

# COVID-19 IN BRAZIL:

IMPACTS  
AND POLICY  
RESPONSES

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## IMPACTS AND POLICY RESPONSES

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Disclaimer: This report considers data and policies adopted or announced up to June 25, 2020. The findings in this report aim to contribute to the ongoing dialogue on policy responses to the COVID-19 pandemic and economic crisis and assist policymakers to design policies going forward. Any information not available until June 25 was not taken into account.

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# EXECUTIVE SUMMARY

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## **The COVID-19 pandemic is exposing Brazil to an unprecedented challenge.**

With a view to containing the pandemic, Brazil, as almost all other countries, has implemented measures to slow the spread of the virus (or “flatten the curve”). This was an attempt to avoid overwhelming the health care system with large numbers of severe case patients. Although Brazil has one of the strongest health care systems in Latin America, capacity is highly uneven across the country. The spread of the virus toward poorer areas with lower health care capacity, especially in the North and Northeast of Brazil, poses a threat to the system’s ability to respond to an increased demand for services. This would add pressure to the already overcrowded public health care system, and endanger more lives, particularly among the poor and vulnerable. As of June 25, 2020, Brazil had recorded 1,228,114 confirmed cases of COVID-19, and 54,971 deaths, according to the Brazilian Ministry of Health data. Brazil is the second most exposed country globally, only behind the United States in number of cases and deaths. The spread of the virus has not slowed down so far, with the number of cases doubling every ten days, on average. Efforts have been made—by both federal and subnational governments—to ramp up the health care system’s capacity, including through the purchase of new intensive care beds, medical equipment and ventilators, and the recruitment of additional health care

professionals. In addition, Besides, the federal government has provided emergency funding to states and municipalities. As the country makes efforts to expand its treatment capacity, it is urgent to expand testing capacity as well, particularly given the estimated high percentage of under-reported cases and deaths.

## **The pandemic is expected to plunge Brazil into another recession.**

Even before the crisis struck, Brazil’s recovery from the 2015–16 recession was fragile, and its fiscal space was limited. Significant achievements to put the country on a path of rebuilding fiscal buffers, such as the 2016 spending cap rule (teto dos gastos) or the 2019 pension reform, did not have sufficient time to bear fruit before COVID-19 engulfed the world and Brazil. The pandemic, and the health policy response to it, have essentially resulted in two shocks for Brazil: an external shock, including foreign demand and prices; and a domestic shock, as domestic demand and supply are affected by consumers’ decision to avoid physical interactions, and by the restrictions on economic activity imposed to prevent contagion. In addition, as a net oil exporter, Brazil has also been hit by the oil price shock. Due to a sharp decline in demand, oil prices have been reduced by half, with some contracts even falling into negative territory in April 2020. The result of these three shocks is Brazil’s sharpest recession on record. World Bank estimates point to

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a -8 percent growth in 2020. While services are expected to be hit the hardest, export-oriented crop sectors (such as soy) should expand, benefiting from a more competitive real effective exchange rate. Although inflation is generally low, the crisis is expected to put some pressure on food prices.

### Still weakened from the 2015–16 crisis, Brazil's poorest 40 percent are particularly exposed to the fallout from the COVID-19 pandemic.

About half of Brazil's population either live in poverty (defined as less than US\$5.50 per day, PPP) or are vulnerable to falling into poverty, and thus are in a disadvantaged position with regard to protecting themselves from infection. This is particularly true for those living in favelas (urban slums), where they lack basic sanitation facilities to observe the required hygiene standards, such as regularly washing their hands with warm water. In addition, the high density in these informal settlements and the difficulty of successfully implementing containment measures, such as social distancing, make it easier for the virus to spread. While disease may spread faster in urban areas, rural populations, including

many indigenous, traditional, or forest-based communities, face additional barriers to seeking medical care during the pandemic, which also places them at a higher risk. At the same time, these groups tend to rely primarily on precarious labor relations for their income, and therefore find it more difficult to avoid going to work, even if local governments tell them not to. School closures also affect the poor disproportionately and can have long-term impacts on human capital accumulation and opportunities. According to the latest estimates, the World Bank projects that, without mitigation measures, inequality should increase, and about 7.2 million Brazilians would join the ranks of the poor in 2020, bringing the poverty rate (at US\$5.50 per day, PPP) to 22.7 percent of the population.

### Although the pain of recession can be felt across the economy, smaller firms are expected to be more affected

because they tend to be more present in sectors with high face-to-face interactions, and where home-based work is less pervasive. They also tend to employ lower-income workers, another aspect affecting the poor disproportionately. Finally, they tend



to have lower cash buffers, and thus face a higher risk of illiquidity forcing them into insolvency. These smaller firms include the more than 5 million family farms that cater mainly for domestic consumption, and which are vital for food security in the country.

### **State (and municipal) governments constitute a third group that is highly exposed to the crisis.**

Many states already faced a precarious financial situation prior to COVID-19, and were already illiquid or insolvent. Brazil's 26 states (plus the Federal District) are at the frontline of the defense against the crisis, as they are chiefly responsible for delivering health care services. They are thus faced with a combination of increased spending needs to shore up their health care systems, while simultaneously experiencing a shortfall in tax revenues, as economic activity declines. Furthermore, they do not have access to capital markets. The combined impact of these risks is estimated to create a funding gap equivalent to 1.5 percent of GDP. A financial support package has already been approved by the federal government and the National Congress to shore up state finances in 2020, reducing the gap to about 0.3 percent of national GDP. However, the states will still face challenges in 2021, as federal financial support winds down and the fiscal situation remains vulnerable. Although this report is limited in its assessment of municipalities, they also experience high levels of fiscal pressure, which often has its roots in a weak precrisis financial position.

### **Special attention will need to be devoted to the infrastructure sector,**

including energy, water, and transport, due to their strategic nature in the economy and potential contingent liabilities for the government. Their exposure to the crisis

is subject to considerable variance depending on sector, location, revenue structure, initial financial health, and position in the supply chain. In the energy sector, oil producers such as Petrobras have been strongly hit by the oil shock, with impacts on finances, jobs, and royalties paid to states. While consumers—including households, industry, transport and others—might, in principle, benefit from lower oil prices, pass-through tends to be low, not least due to administered prices, which reduce the net benefit of lower oil prices for consumers. Given Brazil's reliance on hydropower, the oil price shock is not going to reduce the cost of inputs. Problems are expected across the whole supply chain, with the biggest hits affecting energy distribution companies due to the demand shock, both from low demand and potential non-payments. These might cascade into non-payment to generators under take-or-pay contracts, as well as transmission operators. Just as subnational governments, many electricity distributors already had a weak financial situation at the onset of the crisis. With respect to water utilities, losses are estimated to potentially reach US\$1–1.3 billion over 10 years. Besides, some of the financially weakest states also have the least robust water utilities, which might constitute an important contingent liability. Finally, in the transport sector, impacts vary considerably from one subsector to another. Airlines and the urban public transportation sector are hit the hardest, whereas freight transport has been less affected so far, as the flow of goods has remained relatively uninterrupted (although demand is lower). The survival of both major players (such as air carriers and transport infrastructure concessionaires) and a myriad of SMEs acting as logistics operators (mostly in the trucking subsector) is at stake. In the short term, this may trigger massive bankruptcies and layoffs; in the medium term, a supply shock might hamper the recovery.

**The financial sector was in a position of strength when the COVID-19 crisis started, and it will play a critical role during both the crisis and the recovery phase.**

Having learned from previous crises, such as the 2007–08 Global Financial Crisis, and having adopted global regulatory standards such as Basel III, Brazil's banks are in a sound position, with comfortable capital buffers and liquidity cushions. Banking sector stress tests suggest that the financial sector should be able to weather this shock. However, a prolonged crisis might lead to the deterioration of such financial stability, which would exacerbate the negative linkages with real sector recovery and fiscal sustainability. This risk calls for continuous monitoring. Moreover, given increased credit and market risks, banks may be unwilling to lend, which would contribute to the deterioration of financial conditions. The credit crunch would in turn make it more difficult for firms and households to navigate the crisis. As banks play a critical role in ensuring liquidity in critical times, they are pivotal to tiding companies over during the crisis and supporting their return to normality once containment ends. Considering firms' and households' balance sheets, the longer the crisis lasts, the deeper the damage will be. This would limit banks' ability or willingness to offer them credit. A robust support package put together by the government and the Central Bank will be critical to ensuring a flow of credit and supporting recovery—indeed, it can determine Brazil's economic recovery altogether.

**The COVID-19 crisis undermines the resilience of Brazil's macroeconomic framework.**

On the fiscal side, the recession and associated drop in revenues caused by COVID-19, coupled with higher spending needs, including various contingent liabilities (such as the debt of states, municipali-

ties and state-owned enterprises), are expected to increase public debt by about 20 percentage points of GDP and stabilize within about four years. This might raise the cost of financing for Brazil and undermine much of the recent progress in reducing Brazil's indebtedness. Further fiscal measures may need to be considered to rebuild fiscal buffers. Exposure to a significant currency depreciation, both for the public and private sectors, is moderate, and although the magnitude of the depreciation is large (about 30 percent), it is expected to be relatively temporary and manageable for most entities. External funding needs of an estimated 14.4 percent of GDP in 2020 are likely to be covered with Brazil's ample international reserves, reinforced with additional swap-lines between the Brazilian Central Bank and the US Federal Reserve. The monetary policy framework remains a source of resilience in Brazil, and the Central Bank's credibility has helped to anchor inflation expectations and allowed for further monetary easing. However, Brazil's policy rate—known as SELIC—is already at a level below neutral, a factor which reduces the effectiveness of further rate cuts. New unconventional monetary policy measures, such as quantitative easing, provide new tools and opportunities to cope with the recession, but could also call for reinforcing the institutional setup (for instance, ensuring de jure central bank independence).

**New risks have also emerged with regard to the environment and the sustainability of natural assets.**

While more evidence is needed on this, one of the potential areas of increasing vulnerability is deforestation, as the attention of environmental agencies and civil society shifts to short-term pressing needs over the longer-term climate change agenda. This is likely to weaken the enforcement of environmental preservation policies and increase incentives for deforestation.

## Brazil has already put in place significant measures to address the economic crisis.

In order to protect the poor, the government has expanded its wide conditional cash transfer program (Bolsa Família) by more than 1.2 million families. In addition, an innovative transfer program known as Auxílio Emergencial (or Emergency Aid, which pays just over half of a minimum wage for three months to informal, self-employed, and uncovered unemployed workers) is estimated to cushion the blow of the crisis. Significant financial support is available to SMEs, especially through the BNDES. States have already received some emergency funding, and federal transfers have been secured at last year's level (rather than adjusted to the declining national economy). The overall fiscal response is estimated at about 8.6 percent of GDP—relatively large by emerging market and developing country standards. In this sense, Brazil has mustered a strong economic response to the crisis, but implementation remains key.

## Beyond the immediate containment of the crisis, Brazil will need to focus on laying the groundwork for a speedy and equitable recovery.

Many analysts expect a V-shaped recovery—both across the world and in Brazil. The World Bank estimates a somewhat weaker recovery for Brazil, with growth at 2.2 percent in 2021, somewhat reflecting the experience of the previous recession of 2015–16. Generally, it can be expected that the deeper the recession is, the more damage will be done to firms, households, and public balance sheets, adversely affecting credit provision and thus softening the recovery. This shows how critical it is to successfully implement mitigation measures to the COVID-19 pandemic, so as to quickly “flatten the curve” and avoid or

contain a second wave. As a sequencing of priorities, the World Bank proposes the following (noting that Brazil has already made progress in many areas): 1) containing the damage; 2) protecting the poorest and most vulnerable; 3) supporting firms and jobs; 4) strengthening the fiscal situation of subnational governments; 5) preventing a financial sector collapse and supporting credit provision; 6) shoring up the protection of natural resources; 7) strengthening public sector management, enhancing transparency, and collecting (real-time) data; 8) organizing the management of assets (should the government decide to bail out strategic companies); 9) setting and clearly communicating a strategy to exit fiscal and economic crisis measures; and 10) agreeing and recommitting to a structural reform agenda. Reviving the reform agenda to support the economic recovery will be critical as a means to offer guidance to economic agents, provide additional flexibility, and ensure an orderly adjustment to the new economic reality emerging in the aftermath of the pandemic.



# FIVE PERSPECTIVES ON COVID-19 IN BRAZIL: Impacts and Policy Responses

## 1. Poverty: COVID-19 is a Big Economic Shock—But *Auxílio Emergencial* is a Powerful Response.

When they were hit by COVID-19, Brazilian households were in an already weakened financial position following the 2015–16 recession. The recession fueled increasing inequality as the Gini index grew from 51.9 in 2015 to 53.3 in 2016—the largest single-year increase in Brazil since the early 1990s. The poorest were still recovering from that crisis, with the income of the bottom 40 percent still below precrisis levels. Moreover, unemployment rates remained near crisis-level highs, and the household debt burden stood at a high 45 percent of household income, reflecting an increase in non-mortgage debt since 2017. The bottom line is that most Brazilian families had little room to absorb another shock.

In order to better understand how Brazilians are affected by the economic shocks triggered by COVID-19, we need to consider two angles: first, in which sectors and locations people will suffer labor income losses; and, second, how these income shocks affect different households. We initially estimated income shocks across states and sectors using a macroeconomic model of the Brazilian economy.<sup>1</sup> We

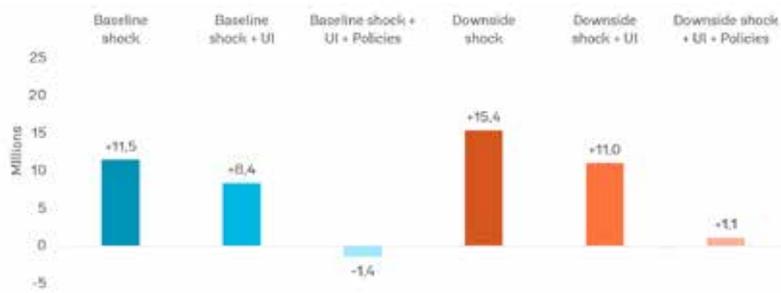
then distributed those shocks among workers using a microsimulation tool developed by the World Bank, which yields estimates of the magnitude of the shock to family incomes.<sup>2</sup> Given the uncertainty around the COVID-19 shock, we modeled a baseline scenario and a downside scenario.

Without any government response, the baseline and downside scenarios would increase the number of Brazilians classified as poor by 11.5 million to 15.4 million people (defined according to the income eligibility threshold for inclusion in *Cadastro Único*, that is, per capita income below half a monthly minimum wage; figure E.1). Once we take into account Brazil's current income protection system for formal workers (*seguro desemprego*, *multas*, and FGTS), the increase in poverty ranges from 8.4 million to 11 million people. The largest effects of the shock are felt in the second and third quintile, as Brazilians in this income range tend to rely more heavily on informal and self-employed work, and have less access to fixed income options, such as *Bolsa Família* or pension benefits (figure E.2).

<sup>1</sup>A Brazil-specific regionally disaggregated computable general equilibrium (CGE) model.

<sup>2</sup>The next section describes in more detail the effects of this simulation on employment outcomes.

**Figure E.1: Number of New Poor under Baseline and Downside Scenarios** (millions of people at national level)



**Figure E.2: Change in Annualized Per Capita Income, Downside Scenario Simulation, Before and After Mitigation Measures** (percentage change in per capita income, by quintile)



Source: World Bank estimates based on microsimulation tool and CGE model. Note: Figures E.1 and E.2 are based on annualized household income estimates, and thus represent an average over 2020. Figure E.1 reports the number of new poor under two scenarios (baseline and downside). The bars labeled “+ UI” report the number of new poor after taking into account income protection for formal workers. The bars labeled “+ UI + policies” report the number of new poor after taking into account income protection for formal workers, the recent expansion of Bolsa Família, and Auxílio Emergencial (AE). Figure E.2 reports changes on per capita income before and after the AE.

However, the real economic impact of the COVID-19 shock also depends on the effectiveness of the policies designed to counter it. Two important pro-poor policies implemented by the Brazilian government are (1) the expansion of the Bolsa Família Program (BFP) to include 1.2 million new families that had been on a waiting list, and (2) Auxílio Emergencial (AE), an emergency aid program targeting informal, self-employed, and unemployed workers living in low-income households, as well as existing BFP beneficiaries.

These mitigation measures absorb the shock for the poorest 40 percent of the population

(1st and 2nd quintiles), limiting the net reduction in average income to 3.9 percent under the most severe scenario. With these measures, the income of the poorest 20 percent will increase by 12 percent relative to preshock levels. Considering the income averaged over the year, the number of Brazilians living in poverty could actually fall by almost 1.4 million under the baseline scenario; or the number of new poor might be reduced to 1.1 million under the downside scenario. In both cases, these are significant improvements relative to the no-policy estimates of 8.4 million to 11 million new poor.

More importantly, the results reported above (based on annualized income) obscure the severity of the short-term impact of these income shocks, assuming instead perfect income smoothing over the year. In reality, if employment interruptions remain widespread, the poorest 40 percent will experience a severe reduction in income after the AE ends. Relative to their prepandemic situation, the income of the two bottom quintiles might fall by 26 percent under the baseline scenario, even after taking into account unemployment insurance.

The AE is an important example of how countries can counter the pandemic and protect informal workers and families in poverty. By June, 64.1 million beneficiaries had already been approved, 29.7 million of whom had been drawn from *Cadastro Único* (which greatly simplifies the implementation of the AE). The remaining 34.4 million are new registrants (approved from the more than 50 million applications received so far) (according with information provided by *Caixa*). What would happen if only half the

eligible families (beyond those already receiving BFP benefits) are able to successfully register for the AE? Poverty could increase by 1.8 million to 4.5 million people under the baseline and downside scenarios, respectively. It will be important to take proactive steps, including local outreach and alternative registration options, to help vulnerable families to access the program.

Even considering these resilience sources and the measures being currently taken, key vulnerabilities remain. Brazil's high inequality underlies structural challenges that cannot be resolved in the short term, including the poor quality of urban housing, especially in slums; and limited access to critical services, such as continuously running water, which are essential for combating the current health crisis. The importance of addressing these inequities has never been clearer.

## COVID-19 is Also an Employment Pandemic.

Even before the COVID-19 pandemic hit the Brazilian economy, unemployment rates remained higher than they had been prior to the 2015–16 recession (12.2 percent overall, and 27.1 percent for youngsters aged 18 to 24 in the first quarter of 2020). As social distancing measures are implemented to slow the spread of COVID-19, employment shocks are exacerbating an already challenging situation for Brazilian workers.

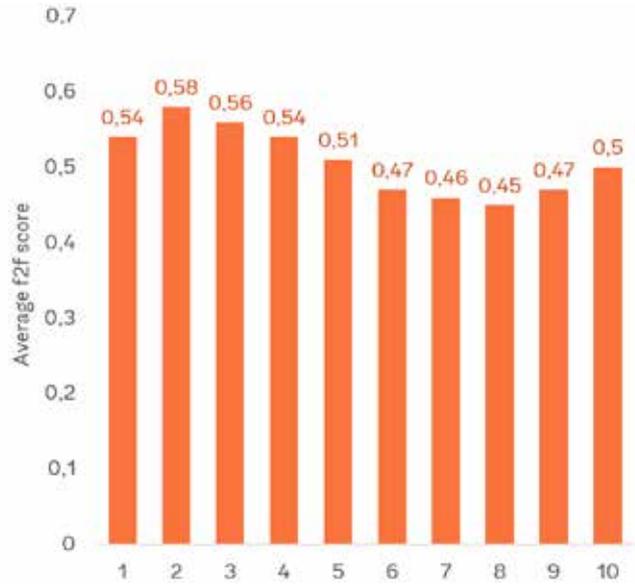
Using a CGE model with subnational disaggregation and crossing its results with high frequency data (such as credit card spending), we find that the most affected sectors are services, while export crops benefit from a lower real exchange rate (with the risk of putting pressure on domestic food prices, as reflected in early evidence of increasing prices for some



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Figure E.3: Face to Face Interactions by Wage Decile (average score by income decile, formal sector)

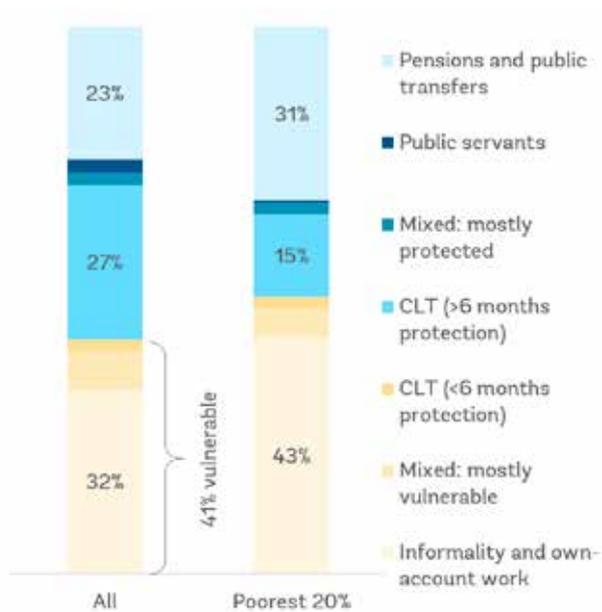


Source: World Bank tabulations based on RAIS database.

products). This same model estimates the impact on real wages across sectors and across states, showing that they tend to decrease across sectors—although there are some regional, exceptions especially for workers in agriculture.

Sectors with heavier reliance on face-to-face interactions and limited teleworking potential are the hardest hit. Figure E.3 shows that reliance on sectors with higher face-to-face interaction scores is higher among lower-income workers, even when we exclude informal and domestic work. Lower-income workers are also less likely to be able to work remotely (which has been recently facilitated through a regulatory reform). Female workers have a larger exposure to social distancing measures due to their occupation, on average with an 18 percent higher index of face-to-face interactions.

Figure E.4: Share of Population by Majority of Income Source (percentage, 2018)



Source: World Bank tabulations based on PNADC 2018 and BraSim. Note: CLT = Consolidação das Leis do Trabalho, that is, the law regulating private sector formal contracts.

Even in good times, informal and self-employed workers are more exposed to income shocks than formal employees, as they lack access to formal income protection mechanisms. The temporary *Auxílio Emergencial* program aims to protect this population, providing three monthly transfers to informal, own-account, and unemployed workers without unemployment benefits, as well as *Bolsa Família* beneficiaries.

In contrast, most workers with a formal contract are protected by regulations such as sick leave and, in the event of a layoff, income protection through unemployment insurance (UI), severance pay (*multa*), and employer-funded savings accounts (FGTS). While we do not have official counts of how many workers have unemployment insurance rights and enough savings in their FGTS accounts, we estimate that about 80 percent of formal private-sector workers have more than 3 months of wage protection. The UI system is also coping with the operational challenges posed by social distancing measures. As in many other countries, the Brazilian unemployment insurance system has struggled to cope with the surge in new requests, particularly as unemployment insurance offices had to close. Many are now using an online application system for the first time.

In general, wages are “sticky”, so adjustments from economic shocks, especially among formal workers, are more likely to take the form of reduced employment (including reduction in hours) than falling wages. The 2017 labor reform that allowed part-time work, and the recent legislation to introduce flexibility for firms to suspend paid work, may help to reduce the amount of outright job destruction. In order to understand how sectoral shocks will affect families, we have allocated them as employment interruptions to workers in a microsimulation model. We estimate that these shocks will

significantly reduce the earnings of 30 million to 35 million workers. As a reference point, in February 2020, 12.3 million Brazilians were unemployed. The workers estimated to be affected by the COVID-19 include as many as 70 percent of non-agriculture informal workers, and a third of formal private sector employees.

The Emergency Employment and Income Protection Benefit (BEm—Benefício Emergencial de Manutenção do Emprego e da Renda) is an important step in the right direction, as it mitigates workers’ losses from cuts in paid hours, without forcing them to sever employment relations so as to activate unemployment insurance.

Labor income vulnerability translates into significant welfare vulnerabilities for the population. Considering informal, self-employed, and private sector workers without sufficient unemployment protection, we estimate that two in every five Brazilians (half of whom among the poorest 20 percent) live in families for whom the majority of income is unprotected labor income (figure E.4). Without income buffers, these families may be forced to resort to coping measures that have long-term costs, such as reducing investment in schooling, or cutting spending on necessities.

The combination of the AE, BEm, and the existing unemployment protection system provides a strong response to the initial employment shocks caused by COVID-19—though only the country’s ability to overcome implementation challenges will be able to determine the extent to which they succeed. Accessing unemployment insurance, for example, was complicated and slowed down by the closure of unemployment offices. The second phase of this response will need to consider how to tackle an uneven job recovery period, as some sectors will continue to struggle in the medium term, or permanently shrink. Displaced

workers may need reskilling, short-term employment opportunities (including through public works to allow the economy to function with in-built health precautions), and additional income support measures, such as extended unemployment benefits or access to last-resort social assistance.

## 2. Firms: Small Firms Will Need Big Support to Overcome COVID-19.

The impact of Covid-19 in the Brazilian production sector has been severe, with an 18.8 percent decline in industrial production in April, following a record 9.1 percent fall in March. Our estimates<sup>3</sup> suggest that the impact is more hardly felt among micro, small and medium enterprises (MSMEs) due to the type of economic activities they perform, which often involve face-to-face interactions (that is, retail, accom-

modation, tourism, and others). MSMEs are in dire need of working-capital financing during the lockdown, as cash reserves can quickly be depleted. Firms need to continue meeting their obligations, even when revenues fail to materialize. A large share of MSMEs—between 39 percent and 56 percent—are likely to have less than 21 days of cash reserves.

In order to protect viable MSMEs, prevent widespread layoffs and thus preserve household income, the government and the Central Bank have established a strong support package for firms and the financial sector, including liquidity support measures; deferrals on taxes; and labor measures to compensate wages and make contracts more flexible, and to ease the regulatory burden. Wage support alone could represent more than R\$20 billion per month in subsidies. Access to these support measures will be critical to maintaining firms' survival and preserving jobs.



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<sup>3</sup>Using face-to-face and ability-to-work indexes to measure exposure to lockdown and social distancing measures mapped to the employer-employee census.

Implementation will be key to the success of these programs. Although banks are in a sound financial position and the government has put forward a significant support package, heightened credit risks resulting from non-payments may deter sustained lending to MSMEs. The credit crunch would then transform MSMEs' liquidity issues into solvency problems, leading to additional non-performing loans, and raising the vulnerability of the financial sector, thereby creating a vicious circle in which financial sector pressures can hinder real sector recovery.

As the country considers a partial reopening of the economy and the recovery phase, it is important to assess which measures will need to remain in place for some time, and which ones will have to be further targeted so as to minimize their fiscal cost. In the short run, new support measures will be required to facilitate the adaptation of businesses to the necessary health protocols to come (that is, adapting spaces, training workers, providing medical equipment to guarantee health and safety, and so on). Businesses will rely on the design and implementation of these new emergency and health plans, which can be facilitated with the assistance of existing management support organizations such as SEBRAE or SENAI. The definition and implementation of these policies require the collection of real-time data on health and the economy. By enabling the government to monitor the situation, and act rapidly and precisely to counter potential disease relapses, data collection will be a key aspect toward minimizing the economic costs of the pandemic.

This can be an excellent opportunity to accelerate government regulatory reforms and reduce the excessive cost of doing business in Brazil. Implementing and accelerating reforms aimed at improving insolvency procedures, firm

registration, and minority investor protection is critical to ensuring the survival of profitable firms (mainly MSMEs). These reforms will also ease labor costs and firm exit in an expedited way, while, in particular, facilitating the entry of new firms, thus creating new employment. Some countries are amending the insolvency framework with temporary measures that can support the ongoing operations of viable MSMEs, as opposed to prematurely pushing them into liquidation.

The availability of finance will be a critical factor for the pace of the economic recovery. Firms will require funding both to make investments and to reestablish working capital. Thus, it is paramount to ensure that any risks affecting the financial sector's stability be contained; that macroprudential policies be closely monitored; and that the financial safety net be strengthened, as per the bank resolution law pending in Congress. As rising credit-risk is one of the key issues, countries are resorting to expanding and adjusting partial public credit guarantee schemes, as well as leveraging technology solutions for facilitating supply-chain financing for MSMEs. In Brazil, beyond these measures, the implementation of open banking will foster efficiency and competition between banks and non-banks to better facilitate MSME financing. In addition, with limited collateral to offer, MSMEs would be served well by reforms that ease the registration, trading and discounting of non-traditional collateral, such as "duplicatas" and credit card receivables, and by policies that offer partial public guarantees for such collateral.

MSMEs are among the most vulnerable and hardest hit economic agents in this pandemic, but they are also supporting many vulnerable workers. Ensuring that they benefit from the needed financing and business support measures to overcome the pandemic is key. The

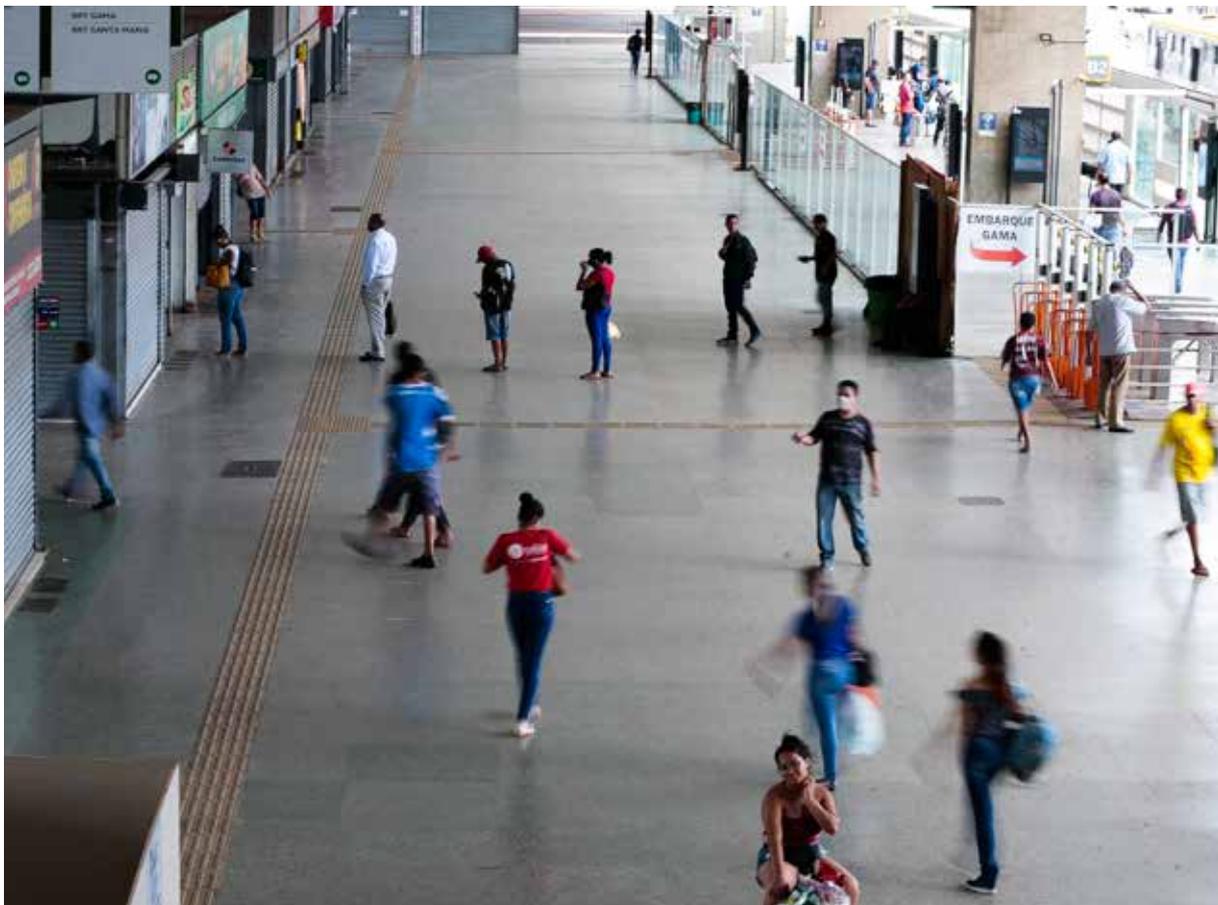
current crisis is also an opportunity to drive a simplification of the business environment, and help MSMEs to accelerate their digitalization process.

### 3. Utilities and Public Transportation: Keeping the Lights On, the Water Running, and People Moving.

As one of the countries in the world most exposed to the coronavirus pandemic, Brazil locked down significant parts of its economy in order to “flatten” the contagion curve. Among all firms that will be impacted by the economic supply and demand shock, utilities in the water, energy and urban transportation sectors deserve special attention for their critical role and specific characteristics. In fact, these companies (i) provide essential services to

the population at large, which is particularly critical for the most vulnerable; (ii) operate in a strongly regulated environment, and have no freedom to set their tariffs or select their customer base; (iii) are under financial stress because of the disruption of economic activity and supply chains resulting from the containment policies in place; and (iv) have no immediate competitors (public or private) to replace them in case of collapse. A few examples can help explain this situation:

State-owned enterprises (SOEs) in the water and sanitation sector (WSS) provide water services to 57 million households, and sanitation services to over 32 million households in Brazil. The financial and fiscal risks faced by WSS-SOEs are increasing fast under COVID-19, even though their financial exposure varies across Brazilian states. The estimated loss of forgone revenue and the financial risks affecting all



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Brazilian states range from US\$100 million to US\$125 million per year, and from US\$1 billion to US\$1.3 billion over 10 years, in the absence of COVID-19 response measures. The states with the highest-exposed WSS-SOEs include Amazonas, Santa Catarina, Maranhão, Minas Gerais, Rio Grande do Sul, São Paulo, and Piauí. Addressing the financial, budgetary, and forgone revenue risks affecting these utilities is critical for preventing their financial collapse. Financial support for WSS utilities and service providers should aim to maintain and restore operations and to avoid the risks of financial bankruptcy in the medium term.

Energy services are also essential to prevent disease and protect human health during the COVID-19 pandemic. The demand shock coming from the quarantine resulted in a progressive drop in energy consumption of up to 20 percent among the most profitable commercial and industrial users. The impact of the financial and operational performance of distribution utilities is compounded by increased default risks and pressures on revenue collection, partly driven by the measure preventing disconnection in case of non-payment. Tariff increases have been suspended, further ex-

acerbating distributors' liquidity constraints, and affecting their ability to honor long-term power purchase contracts with generators. The overall impact in the sector is estimated at R\$22 billion, affecting most severely those utilities operating in the poorer North and Northeast, which were already suffering from significant commercial losses and the low reliability of the system. Beyond the ambitious policy measures already implemented, there is a need to prioritize fuel and energy efficiency, and to adopt financial programs to accelerate progress toward *Luç Para Todos* and a clean energy transition.

The impact is also strong on the urban public transportation sector, with different urban mobility stakeholders being affected in different ways. Three categories of stakeholders have been identified: (i) a few large public transportation SOEs (for example, Metrô and CPTM in São Paulo, CBTU in several cities, or Trensurb in Porto Alegre); (ii) a few large private operators, essentially in the rail transport segment, backed by large international firms (for example, CCR in Salvador or SP, or Mitsui in Rio); and (iii) many private bus operators, present in both large and small cities. Moovit data



suggest that ridership has dropped from 50 percent to 70 percent in Brazil's metropolitan areas. The ANTF (Brazil's National Rail Transport Association) has reported a 63 percent drop in ridership in March compared to last year. This represents a US\$130 million revenue shortfall for March alone. Assuming that services and patronage start resuming around mid-June, the revenue shortfall is estimated at US\$700 million for the urban rail sector alone, US\$400 million for private operators, and US\$300 million for public ones. For the bus sector, losses are estimated at US\$200 million per day. Elements are not available at this point on these large firms' financial resilience, or their capacity to absorb the shock, even though they operate in a strongly competitive environment that does not leave much room for huge margins. On the other end of the spectrum, we find bus operators. Brazil has about 34,000 bus companies, including urban and intercity services. They employ about 700,000 people, and are responsible for 86 percent of all public transportation in Brazil, that is, about 46 million trips a day in normal times. A collapse of these companies would have immediate effects on urban congestion levels, as well as on many workers' ability to reach their workplaces, not to mention the affordability of any alternative solution.

Public support will be needed to ensure that affected companies in these critical sectors survive the lockdown, and to avoid important disruptions to the daily lives of many citizens, as well as contingent liabilities for the already strained finances of subnational governments. However, this could also represent an opportunity to introduce improvements rather than just returning to the status quo ante. These improvements should focus on more sustainable investments and sounder management practices.

## 4. COVID-19 Imposes Unprecedented Challenges to Education in Brazil.

Keeping students learning despite the COVID-19 pandemic is an education challenge never seen before in Brazil. It starts by its sheer size: more than 47 million students are not attending school in an attempt to contain the virus. Besides, it also exposes how unprepared schools were: teachers had to adapt overnight to teaching remotely, and vulnerable children see low-educated parents replacing their teachers in an attempt at homeschooling. Internet connection does not reach vulnerable households, and local authorities have to offer alternatives to facilitate remote learning. The mental burden on students, parents and teachers due to the uncertainty and lockdown measures makes learning, teaching and parenting even harder. During the pandemic and beyond, there are several hurdles to take into account.

According to recent learning poverty estimates, 42.2 percent of 10-year-olds in Brazil cannot understand age-appropriate texts. It is an already critical situation, which the COVID-19 pandemic tends to deteriorate even further. World Bank simulations suggest that COVID-19-related school closures may raise learning poverty by 2.6 percentage points, reaching 44.8 percent of children. However, the consequences are deeper than simply hindering foundational skills and learning in other subjects. In the short run, the same estimates show that the proportion of children not enrolled at school may increase 0.1 percentage point for primary-school-aged children. In other words, the COVID-19 crisis may cause a setback equivalent to one year in Brazil's recent educational progress.

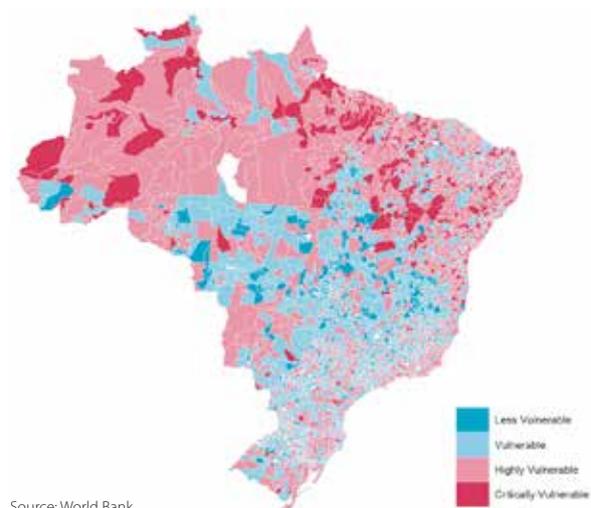
In order to mitigate such a decline, governments have been investing in strategies to maintain learning during the pandemic. Policies rely on preexisting infrastructure; they aim to provide teachers with the right training, and combine technologies to include the highest possible number of students. Under these circumstances, effective remote learning and teacher training in the pedagogical use of technology are complementary policies. In 2017, at least 60 percent of teachers in Brazil considered technology training as a “highly necessary” skill.

Schools also work as a safety net for families. For a significant number of children, the only regular and healthy meal of the day takes place at school. In addition, families—in particular women, who tend to be the primary caregiver in many households—end up overwhelmed by accumulating remote working and childcare responsibilities as a result of school closures. Even for those that are able to find alternative solutions during the pandemic, it is important to note that parents’ ability to help with schoolwork has a strong correlation with their socioeconomic status. For these reasons, it is fundamental to support parental engagement on their children’s education during the COVID-19 pandemic—especially when the focus is on mitigating learning inequalities.

One way to better understand how students may be vulnerable to school closures is to combine—in a single index—the availability of school meals; the use of technology in the classroom; family support; whether students work outside; their performance in standardized tests; and their probability of dropping out from school. The index exploring all these aspects is shown in figures E.5 and E.6, and assumes that low-performing students that dropped out in the past are more vulnerable to the pandemic when school meals are cut,

their teachers are less prepared for remote teaching, and their families are less engaged in homeschooling (as compared with students in the opposite situation).

**Figure E.5: Student Vulnerability per Municipality**  
(index, 2017)



Source: World Bank.

**Figure E.6: Student Vulnerability per State**  
(index, 2017)



Source: World Bank.

Figures E.5 and E.6 indicate that further efforts to mitigate the impacts of COVID-19 on learning should be concentrated in the North and Northeast of Brazil. In particular, the most vulnerable students are found in Pará, Alagoas, Pernambuco, Maranhão, Amazonas and Paraíba. They are more than 0.1 point above the national vulnerability average of 0.495. Students from the Federal District, Mato Grosso, Goiás, Tocantins, Minas Gerais and Paraná are in a less vulnerable position. However, differences within each state must also be considered.

Reopening schools demands careful planning. The first step is to structure clear protocols that prioritize the safety of all students. This plan must systematize the reopening, but also a potential reclosure if new COVID-19 cases are diagnosed at school. During that stage, it is essential to establish an open dialogue with families, teachers and society aiming to build trust

about the reopening protocol. Local governments should also prepare their existing social protection systems to support students at risk of not getting back to school, as well as distribute basic food baskets conditioned upon their returning to classes. Once back, schools need to create early-warning systems and monitor teenage students at risk of dropping out.

Focused learning programs are fundamental to remedy learning gaps caused by the pandemic. Priority must be given to mitigation measures within the school and the school network. Upon return, standardized exams can map learning delays and trigger personalized measures to support the most affected students. Alternative policy measures include setting up small tutoring groups; redeploying teachers; creating discussion groups to alleviate mental health impacts; and establishing more flexible technical programs.



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## 5. Fiscal Impact: After the Disease, the Debt—Recommitting to Fiscal Adjustment in the Face of COVID-19.

The COVID-19 pandemic presents a major challenge for the fiscal consolidation process in Brazil. The fiscal framework was already weak before the crisis. Brazil's public finances face a number of structural challenges, including low levels of economic growth, with resulting limited growth in tax revenues; continued rise in mandatory pension and personnel expenses; and an already high public debt. The economic recession expected in 2020 and the increase in public debt caused by COVID-19 response measures make fiscal adjustment even more difficult from 2021 onwards.

In order to address the crisis in the health sector and minimize the effects on the income of the most vulnerable families due to lower economic activity, the federal government has put forward a package of fiscal measures that add up to about 8.6 percent of GDP. For subnational governments, the federal government has pledged to keep state and municipal transfers (FPE and FPM, respectively) at the same levels as in 2019. In addition, it has approved transfers to finance expenditures related to the health crisis. Another aid package for states and municipalities (worth R\$60 billion, or 0.9 percent of GDP) is intended to partially offset local tax revenue losses (ICMS and ISS), and finance expenses related to COVID-19. Of this total, R\$50 billion can be freely used by each subnational entity to finance its expenditure needs in the face of reduced tax revenues. The remainder is earmarked for health care and social assistance. In addition, the package also suspends the payment of subnational entities' debts with the federal government, and gives them permission to renegotiate their debts with other creditors. States are asked not to

grant wage raises to their public servants, to maintain flexibility in their budgets, and to focus their resources on priority areas (for example, critical health care workers).

Considering all the measures that have already been approved, Brazil's primary deficit in 2020 is estimated to exceed 9.5 percent of GDP, an increase of almost 9 percentage points compared to 2019, and 8 percentage points above pre-COVID-19 estimates. In a downside scenario, Brazil's primary deficit could reach 11.3 percent of GDP. The deep recession and large primary deficit in 2020, and a potential increase in borrowing costs due to greater uncertainty, will strongly impact the trajectory of Brazil's public debt. The country's public-debt-to-GDP ratio is expected to increase from 75.8 percent in 2019 to 92.9 percent in 2020, and stabilize at 109.2 percent in 2030. In the downside scenario, debt would reach stability only in the next decade, at 129.3 percent of GDP in 2033. However, the short-term debt scenario may turn out to be even more dire, if sizable contingent liabilities materialize. These include the debts of subnational governments and public utilities (electric, water, transport), many of which were in a weak financial position even before the crisis.



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### Building Back Stronger: Restarting the Economy and Restarting Reforms.

Although it is too early for a precise assessment of the fiscal vulnerabilities resulting from COVID-19, it is already clear that the public sector will need to reinforce fiscal consolidation efforts from 2021 onwards. The promotion of fiscal consolidation depends on the implementation of a structural reform agenda to control mandatory public spending and accelerate economic growth. For this, Brazil should stick to the following principles

1. Ensuring that fiscal measures to address the crisis are indeed temporary, and do not become permanent.
2. Reaffirming the federal spending cap rule as a fiscal anchor in Brazil, which limits public spending and guides the fiscal consolidation process. In order to comply with the ceiling rule, the government will need to increase the flexibility of its public budget so as to better control and reallocate expenses according to needs. A first step would be the approval of the three proposed constitutional amendments (PECs) currently in Congress (known as Emergency PEC, Public Funds PEC and Federative Pact PEC). In addition, administrative reforms are required to reduce the federal administration's recurring expenses.
3. Reducing the federal government's contingent liabilities through the appropriate sharing of fiscal risks among federal, state and municipal governments. This requires the creation of a framework that may reduce moral hazards in intergovernmental fiscal relationships, but also the acceleration of fiscal reforms in subnational governments so as to limit their structural expenditure growth (for example, completing the pension reforms in states and municipalities).
4. Resuming progress on the long-term economic growth agenda, which includes measures to improve the business environment, lower the cost of production, and increase Brazil's insertion in global value chains through greater openness to trade. Reforming Brazil's tax system to enable a more efficient allocation of production factors takes a high priority.

The uncertainties surrounding the impacts of COVID-19 are still high. If the crisis were to be prolonged or if new waves of infection occur, further stoppage of economic activity may become necessary, deepening the recession, and delaying the recovery. This could require the extension of temporary measures adopted by the government, further increasing Brazil's fis-

cal deficit, and forcing an even stronger fiscal adjustment in the aftermath. Therefore, reinforcing Brazil's commitment to the resumption of economic and fiscal reforms would help to secure investor confidence and gain access to cheaper sources of financing, which would, in turn, accelerate the economic recovery once the health crisis has been overcome.

A photograph of a person riding a bicycle on a paved street. The bicycle has a large front basket containing two yellow plastic crates. The scene is reflected in a large puddle on the ground, creating a symmetrical image. A teal banner is overlaid on the upper portion of the image, containing the text '1. INTRODUCTION'.

# 1. INTRODUCTION

# 1. INTRODUCTION

**The COVID-19 pandemic poses a challenge of historical proportions. This report presents an impact assessment for Brazil.**

Since the Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2 or COVID-19) first infected a human in Wuhan, China, in December 2019, it has rapidly spread around the world. On March 12, 2020, the World Health Organization (WHO) declared a pandemic. By triggering respiratory failure in severe cases, COVID-19 had caused 400,000 deaths globally as of June 8, 2020 (with over 7 million people infected), according to the WHO. COVID-19 has spread more widely – reaching nearly every country—and caused many more fatalities than other recent epidemics caused by coronaviruses, such as SARS 1 in 2002–04

(27 countries, 858 deaths), and the Middle East Respiratory Syndrome in 2012 (30 affected countries, with 813 deaths). Spreading first across East Asia and then Europe, the first COVID-19 case in Brazil was reported on February 25, 2020. As in the rest of the world, the spread of the virus and the containment measures adopted by Brazil put pressure on the country's health care system and its economy.

**The pandemic-induced health crisis has translated into an economic crisis.**

Brazil's health policy response is described in the next section. The following sections analyze the economic impacts on Brazil using the framework depicted in figure 1. It distinguishes between three shocks: (1) global containment policies result in an external shock to Brazil, finding expres-



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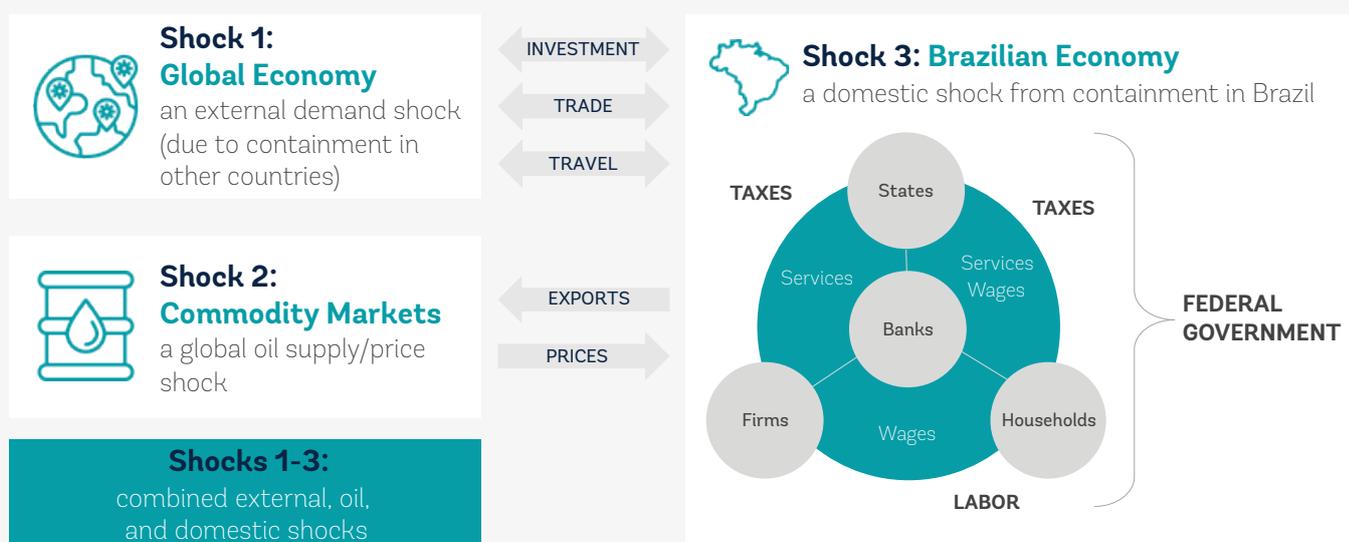
sion in investment and trade flows, travel, and the exchange rate; (2) an initial expansion in oil supply by OPEC+ countries combined with low global oil demand send oil prices diving to new lows; and 3) domestic containment policies in Brazil result in additional supply- and demand-side shocks. This analysis employs a subnational computable general equilibrium model combined with microsimulations, drawing on macrodata, microdata, and high-frequency data (such as credit card spending) to study the impacts on the overall economy. It also assesses impacts on firms (including the infrastructure sector), households, the financial sector, and states, generally linked via the labor market (jobs and wages) and the product market (goods and services), and through government services, transfers, and taxes. Policy responses to date (at different levels of government) will be discussed throughout this analysis, which is current as of June 25, 2020.

**The COVID-19 pandemic is expected to cause a severe recession**

**in Brazil, threaten recent social progress, and reduce fiscal sustainability.**

According to World Bank estimates, a deep recession will hit Brazil, with growth rates at -8 percent in 2020, one of the sharpest falls in Brazilian history. A modest rebound is expected for 2021 and 2022. The recession, the loss in revenue, and the fiscal response are expected to increase debt levels by about 20 percentage points of GDP, with stabilization expected four years later than originally envisioned. This does not yet take into account any contingent liabilities estimated in this report, or any potential additional fiscal tightening measures in the future. Unless mitigated (for example through *Auxílio Emergencial*), poverty rates (at US\$5.50 per day in 2011 PPP) could increase to 22.7 percent in 2020—equivalent to an additional 7.2 million poor Brazilians. Similarly, the share of Brazilians living on less than half a minimum wage per month would increase by 8.4 million to 33 percent.<sup>4</sup>

Figure 1: Analytical framework



Source: World Bank

<sup>4</sup>The half a minimum wage is an important poverty line proxy for Brazil, since it is the eligibility threshold for Cadastro Único (Brazil's national single registry of social program beneficiaries), and it is close to the value of the international poverty line for upper middle-income countries, \$5.50 per day (2011 PPP).

Table 1a): Selected Macroeconomic and Poverty Indicators (baseline scenario)

	2015	2016	2017	2018	2019	2020 f	2021 f	2022 f
<b>Real GDP growth, at constant market prices</b>	-3,5	-3,3	1,3	1,3	1,1	-8,0	2,2	<b>2,3</b>
Private Consumption	-3,2	-3,8	2,0	2,1	2,7	-11,9	2,2	<b>2,9</b>
Government Consumption	-1,4	0,2	-0,7	0,4	-0,4	0,5	0,0	<b>0,0</b>
Gross Fixed Capital Investment	-13,9	-12,1	-2,6	3,9	2,2	-12,1	4,6	<b>4,2</b>
Exports, Goods and Services	6,8	0,9	4,9	4,0	-2,5	3,8	5,5	<b>4,4</b>
Imports, Goods and Services	-14,2	-10,3	6,7	8,3	1,1	-12,0	7,0	<b>7,0</b>
<b>Real GDP growth, at constant factor prices</b>	-3,0	-3,0	1,4	1,3	1,1	-8,0	2,2	<b>2,3</b>
Agriculture	3,3	-5,2	14,2	1,4	1,3	0,0	1,4	<b>1,5</b>
Industry	-5,8	-4,6	-0,5	0,5	0,5	-5,7	1,7	<b>1,9</b>
Services	-2,7	-2,2	0,8	1,5	1,3	-9,6	2,4	<b>2,6</b>
<b>Inflation (Consumer Price Index)</b>	9,0	8,7	3,4	3,7	3,7	3,4	2,9	<b>3,2</b>
<b>Current Account Balance (% of GDP)</b>	-3,0	-1,3	-0,7	-2,2	-2,7	-0,7	-1,1	<b>-1,5</b>
<b>Financial and Capital Account (% of GDP)</b>	3,2	1,4	0,7	2,4	1,5	0,6	1,0	<b>2,0</b>
Net Foreign Direct Investment (% of GDP)	3,4	3,3	2,3	4,0	3,0	2,6	2,6	<b>2,6</b>
<b>Fiscal Balance (% of GDP)</b>	-9,3	-10,6	-8,0	-8,1	-5,5	-12,7	-6,8	<b>-7,7</b>
<b>Debt (% of GDP)</b>	65,5	69,8	73,7	76,5	75,8	92,9	95,6	<b>98,2</b>
<b>Primary Balance (% of GDP)</b>	-1,8	-2,5	-1,7	-1,6	-1,0	-9,6	-3,9	<b>-3,1</b>
<b>Poverty (% of Population)</b>	18,7	20,1	20,4	19,9	19,5	22,7	22,3	<b>21,6</b>

Sources: World Bank, Macroeconomics and Fiscal Management Global Practice, and Poverty Global Practice.  
Notes: e = estimate, f = forecast. Poverty is measured at \$5.50 per day in 2011 PPP using internationally comparable data.

Table 1b): Selected Macroeconomic and Poverty Indicators (downside scenario)

	2015	2016	2017	2018	2019	2020 f	2021 f	2022 f
<b>Real GDP growth, at constant market prices</b>	-3,5	-3,3	1,3	1,3	1,1	-10,9	0,5	<b>2,3</b>
Private Consumption	-3,2	-3,8	2,0	2,1	2,7	-16,0	0,5	<b>2,9</b>
Government Consumption	-1,4	0,2	-0,7	0,4	-0,4	0,6	0,0	<b>0,0</b>
Gross Fixed Capital Investment	-13,9	-12,1	-2,6	3,9	2,2	-15,7	1,6	<b>4,2</b>
Exports, Goods and Services	6,8	0,9	4,9	4,0	-2,5	3,6	3,1	<b>4,4</b>
Imports, Goods and Services	-14,2	-10,3	6,7	8,3	1,1	-16,0	4,0	<b>7,0</b>
<b>Real GDP growth, at constant factor prices</b>	-3,0	-3,0	1,4	1,3	1,1	-10,9	0,5	<b>2,3</b>
Agriculture	3,3	-5,2	14,2	1,4	1,3	0,0	0,5	<b>1,5</b>
Industry	-5,8	-4,6	-0,5	0,5	0,5	-7,4	0,6	<b>1,9</b>
Services	-2,7	-2,2	0,8	1,5	1,3	-13,2	0,5	<b>2,6</b>
<b>Inflation (Consumer Price Index)</b>	9,0	8,7	3,4	3,7	3,7	3,4	2,9	<b>3,2</b>
<b>Current Account Balance (% of GDP)</b>	-3,0	-1,3	-0,7	-2,2	-2,7	-0,3	-0,6	<b>-1,1</b>
<b>Financial and Capital Account (% of GDP)</b>	3,2	1,4	0,7	2,4	1,5	0,2	0,5	<b>1,5</b>
Net Foreign Direct Investment (% of GDP)	3,4	3,3	2,3	4,0	3,0	2,6	2,6	<b>2,6</b>
<b>Fiscal Balance (% of GDP)</b>	-9,3	-10,6	-8,0	-8,1	-5,5	-14,6	-7,6	<b>-7,7</b>
<b>Debt (% of GDP)</b>	65,5	69,8	73,7	76,5	75,8	97,5	103,0	<b>105,7</b>
<b>Primary Balance (% of GDP)</b>	-1,8	-2,5	-1,7	-1,6	-1,0	-11,3	-5,5	<b>-4,7</b>

Sources: World Bank, Macroeconomics and Fiscal Management Global Practice, and Poverty Global Practice.  
Notes: e = estimate, f = forecast. Poverty is measured at \$5.50 per day in 2011 PPP using internationally comparable data.

**This report focuses on the exposure of various parts of the Brazilian economy.** The following sections provide a brief overview of the health response, followed by an analysis, using the framework of figure 1, which examines the exposure of various sectors and actors in the Brazilian economy. The analysis takes into account transmission channels, estimated impacts, and policy

responses, as well as remaining vulnerabilities and sources of resilience. The report concludes with some considerations on recovery. The World Bank Group's support to the Brazilian government will be informed by this assessment, with a particular focus on mitigating any remaining vulnerabilities, saving lives, and laying the foundations for a speedy and equitable recovery.

# 2. THE COVID-19 PANDEMIC IN BRAZIL:



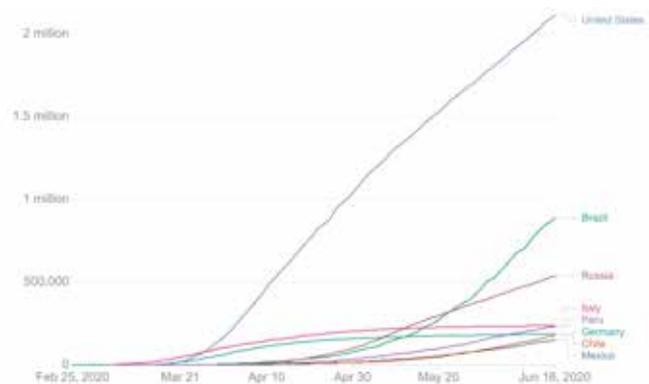
# THE HEALTH CONTEXT

**The first confirmed case of COVID-19 in Brazil was reported in the city of São Paulo on February 25, 2020.** By mid-June, Brazil had the second largest number of confirmed COVID-19 cases and deaths globally, with a 4.9 percent case fatality rate (CFR) as estimated by the Ministry of Health (MOH). These numbers are to be taken with caution, since recent reports point to a large degree of under-notification in cases and deaths in the country.<sup>5</sup> Considering both the number of deaths and the speed of spread, Brazil is among the most exposed countries in the whole world, and the single most exposed country in the Latin America and Caribbean (LAC) region. This rapid increase in cases puts additional pressure on Brazil's Unified Health System (or *Sistema Único de Saúde*, SUS), the country's public health care network, which is the primary (and often only) source of care for over 75 percent of the population, especially among the poor. The SUS, often referred to as the biggest public health care system in the world, is funded through general taxes, and offers universal access to health care at no cost at the point of delivery. The COVID-19 pandemic will pose additional pressure on a system that is already pushed to the limit, and is often seen as overcrowded and unable to offer anything beyond limited access to hospital and specialist care. The SUS will not be immune from the challenges that

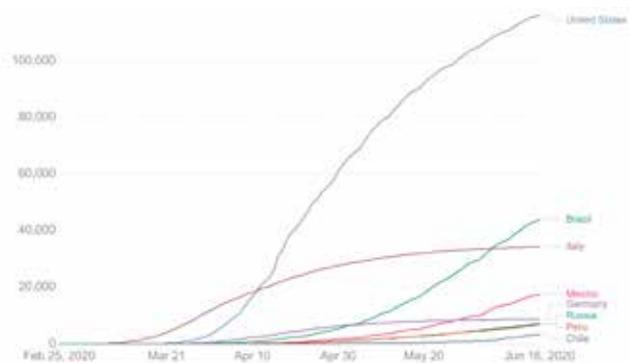
have overwhelmed other health care systems around the world, even in advanced economies.

**Figure 2: Total COVID-19 Cases and Deaths, Brazil and Selected Countries**

a) Total Confirmed Cases



b) Total Confirmed Deaths



Source: Our World in Data/European Centre for Disease Prevention and Control (ECDC), as of June 25, 2020.

<sup>5</sup><https://ciis.fmrp.usp.br/covid19/analise-subnotificacao/>

**Demographic and epidemiological profiles, associated with a large share of the population with no access to clean water and sanitation, are factors that increase the chances of COVID-19-related complications, especially for higher-risk groups.**

While there is still limited information on this novel coronavirus, age and chronic diseases have been identified as risk factors for COVID-19 complications. In Brazil, 27.4 percent of the population are above the age of 50, and 10.5 percent are over 60 years old. According to the last National Health Survey (*Pesquisa Nacional de Saúde*, PNS) about 40 percent of the Brazilian adult population (that is, about 57 million people) suffer from at least one chronic disease. Obesity has also been associated with a higher likelihood of developing COVID-19-related complications.<sup>6</sup> According to the latest estimates of the Brazilian MOH, approximately 20 percent of Brazilians are obese.<sup>7</sup>

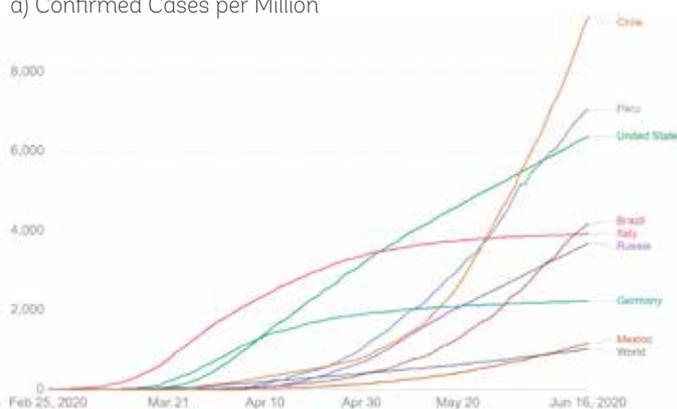
**While the numbers of cases per 100,000 people in Brazil are comparable to other countries, the spread of the virus is still growing at a fast rate, as of June.**

Brazil is among the countries considered to be in the third wave of the pandemic. Indeed, along with other Latin American countries, it is seen as the new epicenter of the pandemic. In early June, the number of daily deaths surpassed 1,000, something which had only happened in a few affected countries (such as Italy, Spain, and the United States). By June 5, Brazil's doubling rate (that is, the number of days required to double the number of deaths) was 17, while it was 39 in the United States, 19 in Peru, 15 in Mexico, 27 in Argentina, and 47 in Germany. These numbers show that, at this point, Brazil has not succeeded in "flattening the curve"—despite the containment measures that have been

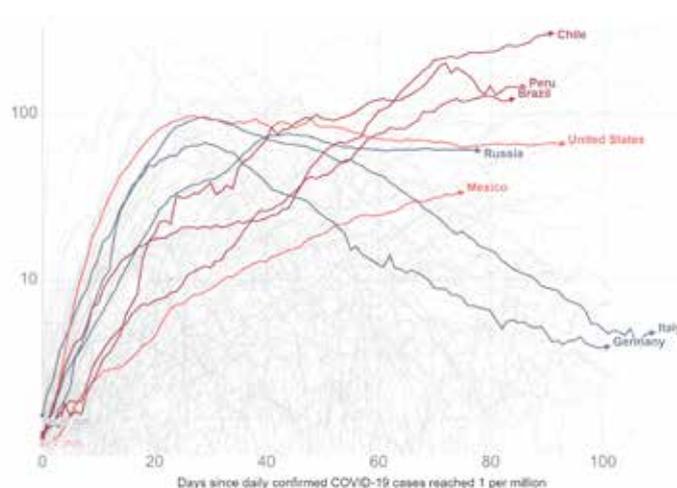
in place across the country for almost 60 days. However, these measures were applied with different degrees of enforcement: by June 1, the social distancing index indicated a 39.5 percent efficiency in Brazil, having reached a 62.2 percent peak in late March. Adherence was lower in some states, ranging from 34.51 percent in Tocantins, to 44.12 percent in Amapá. Highly affected states such as Sao Paulo (40 percent), Amazonas (40.6 percent) and Ceará (42.7 percent) also showed low social distancing scores in early June.<sup>8</sup>

**Figure 3: Total COVID-19 Confirmed Cases per Population, Brazil and Selected Countries**

a) Confirmed Cases per Million



b) Daily Confirmed Cases per Million



Source: Our World in Data/(ECDC), as of June 5, 2020.

<sup>6</sup><https://www.cdc.gov/coronavirus/2019-ncov/need-extra-precautions/groups-at-higher-risk.html>.

<sup>7</sup><https://portalarquivos2.saude.gov.br/images/pdf/2019/julho/25/vigitel-brasil-2018.pdf>

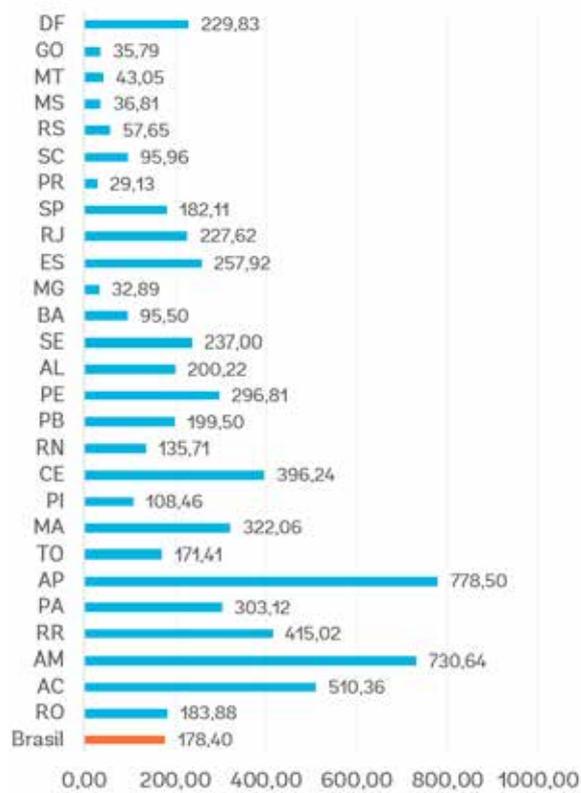
<sup>8</sup><https://public.tableau.com/profile/inloco.tableau#!/vizhome/SocialisolationIndexInLoco/Overview>

While the initial cases were confirmed in the state of São Paulo, the virus rapidly spread into the North region. As shown in figure 4, the highest concentrations of COVID-19 confirmed

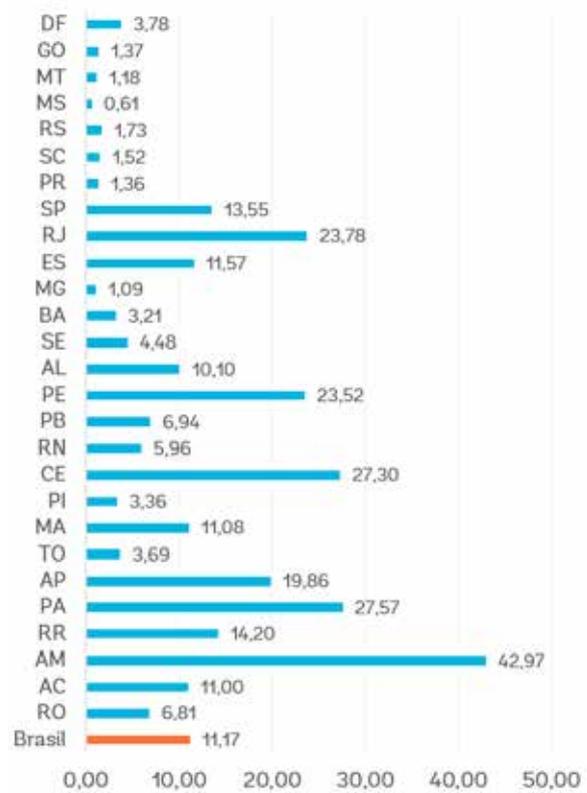
cases per 100,000 people in the country are in the northern states of Amapá (3,241), Roraima (1,959), Amazonas (1,623), and Acre (1,395). These rates are significantly higher than those observed even in the most severely affected countries around the world.

Figure 4: COVID-19 Cases and Deaths across Brazilian States per Population as of June 25

a) Confirmed COVID-19 Cases per 100,000 People



b) Confirmed COVID-19 Deaths per 100,000 People



Source: Brazilian Ministry of Health (<https://covid.saude.gov.br/>).

There are several reasons why the spread of the virus in Brazil's North region can be particularly problematic. Firstly, even by Brazilian standards, the region has a deficit in ICU beds, with many municipalities not having the appropriate facilities to care for patients who may fall ill due to severe complications from COVID-19 (figures 5 and 6). Secondly, states like Roraima and Amapá have large and virtually open

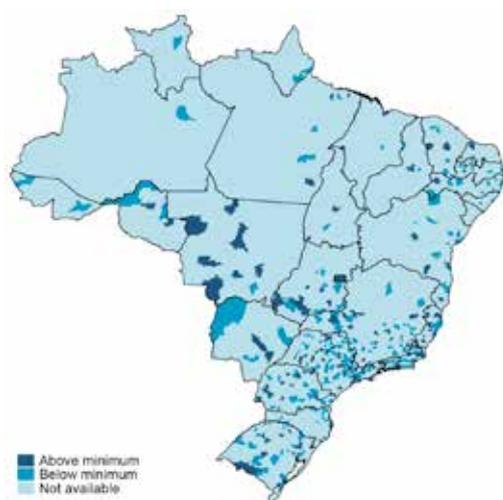


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borders with Venezuela and French Guiana, respectively, which can make it more challenging to control virus transmission from one territory to another. Thirdly, the geography of the region imposes transportation challenges, which means that people cannot be taken easily from

their municipality of residence to another where to find appropriate health care facilities. Finally, the region is home to the largest indigenous groups in the country, and indigenous people often have lower immunity to new diseases than those who live in urban areas.

**Figure 5a: Intensive Care Unit Beds—Non-SUS**  
(per 100,000 people)



**Figure 5b: Intensive Care Unit Beds—SUS**  
(per 100,000 people)



Note: "Below minimum" represents less than 10 adult ICU beds per 100,000 people. "Above minimum" represents more than 10 adult ICU beds per 100,000 people.  
Source: World Bank using DATASUS - February 2020.

**At the outset of the pandemic, the Brazilian federal government tried to coordinate its response to the crisis with subnational governments.** In fact, more than three weeks before the first case was reported in Brazil, the government issued guidance laying down a set of measures to address a public health emergency resulting from COVID-19.<sup>9</sup> All states in the country were encouraged to follow and adapt the National Contingency Plan based on their infrastructure and regional characteristics.

By March 20, the MOH recognized that community transmission was already taking place in Brazil. The recognition of community transmission allowed policymakers across the country to adopt non-pharmacological measures to fight the pandemic, including social distancing and quarantine.

**By the end of March, most of the states and larger municipalities had implemented social distancing measures to contain the spread of the virus.** While subnational authorities promoted strong containment measures in order to decrease the levels of disease transmission and prevent their local health care systems from being overwhelmed, the debate on whether to adopt a vertical or horizontal social isolation strategy remains (the former focusing on the selective isolation of groups with the highest risk of clinical severity, such as the elderly and those with chronic diseases, as well as all confirmed cases; while the latter establishes social distancing measures for the entire population).

The debate over these strategies focuses on the economic and social consequences of each of them.

<sup>9</sup>Law 13,979, or the Quarantine Law.

Despite the lack of agreement among policy makers, horizontal social isolation measures were applied in most states—although with limited adherence. As mentioned above, the highest social distancing level achieved was 62.2 percent in late March.<sup>10</sup>

**Notwithstanding the challenges related to implementing a national response strategy, the federal government has significantly increased the level of resources allocated to the SUS to respond to the COVID-19 pandemic.** By early April, the federal government had already committed R\$16.7 billion in resources to states, hospitals and federal government agencies to support the response to the COVID-19 pandemic. In addition to these measures, the MOH introduced telemedicine services to allow physicians to make online consultations and to issue prescriptions electronically; increased

the number of ICU beds available in the SUS network; and ramped up efforts to hire more physicians (the plan is to hire over 5,800 physicians across the country).

**Both the novel coronavirus pandemic and the measures to contain its spread result in losses of livelihood.** According to the World Bank's April 2020 LAC Semiannual Report,<sup>11</sup> containment measures such as social distancing work best when they are applied with a broad and clear focus. These measures are intended to slow the spread of the virus, also known as “flattening the curve”, thus giving health care systems enough time to stagger the cases that require treatment in limited intensive care units. Yet, this results in severe economic dislocations and can threaten livelihoods. Finding the right balance between saving lives and saving livelihoods is the core challenge of the COVID-19 pandemic.



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<sup>10</sup><https://public.tableau.com/profile/inloco.tableau#!/vizhome/SocialisolationIndexInLoco/Overview>.

<sup>11</sup><https://openknowledge.worldbank.org/handle/10986/33555>.

### Box 1: Possible Measures to Address Remaining Vulnerabilities to Tackle the Pandemic

#### In the short term:

- Expanding testing capacity as well as testing strategy, with a focus on identifying pockets of transmission (focus on asymptomatic cases);
- Ensuring that basic items such as clean water, soap, and other hygiene products, as well as other types of personal protective equipment (PPE), are available in all health care units across the country;
- Centralizing and improving data systems so that information on needs and capacity—as well as infection and death rates—can be readily available. This will allow a closer monitoring of the situation, which is essential for the implementation of any exit strategy;
- Ensure coordination to use efficiently use the existing ICU bed capacity in the public sector and contracting out to private providers;
- Improving coordination between public and private sectors, both in terms of testing and using hospital beds for critical cases;
- Considering the implementation of digital contact tracing.

#### In the medium/long term:

- Continuing to invest in IT systems and dashboards that can collect real-time data and enable monitoring;
- Strengthening primary health care (PHC) coverage based on active engagement within PHC teams (as per the *Previne Brasil* Program),<sup>12</sup> and adequate incentives to PHC teams;
- Strengthening disease surveillance, and reinforcing the link between surveillance systems and service delivery.



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<sup>12</sup><https://www.saude.gov.br/component/tags/tag/previne-brasil>.



# SHOCK 1:



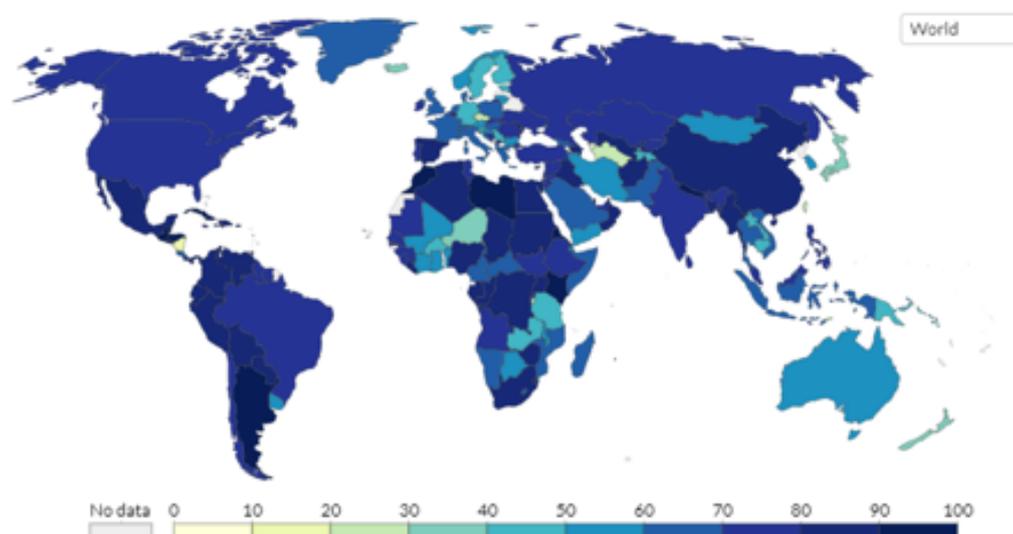
# GLOBAL DISRUPTION AND SPILLOVERS

**As COVID-19 spread around the globe, most governments put in place containment measures, severely disrupting economic activity on the supply side.** China

was the first country to implement lockdown measures, with a particular emphasis on the city of Wuhan (Hubei province), where the virus spread initially. As it was the first country affected, China has since started to loosen restrictions, while other countries have implemented their own stringent lockdown measures. Many countries across the developed and developing world have now containment measures in place. According to a stringency index developed by researchers at Oxford University,<sup>13</sup> these measures include contact tracing, closing schools and workplaces,

suspending public transportation, canceling public events, and restricting internal movements and international travels. Beyond this, non-pharmaceutical measures aimed to contain the spread of COVID-19, commonly adopted policy responses also include public information campaigns; fiscal and monetary policy measures; and financing research into new vaccines and emergency investment in health care. In the Americas, Brazil's early containment response (implemented by mid-April) was broadly comparable to the one adopted in the United States, Uruguay, Chile, Paraguay, and Bolivia; but it was less stringent than what other Latin American countries did (figure 6). Containment measures constitute a supply shock to the economy due to the closure of establishments and the ban on people's movements, which disrupt the production process.

**Figure 6: Supply Side Effects—Global Containment Policies** (stringency index)



Source: Oxford COVID-19 government response tracker, as of May 13, 2020.

**The response to the pandemic also has significant impacts on the demand side.**

Apart from not being able to consume some goods, and especially services, due to lockdown measures, consumers across the world are also held back by three other effects: reduced labor income, reduced confidence, and reduced wealth. Available data show that the crisis has taken a large toll on employment in almost all countries. In the United States, unemployment skyrocketed within weeks, with unemployment insurance claims reaching 6.6 million in a single week in late March (figure 7a). The unemployment rate in the US peaked at 14.7 percent in April, up over 10 percentage points, and retreated slightly to 13.3 percent in May.<sup>14</sup> The lack of income associated with unemployment naturally reduces spending power on the demand side. At the same time, consumer confidence dropped around the world (figure 7b for an example from China) in light of the uncertainty over future income streams. Finally, stock markets declined sharply in February and March (figure 7c). Although stock indexes have recovered some ground following unprecedented monetary and fiscal stimulus packages in most large economies, as well as some progress in containing the COVID-19 outbreak in Asia and Europe, valuations remain well be-

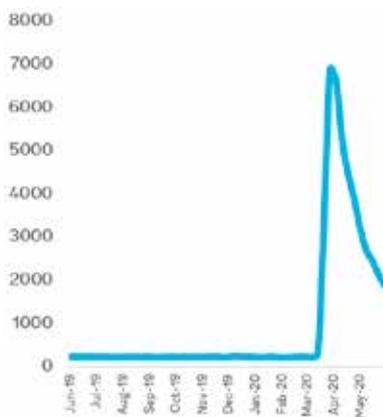
low their previous peaks, affecting household wealth, and consequently people’s propensity to spend.

**Governments across the world have responded with ambitious stimulus measures.**

This is true both for fiscal policy and monetary policy. In particular, more advanced economies such as France, Germany, and the United States mobilized significant fiscal packages (figure 8), with somewhat smaller packages in developing countries, especially where the fiscal space is more constrained and borrowing costs have increased. Most countries are also supporting their economies with monetary stimuli, cutting policy rates where they were still positive (figure 8); and engaging in unconventional monetary policies, such as new rounds of quantitative easing (large scale purchases of government and corporate bonds by central banks). This is especially true for developed economies, including the United States, Japan, and countries in the euro area. Policies similar to quantitative easing have also been discussed (albeit not implemented) in a number of emerging markets, including Brazil. However, conventional monetary policy and policies aimed at safeguarding the stability of the banking system have taken precedence in most emerging markets.

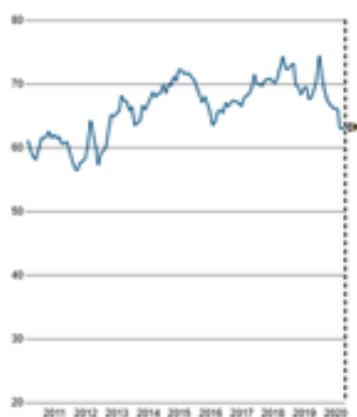
**Figure 7: Demand Side Effects**

**a) Income: US Unemployment**  
(initial claims, thousands, s.a.)



Source: US Dept. of Labor.

**b) Confidence (China): Jobs**  
(index)



Source: Ipsos.

**c) Wealth: Global Stock Markets**  
(percentage change)



Source: Haver.

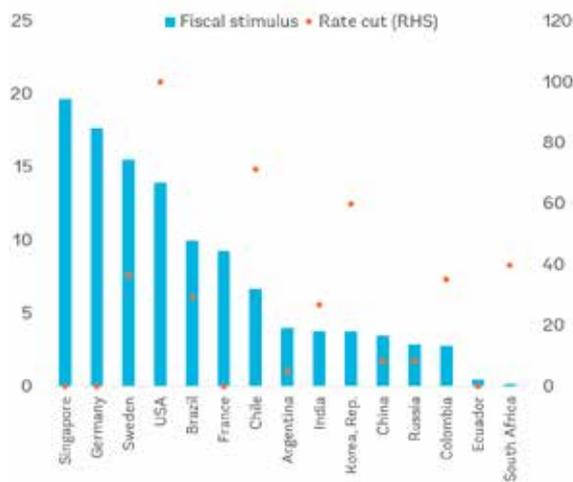
<sup>14</sup>Bureau of Labor Statistics: <https://data.bls.gov/cgi-bin/surveymost>.

**In spite of the significant policy response, the world is expected to enter a deep recession.**

Its depth will depend on the length of required lockdowns; the impact of containment policies and international spillovers; and any additional need for lockdowns due to subsequent waves of COVID-19. Revisions made to the growth outlook in response to the crisis have been dramatic (figure 9), with global GDP expected to contract by 5.4 percent<sup>15</sup>. Growth forecasts for

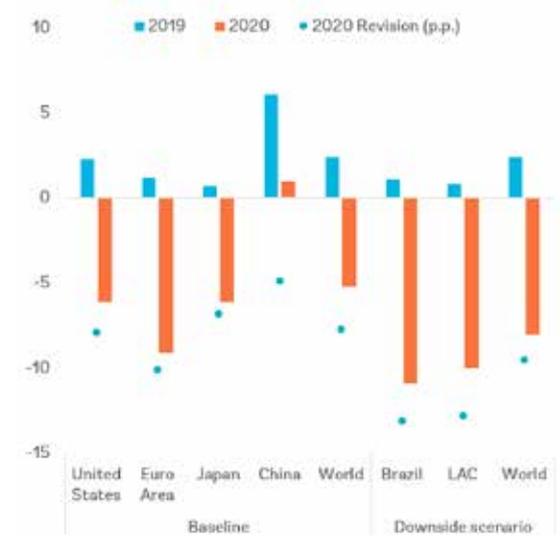
advanced economies have, depending on the scenario, been reduced by about 6 to 8 percentage points. About 90 percent of countries are now expected to see their economies shrink in 2020 in per capita terms. This generates a significant external shock for countries across the world, including Brazil. As discussed in the following sections, Brazil is affected through at least four interrelated channels: FX, investment, trade, and travel. An oil price shock adds to this, thus creating a perfect storm.

**Figure 8: Global Fiscal and Monetary Policy Response (selected)** (fiscal response in percentage of GDP and policy rate cut, latest)

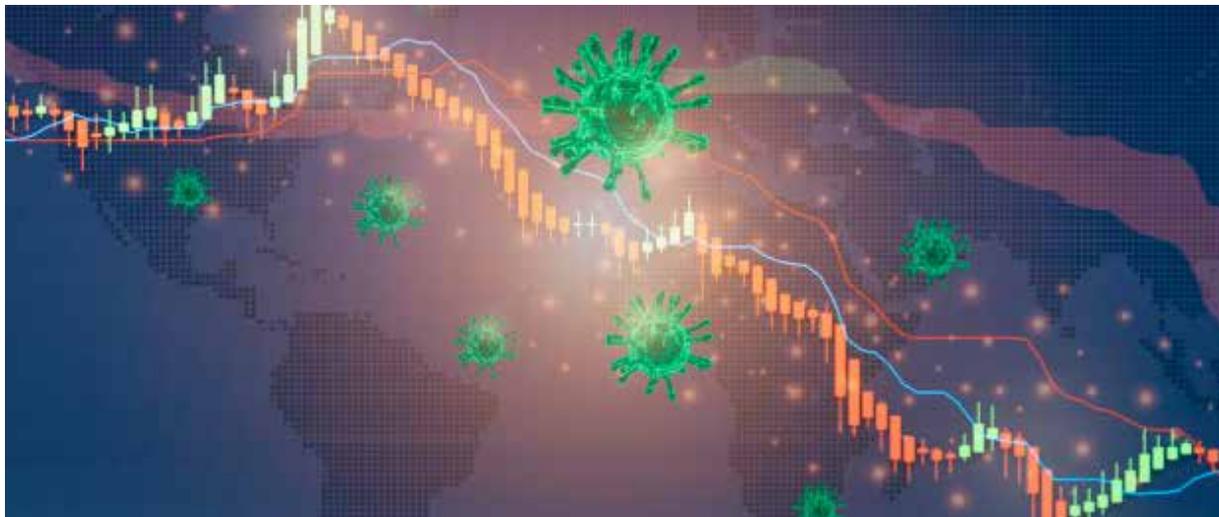


Source: C. Elgin et al. (2020) "Economic Policy Responses to a Pandemic: Developing the COVID-19 Economic Stimulus Index".

**Figure 9: Macroeconomic Scenarios** (annual growth, percentage, and 2020 percentage point revisions)



Source: World Bank.



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<sup>15</sup>Global Economic Prospects released on June 8, 2020: <https://www.worldbank.org/en/publication/global-economic-prospects>.

### 3.1 BRAZIL’S FX EXPOSURE

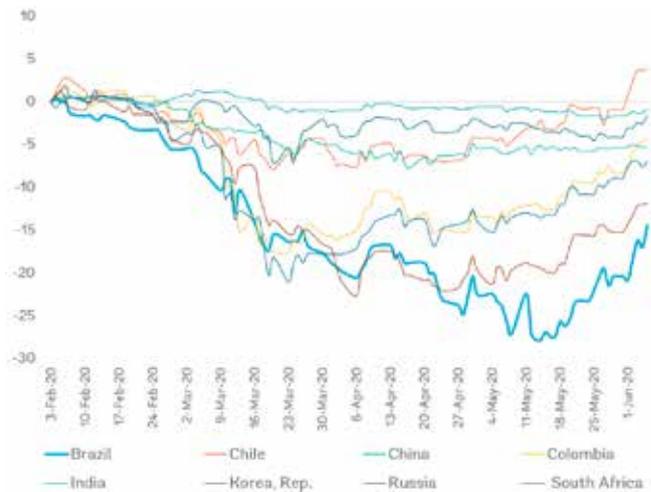
**The Brazilian currency depreciated sharply following the outbreak of the COVID-19 pandemic.**

The Brazilian real began depreciating in late January 2020, driven in part by the outbreak of COVID-19 in China, and the strong trade linkages between the two countries. Depreciation intensified in the subsequent months, and by May 15 the currency had lost 30 percent of its value relative to the US dollar, compared to the end of 2019 (figure 10). However, in the second half of May and in early June, the Brazilian currency strengthened considerably. The real effective depreciation was somewhat more limited (21 percent in April relative to December 2019), as many of Brazil’s trading partners also experienced nominal depreciation versus the dollar.

**Brazil’s external debt is low and much of it is in the corporate sector, with a high degree of natural hedging.**

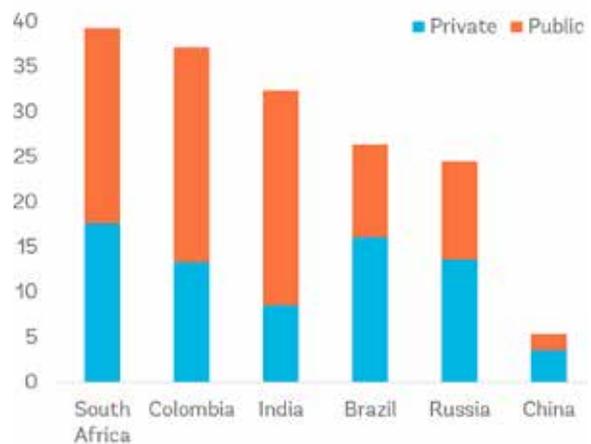
Brazil has a moderate level of foreign currency denominated debt (26.5 percent of GDP), and about two thirds of this is in the corporate sector (figure 11). In many cases, bonds are issued by commodity producers that enjoy some degree of natural hedging through dollar denominated exports. Petrobras, the national oil company, which has also been negatively affected by the decline in oil prices, has improved its balance sheet in recent years, reducing indebtedness by selling non-core assets and pricing domestic fuel in line with world market prices. The central government’s foreign currency denominated debt is only about 2.5 percent of GDP. Domestic public debt held by foreign residents was higher, at 6.1 percent of GDP as of February 2020, but it fell to 5.1 percent by April. As the domestic market for this debt is large and liquid, rollover risks to non-resident holdings are limited.

**Figure 10: Nominal Currency Depreciation**  
(cumulative percentage change, relative to the US dollar)



Source: IMF.

**Figure 11: FX-Denominated Debt**  
(percentage of GDP, public and private sector, 2018)



Source: World Bank.

## 3.2 BRAZIL'S FOREIGN INVESTMENT EXPOSURE

### Despite portfolio outflows, Brazil's foreign investment position was strong in the wake of the COVID-19 crisis.

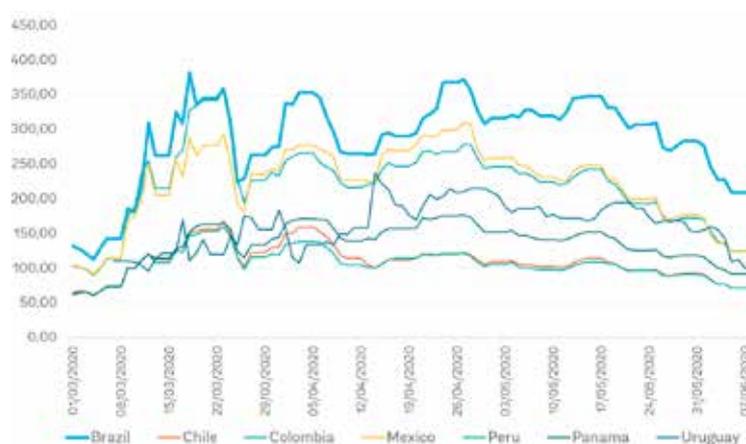
At the end of 2019, Brazil's total foreign liabilities stood at 88 percent of GDP, compared to assets equivalent to 49 percent of GDP. However, half of foreign liabilities (44 percent of GDP) were in the form of foreign direct investment in Brazil (including intra-company loans of 14 percent of GDP).<sup>16</sup> Debt securities issued abroad accounted for only 4.8 percent of GDP, while domestically issued bonds held by foreign residents were slightly higher, at 5.5 percent of GDP. Loans from abroad accounted for another 12.6 percent of GDP. In recent quarters, FDI inflows remained strong (4.5 percent of GDP in the 12 months to March 2020), while portfolio and other investments recorded almost equal outflows (3.4 percent of GDP in the 12 months to March 2020).

### The COVID-19 shock resulted in an acceleration of portfolio outflows.

Portfolio investments in Brazil began to record net outflows in August 2019, totaling US\$22.6 billion by December. Lower interest rates in Brazil, which reduced the interest rate differentials that had long fueled a carry trade, probably contributed to this. Outflows continued in January and February, but were especially strong in March (US\$23 billion), when COVID-19 was recognized as a pandemic. This impacted economies worldwide, and drove down the prices of some commodities. Cumulative outflows during the

crisis (February to May, as tracked by the Institute of International Finance) amount to US\$30 billion. However, in May, the total net FX flows (including FDI and other investments) reversed. As a result, the currency appreciated in the second half of May and early June, in line with other emerging markets. As the global pandemic and economic crisis unfolded, risk perceptions, especially toward emerging markets, increased significantly. By mid-May 2020, Brazil's credit default swaps had risen to 348 basis points, among the highest levels in LAC (figure 12). However, by June 5, with global risks on the retreat, Brazil's CDS spread fell to 209 basis points.

Figure 12: Increased Risk (credit default swaps)



Source: Bloomberg

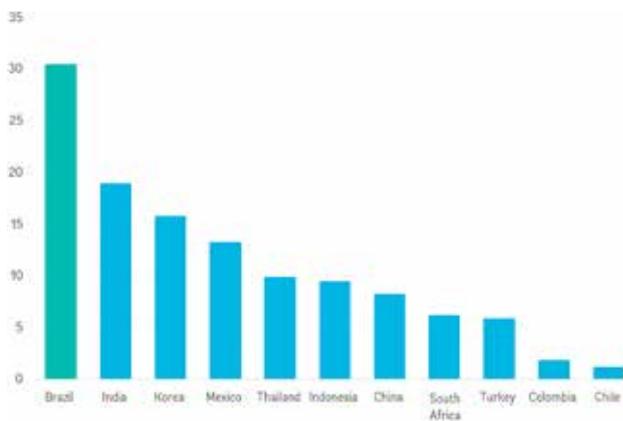
### The response of FDI flows to crisis episodes in Brazil has not been overly strong in the recent past.

FDI flows to Brazil include a significant share of intra-company loans, which tend to be more sensitive to interest rate differentials rather than risk or growth factors. Besides intra-company loans, a high share of FDI inflows

<sup>16</sup>Including official reserves equal to 19 percent of GDP.

in Brazil refers to the acquisition of existing assets, rather than the creation of new fixed assets. The acquisition of existing assets by foreigners in Brazil is sensitive to exchange rate movements. In crisis episodes that involve a strong depreciation of the real, Brazilian assets become cheaper for foreigners, which incentivizes FDI inflows. During the 2015–16 crisis and

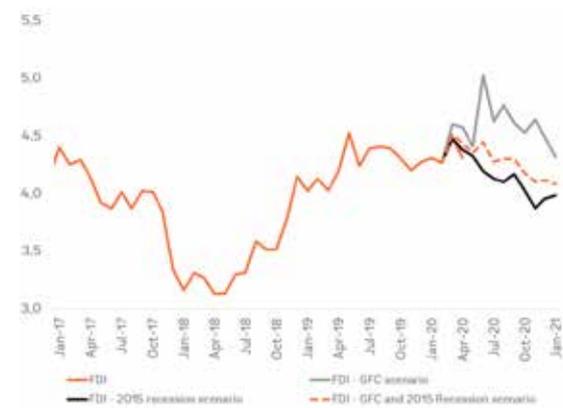
**Figure 13: Net Portfolio Flows** (US\$ billion, cumulative February to May 2020, as available)



Source: IIF

depreciation, FDI only fell modestly. During the 2008–09 Global Financial Crisis, FDI inflows to Brazil actually increased after the initial shock. As the COVID-19 crisis combines elements of an external shock (like the Global Financial Crisis) and a domestic shock (like the 2015–16 recession), FDI inflows to Brazil may remain relatively stable (figure 14).

**Figure 14: FDI Scenarios** (percentage of GDP)



Source: World Bank

### 3.3 BRAZIL’S TRADE EXPOSURE

**The pandemic has created shortages and increased prices for some goods, but has led to a fall in demand and prices for others.**

The early phase of the COVID-19 outbreak was focused in Wuhan and other parts of China. As a result, the supply of Chinese goods in the first quarter of 2020 declined by as much as 50 percent, or an equivalent 12.5 percent of annual supply, assuming no further disruptions in China’s production capacity (a conservative assumption). The production disruption in China could be significant enough to affect other countries in the supply chain in the short term. Early estimates of the supply-side effects in China suggest that they could have a negative effect in Brazil’s 2020 GDP (Kee 2020). On the

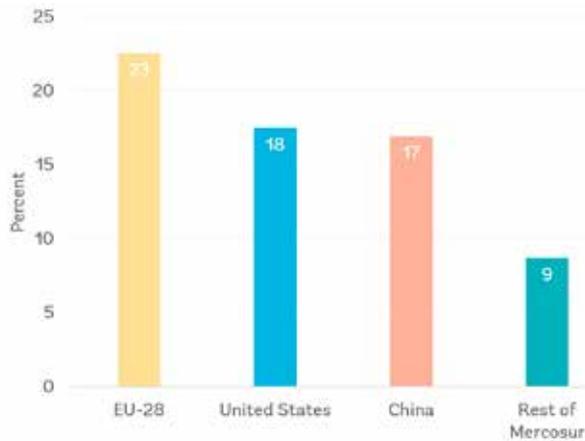
other hand, the strong negative shock to global economic activity, especially transport, has led to a decline in the demand for transport fuels, depressing oil markets.

**The pandemic has affected countries at the center of global trade and production networks.**

The United States and several EU countries (such as Spain, Italy, Germany, and France) have seen some of the highest COVID-19 caseloads. Since they are key hubs of global value chains (GVCs), the economic consequences of the crisis in these countries have worldwide effects through “GVC contagion” (figure 15). For Brazil in particular, the majority of imports are sourced from the EU, China, and the United States.

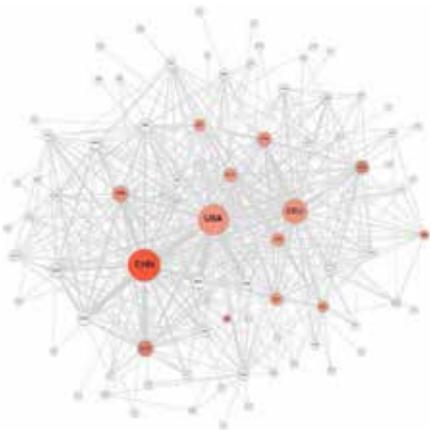
Figure 15: Global Value Chains

(a) Import Shares by Supplier (share of imports)



Source: UN Comtrade

(b) Global trade nodes



Source: World Bank (2020)

Together with these disruptions in supply, containment measures and the uncertainty that lies ahead are negatively affecting aggregate demand across countries, although agricultural trade may be more resilient.

The main destinations for Brazilian exports are heavily concentrated in China, the EU, and the United States. Global demand for and trade of agricultural and food items (a main exportable commodity for Brazil) could be relatively more resilient than that of manufactured goods and certain services. Manufacturing trade may be more affected by GVC disruptions and “postponable”

demand. Trade in services may be affected by disruptions in connectivity, particularly with respect to tourism and workforce movements. Brazil, however, is less exposed to these factors.

**In addition to demand and supply shifts, the transmission of the economic effects of the virus through trade would reflect trade-cost shocks.**

An important driver in this regard relates to the effects of the health crisis on transport and logistics, especially for the air transport sector (figure 16). This is likely to have a disproportionately high impact on sectors dealing with perishable goods and other “just-in-time” supplies. Additionally, sectors characterized by long value chains (such as electronics) may be particularly affected, as trade costs multiply (that is, accumulate along the chain).



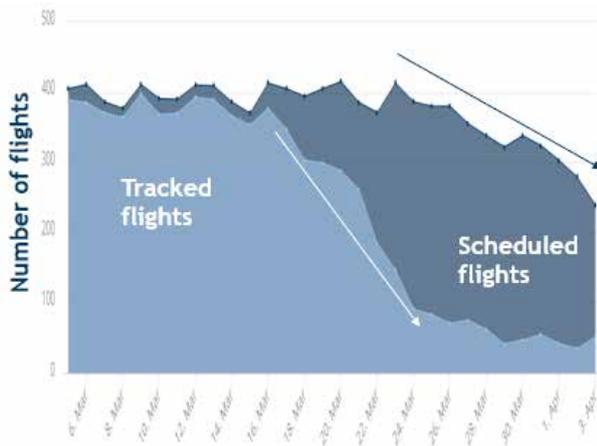
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**Brazil has taken steps to reduce trade costs of essential products with a view to tackling the health crisis.**

This includes several resolutions to eliminate import licenses and offer priority treatment at customs for medical equipment and supplies deemed essential during the current pandemic.<sup>17</sup> In addition, these measures have dropped tariffs for essential medical products. As part of Mercosur, Brazil imposes high tariffs on a wide range of products—resulting

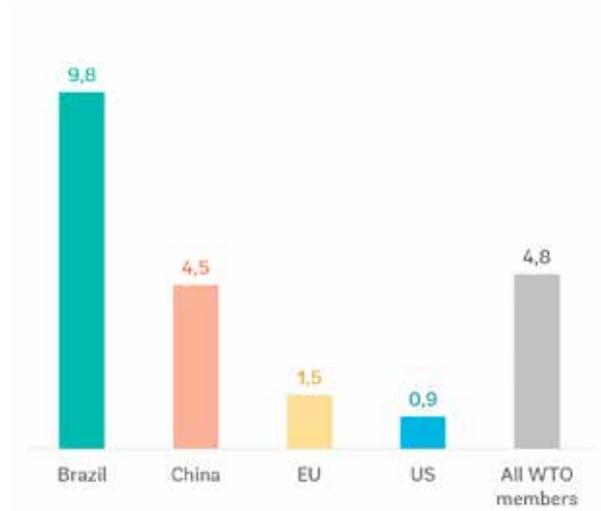
in an average tariff level more than twice as high as that of other economies in the region, such as those in the Pacific Alliance. These high tariffs also apply to medical products,<sup>18</sup> where average tariffs are well above those of all WTO member countries (figure 17). The elimination of import duties for these goods, however, is only a temporary measure (valid until September 30, 2020), which should be liberalized as part of a more general and permanent reform of Mercosur’s common external tariff regime.

**Figure 16: Flights from São Paulo (number)**



Source: Flightradar24

**Figure 17: Most-Favored-Nation Tariff for Medical Products (percentage)**



Source: WTO (2020).

**Easing trade barriers would be important to ensure the supply of essential goods, as well as a less profound global recession and a faster rebound of economic activity.**

This calls for international cooperation and avoiding protectionism both domestically and across the globe. However, many countries

have implemented export restraint measures for medical products that just exacerbate the shortage of such products in global markets. Brazil has approved a similar legislative measure (Law 13,993/2020). Furthermore, looking ahead to the economic recovery, streamlining tariff and non-tariff measures in Brazil (and Mercosur) would be important to sustain value chains and facilitate an economic recovery.

<sup>17</sup>These include measures to maintain a fast flow of supply of essential items and expedited delivery of cargo, as per Normative Instruction SRFB 1,927/2020 and Normative Instruction SRFB 1,929/2020. Certain import licenses have been eliminated, or in certain cases expedited, as per Resolutions RDC 356/2020 and 366/2020, Ministerial Decrees 101/2020 and 114/2020, and Siscomex Import News 11, 12, 13 and 14/2020. Simplified requirements for importing, manufacturing, and purchasing priority medical devices for use in health care services, such as surgical masks, goggles and N-95 respirators are also covered in Resolution RDC 356/2020, Ministerial Decrees 101/2020 and 114/2020, and Siscomex Import News 20/2020.

<sup>18</sup>These include Resolutions 17/2020 (03/17), 22/2020 (03/25), 28/2020 (04/01), and 31/2020 (07/04) for import duty suspension. In addition, other import charges have been eliminated by Decrees 10,285/2020, 10,302/2020, and 10,318/2020. Additionally, the government has temporarily suspended, for reasons of public interest, antidumping duties on blood collection tubes and disposable syringes, and the requirement for non-automatic licensing on the import of these products, according to Ministerial Decree SECEX 18/2020 and Resolution GECEX 23/2020.

**Despite the oil price shock, Brazil’s overall terms of trade have been little affected.**

While Brazil’s oil production has increased in recent years and the country is now a net exporter of crude oil, it is an importer of refined oil and other petroleum-derived products (petrochemicals, and organic chemical products such as fertilizers). Brazil’s aggregate terms of trade have not been significantly affected so far, given its fairly balanced oil exposure and diversification of commodities, with food products playing an important role and performing better in this crisis. As of April 2020, the terms-of-trade index (published by FUNCEX) was up 3.2 percent relative to the 2019 average level. Soy exports (Brazil’s second largest export commodity after iron ore) have benefitted from continued global demand and restocking in China. Other agricultural commodities exported by Brazil, such as maize, coffee and orange juice, have also seen favorable developments.

**Table 2: General Equilibrium Effects on Exports and Imports: FX and Demand Shock** (annual percentage change)

Exports (increase)	imports (fall)
Manufacturing	Transport services
Textiles	Textiles
Beef /meat	Beef / meat
Coffee	Fruits / citrus
Fruits / citrus	...
Petrol	...
Soy	...
...	...
...	...
<b>Oil</b>	<b>Oil</b>

Source: World Bank

**In principle, the real depreciation of the Brazilian currency benefits exporters and hurts importers.**

In a computable general equilibrium model, the changes in relative prices caused by the demand and oil shocks result in a 7.6 percent real depreciation of the Brazilian currency in 2020. This supports tradable sectors, such as manufacturing and agricultural commodities (table 2). As Brazil is a relatively diversified economy, the exchange rate depreciation is not enough to keep Brazilian oil competitive, resulting in a decline in oil exports and an increase in imports. On the import side, as would be expected from reduced travel, trade in transport services is affected, as are some agricultural subsectors such as horticulture and meat (given the global income decline). However, whether these modeled results will translate into real-world outcomes depends on many other factors, including actual exchange-rate movements, expectations over the persistence of effects, changes in consumer demand preferences and confidence, and potential supply disruptions.



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### Box 2: Possible Measures to Address Remaining Vulnerabilities in Trade

Some key activities that could reduce vulnerabilities and increase resilience in the short term are:

- Reinstating the National Committee on Trade Facilitation to facilitate coordination of cross-border regulatory agencies;
- Ensuring that trade operations continue to function, while protecting the health and safety of border agents and society at large;
- Maintaining duty-free treatment for essential products to manage the health crisis;
- Refraining from imposing export controls on medical goods and services or food items;
- Reviewing non-tariff measures on medical products and other imported products, such as import licensing requirements that could be eliminated.

In the medium term, interventions could be aimed at:

- Reducing existing high tariff barriers in Mercosur to facilitate the import of capital and intermediate goods;
- Enforcing trade agreements signed between Mercosur and the EU and EFTA, which would enhance trade liberalization among the parties;
- Cooperating at the international level (for example, at the G20) to maintain an open global economy and avoid protectionist responses to the downturn.



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## 3.4 BRAZIL'S OVERALL EXTERNAL EXPOSURE

**The substantial amount of FX reserves is a cushion to mitigate the risks of capital outflows and sudden stops.** External financing needs are expected to increase to 13.4 percent of GDP in 2020 (figure 18). External debt 1-year redemptions are estimated to increase by 3.7 percentage points of GDP in 2020, mostly due to banking sector and FDI intra-company lending payments (an increase of 1.8 percentage points in each sector between 2019 and 2020).

On the other hand, the current account deficit is expected to narrow by 1.3 percentage points of GDP in 2020, mainly due to larger net exports and lower income outflows. FX reserves stood at US\$346 billion at the end of May 2020 (17 months of imports and 20 percent of GDP), and by far surpass Brazil's external needs for 2020. During the initial months of the COVID-19 crisis, as the country saw an acceleration of capital outflows, reserves declined by US\$20 billion (from end of January to end of April), or about 6 percent of the pre-crisis reserve stock.

Figure 18: External Financing Needs and FX Reserves (percentage of GDP)



Source: Central Bank of Brazil.

Note: Redemptions include short-term debt and long-term debt amortizations falling due within one year. It also includes FDI intra-company lending.



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# 3. SHOCK 2:



**Shock 1**  
Global economy

INVESTMENT

TRADE

TRAVEL



**Shock 3**  
Brazilian economy



**Shock 2**  
Commodity markets

EXPORTS

PRICES



# OIL PRICES

**The speed and depth of the decline in crude oil prices triggered by COVID-19 was more severe than in the 2014–16 oil price drop, or during the 2008 financial crisis.**

A drastic reduction in global oil demand is the key factor in explaining the drop in oil prices. It overshadows the effects of conflicts between large producers, such as Saudi Arabia and Russia, which escalated in March 2020. Figure 19 shows how Brent oil barrel, the international crude oil benchmark, hit a low of US\$21.76 per barrel in mid-April 2020, the lowest level since 2002. Even the almost 10 percent reduction in global supply agreed by OPEC+ countries on April 12, a deeper reduction than during the Global Financial Crisis, was not enough to make up for the 30 percent fall in consumption, as economies shut down to stop the spread of COVID-19. By early June, oil prices had recovered slightly, to about US\$40 a barrel.

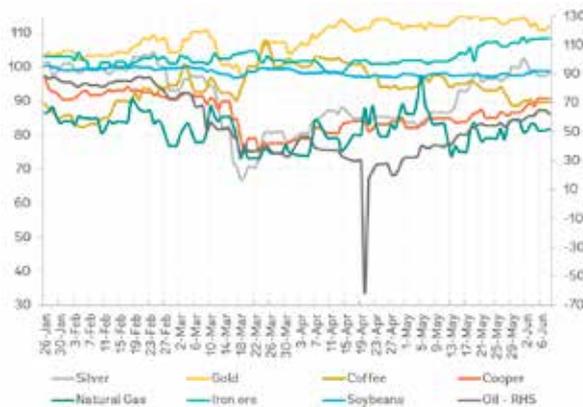


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The decline in oil prices is ultimately the result of a competitive oil market, with supply significantly outstripping demand, at least temporarily. Once oil companies have cut back on marginal fields, the oil price is likely to recover. In the meantime, widespread bankruptcies and restructurings are expected among high-cost-oil producers (including shale oil and marginal fields, which were profitable only when oil prices were relatively high). Such developments are also part of the ongoing competitive process, which is still unfolding, with several oil companies announcing reductions in capital expenditure, refineries cutting back on processing crude oil into fuel, and oil companies starting to shut down marginal wells.<sup>19</sup>

Low oil prices are bad news for net exporters such as Brazil. However, as a net importer of petroleum-derived products, the country also benefits from lower prices. In the case of Brazil, the announcement of production and investment cuts in late March, together with the deferral of dividends by Petrobras, is just a reflection of what is already happening in the global oil market. Oil production cuts in Brazil have reached 0.2 million barrels per day. Petrobras has also announced that it will be deferring payments of up to 30 percent of the salaries of top executives and managers, as well as delaying dividend payments, as a measure to protect its cash position. Yet, as Brazil lacks the refining capacity to process its pre-salt oil, the country imports large amounts of refined fuels (about US\$40 billion per year). Brazil is also a large importer of petrochemicals and organic chemical products (mostly derived from petrol). Therefore, it remains a net importer of a broader category of oil plus products. The computable general equilibrium model used for this analysis suggests that lower global oil prices have, on balance, a positive impact on the Brazilian economy.

**Figure 19: Global Commodity Prices**  
(global index, 26 Jan 2020 = 100)



Source: World Bank.

**Figure 20: Crude Oil Export**  
(percentage of total merchandise exports, by destination)



Source: WITT.

**Because of its strong trade links with China, Brazil is also exposed to disruptions in oil supply and a hefty portion of Brazilian iron ore.**

Chinese refineries are responsible for taking 43 percent of Brazil's exported oil (figure 20). The flow of oil from Latin America, including Brazil, to China has stopped since January 2020. Brazil is the main Latin American supplier of crude oil to China — particularly to the

<sup>19</sup>See: Borenstein, S. 2020. "Coronavirus bailouts should be explicit, not hidden by CO2 tax cuts. And nothing for Oil", March 20, 2020 <https://energypost.eu/coronavirus-bailouts-should-be-explicit-not-hidden-by-co2-tax-cuts-and-nothing-for-oil>.

independent refiners known as teapots, who are most exposed to the effects of reduced demand. While in general there has been a time lag between growth events in China and their impact on Latin American economies, the sudden nature of the current shocks has led to immediate cancellations of transactions based on force majeure clauses. Brazilian iron ore exports are also largely destined for China, and the demand for this commodity fell significantly in the beginning of 2020.

### **Brazilian state governments are seeing a decline in royalties and revenues from oil production.**

Lower oil prices may also delay the development of gas markets, given that gas is a by-product of oil extraction. The mining sector is also one of the expected losers, in light of the drop in mineral prices and demand. As local governments receive significant royalties from resource extraction on or off their coasts, reduced oil production and prices result in significant forgone fiscal revenues for a small group of states such as Rio de Janeiro and Espírito Santo (the broader impacts of the COVID-19 crisis on state government finances are discussed in section 3.6)

### **Due to the predominance of a hydro-based system, only few**

### **power utilities purchasing fossil fuels stand to benefit from the oil price drop, and only after a significant time lag.**

Power producers usually lock in a fixed price (or benchmark plus) or smoothing formulae agreements in their fuel purchase deals. Therefore, lower oil prices are expected to generate a cost relief only after a year or so. The same consideration applies to natural gas imports and purchases, characterized by pricing structures which smoothen volatility.

### **Vulnerabilities remain, but oil and gas companies are more resilient today due to their stronger cash positions.**

The impact on the oil sector depends on the future trajectory of the oil markets and the response of key producers, as well as the responsiveness of Brazil's prioritization of fuel supplies for emergency response (including transport for medical supplies, food chains, and power generation in isolated communities in the Amazon). A potential source of resilience could come from oil and gas companies with healthier cash balances (Petrobras, in particular), which would be in a better position to buffer the impacts of oil price drops and, through purchase agreements and smoothing price formulae, mitigate the pass-through of fossil fuel prices.



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# 3. SHOCK 1-3:



**Shock 1**  
Global economy

INVESTMENT

TRADE

TRAVEL



**Shock 2**  
Commodity markets

EXPORTS

PRICES



**Shock 3**  
Brazilian economy



# IMPACTS FROM EXTERNAL AND DOMESTIC SHOCKS

## 3.5 REAL ECONOMY EXPOSURE AND FEDERAL POLICY RESPONSE

### 3.5.1 REAL ECONOMY

**Brazil was hit by the external demand shock and the oil price shock nearly simultaneously, which undermined its growth.**

The external shock alone would be expected to reduce growth in Brazil from an estimated 2 percent expansion in 2020 to a significant contraction. Notably, the overall impact of the oil price shock is ambiguous. On the one hand, it hurts Brazil as an oil exporter, and also affects its main oil producer (Petrobras), as well as jobs, incomes, and government revenue in oil-dependent states. On the other hand, to the extent that oil prices may be passed on to consumers (which is somewhat hampered by administered prices), it lowers inflation and increases real spending power. Computable general equilibrium estimates suggest that, despite the differentiated impacts across economic actors, the net impact of the oil price shock may in fact have been marginally pos-

itive for Brazil, suggesting that the external demand shock plays a more important role than the oil shock in explaining Brazil's 2020 performance.

**Domestic containment policies, which are critical to slowing the spread of the virus, have added another immediate shock to economic performance. On the supply side, they especially affect activities requiring face-to-face interactions.**

Applying a methodology that measures shock exposure based on the need for face-to-face (f2f) interactions<sup>20</sup> and the lack of flexibility to perform tasks from home,<sup>21</sup> using the labor census from RAIS (*Relação Anual de Informações Sociais*, a social data report), we can classify sectors based on their vulnerability to the lockdown. Sectors that have a higher prevalence of f2f activities and lower preparedness for home-based

<sup>20</sup>Blinder, A. 2009. "How Many US Jobs Might be Offshorable?," *World Economics* 10(2), 41–78.

Oldenski, L. 2012. "Export versus FDI and the communication of complex information," *Journal of International Economics* 87(2), 312–322.

<sup>21</sup>Dingel, Jonathan I., and Brent Neiman. 2020. "How Many Jobs Can be Done at Home?" BFI White Paper. University of Chicago.

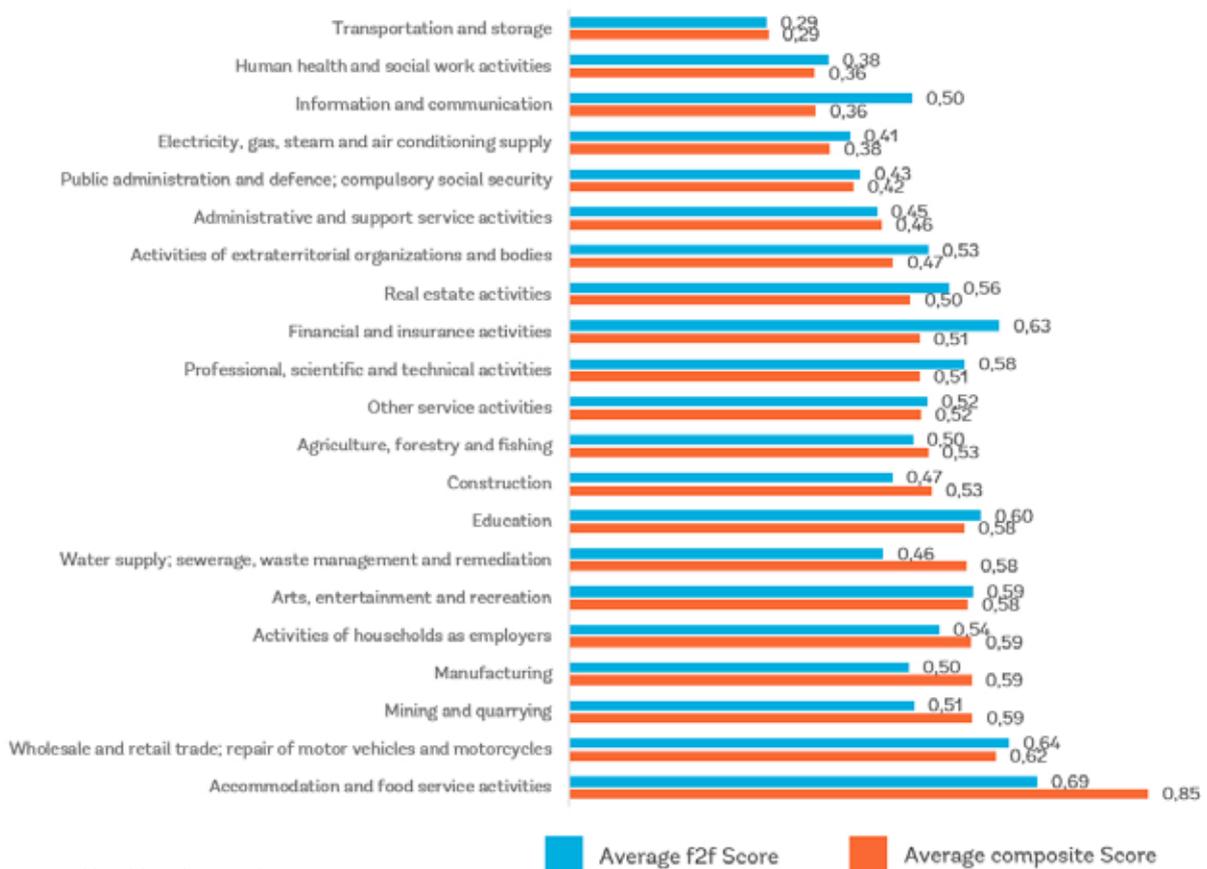
work are more likely to be adversely affected by lockdowns, and by the partial reduction in activities that may persist as long as the risk of infection remains high. Figure 21 shows that these activities are concentrated in the services sectors, including food and beverage services (such as restaurants); advertising and market research; financial services and insurance activities; retail; and travel agencies and tour operators. Essential services, notably health care, are exempt from the lockdown and are thus less affected.<sup>22</sup>

### High frequency data illustrate shocks on both the demand and supply side. One area is mobility.

Figure 22 reflects data collected by Google’s

georeferencing services. It clearly shows a large decline in daily commutes in Brazil—about 50 percent by the end of March 2020 (figure 22a). This compares to the levels observed during Carnival festivities, when large parts of the country regularly grind to a halt. This trend reversed partially by the end of May (-24 percent), and while not reflecting work that continues being done from home, it provides a powerful illustration of the scale of the disruption COVID-19 has caused to Brazilian workers and firms. The impact is even starker when we consider the drop in trips to retail and recreational places (figure 22b), which neared -80 percent in late March (about twice as pronounced as what is observed during Carnival), and remained at -47 percent by the end of May.

Figure 21: Supply Shock (share of f2f activities and limited ability for home-based work)



Source: World Bank based on RAIS data

<sup>22</sup>Official aggregate service data from March 2020 depict a 6.9 percent monthly decline. Services to households (-31.2 percent) and transportation (-9 percent) saw the largest declines.

### Credit card data illustrate the decline in consumer spending.

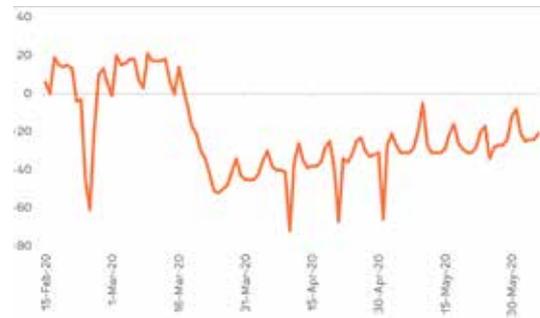
On the supply side, closed shops and other facilities reduce opportunities for spending, while, on the demand side, expected and actual job losses reduce households' spending propensity. According to a survey conducted by Fundação Getulio Vargas in April 2020, consumer confidence has dropped by 28 percentage points. Credit card data provided by Cielo, a Brazilian credit card provider, show that spending has increased significantly in supermarkets and pharmacies (figure 23a), when consumers started stocking up on essentials as a precaution against any potential supply constraints caused by the virus.<sup>23</sup> Such hoarding behavior somewhat abated after a few weeks. At the same time, the credit card data confirm lower spending on parking and at gas stations, somewhat reflecting the mobility data in figure 22. In addition—corroborating the findings from the f2f analysis illustrated in figure 21, and in line with the closing of malls, restaurants, and many other recreational activities—figure 23b shows that spending fell significantly in bars and restaurants (-59 percent), retail (-57 percent), and tourism (-83 percent). The data do show an uptick in food deliveries (by about 70 percent), but beyond that, even e-commerce decreased in Brazil, which probably reflects low consumer confidence. The spending patterns are relatively persistent over time and similar across the country, reflecting the consistency of lockdown measures.

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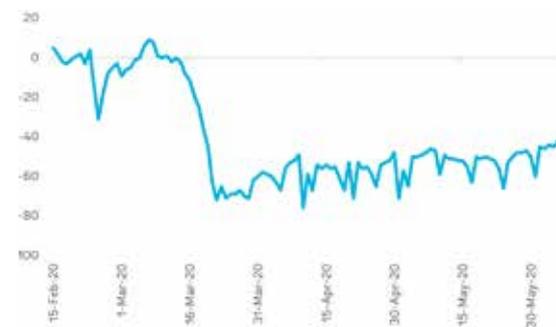


Figure 22: Demand and Supply Shock: Mobility

(a) Daily Commute to Workplaces



(b) Retail and Recreation (trips)



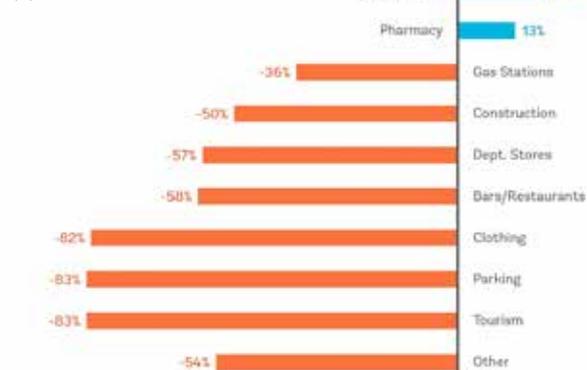
Source: Google Mobility Report

Figure 23: Demand and Supply Shock: Credit Cards (credit card purchases, percentage change, January 5–March 23, 2020)

(a) Daily Variation



(b) Sector Variation



Source: Cielo

<sup>23</sup>Notably, these data are likely to under-represent poor Brazilians who tend not to have credit cards.

## Combined external and domestic shocks have resulted in a recession, pointing toward an estimated 8 percent decline in GDP in 2020.

In the computable general equilibrium model, transmission channels were modeled as an external demand, with the oil shock on the external side. The domestic shock was modeled both as a shock to productivity (representing establishment closures and lower incomes) and a change in consumer spending, broadly reflecting credit card spending in figure 23. As the high-frequency data did not point to significant cross-country variations, a uniform shock has been applied to all states, explaining relatively small changes in estimated impacts across states. As a general rule of thumb, the differences displayed in table 3a indicate that states with less diversified economies and a higher reliance on consumption (as opposed to exports or investment)—that is, generally poorer states, in the North and Northeast—tend to be hit harder. Another noteworthy result is that, as a combination of multiplier effects and low initial levels, the household demand shock has also triggered a significant decline in investment across states. Wages are estimated to have fallen by up to 8 percent in the Northeast, a reflection of the particularly weak economic performance in that region. Consumer prices have increased slightly in most states, implying a double hit to real household incomes, both from wages and from prices, as discussed further in section 3.8.

**Table 3: State-Level Economic Impacts**

**(a) State-Level Impacts: Demand** (percentage change, 2020, general equilibrium effect)

	GDP	Private cons.	Investment	Prices	Wages
Rondonia	-8.4	-13.5	-16.2	0.7	-6.7
Amazonas	-8.3	-15.2	-15.6	0.4	-8.3
Para/Tocantins	-8.0	-13.7	-16.9	0.9	-7.1
Maranhao/Piaui	-8.7	-13.2	-13.4	1.0	-6.7
Pernambuco/Alagoas	-8.4	-14.2	-12.0	0.5	-7.6
Bahia	-7.8	-13.7	-9.4	0.6	-6.7
North East (other)	-8.5	-14.6	-14.5	0.0	-8.1
Minas Gerais	-7.9	-14.2	-12.8	0.1	-7.2
Rio / Esp. Santo	-7.6	-15.4	-12.7	-0.1	-8.4
Sao Paulo	-8.0	-14.1	-10.9	0.4	-7.3
Parana	-8.1	-12.9	-10.6	1.0	-6.1
Santa Catarina, Rio Grande do Sul	-8.2	-13.0	-11.4	0.9	-6.4
Mato Grosso do Sul	-8.2	-12.3	-12.1	1.1	-5.5
Mato Grosso	-8.0	-10.8	-14.5	1.4	-4.3
Center	-8.1	-14.0	-12.9	0.0	-7.2

Source: World Bank

## Services are the hardest hit sector, while export agriculture may expand.

Aligned with the f2f analysis in figure 21 and the high-frequency data, the computable general equilibrium model shows that the services sector was hit the hardest (table 3b). Oil production was severely hurt by the oil price shock. In light of weaker consumer spending, manufacturing was also hit hard, especially textiles. As often in Brazil, export-oriented agriculture acts countercyclically, and key export crops such as soy, citrus and coffee are expected to expand, benefiting from the real depreciation of the exchange rate (soy) and/or increased demand (citrus and coffee).<sup>24</sup> This, however, is one of the reasons explaining pressure on consumer prices as the expansion in export crops increases competition over all agricultural land, be it for domestic or external consumption. This may in fact be further amplified by potential supply-side disruptions in agriculture (not modeled). The impact on meat is ambiguous, reflecting, on the one hand, lower incomes reducing the demand for meat (globally and in Brazil), countered by a greater export-driven competitiveness of Brazilian meat due to currency depreciation. Another important finding from the sectoral analysis is a switching of fuel types: due to the oil prices shock, oil has become cheaper than ethanol, resulting in a decline in ethanol production, which has environmental ramifications further explained in section 3.10.

**(b) State-Level Impacts: Supply** (selected sectors) (percentage change, 2020, general equilibrium effect)

	Meat	Soy	Coffee	Mining / oil	Textiles	Auto-motive	Oth. Manuf.	Electr., water, gas	Com-merce	Transp.	Other service
Rondonia	-7.4	-1.99	-0.6	-10.51	-14.5	-11.8	-7.4	-5.8	-9.2	-8.5	-10.0
Amazonas	-5.8	-1.33	-0.8	-7.99	-15.2	-8.8	-10.0	-5.4	-7.9	-7.0	-8.6
Para/Tocantins	-7.0	-1.64	-2.7	-6.27	-14.2	-12.0	-7.2	-5.8	-7.6	-6.7	-10.0
Maranhao/Piaui	-7.3	-2.43	-2.1	-7.41	-18.0	-12.0	-8.6	-5.9	-8.5	-8.0	-10.1
Pern./Alagoas	-5.8	-2.05	-2.3	-17.84	-11.5	-11.4	-7.2	-5.3	-8.3	-7.7	-9.5
Bahia	-6.1	-1.73	-2.8	-7.67	-14.2	-11.6	-7.1	-5.7	-6.5	-7.4	-10.0
North East (oth)	-4.9	-1.49	-1.3	-6.88	-10.3	-11.0	-7.4	-5.1	-9.4	-6.9	-8.9
Minas Gerais	-5.6	-1.21	-2.1	-6.54	-11.2	-11.0	-7.1	-5.3	-8.8	-6.7	-9.4
Rio / Esp. Santo	-4.6	-1.8	-1.9	-6.82	-13.3	-10.2	-5.7	-5.3	-6.6	-6.2	-8.9
Sao Paulo	-3.5	-1.48	-1.5	-12.86	-11.1	-9.7	-7.6	-5.7	-7.0	-7.0	-9.1
Parana	-4.2	-1.54	-2.1	-13.9	-12.5	-11.7	-8.8	-5.9	-7.3	-7.8	-9.9
St Cat, Rio GdS	-4.0	-2.17	-2.8	-17.7	-13.1	-10.7	-8.6	-5.9	-7.5	-7.2	-9.4
Mato Grosso dS	-7.5	-2.41	-2.9	-7.61	-13.3	-14.2	-10.0	-6.2	-7.9	-8.2	-10.5
Mato Grosso	-8.7	-3	-3.3	-17.16	-15.0	-13.5	-9.8	-6.2	-7.8	-9.9	-11.2
Center	-5.2	-0.97	-1.4	-15.02	-14.7	-12.2	-6.8	-5.6	-8.7	-7.5	-8.6

<sup>24</sup>For 2020, MAPA expects a total agricultural production value of R\$683 billion (up from R\$603 billion, or 13 percent, from 2019).

### 3.5.2 FEDERAL POLICY RESPONSE

To counter the crisis, the government approved a financial support program for 2020 that adds up to 8.6 percent of GDP (table 4). While the federal government had limited fiscal space for a significant sustained fiscal support, it enjoyed a comfortable liquidity position that allowed a rapid financial response. The federal government’s fiscal response package includes reallocations within the 2020 budget to support health expenditures and advances on expected income (such as some pension benefits). It has also created a temporary income support benefit to informal and self-employed workers (monthly transfers of R\$600 for three months, known as *Auxílio Emergencial*); expanded the *Bolsa Família* Program; postponed tax payments; and provided support to subnational governments. The federal government has also pledged to compensate states and municipalities for their tax-revenue losses caused by the economic downturn, and offered federal guarantees and credit lines through federal public banks to fund expenditures related to the health crisis.

**Table 4: Fiscal Stimulus, 2020**  
(local currency amounts and percentage of GDP)

	R\$bn	%GDP
Advance of expected income	58,8	0,9%
New spending	277,5	4,0%
Reallocation	28,3	0,4%
Tax deferment	52,2	0,8%
Tax cut	12,7	0,2%
<b>Total federal</b>	<b>429,5</b>	<b>6,3%</b>
Federal support to sub-nationals	157,2	2,3%
<b>Grand total</b>	<b>586,7</b>	<b>8,6%</b>

Source: World Bank.  
Note: It includes the impacts of the federal support provided to subnational governments through Complementary Law 173/2020.

**Fiscal measures to counter the COVID-19 crisis and the cyclical revenue losses caused by the recession will deepen the general government primary deficit in 2020.** Prior to COVID-19, the projected general government primary deficit was 1.6 percent of GDP. As a result of the economic impact of COVID-19 and the associated fiscal measures adopted, the general government primary deficit is now likely to end 2020 at 9.6 percent of GDP (figure 24). In a downside scenario that considers an even deeper recession, the primary deficit is projected to reach 11 percent of GDP in 2020.



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**Table 5a: Impacts of the Package on the General Government Primary Balance**

(local currency amounts and percentage of GDP)

	R\$ bn	% GDP
<b>New spending</b>	<b>277,5</b>	<b>4,0</b>
R\$ 600 of cash transfer to informal workers for 3 months ("corona vouchers")	152,6	2,2
Covering of reduction of work hours (up to 30% of reduction)	51,6	0,8
SMEs payroll financing for 2 months	34,0	0,5
Health transfers & others	36,3	0,5
Expansion of Bolsa Familia Program to cover an additional one million families	3,0	0,0
<b>Tax cut</b>	<b>12,7</b>	<b>0,2</b>
IOF Reduction	7,1	0,1
Temporarily remove import tariffs and industrialized products tax (IPI) for relevant medical supplies	5,0	0,1
Temporarily remove PIS/COFINS for specific medical supplies	0,6	0,0
<b>Total</b>	<b>290,2</b>	<b>4,2</b>

Source: World Bank

**The fallout from the COVID-19 crisis will require additional fiscal consolidation efforts after 2020, even if the adopted response measures are temporary.**

Fiscal consolidation is anchored by a constitutional federal rule that limits the growth of primary federal spending to inflation rates until 2026. However, the deep 2020 economic recession and the sharp increase in debt (required to finance the fiscal deficit) are expected to affect the pace of fiscal consolidation. Gross public debt stood at 75.8 percent of GDP at the end of 2019. Before the COVID-19 outbreak, it was expected to stabilize at 78 percent of GDP in 2023. Current projections estimate that public debt may increase in 2020 to 93 percent of GDP, and stabilize in 2030 at around 109 percent (figure 26). In a downside scenario, debt stabilization would only be achieved in 2033 at about 129 percent of GDP. Falling interest rates have contributed to reducing interest payments and the required primary balance adjustment to stabilize debt, but will not be enough to make up for the expected lower growth and higher primary deficit. With such high debt levels, Brazil remains vulnerable to

**Table 5b: Projected General Government Primary Deficit in 2020**

Primary Deficit 2020 (R\$ bn)	Pre COVID 19	COVID-19 Measures	Revenue Decreases	Total
<b>Baseline</b>	122,3	290,2	245,8	658,2
<b>Downside</b>	122,3	290,2	339,1	751,5

Primary Deficit 2020 (% of GDP)	Pre COVID 19	COVID-19 Measures	Revenue Decreases	Total
<b>Baseline</b>	1,8%	4,2%	3,6%	9,6%
<b>Downside</b>	1,8%	4,4%	5,1%	11,3%

Source: World Bank

increased risk premium, which would raise the cost of public debt, as well as lower economic growth (figure 27).

**Figure 24: Primary Balance (percentage of GDP)**



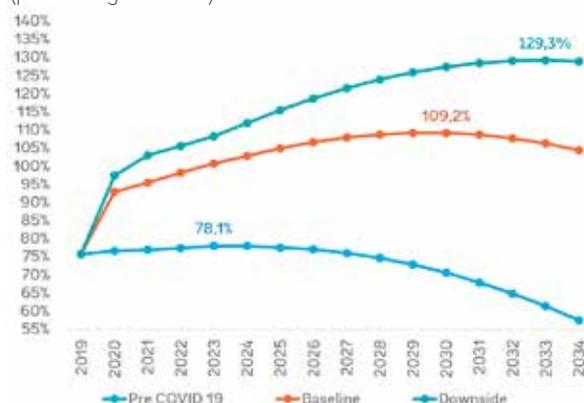
Source: World Bank

**Figure 25: Overall Balance (percentage of GDP)**



Source: World Bank

**Figure 26: General Government Gross Debt**  
(percentage of GDP)

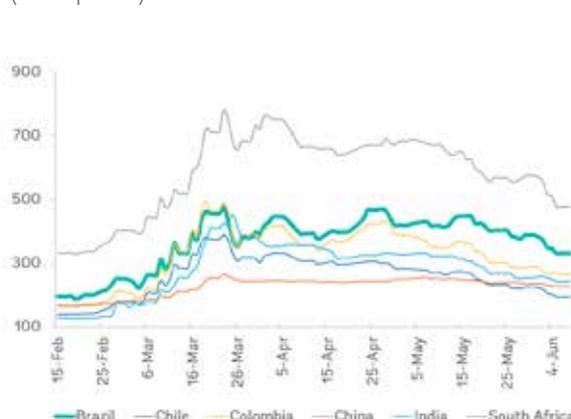


Source: World Bank.

**Brazil also has significant buffers to weather shocks.**

Brazil’s fiscal and debt position is somewhat buffered by its low FX-denominated debt at just 7.8 percent of GDP, and by 93.2 percent of public debt held in the domestic market (as of April 2020). However, much of the debt is short-term. Outstanding debt maturing within one year amounts to 28.5 percent of GDP. The federal government holds a large treasury position, estimated at around 15.3 percent of GDP in April 2020, a factor that reduces rollover risks. Critically, other elements of the macroeconomic environment provide additional sources of resilience, including room for accommodative monetary policy (as inflation has fallen in early 2020); a flexible exchange rate regime; high foreign exchange reserves at US\$344.3 on May 20, 2020 (about 20 percent of GDP); and a strong financial sector, with capitalization rates comfortably higher than regulatory minimums, and adequate liquidity in the banking system prior to the crisis. The measures implemented by the Central Bank aim to ensure the necessary liquidity of the financial system in the face of the COVID-19 crisis.

**Figure 27: EMBIG Spreads**  
(basis points)



Source: Bloomberg.

**The resumption of structural and fiscal reforms in 2021 will be critical to accelerating GDP growth potential and ensuring fiscal consolidation.**

This will rely heavily on the implementation of some of the reforms that have already been submitted to Congress, including three constitutional amendments (known as PECs—*Propostas de Emenda Constitucional*) that the federal government put forward in November 2019. Together, the three PECs (i) grant more resources and financial autonomy to states and municipalities (Federative Pact PEC); (ii) create emergency mechanisms to control public expenditure for federal, state and municipal governments (Emergency PEC); and (iii) extinguish most of the 281 public federal funds, and authorizes the use of those resources to pay off public debts (Public Funds PEC ). The approval of these PECs would improve the government’s control over mandatory expenditures, enhance the liquidity position of subnational governments, and reduce public debt. In addition to fiscal consolidation, as policy responses are developed to support relief and recovery efforts in Brazil, it will also be critical to pay close attention to procurement issues (box 3).

### Box 3: Transparency and Accountability in Crisis Procurement

#### **Brazil has made substantial progress in regularly disclosing information on the budget and its implementation.**

In general, budget transparency is advanced in Brazil. Nonetheless, the substantial resources being allocated to address the COVID-19 pandemic require additional efforts to ensure that funds reach the intended beneficiaries and are not misused or misappropriated. In order to address the urgent needs triggered by the pandemic, the government has had to add flexibility to its procurement processes by waiving bidding requirements for the acquisition of health-related goods, services and inputs. The federal government has been publishing its COVID-19 emergency contracts, and all subnational governments are required to do the same. The Ministry of Health and the Ministry of Economy are providing procurement information to the public through their websites. The Office of the Comptroller General, through its Transparency Portal, discloses data on the budget and the execution of federal government expenditures across Brazil. It also provides a dedicated channel for citizens to send complaints and comments on the provision of services and/or the performance of public officials, specifically regarding the pandemic. In addition, the federal government uses its Plataforma + Brasil to review the flow of funds and apply emergency-response accounting procedures to voluntary transfers. Relevant and reliable information should be available in machine-readable formats, with links to detailed supporting documentation.

#### **Brazil still faces challenges with regard to crosschecking data from different government programs,**

which can lead to increased fraud in many federal programs. In order to detect fraud and corruption, it is important to have in place a prescreening mechanism that can be used by different programs, and that can cross data across states. Fraud and corruption allegations made during the pandemic reflect the lack of proper information on service providers' financial and legal accountability.<sup>25</sup> The Federal Court of Accounts (CGU) has attempted to develop such a system, but has not been able to complete it. The lack of effective national big data systems aggravates local capacity constraints. The same applies to subnational supreme audit institutions: although there is an information exchange system in place, they lack resources to prevent fraud and corruption, and most cases are only identified after the fact. An internal audit function would certainly support these institutions, but it would require additional strengthening to prevent such practices.

#### **The World Bank is supporting Brazil in identifying risks and further strengthening its procurement systems.**

The World Bank is collaborating with the Ministry of Health, as well as the states of Rio de Janeiro and Mato Grosso, and the municipality of São Paulo, and developing an artificial intelligence tool that can help identify over 200 procurement risks. Increased transparency can help to enhance public oversight and eventually build trust in the government, by ensuring that aid and transfers do not favor particular interest groups or individuals. By putting in place additional mechanisms that enhance accountability and provide information to civil society, the governments' response to the pandemic could permanently strengthen transparency in Brazil.

<sup>25</sup>A high-profile example is Federal Police operation "Para Bellum" targeting fraud in the procurement of ventilators (<http://www.pf.gov.br/imprensa/noticias/2020/06-noticias-de-junho-de-2020/policia-federal-deflagra-operacao-para-bellum-e-investiga-compra-de-respiradores-no-para>).

### At the request of the federal government, the World Bank simulated potential wage-bill savings from two different sets of human resource management policies.

The first set of policies considers no new hiring by the federal government except in the health and security sectors (in line with historical rates). It also includes a nominal wage freeze and suspends career progressions for all federal employees. These policies could result in

potential savings in the order of R\$37 billion if implemented for three years, and R\$6.5 billion if implemented for one year only. The second set of policies considers no new hiring except in the health, security, and education sectors. In addition, it implements a nominal wage freeze for all employees but allows for regular career progressions across all categories. This set of policies could potentially result in savings of R\$23 billion if implemented over three years, and approximately R\$3.8 billion if implemented for one year only.

#### Box 4: Possible Measures to Address Remaining Fiscal Vulnerabilities

As the remainder of this assessment will show, the three shocks ripple through various parts of the economy, damaging the balance sheets of firms, households, and state governments, among others. To cushion this shock, the government has rightly stepped in to provide immediate support so as to avoid lasting damage, which is important to support the recovery. As is adequate for a crisis response, these measures are temporary. While it is too soon to provide a complete assessment of fiscal policy vulnerabilities and possible measures, the following principles will need to be considered:

- Ensuring that crisis measures remain temporary, even if political economy pressures may make it difficult to reduce emergency spending. This is critical for fiscal sustainability;
- Reinstating a fiscal policy anchor (such as the current spending rule) to guide the fiscal consolidation path, and credibly communicate it to markets;
- Approving the three constitutional amendments (PECs) on fiscal sustainability (currently in Congress) with a view to providing additional flexibility in budget management;
- Reviving the precrisis administrative reform agenda to reduce recurrent structural expenditure and create fiscal space for critical pro-growth and pro-poor spending; and
- Closely monitoring contingent liabilities and putting in place systems that fairly share the burden between the federal government and other affected entities (such as states and SOEs), thus reducing the scope for moral hazard.

**Inflation has subsided since the outbreak of the COVID-19 crisis, despite an increase in food prices.**

The COVID-19 pandemic has disrupted economic activity, supply chains and consumer behavior. As a result, increases in overall price levels have slowed dramatically, although the price development dispersion has increased. Monthly headline inflation was near zero in March, and negative in April and May, bringing annual inflation to 1.9 percent in May, down from 4.3 percent at the end of 2019. Deflation was driven by durable goods, services, fuel, and transport. Food prices, on the other hand, increased at an annual rate of 6.9 percent as of May, accounting for almost 80 percent of the overall inflation, driven by currency depreciation and a strong global demand for foodstuffs, as food-importing countries aimed to build reserves.

**Monetary policy has responded to the crisis with rate cuts. Yet as the policy rate is already below the neutral rate, its effectiveness to stimulate the economy is limited.**

The low economic activity in recent years exerted downward pressure on prices and wages, and helped to reduce inflation. This allowed the Central Bank to cut the policy rate to a record-low 2.25 percent in June 2020. As a result of the disruption affecting most of the economy in 2020 due to COVID-19, inflation is expected to run below the Central Bank target (3.75 percent ± 1.5 percentage point in 2020), allowing for additional interest rate reductions. As the real interest rate is already below the neutral rate (figure 28), however, additional monetary loosening will become ever less effective. Other monetary responses to COVID-19 include liquidity provisions to the

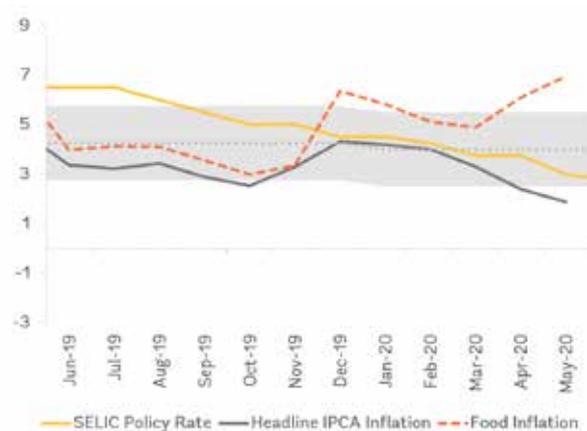
banking sector (reduction in the mandatory reserve requirements for banks, loans backed by financial treasury bills and debentures, etc.), which amounted to R\$1.2 trillion (16 percent of GDP); a 60-day extension on credit maturity for individuals and small- and medium-sized enterprises in commercial banks; and another R\$55 billion in liquidity measures operated by the National Development Bank (BNDES).

**Figure 28a. Policy Rates**  
(basis points, neutral rate, and SELIC, real)



Source: World Bank.

**Figure 28b. Inflation (IPCA, percentage)**



Source: IBGE.

## 3.6 SUBNATIONALS' FISCAL EXPOSURE AND POLICY RESPONSE

**The fiscal challenges faced by state governments as a result of the COVID-19 crisis include revenue shortfalls, rigid expenditures, and lack of access to capital markets.**

<sup>26</sup>Brazilian state governments started 2020 in an already fragile fiscal situation, with revenues slowly recovering from the low levels reached during the 2015–16 economic crisis. In real terms, current revenues in 2019 (R\$831 billion) had not yet restored 2014 levels (R\$868 billion).<sup>27</sup> All the while, recurrent expenditures were quickly rising as a result of pressing wage bills and the ever increasing cost of public pensions, as retirements accelerated. As a result, only 10 out of the 27 states were considered creditworthy enough for the federal gov-

ernment to provide them with guarantees for external borrowing, which limited their financing options. Even before COVID-19, 11 states were already expected to have a financing gap in 2020 in the aggregate amount of R\$17.5 billion. Given the strong relevance that consumption taxes have for state governments, the less diversified states (with higher dependence on consumption in their GDP) are the hardest hit by COVID-19's economic impacts, including many poorer states in the North and Northeast of Brazil. As a result, states are projected to lose R\$113.7 billion in revenues (equivalent to 13.5 percent of 2019 total revenues).<sup>28</sup> This would result in almost all state governments (24 out of 27) having to manage financing gaps in the aggregate amount of R\$101.1 billion.

### Box 5: Intergovernmental Fiscal Transfers in Brazil and their Use as a Crisis Response

**Intergovernmental fiscal relations in Brazil include two types of fiscal transfers: mandatory and non-mandatory.** Mandatory transfers are split between constitutional and legal transfers, while non-mandatory transfers can be voluntary (discretionary targeted grants, subject to intergovernmental agreements) or specific (for essential government programs, or fiscal support to subnational governments due to extraordinary fiscal situations). The main mandatory transfers from the federal to subnational governments are the state and municipal participation funds (FPE and FPM, respectively). These are direct transfers from the federal government that allocate specific shares to each of the subnational governments. The full amounts depend on federal government tax revenues, with specific percentages of most federal taxes earmarked to these funds. Many states, mainly the poorest ones, rely heavily on FPE resources to meet their obligations to provide public services. In the most dependent states, FPE transfers account for more than 20 percent of their GDP. Many municipalities, especially small and poorer ones, also rely heavily on their federal transfers (FPM), as well as on state transfers.

<sup>26</sup>No estimates are currently available for municipalities.

<sup>27</sup>Annual data from the National Treasury (DCA—Annual Accounts Demonstrative). For 2019, we have used official reports from the states (RREO).

<sup>28</sup>R\$51.8 billion (6.2 percent of 2019 total revenues) of the total amount of revenue losses is due to the estimated negative tax revenue shock of the COVID-19 pandemic, and the remaining R\$61.9 billion result from a worsened macro scenario, as compared to a no-COVID-19 scenario.

Table B5.1. Federal Fiscal Transfers to Subnational Governments

Category	Legal aspects	Key elements	Transfer Name	Legal Reference
Mandatory	Constitutional transfer	Constitutionally mandated and automatically transferred	FPE, FPM,	CF: art. 159, I a
			IPI-Exportação,	CF: art. 159, II
			FUNDEB and FUNDEB top up	CF: ADCT, art. 60
			IOF-Ouro	CF: art. 153, V
			Education Contribution	CF: art. 212
			Kandir Law	CF: ADCT, art. 60
			CIDE	CF: art. 159, III
			Royalties	CF: Art. 20
	Legal transfers	Legally mandated and automatically transferred	FEX	If it implemented, it is be laid out in the Annual Budget Law
			PDDE	Law 11.947/2009
			PNAE	Law 10.880/2004
			PNATE	Law 11.947/2009
			SUS – activities listed in the annex of the Annual Budget Law	Law 8.080/1990, Law 8.142/1990, LC 141/2012
Non-mandatory	Voluntary	Discretionary grants (convênios or acordos) for a variety of purposes	Termo de convênio, contrato de repasse	LC 101/2000
	Specific	Essential government programs or financial support for subnationals (AFE/AFM)	SUS	Law 8.080/1990, Law 8.142/1990, LC 141/2012

Under the legal framework of intergovernmental fiscal transfers in Brazil, federal fiscal support to subnational governments due to COVID-19 is neither automatic nor mandatory. All fiscal support mobilized for the crisis response falls into the non-mandatory classification—either as specific transfers under the essential government program to combat the COVID-19 pandemic, or as fiscal support to states and municipalities (AFE/AFM) to help them with the extraordinary financing situation they are facing due to the pandemic. Fiscal support to the states was first enacted through executive orders (known in Brazil as Provisional Measures). In addition to topping up FPE and FPM funds, fiscal transfers were made to support health and social assistance services. Later, the support package was confirmed by law (Complementary Law 173, recently approved), which provides transfers to compensate subnational governments for their own tax revenue losses.

As of June 2, 2020, the federal government had provided the states with a first support package of fiscal transfers worth R\$37 billion (0.5 percent of GDP), followed by a second package of R\$60.2 billion (0.9 percent of GDP), and an additional R\$60.1 billion (0.9 percent of GDP) in debt suspensions or debt renegotiations. The first approved fiscal measure includes keeping federal transfers (FPE, to states, or FPM, to municipalities) at 2019 levels, aiming to minimize the negative cyclical revenue shocks, in addition to transfers to support health and social assistance actions. The second package includes R\$60 billion in transfers to partially compensate subnational governments for their tax revenue losses (mainly VAT/sales taxes, ICMS, and ISS). Of this amount, R\$37 billion (0.5 percent of GDP) benefit the states; R\$7 billion (0.1 percent of GDP) would need to be spent on health and social assistance services; and the remaining would be for them to decide how to use. In addition, the new package suspends the payment of debts to the federal government, and allows subnational governments to renegotiate debt contracts with banks. With the aim of encouraging fiscal adjustment at subnational level, the federal government is proposing a nominal wage freeze until 2021.

Table B5.2: Fiscal Subnational Stimulus, 2020

Measures to support SNGs	Nature	R\$, billions	US\$, billions	% GDP
Health transfers	New Spending	19.0	3.3	0.3%
FPE and FPM	New Spending	16.0	2.7	0.2%
Social assistance spending	New Spending	2.0	0.3	0.0%
Suspension of debt payment the Federal Government	Revenue deferment	49.3	8.5	0.7%
Renegotiation of SNGs debts with creditors	Debt Renegotiation	10.7	1.8	0.2%
Transfers for the SNGs (PLP 39 - R\$10 bn for health and social assistance expenditures)	New Spending	60.2	10.3	0.9%
<b>Total</b>	<b>All</b>	<b>157.2</b>	<b>27.0</b>	<b>2.3%</b>

Source: World Bank.

<sup>29</sup>By the end of 2021, the government estimates potential savings of R\$98.9 billion (1.4 percent of GDP), of which R\$52.4 billion (0.7 percent of GDP) are at state level. The federal government projects zero savings for the following states: Paraná, Rio Grande do Norte, and Roraima. World Bank modeling based on micro data from seven different states suggests potential savings of another R\$3.8 billion (0.1 percent of GDP).

### Box 6: State Governments' Fiscal Exposure Index

The most fiscally exposed states are Minas Gerais (MG), Rio Grande do Sul (RS), Pernambuco (PE), Piauí (PI), Sergipe (SE), and Maranhão (MA). Based on the computable general equilibrium (CGE) analysis, these states are facing the most critical fiscal situation: Minas Gerais and Pernambuco are projected to suffer the largest revenue shocks, while Maranhão, Piauí and Sergipe are expected to experience the deepest recession. The weighted index is composed of (i) the National Treasury's assessment of their payment capacity (CAPAG); (ii) their dependence on own revenues and their personnel spending; and (iii) projections for the financing gap resulting from the recession. All states at the top fiscal exposure ranking are rated CAPAG C or D (not eligible for new

guarantees). The federal government has agreed to keep revenue transfers (known as FPE) at 2019 levels. Thus, those states that are more dependent on their own tax revenues tend to be more affected. On the other hand, the National Congress has approved transfers to compensate states for their own revenue losses, but this will not be sufficient for all states. Minas Gerais, Rio Grande do Sul, and Pernambuco are expected to experience net tax revenue losses, even after receiving those federal transfers. Personnel spending is the highest type of expenditure for all states, and it is a rigid one, and difficult to reduce. According to World Bank calculations, only three states would be able to close the financing gap in 2020 without additional support from the federal government.

Figure B6.1: Fiscal Exposure Index Map



Source: World Bank.

Table B6.1: Fiscal Exposure—Real Economy and Revenue Shocks; Rigid Expenditures and Crisis Spending Needs

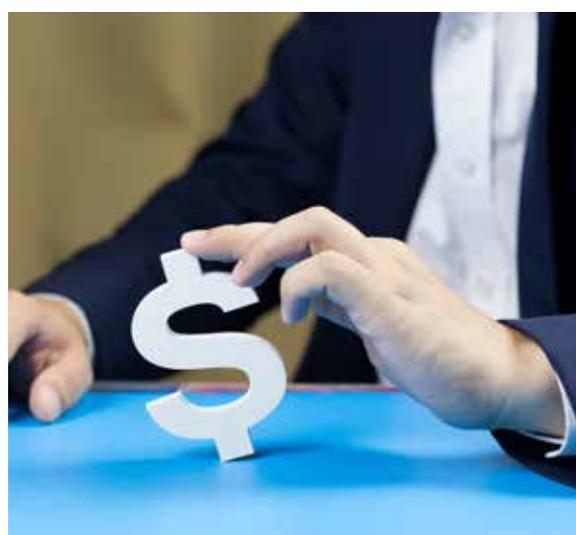
State	CGE modeling revenue impact (% of primary revenue)	CGE modeling GDP projections	CAPAG	Own Revenues (% of Primary Revenues)	Personnel Spending (% RCL)	Financing Gap (% primary revenue)	Financing Gap (% National GDP)	Overall Exposure
Acre	-3,3%	-8,5%	B	27,2%	63,1%	9,9%	0,01%	3,5
Alagoas	-4,4%	-8,4%	B	40,1%	52,9%	6,2%	0,01%	1,5
Amapá	-2,9%	-8,5%	C	23,9%	52,3%	-15,5%	-0,01%	0,0
Amazonas	-4,9%	-8,3%	B	54,6%	59,2%	7,8%	0,02%	3,5
Bahia	-4,8%	-7,8%	C	58,8%	53,7%	15,9%	0,09%	4,5
Ceará	-6,9%	-8,5%	B	57,0%	51,6%	10,7%	0,04%	2,5
Distrito Federal	-8,5%	-8,1%	C	74,4%	46,5%	13,1%	0,04%	5,5
Espírito Santo	-5,3%	-7,6%	A	55,2%	47,6%	-15,0%	-0,03%	1,0
Goias	-6,4%	-8,1%	C	56,4%	59,6%	14,2%	0,05%	5,5
Maranhão	-4,5%	-8,7%	C	40,9%	55,4%	18,9%	0,04%	6,0
Mato Grosso	-4,7%	-8,0%	C	49,7%	62,2%	15,2%	0,04%	5,5
Mato Grosso do Sul	-5,3%	-8,2%	C	55,0%	57,9%	13,3%	0,02%	4,5
Minas Gerais	-7,9%	-7,9%	D	71,5%	67,8%	23,0%	0,25%	10,0
Pará	-5,5%	-8,0%	B	54,3%	52,4%	4,3%	0,01%	2,5
Paraíba	-5,3%	-8,5%	B	43,7%	58,9%	3,3%	0,00%	2,5
Paraná	-6,1%	-8,1%	B	69,3%	53,9%	4,2%	0,03%	3,5
Pernambuco	-6,4%	-8,4%	C	58,6%	56,6%	18,7%	0,08%	7,0
Piauí	-4,2%	-8,7%	C	38,2%	57,5%	48,1%	0,06%	6,0
Rio de Janeiro	-5,6%	-7,6%	D	58,6%	48,9%	12,9%	0,10%	5,5
Rio Grande do Norte	-5,4%	-8,5%	C	44,9%	64,7%	17,5%	0,02%	4,5
Rio Grande do Sul	-6,1%	-8,2%	D	73,5%	54,0%	20,0%	0,14%	8,0
Rondônia	-4,6%	-8,4%	B	40,6%	49,1%	0,3%	0,00%	1,5
Roraima	-3,6%	-8,5%	C	29,5%	55,9%	-23,7%	-0,01%	2,0
Santa Catarina	-5,9%	-8,2%	C	70,9%	55,6%	12,3%	0,04%	5,5
São Paulo	-7,3%	-8,0%	B	83,6%	53,1%	11,6%	0,34%	3,5
Sergipe	-4,1%	-8,5%	C	34,3%	57,0%	25,1%	0,03%	6,0
Tocantins	-3,4%	-8,0%	C	33,5%	53,0%	17,6%	0,02%	2,5

Source: World Bank.

### While large federal support may substantially mitigate subnational fiscal risk in 2020, heightened fiscal challenges remain for 2021 and beyond.

Assuming that this significant federal support program to assist subnational governments is fully implemented, 13 states would still have a total financing gap of R\$21.4 billion (0.3 percent of national GDP). In a downside scenario, 16 states would face financing gaps of R\$43.6 billion (0.6 percent of national GDP). In the absence of federal support in 2021, 20 states would face financing gaps that year in the amount of R\$62.5 billion (0.9 percent of GDP). In a more negative scenario, this could translate into 22 states and R\$86.2 billion (1.3 percent of GDP). This calls for the resumption of state pension reforms, control of wage bills and other structural re-

forms. However, these may not be enough to close the financing gaps in the short term. Thus, a second round of support from the federal government may be required under a fiscal sustainability program.



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Table 6: Subnational Financing Needs, 2020 (before COVID-19, and with and without fiscal support)

State	Financing Needs Before COVID-19			Financing Needs with No Fiscal Support			Financing Needs with Fiscal Support		
	R\$, billions	US\$, billions	% of GDP	R\$, billions	US\$, billions	% of GDP	R\$, billions	US\$, billions	% of GDP
AC	(0.1)	(0.0)	0.00%	0.5	0.1	0.01%	(0.6)	(0.1)	-0.01%
AL	(0.5)	(0.1)	-0.01%	0.5	0.1	0.01%	(1.0)	(0.2)	-0.01%
AM	(0.9)	(0.2)	-0.01%	1.2	0.2	0.02%	(0.9)	(0.2)	-0.01%
AP	(1.4)	(0.2)	-0.02%	(0.7)	(0.1)	-0.01%	(1.6)	(0.3)	-0.02%
BA	1.4	0.2	0.02%	6.4	1.1	0.09%	1.6	0.3	0.02%
CE	(1.0)	(0.2)	-0.01%	2.4	0.4	0.04%	(1.0)	(0.2)	-0.01%
DF	(0.7)	(0.1)	-0.01%	2.6	0.4	0.04%	1.1	0.2	0.02%
ES	(4.1)	(0.7)	-0.05%	(2.1)	(0.4)	-0.03%	(4.2)	(0.7)	-0.06%
GO	(0.5)	(0.1)	-0.01%	3.5	0.6	0.05%	0.8	0.1	0.01%
MA	0.8	0.1	0.01%	2.5	0.4	0.04%	0.4	0.1	0.01%
MG	5.7	1.0	0.07%	16.8	2.9	0.25%	6.3	1.1	0.09%
MS	0.0	0.0	0.00%	1.5	0.3	0.02%	(0.0)	(0.0)	0.00%
MT	0.1	0.0	0.00%	2.4	0.4	0.04%	(0.0)	(0.0)	0.00%
PA	(2.2)	(0.4)	-0.03%	0.9	0.2	0.01%	(1.8)	(0.3)	-0.03%
PB	(0.9)	(0.2)	-0.01%	0.3	0.1	0.00%	(1.2)	(0.2)	-0.02%
PE	1.2	0.2	0.02%	5.2	0.9	0.08%	1.4	0.2	0.02%
PI	3.1	0.5	0.04%	4.2	0.7	0.06%	2.7	0.5	0.04%
PR	(4.2)	(0.7)	-0.05%	1.9	0.3	0.03%	(1.9)	(0.3)	-0.03%
RJ	(1.5)	(0.3)	-0.02%	7.0	1.2	0.10%	3.0	0.5	0.04%
RN	0.4	0.1	0.00%	1.7	0.3	0.02%	0.4	0.1	0.00%
RO	(1.0)	(0.2)	-0.01%	0.0	0.0	0.00%	(1.1)	(0.2)	-0.02%
RR	(1.7)	(0.3)	-0.02%	(1.0)	(0.2)	-0.01%	(2.0)	(0.3)	-0.03%
RS	3.5	0.6	0.05%	9.9	1.7	0.14%	2.5	0.4	0.04%
SC	(0.1)	(0.0)	0.00%	2.9	0.5	0.04%	0.2	0.0	0.00%
SE	0.9	0.1	0.01%	1.8	0.3	0.03%	0.7	0.1	0.01%
SP	(4.6)	(0.8)	-0.06%	23.6	4.1	0.34%	(0.8)	(0.1)	-0.01%
TO	0.4	0.1	0.00%	1.3	0.2	0.02%	0.3	0.0	0.00%
<b>Total</b>	<b>17.5</b>	<b>3.0</b>	<b>0.23%</b>	<b>101.1</b>	<b>17.4</b>	<b>1.47%</b>	<b>21.4</b>	<b>3.7</b>	<b>0.31%</b>
<b>Total, net</b>	<b>(8.0)</b>	<b>(1.4)</b>	<b>-0.10%</b>	<b>97.3</b>	<b>16.7</b>	<b>1.42%</b>	<b>3.3</b>	<b>0.6</b>	<b>0.05%</b>

Source: World Bank.

Table 7: Subnational Financing Needs, 2021

State	Financing Needs		
	R\$, billions	US\$, billions	% of GDP
AC	0.2	0.0	0.00%
AL	0.2	0.0	0.00%
AM	0.4	0.1	-0.01%
AP	(1.9)	(0.2)	-0.01%
BA	4.2	0.7	0.06%
CE	1.0	0.2	0.02%
DF	1.2	0.2	0.02%
ES	(2.8)	(0.5)	-0.04%
GO	2.3	0.4	0.03%
MA	2.0	0.3	0.03%
MG	12.9	2.2	0.19%
MS	1.0	0.2	0.01%
MT	1.8	0.3	0.03%
PA	(0.2)	(0.0)	0.00%
PB	(0.0)	(0.0)	0.00%
PE	3.9	0.7	0.06%
PI	4.1	0.7	0.06%
PR	(1.0)	(0.2)	-0.01%
RJ	4.9	0.8	0.07%
RN	1.4	0.2	0.02%
RO	(0.3)	(0.1)	0.00%
RR	(1.3)	(0.2)	-0.02%
RS	7.0	1.2	0.10%
SC	1.5	0.2	0.02%
SE	1.7	0.3	0.02%
SP	9.7	1.7	0.14%
TO	1.1	0.2	0.02%
<b>Total</b>	<b>62.5</b>	<b>10.7</b>	<b>0.91%</b>
<b>Total, net</b>	<b>56.0</b>	<b>9.6</b>	<b>0.82%</b>

Source: World Bank.



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### Box 7: Main Assumptions for the Financing Needs Projections

**Tax revenues:** the World Bank's CGE model estimates GDP projections and negative tax revenue shocks due to the COVID-19 pandemic for each state in 2020. We have used the negative tax revenue shock to project tax revenues. The first column in table 6 presents the negative impact on tax revenues in 2020 for each state (as a percentage of 2019 primary revenues).

**Transfer revenues:** the negative impact on federal transfers (all of it, not only FPE) is calculated using the variation of estimated federal government transfers using the World Bank federal fiscal model (World Bank 2017). After applying it, the federal government would have to compensate states with R\$10.6 billion. The federal government estimates that the cost of keeping 2019 levels for FPE and FPM transfers would be R\$16 billion. We assume that it would be split equally between states and municipalities, which means that there would be a shortfall of R\$2.6 billion in transfers to states relative to 2019 FPE levels.

**Personnel spending:** baseline estimates are based on personnel microdata shared by some state governments. For the wage freezing simulation, we have used government savings estimates. The federal government projects no savings for the following states: Paraná, Rio Grande do Norte, and Roraima. We have used World Bank modeling based on micro data from seven different states.

**Fiscal support package for states (LC 173/2020):** with regard to the impact of this fiscal package for the states, we have included transfers and debt payment suspensions/re-negotiations estimated by the federal government. We have only disregarded the total impact of the debt suspension/re-negotiation for the following states: Amapá, Goiás, Minas Gerais and Rio Grande do Norte because these states had already suspended their debt payments with public banks (Caixa Econômica Federal and BNDES) before the COVID-19 pandemic. For Rio de Janeiro, we have also made an adjustment because the state had already suspended its debt payments after entering a fiscal recovery regime.

**Financing needs:** we have 3 different scenarios for state governments in 2020: (i) no COVID-19 pandemic; (ii) COVID-19 pandemic, but no fiscal support from the federal government; and (iii) COVID-19 pandemic with the approved federal government support (as of early June, including LC 173/2020). In order to assess which states are more fiscally exposed to the impacts of the COVID-19 crisis, we have considered the estimated financing gaps under the second scenario (COVID-19 pandemic, but no fiscal support from the federal government) in our state fiscal exposure index.

### Box 8: Possible Measures to Address Remaining Subnational Vulnerabilities

**In the short term, it will be important to control rigid expenditures, and at least partially compensate revenue losses to avoid arrears.**

- Approving a federal support package for subnational governments that (i) at least partially compensates their revenue losses; and (ii) introduces flexibility and limits mandatory expenditures (that is, through wage freezes) in public budgets.

**Structural fiscal reforms will be important for subnational governments' medium-term fiscal recovery.**

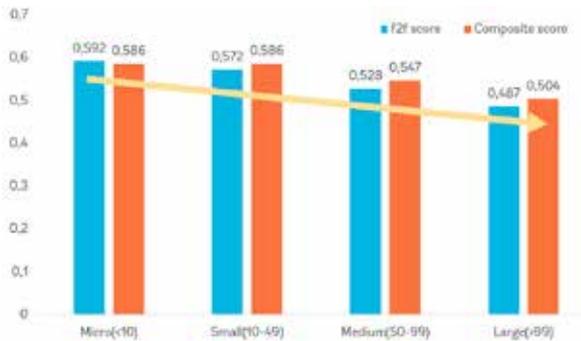
- Adopting a structured fiscal consolidation program that secures structural reforms against financial support;
- Implementing pension reforms in states that have not yet done so;
- Introducing tax and administrative reforms (as being discussed in Congress);
- Adopting the Federative Pact PEC, which grants more resources and financial autonomy to states and municipalities;
- Adopting the Emergency PEC, which creates emergency mechanisms to control public expenditures for the federal, state, and municipal governments.
- Strengthening the fiscal responsibility framework by (i) creating an independent fiscal council that monitors fiscal performance and compliance with fiscal rules; (ii) strengthening fiscal rules; (iii) setting up a fiscal management council as envisaged in the Fiscal Responsibility Law, which would promote the adoption of common accounting standards across all levels of governments; and (iv) strengthening public financial management systems at the subnational levels to ensure further transparency.

## 3.7 FIRM EXPOSURE AND POLICY RESPONSE

**Exposure to the COVID-19 shock is likely to be higher among smaller firms.** Figure 29 shows the average scores by firm size using employment as the classification variable: micro, below 10 workers; small, between 10 and 49 workers; medium, between 50 and 99; and large, above 100 employees. The results show higher exposure, on average, for micro and small firms for

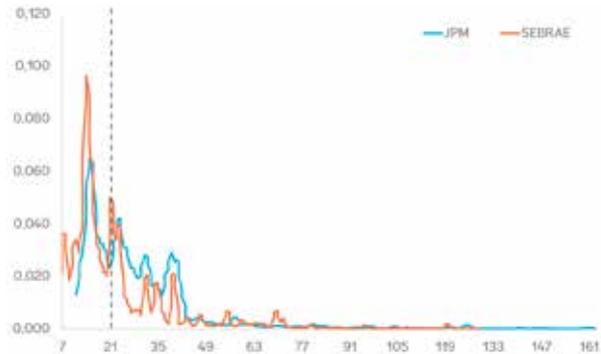
both indexes, suggesting a larger prevalence of smaller firms in vulnerable sectors (with high dependence on fdf interactions). Differences between micro and small firms are not statistically significant, but differences between them and medium and large companies are, and are also robust independently of the data weighting method. Exposure to the shock decreases with firm size.

**Figure 29: Exposure by Firm Size**  
(F2f scores)



Source: World Bank.

**Figure 30: Cash Buffers for SMEs in São Paulo**  
(number of days)



Source: World Bank.

An important problem related to SMEs being the most exposed to the shock is the fact that smaller firms tend to have lower cash buffers than larger firms. This is particularly relevant in this type of shock, since some firms face full closure of activities and will not generate any revenue for weeks. This will initially trigger liquidity problems, but, due to their low cash reserves, will very soon lead to insolvency. Using SME data from the United States and a recent survey from SEBRAE São Paulo (figure 30)<sup>30</sup> to explore the severity of liquidity squeezes, we find that the most affected states are in the North and Northeast—Rondônia, Roraima, Amapá, Tocantins and Piauí. These states have a higher concentration (in relative terms) of firms with high exposure and low cash buffers (less than 21 days). If severe restrictions on economic activity persist over time, the loss of employment in these states could be very large in the case of a conservative threshold for exposure—between 20 and 40 percent in some cases; and between 7 and 13 percent in a more stringent exposure scenario. Overall, for the whole country, between 39 and 56 percent of SMEs are likely to have less than 21-day cash reserves, which is a very large number of firms.

The government of Brazil has designed a significant number of measures to support firms affected by the shock. These measures aim at addressing liquidity constraints with new credit lines; deferrals on taxes; labor measures to compensate wages and make contracts more flexible; and easing of regulatory burdens. Specifically, the federal government is implementing the following measures

**Access to finance**

- Significant regulatory measures issued by the Central Bank to support the financial market with liquidity
- More than US\$40 billion in credit lines offered by public banks to SMEs
- Credit line for wage payments

**Tax measures**

- Deferrals on tax payments, including SIMPLES, PIS, PASEP, COFINS

**Labor measures**

- Subsidies to finance wages, reduction of working hours by up to 75 percent for 60 days, and wage subsidies to maintain labor contracts

<sup>30</sup>Farrell, Diana, and Chris Wheat. 2016. Cash is King: Flows, Balances, and Buffer Days. Evidence from 600,000 Small Businesses. JPMorgan Chase Institute. SEBRAE. 2020. “As finanças dos pequenos negócios paulistas em tempos de coronavírus” Resultados da Pesquisa.

- Bringing forward vacations and public holidays
- *Auxílio Emergencial* (ranging from R\$600 to R\$1,200), including for informal microentrepreneurs and the self-employed

### Regulatory measures

- Flexibilization of INMETRO certification processes

### The effectiveness of these measures is going to depend largely on how accessible they are to MSMEs.

In the case of informal firms, the government is targeting informal workers through a temporary cash transfer program (*Auxílio Emergencial*), given that they are not eligible for most of the other support measures. Whether smaller firms will have access to enhanced credit and guarantees to maintain operations remains to be seen, but it will dictate the impact of the crisis on employment.

### A key measure in this crisis package is the wage subsidy scheme,

which aims at reducing the erosion of employment and the closure of companies by providing temporary subsidies to pay wages, and allowing the temporary freezing and flexibilization of contracts. Table 8 summarizes some estimates of fiscal costs per month, and the aggregate wages lost under different coverage scenarios.<sup>31</sup> The costs oscillate between R\$20 billion and R\$40 billion per month, with the actual costs probably closer to the R\$20 billion mark, given that not all firms will apply for the reduction on working hours. However, these costs could easily escalate to R\$30 billion a month if most formal firms apply and agree larger wage cuts. Also, workers would still need to bear a wage loss between R\$15 billion and R\$35 billion. An important implication of these results is that, if the federal government could improve their targeting, identifying those most in need (that is, those that are most exposed to the shock) and offering them larger subsidies while reducing subsidies to those less affected, there could be considerable fiscal savings.

Table 8: Expected Outcomes in Each Scenario per Month

Scenario	Government Cost	Government Cost only with Micro Firms	Workers' Lost Wages	Micro Firms Cut Wages by	Large Firms Cut Wages by
Benchmark	R\$31.41 billion	R\$10,32 billion	R\$25,94 billion	100%	50%
Extreme	R\$39.85 billion	R\$10,32 billion	R\$34,58 billion	100%	70%
Low	R\$19,88 billion	R\$7,22 billion	R\$16 billion	70%	25%
Exposure to COVID-19 <sup>32</sup>	R\$20 billion	R\$5,54 billion	R\$14,99 billion	Depends on exposure	Depends on exposure

Source: World Bank

<sup>31</sup>Note that all scenarios assume that firms would reduce wages in the exact proportion in which unemployment insurance is paid. If most firms, for instance, reduced working hours by 60 percent (in which case workers would be compensated with 50 percent of their unemployment insurance), workers' lost wages would be underestimated. Two other important caveats are:

(i) Since there was no information on firms' revenues, it is assumed that firms with less than 10 employees would match the criteria of yearly revenues below R\$4.8 million; (ii) Workers who earn between R\$3,135.00 and R\$12,202.12 per month are expected to have higher bargaining power, as negotiations must take place collectively.

<sup>32</sup>In this last scenario, we estimate which firms are most likely to reduce workers' wages. We have four groups of exposure with different responses for each of them: (1) firms paying 100 percent of wages; (2) firms paying 70 percent of wages; (3) firms with less than 10 employees paying 30 percent of wages, while firms with more than 10 employees pay 50 percent of wages; and (4) firms with less than 10 employees suspending their contracts, while firms with more than 10 employees pay 30 percent of wages.

### Some important vulnerabilities could limit the speed of recovery,

such as the duration of lockdown measures and the potential maintenance of social distancing over time. Firstly, some of the social distancing measures are likely to persist over time, which can make recovery very difficult in the most exposed sectors, with firms moving from liquidity to solvency problems. Secondly, the financial sector's ability to continue offering credit to firms is critical to supporting recovery, but the increasing credit risks will affect banks' willingness to lend. Thirdly, risks associated with supply chain disruptions could affect the manufacturing sector disproportionately. Fourthly, a full demand shock deriving from rising unemployment and falling con-

sumption is likely to put more pressure on the productive sector. Finally, there is a risk of delaying a much-needed microeconomic reform. Especially during the recovery, it would be important to reduce the cost of doing business, facilitate entry and exit, and eliminate some of the distortions that have traditionally led to misallocation of resources and low productivity in Brazil.

### There are also some sources of resilience.

Brazil has a large domestic market, which can offset some of the important external shocks that are taking place in the context of COVID-19. Together with an accelerated decision to promote a microeconomic reform, this could bring large returns in terms of employment and economic recovery.



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### Box 9: Possible Measures to Address Remaining Vulnerabilities (Firms)

Some key activities that could reduce vulnerabilities and increase resilience in the short term are:

- Ensuring credit facilities through low interest rates and credit guarantees that reach MSMEs for:
  - Working capital;
  - Wage bill payments;
  - Investment;
- Expanding fintech solutions for SME financing;
- Expanding public procurement initiatives;
- Allowing interest-rate payment deferrals;
- Making instant asset write-offs available to SMEs (limited in time);
- Allowing deferrals on tax payments: SIMPLES, PIS, PASEP, COFINS;
- Allowing the flexibilization and temporary suspension of labor contracts while social distancing measures are in force;
- Providing targeted wage subsidies to compensate for activities that are paralyzed during social distancing, conditional on firms' keeping employment levels;
- Providing targeted cash transfers to informal workers;
- Easing non-essential regulatory measures and relaxing regulatory compliance requirements, particularly in low- to medium-risk sectors; shifting toward deemed approval, self-certification, and risk-based inspections; and waiving fees;
- Supporting firms with the implementation of emergency plans (Sistema S);
- Offering grants to incentivize production switch to essential health products, and supporting health care solution startups;
- Reducing import restrictions (NTBs, duties) on intermediate goods and essential health goods.

In the medium term (reopening and recovery), interventions could be aimed at:

- Amending insolvency and restructuring frameworks, and simplifying business registration;
- Maintaining credit facilities through low interest rates and credit guarantees that reach MSMEs for:
  - Working capital;
  - Wage bill payments;
- Subsidizing credit facilities for investment, and expanding credit factoring programs;
- Creating dedicated credit lines for the implementation of emergency protocols in businesses (for example, acquisition of necessary equipment and implementation of emergency plans);
- Reorienting tax breaks toward productive use through:
  - Accelerated depreciation for capital investments;
  - Incentives for investments in innovation;
  - Full tax deduction of expenses for training workers;
- Providing technical assistance for digitalization, upgrading and business models (Sistema S), and offering dedicated credit lines to support the acquisition of digital equipment;
- Providing technical assistance for the implementation of recovery plans (Sistema S);
- Expanding public procurement initiatives.

### **Safeguarding the Mitigating Role of Agriculture by Reducing its Vulnerability and Improving its Resilience.**

#### **While the pandemic is likely to plunge Brazil into another recession, export-oriented agriculture is expected to continue to play its traditional role as a mitigating factor in overall GDP performance.**

This is because the most important subsectors of export-oriented agriculture (such as soy, coffee, citrus) are estimated to expand. Their expansion is expected to outweigh the negative effects of COVID-19 on demand for cotton (due to stalled textile mills), rubber (due to stalled automotive production) and ornamentals and flowers (collapse in demand in both domestic and overseas markets), all of which have already seen significant price drops.

#### **The dualistic structure of the agriculture sector in Brazil implies that, despite the expected slight growth of the sector as a whole, family farmers are likely to suffer from the pandemic.**

While they constitute the majority of producers in Brazil, family farmers produce mostly for domestic consumption, and thus bear primary responsibility for food security in the country. In recognition of the danger to this sector, the government has already intervened in a number of ways. These include safety-net-type measures such as the approval of Law 13,987/2020 on April 7, 2020, allowing the distribution of food acquired by the National School Meals Program (PNAE) to the families of schoolchildren while classes are suspended; a R\$500-million fiscal allocation toward purchasing food products from family farms for the Food Procurement Program (PAA, authorized on April 27, 2020); and income transfers

for seasonal workers of R\$600 per month for 3 months, which also benefits agriculture workers. The government has also agreed to a deferral of tax payments for firms including agribusinesses. In addition, several major banks are deferring principal and interest payments on agricultural loans and assisting agribusinesses (especially SMEs) with credit to ensure sufficient working capital.

#### **While the measures that have already been introduced are necessary, they may not be sufficient.**

It is of critical importance for Brazil to safeguard the mitigating role of agriculture. In order to do so, it is necessary to further reduce the agriculture sector's vulnerability and improve its resilience to the effects of the COVID-19 pandemic, and potential future shocks. Therefore, a number of additional short- and medium-term policy interventions should receive due consideration. The potential benefits of most of these would not be limited only to family farmers or only to larger agricultural enterprises with a primary focus on exports, but rather benefit both categories. Key activities that could be implemented in the short term include the following:

- Assisting farmers with credit to overcome liquidity constraints and be able to purchase inputs for their next cropping season;
- Offering support to service providers (many of which are SMEs) to ensure continuity in the delivery of key farming services, thus helping to protect critical agricultural production for the domestic market, as well as safeguarding export markets;
- Authorizing the early release of resources from the Coffee Economy Defense Fund (FUNCAFÉ) for the 2020–21 coffee harvest;
- Authorizing beneficiaries of the Agricultural Activity Guarantee Program (PROAGRO, a crop insurance program) to report losses remotely;

- Launching communication campaigns to promote social distancing and personal hygiene measures as a means to ensure the safety of workers and the proper implementation of field activities;
- Further stimulating the already growing use of e-commerce platforms and applications for food deliveries.

Given that the COVID-19 pandemic will surely not be the last unexpected event to hit Brazil and its agriculture sector, it is important to consider what can be done to prepare for potential external shocks in the future. The federal and state governments may find it worth considering the implementation of the following measures in the medium term:

- Ensuring continuity in the provision of irrigation and drainage services (including O&M of schemes), as well as irrigation infrastructure maintenance, which could presumably be done through cash-for-work programs, thus contributing to restoring rural employment;
- Scaling up programs for the development of inclusive and resilient agri-food value chains, with a special focus on vulnerable

indigenous and quilombola communities, as well as women producers, so as to improve their productivity, income, natural capital management capacity, and resilience;

- Protecting domestic consumers and safeguarding export markets by ramping up the surveillance and prevention of zoonotic diseases and improving the country's sanitary and phytosanitary (SPS) capacities, as well as its traceability systems;
- Investing in post-harvest storage, processing and handling infrastructure, including cold chains to reduce food loss and waste, promote value addition and ensure food quality and safety, especially to support the integration of small farmers into markets;
- Further strengthening local and national capacity for preventing, detecting and responding to zoonotic diseases.
- Promoting the digital delivery of agricultural services to increase their security and accountability, as well as to cut costs, while also reducing the need for person-to-person contact;
- Investing in integrated agricultural risk planning, mitigation, and management strategies, developing an action plan with public and private interface.



### 3.7.1 FIRM EXPOSURE AND POLICY RESPONSE: WATER DEEP DIVE

**Any country's water and sanitation system (WSS) is critical in times of a pandemic like COVID-19.** The capital investments required to meet global goals for water supply, sanitation and hygiene services in low- and middle-income countries are at least 3 times current expenditure levels, or approximately US\$114 billion per year (from 2015 to 2020). In LAC alone, the costs of achieving universal access are about US\$20 billion between 2020 and 2030 (World Bank 2016; WRI 2020). These investments provide the basis for human health to fight communicable diseases such as COVID-19, as well as more common maladies, including diarrheal diseases, which killed 1.6 million people in 2017 alone. These investment requirements are increasing every day due to the COVID-19 pandemic.

**Currently, WSS state-owned enterprises (SOEs) provide water services to 57 million households, and sanitation options to over 32 million households in Brazil.** Public WSS utilities are subject to lax regulation in Brazil, and are often prone to weak governance, which translates into inefficiencies in the services provided. In addition, public water and sanitation utilities struggle to levy enough financial resources to meet cost-recovery targets, and the levels of revenue avoidance and financial performance vary considerably among municipalities. The financial risks faced by WSS-SOEs are increasing fast because of the disruptions in economic activity and supply chains that result from con-

tainment policies enacted under the COVID-19 global pandemic. In this situation, the government of Brazil can use infrastructure spending as a prominent means to contain short-term economic shocks and promote stimuli, while avoiding risks of outages in those essential services. Given the importance of WSS-SOEs for health and human capital, their operations are critical to (a) preserving sanitation and hygiene, which are both necessary to prevent and contain the spread of COVID-19 and avoid increasing health costs (many areas still lack data on sanitation and wastewater treatment; and (b) preventing the WSS-SOEs from increasing their financing gaps (and reducing their coverage targets) due to shortages and shocks that affect their service supply. Without addressing COVID-19-associated risks and reducing WSS-SOEs' exposure to financial and fiscal risks, not only may local governments be financially harmed, but the country may also risk losing all the progress achieved in WSS coverage over the past 15 years.



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### **Brazil will need to increase its federal public spending in WSS-SOEs in order to reduce the cumulative financial and fiscal risks emerging from this contingency.**

These extraordinary expenditures need to be complemented with targeted subsidies that could further reduce the economic burden on local governments and poorer populations. On the demand side, containment measures have reduced mobility, which limits the ability of poorer people to work and pay their water bills at service windows. Many WSS-SOEs and service providers have already enabled online payment solutions for these services, but a significant number of consumers have no internet access, and therefore cannot benefit from that payment option. Therefore, most WSS-SOEs are opting to waive or suspend payments, which will increase their forgone revenues in the short run.

### **Addressing the financial, budgetary, and forgone revenue risks affecting WSS-SOEs is critical for preventing the financial collapse of these enterprises.**

According to the Brazilian Ministry of Health, the SUS (Brazil's national health care system) spent more than R\$1 billion in the last five years to treat diseases caused by the lack of water supply and sanitation. Financial support for water and sanitation utilities and service providers should aim to maintain and restore op-

erations, while avoiding the risks of financial bankruptcy in the medium term. The reasons for pouring additional funding into WSS-SOEs include helping to ensure the availability of water, wastewater treatment chemicals, and electricity and fuel for pumping and treating water; meeting minimum staffing levels; and providing the means for staff to follow hygiene guidelines and avoid contagion. All this is of utmost importance, especially considering the WSS sector's strong role in preventive health. The support package should also include help to monitor and support cash reserves, and provide financial respite for agencies unable to recover payments.

### **Increased water-supply interruptions can pose higher risks to households (hygiene) and increase SOEs' financial gaps by raising the costs of the inputs they need for those services.**

Suspending disconnections due to non-payment of water bills could exacerbate forgone revenues and hit WSS-SOEs' budgets, affecting their cash flows and (already low) operating margins. Hence, in order to assess the WSS-SOEs' risk exposure, three risk categories were considered at the onset of the pandemic: forgone revenue risks (demand shock); financial risks (higher input costs relative to staff costs, and reduced operating margins); and budgetary risks (losses as a percentage of investments made in the sector over the past 15 years).



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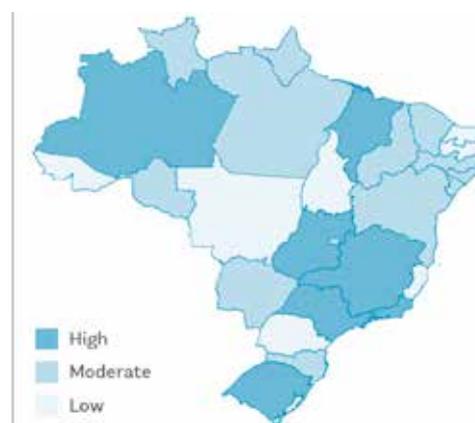
Table 9: State Level Risk Exposure of WSS-SOEs

State	GDP loss (shock)	State Revenue Shock	Mean shock	Total WSS SOE risk index*	Risk category
AC	-0.12	-0.11	-0.11	-0.27	Low
AL	-0.08	-0.09	-0.09	0.05	High
AM	-0.11	-0.02	-0.07	0.30	High
AP	-0.12	-0.11	-0.11	-0.11	Moderate
BA	-0.01	-0.04	-0.02	-0.20	Moderate
CE	-0.04	-0.11	-0.08	-0.22	Moderate
DF	-0.04	-0.11	-0.07	-0.24	Moderate
ES	-0.03	-0.05	-0.04	-0.30	Low
GO	-0.04	-0.11	-0.07	0.20	High
MA	-0.13	-0.09	-0.11	0.36	High
MG	-0.18	-0.09	-0.14	0.19	High
MS	0.03	-0.07	-0.02	-0.23	Moderate
MT	0.06	-0.06	0.00	-0.27	Low
PA	-0.05	-0.06	-0.06	-0.11	Moderate
PB	-0.04	-0.11	-0.08	-0.30	Low
PE	-0.08	-0.09	-0.09	-0.07	Moderate
PI	-0.13	-0.09	-0.11	0.03	Moderate
PR	0.04	-0.09	-0.03	-0.28	Low
RJ	-0.03	-0.05	-0.04	0.07	High
RN	-0.04	-0.09	-0.07	-0.29	Low
RO	0.02	-0.11	-0.04	-0.23	Moderate
RR	-0.12	-0.11	-0.11	-0.23	Moderate
RS	-0.07	-0.09	-0.08	0.16	High
SC	-0.07	-0.09	-0.08	-0.23	Moderate
SE	-0.04	-0.11	-0.08	-0.16	Moderate
SP	-0.08	-0.09	-0.08	0.11	High
TO	0.03	-0.06	-0.01	-0.30	Low

\*The cohort categories of risk are lower than -0.25 is low risk; between -0.24 and 0.05 is moderate risk; above 0.06 is high risk. Index standardized with mean 0 and SD 1, ranging from -1 (lowest risk) to 1 (highest risk).

Note: Adjusted by GDP loss estimates from the computable general equilibrium model. - Source: World Bank, 2020 based on SNIS data.

Figure 31: WSS-SOE Overall Exposure Index



\*Note: Categories were defined according to the following: lower than -0.25 is low; between -0.25 and 0.05 is moderate; above 0.06 is high. Index standardized with mean 0 and SD 1, ranging from -1 (lowest risk) to 1 (highest risk).

**WSS-SOEs' exposure levels vary across Brazilian states. The estimated losses, forgone revenues and financial risks range from US\$100 to 125 million annually, and from US\$1 to 1.3 billion over 10 years.** The total investment allocation to the WSS sector was approximately US\$31 billion over the last 15 years. Some states have higher exposure and higher risks linked to climate change vulnerability: Alagoas, Amazonas, Goiás, Maranhão, Minas Gerais, Rio de Janeiro, Rio Grande do Sul, São Paulo, and Piauí. The profile of state-level risks could be even higher if the COVID-19 contingency perpetuates a stall in economic activity. Such risks include suspending service disconnections, reconnecting households that had been

disconnected for non-payment, negotiating customer debts, and providing financing for fee waivers to mitigate service disruption. During the initial COVID-19 response period in Brazil, water consumption has increased in many urban and rural areas, leading to additional water shortages. High-level multisectoral processes may be needed to reallocate water among different users where it is scarce, in a way that may minimize losses to the greatest extent possible. In addition, countries will need help in planning and designing a new water infrastructure, and in rehabilitating the existing one. In addition to the financial and fiscal risks faced by WSS-SOEs, it is important to bear in mind that many municipalities lack information on their levels and rates of wastewater treatment and sewage.

## In line with the exposure of WSS-SOEs, the following paragraphs highlight key strategic steps to mitigate the economic costs caused by the COVID-19 pandemic in Brazil:

**1. Making supercharged investments in clean water access and sanitation.** Budgetary support is needed for WSS-SOEs, given the tightening of their fiscal and budgetary resources. The prioritization of states/SOEs must be based on a combination of financial/budgetary risks and the potential population affected. Budgetary support measures may also tap into private sector funding options wherever possible, in order to (i) keep the pace and increase coverage of basic services; (ii) sustain and improve the performance and quality of services; and (iii) provide federal budgetary support to alleviate WSS-SOEs' financial gaps. In addition, a short-term relief plan should aim at helping to establish subnational contracts that can expand sanitation projects and leverage private sector engagement. These strategic investments would show that the WBG has added value and could set the basis for crafting different types of contracts with a focus on results, such as performance contracts for non-revenue water, or PPP/concession approaches, just to mention a couple.

**2. Offering emergency support to water and sanitation utilities to ensure the continuity of water supply under enhanced monitoring.** This could be complemented by reorienting subsidies that could be targeted at water and sanitation bill waivers. Several states, including São Paulo, Ceará, Piauí, Pernambuco, Espírito Santo, Paraíba, Minas Gerais, Distrito Federal and Rio de Janeiro, are even waving payments to special groups or freezing tariff adjustments. Coordination with social protection operations will allow efficient targeting and economies of scale in the use of public funds, prioritizing those

households with unemployed people, high dependency ratios and limited sources of income that are beneficiaries under social programs.

**3. Enhancing liquidity options to ensure that the production and service delivery of large-scale utilities are not at risk of stoppage.** Measures should allow discerning between short- and medium-term liquidity options, and then scale up nationally available liquidity for WSS-SOEs, so that all states can ensure water supply to defaulting clients under social tariffs or reduced water bills during this period. This will also help to reduce uncertainties based on constraints in the supply chains of products and inputs required for WSS-SOE operations.

## Even with those ambitious and unprecedented actions, vulnerabilities in the financial performance of WSS-SOEs will remain.

If financial gaps increase considerably, utilities will not be able to continue providing services in some states. Financial limitations, coupled with Brazil's convoluted institutional arrangements for federal transfers and state budget implementation, make it difficult to respond effectively. Therefore, extraordinary measures are warranted. Other emerging contingencies such as droughts or floods may even push WSS-SOEs into very risky financial positions. Some key activities that could reduce vulnerabilities and increase WSS-SOEs' resilience are: (a) assessing responsiveness and capacity to implement extraordinary funding arrangements for SOEs; (b) prioritizing SOEs in those states where larger populations might be affected by droughts or floods this year; (c) identifying supply-chain disruptions that generate service interruptions and increase costs, due to the scarcity of inputs and materials; and (d) developing WSS investment plans and scaling up strategies to all states, given the budgetary and financial risks affecting most SOEs under COVID-19.

### Box 10. Possible Measures to Address Remaining Vulnerabilities (Water)

The main objectives of these policy options and responses are to prepare Brazilian state water utilities to reduce their financial vulnerabilities and enhance the operational response aimed at minimizing the impacts of the COVID-19 pandemic, while ensuring the continuity of water supply, sanitation and wastewater services.

#### The following are short-term measures for WSS-SOEs:

- Reorienting water tariff subsidies to cover SOEs' increasing financial gaps, deriving from their reduced operating margins and forgone revenues caused, in turn, by suspending water-bill payments and granting waivers to consumers;
- Developing an emergency coordination facility between federal and state governments to allocate financial resources and establish procedures for the implementation of Contingency and Recovery Plans for utilities/service providers;
- Implementing and scaling up non-revenue water reduction programs. It should be noted that these programs often have good financial returns and are labor-intensive (for example, detecting and repairing leaks), which can help get people back to work quickly;
- Revising budget and asset management plans to address increased costs from response-related activities and follow-up actions;
- Developing and maintaining an emergency inventory of all required inputs in stock (including spare parts, chemical products, and PPE). Those are fundamental to keep WSS-SOEs operating.

#### The following are medium-term measures for WSS-SOEs:

- Establishing financial instruments, including fiscal transfer mechanisms, direct budget support and liquidity facilities to provide financial relief to utilities during the emergency and recovery phases, bearing in mind federal fiscal constraints;
- Adopting a package of reforms to improve the operational and financial sustainability of water utilities (for example, improved corporate governance, strengthened managerial practices and an enhanced regulatory framework);
- Designing a WSS-SOE bailout program to financially support SOEs at higher risk of bankruptcy, including private operators and PPPs under performance-based contracts.

### 3.7.2 FIRM EXPOSURE AND POLICY RESPONSE: ENERGY DEEP DIVE

**Energy services are an essential part of preventing disease and protecting human health during infectious disease outbreaks, ensuring the functioning of hospitals and other health care facilities.** Almost all medical equipment requires electricity, and without electricity, many health care interventions cannot be provided, particularly for intensive care.

**Not only do fuel and electricity matter for health, but they are also important inputs for water pumping and water provision, which are key to ensure the ba-**

**sic hygienic conditions needed to limit the spread of the disease,** as well as to support irrigation and crop production, and thus safeguard food security during this period of crisis. Moreover, the provision of electricity services will also be critical during the recovery phase to support community livelihoods and economic growth.<sup>33</sup>

**Due to COVID-19, the whole electricity supply chain may be subject to disruption:**

**In most Brazilian states, independent power producers (IPPs) dominate the generation sub-sector of the market. There is a heightened risk that governments or utilities may not be able to honor take-or-pay contracts.** In early April 2020, some companies already triggered force majeure clauses on electricity contracts after seeing a sharp reduction in demand in the wake of lockdown measures ad-



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<sup>33</sup>For more detailed evidence see: Vagliasindi, M. et al. 2019. "Catalyzing Human Capital Formation Through Energy Services" World Bank Washington DC; and Vagliasindi, M. 2020. "WBG Response to COVID-19: The Energy Sector" World Bank Washington DC.

opted to contain the spread of COVID-19. New energy projects will be struggling to reach financial close, and project sponsors are becoming reluctant to make new financial commitments given the higher uncertainty levels. For renewable projects, disruptions in the supply of solar PV modules from China will compound an already challenging situation.

**On the transmission side, difficulties may emerge from balancing the system due to a significant drop in demand during the crisis, and the expected ramp up of demand after the immediate crisis.**

Additionally, there may be potential delays in the construction of planned transmission lines, and these could have an impact on congestions and cause delays in connecting some plants.

**The distribution subsegment of the market will be hit in the most severe way by the demand shocks**

(caused by lockdowns) compounded by the declining levels of employment and household income that could strain consumer affordability, resulting in reduced revenue collections and additional operational costs (for example, grid maintenance and repair that has to be done on site by workers and engineers).

**A significant deterioration in revenue collections can cascade throughout the supply chain.**

Distributors rely on money collected from consumers to make payments to energy generators and transmission firms. Therefore, consumers' failure to pay their electricity bills may generate a cascading effect, with a potential chain of defaults. What makes the Bra-

zilian case particularly unique is the massive presence of hydroelectric plants with storage capacity. The Brazilian system needs to account for the future influx and storage of water, the multiple plants in cascades and the operative interdependence between plants in different hydrographic basins. In order to do that, it relies on optimization stochastic dual dynamic programming-based algorithms. The low marginal cost of operation is reflected in the difference settlement price (PLD), calculated ex ante and used to settle contractual differences registered at the Chamber of Electric Energy Commercialization (CCEE). Currently the PLD stands at R\$39.68/MWh, which is the current floor, as defined by a regulation based on the optimization tariff at the Itaipu Binational power plant. This means that electricity which is not sold by distributors will be remunerated at a significantly lower price than the average tariffs paid by consumers, and even lower than the cost of purchase itself.

**The immediate impact of the demand shock coming directly from the policy measures implemented in the form of quarantines and local or more generalized shutdowns of economic activity is already evident.**

Data released by the CCEE point to a progressive drop in energy consumption in Brazil since the beginning of the quarantine adopted by several states to contain the advance of COVID-19. Between March 18 and 31, there was an average decrease in consumption of up to 12 percent in the National Interconnected System (SIN), when compared to the period from March 1 to 17, before the implementation of containment measures (figure 32).<sup>34</sup> As of May 8, the average drop had increased up to 15 percent.

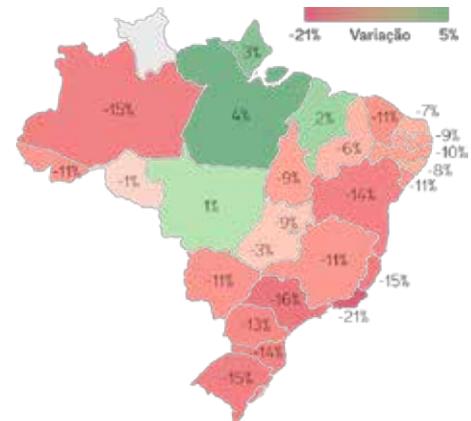
<sup>34</sup>For more detailed evidence, see: CCEE. 2020. "Acompanhamento do consumo em função das medidas de contenção da COVID-19", Rio de Janeiro.

Figure 32: Daily Reduction in Electricity Consumption, Before and After Lockdown



Source: CCEE (2020).

Figure 33: Overall Reduction in Electricity Demand by State, as of April 10



Source: CCEE (2020).

In the so-called energy free market (ACL), an environment for energy contracting in which open negotiation between generators, traders and large consumers prevails, the drop in consumption reached 14 percent in the period. In the regulated market, where electricity is supplied through distributors, the decrease was slightly lower, amounting to 9 percent. This smaller drop in consumption in the regulated environment, compared to that observed in the free market, results from the tendency of residential consumption to increase during lockdowns. Within the ACL, the automotive and textile industrial segments presented the largest reduction of demand, after the shutdown of factories (with vehicles declining by 53 percent, textiles by 40 percent, and services by 34 percent).

The state of Rio Grande do Sul saw the largest drop in energy consumption since the lockdown measures, with a reduction of 23 percent. Other states with high percentage variations include Santa Catarina (an 18 percent drop), Alagoas and Paraná (minus 14 percent), and Sergipe and Ceará (minus 13 and 12 percent, respectively) (figure 33). Considering the states with the highest average consumption in the country, Paraná saw a drop of 9 percent; São Paulo, 11 percent; Rio de Janeiro, 7 percent; and Minas Gerais, 5 percent.

The trend described above continued through April and May 2020. From the start of April till May 8, Rio de Janeiro emerged as the most affected state, with a 21 percent reduction in electricity demand; followed by São Paulo, with a 16 percent reduction, and the states of Espírito Santo, Rio Grande do Sul, and Amazonas, which saw a decline of 15 percent.

For more detailed evidence see CCEE (2020) "Acompanhamento do Consumo em função das medidas de contenção da COVID-19", Rio de Janeiro.

**Demand shocks of such dimensions—which are likely to imply a permanent reduction in demand due to the expected increase in bankruptcies among commercial and industrial users—are inevitably poised to cause liquidity crunches,** leading to a significant deterioration in the financial position of power utilities across developing countries and potential bankruptcies, with negative fiscal consequences.

**The pandemic has led to a sudden drop in energy sales to the most profitable industrial and commercial consumers, and this is expected to have a significant impact on the financial performance of power utilities.** The impacts are particularly strong for those companies operating in the poorest North and Northeast states, which are already suffering from significant levels of non-technical commercial losses and low reliability of the system, resulting in higher frequency and duration of power failures (figure 34).<sup>35</sup> Delinquency rates rose to nearly 12 percent in April, a significant increase compared to the precrisis levels of

2 percent to 3 percent. Whereas in different circumstances most power systems could respond by raising end-user prices, a tariff increase seems unlikely at the moment, or would have to be spread over multiple years, thereby exacerbating the distribution utilities' liquidity constraints.

**The largest investors in Brazil's energy distribution sector include Italy's ENEL, Spain's Iberdrola via its subsidiary Neoenergia, and China's State Grid via CPFL Energia. All of them have already been subject to strains in their home countries.** Local players Energisa and Equatorial Energia have smaller cash cushions to cope with the crisis. The Ministry of Mines and Energy estimates that a 20 percent loss of revenue for power distributors, together with potential defaults from energy users, could lead to losses of R\$14.1 billion for the sector in the first half of 2020.

**Moreover, the nascent off-grid (including mini grids and solar home systems) segment of the market—often involving much smaller players—will be severely affected,** impairing the expansion of access to rural and isolated communities not connected to the main grid.

Figure 34: Exposure Index of Power Utilities at State Level



Source: Vagliasindi (2019)

<sup>35</sup>See: Vagliasindi. 2019. "Reconsidering Electricity Pricing for the poor in an era of Technological Disruption: the case of Brazil", World Bank, Washington DC.

## Potential sources of resilience may come from power systems where fuel is a major expense.

To some extent, these systems may be able to offset the effect of lower sales through lower purchases (subject to specific contractual agreements and price indexation to oil prices), and utilities with healthier cash balances may be able to further buffer the impact of the disruptions, assuming that the emergency loan package (described below) will be successfully implemented by ANEEL. Deferring capital spending and dividend payments may also partially offset losses. However, a prolonged deferral on capital investment risks leading to physical asset deterioration and resulting on adverse impacts on the quality of service.

**Brazil has already responded to the crisis with several policy measures:**

- **Brazilian regulator ANEEL has suspended disconnection due to non-payment for 90 days for residential users, as well as essential services** (such as hospital and health care facilities, water and wastewater plants, public transportation and public security units, the Central Bank and customs units). This was one of the first measures adopted on March 23. In addition, the low-income population that are registered for lower tariffs (under the Social Tariff program) will not be subjected to periodic checks. Brazil's conditional cash transfer program—Bolsa Família—was reinforced, and a new transfer program (Auxílio Emergencial) has been introduced.
  - **In order to avoid the spread of the disease, ANEEL has also suspended the delivery of printed monthly invoices**, which have been replaced by electronic invoices or barcodes, available on its website
- or application. Distributors were also allowed to perform consumption readings at intervals different from the usual, or not to perform readings at all. In the absence of a reading, billings will be made based on the average consumption in the past 12 months, or consumers will be allowed to self-read their own meters, as an alternative.
- **On April 20, ANEEL also approved two measures to mitigate the payment of transmission charges by distributors and free consumers in the amount of approximately R\$432 million.** The immediate effect of this measure includes R\$144 million in discounts on the transmission system charges paid by distributors (90 percent) and free consumers (10 percent) released in April, with similar discounts in May and June. These measures aim to increase the liquidity of the sector and prevent any financial problems for users of the transmission system.
  - **On April 15, ANEEL transferred R\$400 million to the CCEE to cover for tariff discounts granted to social tariff beneficiaries**, under Provisional Measure (Medida Provisória, or MP) 950/2020, issued by the federal government. This MP granted social tariff beneficiaries a 100 percent discount on the tariffs for the share of electricity consumption of up to 220 kWh/month. In parallel, MP 949 added an extraordinary credit of R\$900 million to ANEEL's budget, and determined that the Agency would contribute this resource to the Energy Development Account (CDE) to subsidize authorized discounts. In consultation with the CCEE, ANEEL divided the transfer into three monthly installments: R\$400 million in April, R\$250 million in May, and R\$250 million in June.

- **On April 7, ANEEL authorized CCEE to pass on to distributors approximately R\$2 billion for the future relief of charges,** benefiting distributors in the regulated contracting environment, as well as 7,166 agents in the free market. This will help the entire energy generation, transmission and distribution chain to honor their payment obligations. According to the CCEE, R\$1.475 billion will be allocated to distributors, and the remaining R\$547 million, to free consumers.
- **The Brazilian government has approved Decree 10,350/2020, establishing rules for new syndicated loans to the sector through the Chamber of Electric Energy Commercialization (CCEE), also known as “Conta-Covid”.** Some regulatory definitions are still pending, (including details on the new regulation designed by ANEEL, pending public hearings). Still, the current plan entails syndicated loans of up to R\$15.4 billion provided by private and state-owned banks, which will be amortized through future sector charges included in electricity bills starting in 2021 over a 60-month period. The CCEE will manage the funds raised through a centralized regulatory account known as Conta-Covid, and the net regulatory balances of each distribution company. Conta-Covid will support distribution companies’ immediate expenses, such as the settlement of contracted PPAs and sector charges. The resources may also be used to anticipate revenues, including non-amortized balances from existing regulatory accounts; postpone tariff readjustments until 30 June; and ensure the earlier disbursement of compensation on manageable costs. The amount to be transferred will be defined on a monthly basis by the sector regulator, ANEEL (hence, the total loan amount is subject to change). The funding availability requires utilities to comply with a number of conditions, including: (i) not requesting suspensions or reductions of energy volumes in existing contracts because of drops in consumption; (ii) keeping dividend payouts at the minimum statutory level of 25 percent, in case of delinquency within the sector; and (iii) waiving judicial or arbitration discussions on the matters of the decree. ANEEL will define the criteria and procedures for the management of Conta-Covid, establishing funding limits for distributors, based on their individual revenue and market losses. The proposal also details the cost items that can be covered by the account, as well as the operational flow of transfers. The package resembles a similar measure adopted in 2014 and 2015, which offered roughly R\$22 billion in loans to the sector, as Brazil was going into its deepest recession on record. It was also meant to offset adverse hydrologic conditions that were fully amortized with regulatory assets by September 2019.
- **The BNDES announced, among several measures, the suspension of amortizations of R\$19 billion for direct operations (and R\$11 billion for indirect operations) for the sectors affected by the crisis, including oil and gas and energy services.**
- **ANEEL has indefinitely postponed the power auctions scheduled to take place in 2020 due to the pandemic.** Brazil was planning to hold six tenders to contract power generation projects in 2020, as well as tenders for transmission lines. Two tenders were expected to buy electricity from existing plants (the A-1 and A-2 auctions in December), and two others were for new projects (the A-4 and A-6 auctions in April and September, respectively), amounting to approximately 51,438MW of hydro, wind,

solar and biomass energy projects to compete in the bidding process. The tenders scheduled for April were expected to contract power supply from new plants and existing units simultaneously for the first time, replacing diesel-fired plants with less expensive and less polluting gas-fired units. The prices in those two auctions were seen as crucial to reflect the expected reduction in natural gas prices in long-term contracts, as part of the federal government's program to open up the sector to private investors and stimulate competition.

- **Several major divestments via share sales have also been postponed, including the privatization of Eletrobras**, with no details on the projected timeline. The only transaction completed so far was the sale of a R\$22 billion stake in oil company Petrobras, owned by the BNDES. With the Brazilian stock market suffering as a result of COVID-19, Brazil will slash its ambitions to raise up to R\$150 billion with sales of state-owned enterprises through share offerings, mergers and acquisitions (M&A). At least R\$50 billion in announced share sales have already been postponed, and transactions waiting for regulatory approval have been halted. Planned asset sales via mergers and acquisitions have not yet been halted, but are expected to become more difficult as volatility affects valuations across industries, and potential buyers face challenges posed by the COVID-19 pandemic and the oil price war.

### Even with those ambitious and unprecedented actions, vulnerabilities in the financial and operational performance of electricity utilities still persist.

Whereas in different circumstances most power systems could respond by raising end-user prices, many of the scheduled price increases have been postponed by ANEEL until the end of June 2020. Moreover, additional operational costs which may be required (for example, grid maintenance and repair works that have to be done on site by workers and engineers; and camp facilities and supplies to ensure that key personnel may remain on site and continue to perform essential technical functions while respecting pandemic protocols) could further strain their financial performance. Such an impact could also affect their operating performance and ultimately their ability to keep the light on during this period of crisis. Contrary to the common belief that power outages happen only with supply shortfalls, some of the most severe blackouts may also take place during periods of low demand.



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### Box 11: Possible Measures to Address Remaining Vulnerabilities (Energy)

Some key activities that could reduce vulnerabilities and increase resilience in the short term are:

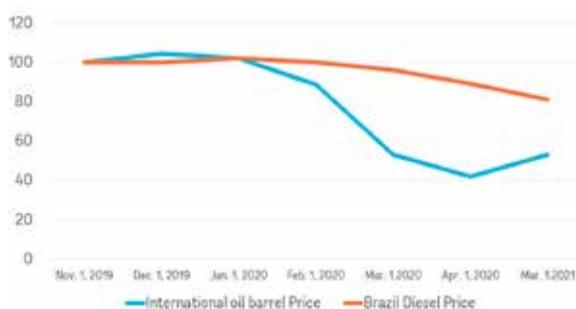
- Ensuring coordinated actions to keep a minimum standard across crucial services, with emergency actions including prioritizing fuels and fostering energy efficiency where needed;
- Adopting contingency plans to ensure electric utilities may continue to operate under crisis conditions while respecting pandemic protocols;
- Identifying supply chain disruptions that generate service interruptions or increase costs (due to the scarcity of inputs and materials), and consider promoting private sector intervention to deliver quickly deployable off-grid or mini-grid solutions to provide the electricity needed in case fuel supplies get cut or become restricted;
- Providing targeted liquidity support to power utilities suffering financial strains from potential declining demand and rising payment delinquency, including the provision of short-term emergency support for redundant workers;
- Reviewing cases where government's or utilities' non-payment of EPC contractors and/or take-or-pay clauses under PPPs are likely to trigger force majeure clauses, and prioritizing actions needed to limit the adverse impacts on the country's reputational risks.

In the medium term, interventions could be aimed at:

- Adopting a package of reforms to improve the financial sustainability of power utilities, and resuming previous ongoing reforms that were stalled/delayed because of the COVID-19 crisis, including the delayed auctions and investments in transmission, as well as the ongoing privatization in the sector and the ambitious reforms under Novo Mercado;
- Supporting fiscal stimulus programs as part of the economic recovery strategy, including (i) labor-intensive on-grid and off-grid rural electrification programs, which could simultaneously contribute to a fiscal stimulus and to the achievement of universal access goals under Luz Para Todos; (ii) labor-intensive clean energy transition, which may have lost momentum in a low-oil-price environment, replacing aging fuel plants with renewable-plus-battery combinations.

### 3.7.3 FIRM EXPOSURE AND POLICY RESPONSE: TRANSPORT DEEP DIVE

Figure 35: Compared Evolution of International Barrel and Diesel Pump Prices in Brazil



Sources: ANP, Markets Insider.

#### In principle, the oil shock should benefit the transport sector.

About 87 percent of the energy consumed in the transport sector in Brazil comes from oil-derived fuels—gasoline, diesel, kerosene, or bunker fuel. The notable exception is ethanol, which powers private cars.<sup>36</sup> In 2018, oil-derived products in transport amounted to 73 GTOE, which is about 30 percent of Brazil's total final energy consumption. While firms have different cost structures across transport subsectors, diesel accounts for about 53 percent of costs for trucking companies, and 16 percent for air carriers. This means that a decrease in fuel costs should substantially alleviate cash-flow pressures, especially for trucking and bus companies that are in the frontlines to ensure essential supplies and urban connectivity.<sup>37</sup>

**Despite the accumulated drop in refinery prices, pump prices have little decreased, limiting the actual benefits for the transport industry (diesel) and households (gasoline).** While international oil prices

have fallen by 60 percent since November 2019, diesel pump prices in Brazil have accumulated a drop of only about 19 percent in 2020. However, given the cut in production and the 15.57 percent appreciation in the diesel reference price (ULSD NYH, Argus Media) in May, the price rose by 8 percent at refineries, according to the ANP (National Agency for Petroleum, Gas and Bio-fuels). Furthermore, despite operating at a low price level, the oil barrel has already doubled its value when compared to mid-April (it has been quoted at approximately US\$40, while the mid-April price was below US\$20). This reduces the margin for decreasing fuel prices in the country. As a consequence, gasoline and diesel pump prices have experienced a slight increase in the first week of June. This represents a risk to the potential benefits and the financial recovery of transport operators, especially trucking and bus companies.

#### Most importantly, the transport sector is being hit by a severe demand shock.

Airlines and airport concessionaires are already the most strongly affected. In March, both GOL and AZUL cut their services by 90 percent, while LATAM saw a 70 percent reduction. Since GOL and AZUL have rather high operating margins compared to other LAC carriers (18-20 percent), they may be in a stronger position to stand the shock than LATAM, which had an 8 percent operating margin in 2019. With regard to airport concessionaires, overall numbers for Brazil are not available, but the CCR Group reports a 95 percent traffic drop in the airports they manage—in line with air carrier reductions.

#### The urban public transportation sector is also strongly affected.

Moovit data (figure 36) suggest a ridership drop from 50 percent to 70 percent in Bra-

<sup>36</sup>Empresa de Pesquisa Energética 2019.

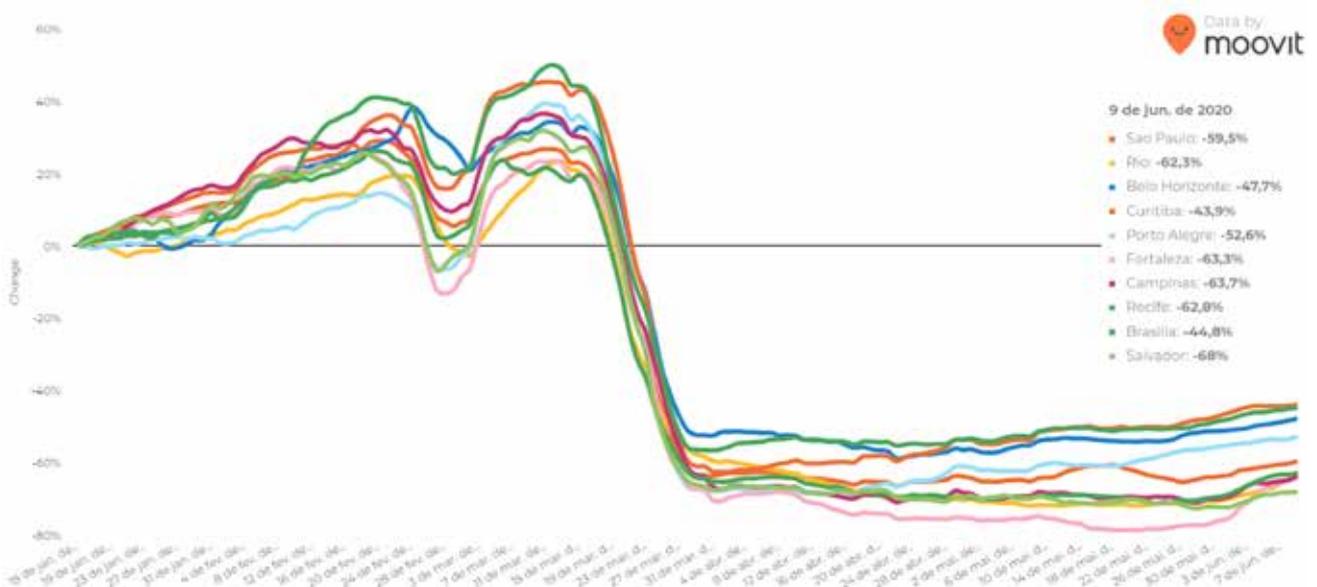
<sup>37</sup>IBGE/SIDRA database 2017.

zil's state capitals. While the ANTF (Brazil's National Rail Transport Association) reported a 63 percent drop in ridership (with losses of R\$500 million) in March, the NTU (National Association of Urban Transport Companies) reported an 80 percent drop in ridership across the country in early May, with a fleet reduction of only 25 percent. This represents more than R\$2.5 billion in losses, or 40 percent of the annual revenue for the sector. The CNT (National Transport Confederation) reported that over 97 percent of bus companies were affected by the pandemic, while almost 78 percent of companies in the subway and train segment have felt negative financial impacts. The projection for the 2nd semester is that the total ridership drop will remain close to 60 percent. However, with the current relaxation of social distancing measures and the resumption of commercial activities in several cities, an increase is expected in the coming months.

**Different urban mobility stakeholders will be affected differently.** Three categories of stakeholders have been identified: (i) a few large public

transportation SOEs (for example, Metrô and CPTM in São Paulo, CBTU in several cities, or Trensurb in Porto Alegre); (ii) a few large private operators, essentially in the rail transport segment, backed by large international firms (for example, CCR in Salvador or SP, or Mitsui in Rio); and (iii) many private bus operators, present in both large and small cities. Elements are not available at this point to assess these large firms' financial resilience, or their capacity to absorb the shock. Despite being diversified, these companies or their parents operate in a strongly competitive international environment, which certainly does not leave much room for huge margins. On the other end of the spectrum, we find bus operators. Brazil has about 34,000 bus companies, including urban and intercity services. They employ about 700,000 people, and are responsible for 86 percent of all daily trips in public transportation in Brazil. This is a very atomized subsector, and thus cannot be described in terms of overall sectoral features; still, it is expected to share similarities with the trucking segment described below.

Figure 36: Compared Evolution of Public Transportation Ridership in Selected Cities, Brazil (index)



Source: Moovit

**So far, the impact on road transport has been lighter than on urban mobility and air transport. This is largely driven by the continuity of supply chains, which are essentially road-based in Brazil.**

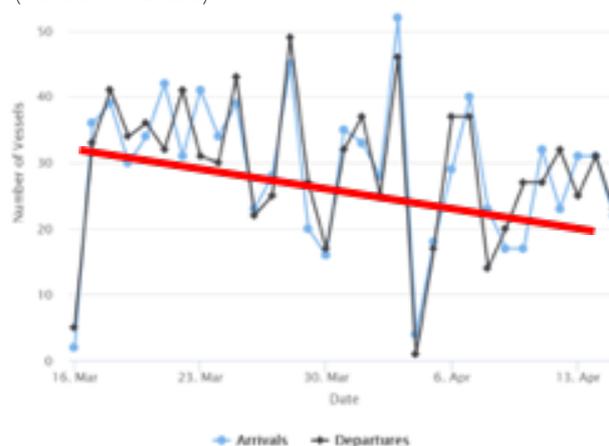
Numbers published by the Brazilian Association of Highway Concessionaires (ABCR) show an overall 18 percent drop in traffic on concessioned highways in Brazil. While Brazil has only about 20,000 km of federal and state concessioned highways, these have the most traffic and are the most critical for the country's logistics. Yet, this overall number masks different realities for passenger traffic (reduced by 23 percent) and cargo traffic (reduced by a mere 4 percent, compared to March 2019). These numbers are expected to grow in April, as more industries cease operating, either temporarily or permanently. In addition, specific situations already reflect a much more dire picture: the CCR, a concessionaire responsible for 3,300 km of highways, mostly in the state of São Paulo, reports traffic drops of about 60 percent for cars, and 15 percent for trucks.

**As for urban mobility, impacts on road transport will vary depending on stakeholders.**

As regards public infrastructure managers, investment plans are likely to be cut even further in the coming years, aiming at covering shortfalls in tax revenue. The pandemic will scale up the current situation of investment budgets being regularly cut. As a reference, the 2020 DNIT budget is about half of what it was five years ago, which seriously jeopardizes the future conditions of Brazil's road infrastructure. The 2013 situation is likely to resurge, with a rapid infrastructure deterioration 3 to 4 years from now. With regard to highway concessionaires (51 federal and subnational highway concessions), with yearly revenues of about US\$4 billion, the

observed traffic drops are equivalent to monthly revenue shortfalls of approximately US\$120 million. Finally, and maybe most importantly, the trucking subsector is comprised of about 120,000 transport operators and 26,000 firms in warehousing and other logistics services. Overall, this segment represents 1.7 million jobs. However, the market is dual: on the one hand, we find a few large and well-organized trucking companies that own half the fleet; on the other, an extremely vulnerable group comprised of many one-driver/one-truck family businesses, with low operational and financial capacity.

**Figure 37: Daily Port Calls, Port of Santos**  
(number of vessels)



Source: MarineTraffic.com.

**On port, rail and waterborne cargo transport, the demand has also been reduced,**

but no overall numbers have been made available so far. Figure 37 shows that daily port calls (arrivals and departures) have dropped from 35 to 25 vessels per day over the past month, yet with significant variability depending on the date.

**In the short-to-medium term (4 to 6 months), the pandemic is likely to result in a supply shock, stemming from transport operators' cascading bankruptcies.**

This impact could affect very large but vulnerable companies, such as air carriers or large

infrastructure concessionaires. Based on data made available by ALG Consultancy, GOL, AZUL and LATAM have between one and two months of cash or quasi-cash to face financial obligations. On May 26, LATAM, the largest carrier in Latin America, filed for Chapter 11 bankruptcy protection in New York. Some public transport concessionaires have reported about a month of cash, after which service could be affected. On the mitigation side, as described below, governments have been preparing packages to support these big players (for air transport at federal level, and for metro-rail transport in some cities).

**The situation could be even more worrisome for the large number of small passenger (bus, urban or interregional transportation) or cargo transport providers.** A recent survey from the National Confederation of Transport (CNT) reveals that: (i) 70 percent of the surveyed firms are already facing diffi-

culties in meeting their financial obligations (a good share of them were probably already so even before the crisis); (ii) 54 percent have enough working capital to cover one month of expenditures; and (iii) 22 percent have already laid off staff. If the decline in demand continues, massive layoffs could materialize in the transport sector, which could trigger protests to secure government support, affecting the supply of essential goods.

**In the medium-to-long term (1 to 5 years), we expect a severe deterioration of key transport infrastructure, which will drive logistics costs up once again.** Previous crises in Brazil and elsewhere have repeatedly shown that public administrations cut infrastructure maintenance expenditures to keep public budgets on track. While such policies may bring short-term savings, they indubitably lead to higher social costs. At some point, perhaps 4 to 6 years later,



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some infrastructure may need to be rebuilt almost from scratch. Both according to the World Bank Logistics Performance Index and WEF rankings, Brazil's transport and logistics infrastructure is already seen as a hurdle for the country's competitiveness. This situation may deteriorate even further. Although in early April, as part of the recovery plan, the federal government announced a US\$6 billion infrastructure investment package ("Plano Pró-Brasil"), the actual implementation of such plan remains to be seen—see PAC, PAC2 and PIL programs from the early 2010s.

### Private sector investment in transport infrastructure has been the motto in recent years, and should continue to be so.

Key transport infrastructure has recently been granted to the private sector through concession contracts, including ports, airports, highways and railways. The Ministry of Infrastructure, together with the Ministry of Economy and the BNDES, has a strong program covering

a 2-year horizon. Yet, questions remain about the private sector's capacity to take on more investments (and more risks) in a post-crisis environment. Contacts with key private sector infrastructure operators and investors lead us to believe that they will be busier renegotiating their current contracts (force majeure) rather than developing new business. Besides, a differentiated risk environment may be conducive to moving the risk cursor onto the public side in upcoming PPP/concession contracts—more of a seller market, with less interesting conditions for public administrations.

### This crisis may also be an opportunity for a more sustainable transport sector in the medium term.

Firstly, if full lessons are learned from this pandemic, transport services may reach a better level of preparedness to other similar situations. Emergency procedures designed on the rush and the dissemination of best practices may fuel a greater resilience for transport services in the future. This is particularly true for public transportation services, and to a lesser extent, trucking services. Secondly, the crisis may lead to consolidation in the trucking sector, which is traditionally characterized by excessive supply and inefficiencies (at least part of it). While, as discussed above, consolidation in this sector will come at a (social) cost, the efficiency of the trucking sector as a whole would end up enhanced. Thirdly, there may be some redistribution of transport patterns. This is true both for urban mobility and for global value chains. With regard to urban mobility, the remote working experience for the past month or so may well continue. As a result, passenger transportation, both urban and long-distance (air) may be permanently reduced to some extent. On global value chains, the crisis has made stakeholders and decision-makers more aware of the

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current efficiency—but also the fragility—of global value chains. The automotive sector, involving hundreds of manufacturers worldwide, well exemplifies this situation, which has led to the current shutdown of the industry. Value chains may be restructured, aiming at more resilience—in particular with more local suppliers and less transport.

### Most policy measures taken so far have focused on protecting sector workers.

Transport sector workers are indeed in the front line, as they ensure the continuity of transport services and supply chains, including food and health care equipment. Besides communications, these measures essentially include sanitization and personal protection equipment. Such measures have been applied across transport subsectors.

### The federal administration has declared transport as an essential service

by presidential decree. This decision provides a framework for the continuity of transport services. The decree also intended to standardize the approach to transport restrictions across the three spheres of government in Brazil.

### Operational measures have been taken to facilitate transport services.

The federal administration relaxed documentation and operational compliance requirements for cargo and interregional passenger transport. Truck overweight is temporarily allowed. Restaurant, health care centers and repair shops have been mandatorily opened to serve long-distance truckers. Specific apps have been developed for trucks to find support points and report any health issues.

### Fiscal flexibilization measures have also been adopted.

In the air transport sector, additional deferrals have been granted to airport concessionaires and air carriers for the payment of their concession fees and air navigation/traffic control fees. Banco do Brasil has authorized airlines not to pay interests for up to four months. The airlines relief package includes: (i) a 6-month postponement on the collection of air navigation charges; (ii) postponement until December 2020 of the collection of concession fees from airport concessionaires, with no fines; and (iii) a 12-month extension period for companies to reimburse costumers for canceled flights.



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## Box 12: Possible Measures to Address Remaining Vulnerabilities to Tackle the Pandemic (Transport)

### In the short term:

- Sustaining widespread sanitization and protection of frontline transport and infrastructure workers;
- Supporting customer protection policies and measures to prevent further coronavirus expansion, in particular for public transportation;
- Supporting credit lines and other financial measures to sustain the working capital of operators affected by harsh drops in demand: public transportation services, transport and logistics companies, transport infrastructure concessionaires.

### In the medium term:

- Developing financial instruments, in particular guarantees, to backstop financial obligations of transport operators and re-enable them to access capital markets;
- Developing labor-intensive infrastructure investment programs to support the job agenda and economic recovery;
- Scaling up investment and policies to further develop public transportation and active mobility in cities—aiming both at a more resilient transport systems, and the maintenance of accessibility to jobs and services;
- Adapting the regulatory framework and scaling up investments to increase the resilience of logistics and global value chains, in particular through increased digitalization.



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### Box 13: Concessions and Public-Private Partnerships (PPPs) in the time of COVID-19

Private sector participation in infrastructure, be it under performance contract approaches, concessions, or in the form of a partnership under the Brazilian PPP law, can play an important role in the country's post-COVID-19 recovery, with the following advantages:

1. Alleviating public sector fiscal burden at the subnational level, by mobilizing private sector investment capacity to complement public sector investments wherever possible;
2. Improving the quality of infrastructure services to end-users through performance-based approaches; and
3. Addressing vulnerabilities and job creation when focusing on sectors such as health or sanitation.

COVID-19 may alter the confidence of the private sector in contracting with public authorities through PPP/concession approaches. Risk sensitivities may be modified due to the crisis, and instruments to “de-risk” some projects may be mobilized more systematically, with a need for more guarantees, or occasionally PPP projects that are based on availability payment revenues (instead of the private partner taking the revenue risk).

In addition, possible solutions to which the WBG could contribute are:

- A. Turning around selected utilities SOEs to improve performance and service reliability;
- B. Scaling up infrastructure PPP projects;
- C. Strengthening subnational PPP/concession institutional framework and capacity to create pipelines of bankable projects, alleviating fiscal burdens and prioritizing projects based on COVID changing priorities;
- D. Enhancing the Infrastructure Guarantee Fund (FGIE), or a similar instrument, to structure guarantees for concessions and PPPs (especially those in the social sector).

## 3.8 HOUSEHOLD EXPOSURE AND POLICY RESPONSE

### Household Vulnerability

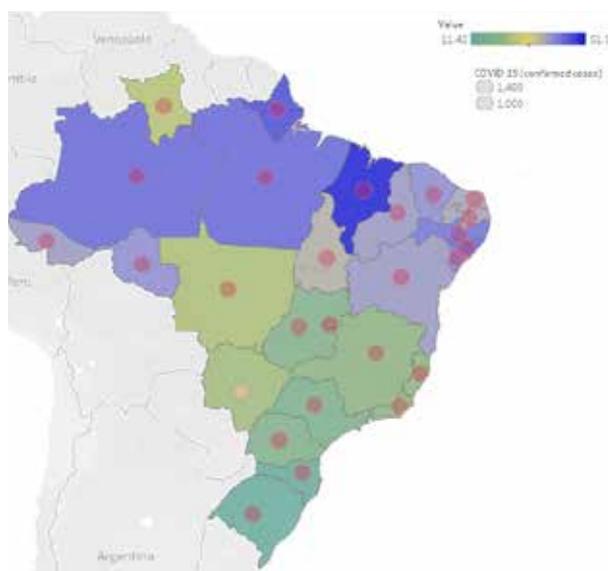
**The pandemic is hitting Brazil at a time when the poorest 40 percent are still struggling to recover from the 2015–16 crisis.** The economic crisis

resulted in a significant increase in poverty and inequality. Between 2014 and 2016, nearly 5.6 million Brazilians fell into poverty (US\$5.50 per day). Currently, 20.1 percent of the population live in poverty, while those living on less than US\$1.90 grew by 2.5 million, and now exceed 8 million people. Inequality increased from a Gini index of 51.9 in 2015 to 53.3 in 2016—the largest single-year increase in Brazil since the early 1990s. The subsequent uneven recovery since 2017 has left the poorest 40 percent worse off than they were before the crisis. In real terms, the income of the poorest 40 percent was lower in 2018 than in 2014 in all but four states.

**Even before the pandemic, half of the Brazilians (52 percent) were economically vulnerable,** being either already in poverty (living on less than US\$5.50 per day in 2011 PPP) or at risk of falling into poverty (living on a per capita income between US\$5.50 to US\$13 per day). This is particularly true in the North and Northeast regions of Brazil, where in most states, between 70 percent and 80 percent of the population fall into this category. These people are mostly young (more than 7 out of every 10 Brazilian children and youth belong to this group), urban, and employed in precarious and unprotected jobs.<sup>38</sup> They belong to groups expected to suffer a higher income shock.

<sup>38</sup>The poor represent 20 percent of the Brazilian population, and include 36 percent of all Brazilian children (<15 years old) and 25 percent of the youth (15–24). Seventy-two percent of the poor live in urban areas, and 67 percent of those who work are in precarious jobs (informal or own-account), two groups likely to be particularly exposed to the COVID-19 crisis. This profile is very similar for the economically vulnerable (those living on US\$5.50 to US\$13 per day), who represent 32 percent of the country's population and 37 percent of all Brazilian children and youth. The proportion among those living in urban areas is even higher: 85 percent. Informal or own-account workers amount to 43 percent; and 67 percent are working in retail or services, which are expected to be the most affected sectors by the crisis.

**Figure 38: Half of the Brazilian population are Economically Vulnerable** (reported COVID-19 cases and percentage of state population aged 65 and older who are poor or vulnerable, 2018)



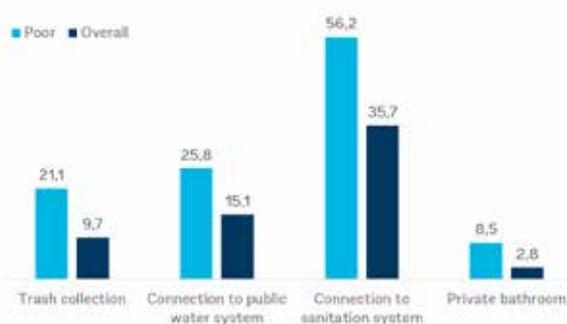
Source: World Bank (LAC TSD tabulations using SEDLAC) and Ministry of Health COVID-19 cases (as of May 31, 2020).

**The most vulnerable Brazilians are the urban poor; those in rural communities, including indigenous populations; women and children; and older people.** About one in every five Brazilians live in slums or substandard housing, and another 32,000 are homeless. Epidemiological models find that COVID-19 is likely to spread more in high-density areas, such as slums, making the urban poor particularly exposed. At the same time, rural populations, including indigenous peoples, forest and traditional communities, face additional risks arising from their difficult access to basic services, including health care. Children and youth

face challenges from school closures and higher unemployment (examined in more detail below). Women and children, in particular, also face increased risks of domestic violence. Quarantines and pandemics can increase widespread violence, as well as violence at home toward women and children. There is early evidence that this is already occurring in Brazil. Finally, while there is near-universal coverage of old-age benefits, either through pensions or social assistance schemes (such as the Continuous Cash Benefit program, or *Benefício de Prestação Continuada*—BPC), a quarter of Brazil’s population aged 65 and above live in vulnerable households, with higher proportions being found in the North and Northeast (figure 38).

**There is an important overlap between income vulnerability (ability to pay for food and rent) and vulnerability in living conditions (adequate housing and services).** Poorer households have less access to improved sanitation, running water, and private bathrooms (figures 39 and 40)—all important services to reduce the spread of disease. These critical deprivations affect the poorest 40 percent across all states in Brazil in similar proportions to other countries in Latin America (figure 41a, 41b, and 41c).

**Figure 39: Lack of Access to Adequate Sanitation** (percentage, 2018)



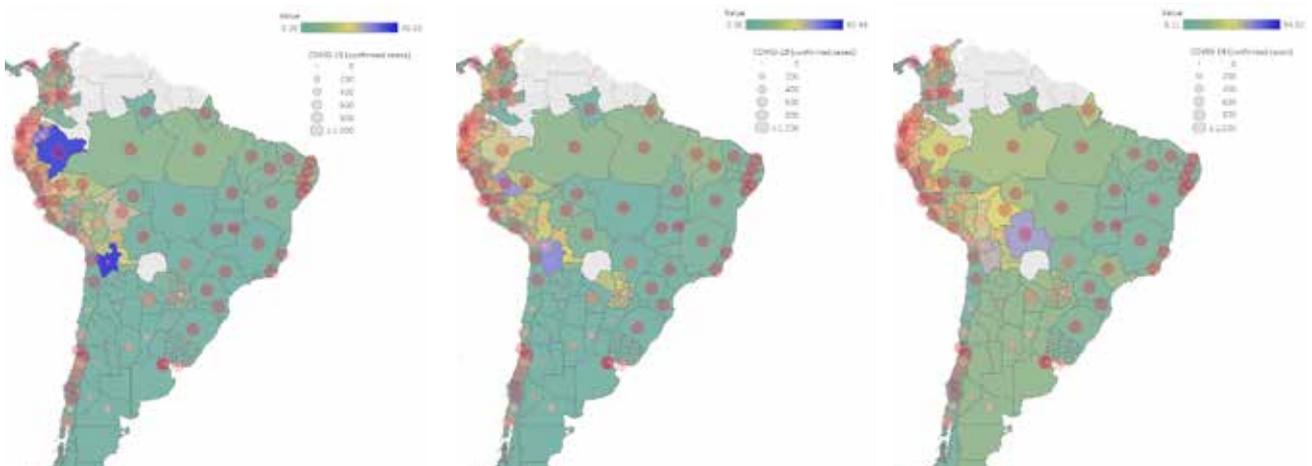
Source: World Bank.

**Figure 40: Water Supply Interruptions for Domestic Users** (average hours per month, 2018)



**Figure 41: Percentage of the Poorest 40 Percent Facing Deprivations in Housing and Related Services by State, 2018**

- a) Lacking Running Water (percentage)
- b) Lacking Improved Sanitation (percentage)
- c) Living in Overcrowded Housing (percentage)



Source: LAC Team for Statistical Development tabulations of SEDLAC (CEDLAS and World Bank) for poverty data; and Public Health ministries for COVID-19 confirmed cases, circa May 31, 2020.

## Transmission Channels

**The key transmission channels through which the COVID-19 crisis will affect households are market demand and supply shocks, which are expected to translate into labor income losses.**

A large proportion of Brazilian households face a high risk of losing their income: two in every five Brazilians rely mostly on unprotected income sources (figure 42a). These are defined as the population for whom most of the household income derives from informal jobs, own-account work and formal employment with less than six months of wage protection in case of job loss.<sup>39</sup> Among the poorest 20 percent, the share of people relying on unprotected income increases to half the population.

**Another transmission channel through which the crisis may affect households is prices and, in particular, food security.**

Beyond the general equilibrium effects on prices, potential breakdowns in local logistics and labor availability could increase the cost of bringing food to market. This would especially affect lower-income net food buyers, consisting of both the urban population and a substantial number of rural dwellers. They would suffer a double hit—not only are they more likely to experience income losses, but food is also a relatively larger part of their total consumption expenditure. The full impact of food price inflation on poverty depends on a range of factors, including the distribution of initial income/expenditure across food producers and consumers, that is, whether net buyers have lower incomes than net sellers, or vice versa; whether households close to the poverty line are net sellers or net buyers; the concentration of households around the poverty line; the magni-

tude of price increases; and the extent to which medium-term adjustments in production and consumption—“second-round effects”—are able to reverse some of the short-term welfare losses. The food component of the IPC-C1 (a price index measured by FGV Ibre)<sup>40</sup> increased from 0.51 percent in February to 1.63 percent in March due to the initial run on supermarkets caused by the COVID-19 pandemic. However, while this initial pressure has receded a bit as the income shock compresses demand, supply constraints caused by lower labor availability and partial breakdown of supply chains still imply a danger of food price increases.

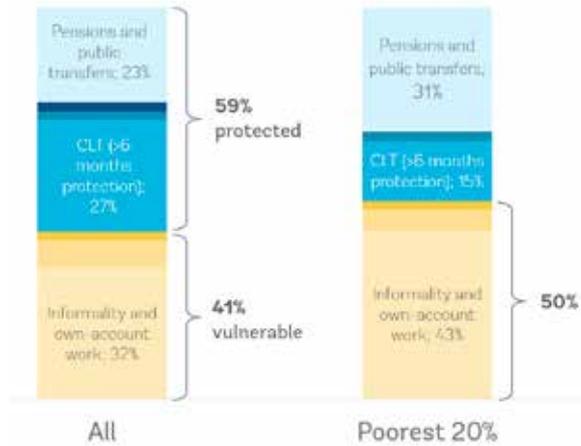
**Relatively few households can weather significant labor income shocks.**

It is particularly important to consider that Brazil’s poorest were still recovering from the 2015–16 crisis, and the income of the poorest 40 percent is still below precrisis levels. Moreover, unemployment rates remain near crisis levels (figure 42b), with the youth facing particularly alarming levels of unemployment. In addition, household debt burden is high, at 45 percent of household income, reflecting increased non-mortgage debts since 2017 (figure 43). These factors suggest that many households have little room to absorb another shock.

<sup>39</sup>The analysis uses job and worker characteristics to simulate unemployment insurance eligibility, severance pay (multa) and employer-funded savings account (FGTS) balances. Based on these amounts, we calculate how many months of protected wages each formal private-sector wage worker will have in the case of a layoff.

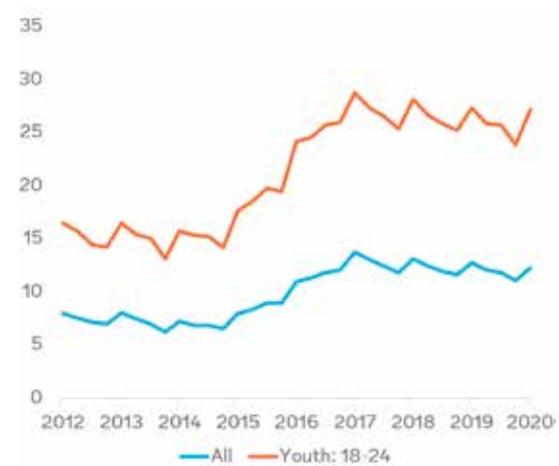
<sup>40</sup>The IBGE suspended face-to-face data collection for the official national price indexes (IPCA, INPC) due to COVID-19, replacing it with phone and internet-based data collection. This may generate some discontinuity in the series.

**Figure 42: Market Demand and Supply Shocks**  
**(a) Share of Population by Majority Income Source**  
 (percentage, 2018)

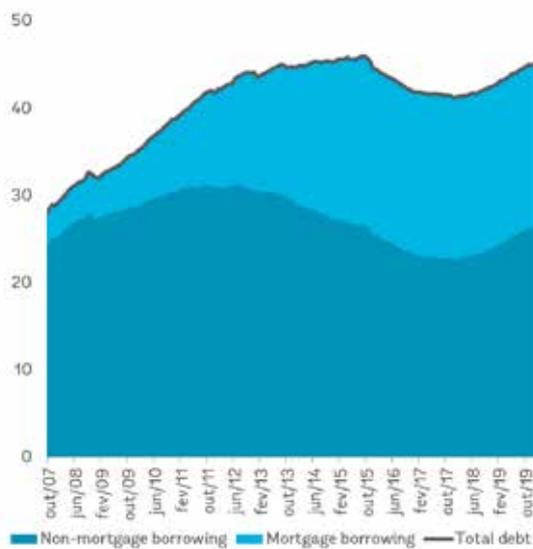


Source: World Bank.

**(b) Unemployment Rates**  
 (percentage of labor force, Q1 2012–Q1 2020)



**Figure 43: Household Debt Burden**  
 (percentage of household disposable income, 2007-20)



Source: World Bank.



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**Impact on Employment and Household Income**

Vulnerability to pandemic-related unemployment or labor income shocks is heterogenous, affecting some types of workers more than others. As noted above, informal and own-account workers have no formal income protection mechanisms in place, whereas public sector

workers and most formal private sector wage earners (CLT workers, that is, those covered by Brazil’s labor law known as *Consolidação das Leis do Trabalho*) have employment protection and access to unemployment insurance, severance pay, and employer-funded savings accounts. Sectors are differently exposed as well. The risk of employment interruption is higher for sectors that rely more heavily on face-

to-face interactions. Low-wage workers and women are more likely to be in these sectors (figures 44a and 44b), and hence more prone to suffer the employment shock first.

**Using subnational macroeconomic modeling techniques and crossing them with high-frequency data (such as credit card spending), estimates show that the most affected sector is that of services (export-crops benefit from the lower real exchange rate, but there is a risk of pressure on prices across food products, as reflected in early evidence of increasing food prices).**

This same model estimates the impact on real wages across sectors and across states, showing that they decrease across sectors, although there are some regional exceptions, especially in agriculture. In general, wages are “sticky”, so adjustments from economic shocks, especially among formal workers, are more likely to take the form of reduced employment (including reduction in hours) than falling wages. In order to understand how sectoral shocks will affect families, we have allocated them as employment interruptions to workers in a microsimulation model.<sup>41</sup> We estimate that these shocks will significantly reduce the earnings of 30 to 35 million workers, including as many as 70 percent of non-agriculture informal workers, and a third of CLTs. As a reference point, in February 2020, 12.3 million Brazilians were unemployed. More importantly, not all of these interruptions will necessarily become unemployment spells. The 2017 labor reform that regulated part-time work, and the recent

Emergency Employment and Income Protection Benefit (BEm—*Benefício Emergencial de Manutenção do Emprego e da Renda*), which introduced flexibility for firms to suspend paid work, may help to reduce the amount of outright job destruction and mitigate workers’ losses from cuts in paid hours, without forcing them to sever employment relations so as to activate unemployment insurance.

**These unemployment shocks translate into significant reductions in family income and higher inequality.**

Simulations were run for two scenarios: a baseline and a downside scenario. The largest impact under both scenarios is in the middle of the income distribution. Under the baseline scenario, annualized per capita income is expected to fall by 7.6 percent overall, and 14.9 percent and 14 percent in the second and third quintiles, respectively (figure 44a). These are the quintiles hit the hardest by the crisis, and whose income depend less on government transfers. The first line of defense is Brazil’s existing unemployment protection system for formal workers. Once unemployment benefits are considered, this effect is reduced to 5.3 percent nationally, and buffers 20 to 40 percent of the average income reduction in all but the poorest quintile.<sup>42</sup>

**The effects are not expected to be income neutral—instead, they are likely to increase inequality, as informal workers and lower-wage formal workers are more likely to suffer unemployment shocks.** The disproportionate erosion of income for lower-income families would result in an increase of 3.1 percent in inequality—a

<sup>41</sup>These estimates are based on results from the computable general equilibrium model and the BraSim microsimulation tool, assuming a baseline and a downside unemployment shock for affected workers. Unemployment shocks are allocated based on worker and household characteristics that are correlated with higher likelihood of non-employment.

<sup>42</sup>This analysis implicitly treats BEm, an emergency benefit which grants workers access to three months of unemployment benefits without a formal dismissal, as part of the unemployment insurance system.

significant one-year change, and larger than the 2.7 percent increase experienced between 2015 and 2016.

**The baseline scenario could lead to an increase in the population living on less than half a minimum wage (a proxy for poverty) by an estimated 8.4 million people in 2020.**

To assess the impact of the crisis on household welfare, we estimate the share of the population that will fall into poverty, defined in this analysis as living under the income threshold of half a minimum wage per capita. Because of the temporary nature of expected income shocks and of mitigation measures, results are based on annualized income. We begin from a baseline poverty rate of 29.1 percent based on recently published 2019 PNAD-C data. For the baseline scenario, and after taking into account unemployment benefits received by formal workers who may be laid off, the result is a 13.4 percent increase in the share of people living on less than half a minimum wage. This translates into approx-

imately 8.4 million people. Without unemployment benefits, this number would have been 11.5 million. These results are aligned with an increase in poverty (at the international poverty line of US\$5.50 per day) for approximately 7.2 million Brazilians.<sup>44</sup> The most affected quintiles are the second and the third—largely aligned with the economically vulnerable living on incomes that fall above the US\$5.50-per-day line, but below US\$13 per day.

**Under the downside scenario, income reductions would be steeper, leading to higher increases in inequality and poverty.**

Overall, income would fall by 7.1 percent; and by 10.5 percent to 15.1 percent for the second and third quintiles (figure 4.5c). Inequality would jump by 4.1 percent—an increase higher than what was seen in 2015–16. As a result, poverty would rise by 17.6 percent after taking into account formal workers' unemployment protection, pushing 11 million into poverty. Without unemployment protection measures, the increase in poverty would reach 24.5 percent, or over 15.4 million people.



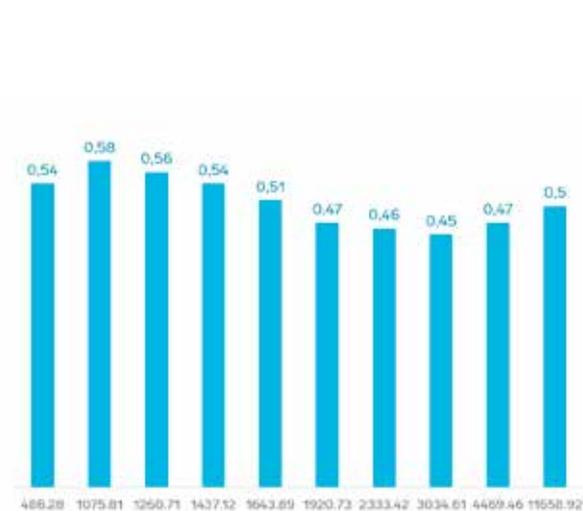
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<sup>43</sup>The value of half a minimum wage is an important poverty line proxy for Brazil, since it is the eligibility threshold for *Cadastro Único*, and it is close to the international poverty line for upper middle-income countries, US\$5.50 per day (2011 PPP).

<sup>44</sup>Due to methodological differences between the welfare aggregates used for the two poverty lines, the results are not directly comparable. The poverty change for the US\$5.50 line is estimated based on historical elasticities of poverty to growth, but the selection of parameters is informed by the results of the microsimulation model.

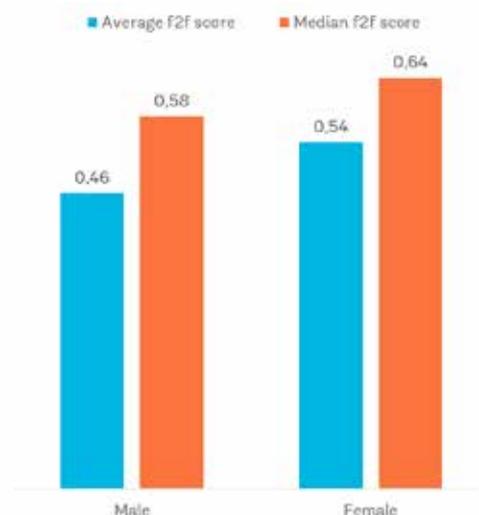
Figure 44: Sectoral Distribution of Face-to-Face Interactions in the Formal Sector

a) Average Score by Income Decile



Source: World Bank tabulations based on RAIS.

b) Average and Median Score by Gender



The results above highlight the importance of access to unemployment insurance benefits during this crisis, while also showing the magnitude of uncovered shocks among lower-income groups.

Accessing unemployment insurance was initially slowed down by the closure of SINE offices, which traditionally process the majority of unemployment claims. These have now largely moved to online applications, which have allowed the continued processing of claims during the pandemic. Two particularly relevant policy responses announced by the government for alleviating the impact of the crisis on Brazilian households are (i) the expansion of the *Bolsa Família* Program (BFP) to include families that were already eligible; and (ii) *Auxílio Emergencial*, that is, an emergency aid program that grants three monthly transfers of R\$600 to families with income levels below half a minimum wage per capita for informal and own-account workers (*Microempreendedor Individual MEI*, or self-employed), as well as the unemployed not receiving any unemployment insurance.

The expansion of the BFP is expected to add 1,225,000 families to the program, or approximately 3.3 million people.

This increases the total coverage of the program by 8.6 percent to 14.26 million families at an estimated cost of R\$3.1 billion. Although this expansion is expected to increase the income of these affected families, it should reduce poverty only marginally. The population living on less than R\$178 per month (the BFP eligibility criteria, and a value close to US\$1.90 per day) are expected to decrease by 0.1 percentage point. This is because of BFP's low generosity levels: 60 percent of families in the BFP receive less than R\$200 per month. Moreover, an estimated 450,000 eligible families are still waiting to access the BFP, while it is possible that, in the coming months, new families will need assistance as a result of the pandemic.

### The Auxílio Emergencial program will have a significant impact on low-income households.

Assuming that the transfers are well disbursed to all eligible households, under the baseline scenario the benefit would more than offset the impact of the pandemic on the poorest quintiles, covering an estimated 54 to 68 million workers at a cost of R\$106 billion to R\$135 billion.<sup>45</sup> Relying only on the lower-bound estimates of coverage, the transfers would fully undo the annualized impact of the pandemic on income for the poorest 40 percent of the population. In annualized terms, the three months of transfers would increase the average income of the poorest quintile by 14 percent relative to 2019, when it was R\$203.50 per capita, and of the second quintile by 3 percent. *Auxílio Emergencial*, if well implemented, would also significantly (though temporarily) mitigate the impact of the shock on inequality. Even with the resulting significant increase in income for the lowest income quintiles, inequality is expected to remain at a Gini index of 53.4, higher than its 2015 precrisis level.

### The resulting increase in income for the poorest 40 percent has

### the potential to reverse the pandemic's impact on poverty.

Using the annual average income for 2020, the poverty rate could fall by 2.3 percent relative to preshock poverty levels (figure 45b).<sup>46</sup> While the inclusion of all BFP families in this transfer means that a significant proportion of the poorest quintile will see their incomes increase (by an average of 14 percent), few BFP families are expected to exit poverty, as their income will remain below half a minimum wage. Rather, it is other households with higher incomes and who rely on informal and own-account work that are most likely to be pushed out of poverty. While the percent of families living on less than half one minimum salary is expected to fall as a result of the AE, it is important to note that, for about 1.2 million families who experience an income shock, the AE will not be sufficient to push them above this threshold. The median family in this category will see their monthly income fall to about R\$420 per person. Figure 45d presents the impact of these transfers in the face of a more severe employment disruption scenario. In the downside scenario, the effects of the transfers are still positive and can offset most of the negative impact of the shock, but they are not able to reduce poverty below preshock levels.



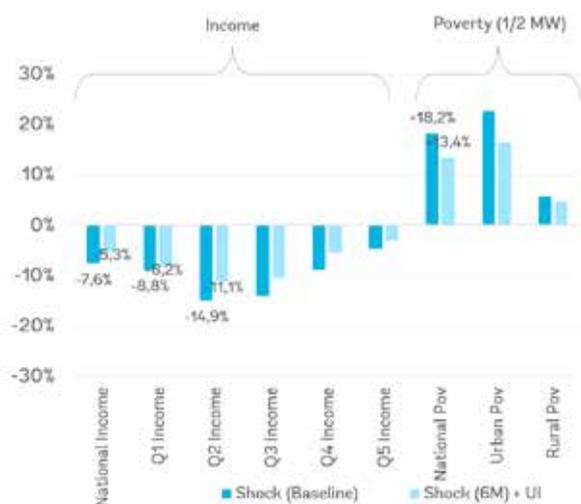
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<sup>45</sup>Lower-bound estimates are based on the application of income eligibility considering all informal income reported in the BraSim microsimulation model. Upper-bound estimates apply income eligibility, excluding income that is not reported by a third party (informal and self-employment income) and does not enforce the limit of 2 benefits per household. As of late May 2020, benefits had been approved for 60 million people.

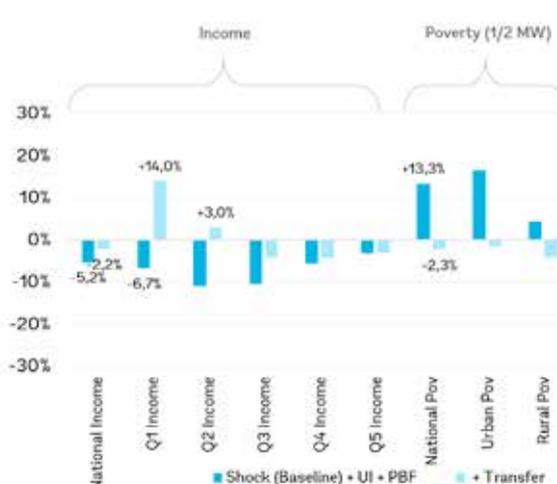
<sup>46</sup>These results are based on the baseline and downside unemployment shock scenarios derived from CGE-based projections of sectoral income losses used above. This estimate takes into account unemployment benefits and the BFP expansion.

Figure 45: Poverty and Income Impacts of Household Employment Shocks and Auxílio Emergencial: CGE—Microsimulation Household Analysis

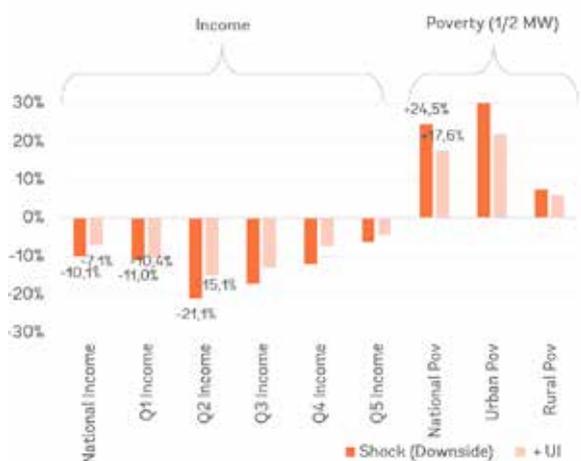
(a) Effects of the Pandemic on Household Income and Poverty (before policies), Baseline Scenario



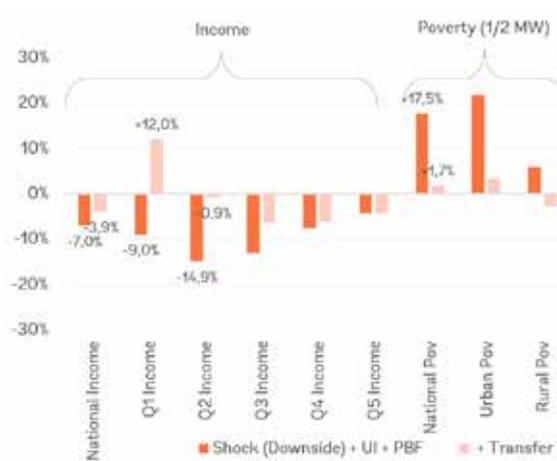
(b) Effects of Expanded BFP and Auxílio Emergencial on Household Income and Poverty, Baseline Scenario



(c) Effects of the Pandemic on Household Income and Poverty, Downside Scenario



(d) Effects of Expanded BFP and Auxílio Emergencial on Household Income and Poverty, Downside Scenario



Source: World Bank.

Note: The wage bill shock is based on the Brazil CGE model. Unemployment shocks are distributed based on worker and household characteristics using a fitted logit model. All figures are based on the lower-bound estimates of coverage for Auxílio Emergencial under each scenario.

**The successful implementation of Auxílio Emergencial requires a quick expansion of the national beneficiary registry (Cadastro Único) to include eligible workers that are not receiving benefits yet.**

This process has been hindered by a lack of identification numbers (known as CPF) for segments of the population, and the limited ca-

capacity of local social assistance offices (CRAS) to process new beneficiaries. A large segment of beneficiaries will be automatically covered—those who receive Bolsa Família. Under the lower-bound estimates of coverage, if we assume that only half of the eligible workers who do not receive Bolsa Família are able to access Auxílio Emergencial, 12.5 million fewer workers would receive it in the baseline scenario. The

result would be 1.8 million people still entering poverty, instead of 1.4 million leaving it as a result of the transfers.

**Importantly, the results reported above, based on annualized income, obscure the severity of the short-term impact of these income shocks, assuming instead perfect income smoothing over the year.** In reality, households in the lowest income groups will, on average, experience three months with higher-than-usual incomes during the onset of the pandemic (mostly April through July, depending on enrollment date) as a result of *Auxílio Emergencial*. Once these transfers end, and if employment remains weak, these same households will then experience a severe income reduction: relative to their prepandemic income, the income of the two bottom quintiles would fall by 26 percent on average—after taking into account unemployment insurance.

**Beyond the two key policy responses explored above (expanded BFP and *Auxílio Emergencial*), policies are also being implemented to reduce unemployment shocks for formal workers,** such as increased flexibility for remote working and leave policies, and bringing forward extra payments (such as the 13th salary and other wage subsidies). Other measures have also been adopted, such as expanding access to credit through increased lending, and steps to reduce food insecurity. Furthermore, there are also housing policies being implemented, such as the construction of subsidized housing; temporary suspension of mortgage payments for *Minha Casa Minha Vida* beneficiaries; and temporary resettlement of at-risk groups to government-managed facilities.

**Brazil also has some notable sources of resilience, especially as compared to many other middle-income countries.** Firstly, Brazil benefits from having a relatively large formal sector workforce with some unemployment protection and savings mechanisms in place. Secondly, Brazil has provided near-universal access to pensions and/or social security benefits to its older population, which is also among the most vulnerable to COVID-19. Thirdly, Brazil has robust infrastructure in place for the delivery of its emergency measures, such as *Cadastro Único*, with 76.4 million people registered, complemented by other tools, including an existing network of NGOs supporting government actions in the slums. While the country will still need to add a significant number of newly eligible informal, self-employed, and unemployed workers to the registry in order to effectively distribute *Auxílio Emergencial*, the rollout of this benefit to *Bolsa Família* beneficiaries provides a quick source of additional support to the poorest families in Brazil.

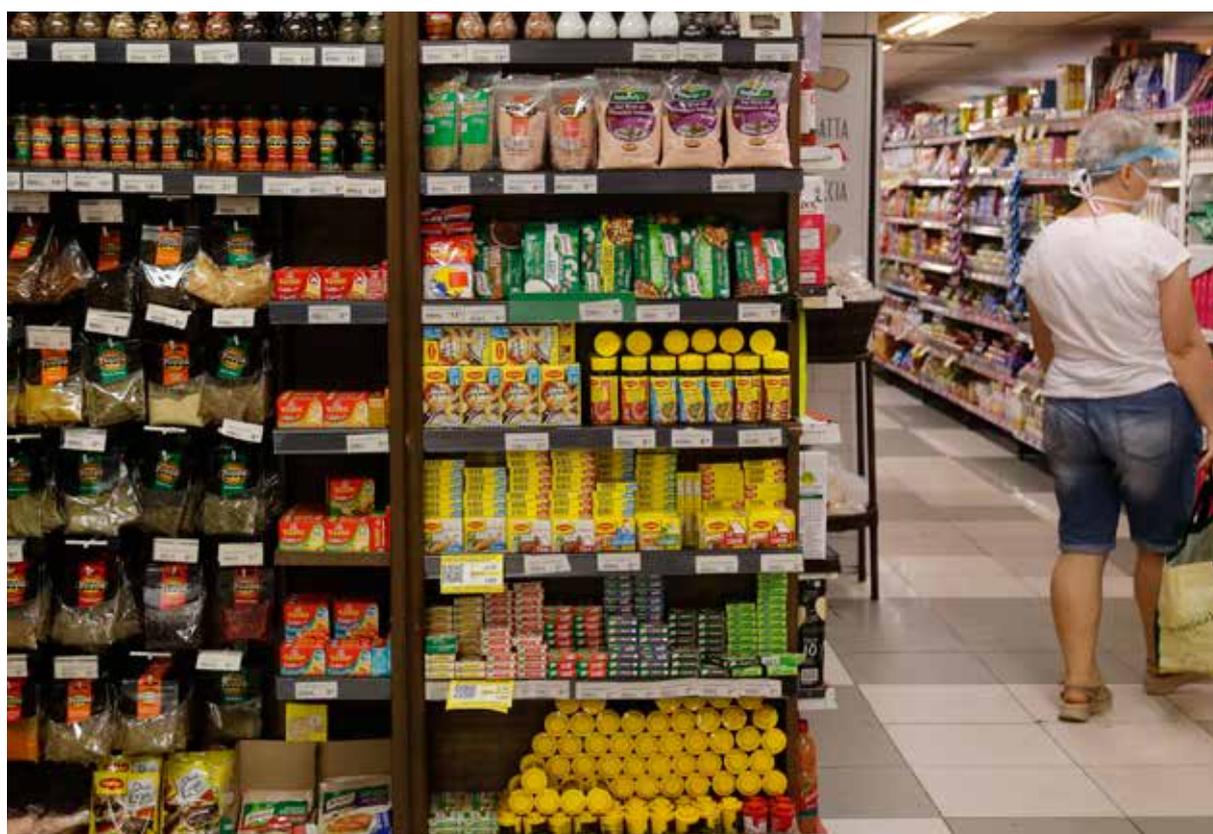


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### Box 14: Possible Measures to Address Remaining Vulnerabilities for Households

#### In the short term:

- Increasing capacity of local CRAS offices to process new applications for *Cadastro Único*, *Auxílio Emergencial*, and *Bolsa Família*;
- Increasing flexibility of procedures for unemployment insurance benefits and FGTS withdrawals;
- Providing continued access to clean water, soap, and other hygiene products in low-income neighborhoods and rural communities;
- Ensuring continued food distribution strategies, especially for households with children who would ordinarily rely on school meal programs;
- Increasing protection and support services for victims of domestic abuse, including safe accommodation facilities, when necessary;
- Resuming the publication of monthly job-loss counts in the formal sector, based on the CAGED database;
- Publishing information on the number of workers with access to unemployment insurance and FGTS accounts to better prepare for temporary employment interruptions affecting formal workers;
- Increasing phone and web-based data collection.



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### Box 14: Possible Measures to Address Remaining Vulnerabilities for Households

#### In the medium term:

- Taking into account Brazil's limited fiscal space: increasing the generosity and coverage of *Bolsa Família*. *Auxílio Emergencial* will result in a large temporary increase in income for *Bolsa Família* beneficiaries, but a long-term adjustment to the program will still be needed over the next year;
- Enhancing the social safety net to make it more shock-responsive in the future, including increasing the coverage of identity numbers (such as the CPF) to facilitate future enrollment and response strategies;
- Revising labor regulations to facilitate and expedite the hiring of personnel, especially youth; and moving forward with the labor market reform agenda, aiming to reduce the explicit and implicit costs for firms to hire formal workers (ultimately high informality is a key cause of vulnerability to labor market shocks);
- Strengthening the infrastructure to allow more jobs and services (including education) to operate online (for example, internet connectivity, mobile broadband, delivery services, payment systems);
- Modernizing the statistical system, including more online and phone surveys, expanding the use of administrative data for statistical purposes, and using non-traditional sources, such as big data;
- Considering the introduction of fiscally-neutral programs to allow the rising number of formal self-employed to access risk-management instruments in the labor market, such as FGTS, while reducing the wide gap in labor costs between dependent and independent employment, which can cause labor market duality;
- Reforming and consolidating different unemployment protection instruments and wage top-ups (*Abono Salarial*, *Salário Família*), in order to generate the fiscal space required to finance active labor market programs targeted at labor market outsiders, such as informal workers and first-time jobseekers;
- Carefully taking into account fiscal constraints, and considering support to active labor market programs that can address shortcomings in essential infrastructure, and that can support employment recovery for vulnerable workers. This can be done, for example, through community-driven interventions that employ vulnerable workers and focus on productive infrastructure (water, irrigation, sanitation), or socially useful jobs (including waste collection).

**However, even considering these sources of resilience and the measures being currently taken, several vulnerabilities remain.**

Firstly, it is unclear what measures can be taken after the end of *Auxílio Emergencial*. More than 60 million people are expected to receive the transfers. Given its wide coverage (including households with income of up to three times the minimum wage), relative generosity (at almost 60 percent of the minimum wage), and the tight fiscal situation facing the country, follow-up measures are likely to be smaller. The low generosity of the BFP and its limited coverage are unlikely to be enough to support the economically vulnerable population after the end of *Auxílio Emergencial*. Moreover, Brazil's high inequality underlies structural challenges that cannot be resolved in the short term, including the poor quality of urban housing and services, especially in informal poor settlements, which are prone to overcrowding. Hence, measures taken to address the urban poor's low-quality housing will not be fast enough to mitigate the pandemic pressure. An increase in gender-based violence (and its severity and frequency) due to confinement can be observed across different countries. The stretched capacity of response services might reduce the protection and support available, contributing to a heightened perception of impunity. Finally, the pandemic has undermined Brazil's ability to monitor the impact of the crisis and its aftermath, which is necessary to design and implement effective policy responses. It has disrupted face-to-face surveys and delayed the Population Census to 2021, adding pressure to the already nascent modernization agenda being developed by the IBGE (Brazil's statistics agency). Brazil's rich administrative data are underutilized for statistical purposes, though the recent publication of unemployment claims from the new CAGED

database has provided a clearer picture of the use of the BEm program, and the extent of new unemployment claims in April and May.

### 3.8.1 IMPACT ON LEARNING: EDUCATION DEEP DIVE

**While at lower risk from COVID-19 related deaths, children and youth face additional risks during this pandemic.** As mentioned above, they are overrepresented in poor and vulnerable households. The closure of schools can lead to malnutrition, as children miss school-provided meals. It can also drive higher dropout rates, while the already high unemployment rates among the youth are likely to increase during the pandemic. These factors may have long-term effects on the accumulation of human capital.

**The rapid spread of COVID-19 in Brazil imposes pressing challenges to the country's education policy.** Over 180 thousand schools have been closed in an attempt to contain the virus. Teachers are having to learn how to deliver their lessons online. Governments have to provide tools for remote learning and internet connectivity. The situation is also unprecedented for parents, who must become learning instructors, and for 47 million students, who are having to adapt to a new routine. At the same time, they are weathering an increase on student-parent socioemotional stress, as well as an adverse income shock. By far, the biggest challenge is coordinating all these fronts and keeping students learning.

### Without Coordinated Actions, Learning Gaps Tend to Rise as Students are Out of School.

**Especially for the most vulnerable, school closures can mean disrupted learning processes and increased dropout rates.** Even for those that are able to continue learning, parental support varies critically according to the family background (both quantitatively and qualitatively), according to the international literature.<sup>47</sup> Loose interactions between students and teachers during the pandemic interrupt the regular learning progress, particularly when teachers are replaced by parents with low levels of education. Besides, students from highly vulnerable households dealing with the job market dilemma can see little reason to return to school once the system reopens.

**According to evidence from learning poverty indicators, 42.2 percent of children in Brazil are unable to read and understand short age-appropriate texts by the age 10.** Despite the relevance of all foundational skills, focusing on reading is justified because (i) it is an easily understood measure; (ii) reading is a student's gateway to learning in every other area; and (iii) it is a proxy for foundational learning in other subjects.

**Table 10 shows that school closures in Brazil may raise learning poverty levels by 2.6 percentage points to 44.8 percent.** Additionally, in the short term, the proportion of children not enrolled in school may increase 0.1 percentage point and reach 4.8 percent among primary-school-aged children. If mitigation strategies are partially successful—for example, with

50 percent effectiveness—the impact will be reduced by half. Brazil has steadily decreased learning poverty in recent years by an average of 3 percentage points per year. However, with the spread of the coronavirus, the education system could backtrack the equivalent of one year on this recent progress. These results are clearly a lower-bound estimate, as they do not include the effects of income loss in both learning and school dropout rates throughout the entire educational cycle, especially in secondary and tertiary education.

### The first measure being implemented by governments during the pandemic was to replace face-to-face with remote learning.

An effective and inclusive implementation of this strategy depends heavily on existing infrastructure. In addition, it is important to ask whether teachers are prepared to teach remotely, and how technologies are combined. One example is the state of Amazonas, one of the most well-equipped states for remote learning. They combined *Aula em Casa* (a home schooling program that broadcasts educational content on open television via satellite) with social media lives and apps. Other similarly impactful strategies come from Piauí, Paraná, Distrito Federal and Maranhão (using television), and Pernambuco and Rio de Janeiro (through online platforms).



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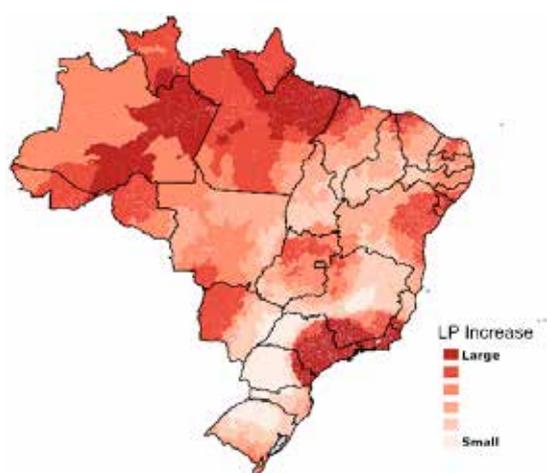
<sup>47</sup>Guryan, Jonathan, Erik Hurst, and Melissa Kearney. 2008. "Parental Education and Parental Time with Children." *Journal of Economic Perspectives*, 22 (3): 23-46.

Table 10: Simulated Impacts of School Closures on Learning Poverty (index)

Indicator	Baseline (2017)	12.5% School year equivalent	25% SYE	37.5% SYE
Learning Poverty (%)	42.2	43.5	44.8	46.1
Out-of-School	4.8	4.8	4.9	5
Below Minimum Proficiency	39.3	40.6	41.9	43.2

Source: World Bank.

Figure 46: Learning Poverty, SAEB (learners under the learning poverty baseline, 2017)



National and Subnational Governments Have Been Implementing Different Combinations of Education Policies, but Inclusiveness Remains a Challenge.

**Teachers’ previous experience in the use of technology for learning is another critical factor.**

In other words, effective remote learning and teacher training in the pedagogical use of technology are complementary policies. However, initiatives aimed at this are still to be fully explored. In Brazil, data from SAEB 2017 (a national learning assessment) indicate that 60 percent to 70 percent of teachers consider technology training as “highly necessary”. Distrito Federal has been delivering training to public school teachers on how to use online platforms.

**It is crucial to encourage further parental engagement while children are studying from home.**

Keeping parents involved is even more important during the COVID-19 pandemic—especially if the focus is on reducing inequalities. Vulnerable families are likely to spend less time homeschooling their children than non-vulnerable families. Therefore, one awareness-raising option is to use traditional platforms, such as radio or television, to broadcast programs reinforcing the importance of parental support during the pandemic, while encouraging information sharing and creating mobile apps to motivate parents.

**Households must also be structurally prepared to replace regular classes with homeschooling.**

In addition to socioeconomic gaps, several inequalities should be considered, including differences in internet connectivity among regions, and among households located in rural and urban areas. The state of São Paulo has engaged with local internet providers to substantially reduce connection costs in an effort to make it more affordable for vulnerable families. Other potential strategies to confront structural difficulties include using available devices, such as mobile phones, or computers/tablets at school.

**Class suspensions also affect the social safety net generated by schools.**

For many children, the only regular and healthy meal of the day takes place at school. In addition, women, who tend to be the primary caregiver in many households, end up overwhelmed by accumulating remote working and childcare responsibilities during a pandemic. As mentioned earlier, Law 13,987/2020 has recently been enacted by the federal government, allowing the resources

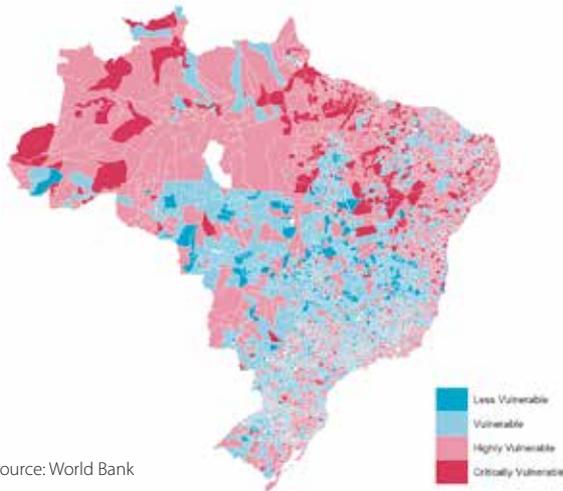
originally allocated to providing school meals in all public schools (under the National School Meals Program—PNAE) to be used to buy basic food baskets for disadvantaged families. Before this change, municipalities such as Recife were already distributing food baskets to the families of vulnerable students.

**One way to illustrate these aspects is by considering an index of student vulnerability to school closures.** With this purpose, figures 47 and 48 present a student vulnerability index based on (i) the availability of meals at schools; (ii) whether teachers use internet or technology in

the classroom; (iii) whether the family supports their education; (iv) the incidence of students working; and (v) past dropouts. The index is ordinal and assumes that low-performing students that dropped out in the past are more vulnerable to the pandemic when school meals are cut, their teachers are less prepared for remote teaching, and their families are less engaged in homeschooling (as compared with students in the opposite situation).

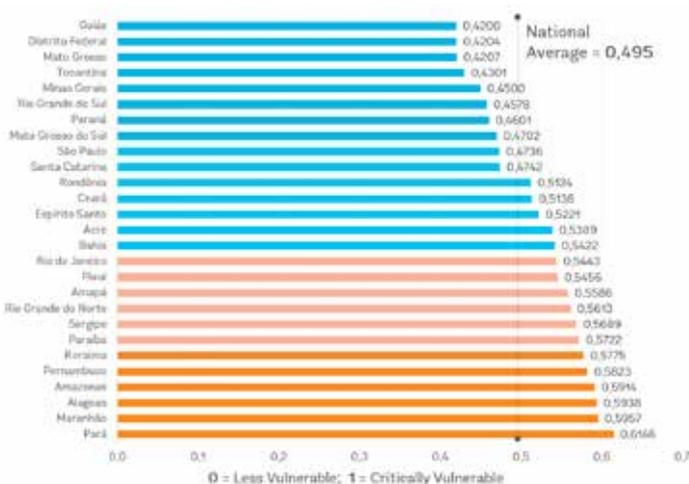
**Additional mitigating efforts should be undertaken in municipalities located in the North and Northeast.** According to the student vulnerability index, the top six states where students are most vulnerable are Pará, Maranhão, Alagoas, Amazonas, Pernambuco and Roraima, which are more than 0.1 point above the national average (weighted by the number of students). The six states where students are least vulnerable are Goiás, Mato Grosso, Distrito Federal, Tocantins, Minas Gerais and Rio Grande do Sul. However, it is important to note that the index shows data at municipal level, and vulnerabilities within a state must also be taken into account.

**Figure 47: Student vulnerability, per municipality** (Index, 2017)



Source: World Bank

**Figure 48: Student vulnerability per state** (Index, 2017)



**Another Challenge Will Start When Schools Reopen.**

**A safe school reopening strategy is key.** The first step for a post-pandemic strategy is establishing reopening protocols that enable all students to return safely to school. In the case of the Ebola epidemic in Africa, for example, dropouts increased 18 percentage points among vulnerable girls<sup>48</sup>. In order to prevent that from happening, several policies can nudge families toward taking their children back to school. One option is to send text messages to all parents whose children

<sup>48</sup>Bandiera, Oriana, Niklas Buehren, Markus Goldstein, Imran Rasul and Andrea Smurra. 2018. "The Economic Lives of Young Women in the Time of Ebola: Lessons from an Empowerment Program", mimeo UCL.

fail to return to school.<sup>49</sup> Another way of attracting the most vulnerable groups is by conditioning Bolsa Família cash transfers or the distribution of basic food baskets upon children's return to school. Once they are back, it will be necessary to continue monitoring those at risk of dropping out. This can be done by setting early warning systems and introducing discussion groups to alleviate the mental health shocks caused by the pandemic.

## Implementing remedial learning programs is fundamental to ad-

## dress the inequalities amplified by the pandemic.

After students return to school, the priority must be to mitigate learning gaps within the school and the network. For such, schools can apply standardized exams to all students, and introduce remedial policies based on the results. Examples of activities are small tutoring groups for lagging students; redeployment of teachers, prioritizing specific grades and students; and implementing shorter and more flexible technical programs for students.

### Box 15: Possible Measures to Address Remaining Vulnerabilities in Education

#### Key police actions to tackle education vulnerabilities in the short term:

- Ensuring a broad use of platforms to provide distance learning (digital, TV, radio) so as to reach families with no connectivity;
- Ensuring the availability and distribution of school meals, particularly for the most vulnerable, in a frequent and effective way;
- Working with vulnerable parents to provide academic and emotional support to their children in homeschooling;
- Sending regular text messages or providing phone lines for communication between parents and teachers;
- Providing help centers for teachers to ask questions, receive feedback and search for emotional support;
- Establishing a clear protocol preparing schools to reopen, in partnership with the Ministry of Health and local Health Secretariats;
- Distributing basic food baskets and/or implementing cash transfers conditioned upon students returning to school.

#### In the medium term, interventions could be aimed at:

- Introducing early warning systems for dropouts to maintain the most vulnerable students at school in the post-pandemic stage;
- Launching remedial learning programs to tackle inequalities generated during the pandemic, including adaptive learning building on technological improvements;
- Creating small oriented tutoring groups for lagging students;
- Sending text messages to parents when their children miss school;
- Introducing periodical standardized exams for all students (twice a year);
- Preparing to redeploy teachers, prioritizing specific grades and students;
- Pursuing technological innovations used during the pandemic to support more robust distance-learning systems and expand education coverage with quality;
- Delivering flexible short-term technical programs for in- and out-of-school youth;
- Investing in laptops/tablets, teacher training on remote teaching, and online materials.

## 3.9 FINANCIAL SECTOR EXPOSURE AND POLICY RESPONSE

### **The economic effects from pandemic containment measures will affect the financial sector with significantly increased risks.**

Social distancing measures and job losses will hit private consumption, while the significant increase in economic uncertainty will hurt investment. A weaker economy will negatively affect unemployment rates and the performance of household loans. Additionally, the corporate sector will face losses, with segments such as transport, services, tourism and manufacturing likely to be significantly affected. Prolonged uncertainty will affect the financial sector, as weakened corporate and household balance sheets would lead to non-payment and deteriorated asset quality, in turn affecting banks' willingness to lend. A prolonged shock may enhance existing vulnerabilities, namely banks' strong links to the government and their exposure to relatively highly-leveraged households and corporates, whose debt-servicing capacity will become stretched. In the current state of volatility, the capital market will also be affected through capital outflows.

### **The strong support package designed by policymakers aims to help the financial sector to play an important role in mitigating the effects of the crisis on the real economy.**

The financial sectors sources of resilience, coupled with the financial support package, will assist in resisting the economic downturn, and will help it to maintain critical lending to the economy. Neverthe-

less, a lengthened crisis may exacerbate the pressures on the financial sector, and will require a reassessment of potential negative impacts on financial stability. There is a high risk of a vicious circle undermining both borrowers' viability and the financial sector' stability. Given increased credit and market risks, banks may be unwilling to lend, and financial conditions would deteriorate. This credit crunch would in turn make it more difficult for firms and households to navigate the crisis, leading to additional non-performing loans, and even more risks for banks, thereby creating a vicious circle, in which financial sector instability can hinder real sector recovery.

### **The financial sector in Brazil was resilient through the recession and is entering the pandemic crisis from a sound position—ample capital and liquidity cushions, low NPLs, high provisioning, low FX lending exposure, and a tight regulatory framework.**<sup>50</sup>

Due to the recession, lending turned negative in 2016–17. With a recovery starting in 2017, credit grew by 5 percent in 2018, and by 6.5 percent in 2019 (48 percent of GDP). The banking sector is well capitalized, profitable and liquid—with a capital adequacy ratio of 17.7 percent; return on equity of 16.5 percent; and a ratio of liquid assets to short-term liabilities of over 230 percent. Banks have limited exposure to FX lending (15 percent of total lending). Non-performing loans (NPLs) have declined to 3 percent in 2019, and banks have adequate provisions covering over 200 percent of NPLs. These provisions could

<sup>50</sup>This is an average sectoral analysis, with differing individual bank indicators.

temporarily absorb asset quality declines. Stress tests carried out under the 2018 World Bank-IMF Financial Sector Assessment Program (FSAP) indicate that banks are broadly resilient to severe macrofinancial shocks. The tests in the context of the pandemic are among the most severe that the Central Bank has undertaken, but simulations indicate that, in general, banks have the capacity to handle stress situations. COVID-19-specific stress tests, which take into account default by the most affected companies and workers, indicate a need for increased provisioning, which would compromise the banking sector's ability to continue extending credit.

**While liquidity risks could be manageable with stable domestic funding and robust central bank reserves, banks are exposed to**

**higher credit and market risks, which will affect their appetite to lend.**

Banks are mainly deposit funded, with loan-to-deposit rates at about 70 percent. Although banks are liquid, they may seek to further build liquidity buffers to keep supporting their clients, given the delay in payment flows. The key risks for banks arise from rising asset quality risks and potential market losses on banks' large holdings of government bonds and equity holdings. Banks invest about 25 percent of their assets in sovereign bonds (a sizeable amount given the high public-debt levels and increasing fiscal pressures), and bank failures are expensive for sovereigns. Therefore, the financial and fiscal sectors are closely linked, should there be a problem in either (Brazil has a high public debt at 88 percent of GDP). Bank equity market valuations have dropped more than 35 percent (approximately R\$60 billion) as of February 2020.



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The pandemic-induced crisis will significantly affect firms with already weakened balance sheets and that are relatively highly leveraged, especially in the services sector, which includes a large share of MSMEs.<sup>51</sup> MSMEs are expected to be particularly hit, and are often the first ones to lose access to credit during economic downturns. They account for 99 percent of all firms (73 percent of firms are micro), 27 percent of GDP, and 46 percent of employment. Besides, they are mainly in the services sector, which will be significantly affected.<sup>52</sup> An analysis of SME cashflow data estimates that between 39 percent and 56 percent of MSMEs have less than 21 days in cash reserves (see section 3.7).

### Rising asset quality risks from SMEs will be a key risk for banks.

A macrofinancial shock could significantly increase debt-at-risk among firms, undermining access to additional credit. In recent years, banks have increased lending to SMEs, as corporates increasingly obtained capital market financing. MSMEs account for 37 percent of total corporate loans. The current disruptions are expected to cause a significant increase in NPLs, which are on the rising trend according to March 2020 data, especially in the MSME segment. The NPL ratio (90 days) of the MSME segment is close to its historical lows at 3.8 percent, declining from a 2017 peak of 6.8 percent.<sup>53</sup> SME payroll credit lines help to alleviate the rising asset quality risks. Given the large amount of debt among financially weak firms, the corporate insolvency framework will need to be revisited.

Banks are also exposed to relatively indebted households weakened by the crisis. The household debt-to-income ratio is high at 45 percent, with debt service at about 21 percent of disposable income in 2019. Banks have focused on payroll lending and mortgages (secured lending), with a recent growth in unsecured consumer lending. More severe shocks, including a rise in unemployment, might affect households' debt-servicing capacity. In May, new non-earmarked credit data already indicated a decline in lending to households. The wage subsidies program launched by the government partially mitigates the rising asset quality risks for households.



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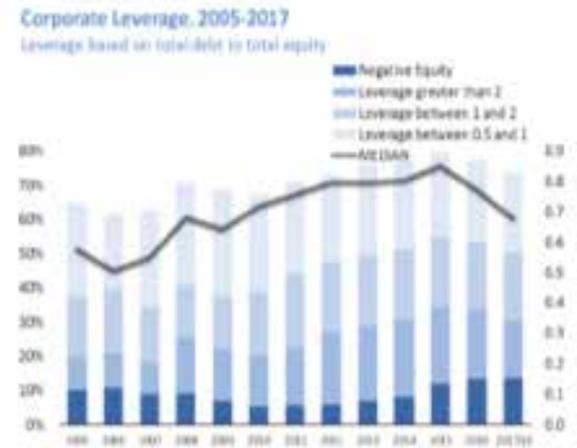
<sup>51</sup>Micro companies are those with annual revenues of up to R\$360,000; small companies, revenues between R\$360,000 and R\$3.6 million; midsize companies, revenues between R\$3.6 million and R\$300 million, but with total assets below R\$240 million; and large companies are those with annual revenues above R\$300 million, or total assets above R\$240 million. Average loans for micro companies are R\$12,500, with 49 percent annual interest rate, and 10 percent NPLs. Average loans for small companies are R\$97,000, with an interest rate of 39 percent per year, and NPLs of 5.3 percent.

<sup>52</sup>Cadastro Central de Empresas, SEBRAE. Seventy-two percent of firms are micro, 23 percent are small, and 4 percent are midsize. Micro firms account for 12 percent of employment; small firms, for 19 percent; and midsize firms, for 15 percent.

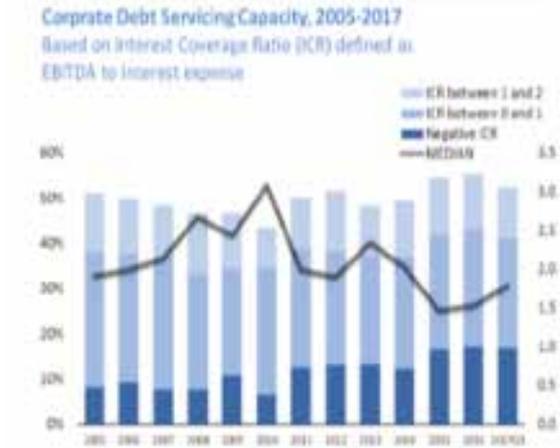
<sup>53</sup>However, NPLs for micro companies are high at 10 percent, compared to 5 percent for small companies. SMEs have higher NPLs compared to large corporates (1.4 percent, January 2020). When SME NPLs reached their historical high of 6.8 percent in 2017, large corporate NPLs were less than 2 percent.

Figure 49: Selected Financial Sector Indicators (corporate)

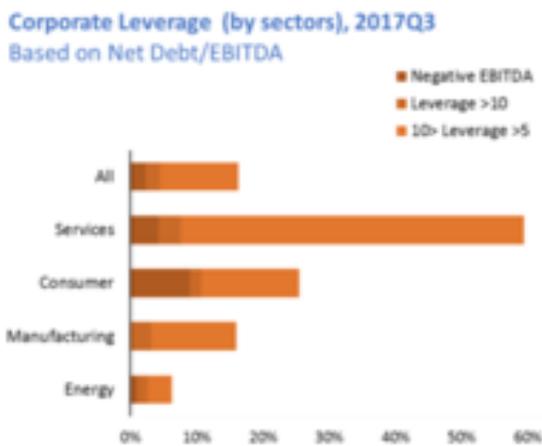
a) Corporate Leverage



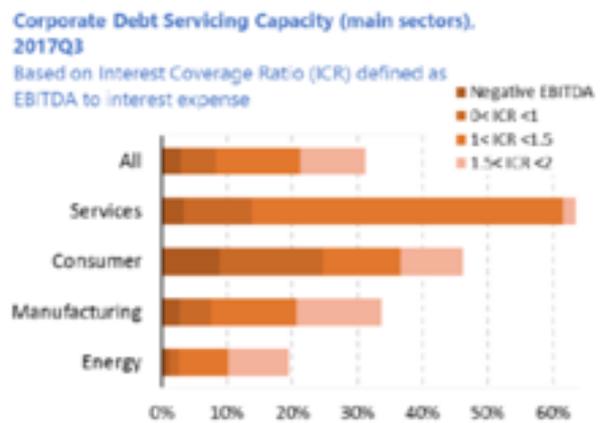
b) Corporate Debt Servicing Capacity



c) Corporate Leverage (by Sector)

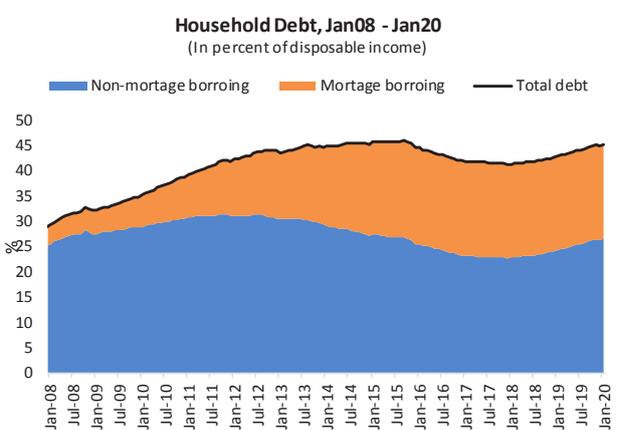
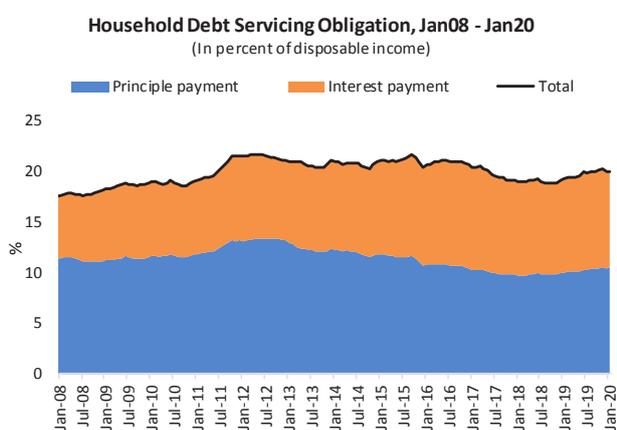


d) Corporate Debt Servicing Capacity (by sector)



Source: World Bank/IMF FSAP 2018.

Figure 50: Household Debt Servicing Obligations and Household Debt



Source: BACEN

**Beyond the banking sector, capital markets are highly exposed to current developments.**

The stock market index declined by about 30 percent in March 2020, but recovered most of the losses by early June. The corporate bond market also saw losses in March. Foreign investors withdrew R\$64.3 billion from the stock market over a three-month period, but non-institutional local investors were attracted by lower asset prices and invested R\$21 billion.

**Investment funds, which consist of about 30 percent of total financial sector assets, have been experiencing pressures, with investors withdrawing R\$31.2 billion as of March 2020.**

Fixed income funds have been the most significantly affected, as the reduction in the SELIC rate reduced the returns of such funds, which are heavily applied in government securities.

**Pension funds and insurance companies are less vulnerable, as more than half of their assets are invested in liquid government securities, although cuts in the SELIC rate will negatively affect investment earnings.**

Besides the expected swings in the mark-to-market value of the assets under management, and the reduction in the funding ratios of some defined benefit (DB) pension funds, the pensions sector should be resilient to the crisis. Most systematically, major pension plans have reasonable levels of solvency. Given the significant investments of open pension funds (in particular) in short-term securities, the impact on the value of the assets should be small.

In order to mitigate the impact of the pandemic on the financial market, policymakers in Brazil have taken significant steps to support the financial market (a more significant package than in 2008), focusing on: (i) providing market and funding liquidity, (ii) offering regulatory relief; and (iii) providing support to SMEs. A summary of key measures undertaken by the Central Bank is outlined below.

**Monetary Measures:** BACEN has lowered the SELIC rate to 2.25 percent.

**Liquidity:**

- Reduced reserve requirements rates on term deposits, from 25 percent to 17 percent;
- Additional deposits to be covered with deposit insurance;
- Flexed regulation of Agribusiness Credit Bills (LCA) for agriculture credit;
- Loans to FIs backed by debentures;
- Higher ceiling for banks' securities repurchase;
- One-year repos backed by sovereign bonds;
- Reduced spread in liquidity-leveling operations;
- Enabling "credit, financing, and investment companies" to issue Certificates of Deposits (CDBs) in order to broaden funding options.

**Capital:**

- Capital conservation buffer reduction, from 2.5 percent to 1.25 percent;
- Temporary measure establishing that tax effects arising from the overhedge of equity investments held abroad will not be deducted from equity;

- No provisions/requirements for renegotiating performing loans in the next 6 months;
- Reduction of the capital requirement for SME loans risk-weight factor reduced from 100 percent to 85 percent;
- Possible reclassification of renegotiated loans between March 1 and September 30, 2020 to the level of risk at which they were classified in February;
- Temporary reduction of capital requirements for smaller financial institutions (S5 category).

#### SME Credit Support:

- Credit line to SMEs to cover two months of payroll, via the BNDES (85 percent) and other banks (15 percent).

#### Other Measures:

- BACEN's intervention in foreign exchange markets to establish liquidity swap lines with the FED;
- Support to SMEs to pay salaries through a credit line offered through private banks (R\$40 billion);
- BACEN's agreement for fintech companies to issue credit cards and obtain funding from state banks;
- BACEN's temporary ban on the distribution of dividends or raises;
- Constitutional amendment allowing BACEN to buy a range of public and private assets, including government and corporate bonds.

**While this robust financial support package mitigates some risks, important risks remain and need to be carefully monitored:**

1. **Banks' willingness to lend remains uncertain.** The policy measures in place have relaxed banks' liquidity and regulatory capital constraints to lending, but their willingness to lend may be constrained by uncertainties on the economic outlook, and by damaged firm and household balance sheets.
2. **Corporate sector balance sheets:** the SME payroll program mitigates rising corporate risk, but even if firms maintained access to credit, prolonged solvency losses may affect their financial strength. A credit crunch would put further pressures on firms' balance sheets, leading to more losses, and creating a vicious circle.
3. **Household financial weakness:** people may lose income, which would stretch even further their debt servicing capacity. The temporary wage subsidies program softens this vulnerability.
4. **The banking sector has the necessary buffers to be financially resilient, but a lengthened crisis will require reassessing the risks for the financial sector and its stability.** Risk-based supervision and contingency plans for crisis management are in place, but an enhanced bank resolution law, which is pending approval in Congress, should be adopted.



### Box 16: Possible Measures to Address Remaining Vulnerabilities in the Financial Sector

#### In the short term, policy recommendations for consideration are:

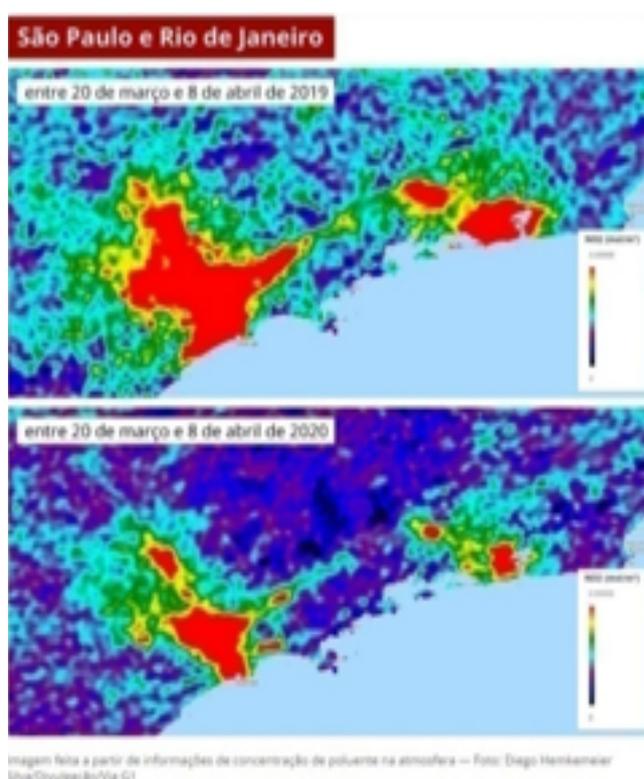
- Monitoring the impact of the adopted monetary and macroprudential policies aimed at supporting the financial sector;
- Considering a financial stability coordination law, and improving coordination mechanisms with other regulators;
- Adopting measures to strengthen the financial sector safety net, such as an enhanced bank resolution law, and a law on the independence of the Central Bank;
- Ensuring transparency of loan restructuring;
- Amending the insolvency framework with temporary measures that can facilitate the ongoing operations of viable firms (especially MSMEs), as opposed to prematurely pushing them into liquidation;
- Considering designing an efficient out-of-court system to deal with NPLs;
- Continuing to mobilize funding through state banks, based on clear eligibility criteria, ideally through instruments that crowd in private lenders (both banks and non-banks), such as second tier lending, credit enhancements, syndicated loans or by supporting the development of an ecosystem of financial intermediaries;
- Expanding partial credit guarantee schemes to protect loans by the financial sector, taking into account international good practices and market appetite for new lending;
- Encouraging the BNDES to leverage technology solutions to facilitate access to finance for SMEs by establishing online platforms to facilitate supply chain finance (electronic platforms for assigning and trading digital assets, invoices, receivables, instruments, commercial paper and electronic payments), and the use of state partial credit guarantees on these assets;
- Supporting the non-bank sector's role by enabling technologies that will level the playing field between banks and non-banks, such as, for example, open banking and instant payments;
- Facilitating the registration, trading and discounting of non-traditional collateral, such as "duplicatas" and credit card receivables, by adopting the necessary regulation for these instruments;
- Encouraging key credit reporting disclosures for payment deferrals due to the pandemic crisis, such as separate reporting codes for facilities that are under a forbearance or a deferred payment status window;
- Considering mandating a temporary reduction in digital payment fees on critical payment services as a way of supporting users, and increasing transaction and balance limits for the payment of those products used by the population that are more vulnerable to the crisis—while balancing AML/CFT objectives.

#### In the medium term:

- Monitoring risks for financial sector stability, while adopting macroprudential policies that can accommodate credit recovery;
- Monitoring loan restructuring and ensuring transparency;
- Continuing to support postcrisis credit recovery through well designed interventions via public banks;
- Monitoring and adjusting operational models for partial credit guarantee schemes;
- Assessing changes in the insolvency framework, including workouts and debt restructuring measures.

## 3.10 ENVIRONMENTAL EXPOSURE AND POLICY RESPONSE

Figure 51: Pollution Levels in São Paulo and Rio de Janeiro (NO<sup>2</sup> levels pre-pandemic and during the pandemic)



**The COVID-19 crisis is also putting pressure on the environment.**

There is some emerging evidence that pollution levels are dropping fast following the lockdowns triggered by the pandemic. In the United States, carbon dioxide emissions are projected to drop 7.5 percent in 2020, according to government estimates.<sup>54</sup> In the EU, daily emissions have fallen 58 percent compared to pre-lockdown levels.<sup>55</sup> Air quality in major cities across the world is better than any time in recent history due to a substantial reduction in transport during the confinement. In Brazil, the same trend is observed in its two largest cities, São Paulo and Rio de Janeiro (figure 51).

Table 11: Potential Impacts on Climate

Sector	Potential Impacts
Transport	Potential reduction in air pollution and greenhouse gas emissions from industrial and transport emissions due to low economic activity, supply and demand shocks.
Land-use change and forestry	Reduced demand for wood products expected to be a disincentive for illegal logging
	Reduction of environmental enforcement due to social distancing measures increases incentives for squatters and illegal logging
Energy	Reduce incentives to increase fossil fuel supply and reduced incentives to switch to greener energy generation modes, with possible negative long-term impacts on climate change

<sup>54</sup>US Energy Information Administration (EIA), Short-term energy outlook, April 7, 2020 ([www.eia.gov/outlooks/steo/](http://www.eia.gov/outlooks/steo/))

<sup>55</sup>Sia Partners Consulting ([www.sia-partners.com](http://www.sia-partners.com)).

Regardless of the potential short-term reductions in greenhouse gas (GHG) and local pollutant emissions in urban areas, it is still uncertain what effect the spread of the pandemic will have on deforestation.

Agriculture and pastures are well described in the scientific literature as the main drivers of deforestation in the Amazon region. This has been the case for the past 50 years.<sup>56</sup> The Real-Time Deforestation Detection System (DETER), an early warning system developed by Brazil's National Space Research Institute (INPE) to measure forest cover changes, provides discordant data for the two largest biomes in Latin America: the Amazon and the Cerrado.

**DETER data for the period from March 2020 to May 2020, when**

**COVID-19-related protective measures were already in effect in Brazil, show that deforestation is increasing in the Amazon but not in the Cerrado, compared to the same period in recent years.**

In the Brazilian Amazon, the area with deforestation alerts from March to May 2020 is higher than in the same period in 2019, the year with the largest deforestation measured in more than a decade (figure 52). While deforestation alerts do not automatically translate into deforestation, there is a clear correlation between alerts and actual deforestation, as also shown in figure 52.<sup>57</sup> On the other hand, Cerrado alerts for the same time range are lower when compared to the same period in the previous two years, despite a strong increase in grain production, an activity that has not been impacted by the pandemic.<sup>58</sup>



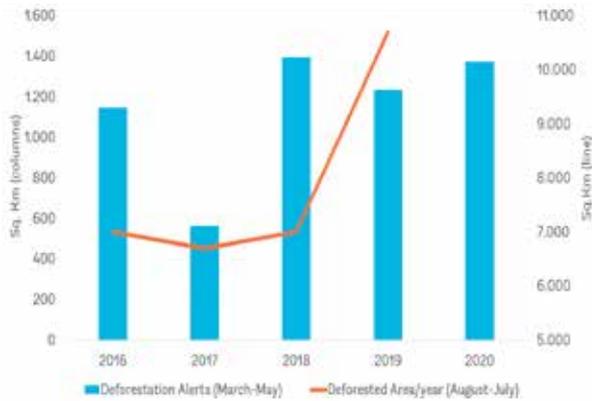
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<sup>56</sup>Oliveira Filho. 2020. Impact of environmental law enforcement on deforestation, land use and natural regeneration in the Brazilian Amazon. Ph.D. Thesis, University of Cambridge, England, 214p.

<sup>57</sup>May 2020 data are only up to date as of May 28.

<sup>58</sup>Grain production is up by 4.1 percent this year (or nearly 10 million MT): mainly soy and maize for exports.

Figure 52: Impacts on Amazon Deforestation Trends in the Legal Amazon 2016-2020<sup>59</sup>



Source: INPE/DETER.

**This increase of deforestation in the Amazon is counterintuitive, as the drop in economic activity and trade was expected to reduce the demand for wood.** On the other hand, the social distancing measures in place seem to have reduced environmental enforcement, anecdotally creating an opportunity for illegal loggers and land speculators to invade public lands, particularly indigenous territories and protected areas. Further analysis will be necessary, once additional data become available, to determine any causal correlation between deforestation and pandemic-induced social distancing measures.

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**At the same time, as figure 52 also shows, it is important to underline that Amazon deforestation has been increasing in recent years, in a trend that predates the COVID-19 outbreak.** In order to counteract the recent trends in deforestation, Brazil needs to strengthen its well-developed monitoring and law enforcement strategy along both technological and policy dimensions. The benefits of doing so—for Brazil and the world—far outweigh the costs. Recent scientific evidence shows that increased enforcement of deforestation control does not undermine agricultural productivity or economic growth.<sup>60 61</sup>

**The potential impact of COVID-19 on the environmental and climate-related aspects of the energy sector—the largest source of GHG emissions in Brazil—is also inconclusive.** A prolonged demand shock might lead to a reduction in future investments and production, regardless of whether the impacts come from fossil fuel or renewables. In the short term, the shock in oil prices represents a disincentive for switching from fossil fuel to renewables. In the long term, on the other hand, it will negatively affect the return for future investments in thermal power plants—a trend largely observed in Europe. Further analysis will be necessary for a deeper assessment of these impacts.

<sup>59</sup>A given reference year runs from August 1 of the previous year to July 31 of the reference year (for example, 2019 = August 2018–July 2019).

<sup>60</sup>[www.inputbrasil.org](http://www.inputbrasil.org)

<sup>61</sup>Gandour, Clarissa, and Juliano Assunção. 2019. "Policy Brief. Brazil Knows What to Do to Fight Deforestation in the Amazon: Monitoring and Law Enforcement Work and Must be Strengthened". Rio de Janeiro: Climate Policy Initiative.

### Box 17: Possible Measures to Address Remaining Environmental Vulnerabilities

#### In the short term:

- Increasing enforcement capacity at state and federal levels in critical areas with high deforestation alerts;
- Establishing an emergency protection mechanism for undesignated public forestlands (public lands with no defined function). These areas accounted for 25 percent of all deforestation from January to April 2020, emitting an estimated 200 million tons of CO<sub>2</sub>;
- Providing continued access to clean water, soap, and other hygiene products in low-income communities living inside protected areas and indigenous lands;
- Ensuring continued food distribution strategies to isolated communities in and around protected areas and indigenous lands, as well as in rural areas.

#### In the medium term:

- Promoting effective actions against Amazon deforestation, and fostering close collaboration between monitoring and law enforcement capacities;
- Resuming and strengthening the federal government's institutional and financial support for monitoring and law-enforcement action;
- Increasing law enforcement's capacity to impose binding sanctions on environmental offenders by enhancing law enforcers' ability to catch illegal deforesters and miners red-handed, and to respond quickly;
- Developing innovative financial mechanisms to monetize the sustainable use and conservation of the forest, including concessions, payment for environmental services, and carbon pricing;
- Promoting frequent reassessment and improvement of existing monitoring systems;
- Building strategic public-private partnerships that bolster monitoring and law enforcement capacities (MPF, IBAMA, states, farmers associations);
- Promoting an accelerated process for allocating about 70 million hectares of undesignated public forestlands to conservation and social uses.

# 4. THE WAY FORWARD

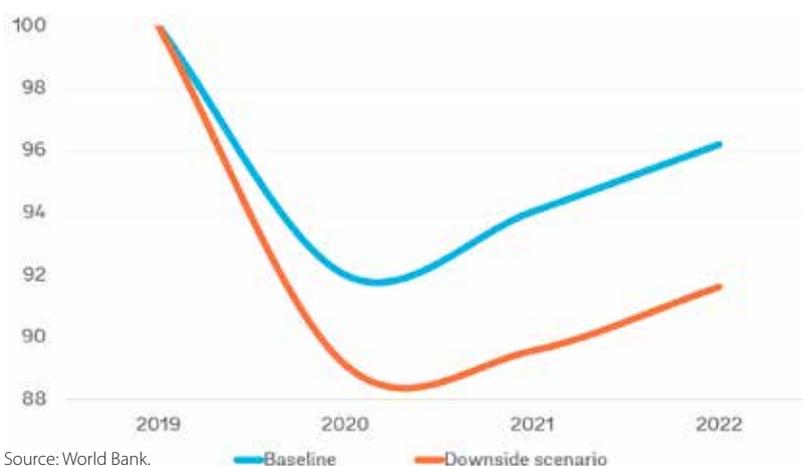


# THE WAY FORWARD

## Overcoming the COVID--19 pandemic and reopening the economy require careful consideration.

There are currently many views on the way forward and no international consensus on how to end the lockdown—although there is general agreement that lifting the lockdown of the economies would risk forfeiting the sacrifice made so far to “flatten the curve”, as the virus might quickly resume its spread and, yet again, threaten health care systems. In its April 2020 LAC Semiannual Report (World Bank 2020), the World Bank presented some potential principles that should be applied, as different paths are sought to normalize economic and social life again. These principles support crisis relief and the recovery. They were adapted to the Brazilian context for the purposes of this report and can be summarized as follows: 1) containing the damage; 2) protecting the poor and most vulnerable; 3) supporting firms and jobs; 4) strengthening the fiscal situation of subnational governments; 5) avoiding financial sector instability and supporting credit provision; 6) enhancing natural resource protection (including the Amazon); 7) strengthening public sector management, enhancing transparency, and collecting real-time data, 8) should the government decide to bail out strategic companies in return for equity stakes, organizing the management of these assets; 9) defining and clearly communicating an exit strategy; and 10) laying out the reform agenda for sustained recovery. These priorities will be briefly described below.

**1. 1. Containing the damage:** Any slippage in virus containment would require an extension of the lockdown period, causing significant economic and social damage. World Bank estimates for this report suggest that every month of domestic lockdown shaves another 1.1 percentage points off annual GDP growth (estimated using monthly changes in expenditures based on the credit card data in section 3.5.1, figure 23). At the same time, a deeper recession is likely to cause more damage to firm and household balance sheets (affecting access to credit, as discussed further below), dampen confidence, keep international capital away, and generate fiscal costs that would weigh on future growth. It could lead the economy into hysteresis, countering which would require a significantly greater fiscal outlay. The deeper the recession is, the flatter the recovery can be expected to be (changing the shape of the recovery curve from a “V” into an “L”). Figure 53 displays the World Bank’s baseline scenario for the Brazilian economy as of June 2020. It also presents a worst-case scenario, which incorporates a deterioration of global economy (see the World Bank’s June 2020 Global Economic Prospects) and an extension of Brazil’s lockdown by another 2 months. A deeper recession is reflected in a softer recovery. Table 12 translates the two scenarios into fiscal and social impacts for 2020, showing the significant deterioration of the national fiscal situation, and the effects on state finances and poverty.

**Figure 53: Growth Projections: Baseline and Downside Scenario** (GDP index, 2019 = 100)


Source: World Bank.

**Table 12: Economic, Fiscal and Poverty Scenarios**

	GDP growth (%)	Primary Balance (% of GDP)	States' Financing Needs (% of GDP)	Change in Number of Poor (1/2 MW) <sup>62</sup>	Poverty Rate (1/2MW)
Baseline (2020)	-8.0	-9.6	0.3	-1.4m	28.4%
Downside (2020)	-10.9	-11.3	0.6	+1.1m	29.6%

Source: World Bank. - Note: MW = Minimum Wage.

### Containing the damage will mean persevering in maintaining the lockdown until the spread of the virus is under control—and keep controlling it.

Brazil has already taken significant action, and a strong fiscal response was probably warranted, given the significant risk of hysteresis in light of the depth of the expected recession. Some of the programs introduced by the government have the potential to be real game changers. *Auxílio Emergencial*, for example, could make a significant difference to the poor and vulnerable if well implemented. Some preliminary calculations for this assessment suggest that this program could in fact reduce poverty (table 12) and mitigate the pandemic's inequality-increasing effects—but the longer that the effects last, the less *Auxílio Emergencial* will be able to cushion the economic blow. Assuming the virus can be

contained more swiftly, the magnitude of the expenses associated with the program could also support equitable growth—even if at a higher fiscal cost. This strategy is particularly relevant in Brazil, given the weakened state of the poorest 40 percent following an uneven recovery from the 2014–16 crisis. Like other developing countries, Brazil faces challenges that advanced economies have to grapple with less often, such as, for example, large informal, urban areas with high density (favelas). However, to the extent possible, Brazil could follow some of the key measures that have been tried and tested in other countries. These include continued support to the health care system; “testing, testing, testing” in order to detect and control cases early, and gather critical information on the characteristics of the virus (including case fatality rates); leveraging technology (for example, for contact tracing); and investing in research into new vaccines and treatments.

<sup>62</sup>Reduction in poverty is driven by the *Auxílio Emergencial* program.

Table 13: Main Vulnerable Groups/Entities in Brazil

		Main source of vulnerability	Main mitigation	Residual risk (increases with duration of lock-down): WB assessment
Poor households	Health	Limited access to running water/ improved sanitation		Limited mitigation
		Limited ICU capacity, especially in poorer areas	SUS reinforced	Limited mitigation
		Overcrowding / Difficulty to enforce social distancing		Limited mitigation
		Food insecurity (potentially food price inflation), especially low income children	Meals still provided through schools	Depends on implementation effectiveness
	Liquidity / solvency	Loss of income / insecure labor contracts / limited formal employment protection		Depends on length of the lock-down / extension of the program if needed
		Depleted assets, high household debt	Increase in Bolsa Familia coverage / 3 months "corona vouchers"	
Service interruption due to inability to pay bills			Bills need to be paid eventually	
SMEs	Liquidity / solvency	Low cash buffers	Utility moratorium	Depends on implementation effectiveness and length of lock-down
		Costly business environment - insolvency law, minority protection, ...	Liquidity support from government, central bank and commercial banks; deferred tax obligations	Policy uncertainty
		Risk government suppliers: state arrears	Insolvency legislation underway	
	Other	Difficulty to retain highly productive workers		Depends on implementation effectiveness and judicial certainty
States / municipalities	Health	Supply-chain interruption to procure medical equipment	Financial and other support (e.g. ability to renegotiate hours/pay) for worker retention	
	Liquidity / solvency	Large financing gaps and arrears (lower revenue and GDP vs higher expenditure needs)		No strategy in place yet to meet financing gap; potential moral hazard
		Access to credit markets	Emergency from the federal government; other programs under consideration	States with CAPAG rating of C and D excluded from credit markets

Source: World Bank (based on the preceding analysis).

## 2. Protecting the poor and most vulnerable.

Table 13 summarizes some of the insights on the main vulnerabilities emerging from this assessment. The poor and the most vulnerable are of particular concern. Thanks to its vast knowledge in designing world-class social protection systems, Brazil has acted swiftly to address major social vulnerabilities by expanding Bolsa Família and rolling out temporary Auxílio Emergencial cash transfers. Additional measures taken at sectoral level will also help to ensure, for now, that the poor will not be disconnected from essential services such as water and electricity in case of non-payment. A key risk is that, once the three months of transfers from Auxílio Emergencial end, and if the pandemic continues to

inflict employment losses, the government will have limited fiscal resources to sustain this or similar initiatives. Existing programs, including Bolsa Família and BPC (social security benefits for low-income older adults and people with disabilities), will not be able to protect the poor in this crisis. Efforts have also been undertaken to maintain a minimum level of nutrition among the poor, which will be a critical measure if well implemented. Some remaining vulnerabilities are more difficult to mitigate in the short term, including access to adequate sanitation; access to medical treatment (especially in rural areas); and effective social distancing measures in informal settlements, especially the high-density urban favelas.

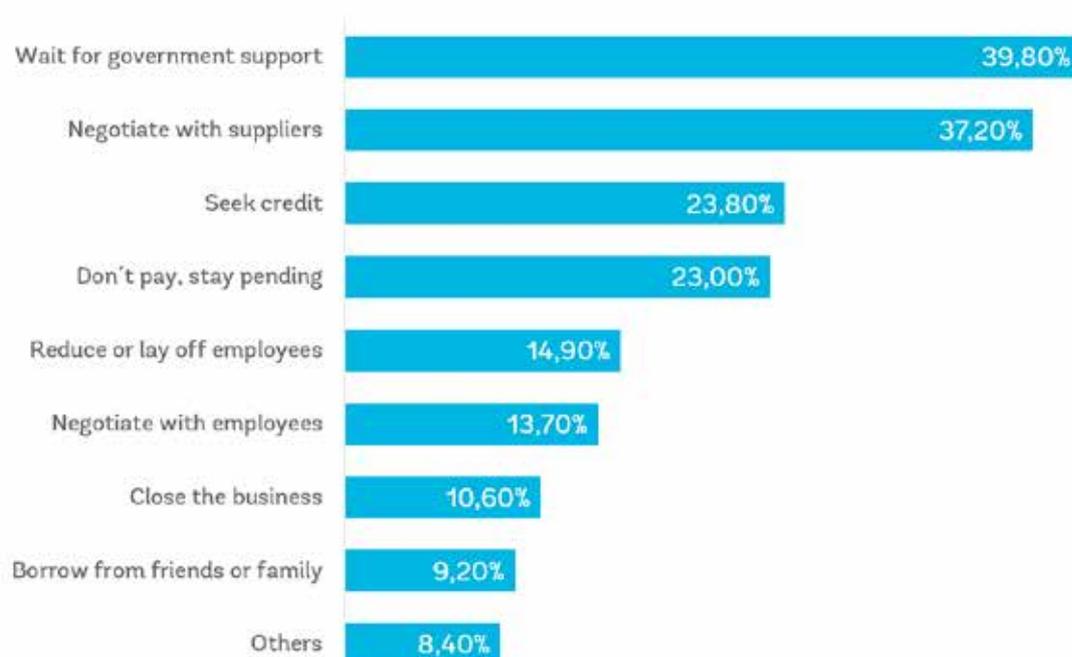
**3. Supporting firms and jobs.** The analysis in this report has shown that SMEs are expected to be particularly affected by the crisis, as they are highly exposed to face-to-face activities, and are low on liquidity. They need government support, and new measures are frequently being announced. Ensuring that such support reaches its intended beneficiaries is critical, as many companies rely and depend on it (figure 54). Special consideration must also be given to infrastructure utilities providing essential services, particularly to ensure that provisional measures taken to prevent consumers from being disconnected in case of non-payments will not jeopardize their financial and operational viability, and their ability to ensure continuity of supply. The precarious situation of states and municipalities is another potential risk for firms, as a lack of public funds may mean arrears to suppliers. Schemes implemented in other countries (such as Spain) have ensured that such ripple effects are limited, for example, by turning arrears into tax credits. In order to ensure that

this shock, likely to be deep but temporary, does not create additional distortions in the labor market, a case can be made not only to protect workers from unemployment, but also to protect existing jobs. Some of this is already being done, for example, by allowing employers to negotiate temporary changes to labor contracts with their employees with a view to ensuring employment continuity. There currently is, however, considerable policy uncertainty about such solutions.



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**Figure 54: Brazilian Firms Rely on Government Support to Weather the Crisis** (percentage of respondents)



Source: Sebrae-SP.

#### 4. Strengthening the fiscal situation of subnational governments.

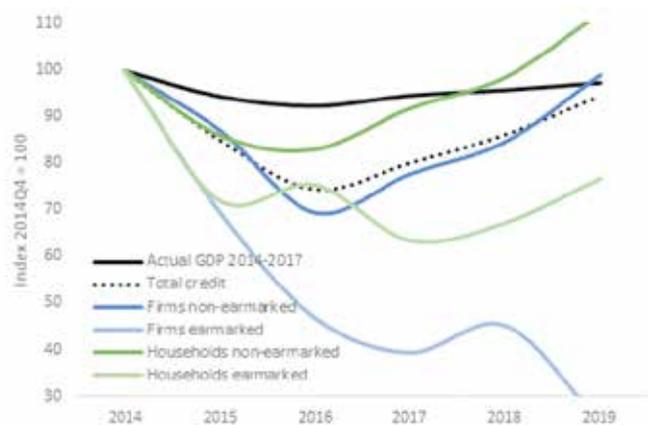
The analysis has shown that the public finances of Brazilian subnational governments are severely affected. Although some support has already been forthcoming from the federal government (maintaining transfers at 2019 levels, and selected loans for health expenditures), broader and more strategic solutions are required that place the onus of the adjustment both on federal and state governments in order to avoid moral hazards and limit contingent liabilities for the federal government. All three levels of government will need to identify solutions to manage their public finances so as to ensure that Brazil’s debt levels remain sustainable overall.

#### 5. Avoiding financial sector instability and supporting credit provision.

The availability of finance will be a critical factor for the pace of economic recovery. Firms will need financing both to make investments and to reestablish working capital after the crisis has stressed their cash positions. This will depend on a mix of domestic banks, capital markets, and external capital flows. The 2015–16 recession, which had a comparable depth to the scenarios depicted in figure 53, illustrates how new credit origination is more volatile than growth, and how it may

lag rather than lead the recovery. The decline in earmarked lending (figure 55) partially reflected a policy choice during that period, but non-earmarked credit illustrates the market-based response. The recession relied on a financially sound financial sector, and financial instability would have a substantial negative impact on the recovery.<sup>63</sup> Banks and capital-market investors will be cautious in their lending, which reflects the weakened real sector balance sheet and economic uncertainty. Firms will have seen losses, household wealth will have been depressed, and housing values are likely to be affected by the COVID-19 crisis—all elevating credit risk for banks and bond investors. The nature of policy responses for the real sector during the crisis may mitigate these effects.

Figure 55: New Credit Operations During/After the 2015–16 Recession (index)



Source: Central Bank of Brazil.



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<sup>63</sup>Laeven and Valencia (2018) estimate a median 14 percent output loss from financial crises in low- and middle-income countries. For the full quote, see: Laeven, Luc, and Fabian Valencia. 2018. “Systemic Banking Crises Revisited”, IMF Working Paper 18/206.



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## 6. Enhancing natural resource protection.

Although there is currently little evidence that the economic crisis may be spilling into the environment, this report has laid out a number of risks that need to be closely watched to ensure that Brazil's natural assets do not fall prey to this crisis. This holds for the Amazon, but also other areas.

## 7. Strengthening public sector management, enhancing transparency, and collecting real-time data.

The COVID-19 outbreak calls for an inclusive, fast, creative, effective, transparent and accountable public sector to confront the crisis. At the same time, as this period settles, public institutions need to become more resilient and be prepared for potential future outbreaks. A particular challenge is how to introduce the needed flexibility and agility into an overly rigid and legalistic public system. In a low-trust environment, it will be challenging to lower procedural checks/controls and delegate decision and implementation powers to where they are most needed to respond to this crisis. Political leaders and public institutions must make special efforts, and focus their

energy on ensuring the utmost level of transparency, so that any misuse of trust is appropriately handled. In addition to enhancing the use of digital technologies and collecting real-time data for better decision-making, there are at least six key areas where public sector management measures could be implemented to help during the immediate response and in the aftermath: (1) coordination of government action to help develop an integrated cross-government response; 2) provision of essential services, which will require assessments and continuity strategies to address citizens' needs; 3) public employment and management to map essential functions and alternative work modalities; 4) public financial management measures to identify and make additional budgetary and financial resources (along with allocation and spending decisions) available where they are needed, including in the form of simplified procurement processes; 5) domestic revenue mobilization actions that can streamline and automate tax and customs procedures; and 6) transparency and accountability initiatives to ensure that funds reach the intended beneficiaries and are not misused or misappropriated.

### 8. Organizing the management of assets.

Brazil has had a mixed experience of government ownership in the productive sector—and in fact, the current administration aims to accelerate the process of privatization. However, to ensure that this temporary crisis does not cause more systematic damage, the government may choose to bail out strategic companies. An equity share should be required in return for such support. If this route is to be chosen, some basic principles ought to be adhered to for the management of public assets: (1) clarifying and publishing ground rules, while assessing risks; (2) exploring options for arms-length management/oversight of portfolio (including whether government will have voting rights on the board, for example); (3) ensuring full transparency on the application of criteria, requiring companies to publish all materially relevant information on asset sales; and (4) implementing strong governance provisions to prevent abuse, including limits on bonuses, golden parachutes and dividend payments, and introducing clawback provisions. A clear divestment strategy would also be needed, including (1) clear provisions for recoupment of state support; (2) clear rules for privatization/sale, including asset valuation; and (3) full transparency on subsequent asset sales, including on government profits. Good and updated data will be critical to organize the emergency response.

### 9. Defining and clearly communicating an exit strategy.

Countries are currently experimenting with various options to reopen some sectors of their economies (table 14). In most cases, this continues to be accompanied by active case finding, testing, case isolation, contact tracing, and contact quarantining. Many countries have made the wearing of respirators compulsory. Strong community education remains critical. Hygiene measures, including disinfecting public areas, remain a priority. Some industries are experimenting staggered work schedules. Countries are also experimenting with different stepwise approaches to reopening the economy, which can include: (1) population: allowing specific age cohorts to return to work; (2) sectors: allowing specific sectors to reopen; and (3) geography: allowing specific regions to phase out the lockdown at different speeds. Table 14 provides an overview of how different European countries have communicated their intention to reopen their economies. What appears clear is that critical public and private services receive priority, while activities that are more “dispensable” or involve larger groups will be opened later—with major events coming last. Since COVID-19 arrived relatively late in Brazil, the country will have an increasing number of global experiences to learn from to identify and communicate its own exit plan.

Table 14: Examples of Exit Strategies from Europe

	1. Critical public and private services						2. Other private and public services, leisure				3. Large events
	Reopen selected shops	Reopen parks	Selected return to work	Reopen public transport	Allow limited travel	Reopen pre and primary schools	Reopen high schools	Reopen hairdressers and malls	Lift/limit curfew and staggered work schedule	Reopen restaurants	Permit large events
Mid-April	Austria, Italy, Czech Rep., Denmark	Austria	Austria, Italy	Austria, Italy, Denmark	Czech Rep., Finland, Norway	Denmark, Norway					
Late April	Norway						Norway	Norway			
May							Denmark, Austria	Austria	Italy, Denmark	Austria	
June											Norway
July											Austria
August											
September						Italy	Italy				Denmark

Sources: Der Spiegel and World Bank.

## 10. Laying out the reform agenda for sustained recovery.

Understandably, and as elsewhere in the world, the pandemic and its containment have moved into the focus of policymaking, crowding out the previous reform agenda. In Brazil, some early reform momentum, which resulted in an ambitious pension system reform in 2019, for example, had already been at risk of dying down in early 2020, just before the pandemic struck. A brief window of opportunity for reform before the municipal elections later this year (also possibly due to be postponed) will be overshadowed by COVID-19. This poses a significant risk to Brazil's recovery, as a strong macroeconomic and microeconomic framework will be critical to supporting such

recovery. This makes it even more important now to continue with the reform agenda, which includes a continued opening of markets to greater competition (beyond trade); a reform of the country's byzantine tax system to enable the efficient allocation of factors; and a more general reform of the business environment. Given the significant blow to the country's fiscal space, it will be important to also communicate how the fiscal consolidation agenda will be maintained—and potentially tightened—to reach the ultimate target of recreating fiscal space. With regard to monetary policy, and especially in light of potential quantitative easing and Brazil's history with the monetization of fiscal deficits and inflation, it will be more important than ever to guarantee the de jure independence of Brazil's Central Bank.



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