was largely through an adjustment in exports. Small and medium-sized firms also accounted for substantial trade destruction, which was divided equally between an adjustment in exports and halting exports altogether.

¹¹ The firm's export size distribution in each country-sector pair is divided into ventiles (20-quantiles). A firm is considered large if it belongs to the 20th quartile, and small or medium otherwise. Large firms account on average for 83% of exports; trade creation and destruction for each group are simple averages.

In empirical analyses, five firm characteristics appear to play a key role in explaining export performance during the pandemic: i) Firm size, ii) diversification of export markets, iii) whether the firm also imports, iv) whether the firm imports intermediate goods from distant countries such as China, and v) the performance of the firms' suppliers and customers

FIGURE 7.5 • Dissecting Trade Creation and Destruction



Quadrant	Net trade creation	Trade creation by adjustment of exports	Trade creation through entry	Trade destruction by adjustment of exports	Trade destruction through exit
Large firms (% change)					
I	1.1	0.8	0.5	-0.1	-0.1
II	-0.4	0.2	0.1	-0.5	-0.2
III	-11.1	5.1	1.0	-13.7	-3.5
IV	4.4	5.6	1.1	-0.8	-1.5
Small and medium firms (% change)					
I	0.4	1.0	0.6	-0.4	-0.8
II	-0.3	0.1	0.1	-0.2	-0.2
III	-5.8	2.6	3.8	-6.1	-6.1
IV	-0.9	1.0	1.4	-0.6	-2.6
Total	-12.7	16.2	8.6	-22.5	-15.0

Source: Alvarez (forthcoming).

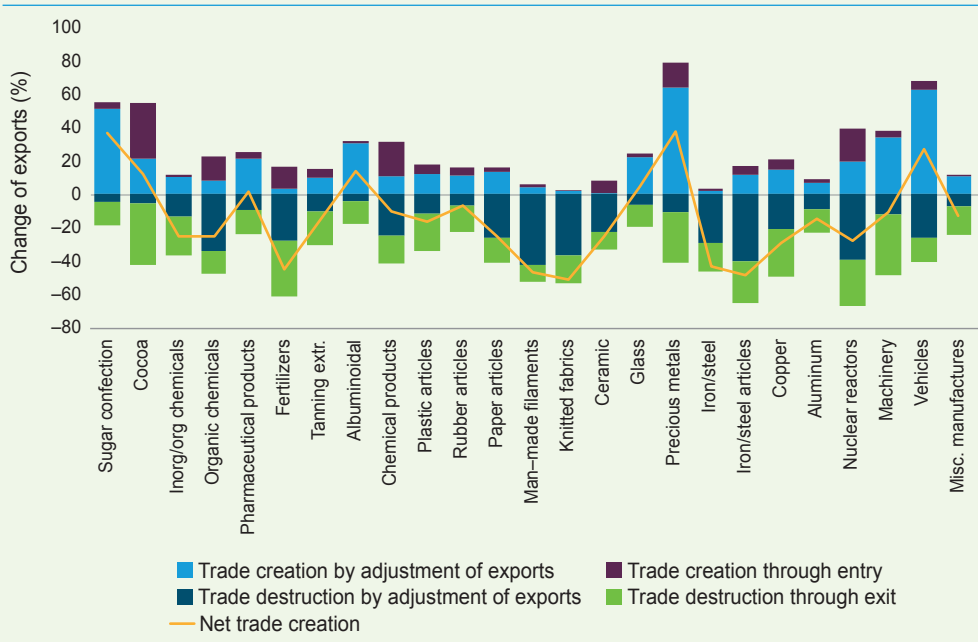
Note: Each bar in this figure represents one quadrant and each is decomposed into the four margins of net trade creation: (i) an increase in exports by existing exporters (light blue bars), (ii) by firms entering the export market in 2020 (purple bars), (iii) a decrease in exports by existing exporters (dark blue bars), and (iv) a decline in exports by firms exiting the export market in 2020. The left (right) panel shows the margins of trade creation for large (small) firms located in each quadrant. A firm is considered large if it belongs to the 20th quartile, and small otherwise. The table above shows the net trade creation and each of its margins is already weighted by the relative importance of each sector and size in the economy.

BOX 7.1 • Margins of Trade Creation and Destruction

During the COVID-19 pandemic period, exports declined in most sectors. Nonetheless, within each sector some exporting firms ‘created trade’ either by increasing their level of exports during the first three quarters of 2020 relative to 2019 (intensive margin), or because some firms exported in 2020 but did not export during the previous year (extensive margin). Figure 7.1.1 shows the shrinking growth rate of exports (yellow line) across Colombian macro sectors. Overall export growth within a sector can be broken down into two components: trade creation (TC) represented by light blue and purple bars, and trade destruction (TD), represented by dark blue and green bars. Trade creation distinguishes between (i) an increase in exports at expanding firms (light blue bars), and (ii) exports created by new exporters (purple bars). Similarly, trade destruction (TD) distinguishes between export losses among shrinking exporters (dark blue bars) and firms exiting from foreign markets (green bars) (see Alviarez, forthcoming).

The startling fact captured by Figure B7.1.1 is the simultaneous trade creation and destruction in a given sector, indicating that net trade creation (yellow line) masks big differences among

FIGURE 7.1.1 • Export Creation and Destruction in Colombia (2020 compared to 2018–19)



Source: UN Comtrade data.

firms. For example, in Colombia, although exports of precious metals expanded by a robust 36% on net, certainly not all firms enjoyed export growth during this period. In fact, substantial trade destruction (41%) occurred in the sector. In the pharmaceutical products sector, net trade creation was relatively small (1% in the first three quarters of 2020), but both trade creation and trade destruction were substantial. Firms that exported in 2020 but not in 2019, or that increased their

(continued on next page)

BOX 7.1 • Margins of Trade Creation and Destruction *(continued)*

exports over this period, accounted for trade creation of 21.2%. On the other hand, the firms that stopped exporting in this sector, or that exported less than in the previous year, accounted for trade destruction of nearly the same magnitude but opposite signed (24.1%). Given the high levels of trade destruction in some sectors, trade creators have played a crucial role in compensating the negative effect of trade destruction on aggregate export growth.

Formally, net trade creation (NTC) is given by trade creation (TC) minus trade destruction (TD), $NTC_{ft} = TC_{ft} - TD_{ft}$. Trade creation is calculated as the weighted sum of the growth rate corresponding to those firms that increase trade, weighted by their relative importance in the economy,

$$TC_{ft} = \sum_{g_{ft} \geq 0} \left(\frac{x_{ft}}{x_{st}} \right) g_{ft}.$$

Notice that the weights are constructed as the average of firm exports across the two periods, relative to the country's average total exports in the two periods. Similarly, trade destruction is defined as the weighted average of the absolute growth of firms with negative export growth rates:

$$TD_{ft} = \sum_{g_{ft} < 0} \left(\frac{x_{ft}}{x_{st}} \right) |g_{ft}|.$$

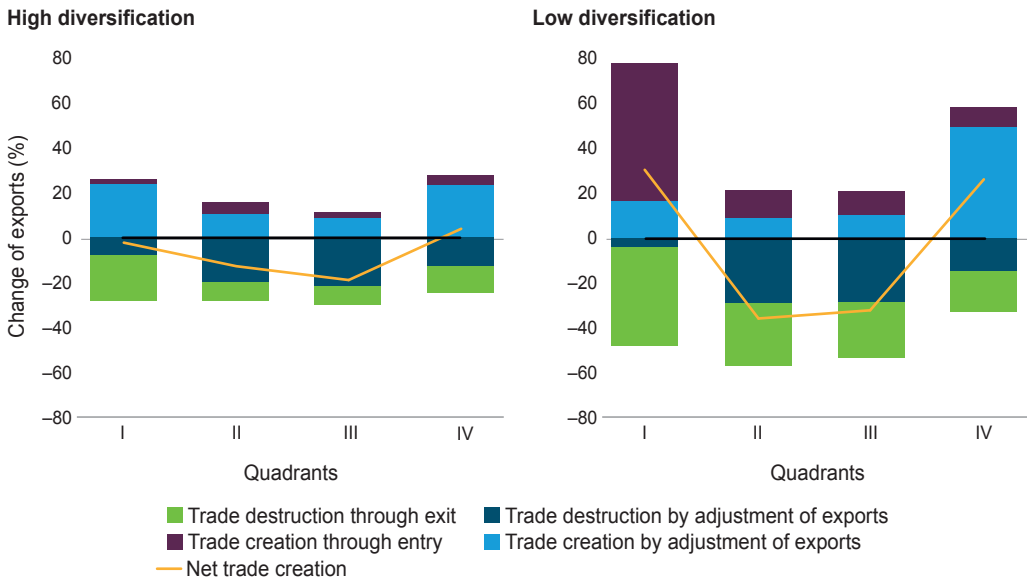
The export growth rate is calculated using the mid-point method, $g_{ft} = 2(x_{ft} - x_{ft-1}) / (x_{ft} + x_{ft-1})$. This decomposition is inspired by the concepts of labor creation and destruction applied in the labor literature (Davis and Haltiwanger, 1992).

(the resilience of the firms' network).¹² The importance of these specific factors suggests how policies might be best designed to help firms participate in global value chains.

- i. **Firm size.** As discussed, large firms appear to adjust exports smoothly while small firms destroy trade by stopping exports altogether. Adjusting in this manner is highly inefficient as broken links are likely to be permanent. The lower capacity of smaller firms to absorb negative shocks may explain this behavior. Although small firms represent a relatively small share of exports (15-20% on average), they account for a significant fraction of employment. Finding ways to preserve the links for small firms that are already exporting would be a valuable policy objective. Facilitating access to credit may boost a small firm's capacity to absorb negative shocks, helping them preserve links.¹³
- ii. **Diversification in export markets.** Diversification lowers risks or, put another way, having only a few customers for most of a firm's exports (a high concentration of

¹² See Alviarez (forthcoming).

¹³ Due to their scale, the exports of small firms are often concentrated in just a few clients—often only 1 (see explanation in the next subsection on diversification).

FIGURE 7.6 • Diversification across Quadrants

Source: Alviarez (forthcoming).

Note: Each bar in this figure represents one quadrant and is decomposed in the four margins of net trade creation: i) an increase in exports by existing exporters (light blue bars), ii) new exports by firms entering the export market in 2020 (purple bars), iii) a decrease in exports by existing exporters (dark blue bars), and iv) a decline in exports by firms exiting the export market in 2020. The left (right) panel shows for each quadrant, the margins of trade creation for firms whose exports show a high (low) export concentration among their foreign buyers. A firm is considered to be highly (low) concentrated if its Herfindahl index (HHI) is above (below) the median of the HHI distribution of firms in the same size category (small or large).

customers) is risky. Firms that export to only a few customers create more trade but also destroy more trade than more diversified ones. In all quadrants, trade destruction is greater for firms with low customer diversification. In quadrant III (referring to Figure 7.4), sectors in which global demand and exports fell, trade destruction was particularly acute for firms with high export concentration.¹⁴ In particular, more firms stopped exporting altogether (See Figure 7.6). As noted, this is an inefficient way to adjust trade as re-establishing these broken links is costly. And in the case of quadrant IV (where global demand fell but exports rose), it was also firms with few customers that created more trade. Interestingly, this trade creation was led by existing exporters exporting more. One possibility is that these firms took advantage of problems face by other suppliers. But firms were unable to create trade if they had to start exporting; only firms that were already exporters could do so.

Perhaps the most relevant finding is that low customer diversification implies more trade destruction in the event of a negative shock. In fact, the contribution

¹⁴ A firm is considered to highly (low) concentrate its exports among their foreign buyers if the Herfindahl index (HHI) is above (below) the median of the HHI distribution for firms in the same size category (small or large). This explains why small firms have fewer clients as a result of their scale.

of exiting exporters in quadrant III was almost twice as large among concentrated exporters as it was among exporters with a diversified clientele. Thus, having a more diversified portfolio of foreign customers can act as an insurance mechanism, especially under adverse demand and supply conditions. From a policy perspective, the strategy should be to help companies diversify their customer's portfolio, in good times when demand might be increasing, and even in turbulent times when firms from other countries exit the market, in order to become more resilient exporters. Policies that help firms preserve their customers in these difficult times will also make them more resilient for future crises.

- iii. **The firm's import status and, iv) whether the firm imports from afar.** Exporters that are also importers tend to benefit from higher quality, cheaper intermediate products, but appear to be more exposed to external negative shocks and may not be able to rapidly take advantage of positive shocks. Nonimporting firms accounted for most of the trade creation in quadrants I and IV and importing firms accounted for most of the trade destruction in quadrants II and III (see Figure 7.7A). Specifically, in quadrant IV, where global demand fell but exports from the region rose nonimporters accounted for that net trade creation.

Importing from far afield during the pandemic added further complications. Importing from China is used to illustrate this point. Firms that imported intermediate goods from China had lower trade creation in all quadrants compared to firms that imported from elsewhere (Figure 7.7B). The vast majority of trade creation in quadrants 1 and 4, where exports rose, was due to firms that imported from elsewhere and not from China. Moreover, much of this trade creation came from firms starting to export. Little trade creation came from firms that started to export if those firms imported from China.¹⁵ There is also more trade destruction from firms that do not import from China, but net trade creation remains greater. These results suggest that participating in truly global value chains may reduce the possibility of taking advantage of new opportunities. One interpretation is that while truly global value chains may enhance productivity and growth, they may also constrain firms and are thus less well-positioned to react to shocks and boost exports if there is an opportunity to do so. Regional value chains may have an advantage in this situation as they also yield greater productivity and growth but at the same time may allow firms to take advantage of new export opportunities. The final section of this chapter outlines policies that would multiply links within the region and allow firms to source more intermediate inputs from countries in the region which could then boost exports of finished goods across the region and to advanced economies.¹⁶

¹⁵ Additional analysis indicates that this effect is not explained given the size distribution of firms.

¹⁶ Given their comparative advantage, stage of development, and sizable concentration of global production networks, East Asia is Latin America and the Caribbean's main competitor exporting to advanced economies.

FIGURE 7.7A • Firms that Import Versus Firms that Do Not Import

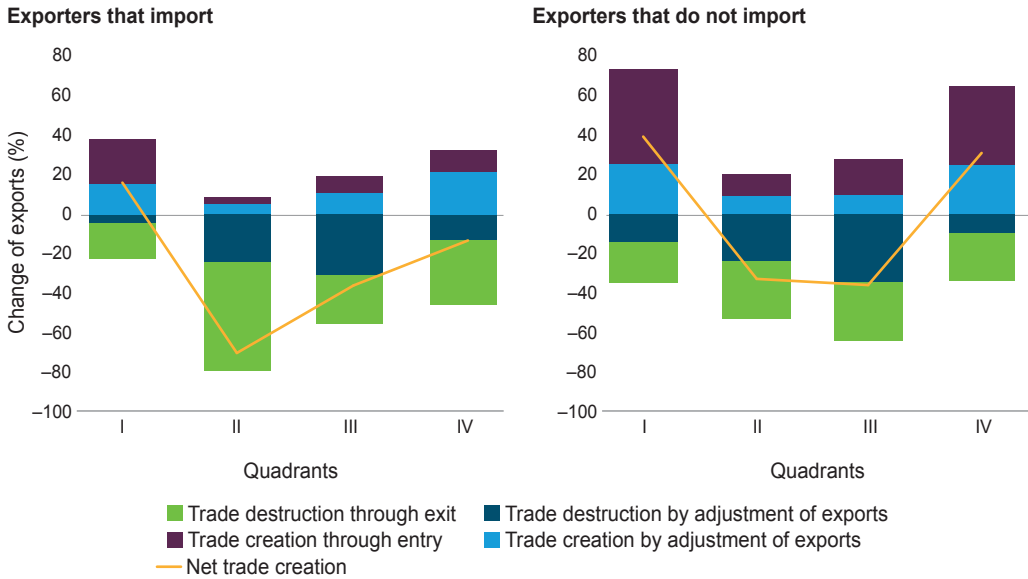
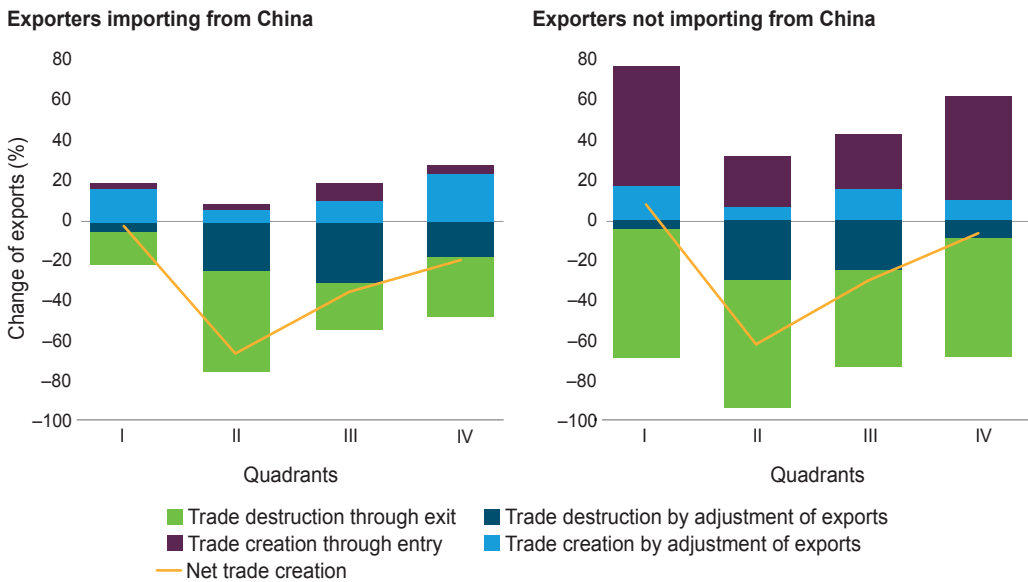


FIGURE 7.7B • The Impact of Importing from Afar: China versus Elsewhere



Source: Alviarez (forthcoming).

Note: Each bar in this figure represents one quadrant and each is decomposed in the four margins of net trade creation: (i) an increase in exports by existing exporters (light blue bars), ii) exports by firms entering the export market in 2020 (purple bars), iii) a decrease in exports by existing exporters (dark blue bars), and iv) a decline in exports by firms exiting the export market in 2020. The left (right) panel of Figure 7.7A shows the margins of trade creation for importer (non-importer) firms located in each quadrant. Figure 7.7B shows the margins of trade creation for importers that source any of their imported intermediates from China (left panel), and importers that do not source any imports from China (right panel).

iv. **The performance of firms' suppliers and customers: network resilience.** Building business relationships takes considerable time and effort. This is especially true in international business, where the transacting parties often do not speak the same language and conduct business in different time zones. Moreover, relative to domestic transactions, the time between when orders are placed, customs are cleared, and products are finally delivered is considerably longer, creating additional risks that must be managed, and requiring trust between the parties.¹⁷

Exporters often rely on imported intermediate inputs tailored to specific needs, which demands significant investments by both parties. Therefore, when an exporter loses an existing provider it takes time to search and successfully establish a relationship with a new partner, which takes a significant toll on output.¹⁸ When facing a large-scale shock such as the COVID-19 pandemic, many businesses are forced to stop fulfilling their orders, potentially disrupting many relationships.¹⁹

The COVID shock has had a serious impact on the foreign suppliers to firms in the region and also on firms' customers. Figure 7.8A plots the change in exports of firms (y-axis) against the fraction of suppliers that the firm lost.²⁰ Clearly, the larger the fraction of suppliers that were lost, the more negative is the impact on firms' exports. For example, for firms that lost about 20% of their suppliers, exports fell about 13%. On the other hand, firms that increased their suppliers by about 20% saw exports grow about 0.1%. A similar exercise considering customers, rather than suppliers, shows another strong correlation between the change in exports and the loss in customers.²¹ Figure 7.8B plots the export growth of the firm against the share of customers lost. Firms that exported around a quarter less lost about a third of their customers.

While the pandemic persists and uncertainty reigns over how the health and economic crises will proceed, the destruction of the network of firms' suppliers and customers raises concern. Since it takes time and resources to build

¹⁷ To partially overcome the lack of trust, as well as reputational and informational frictions related to international transactions, the market has developed financial instruments, such as letters of credit, as well as a complex informational technology system that allows sellers and buyers to share information about themselves and the products they offer.

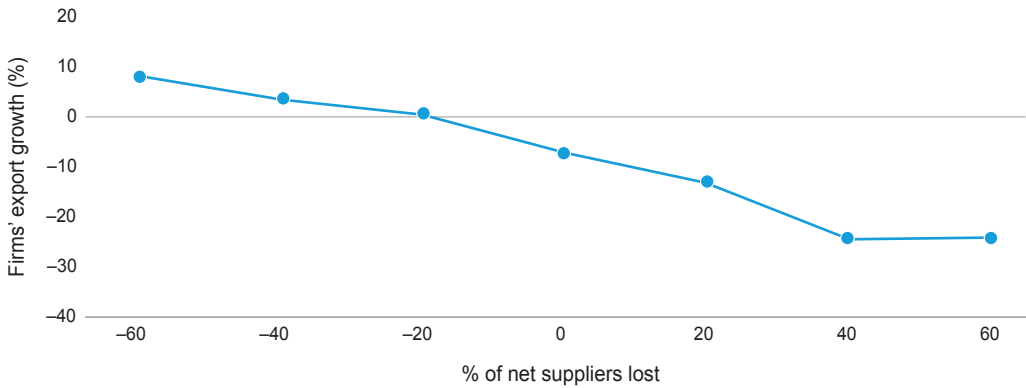
¹⁸ For a discussion on the relevance of networks on firm performance, see Barrot and Sauvagnat (2016); Martin, Mejean, and Parenti (2020); Kramarz, Martin, and Mejean (2020); and Bernard et al. (2019).

¹⁹ This analysis defines a new relationship as one observed in the current period, but not in the previous one. Similarly, a disrupted relationship is one observed in the previous period, but not in the current one. Some of these disrupted relationships could be re-established after the crisis while others may be permanently broken, especially if buyers connected with new suppliers or sellers found new customers. Therefore, the measure of network resilience here assesses whether a relationship was disrupted during the pandemic.

²⁰ Firms may add some suppliers and lose others; the analysis is performed on the net change in suppliers for Colombia and Mexico.

²¹ As with suppliers, firms may gain some customers and lose others; the analysis considered the net change.

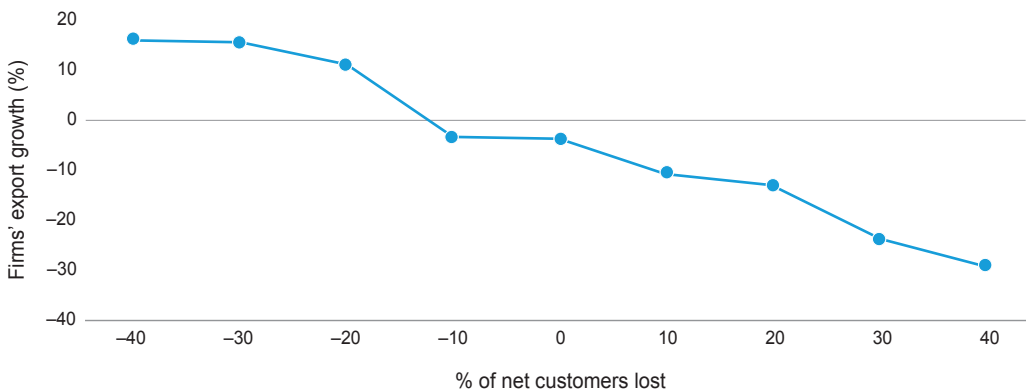
FIGURE 7.8A ● Exporters' Network of Foreign Suppliers



Source: Alvarez (forthcoming).

Note: The x-axis shows the share of net suppliers lost. In this share, the numerator is calculated as the number of suppliers dropped minus the number of suppliers added within a given firm. The denominator is the number of suppliers the firm's sourced from in 2019. The y-axis is the export growth at the level of the firm.

FIGURE 7.8B ● Exporters' Network of Foreign Customers



Source: Alvarez (forthcoming).

Note: The x-axis shows the share of net customers lost. In this share, the numerator is calculated as the number of customers dropped minus the number of customers added by a given firm. The denominator is the number of customers to whom the firm exported in 2019. The y-axis is the export growth at the level of the firm.

relationships, if the network continues to unravel, then the region could experience a significant loss of exports. On the other hand, the shake-up in global value chains may represent an opportunity that firms in the region can exploit.

Policy Implications

Increasing participation in global value chains can help countries in the region improve productivity and growth but may increase vulnerability to shocks. How can policies

simultaneously enhance participation and reduce risks? Turbulent times like the present sometimes offer windows of opportunity. These windows may close rapidly, and must be taken advantage of, since these windows are temporary, but their possible benefits can be permanent.

Several policies can help firms participate in value chains more generally. Allowing multinational corporations to operate more freely, fostering trade-facilitation, improving logistics performance, investing in infrastructure (both physical capital and its governance), promoting innovation by enhancing intellectual property protection, and investing in education and training to improve the technical abilities of workers are all examples of broader, horizontal policies that can facilitate greater insertion into GVCs. Improving institutions including trade promotion agencies can also play an important role.²²

Deepening regional value chains that are less developed and less vulnerable to global shocks would also bring benefits. Removing the barriers to regional integration would go a long way to promoting greater participation in regional value chains.²³ Unfortunately, a complicated “spaghetti bowl” of trade agreements across the region lacks consistent rules. Most trade that does take place could be under preferences (in other words, an agreement likely exists between the exporting and importing country) but the complexity of regulations increases the costs of compliance and results in little trade. For example, rules of origin differ across agreements and do not cumulate between agreements in many cases.²⁴ Forming regional value chains involving several countries becomes difficult indeed. A bottom-up approach ensuring that the rules of origin are consistent between the many different agreements and removing other trade and nontrade barriers would provide a significant boost.²⁵

The analysis in this chapter suggests a set of more specific policies could be beneficial:

- **Small and medium enterprises as exporters (SMEs):** Large companies tend to be the leading actors in GVCs. Most exports are driven by a limited number of large firms, often multinational corporations. However, supply chains have become much more fragmented and dispersed with longer and wider-growing networks of small and medium-sized upstream and downstream enterprises around the world. Moreover, SMEs account for substantial trade creation and destruction, especially as new firms start to export and then soon drop out of the export market. Policies that allow SMEs to enter and remain as exporters on a more consistent basis could yield significantly greater overall participation in GVCs. Difficulties creating a resilient network of foreign clients and access to credit appear to be the

²² For a more detailed discussion please refer to Mesquita Moreira and Stein (2019).

²³ These barriers affect the gains from trade and multinational production, distorting the levels and the sectoral allocation of foreign investment (Alviarez, 2019).

²⁴ Some firms do not even bother to ensure that the preferences are applied given the high costs of compliance.

²⁵ See Powell (2017) and Mesquita Moreira and Stein (2019).

main problems. Policies to help efficient firms weather transitory negative shocks and thereby prevent their exit from the export market could be highly beneficial.

As reviewed in Chapter 5, governments have attempted to facilitate credit during the crisis through guarantee programs. Despite concerns regarding the potential fiscal losses associated with these policies and their support of potentially inefficient firms, their aim is to keep firms operating and their labor force intact during the health crisis. These programs may be particularly useful for exporters whose foreign client is also in financial distress and, unable to pay in advance, must wait to receive payment upon delivery of goods. This policy will help small and medium exporters to mitigate the high cost associated with relationship disruptions. It also complements Basel III regulations that establish a lower capital requirement for trade finance instruments and waives the so-called sovereign floor for confirmed letters of credit, which are particularly important for low-income countries.²⁶ Lower regulatory costs for trade finance could increase the resilience of these countries to external shocks.

- **Exporters' network resilience:** Having a robust set of supplier networks enhances firm export performance, since firm-level idiosyncratic shocks propagate across their production networks. Evidence from the aftermath of natural disasters, for example, indicates that affected suppliers impose substantial output losses on their customers, especially when they produce specific inputs, which is the typical case in complex GVCs.²⁷ Diversification at the source country level is also important. For example, from January to March 2020 some US firms shifted their imports of particular goods from China to Vietnam and Bangladesh, in response to the initial stages of the COVID-19 pandemic (Heise, 2020a). This sourcing diversification strategy was implemented by firms that already imported from the alternative locations, indicating the importance of pre-existing commercial relationships and the usefulness of market diversification to build resilience of GVCs. In addition, diversification of GVCs among foreign suppliers can reduce macroeconomic volatility by lowering the exposure to any single country. Countries that source from a variety of locations are better shielded from shocks and experience less aggregate volatility. Concentration on a single country can increase the risk of a shock propagating through supply chains and negatively affecting the economy (Caselli et al., 2020).

Given the importance of maintaining relationships and creating new ones when facing a significant shock like the COVID-19 pandemic, it is critical to support business networks on this front. Online networks for businesses are an important tool provided through the internet for SMEs to connect to international markets.

²⁶ Beck and Rojas-Suárez (2019).

²⁷ See Barrot and Sauvagnat (2016).

One example of such efforts is ConnectAmericas, an online network for businesses in the Americas created by the Inter-American Development Bank with the support of Google, DHL, Visa, and Alibaba; it seeks to promote international trade and investment by firms of all sizes in the Americas through its platform. The platform provides a network for around 86,000 companies, and access to online courses, webinars, success cases, and articles through guides, tools, and information about good business practices, trends, and new markets. Supporting firms' participation in trade fairs and having active and effective export promotion agencies, are also helpful. These policies enhance the ability of firms to connect with new suppliers and customers.

The COVID-19 pandemic can become an opportunity for Latin America and the Caribbean. Foreign markets are restructuring their sourcing strategies and the region may be able to take advantage of these shifts. Windows of opportunity open during crises but may close rapidly. Countries that fail to take advantage of them may miss out on lasting benefits. For example, policies that promote trade credit today may be more effective in allowing firms to jump on opportunities—including avoiding dropping links to clients and suppliers—than similar efforts in normal times. Nonetheless, this chapter suggests the need to emphasize some of these policies on a more consistent basis. Turbulent times may lead to great gains when earlier and more sustained efforts to help firms participate into GVC are in place. By grouping firms by their export performance relative to global demand, and by analyzing which characteristics are most likely to be associated with their capacity to create and destroy trade, this chapter contributes to finding the right mix of policies to help the region achieve greater and more stable participation in value chains and foster longer-term growth.

CHAPTER 8

Growth, Productivity, and Malleability

The COVID-19 pandemic hit economic growth in Latin America and the Caribbean hard (see Chapter 1). But growth has been elusive in the region for decades. Since 1960, the average per capita growth rate of real GDP in the region was 2.4% per annum—noticeably below that of the rapidly growing Emerging Asian countries (4.9%). Two factors contributing to mediocre long-run growth have been low investment rates, resulting in limited capital deepening, and laggard total factor productivity (TFP) growth, which is the most widely used measure of aggregate economic efficiency.¹ Another factor has been recurrent economic crises.² Crises have costs, and not all sectors recover alike. This asymmetry affects the allocation of economic resources after crises and, therefore, long-run growth.

COVID-19 has generated more output losses among labor-intensive sectors, which have been most impacted by changing consumption and production patterns. Despite the unprecedented nature of the pandemic, the disproportionate impact on labor-intensive sectors is a common feature of crises because those sectors are more “malleable,” meaning that labor is easier to reallocate than capital. The same feature, compounded by depressed investment in physical capital after crises, allows labor-intensive sectors to absorb relatively more resources in the recovery process than capital-intensive sectors. A problem with this bust and recovery cycle is that labor intensive sectors are also less productive on average and, therefore, resources may be misallocated and hurt economic efficiency. To reverse that cycle, countries should increase investment in sectors with a greater potential to increase TFP. A case in point is infrastructure: investing in infrastructure builds up or improves a country’s transport, energy, water and sanitation, and telecommunication assets, with positive spillovers to other sectors. More and

¹ Since 1960, growth has been fueled by increased labor participation—amid the demographic bonus—and higher skills as education expanded to universal coverage (see Cavallo and Powell, 2018).

² In terms of investment, Latin America and the Caribbean invested less (as a share of GDP) before the pandemic than any other region except Sub-Saharan Africa. While investment (net of capital depreciation) has averaged 12% of GDP since 1960, it was 19% of GDP in Emerging Asia during the same period. The growth rate of TFP has been close to zero since 1960 in Latin America and the Caribbean, while it was approximately 1 percent per annum on average in Emerging Asia.

better-targeted infrastructure investments in the recovery phase from COVID-19 can enhance the region's growth prospects.

From Volatility to Malleability

Frequent exposure to external shocks, including terms-of-trade, natural disasters, and financial crises, combined with inadequate instruments to deal with them, make Latin America and the Caribbean's economies volatile. Economies that are intermittently exposed to volatility face substantial uncertainty about the profitability of investment projects, and entrepreneurs may find it best to select technologies that are easily reversed, i.e., that are more "malleable."³ However, greater malleability may not be costless, given that constantly jumping from one task to another may inhibit the discovery of more efficient methods of production.⁴ For example, Cavallo et al. (2013) find that higher volatility distorts efficient resource allocation—resulting in lower productivity growth—especially in developing countries that are highly exposed to shocks and may lack the necessary institutions to deal with them successfully. Consequently, countries adopting more malleable technologies end up with low TFP, slower productivity growth, and lower long-run economic growth (Pagés, 2010).

Although malleability is difficult to assess empirically, a shortcut is to consider capital intensity relative to labor (K/L), under the assumption that labor is easier to reallocate across sectors than capital, which tends to be more specific to a particular production process.⁵ A new database⁶ provides the inputs to assess the relationship between the capital intensity of sectors and, therefore, their estimated malleability, and sector-level productivities (TFPs).⁷ Figure 8.1 shows the relationship between the capital-labor ratio by sector, and an index of TFP for the sectors—computed according to standard growth accounting, using capital and labor as factors of production—from LA-KLEMS and

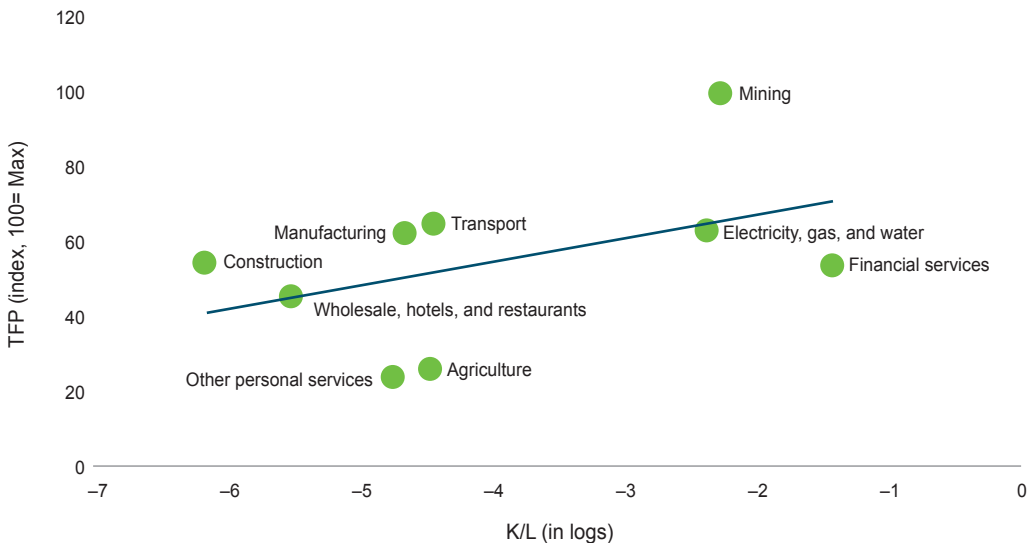
³ Calvo (2005).

⁴ See, for example, Hausmann and Rodrik (2003).

⁵ This idea was identified long ago in the Latin American and Caribbean literature as a case of "speculative production," in that entrepreneurs, constantly speculating on relative price volatility, pick technologies that make it easy to switch from one product to the other. See Ocampo Gaviria (1984).

⁶ LA-KLEMS is the Latin America and the Caribbean chapter of World KLEMS, a global initiative set up to promote the analysis of growth and productivity patterns around the world. The approach is based on a growth accounting framework. See: Jorgenson (2012) and LA-KLEMS (2019) databases. The key innovation of the KLEMS methodology is the building up of databases on output (GDP), inputs (i.e., capital stocks, labor, and intermediate inputs) and productivity at a detailed economic sector level.

⁷ The LA-KLEMS database provides data for ten economic sectors at the 1-digit ISIC (rev 3)—agriculture; construction; electricity, gas and water; financial services (finance and insurance); manufacturing; mining; transport (transportation, storage, and communication); wholesale, hotels and restaurants; and other personal services— for eight Latin American economies (Chile, Colombia, Costa Rica, Dominican Republic, El Salvador, Honduras, Mexico, and Peru), over the period 1990–2017.

FIGURE 8.1 ● TFP vs Capital Intensity by Sector

Source: IDB staff calculations based on LA-KLEMS (2019) and EU-KLEMS (Van Ark and Jäger, 2017).

Note: Each point is the average of the sector's TFP and its capital-labor (K/L) ratio, with the average taken over time and across countries (eight countries from LA-KLEMS, and 12 countries from EU-KLEMS). The TFP for each sector/country is calculated as a residual using a Cobb-Douglas production function with sector specific coefficients (see Appendix D). Capital units are in PPP 2010 US dollars, and labor is measured in number of workers.

EU-KLEMS.⁸ The figure illustrates that more capital intensity is associated with higher TFP levels, on average.⁹ Given that aggregate TFP is the weighted average of sector-level TFPs, countries that adopt less capital intensive—more malleable—technologies have lower aggregate efficiency (TFP). In the case of Latin America and the Caribbean, for example, the average capital intensity across sectors is about two-thirds that in Europe, while the average TFP level in the region is 60% lower.^{10 11}

The COVID-19 pandemic is a major shock that is likely to have significant and persistent impacts on the allocation of resources across sectors.¹² The long-run implications of those

⁸ Appendix D describes how TFP measures are constructed. Suffice it to say that TFP is constructed by a cost shares approach. A Cobb-Douglas production function in labor and capital is assumed. The production function is log-linearized and TFP is computed as the accounting difference between output and a linear combination of the inputs with cost shares varying between sectors but remaining constant across countries.

⁹ See Cavallo et al. (2013) and Pagés (2010).

¹⁰ K/L ratios are lower in Latin America and the Caribbean than in Europe at the aggregate economy level, and across most economic sectors. At the aggregate economy level, the K/L ratio in Europe is 1.5 times that in the region. At the sector level, most sectors in the region have lower K/L ratios than their European counterparts. See Appendix D for details.

¹¹ Lower TFP implies that the average efficiency with which factors of production (i.e., labor and capital) are employed to produce output is lower, which in turn explains relative income differentials across countries. See Caselli (2005), and Hsieh and Klenow (2010), and Daude and Fernández-Arias (2010) for an analysis of Latin America and the Caribbean.

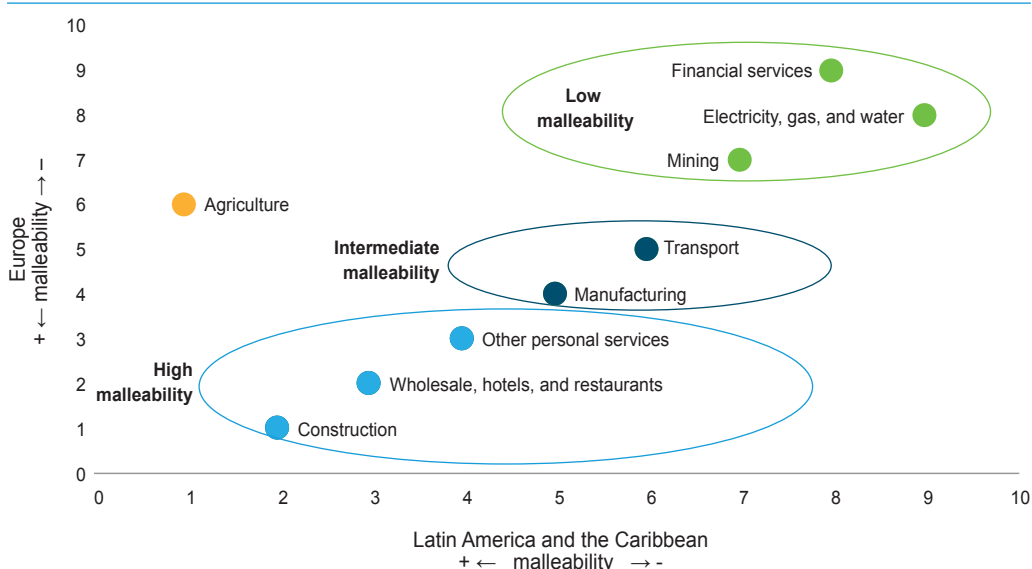
¹² See Barrero, Bloom, and Davis (2020).

changes will depend on which sectors expand and attract more resources in the recovery phase. The experience of the region coping with crises can be a useful benchmark to assess the possible implications of COVID-19. In order to make that assessment, this chapter first ranks sectors' malleability, employs the resulting classification to study the sector level impacts of the COVID-19 shock, and then draws lessons for the recovery from previous crises.

Ranking Malleability across Sectors

Malleability is inversely related to the K/L ratio. Figure 8.2 shows the ranking of economic sectors by their K/L ratio, comparing across sectors in Latin America and the Caribbean (x-axis) and Europe (y-axis). Sectors with a low rank have more malleable production technologies, and vice-versa. The ranking across sectors between regions is similar except for agriculture, which has the lowest K/L ratio in the region, while it ranks six out of ten in Europe. This suggests that, on average, the technologies used in the region's agricultural sectors are significantly less capital intensive than in Europe.¹³

FIGURE 8.2 • Ranking of Capital Intensities



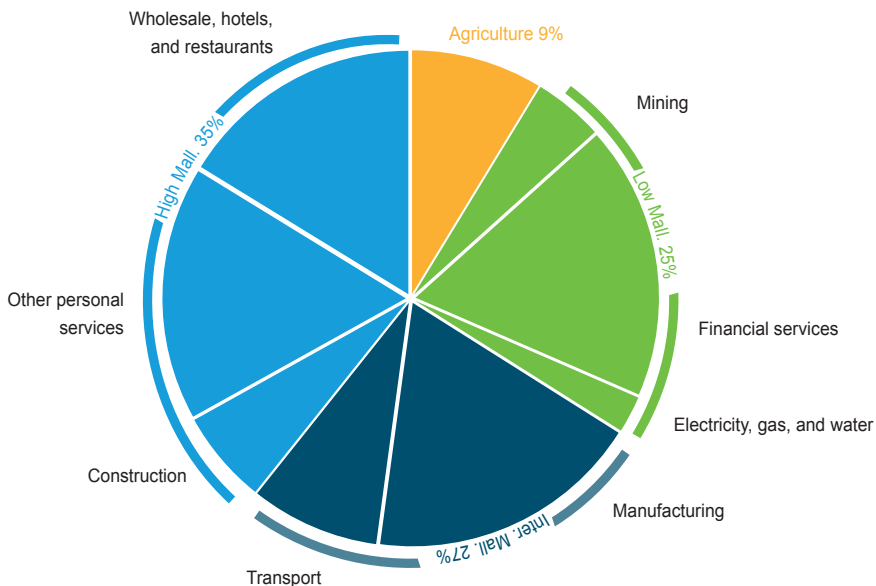
Source: IDB staff calculations based on LA-KLEMS (2019) and EU-KLEMS (Van Ark and Jäger, 2017).
 Note: Ranking of the average capital/labor ratio for each sector in each region; from lowest capital/labor ratio (high malleability) to high capital/labor ratio (low malleability).

¹³ The agricultural sector in Latin America and the Caribbean is split between modern (likely more capital intensive) and traditional (likely labor intensive) subsectors that co-exist (see Mesquita Moreira and Stein, 2019). The low capital intensity of agriculture in Figure 8.3 likely reflects the predominance of the more traditional sector in this sample.

The similar ranking of sectors suggests that the degree of malleability is intrinsic to the production processes, with some sectors employing more malleable technologies (i.e., less capital per unit of labor) than others everywhere.¹⁴ This implies that, for example, construction is more malleable than manufacturing, and manufacturing in turn is more malleable than the electricity, gas, and water sector in both regions. Except for agriculture, the other sectors¹⁵ form three malleability clusters: “high malleability” comprises construction, wholesale, hotels and restaurants, and other personal services; “intermediate malleability” consists of manufacturing and transport, and; “low malleability” consists of mining, financial services, and electricity, gas and water.

The relative size of each group in the average economy in Latin America is shown in Figure 8.3. The intermediate (27%) and higher malleability (39%) groups are bigger than the low malleability group (25%) and, therefore, weigh more in the aggregate economy. Agriculture accounts for about 9% of the total. The next section uses this sector level classification to assess the impact of COVID-19 on sectors.

FIGURE 8.3 • Sectoral Share of GDP in Latin America and the Caribbean



Source: IDB staff calculations based on LA-KLEMS (2019).

¹⁴ The assumption that the degree of malleability of sectors is intrinsic to their production processes is akin to the Rajan and Zingales (1998) assumption that there is a technological reason (i.e., different capital intensities) why some industries depend more on credit than others and that these technological differences persist across countries and over time.

¹⁵ Housing is dropped from the sample because of lack of data.

The Impact of COVID-19 on Sector-level Output

The global pandemic triggered simultaneous supply and demand shocks across sectors. Lockdowns and other mitigation measures led to the total or partial suspension of productive activities, hampering consumption and production. The effect of lockdowns has been stronger in sectors whose activities involve agglomeration and physical proximity/contact like, for example, tourism, entertainment, hotels and restaurants, transport, and personal services, which are labor intensive sectors; it has been milder in sectors considered essential, for example, food, and some manufacturing activities including cleaning supplies and disinfectants, pharmaceuticals, and medical supplies.¹⁶

As the pandemic crisis hit, real GDP fell by 0.6% year-on-year (yoy) on average during the first quarter of 2020 across selected countries in the region with available data (see Table 8.1). The impacts of the lockdowns were felt in full force in second quarter 2020, with output collapsing by 13.1% yoy, and falling an additional 6.6% yoy on average during the third quarter.¹⁷ The impacts on sector-level output in turn, have been larger among the high and intermediate malleability groups, than in the low malleability group. The exception is agriculture, which has withstood the shock better than other malleable sectors, probably because food, being essential, has benefited from the mitigation policies—including direct transfers to sustain incomes—that governments implemented in response to the pandemic.

The impacts on output have varied across sectors; what can be expected during the recovery phase? And what may be the implications for the efficient allocation of resources? While it is too early to know when the COVID-19 crisis will end, the next section reviews the pattern of economic recovery from previous crises in search of clues to answer these questions. The COVID-19 crisis presents both similarities and differences with previous crises. While the crises that have affected the region since the 1980s usually had either a trade or a financial shock at their epicenter, during the pandemic international trade was severely

TABLE 8.1 • Economic Growth by Sectors During 2020 (%)

	First quarter	Second quarter	Third quarter
Low malleability	0.3	-8.5	-4.1
Intermediate malleability	-1.4	-17.5	-8.0
High malleability	-1.3	-18.5	-10.6
Agriculture	0.6	-1.9	1.1
Total	-0.6	-13.1	-6.6

Source: IDB staff calculations based on national accounts.

Note: Simple average of the annual GDP growth rates of the sectors within each group. Countries with available data through the third quarter of 2020: Argentina, Brazil, Chile, Colombia, Mexico, and Nicaragua.

¹⁶ See ECLAC (2020).

¹⁷ Similar sectoral patterns have been observed in other countries. For example, Brinca, Duarte, and Faria-e-Castro (2020).

curtailed by the lockdowns and the global collapse in demand (see Chapters 3 and 7). On the positive side, to date countries have been spared financial crises thanks to swift policy responses (see Chapter 5). Despite the differences, the evidence from previous crises may still shed light on how unique the sector level impacts of COVID-19 (summarized in Table 8.1) have been, and what are the possible implications for growth after the pandemic.

Lessons from Previous Crises

The analysis considers the impact of large economic crises that affected the eight countries in the LA-KLEMS database since 1990. They are the Tequila Crisis affecting Mexico in 1995, the aftermath of the Asian and Russian financial crises, which affected Peru in 1998 and Colombia in 1999, and the Global Financial Crisis of 2008–09 that affected all the countries in the sample and caused generalized recessions in 2009. The study is of the impacts of the crises on sector level output and TFP during the crisis and in the recovery phase.

For each of the crises, the crisis year trough (i.e., the year when real GDP bottomed-out) is presented as T, and the behavior of sector level real GDP and total factor productivity (TFP) five years before and four years after the onset of the crisis is studied. To summarize information across sectors and across crises, the outcome variables of interest are transformed into indices and then normalized to 100 on T-1, the year prior to the crisis trough. Then, the simple (unweighted) average of sectors' indices within each malleability group for the various crisis episodes in the sample is taken to produce one synthetic index per group.

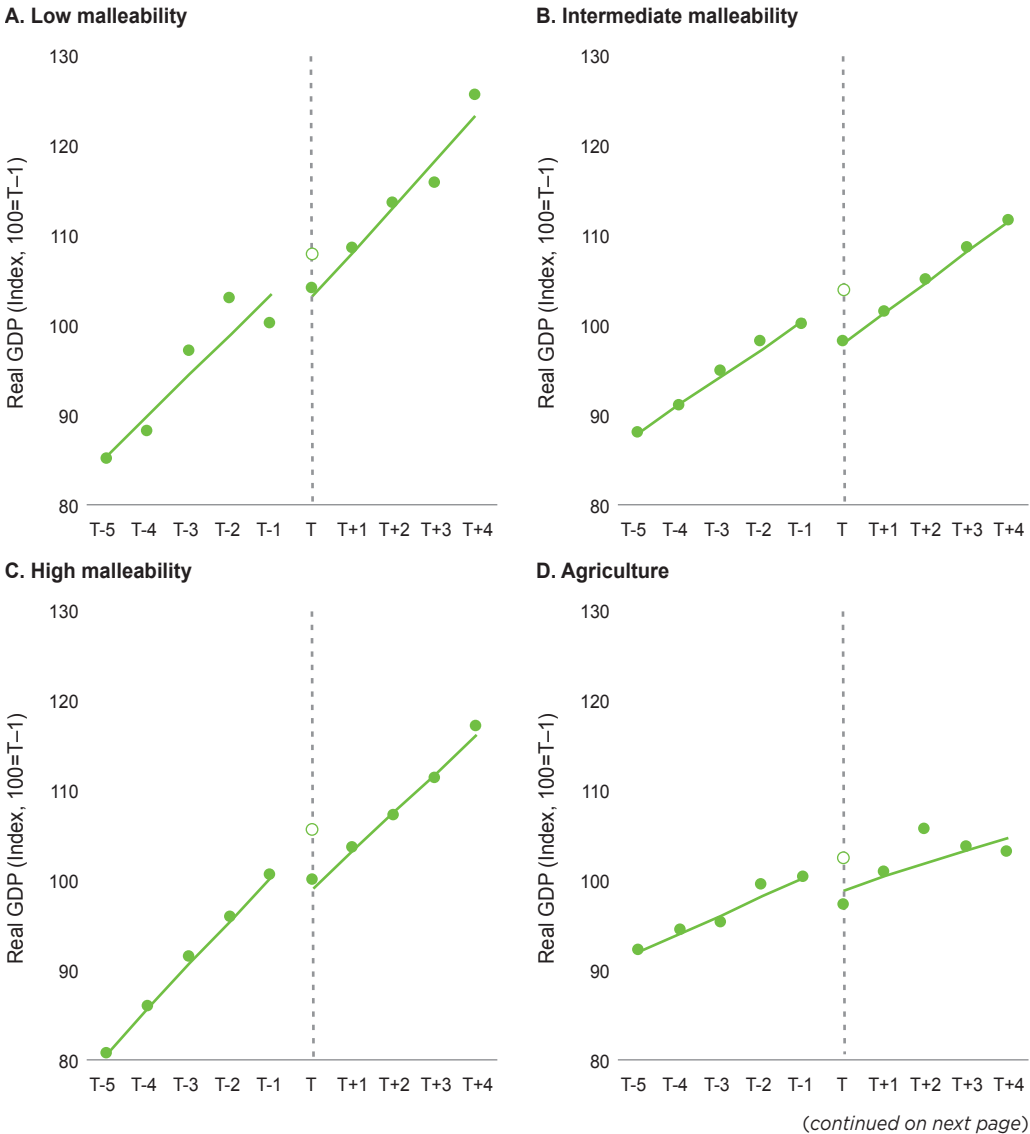
Figure 8.4 reports the real GDP indices for the three malleability groups, plus agriculture, which is separated from the other sectors because it has different capital intensities in Latin America and in Europe, and therefore does not align unequivocally with one of the malleability groups. Figure 8.4 also reports the index for the economy, which is the aggregate (weighted average) of all sectors.¹⁸

Panel E shows that real GDP losses at the peak of the crisis (on period T) average 5.3% of GDP for the average economy. After the crisis, it takes an average 1.4 years for GDP to recover from the trough to the pre-crisis counterfactual level (i.e., the level of GDP that the group would have reached without a crisis if the pre-crisis trend had continued without interruption).¹⁹ Interestingly, the pattern varies across sectors. For high malleability sectors (Panel C), output losses during the crisis are greater than average (6% of GDP) and it takes 1.5 years for GDP to recover to the pre-crisis level. On this dimension,

¹⁸ The total is the aggregate of all economic sectors, which is also the weighted average of sectors, where the weights are the sector shares in the total of each economy.

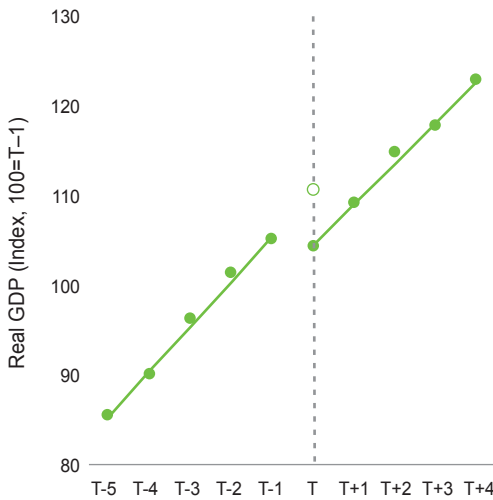
¹⁹ However, crises generate permanent losses because the post-crisis GDP trend is lower and parallel to the pre-crisis trend. Cerra and Saxena (2008) find that output loss from financial crises and some types of political crises is highly persistent.

FIGURE 8.4 ● Impacts of Crises on Real GDP



agriculture (Panel D), which in Latin America is the most malleable sector, behaves like the other high malleability sectors. In the intermediate malleability group (Panel B), output falls by 5.9% on average, and it takes 1.7 years to recover to pre-crisis levels. Instead, the low malleability group (Panel A) is the most resilient: on average output falls by 3.9%, and it takes about a year to recover to pre-crisis levels.²⁰

²⁰ The heterogeneity in how sector level output responds to crises is also observed in the behavior of investment. Aggregate investment falls by 25.3% on average following crises. Investment remains subdued for a

FIGURE 8.4 ● Impacts of Crisis on Real GDP (continued)**E. Total**

Panel	Output loss (% GDP)	Time to recovery (years)
A	3.9	0.9
B	5.9	1.7
C	6	1.5
D	5.6	2.3
E	5.3	1.4

Source: IDB staff calculations based on LA-KLEMS (2019).

Note: T is the crisis year trough (i.e., the year when real GDP bottomed-out in each country). To summarize information across sectors and crises, Real GDP of each sector is transformed to an index and normalized to 100 on T-1. Each dot is the simple (unweighted) average across sectors within each malleability group, for each of the five years before and the four years after the crisis onset. Averages taken across 11 crisis episodes. Pre- and post-crisis trend lines are included. The output loss is the difference between the counterfactual GDP (computed projecting the pre-crisis trend to T, and plotted as an empty dot on the vertical line at T) and actual GDP on T (solid dot on the vertical line at T). The time to recovery is the number of years it takes after the crisis for GDP to reach the pre-crisis counterfactual level. Time to recovery is calculated by projecting horizontally the empty dot to the post-crisis trend line, and then down to the x-axis.

This evidence shows that the way in which crises impacted output across economic sectors was similar to the COVID-19 crisis (Table 8.1), even though previous crises were less severe in magnitude. It seems then that more malleable sectors typically suffer a bigger impact during crises.²¹

In addition to the impacts on output, the volatility associated with crises usually diverts resources away from efficient allocation, especially in developing countries that are less able to cope with volatility.²² Resource misallocation then affects economic efficiency (TFP) during the recovery phase and beyond.

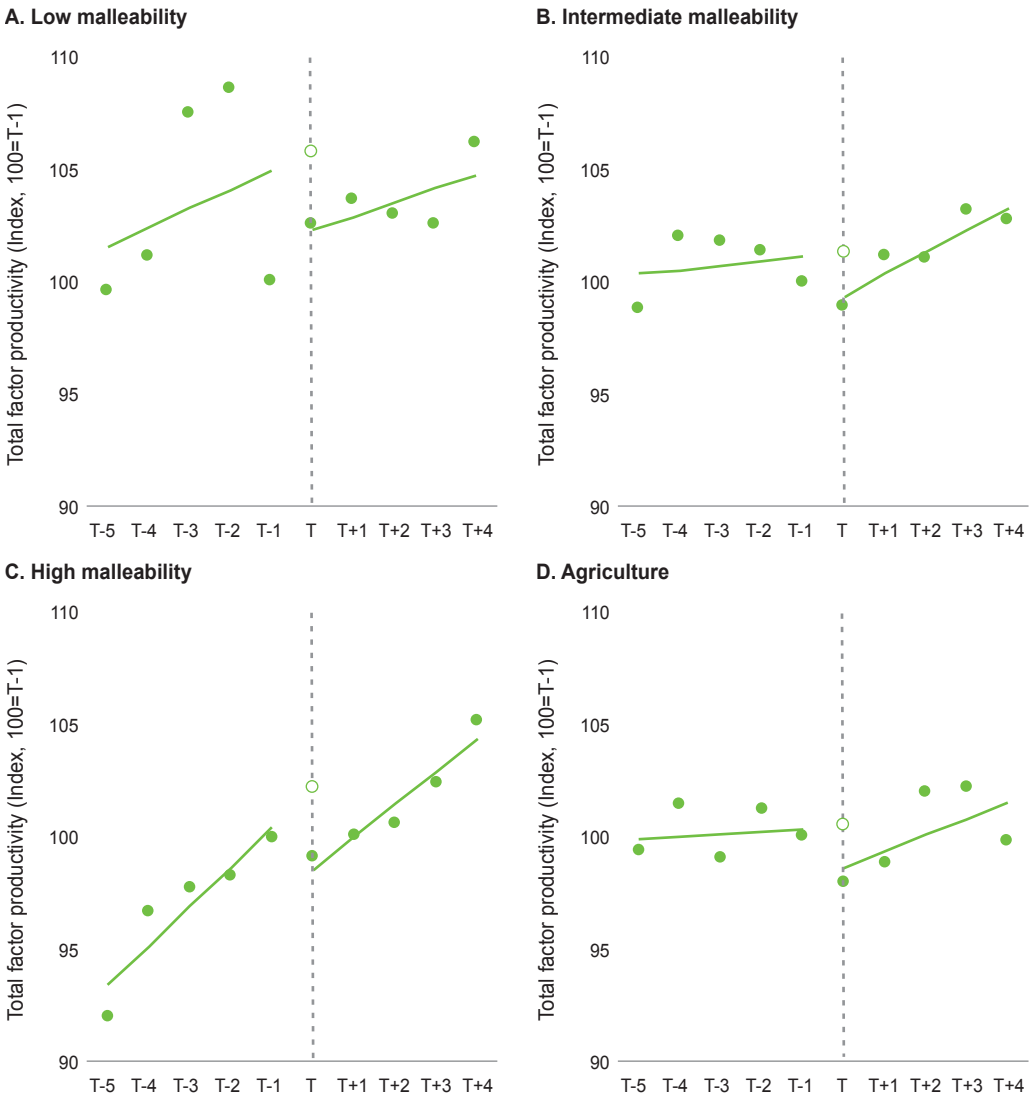
significant period, taking on average 4.6 years to recover to pre-crisis levels. These aggregate effects are driven by the high malleability and intermediate groups as investment falls 27.2% and 39.2% on average respectively following crises. Instead, investment dips only 7.9% in the low malleability group and takes about one year to recover to its pre-crisis level.

²¹ This is further confirmed in recent work by Ahumada et al. (2021). They find that while Latin American and Caribbean countries experienced a smaller aggregate shock during the 2008-09 crisis than OECD countries, the shock was relatively larger for more malleable sectors.

²² See Cavallo et al. (2013).

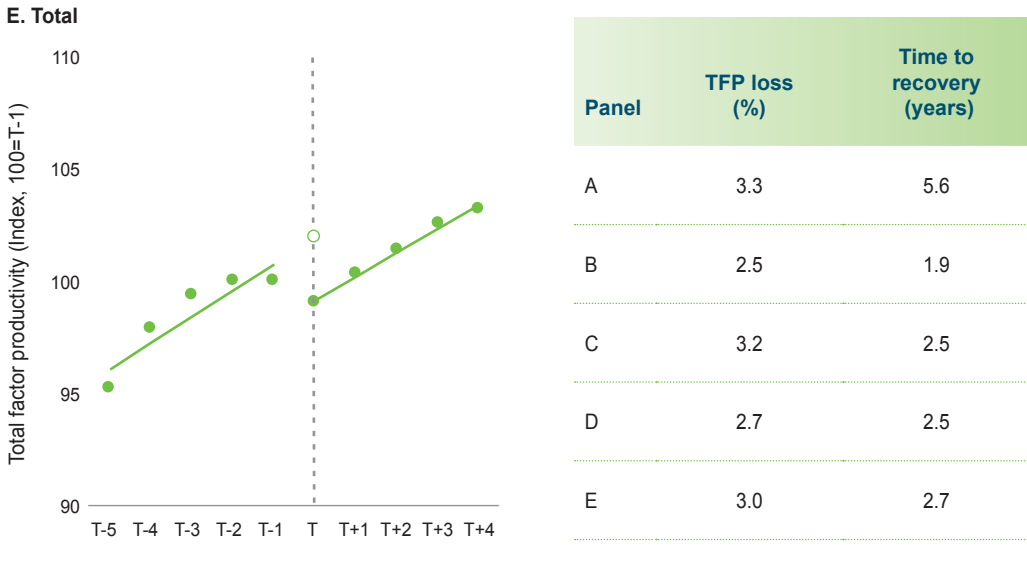
Figure 8.5 shows the evolution of measured TFP before and after the crisis onset.²³ TFP levels fall uniformly across the three malleability groups; however, interestingly, it takes longer for the *low* malleability group to recover its pre-crisis TFP level (5.6 years) than either the intermediate (1.9 years) or the high malleability group (2.5 years). The combination of the sector level responses, plus the impacts on agriculture (Panel D), result in an

FIGURE 8.5 ● Impacts of Crises on Total Factor Productivity



(continued on next page)

²³ Results using labor productivity (Real GDP/labor) instead of TFP are qualitatively and quantitatively similar and do not alter the conclusions.

FIGURE 8.5 ● Impacts of Crises on Total Factor Productivity (continued)

Source: IDB staff calculations based on LA-KLEMS (2019) and EU-KLEMS (Van Ark and Jäger, 2017).

Note: T is the crisis year trough (i.e., the year when real GDP bottomed-out in each country). To summarize information across sectors and crises, TFP of each sector is transformed to an index and normalized to 100 on T-1. Each dot is the simple (unweighted) average across sectors within each malleability group, for each of the five years before, and the four years after the crisis onset. Averages taken across 11 crisis episodes. Pre- and post-crisis trend lines are included. The TFP loss is the difference between the counterfactual TFP (computed projecting the pre-crisis trend to T, and plotted as an empty dot on the vertical line at T) and actual TFP on T (solid dot on the vertical line at T). The time to recovery is the number of years it takes after the crisis for TFP to reach the pre-crisis counterfactual level. Time to recovery is calculated by projecting horizontally the empty dot to the post-crisis trend line, and then down to the x-axis.

estimated aggregate TFP loss of 3% (Panel E) for the economy, which takes 2.7 years to recover to its pre-crisis levels after the crisis trough.²⁴

The fact that TFP falls in the aftermath of crises has been also documented by Calvo, Izquierdo, and Talvi (2006). They found that variations in TFP account for the bulk of the variation in output throughout the collapse-recovery period for a similar sample of crises.²⁵ That the TFP losses are persistent has been documented as well by Daude and Fernández-Arias (2010). What is new about these results is that the *pace* of recovery varies across sectors, with TFP growth being *slower* in high capital intensity—low malleability—sectors. Thus, sectors with the highest average productivity levels usually experience fewer efficiency gains than other sectors during the recovery and, therefore, contribute less to aggregate TFP growth.

²⁴ It takes 1.5 years for productivity to recover its pre-crisis level when using labor productivity instead of TFP as the proxy.

²⁵ Calvo, Izquierdo, and Talvi (2006) find the swings in measured TFP are hard to attribute to technological factors. An alternative conjecture is that true TFP remains roughly the same throughout the collapse-recovery process, and that swings in measured TFP stem from a malfunctioning in the financial system.

The asymmetric responses of sector level output and TFP in the aftermath of crises suggest that the sector's malleability has different implications for the crisis impact and for the recovery phase. Low malleability sectors—which are more productive on average—seem to be more resilient and sustain lesser output losses when the crisis hits. The same pattern has prevailed during the COVID shock. However, as resources are misallocated during crises, especially in developing countries, the higher resilience of low malleability sectors does not translate into higher efficiency gains in the aftermath of crises. This, in turn, has implications for long-run growth. Ahumada and Navajas (2019), for example, show that a productivity slowdown in key low malleability sectors—for example, infrastructure-related sectors—can have ripple effects on the rest of the economy that are larger than the impacts of shocks on more malleable sectors.²⁶

Yet the risk of slower growth can turn into an opportunity if—unlike previous crises—the region is able to increase investment in economic sectors that can boost productivity through their interactions with other sectors.²⁷

Infrastructure: The Path from Recovery to Higher Sustainable Growth

The economic sector with the lowest estimated malleability according to the ranking in Figure 8.2 is electricity, gas, and water and sanitation which, together with transportation, storage and communications, comprise what is known as “economic” infrastructure. Investing in infrastructure can support short- and long-term economic growth (Cavallo, Powell, and Serebrisky, 2020).

In the short run, boosting infrastructure investment can fuel the recovery from the pandemic because the spending multiplier from an additional dollar in infrastructure can be as high as two (see Chapter 2),²⁸ especially in Latin America and the Caribbean, a region with infrastructure gaps between 2% and 3% of GDP.²⁹ In the long run, investing in infrastructure can propel growth by increasing productivity of other economic sectors, especially those sectors with high growth potential, because infrastructure services are intermediate

²⁶ Similarly, results from a Computable General Equilibrium model in Brichetti et al. (2020), summarized in Cavallo, Powell, and Serebrisky (2020), Chapter 12, show that productivity gains in infrastructure can produce significant gains on other sectors.

²⁷ Ahumada and Navajas (2019) find that if countries in Latin America and the Caribbean could increase productivity levels in infrastructure-related sectors to the levels of OECD countries, then economy wide productivity growth could increase by 0.6 percentage points per year (i.e., a 75% increase with respect to the historical average) just through the estimated impact on the low productivity sectors in the region.

²⁸ Spending multipliers of public investment are significantly higher than current expenditures across a broad set of country estimates. See Ilzetzki, Mendoza, and Végh (2013); Abiad, Furceri, and Topalova (2016); Furceri and Li (2017); and Izquierdo et al., (2019).

²⁹ Infrastructure gap estimates vary widely depending on the data and methodology, but most estimate gaps around 2.5% of GDP or about US\$150 billion per annum. For a recent analysis of infrastructure gaps in the region, by sector and by country, see Cavallo and Powell (2019), Chapter 6.

production inputs of other economic sectors, with varying intensities. Therefore, if electricity provision is intermittent, for example, sectors that use energy intensively have higher productive costs and, therefore, are less competitive. Increasing investment in infrastructure by modest amounts can have significant growth impacts due to their interaction with other economic sectors³⁰ Ahumada and Navajas (2019) find that if countries in Latin America and the Caribbean could increase productivity levels in infrastructure-related sectors via targeted investments to the levels of OECD countries, then economy-wide productivity growth could increase by 0.6 percentage points per year (i.e., a 75% increase with respect to the historical average) just through the estimated impact on the low productivity sectors in the region.

Unfortunately, even before the COVID-19 crisis, investment in infrastructure was low and declining. Investment in the region averaged just 2.8% of GDP between 2008 and 2017, well below the investment to GDP ratio of East Asia and other fast-growing regions, thereby widening the infrastructure gaps. Taking the median estimate of the infrastructure investment needs in the region (5% of GDP), closing the infrastructure gap would require increasing investment by at least 2 p.p. of GDP (approximately US\$110 billion) for years.³¹ That level of investment will require both private and public financing. While increasing public investment will be difficult given tight budgets in the post-COVID 19 context, countries can still reverse the existing bias against public investment in the region's spending policies. Distorted political economy incentives bias public expenditures toward consumption and away from investment over the economic cycle.³² One way for governments to address the spending bias is through the design of fiscal institutions, including fiscal rules that protect public investment from spending cuts during fiscal consolidations (see Chapter 2).

Private investment, which has averaged about 1% of GDP in the region since 2008, must also play a role boosting aggregate investment. Private investment must take place where it makes economic sense: that is, in projects with high rates of social return, and where the private sector can innovate and provide better quality and more efficient services. There is plenty of room for private investment to grow. Presently, commercial banks account for two-thirds of the infrastructure financing available in the region. Instead, institutional investors, which are ideal candidates to finance infrastructure, only account for 1% of total financing. Commercial banks have played a leading role in financing because they have the resources and the project finance skills that are particularly important during the construction phase of projects. But the pressure of tighter regulations, and the COVID crisis, may prevent commercial banks from keeping long-term loans on their balance sheets. New investors are therefore needed either from the start of the project, or once the construction phase is complete. By the time that construction phase ends, project risks decline, and the nature of the risks facing the financier change. At that point, bonds backed by the return of

³⁰ See Cavallo, Powell, and Serebrisky (2020), Chapter 12.

³¹ See, for example, Castellani et al. (2019) and Rozenberg and Fay (2019).

³² See Izquierdo, Pessino, and Vuletin (2018).

the operation of the asset for example, could be an attractive instrument for institutional investors. Banks could then sell the bonds to institutional investors and free up space in their balance sheets for additional new investments. If institutional investors were to allocate 5% of their assets under management to infrastructure in the region—currently they allocate negligible amounts— private investment could double to \$40 billion annually.³³

Increasing investment is key to enable the region to take advantage of the opportunities afforded by the digitalization process that is already underway. Digitizing infrastructure services, which implies increasing the capital intensity of the sector or making it less malleable, includes using digital technologies to expand supply, improve demand management, and improve the quality of the services provided. It includes technologies like smart meters to control and manage residential electricity consumption, smart phone apps to monitor the consumption of home appliances, remote digital sensors to measure and control water pressure, and digital screens at bus, train, and metro stations to inform passengers on the arrival of the next vehicle. The payoffs of increasing digitalization can be large: on average, countries would experience a 3.5 percentage point increase in growth rates over a 10-year period following a 5% increase in efficiency in the sector from modest increases in investment (Brichetti et al., 2020). Extrapolating to Latin America and the Caribbean, this represents approximately US\$200 billion of incremental output over ten years. These benefits may be as high as 4 and 5 percentage points of incremental growth in some countries depending on the context and the structure of their economies.³⁴

A further opportunity comes from the so-called green infrastructure investment agenda, which combines the need to invest in infrastructure with countries' environmental goals and commitments. When planning investment, resources can be directed towards investments in sustainable infrastructure that, if well-designed, have at least as large an impact on growth as standard infrastructure. Green building projects, such as refurbishing existing buildings for better heat insulation and/or clean energy infrastructure, may have high multiplier effects. And critically, they lower the costs of transitioning toward renewable energies (see Chapter 9).

COVID-19 has dealt a significant blow to the region. While economic recovery may be already underway in some sectors and countries, previous crises demonstrate that the pace of recovery may be uneven and biased against high productivity sectors. Seizing the opportunities for stronger post-pandemic sustainable growth requires boosting the recovery by investing more in key, low malleability sectors, which have higher average productivity, and greater potential to generate positive spillovers on other sectors.

³³ See Cavallo, Powell, and Serebrisky (2020), Chapter 3.

³⁴ The impacts vary across countries depending on various factors: their economic structure, the weight of infrastructure services in consumption baskets and intermediate input requirements for other sectors, the extent to which reallocation of resources is feasible among different productive sectors, the efficiency of the investment, and the growth rates of each country.

CHAPTER 9

Stronger Sustainable Growth

While governments focus on the health and economic crises, the environmental and climate crisis deepens. The pandemic has exacerbated social and economic needs that amplify the region's vulnerability to current and future climate change impacts; the aftermath of the November 2020 hurricanes, Iota and Eta, that struck Central America tragically illustrates this reality.

This chapter presents evidence on how investing for a sustainable recovery constitutes a win-win strategy, adding millions of jobs and increasing economic growth as well as reducing climate risks. If the right policies are adopted, there is no trade-off between climate and growth objectives. A set of policies are suggested to leverage synergies between economic recovery and climate goals. Estimates suggest additional growth of more than 1% could be attained.

Public spending designed to help firms and households through the pandemic should prioritize investments in environmentally friendly activities and help relocate workers to sectors that will benefit from the transition to a net-zero emissions economy. To guarantee sustained public and private financing, governments should update their fiscal strategies (to rely less on fossil fuels) and align regulations and prices with environmental goals. The design of ambitious and comprehensive climate plans can help ensure the consistency of public policy across sectors and help identify which activities to support and which ones to avoid.

The Case for a Sustainable Recovery: Addressing both Environmental and Health Vulnerability

Even before the COVID-19 pandemic hit, climate change was having a substantial impact on the region (Busso and Messina, 2020). For instance, hurricane seasons are becoming more severe. The 2017 hurricane season resulted in an estimated loss of 800,000 visitors to the Caribbean who would have generated US\$740 million and supported about 11,000 jobs if there had been no hurricane (Saget, Vogt-Schilb, and Luu, 2020). The most affected are informal and seasonal (lower paid) workers. Now the pandemic has only deepened the loss of jobs in these industries in tourism dependent economies.

In November 2020, two deadly hurricanes, Iota and Eta, hit Central America two weeks apart, leaving more than 400 deaths and missing persons in its wake as well as more than

US\$8 billion in damages. In Honduras, the hardest hit country, half of the population was affected, and economic damages are evaluated at about 8% of GDP.

Iota and Eta were part of the 2020 Atlantic hurricane season, which had no less than 13 hurricanes—the most active on record. This was the fifth consecutive season with above-average hurricane intensity; global warming has provoked this trend (Masters, 2021).

Climate change is also provoking more frequent and more intense heat waves. Considerable evidence shows that high temperatures reduce productivity and growth (Nuguer and Powell, 2020a). Outdoor workers, such as street vendors and construction workers, are the most affected. Looking forward, the equivalent of 2.5 million jobs could be lost due to heat stress in the region by 2030 (Saget, Vogt-Schilb, and Luu, 2020). Sadly, the same groups hit hardest by the pandemic will be hurt most by climate change.

Global warming is also making droughts and wildfires increasingly costly. The global 2020 wildfire season was the fifth most damaging on record. In Brazil, the agriculture sector suffered US\$3 billion in losses due to the 2020 drought, the third most expensive on record. In addition, wildfires destroyed one-third of the Pantanal, the largest tropical wetland in the world, jeopardizing biodiversity and the health and economy of local communities (Libonati et al., 2020).

Other climate change impacts include altered discharges from rivers, sea level rise, ocean acidification, coral bleaching, retreats of glaciers, less availability of fresh water, lower agriculture yields (except in southernmost regions), reduced biodiversity, ecosystem disruptions, mass extinctions, and fish migrations. Climate change damages infrastructure and productive capital in the region and increases mortality and morbidity. It can also aggravate conflict, humanitarian crises, and migration (IPCC, 2018). Compounding matters, poor countries—and poor households within poor countries—tend to be more exposed, more vulnerable, and less able to cope with the impacts of climate change (Hallegatte et al., 2015).

Many countries affected by the pandemic were also impacted by these climatic events. The combination has been particularly acute for poorer and more vulnerable populations.

The Need to Transition to a Net-Zero Emissions Economy

To manage the impacts of climate change on development, all countries in the world need to both increase the resilience of their economies to climate change impacts and drastically reduce greenhouse gas emissions to stabilize climate change itself (Cavallo, Powell, and Serebrisky, 2020, and Hallegatte et al., 2015).

Stabilizing climate change below 2°C and as close to 1.5°C as possible, the objective set in the Paris Agreement, requires getting to net-zero carbon emissions globally by around 2050 (IPCC, 2018). Reaching net-zero carbon emissions, or *decarbonizing* the

economy, means reducing man-made emissions of carbon due to human activities such as fossil fuel combustion, and balancing out remaining emissions, for instance by planting trees at scale.

Latin America and the Caribbean can achieve carbon-free prosperity through immediate and parallel actions around five pillars of decarbonization (Saget, Vogt-Schilb, and Luu, 2020): (i) phasing out fossil-fuel-based electricity generation by switching to carbon-free sources such as wind and solar power; (ii) using electricity instead of fossil fuels for transportation, cooking, and heating; (iii) reducing private transportation, by increasing public transportation, walking, biking, and telework; (iv) halting and reversing deforestation, by stabilizing or reducing consumption of animal-based foods to reduce pressure on forests; and (v) reducing waste in all sectors, recycling materials, and switching to sustainable construction materials, such as wood or bamboo.

Most countries in the region have either officially embraced the goal of becoming carbon-neutral, or stated that they are working on it (IDB/DDPLAC, 2019). Done right, the transition to a net-zero economy can contribute to create jobs and improve economic growth post-COVID-19.

A Sustainable Recovery for both Economic and Environmental Gains

Sustainable Energy: Fueling Jobs and Growth

Governments can simultaneously create jobs, spark economic recovery, and reduce emissions in a sustainable recovery. The International Energy Agency, in partnership with the International Monetary Fund, has proposed a global Sustainable Recovery Plan to help governments boost economic growth, create jobs, and build more resilient and cleaner energy systems (IEA, 2020a). It focuses on expanding renewable electricity capacity and electricity grids, expanding electric vehicle production, expanding mass transit, improving energy efficiency in the residential, commercial, and industrial sectors, among others.

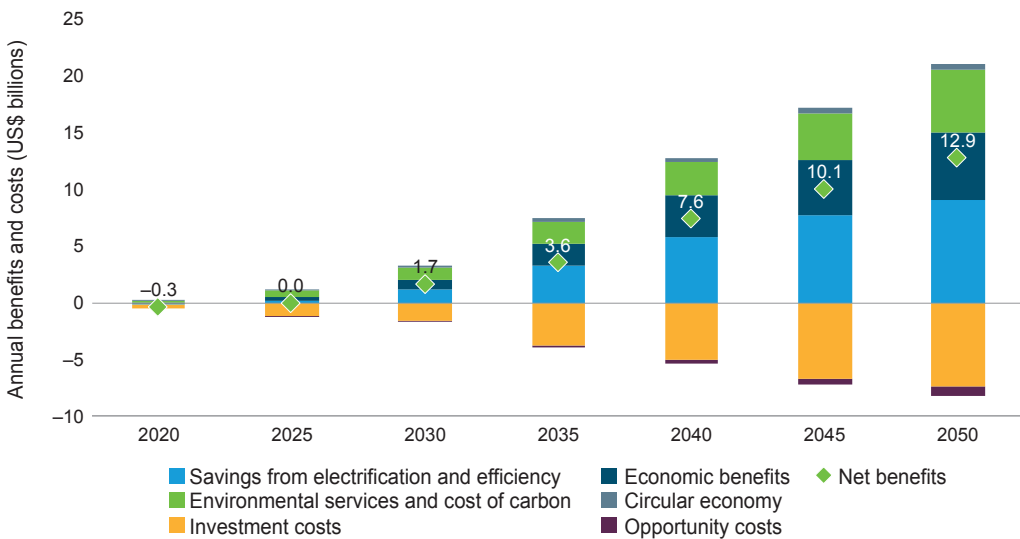
Implementing such a plan would create 9 million jobs a year over the next three years globally and add 1.1 percentage points to global economic growth each year (IEA, 2020a). In developing countries, growth would increase by around 1.3 percentage points. Global GDP would be 3.5% higher in 2023 than it would have been otherwise. The plan envisions 2019 as the definitive peak in global emissions, and then puts them on a path towards achieving long-term climate neutrality. It would also facilitate attaining sustainable development goals such as improving access to electricity, increasing clean cooking solutions, and reducing air pollution. Finally, it would make energy systems more resilient thanks to investments to expand electricity grids and digitalize grid control (IEA, 2020a).

Beyond Sustainable Energy

A sustainable recovery for the region entails transformations in more than just the energy sector. Costa Rica’s National Decarbonization Plan provides an example. It sets the goal of reaching net-zero greenhouse gas emissions by 2050 by updating agriculture and livestock practices; using forests and other high-carbon ecosystems as carbon sinks; improving waste management and recycling; maintaining electricity 100% renewable; electrifying transportation; reducing reliance on private cars; and implementing efficiency measures for buildings and industry (Costa Rica, 2019).

Most of the net economic benefits of implementing Costa Rica’s decarbonization plan would come from updated land use practices in rural areas. There, increased agricultural yields, better livestock productivity, and the value of ecosystem services provided by forests (such as renewable forestry products, water and soil benefits, and support for tourism and cultural heritage) would bring US\$21 billion in net benefits to the country (Groves et al., 2020). This figure is net of required investments and the opportunity cost of land use to reforest.

FIGURE 9.1 • Annual Benefits and Costs of the Costa Rica Decarbonization Plan



Source: Groves et al. (2020).

Note: *Savings from electrification and efficiency* includes lower fuel costs in the transport sector due to the adoption of electric and hydrogen vehicles, and energy savings in buildings and industry sectors. *Environmental services* include benefits from the agriculture, livestock, and forestry sectors, such as providing plants for medicine, food for forest-based communities, controlling erosion, and filtering water supplies. *Cost of carbon* refers to avoided climate change impacts in Costa Rica. *Economic benefits* include health and time savings. *Circular economy* includes benefits from recycling materials and wastewater. *Investment costs* include switching to electric mobility, improving public transport, purchasing energy efficient equipment, and converting building energy use to electricity. *Opportunity costs* include those related to preserving primary forests instead of using the land for timber production or agriculture and livestock.

BOX 9.1 • The Social and Economic Benefits of Decarbonization

Many studies stress the social and economic benefits of the transition to a net-zero economy. In Chile, the productivity and energy efficiency gains associated with a transition to net-zero emissions by 2050 could add the equivalent of 0.13 percentage points to economic growth (Antosiewicz et al., 2020).

In the United States, the transition to a net-zero economy will create 0.5 to 1 million net energy jobs by 2030 (Larson et al., 2020). Similarly, the transition in Europe will produce 2 million net new jobs by 2030 and 5 million by 2050 (D'Aprile et al., 2020).

Investing in public transit, walking, and cycling creates more jobs than investments in highways, and renewable energy deployment will provide US\$97 billion in air pollution and health benefits 2015–50 (Saha and Jaeger, 2020).

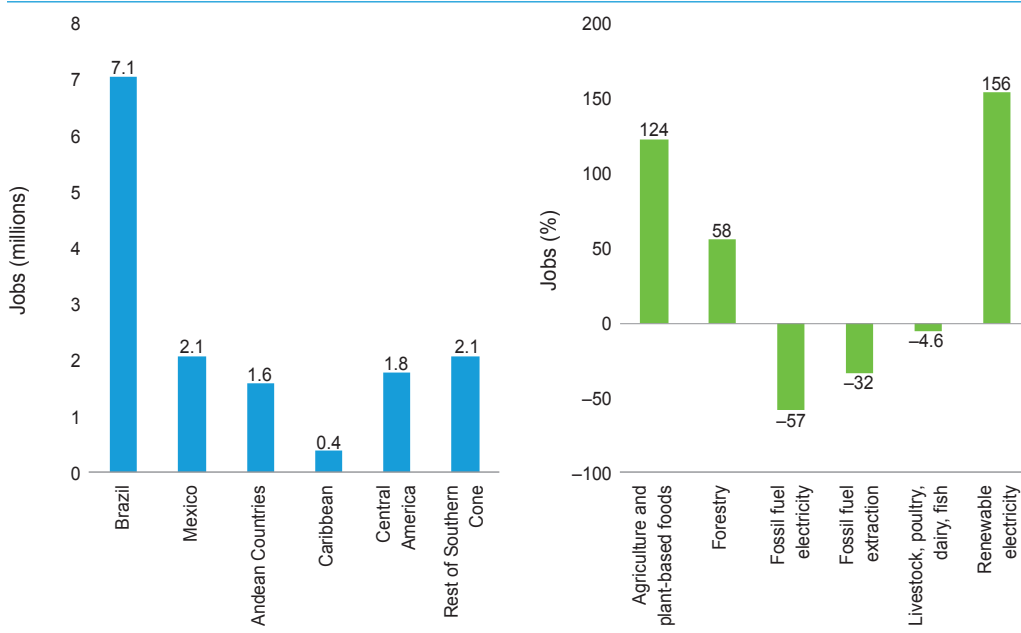
The global commission on the economy and climate found that bold climate action globally could deliver a direct economic gain of US\$26 trillion by 2030, mainly in the form of energy savings (NCE, 2018).

In Peru, going to net zero emissions by 2050 would bring more than US\$150 billion in net benefits to the country (Quirós-Tortos et al., 2021). The sectoral transformations required for Peru to reach net-zero emissions are similar to those required in Costa Rica (see main text), with the addition of transforming the power generation sector to rely on renewable energy rather than fossil fuels. As a result, the type of costs and benefits that Peru would experience are similar to those in Costa Rica, with the added benefit of shifting from expensive fossil fuel to cheap renewable power generation.

In cities, the economic benefits from energy savings, fewer accidents, time saved from reduced congestion, and the favorable health effects of less air pollution more than compensate for the initially higher upfront costs of switching to electric vehicles and building infrastructure for zero-emissions public transport. Energy savings in buildings, efficiency gains in industry, and the economic value of recycled materials and treated water are additional benefits (Figure 9.1). In total, implementing the decarbonization plan will bring US\$41 billion in net benefits to Costa Rica between 2020 and 2050, equivalent to boosting growth by 0.4 percentage points (Groves et al., 2020).

A sustainable recovery post-COVID could help the region gain new jobs in rural areas thanks to land use changes. A joint study by the International Labour Organization and the IDB found that countries can create 15 million additional net new jobs by 2030 if they advance towards a net zero-emission economy (Saget, Vogt-Schilb, and Luu, 2020). While all countries can create jobs in the transition, there will be winners and losers within countries (Figure 9.2). Compared to 2014, employment in plant-based agriculture and renewable electricity in the region would more than double and employment in forestry would increase by more than 50%. On the other hand, employment in fossil-fuel electricity and extraction is bound to decline drastically (by nearly 50% and 30% respectively), while animal-based food production would also dip slightly (Figure 9.2, right panel).

FIGURE 9.2 • Labor Impacts of a Transition to a Net-Zero Emissions Economy by 2030



Source: Saget, Vogt-Schilb, and Luu (2020).

Note: Left panel: net jobs created in a low-carbon scenario with respect to a high-carbon scenario. Right panel: variation of jobs in 2030 relative to jobs in 2014, selected sectors, Latin America and the Caribbean.

Reallocating Workers to Sustainable Sectors

The challenge for governments is to ensure that during and after the pandemic workers are relocated to (i) sectors that directly contribute to environmental sustainability, such as renewable energy and grids, sustainable plant-based agriculture, ecosystem restoration and management, or energy efficient buildings and manufacturing; or (ii) sectors that are naturally low-carbon such as many service industries. At the same time, workers should be steered away from industries that go against achieving environmental goals such as natural gas, oil, or beef production.

More generally, governments should facilitate a *just transition of the workforce*, which means ensuring three things (Saget, Vogt-Schilb, and Luu, 2020); (i) workers and communities affected by the downsizing of fossil fuel must find productive employment in other areas or be compensated; (ii) the jobs created during the transition must offer decent working conditions; and (iii) all stakeholders must have a voice and participate in the decision making.

COVID Relief Dwarfs Green Investment

Because of their sheer size, COVID relief packages can impact the transition to net-zero emissions. By the end of August 2020, global relief packages reached US\$12.2 trillion, while

investment to deliver a Paris-compatible energy pathway is estimated at about US\$1-1.4 trillion per year (Andrijevic et al., 2020; IEA, 2020a).

Substantial fiscal and liquidity support packages have been implemented in the region (see Chapter 2 for further details). For many countries, the size of these packages exceeds that of investments needed to decarbonize the energy and transport sectors, which are estimated to be about 3% of GDP (Andrijevic et al., 2020). It is imperative that support packages align with climate goals and do not exacerbate incentives against the transition to a net-zero economy.

Unfortunately, this remains a work in progress. By November 2020, G20 governments had directed US\$233 billion of COVID-19 support to fossil fuel production and consumption, but only US\$146 billion to decarbonized energy (SEI et al., 2020). A change of course is needed to deliver a sustainable recovery.

Enabling a Carbon-Neutral Future

Lessons from the 2008-09 stimulus show that public spending measures can contribute to a sustainable recovery, as long as governments also ensure a consistent regulatory and financial environment (IEA, 2020b; IMF, 2020a; Jaeger, Westphal, and Park, 2020). This section details key recommendations.

Conditioning Public Support to Sustainability Criteria

Public support to businesses affected by the pandemic and future stimulus spending could be prioritized for environmentally virtuous businesses (IMF, 2021a).

Public investment could focus on infrastructure that meets sustainability criteria, such as renewable energy capacity, modern electric grids, public transport, digitalization (including to build capacity to continue teleworking, remotely engage with the government and businesses, and teleconferencing), flood protection infrastructure, and resilient transport networks (Cavallo, Powell, and Serebrisky, 2020; IDB and IDB Invest, 2018). Similarly, public spending on work-for-cash programs could focus on labor-intensive environmental programs, such as ecosystem restoration or irrigation.

On the other hand, governments should avoid carbon-intensive investments such as expanding the transport network to remote areas (a key driver of deforestation), or investing in fossil-fuel infrastructure. In particular, expansions of natural gas production and natural gas power generation capacity are unlikely to be consistent with the Paris Agreement (Binsted et al., 2020; González-Mahecha et al., 2019). Fossil fuel power plants built today are likely to become *stranded assets*, that is, to be retired before the end of their technical lifetime as governments implement regulations to comply with climate commitments and/or technologies such as wind and solar outcompete fossil fuels (Delgado, Eguino, and Lopes, 2021).

Support for carbon-intensive firms should be conditional on commitments to reduce emissions over time or to implement just transition measures. For instance, support to automakers can be tied to electric or hydrogen vehicle production targets. Support to airlines can be contingent on reducing their carbon intensity. Buy-outs of fossil fuel extracting firms could be used to organize the early retirement of facilities, including providing compensation or re-training to their workers (Paul, Santos Skandier, and Renzy, 2020; Saget, Vogt-Schilb, and Luu, 2020).

Governments should require large organizations receiving support to disclose their carbon footprints and climate change impacts. The Prime Minister of Canada (Business Insider, 2020) mandated companies receiving aid to make progress on the recommendations issued by the Financial Stability Board's Task Force on Climate-related Financial Disclosures (TCFD). These are guidelines for large firms (e.g., public and private energy companies), banks, and other key actors in the financial system (e.g., pension funds) to improve and increase reporting of climate-related information, such as the risks and opportunities presented by rising temperatures, climate policy, and emerging technologies (TCFD, 2017). Applying TCFD recommendations would help investors make decisions consistent with climate change goals, but awareness and implementation of the TCFD recommendations is still low in the region (CFMCA, 2020; Yazmín López et al., 2020).

Stimulus measures themselves could also be screened for their climate impact, both positive and negative, provided that doing so does not delay aid unreasonably. Ideally, such screening could be part of a broader “green budgeting” practice—the integration of environmental and climate dimensions into budgeting processes (IMF, 2020a).

Failures in 2008–09 also provide lessons on how to do things better this time. Many large low-carbon projects that received public investment in the EU and the United States failed or were cancelled as they struggled to attract private funding in the absence of price and regulatory incentives. Other projects selected for their good environmental and employment multipliers, such as long-distance electricity transmission, were never built because of complex licensing procedures or the inability to attract private co-financing (IEA, 2020a).

The lesson is that large infrastructure projects require careful appraisal. Relaxing environmental, social, or institutional standards would be counter-productive; doing so makes it more likely that COVID-19 relief packages end up financing unsustainable projects (IMF, 2020a). Scaling up existing successful policies, supporting proven technologies and business models, and synchronizing investments with worker training tends to deliver the best economic, employment, and environmental returns (IEA, 2020a).

Given the limited availability of public finances, support to green activities will be sustainable only if they can attract continuous participation from the private sector. Public investments should thus be coupled with consistent pricing and regulatory reforms.

Greening Private Finance

Over the last decade, many zero-carbon technologies have become cheaper than fossil fuel technology. Renewable energy is the cheapest source of energy globally (IEA, 2020c), and electric transport is bound to follow. But regulations and price signals often work against attracting private finance to fund the adoption of new technology.

Public transportation in buses, for instance, is provided by the private sector in most countries of the region. Electric buses can be cheaper to own and operate than diesel counterparts thanks to lower maintenance and energy costs, but cost much more to buy, making them more difficult to acquire for small businesses with low financial capacity. In Chile, a solution was to update market design to let electricity utilities own the buses, while the operators lease them; previously, bus operators were required to own their fleet (World Bank, 2020a). In the case of renewable energy, dispatch rules, regulations surrounding connections to high-voltage transmission lines, land-use rights, and net-metering for households can all be critical to widespread adoption (Energy Sector Management Assistance Program, 2018).

These examples show that sectoral regulations must accompany any budgetary support to green activities. Ministries of finance should thus coordinate with line ministries to ensure financial and regulatory interventions are consistent.

Energy prices kept artificially low by government subsidies can also be an obstacle to the transition to net-zero emissions. In 2017, the region spent US\$44 billion on energy subsidies, including direct subsidies and the cost associated with exemptions from consumption taxes (Coady et al., 2019). On average, countries spent 1% of GDP subsidizing energy. Furthermore, putting a price on carbon and other externalities can improve incentives to adopt low-carbon technology and practices (Stiglitz et al., 2017).

While the context of low oil prices may favor energy price reforms, subsidy removal and environmental taxation can negatively impact the cost of food and public transport, which affects poor and vulnerable consumers. To make them socially and politically acceptable, governments should clearly communicate the goals of such reforms, and provide compensation packages. The cash transfers and social protection programs that governments have scaled-up to help the population cope with the pandemic (Chapter 2) are good means of providing compensation (Feng et al., 2018; Vogt-Schilb et al., 2019).

Greening Fiscal Strategies

The crisis has drastically limited fiscal space in the region. Governments should anticipate the limited capacity of fossil fuels to provide a sustainable tax base when they plan for future revenues (Delgado, Eguino, and López, 2021).

Before COVID-19, many countries depended on global demand for oil and gas for their tax revenues. Fossil fuels represented more than 5% of public revenues in Bolivia, Ecuador, Trinidad and Tobago, and Mexico during the 2013–18 period (Delgado, Eguino, and López, 2021). Moreover, Argentina, Brazil, and Mexico plan to increase production and Guyana is beginning exploitation on a transformative scale for its economy. The pandemic depressed oil demand, and ongoing global energy transition means that fossil fuel revenues face an uncertain future.

Indeed, fossil fuel producers' output aspirations conflict with international climate targets. Globally, countries aim to produce 120% more fossil fuels by 2030 than would be consistent with limiting global warming to 1.5°C (SEI et al., 2020). As alternative technologies become cheaper and measures to address climate change are put in place in most countries, demand for fossil fuels will drop. IDB projections find that demand for oil from the region will be down 60% in 2035 compared to pre-COVID-19 levels, and two-thirds of reserves will remain unused, if the global energy transition proceeds as planned. Compared to a situation in which global demand continues to grow, cumulative 2020–35 public revenues associated with oil will be about US\$2.8 trillion lower (Solano-Rodriguez et al., 2019).

Governments should identify the fiscal risk associated with the energy transition and develop a strategy to reduce and manage it. Few governments have done so yet, but South Africa provides a good example of what a comprehensive fiscal risk identification and management strategy should aim to achieve (Huxham, Anwar, and Nelson, 2019):

- quantify the financial impact of reduced oil and gas for the country.
- quantify risk distribution along the supply chain (e.g., extractors, refineries, and consumers), on private vs public actors (depending on contract structure and market design), at different levels of government (such as municipal or central), for specific programs (e.g., in cases where royalties finance social programs) and for different regions.
- identify investments that would increase dependence on fossil fuels, such as natural gas power plants, in order to delay or avoid them.
- plan to progressively eliminate most carbon-intensive activities. For instance, Chile announced in 2019 a plan to close all coal power plants before 2040 (Saget, Vogt-Schilb, and Luu, 2020).

In other countries, gasoline and diesel taxes provide a significant share of public revenues: e.g., 6% in Uruguay and 11% in Costa Rica (Rodriguez Zúñiga et al., 2021). The transition to electric vehicles will progressively erode and eventually eliminate that tax base. In the short term, raising gasoline taxes can be a solution (if distributional impacts are managed), but in the longer term, countries need a strategy to increasingly replace

the revenue from fossil fuel taxes. Alternative sources of income to consider include taxes on vehicle purchase or ownership (e.g., acquisition, excise costs, or import taxes); use charges (e.g., congestion and road charges, ideally linked to the energy efficiency of vehicles); and distance-based charges. Taxes not linked to transportation might include electricity taxes or value added taxes (IEA, 2019).

A Roadmap to Net-Zero Emissions and a Stronger Recovery

The transition to net-zero emissions requires consistent regulatory and financial environments across sectors and over time. Decarbonization strategies can help the government ensure such consistency (Delgado, Eguino, and López, 2021; Fay et al., 2015).

A *decarbonization strategy* is an aspirational document that: (i) sets a vision of where the country wants to be in 2050 in terms of decarbonization and development goals; (ii) anticipates regulatory and financial barriers in the transition; and (iii) enables the development of policy and investment roadmaps required for the progressive transformation of all sectors (Cavallo, Powell, and Serebrisky, 2020; IDB and DDPLAC, 2019).

Decarbonization strategies should translate the carbon-neutrality goal and socioeconomic aspirations into concrete technical and socioeconomic changes to support these goals. For instance, Costa Rica's national decarbonization plan establishes a timeline for public transport to progressively switch to electric or hydrogen vehicles by 2050, and identifies immediate regulatory changes needed by 2023 to enable it (Costa Rica, 2019). It includes more than 70 such targets for 35 different government agencies and line ministries to implement by 2023. During the pandemic, the plan could thus serve as a guide to focus economic relief policies and financing (Groves et al., 2020).

Finally, to ensure that decarbonization strategies align with domestic development goals and to secure a just transition, all relevant stakeholders should be involved in elaborating decarbonization strategies (Saget, Vogt-Schilb, and Luu, 2020). These stakeholders include workers' and employers' organizations, researchers, indigenous communities, and civil society groups representing the key sectors of the economy. In Spain, for instance, a government plan to phase out coal mines designed with trade unions includes funding to let coal miners retire early or relocate to other sectors (Saget, Vogt-Schilb, and Luu, 2020).

The Paris Agreement invites countries to design and communicate decarbonization strategies. Thus, countries have an opportunity to institutionalize the goal to reach a carbon-free future with a consistent regulatory environment across sectors that brings social and economic benefits. In this way, a green recovery plan that addresses both environmental and economic concerns could boost growth by more than an estimated 1% per year.

CHAPTER 10

The Economy after COVID

The year 2020 will be remembered as one of the most challenging in modern history. The 7.4% loss in GDP is the largest in Latin America and the Caribbean in a single year—at least since 1821. The global pandemic spurred a triple sudden stop, with lockdowns and restrictions on human mobility, a collapse in trade and commodity prices, and impacts on financial flows.¹ Some countries in the region fared particularly badly in terms of both the health crisis and growth. Tourism dependent economies were hit particularly hard.² Other countries suffered higher COVID-19 cases, hospitalizations, and deaths than might have been expected, given the level of growth. Potential explanations for the disproportionate impact include high levels of urbanization and population density, informality, poor health infrastructure, a lack of connectivity to work at home, patchy enforcement of lockdown policies, and weak fiscal positions coming into the crisis (that limited resources for support measures).³ Although the impacts of the shock were substantial during the first half of 2020, economies started to turn around in the second half of the year. However, the region was already losing ground in terms of its share in global GDP, and the pandemic has only reinforced that trend; the region will come out of the crisis with higher indebtedness, greater poverty, and increased income inequality.⁴

The region is expected to recover in 2021 with growth expected to be 4.1%, with a subsequent reversion to trend growth of around 2.5% per annum. Recovery was assisted by positive growth in China in 2020 and the projected growth of over 8% in 2021 will help the region to grow. The baseline scenario assumes countries continue to open and are not forced into new lockdowns, despite a significant number of new COVID-19 cases each day, and that vaccine roll-out programs advance as planned, bringing widespread immunity in most countries in the second half of the year.

However, any growth projection is fraught with uncertainty at the present time. Outbreaks are already forcing new containment measures in some countries, especially where more contagious strains are gaining ground. Moreover, the concern is that current

¹ See, for example, Parrado (2020) on Latin America's triple sudden stop affecting capital flows, trade, and mobility.

² See, for example, Mooney and Zegarra (2020).

³ See, for example, Nuguer and Powell (2020b) on countries' policy responses to the crisis.

⁴ See, for example, Cavallo and Powell (2018) on the pre-pandemic growth trajectory, Izquierdo et al. (2020) on how countries may emerge from the pandemic, and Busso and Messina (2020) on the impacts on inequality.

vaccines may be less effective against mutations of the virus. In a negative scenario, with a second wave of the virus in the United States and Europe, combined with delayed and less-effective vaccines, Latin America and the Caribbean would be severely impacted. Growth would be considerably lower than in the baseline in 2021 and in 2022 could fall back further, implying a double-dip scenario or “W”-shaped recovery.

But there is also upside risk. If vaccination programs accelerate and new strains are contained, then a consumer boom could follow. This would boost growth in the United States, Europe and the region. But in such a scenario, central banks may have to revise their current forward guidance on keeping policy interest rates very low for a significant period of time in order to contain inflationary pressures. At the same time, equity valuations may reflect a bubble rather than fundamentals. The impact could then be a sharp correction in financial markets. Simulations suggest that if the market correction is severe, this could nearly wipe out the positive impacts of higher global growth and leave growth in the region reasonably close to the baseline.

Fiscal Reforms: Urgently Needed

Governments in the region were active in supporting economies impacted by the pandemic. The total fiscal effort reached US\$485 billion. The average package across countries, including on and off-budget, was 8.5% of GDP, but this average is pushed upwards by a few countries with big packages, while more than one-third of countries provided more modest support of 3% of GDP or less. In general, countries' efforts to support economies reflected the fiscal space available, given pre-crisis fiscal positions. In contrast, advanced economies had packages of 19% of GDP. The negative impacts on revenues and more spending drove the average primary balance from -0.5% of GDP in 2019 to -5.4% in 2020. During the same period, the overall fiscal deficit increased to 8.3% of GDP from 3.0% in 2019.

As countries navigate the narrow path of supporting economies while maintaining fiscal sustainability, finding the right fiscal strategy is critical. In a few countries, especially in South America, tax revenues and spending are relatively high. In these cases, improving the efficiency of spending and reforming tax structures bring large benefits. On the spending side, the combination of: i) reducing leakages in existing social transfer programs; ii) leveling public wages with private-sector wages; and (iii) improving government procurement policies, can yield up to 4.4% of GDP in public savings per year, on average across the region, and even higher in countries with relatively high spending.

Other countries in the region, especially in Central America, have relatively low taxation and spending. Assuming a minimum level of efficiency can be guaranteed, then increasing tax revenues would allow for greater spending and likely have little negative impact on growth. Countries in the Caribbean have space to improve the efficiency of

spending and to reform tax systems, for example by revising complex systems of exemptions and tax incentives in some countries.

To raise revenue, increasing value-added-taxes (VAT) may negatively impact growth less than raising income taxes. A concern, however, is that VAT may be regressive, and countries have responded by introducing reduced rates on basic items. However, these “subsidies” are very poorly targeted, and leak to more wealthy consumers. It would be more efficient to have VAT at a common rate and a good system for targeting transfers to those who need assistance.

Increasing property taxes is progressive and as rates are generally low, may have little effect on growth. Governments also have opportunities to tax activities that are detrimental to health or the environment. And the crisis is inducing reallocation and spurring innovation; tax authorities need to keep up to ensure that taxes are applied fairly across sectors.

Corporate tax rates are very high in some countries, but revenues are low. Reducing rampant informality would be an important step to boost the tax base, while also leveling the playing field for small and medium enterprises (SMEs) to prosper.

One way to deal with informality is with policies that reward formal employment. Since as many as 80% of workers are employed in the informal economy, such changes could have a significant effect. The Earned Income Credit (EIC) could be a useful tool to address informality while phasing out noncontributory social programs that subsidize informality.

Additional revenues and resources saved from improving efficiency could be channeled to increase productive investments, including sustainable infrastructure. High-quality public investment has a high growth multiplier of around 2, meaning that for every peso spent, GDP may grow by up to 2 pesos. In addition, well-designed sustainable infrastructure can be good for the environment, helping countries achieve Paris Agreement climate commitments.

Beyond specific spending or tax measures, one of the greatest opportunities to improve efficiency comes from strengthening fiscal institutions or creating new ones: to collect taxes more efficiently; to plan spending with long-term horizons; and to build or strengthen budgeting tools, including multiannual budget planning shielded from political pressures.

These may seem like medium-term reforms, but they will help countries deal with the fiscal problems of today. Public debt as a share of GDP has increased to 72% in 2020, up from 58% in 2019. Most countries are planning fiscal adjustments to bring debt levels down over time. While an aggressive adjustment plan means less adjustment will actually be needed (as debt comes down, interest payments are reduced), it may have a negative impact on growth. A more gradual adjustment would assist in the recovery from the crisis, but then more adjustment will be required. Improved fiscal institutions could be particularly beneficial by providing greater credibility, keeping interest rates low, and allowing for a more gradual adjustment program with less financial cost and less impact on growth.

External Sustainability: How to Reduce Capital Flow Volatility

Exports and imports both collapsed, and the aggregate current account deficit was reduced narrowly. Nevertheless, several countries were able to finance higher current account deficits. Tourism dependent countries were particularly hard hit as exports and economic activity fell in the face of travel restrictions. There was a fear remittance flows would shrink, but they proved to be resilient, aided by the economic recovery and fiscal transfers in the United States.

As the COVID-19 shock hit the region and despite the plunge in stock markets around the world, only about one-third of countries experienced a sudden stop in net capital flows. In these types of crises, countries must normally narrow current account deficits swiftly, usually by curtailing imports and thereby provoking a deep recession. This crisis, however, followed a different pattern, with the fall in demand and supply restrictions taking center stage. Still, this was no normal demand shock that allowed financing to effectively smooth consumption. But external financing did help finance government relief packages and address the private sector's demand for liquidity.

In addition, some countries saw strong outflows from residents or through some types of portfolio flows; these were compensated by inflows, which were the product of tapping bond markets and from official lenders.

Interestingly, the sudden stops that did occur were well predicted by a limited number of variables capturing countries' pre-crisis fundamentals. Countries will want to improve macroeconomic fundamentals to prevent future painful capital flow volatility and maintain fluid access to international capital markets.

Unwinding Monetary Expansion

Inflation has been low and stable at around 3% among most countries in the region with a variety of monetary and exchange rate regimes. Still, food prices have pushed up inflation in some countries. While it is hoped this will be temporary, the impacts on poorer households should be monitored carefully.

Central banks were active during the crisis, reducing policy interest rates and reserve requirements, and providing liquidity, particularly to banks and governments. The demand for liquidity increased substantially and central bank assets (including reserves) and liabilities (including the monetary base) rose. Central banks mostly accommodated these changes. In some countries with significant fiscal expansions and capital inflows, central banks issued large amounts of short-term (sterilization) liabilities. Exchange rate depreciations in some countries boosted the value of central banks' assets (mostly in hard currency) relative to liabilities. In general, central banks have significant buffers to back their short-term liabilities, but if doubts remain about

fiscal sustainability, then the government and central bank roll-over requirements may provoke risks.

Additional risks would arise if central banks were called upon to provide direct financing to governments or to take on private sector credit risk. Inflation expectations remain well-anchored and central banks command considerable credibility. Under a positive scenario of greater demand, inflation could pick up temporarily, but this may be a good problem to have. A more dangerous scenario would be the monetary financing of deficits, a weakening of central bank independence and credibility, and higher inflation expectations. History suggests that this is the route to more persistent problems, including higher inflation, which are then costly to reverse.⁵

Banks and Firms: Risks and Opportunities

Banking sectors came into this crisis with high capital ratios and ample liquidity. Banks have seen deposits rise and the composition of assets has shifted towards holding more government securities. Policies to support households and firms have helped smooth the shock. Income fell sharply but appears to have recovered. Many countries have implemented loan guarantee programs and introduced voluntary loan deferral programs; a few have mandated such policies. In most cases, banks may maintain loans registered as performing and are not required to set aside additional provisions.⁶ Such policies help make bank balance sheets appear healthy, but they hide the risks. Higher government bond holdings tie banks closer to fiscal developments, and nonperforming loans will surely rise as deferred loans mature. Market measures of risk fell after a sharp rise in March, but they have been increasing once again. History teaches that forbearance policies are hard to remove once implemented, but the longer they carry on, the greater will be the eventual losses. It will be important for banks to report the true risk of loans and provision accordingly, dipping into buffers where required. In some cases, a recovery plan may be required to allow banks time to regain regulatory ratios. This policy will be more credible and build confidence.

As the COVID-19 shock hit, firms across the region sought to increase leverage to restore liquidity and create buffers against a crisis of unknown duration. They were able to borrow domestically, assisted by loan guarantee programs and central bank support to banks, and in some cases internationally as well. The increase in firms' leverage has been larger in Latin America and the Caribbean than in other regions, which raises the risk of a debt overhang after the pandemic. A corporate debt overhang could lead to

⁵ See Powell (2021) on the post-COVID fiscal, monetary, and financial risks and see Kehoe and Nicolini (2021) on historical experiences of persistent monetary financing of fiscal deficits.

⁶ See Powell and Rojas-Suárez (2020) for further discussion.

lower investment or debt restructurings. Guarantees on new loans are not the appropriate instrument when debt ratios or uncertainty are already high. Authorities should consider new equity-like instruments to assist firms. The use of public funds and private property rights should be carefully monitored and protected.

The COVID-19 shock has meant significant reallocation between economic sectors. Stock markets provide a forward-looking indication of which sectors are expected to expand and which may contract as a result of the pandemic. The tech-related service sectors and some manufacturing sectors, including chemicals, oil, metal-related manufactures, and electronics have emerged as leading economic sectors according to their stock market valuations. Countries should seek to tap the opportunities created in those sectors, facilitating their expansion through smart regulation and taxation that enables SMEs to invest and grow. These efforts should align with other policy objectives, including environmental goals, to ensure sustainable and equitable growth.

Firms in the region have also been affected by the disruptions that the COVID-19 shock caused on global trade. Before the crisis, Latin America and the Caribbean had not been able to take full advantage of the opportunities provided by participation in global and regional value chains because of deficiencies in logistics, inadequate infrastructure to access global markets, insufficient information to connect exporters to global suppliers and foreign demand, and poor harmonization of rules across a diverse set of regional and bilateral trade agreements. The uncertainty generated by the COVID-19 shock, plus the disruptions generated by natural disasters and tariff disputes, have forced countries and companies within countries to reassess their position in global and regional value chains. The region thus has a unique opportunity to improve its positioning and support growth. During the COVID crisis, around US\$56.5 billion (6.1%) of U.S. total imports switched to new source countries. This represents a considerable opportunity for the region, which exported just US\$26 billion in 2019 to the United States. Tapping into this opportunity requires a combination of general policies to help all exporting firms integrate better with global and regional value chains, like for example providing logistical support, or overcoming infrastructure gaps through targeted investments, tailoring specific policies to support small and medium enterprises as exporters, and strengthening the resilience of exporters' networks of suppliers and customers. Governments have key roles to play in supporting smaller exporters that may be able to become large exporters or tap the openings generated by the reallocation of global supply and demand in a flexible manner. If exporters in the region can develop a more diversified portfolio of foreign customers, that would provide an insurance mechanism, especially when the demand and supply conditions are adverse. From a policy perspective, it is important to help companies diversify their customer's portfolio, in good times when demand might be increasing—and even in turbulent times when firms from other countries exit the market—to become more resilient exporters.

Healing Better: Opportunities for Stronger Post-Pandemic Growth

Building opportunities for higher and sustainable post-pandemic growth will require rethinking growth policies. The configuration of economic sectors in the region is the result of past policies, and of the environment in which those policies are implemented. Two of the leading factors driving the poor long-run growth performance in the region have been low investment rates and slow productivity growth. To reverse these trends, the region must increase productive investments, and ensure the efficient allocation of that investment. But economic volatility conspires against those goals. In volatile environments, it may be more convenient for entrepreneurs to choose more malleable production technologies, meaning that they could be easier to reallocate between sectors. More malleable technologies are more labor-intensive, but on average they are less productive. Latin America and the Caribbean have more malleable production technologies than advanced economies, and malleable sectors account for the largest share of the economies in the region. The advantage is that sectors may recover quickly from crises like, for example, the one generated by COVID-19. But while a V-shaped recovery is possible, the recovery will not foster long-run growth if economic resources are not channeled to productive sectors.

One of the most productive, less malleable sectors is infrastructure. Efficient, quality investment in infrastructure reduces bottlenecks, which enhances growth prospects.⁷ Unfortunately, Latin American and Caribbean countries are not investing enough in infrastructure. Countries should invest between 2% and 3% of GDP more every year in infrastructure. Achieving that goal requires private and public financing. On the private side, opportunities arise from incorporating new financiers into the mix, especially institutional investors that have been constrained by the lack of appropriate projects and investment instruments. On the public side, opportunities arise from expenditure switching policies, from current to capital spending, which may be supported through fiscal rules that protect public investment from cuts during fiscal consolidations.

If investing in infrastructure can support economic growth, investing in *sustainable* infrastructure constitutes a win-win strategy, increasing economic growth as well as reducing climate risks. Investing in sustainable infrastructure means focusing on expanding renewable electricity capacity and electricity grids, expanding electric vehicle production, expanding mass transit, and improving energy efficiency in the residential, commercial, and industrial sectors. However, progress toward this has been difficult because of the erroneous assumption that meeting environmental targets would mean higher energy costs that impact productivity, competitiveness, and household payment capacity. That is a false choice. Renewable energy can help reach environmental goals while also fostering higher growth. Implementing sustainable infrastructure plans could add 1.1 percentage

⁷ See Cavallo, Powell, and Serebrisky (2020) on the challenges for improving infrastructure in the region.

points to global economic growth each year and around 1.3 percentage points of incremental growth in the case of developing countries. The technology is advancing, and costs are falling, but for the benefits to materialize, the regulatory agenda has to be put in place to facilitate the transition to a power matrix that incorporates a larger share of nonconventional renewable sources. The Paris Agreement invites countries to design and communicate decarbonization strategies. Thus, countries have an opportunity to reach the goals of a carbon-free future with a consistent regulatory environment across sectors that brings social and economic benefits.

Countries face a hazardous time ahead. Most countries will require some type of fiscal adjustment to maintain fiscal sustainability and, given the extraordinary circumstances, some countries may need to consider alternatives to reduce debt overhangs. International interest rates remain low and opportunities may exist to refinance at improved rates. International financial institutions (IFIs) have increased disbursements as a result of the crisis. The IMF has disbursed over US\$5.4 billion in emergency financing and approved more than US\$60 billion in backstop and traditional programs for the region. The IDB group disbursed a record US\$18 billion through 2020. The World Bank disbursed more than US\$7 billion between April 2020 and January 2021 for specific COVID-related operations. Countries should continue to take advantage of the long-maturity and low interest rate loans from IFIs to substitute more expensive commercial debt.

In some cases, debt restructuring may also be required. Most countries in the region are middle income countries, and commercial borrowing dwarfs that from the official sector. A natural concern is whether high debt levels might prompt a repeat of the 1980s, the so-called Lost Decade. But commercial debt is now more in the form of bonds rather than bank loans, and many countries have incorporated new generation collective action clauses (CACs) into debt contracts that should ease any renegotiation with creditors. Argentina and Ecuador have already restructured debts aided by the existence of such clauses. The lesson from the 1980s is that it was not the restructurings themselves that provoked the lost decade, but more the delays in restructuring debt, monetary financing of fiscal deficits, financial repression, and forbearance type policies. If restructuring of commercial debts is required, it is better done quickly and preemptively.⁸

While the months ahead will be challenging, this report details a set of policies that should help countries realize a stronger recovery, not just to the low growth rates of the pre-pandemic period, but to higher rates of growth that will benefit all, with more efficient public policies, higher productivity in the private sector, and more sustainable economies.

⁸ See Powell (2021) and Powell and Valencia (2020) for a complementary discussion.

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