COVID-19 IN BRAZIL

IMPACTS AND POLICY RESPONSES

WORLD BANK GROUP

JUN
2020

BRAZIL'S EXPOSURE TO COVID-19

Key highlights

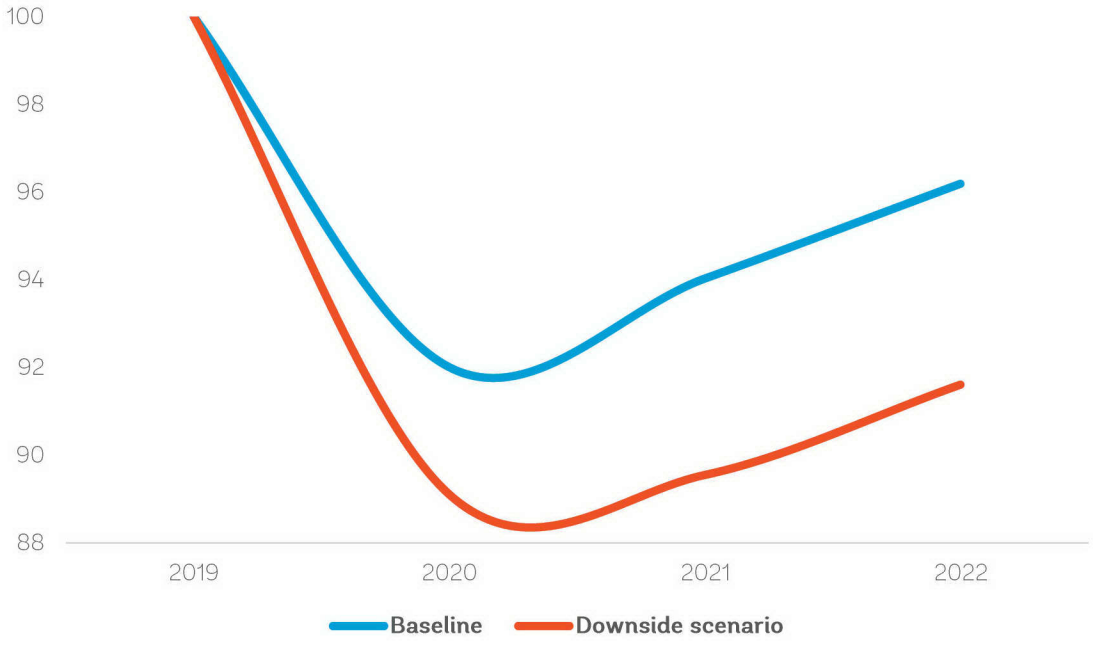
Economy expected to contract by **-8% of GDP** in 2020, one of Brazil's sharpest recessions in decades, with the potential to push at least **8.4m Brazilians** into poverty in 2020 unless mitigated.

Prior weaknesses (policy distortions, closedness, limited fiscal space) will slow down recovery

Virus spreading to poorer, more rural areas with **lower health capacity**

Poor sanitation and **high density in favelas** exposes the poor to the virus

Each month of lock-down costs about **1.1 p.p. of GDP** in 2020



BRAZIL'S EXPOSURE TO COVID-19

Key highlights

- Recession **hits services** hardest; agriculture supported by FX depreciation
- **SMEs** hardest hit due to high face-to-face exposure
  - most SMEs only have 21 days of cash buffers
  - women and low income/informal workers particularly affected
- Brazil at risk of regressing by equivalent of **1.5 years** of progress on reducing **Learning Poverty**

- **External financing needs:** 13.2% of GDP in 2020
- **Public financing needs** at 31.4% of GDP thru 2022
- **Primary deficit** of 9.6% of GDP in 2020
- **Financing gaps of states** of 0.3 to 1.5% of GDP
- **Public debt to stabilize** in 2030 at 109.2% of GDP (7 year later and 30bp higher than pre-Covid)

High financial and operational risks to SOEs/PPPs in **transport, water,** and **energy**

Risks to **deforestation** of the Amazon (incl. weaker enforcement)

COVID-19 IN BRAZIL

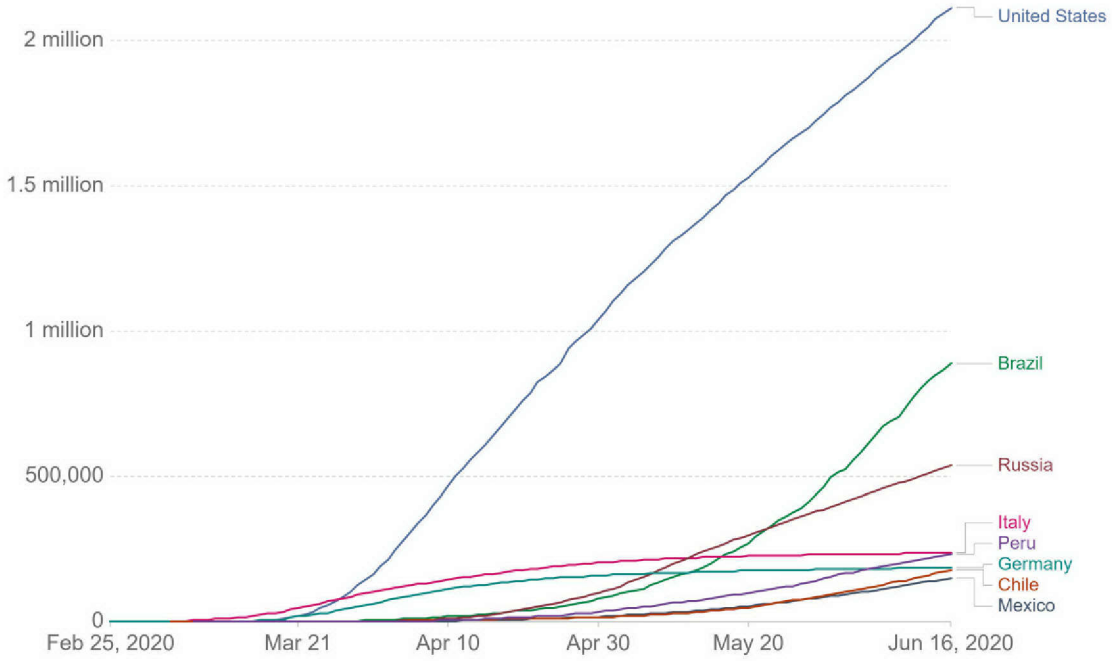
Health impacts

WORLD BANK GROUP

COVID-19 EXPOSURE: Brazil is 2th most exposed country in the world and first in LAC. With confirmed infections of ~890,000 and death rate close to 5%

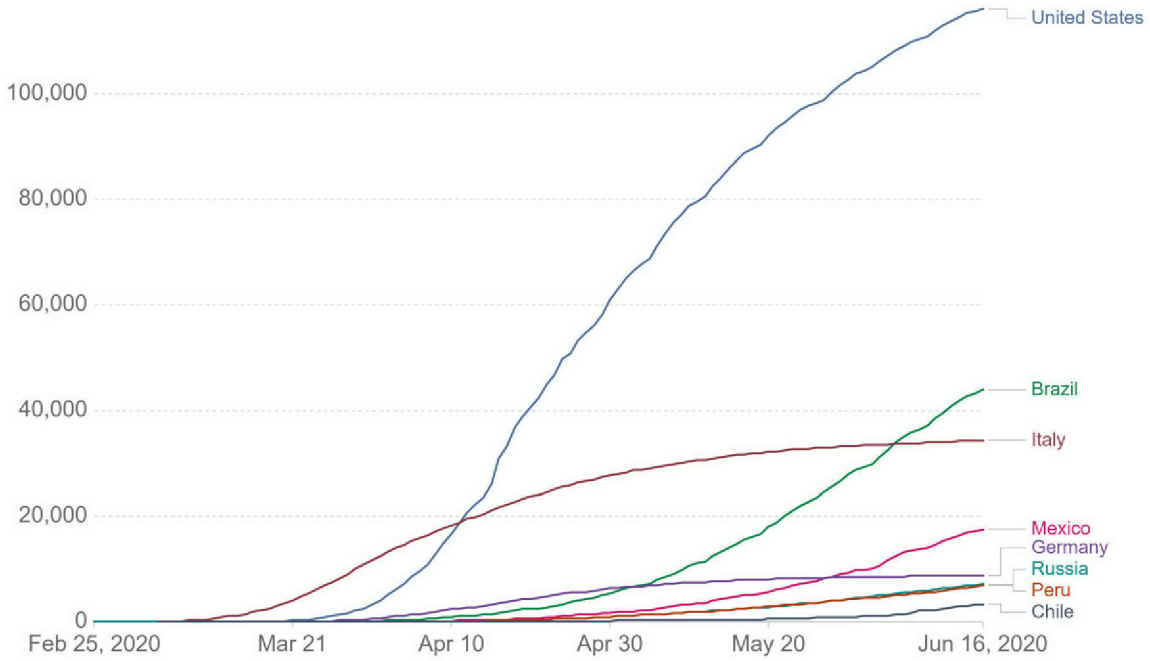
Total confirmed cases

(as of 16 June 2020)



Total confirmed deaths

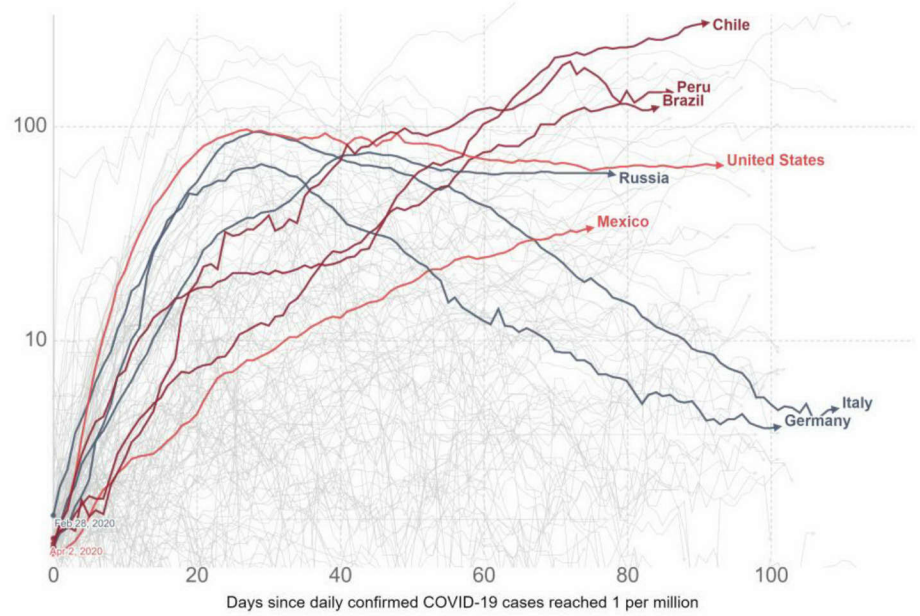
(as of 16 June 2020)



Source: Ourworlddata

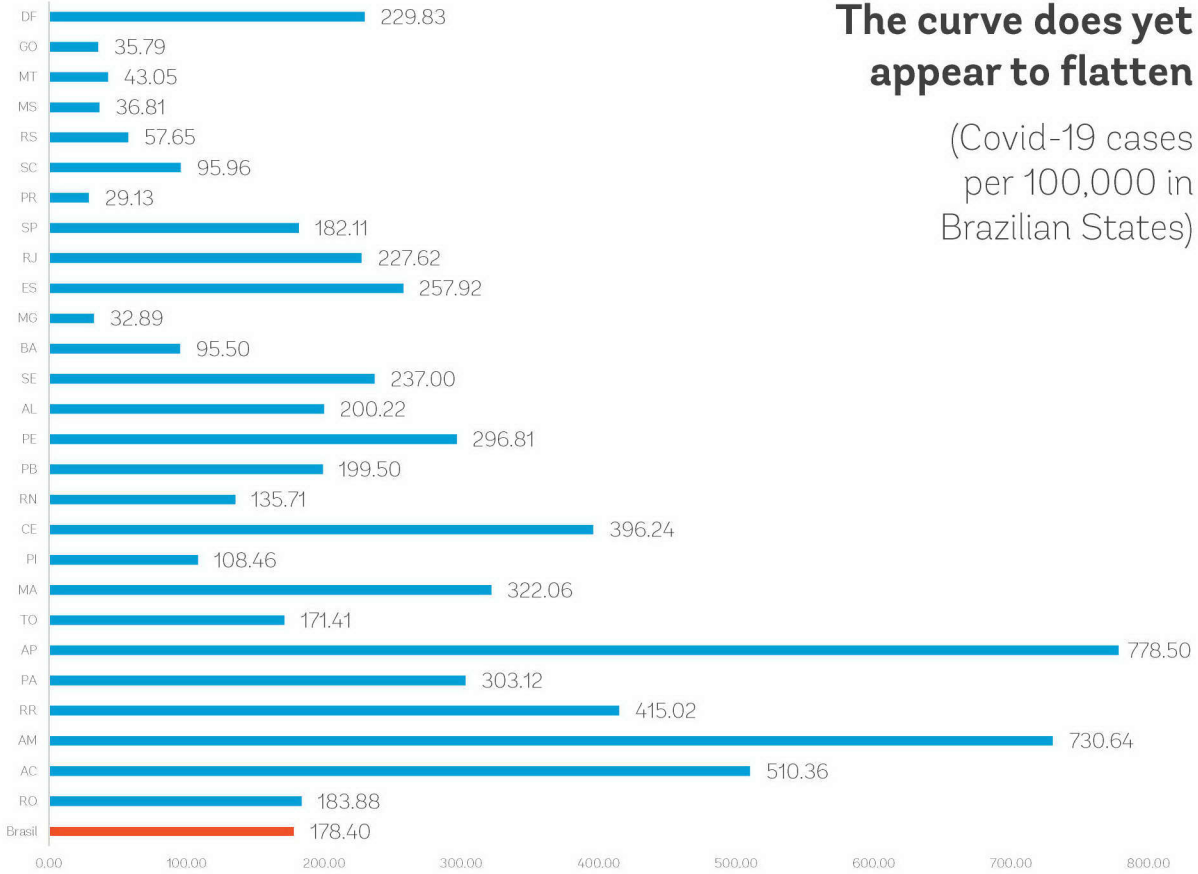
COVID-19 EXPOSURE: Brazil is 2th most exposed country in the world and first in LAC. With confirmed infections of ~890,000 and death rate close to 5%

Recent studies point to **substantial under-reporting of Covid-19** infections, estimated at 12-15 times higher (USP, UFPel, April 2020). This is worrisome in contexts with insufficient tests and large number of poor.



The curve does yet appear to flatten

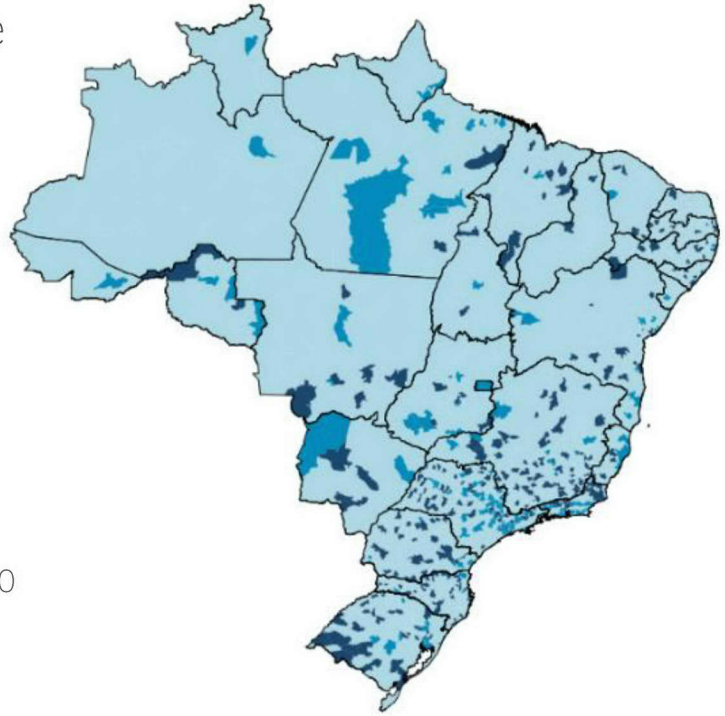
(Covid-19 cases per 100,000 in Brazilian States)



COVID-19 EXPOSURE: rapid projected spread with strained health systems in poorer states

Intensive care unit beds, SUS

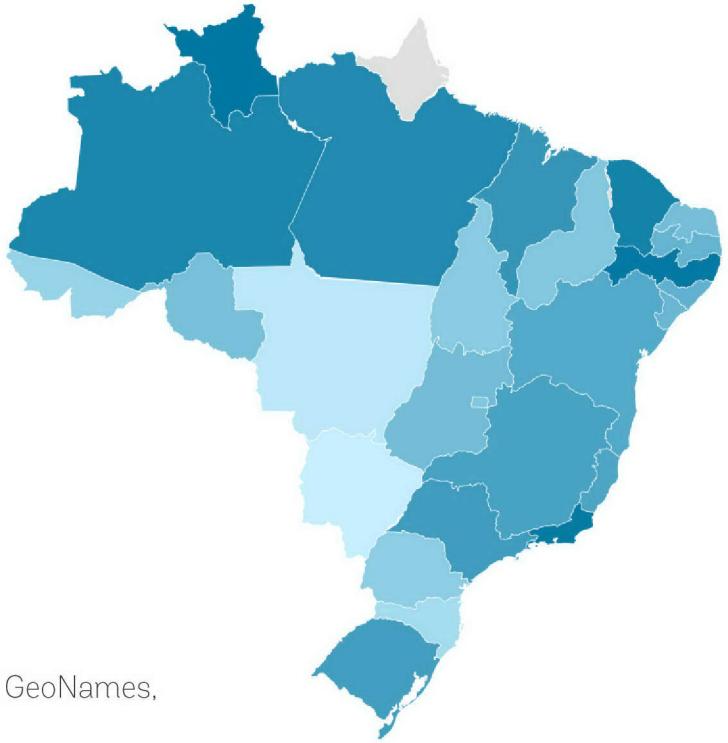
per 100.000 people



Note: "Below minimum" represents less than 10 ICU beds per 100.000. "Above minimum" represents more than 10 ICU beds per 100.000 people.
Source: World Bank using DataSUS

Intensive care units are strained

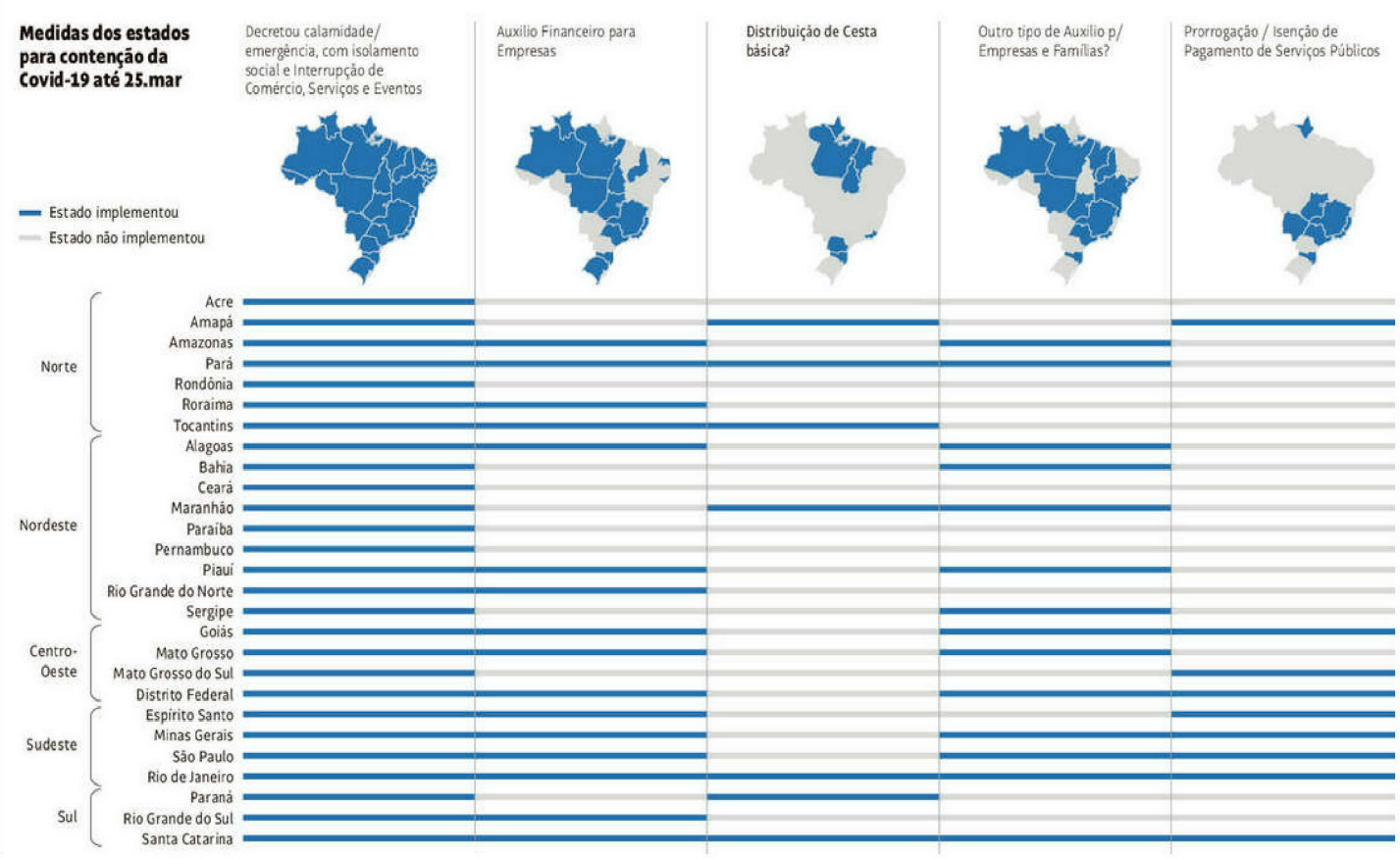
(ICU occupation rates)



Powered by Bing
DSAT Editor, DSAT for MSFT, GeoNames, Microsoft, Navteg, Wikipedia

COVID-19 EXPOSURE:

Lockdowns in most states with varying health responses started in March



Health emergency response:

- **Social distancing** measures in most states
- Acquisition of **2,000 ICU beds**
- Procurement of ventilators (**BRL 1bi for 15,000 ventilators**)
- Increase in number of **federally funded doctors** (via new Mais Médicos – over 5,800 doctors)
- **Telemedicine services** have been allowed

Source: Folha newspaper, as of 25 March 2020

COVID-19 IN BRAZIL

Economic and social impacts

WORLD BANK GROUP

CONCEPTUAL FRAMEWORK:

Brazil's Covid-19 exposure to three interrelated shocks

Shock 1:
Global economy
an external demand shock (due to containment in other countries)

INVESTMENT

TRADE

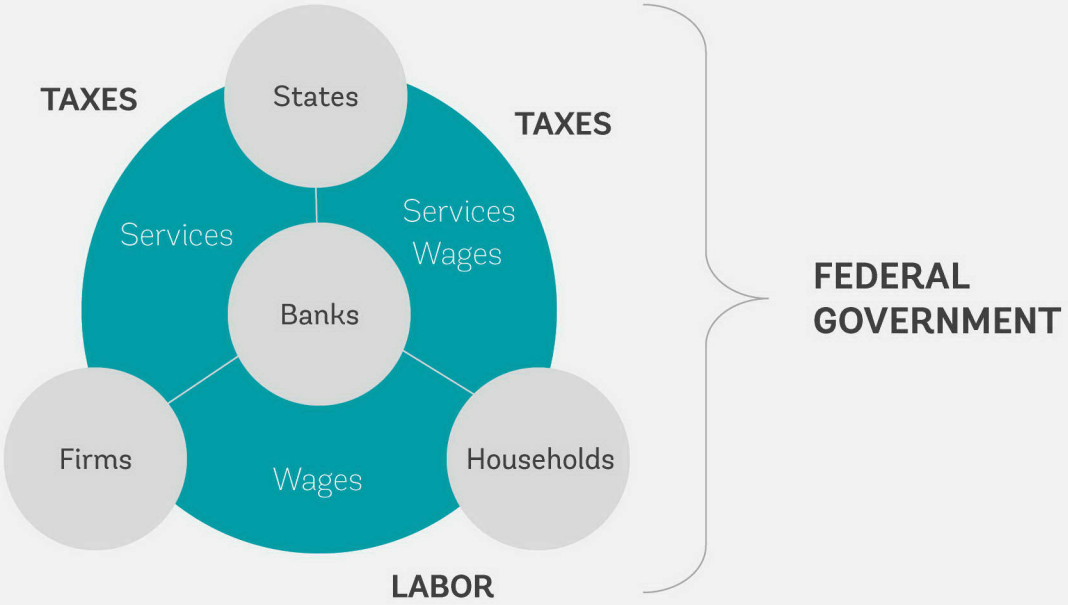
TRAVEL

Shock 2:
Commodity markets
a global oil supply/price shock

EXPORTS

PRICES

Shock 3: Brazilian economy
a domestic shock from containment in Brazil



Shocks 1-3:
combined external, oil, and domestic shocks

REAL TIME HIGH-FREQUENCY DATA:

Confirms supply and demand shocks due to Covid-19 containment measures

Supply shock

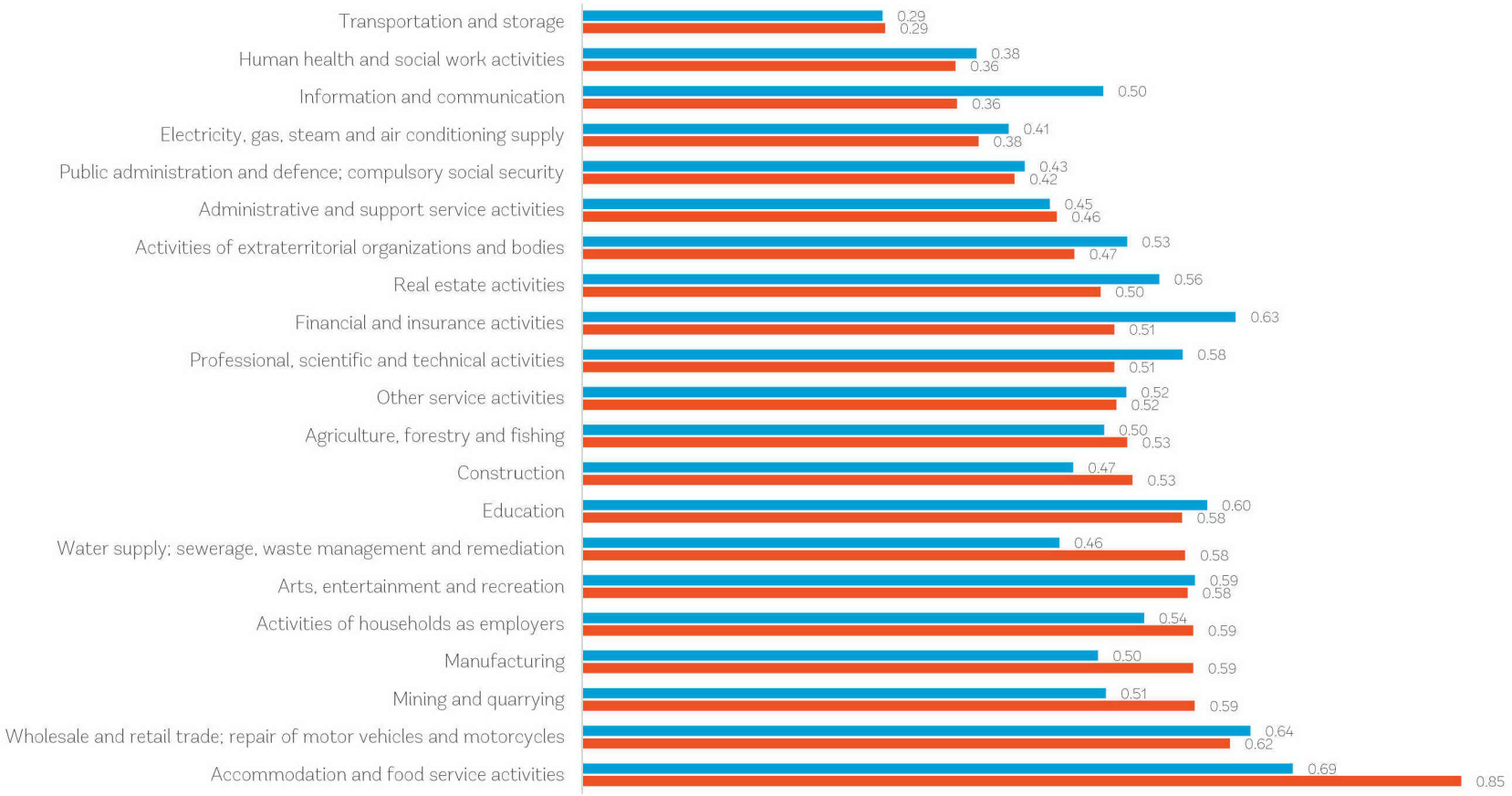
(Share of f2f activities and limited ability for home-based work)

More affected:
Food and beverage services; advertising and market research; Activities auxiliary to financial service and insurance activities; Retail; Travel agencies and tour operators.

Less affected: essential services

Average f2f Score

Average composite Score



Source: World Bank based on RAIS data

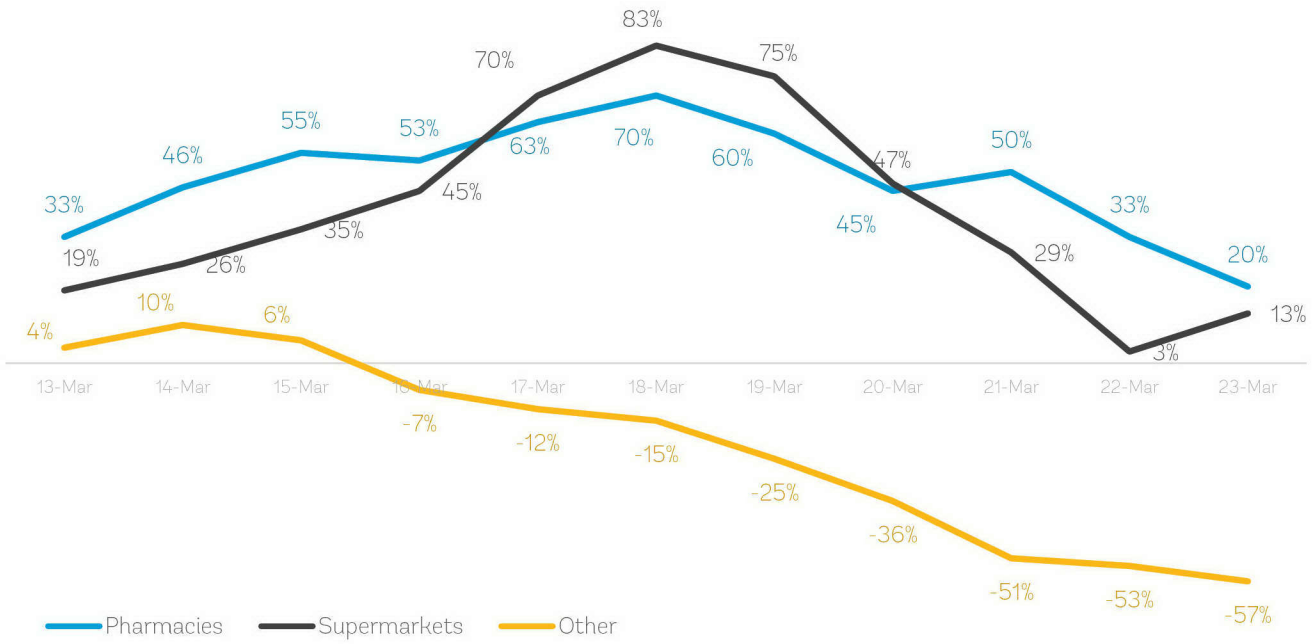
REAL TIME HIGH-FREQUENCY DATA:

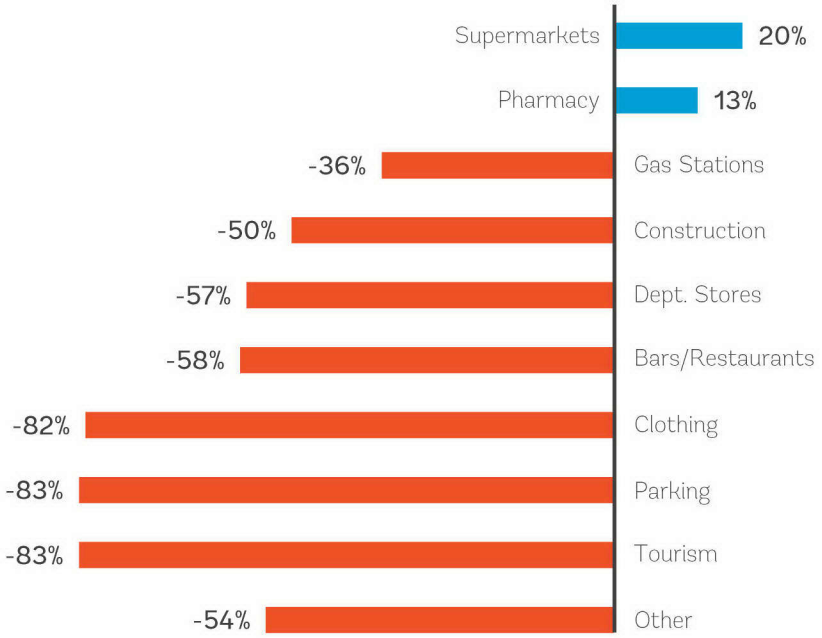
Confirms supply and demand shocks due to Covid-19 containment measures

Demand shock

(Credit card purchases, percentage change, rel. to 5Jan-22 Feb 2020)

Source: Cielo





REAL TIME HIGH-FREQUENCY DATA:

Confirms supply and demand shocks due to Covid-19 containment measures

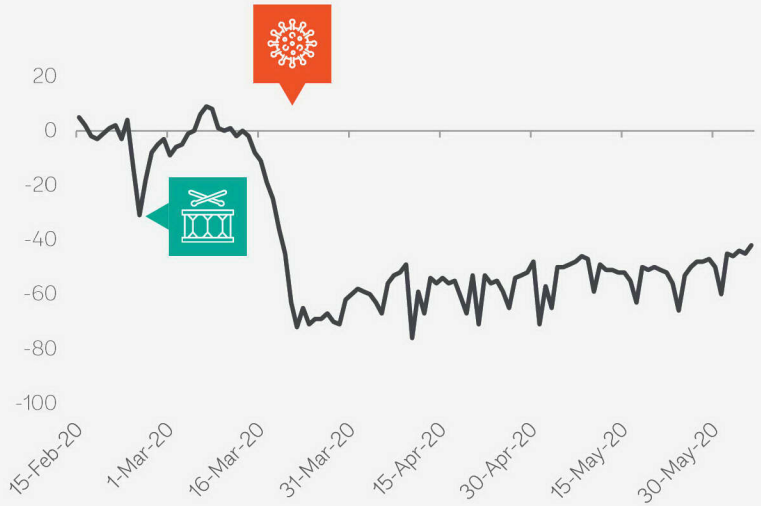
Demand and supply shock

Carnival

Covid-19

Daily commute to work places

Retail and recreation trips



REAL ECONOMY IMPACTS:

Steep recession of -8%; state level impacts of Covid-19 on the supply and demand side, confirm that poorer / less diversified states are hit the hardest. Export agriculture supported by exchange rate depreciation

Supply shock

(Share of f2f activities and limited ability for home-based work)

	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
Maranao/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

Source: World Bank

State level impacts: demand

(percentage change, 2020, general equilibrium effect)

	GDP	Private cons.	Invest.	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
Maranao/Piaui	-8,7	-13,2	-13,4	1,0	-6,7
Pern./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
St Cat., Rio GdS	-8,2	-13,0	-11,4	0,9	-6,4
Mato Grosso dS	-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

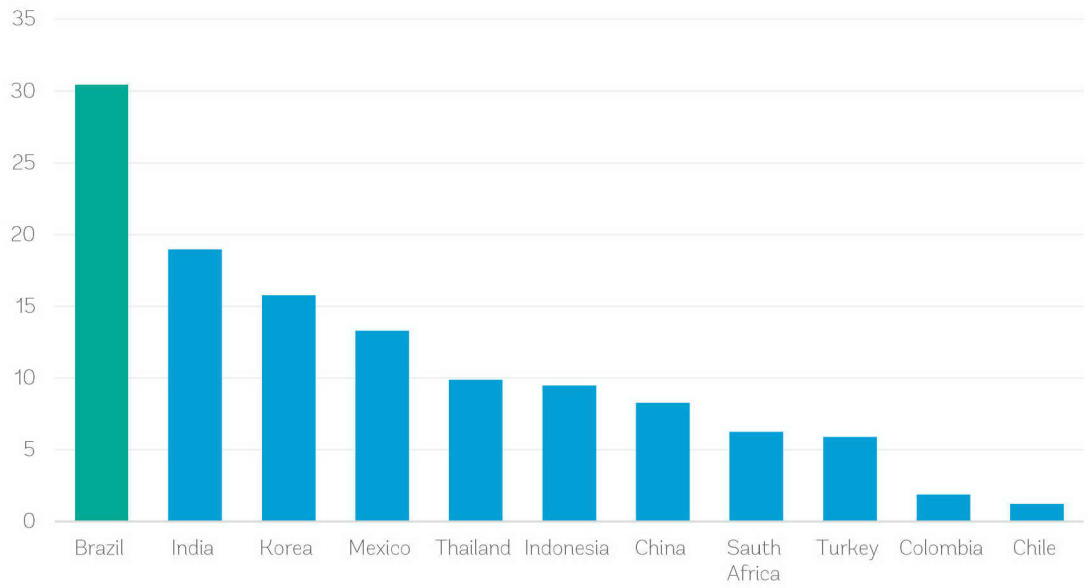
Source: World Bank

EXTERNAL SECTOR EXPOSURE:

Large capital outflows (13 US$ bn) combined with lower FDI and export earnings put pressure on external financing needs (13.2% GDP).

Portfolio outflows

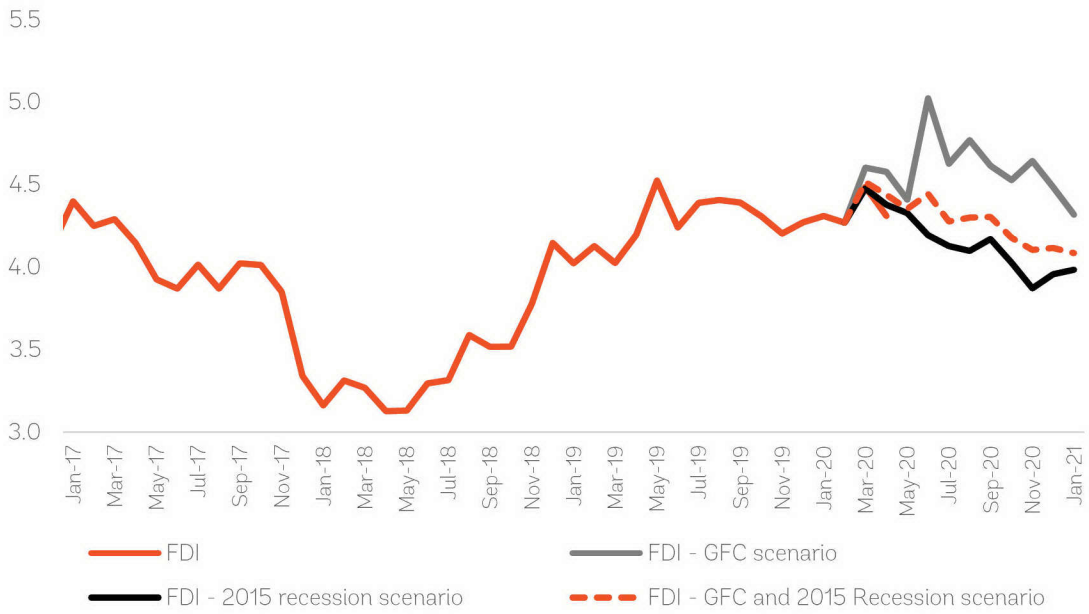
(cumulative US$ bn)



Source: IIF

Scenarios for FDI

(% of GDP)



Source: World Bank

EXTERNAL SECTOR EXPOSURE:

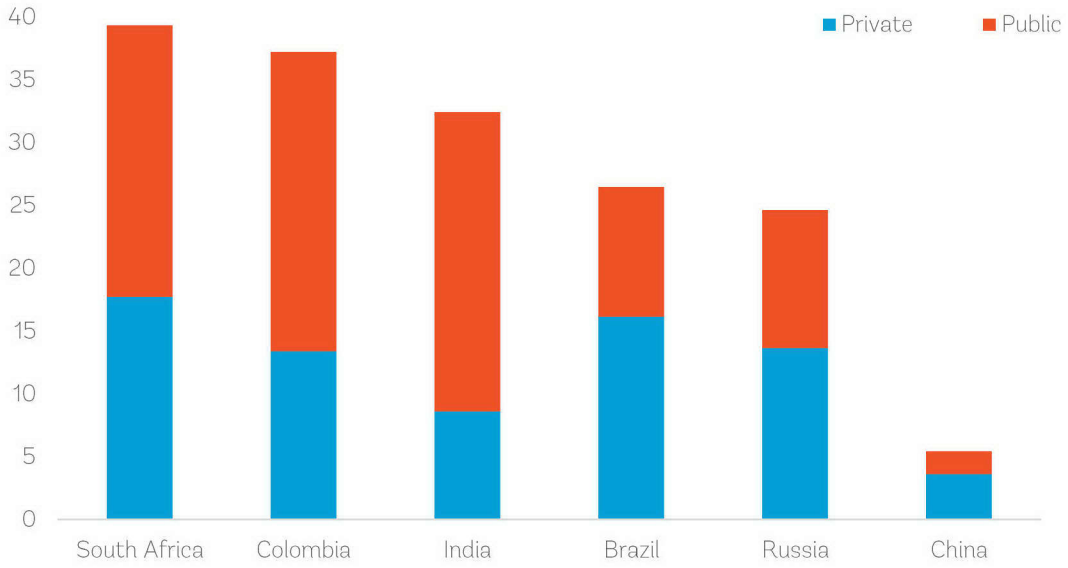
Large capital outflows (13 US$ bn) combined with lower FDI and export earnings put pressure on external financing needs (13.2% GDP).

Currency depreciation

(Index, relative to USD)

FX-denominated debt

(% of GDP, public and private sector, 2018)



EXTERNAL SECTOR EXPOSURE:

Large capital outflows (13 US$ bn) combined with lower FDI and export earnings put pressure on external financing needs (13.2% GDP).

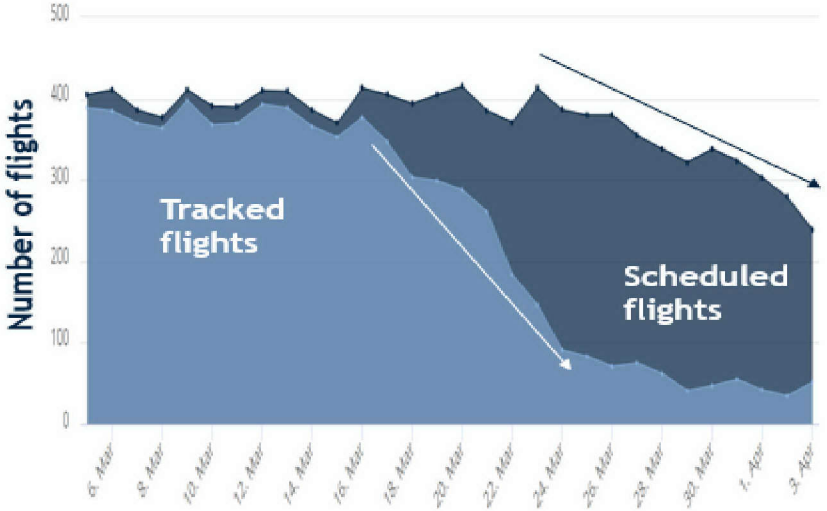
Trade: general equilibrium effects

(Annual % change)

EXPORTS (INCREASE)	IMPORTS (FALL)
Manufacturing	Transp. Services
Textiles	Fruits/Citrus
Beef/meat	Beef/meat
Coffee	...
Fruits/citrus	...
Petrol	...
...	...
Soy	...
...	...
Oil	Oil

Flights from São Paulo

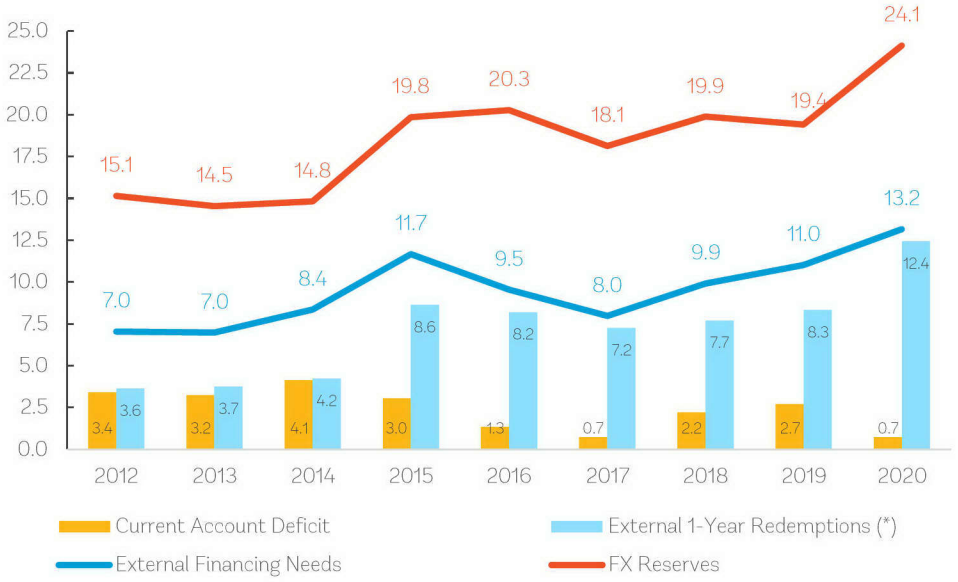
(Number)



Source: Flightradar24

External financing needs and FX reserves

(percent of GDP)



EXTERNAL SECTOR EXPOSURE:

Policy response and remaining vulnerabilities

Policy response

Trade: government dropped import tariffs (until Sept 30, 2020) and simplified customs clearance processes for the release of imported medical goods

Central bank interventions in FX markets:

- **FX spot operations** of U$13.76 bn
- **FX swap lines** with US Fed supporting liquidity in Brazilian US dollar markets of U$12bn

Remaining vulnerabilities

- Risk sentiment toward Brazil : highest CDS in LAC
- Small interest rate differential Brazil / US
- Non-trade measures (e.g., import licenses) on medical equipment and supplies should be streamlined
- Longer impact expected in services trade, such as tourism and foreign professionals
- Global value chain disruptions and trade barriers
- Sizeable external financing needs

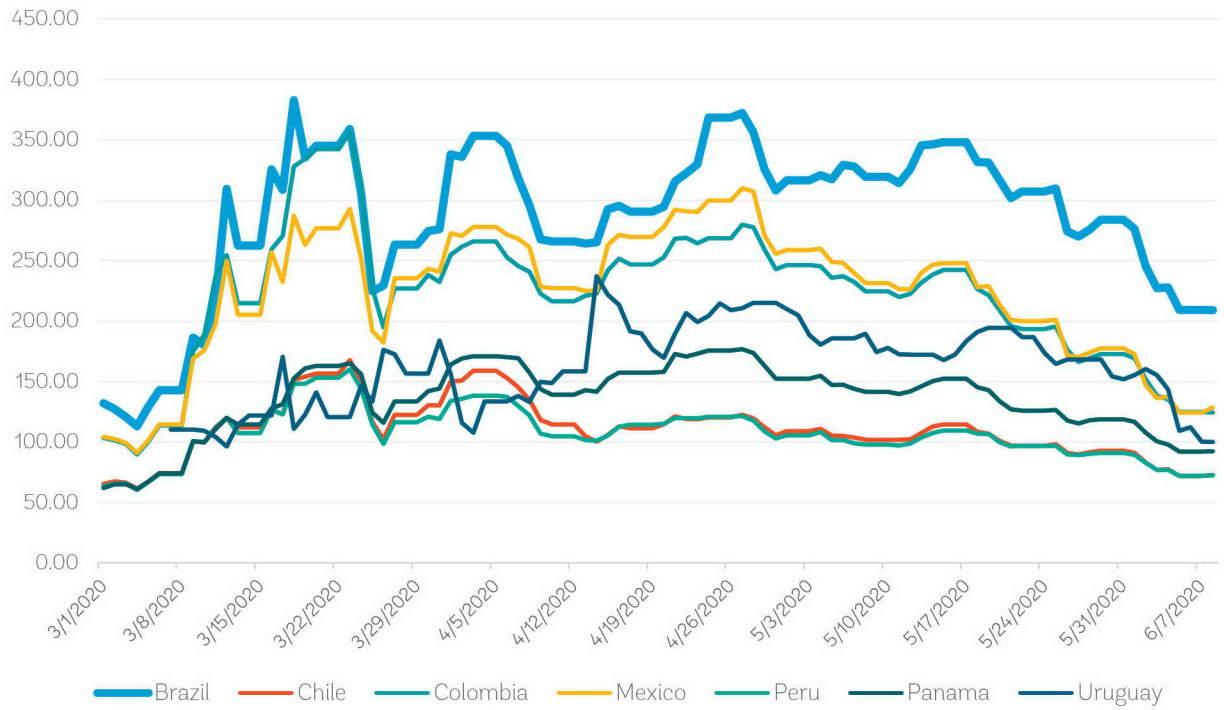
EXTERNAL SECTOR EXPOSURE:

Policy response and remaining vulnerabilities

Sources of resilience

- Flexible exchange rate (first line of defense)
- Ample international reserves (US$ 356 billion/ 18 months of imports)
- FX swap lines with US Fed
- Monetary policy credibility
- Low pass-through to domestic inflation

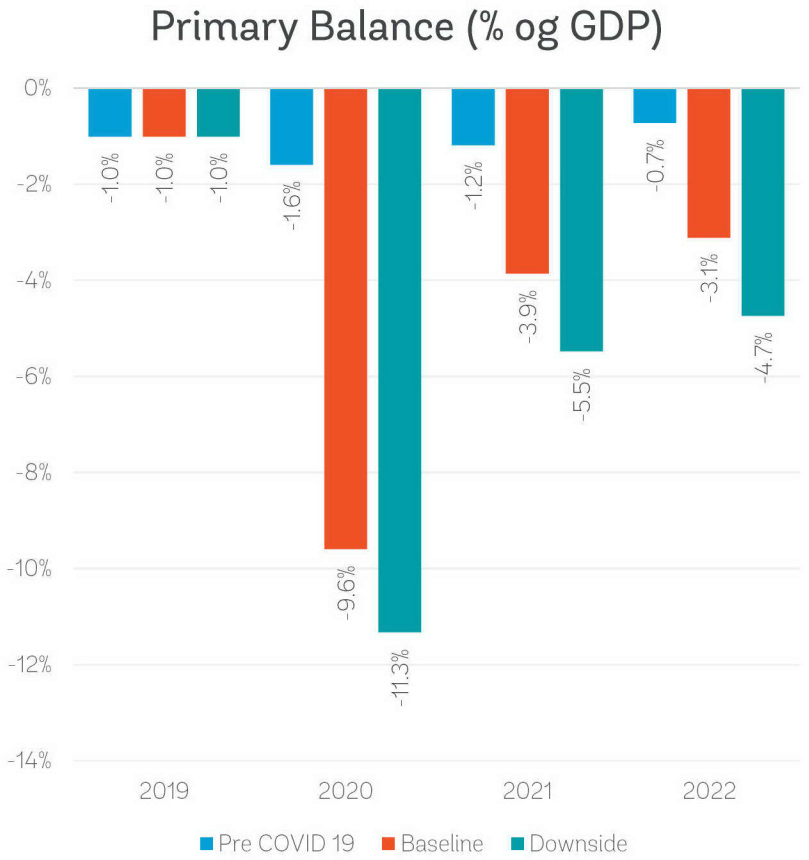
Credit Default Swaps (CDS)

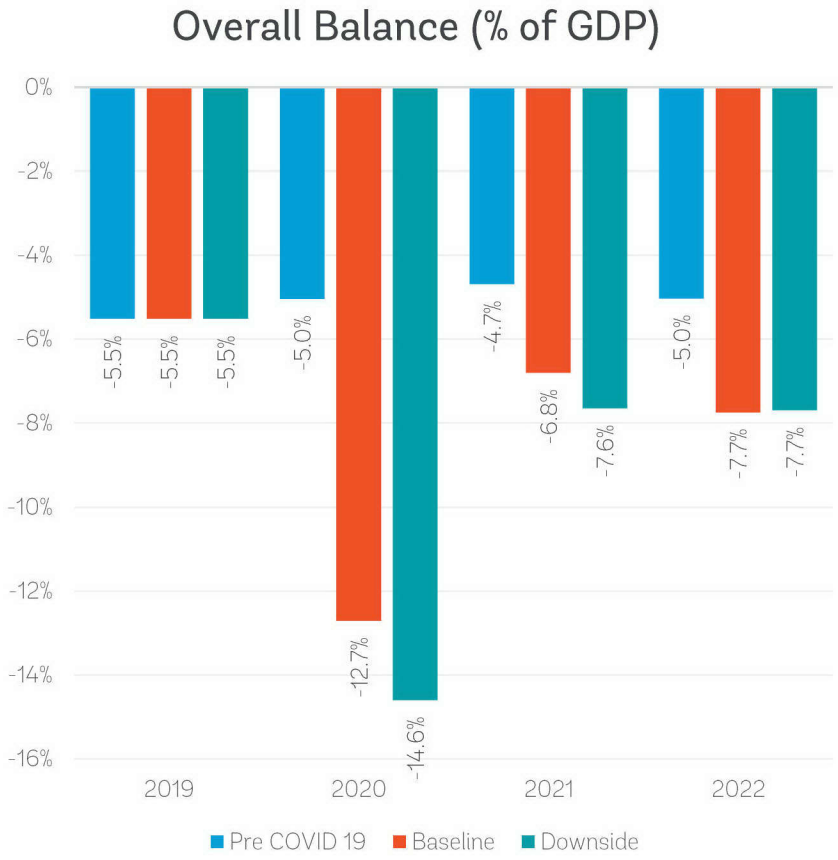


FISCAL EXPOSURE (GENERAL GOVERNMENT):

Primary fiscal deficit, public financing needs, and public debt trajectory deteriorate significantly

- Primary fiscal balance is estimated at -**9.6% of GDP**, but **could reach -11.3%** of GDP at the downside scenario (at least 8 bp higher than pre-Covid)
- Gross public debt **stabilizes in 2030 around 109.2%** (7 years later and 30 bps higher than pre-Covid). At the downside scenario, stabilization is expected **only at next decade**.
- Gross public financing needs to remain elevated at **around 33 percent** of GDP until 2022, raising debt rollover risks



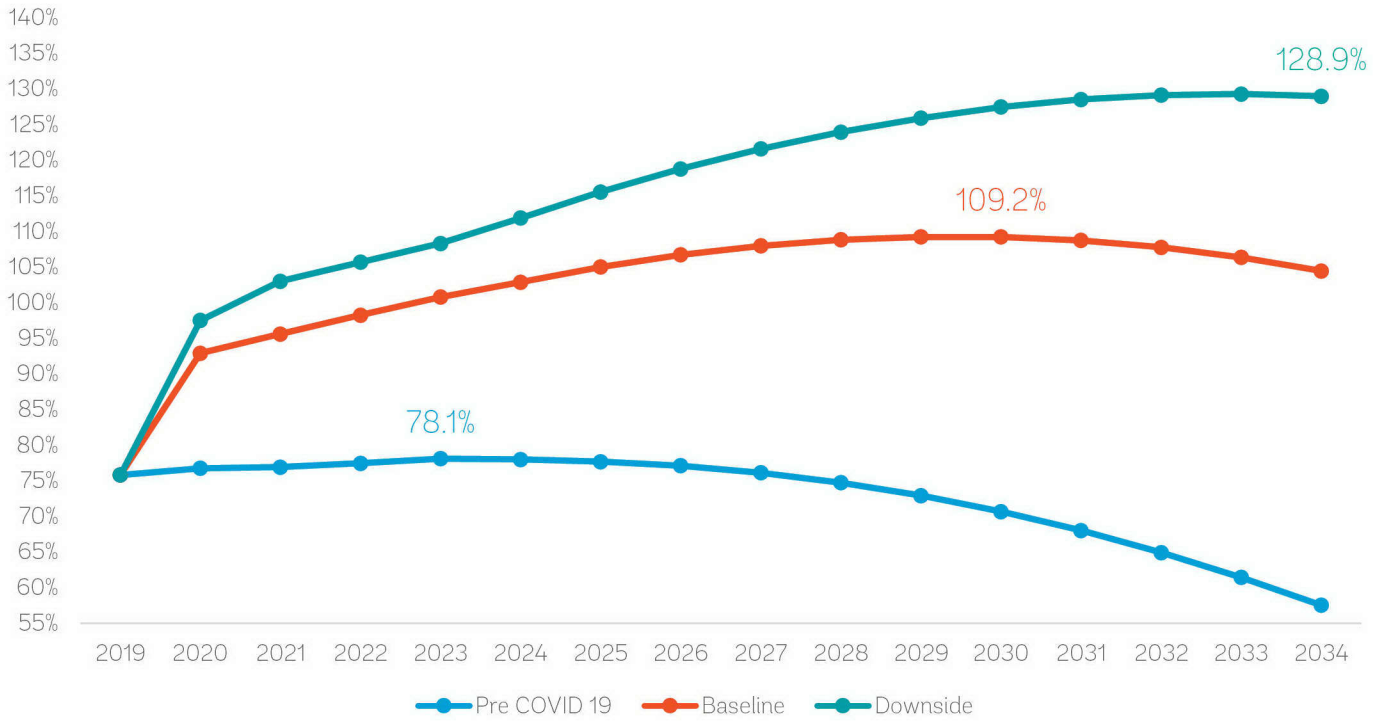


FISCAL EXPOSURE (GENERAL GOVERNMENT):

Primary fiscal deficit, public financing needs, and public debt trajectory deteriorate significantly

General Government Gross Debt

(% of GDP)



Risks to 2021 fiscal outlook:

- A **deeper health crisis** could exacerbate and prolong the economic crisis.
- A **deeper recession** would also imply a softer rebound, as the disruption causes **longer-term damage** to firm and household balance sheets.

FISCAL EXPOSURE (SUBNATIONAL LEVEL): financing gap of Brazilian states can reach 1.9% of national GDP in 2020, even after including federal support

Fiscal exposure:

1. **Real economy** /revenue shocks;
2. **Rigid expenditures** (personnel) and crisis spending needs
3. **Revenue cyclicality:** transfers vs own revenues;
4. **Ability to borrow:** CAPAG rating

FISCAL EXPOSURE (SUBNATIONAL LEVEL): financing gap of Brazilian states can reach 1.9% of national GDP in 2020, even after including federal support

Keeping CAPAG A or B ratings will be a challenge

- Federal fiscal package is not enough to close financing gaps;
- **States' financing gap** with federal fiscal package sums up to **0.1% of GDP**. Without federal support, it would **be 0.9% of GDP**;
- At the **downside scenario, states' financing gap** sums up to **1.5% of GDP**, and would fall to **0.3% of GDP** with federal support;
- Even after the federal fiscal package, 12 states remains with financing gaps. At the downside scenario, this number scaltes to 16 sates.
- Accumulation of arrears;
- Liquidity crisis of the states: need to buy health inputs – due to the high demand all around the world, it most be paid in advance and in cash.

Policy response

Federal fiscal package for subnational governments:

- Keep federal transfers (FPE and FPM) at 2019 level;
- Transfers related to health and social assistance;
- Suspension of debt repayments with the Union, and with public banks;
- R$60 bn (R$37 bn for states) fixed insurance to be distributed within the subnationals, of which R$ 10 bn must be to cover health and social assistance expenditures;
- Nominal wage freeze under discussion, with government estimations of saving R$ 52.4 bn for states, and more R$ 46.5 bn for municipalities

FISCAL EXPOSURE (SUBNATIONAL LEVEL): While large federal support substantially mitigates subnational fiscal risk in 2020, heightened fiscal challenges remain for 2021 and beyond.

States 2020 financing needs:

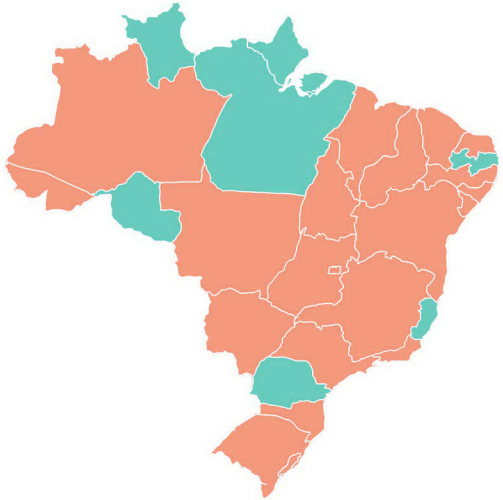
Financing needs with no COVID-19: R$ 17.5 bn (0.2 % of GDP) – 11 states with financing needs

Financing needs with no federal fiscal support: R$ 101.1 bn (1.5 % of GDP) – 24 states with financing needs

Financing needs with federal fiscal support: R$ 21.4 bn (0.3 % of GDP) – 13 states with financing needs

States 2021 financing needs:

Financing needs: R$ 62.5 bn (0.9% of GDP) – 20 states with financing needs



Financing Needs No Financing Needs

FISCAL EXPOSURE:

fiscal response and remaining vulnerabilities

Fiscal policy response to Covid-19

Source: World Bank

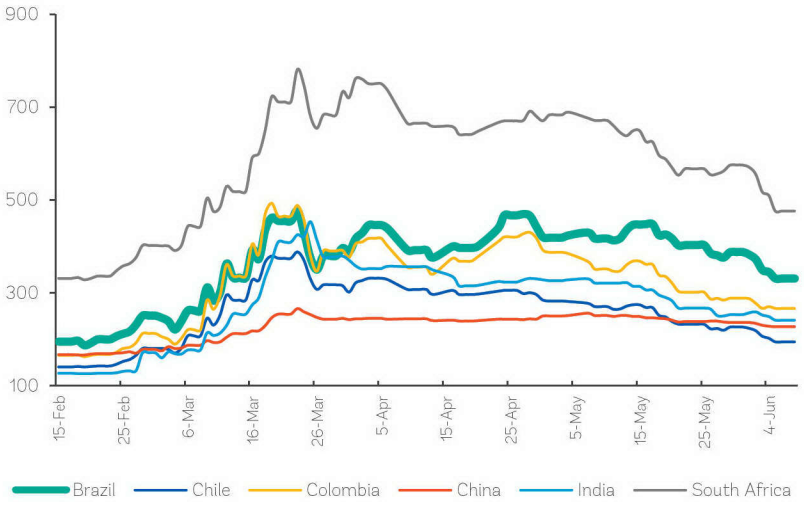
	R$ bn	% of GDP
Advance of expected income	58.8	0.9%
New spending	277.5	4.0%
Reallocation	28.3	0.4%
Tax deferment	52.2	0.8%
Tax cut	12.7	0.2%
Total federal	**429.5**	**6.3%**
Federal support to sub-nationals	157.2	2.3%
Grand total	**586.7**	**8.6%**

Remaining vulnerabilities

- Potential needs for additional stimulus spending
- Larger-than-expected revenue shortfalls
- Increased public debt levels an financing needs
- Elevated bond spreads and risk-off sentiment to EMDEs
- Contingent liabilities from SOEs

EMBI sovereign spread (basis points)

Source: Bloomberg



Sources of resilience

- ✓ **Ample** treasury liquidity
- ✓ **Deep** domestic credit markets
- ✓ **Very low** foreign currency denominated debt
- ✓ **Large** international reserves (net government asset)

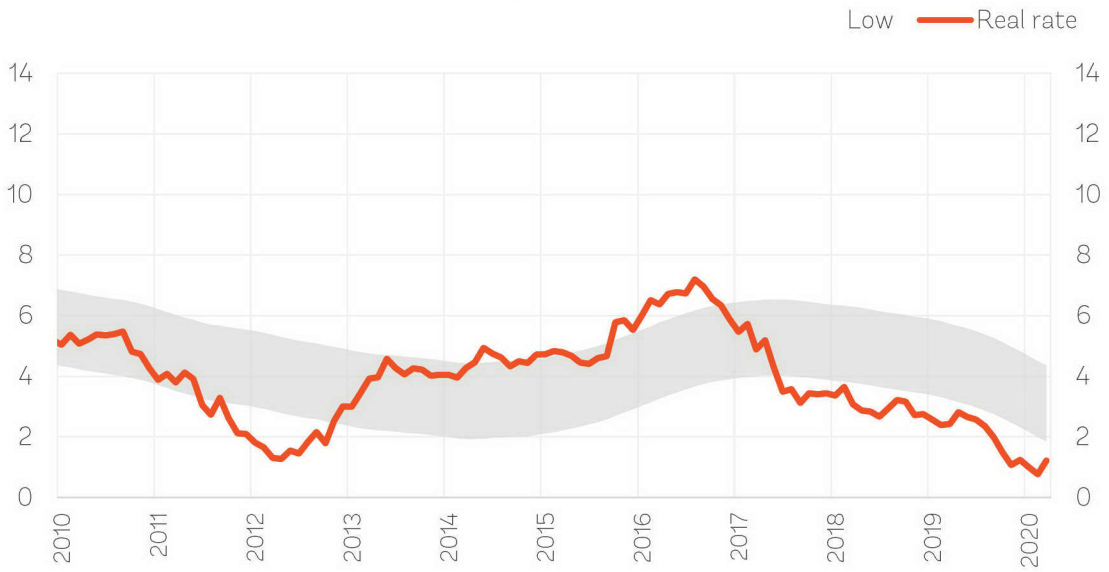
MONETARY POLICY/EXPOSURE:

Policy response and remaining vulnerabilities

Policy response

Monetary expansion (consecutive rate cuts of 200 bp)

Policy rates (basis points, neutral rate and SELIC, real)



Source: World Bank

Remaining vulnerabilities

- Limited space (rates below neutral levels)
- Limited effectiveness for monetary policy to address a supply side shock
- Weak firm and household balance sheet may reduce monetary policy transmission
- History of high inflation

Sources of resilience

- Central bank credibility
- Nominal rates still positive
- Inflation expectations remain well anchored
- I would add: "Low inflation pre-crisis and limited pass-though from FX depreciation"

FINANCIAL SECTOR EXPOSURE:

Financial sector is resilient but domestic capital markets are showing signs of strain

The financial sector is entering the Covid-19 crisis on a sound footing

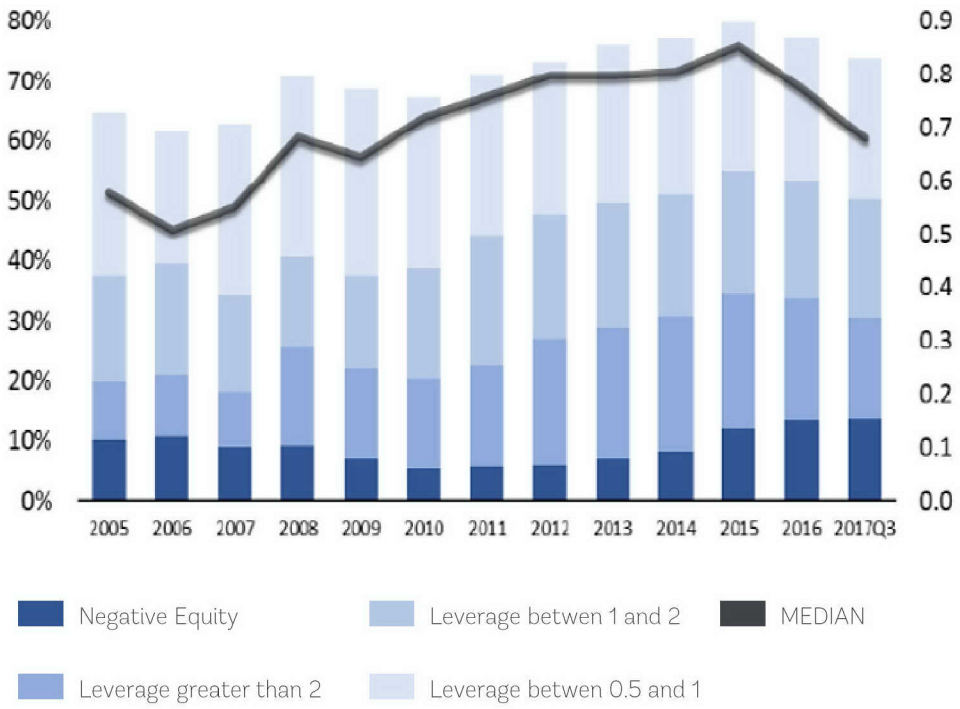
- High capital adequacy, high liquidity, low NPLs, high provisioning. FSAP 2018 and CB 2019 stress tests confirming resilience
- Liquidity risks are manageable with stable domestic funding and robust central bank reserves.

Banks are exposed to firms weakened by the crisis

- High corporate leverage, especially services (mostly SMEs), and weak debt servicing capacity
- Given the large amount of debt to financially weak firms, weaknesses in the corporate insolvency framework need to be addressed.

Corporate Leverage, 2005-2017

Leverage based on total debt to total equity



FINANCIAL SECTOR EXPOSURE:

Financial sector is resilient but domestic capital markets are showing signs of strain

Banks are exposed to relatively indebted households weakened by the crisis

- High household debt/income (45%) and household debt service (21% of disposable income)
- More severe shocks including a rise in unemployment could impact debt servicing capacity

Banks are exposed to sovereign risks

- Banks invest about 25% of their assets in sovereign bonds

Domestic capital markets have been affected by Covid-19 risk aversion:

- Bank equity markets lost 40% and corporate bonds lost 16% since February
- Domestic debt market is strained limiting access to domestic sources of funding

Investments funds have experienced pressures, but **pension funds and insurance companies are less vulnerable** due to a high share of investments in liquid government securities.

FINANCIAL SECTOR EXPOSURE:

Policy response and remaining vulnerabilities

Policy response

Central Bank: Objective of maintaining liquidity and lending liquidity (larger package than in 2008)

- Constitutional amendment allows BACEN to buy a range of public and private assets, including government and corporate bonds
- Reduced reserve requirements rates on term deposits, from 25% to 17%
- Additional deposits to be covered with deposit insurance
- Flexibilization of Agribusiness Credit Bills (LCA) regulation
- Loans to FIs backed by debentures
- Higher ceiling for banks' securities' repurchase
- One-year repos backed by sovereign bonds
- Reduction of spread of liquidity- leveling operations
- Expand funding options for credit societies.

Capital

- Capital conservation buffer reduction, from 2.5% to 1.25%
- Temporarily, the tax effects arising from the over-hedge of equity investments held abroad will not be deducted from equity
- No provisions requirements for renegotiation of performing loans in the next 6 months.
- Reduction of the capital requirement for SME loans- risk weight factor reduced from 100% to 85%.
- Reclassification of renegotiated loans between March 1 and September 30, 2020 to the level of risk at which they were classified in February.
- Temporarily reduce capital requirements for smaller FIs.

SME Credit Support

- Credit line to SMEs for two months of payrolls, via BNDES (85%) and other banks (15%)
- Fintechs can issue credit cards and obtain funding from state banks
- State banks: Over US$ 40 bln in new lines of credit for SMEs

FINANCIAL SECTOR EXPOSURE:

Policy response and remaining vulnerabilities

Remaining vulnerabilities

The willingness of banks to lend remain uncertain

- The policy measures relax banks' liquidity and regulatory capital constraints to lending, but their willingness to lend may be constrained by uncertainty about economic outlook and by damaged firm and household balance sheets. Recent weekly data indicates a declining trend in credit for households.

Corporate sector balance sheets

- SME payroll program mitigates rising corporate risk, but even if firms maintained access to credit, prolonged solvency losses may affect financial strength. A credit crunch would put further pressures on firms' balance sheets, leading to more losses, and creating a vicious circle.

Household financial weakness

- People may lose income – debt servicing capacity stretched further
- Temporary wage subsidies program softens this vulnerability

Package mitigates some risks, but a lengthened crisis may require reassessing financial stability

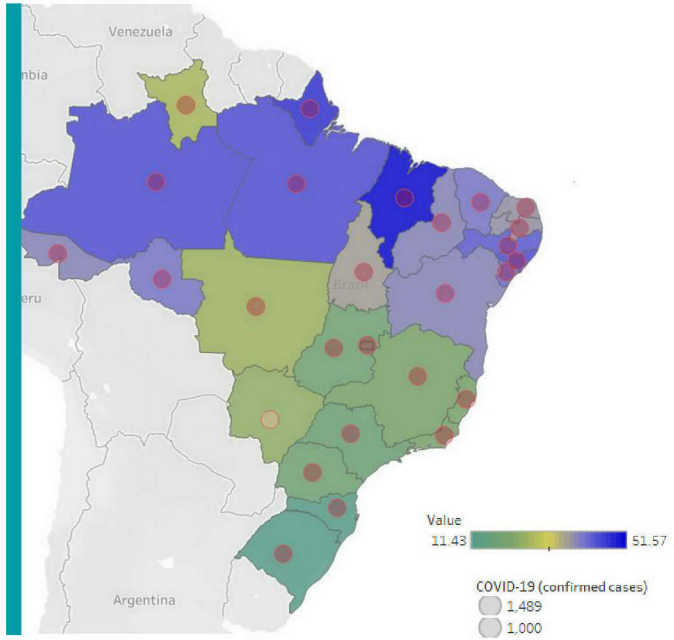
- Crisis management framework could be strengthened (draft bank resolution law pending in Congress)

Sources of resilience

- Low Loan to Deposit Ratio (70%)
- High capitalization (Capital adequacy (CAR) of 17.7%)
- Low NPLs (3%) and high provisioning (over 200% of NPLs)
- Ample liquidity (liquidity assets to ST liabilities of 238%)
- Low FX exposure (15% of bank lending)
- Risk-based supervision and contingency plans for crisis management in place
- BCB has credibility in providing liquidity

HOUSEHOLD EXPOSURE: half Brazilian population is vulnerable to shocks, either because they are poor or because they can easily fall into poverty

Reported COVID-19 cases and % of 65+ population who is poor or vulnerable (2018 poverty data)



Profile of vulnerable households to labor income shocks

The poor: 20% of population (income <$5.5 per day)

- Children and youth: 36% of children and 25% of youth (15-24)
- Urban: 72% are urban poor
- Informal/Precarious work: 67% of workers are informal or self employed

The vulnerable (could become the new poor): 32% of population ($5.5-$13):

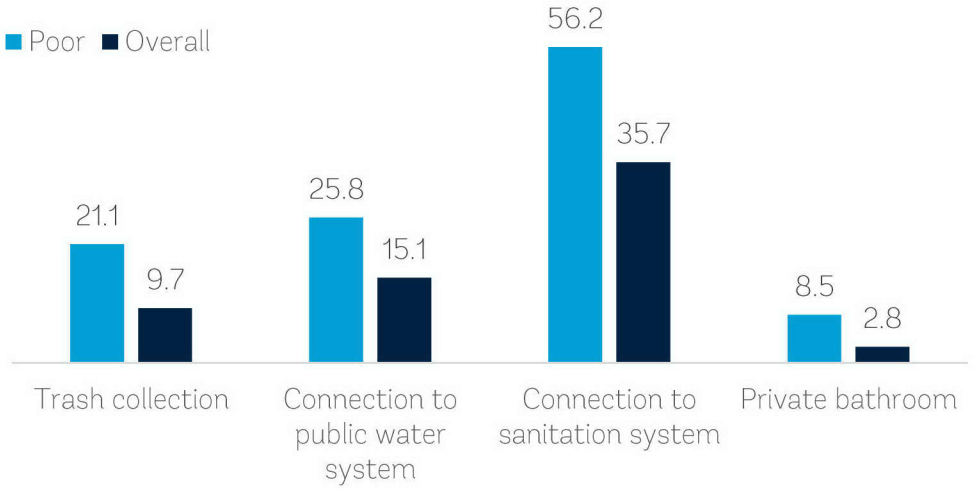
- Children and youth: 37% of Brazilian children and 37% of youth (15-24)
- Urban: 85% are urban; Over 1/3 of the population in 8 states,
- Informal/Precarious work: 43% are informal or self-employed; 67% in services

HOUSEHOLD EXPOSURE: half Brazilian population is vulnerable to shocks, either because they are poor or because they can easily fall into poverty

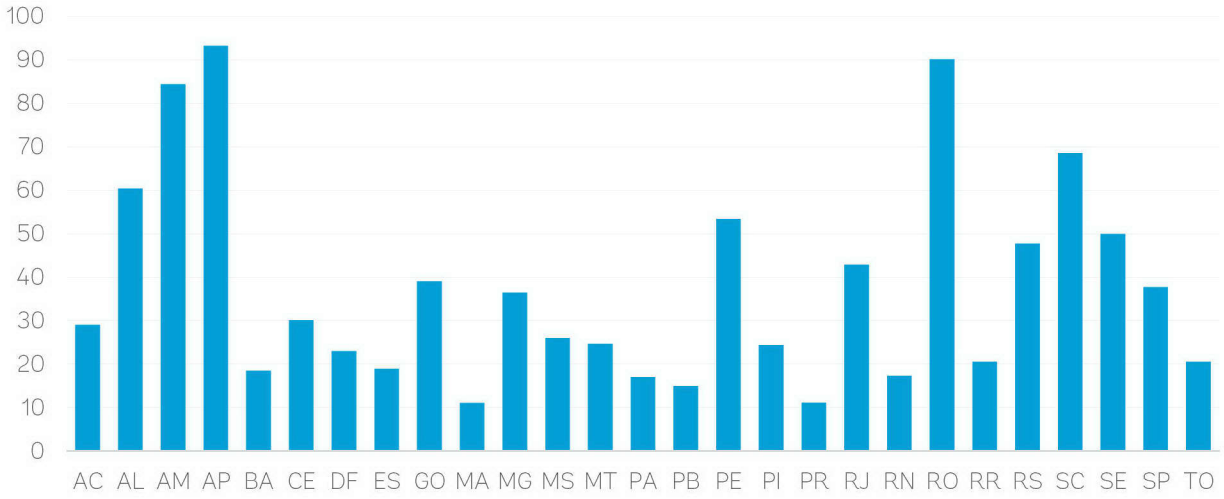
Vulnerabilities also due to limited access to basic services

Rural poor, indigenous peoples, traditional communities, disabled, suffer from limited access to health, water sanitation; gender based violence rising w pandemic

Lack of access to adequate sanitation (%,2018)



Water supply interruptions for domestic users (average hours per month, 2018)

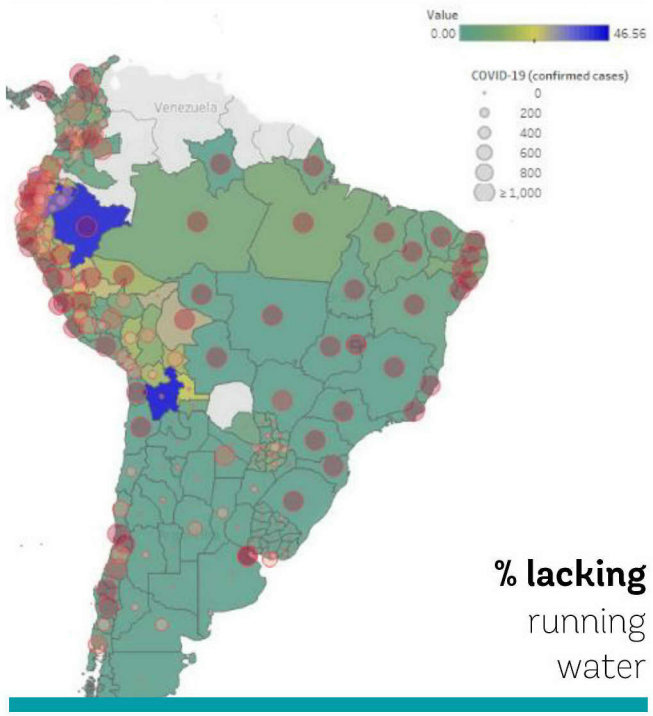


HOUSEHOLD EXPOSURE:

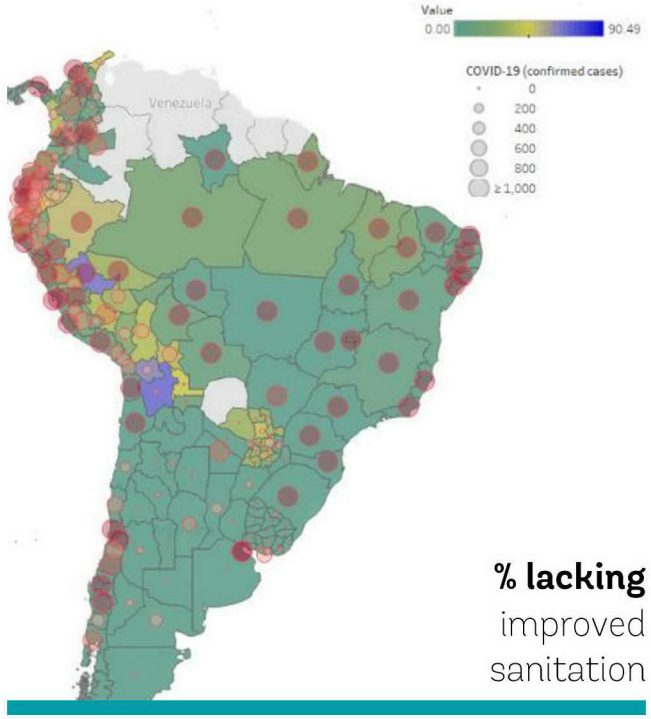
Bottom 40 located in the states of North/North East are particularly vulnerable

The Bottom 40 face higher levels of deprivations associated with disease transmission

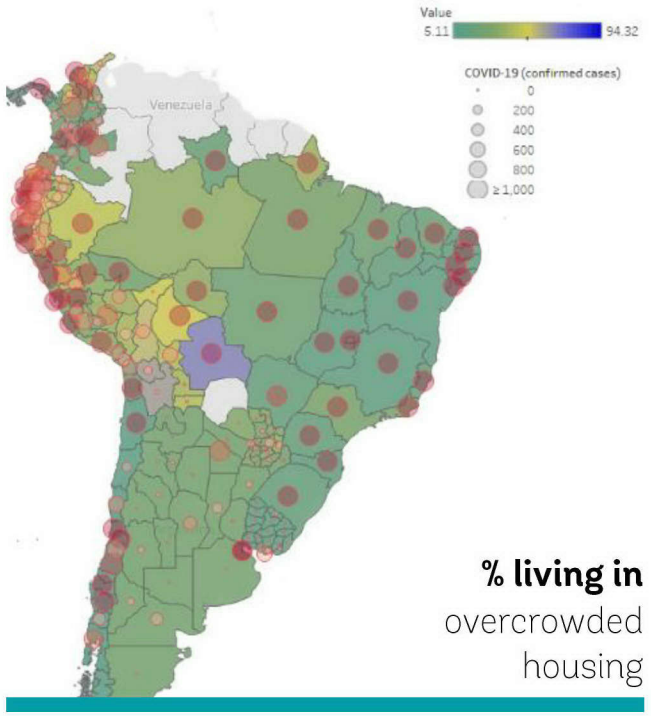
Source: LAC Team for Statistical Development tabulations of SEDLAC (CEDLAS and World Bank) for poverty data. Public health ministries for COVID-19 confirmed cases. COVID-19 confirmed cases circa May 31st.



% lacking running water



% lacking improved sanitation



% living in overcrowded housing

HOUSEHOLD EXPOSURE:

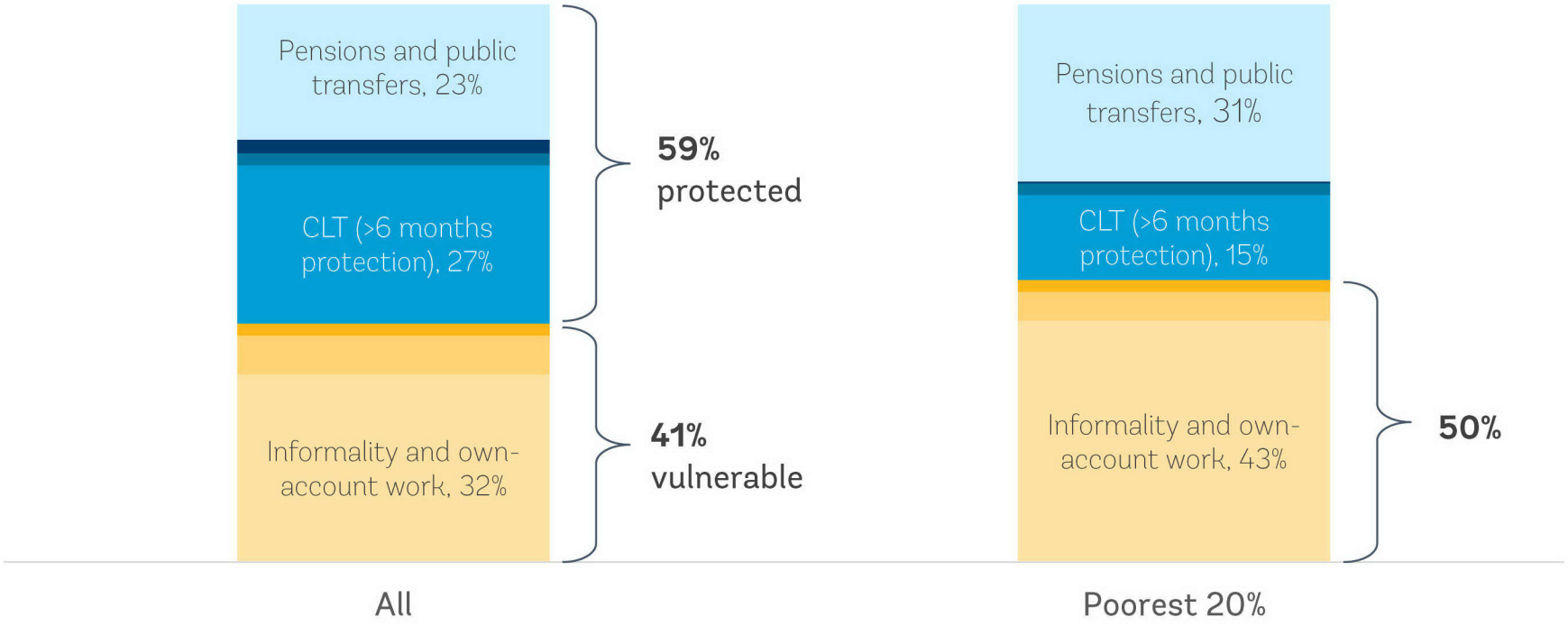
Labor income shocks

Exposure to labor market demand and supply shocks

Formal workers are relatively protected, but only **60% of CLT workers have at least 6 months of salary protected** – and they are overrepresented among the top 40%.

Two in five Brazilians rely on vulnerable income sources

% of population by majority income source, 2018



Source: World Bank

HOUSEHOLD EXPOSURE:

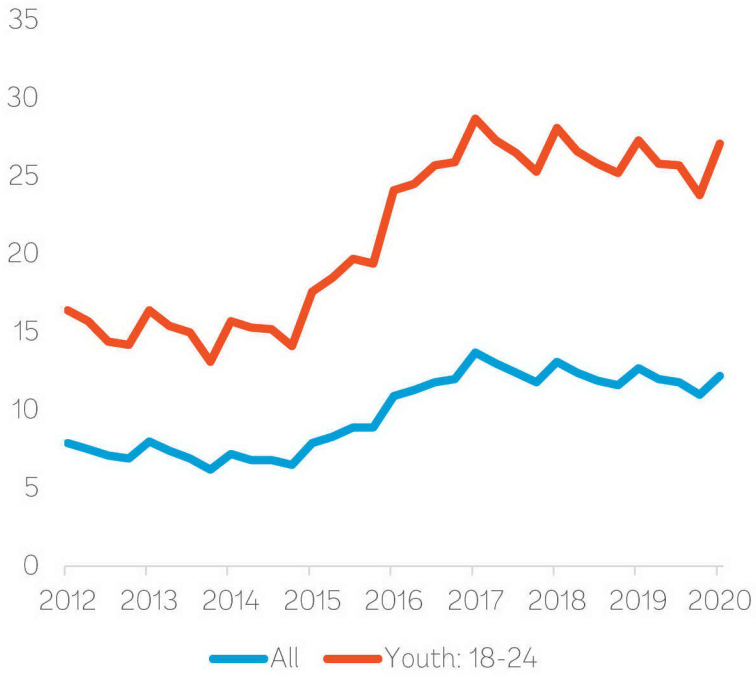
Labor income shocks

Income of the poorest 40% was below 2014/16 recession levels (and unemployment rate remained high, at 2014/16 recession levels, when the Covid-19 crisis hit, leaving them particularly vulnerable.

Household debt burden is high and raising.

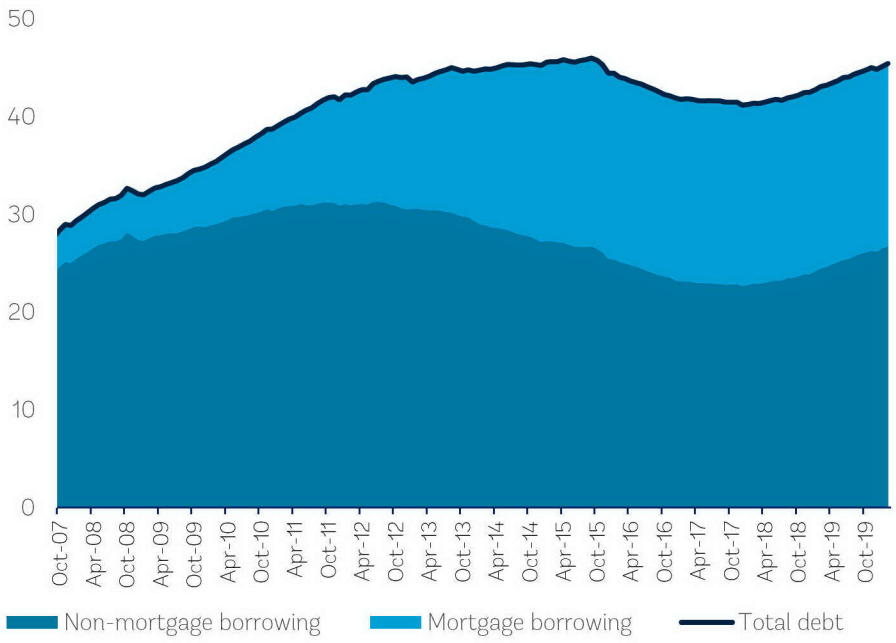
41% of Brazilians rely primarily on informal/volatile sources of income (these represent half of total income for the poorest 20%).

Unemployment rates, 2012Q1-2020Q1



Household Debt, 2007 - 20

(In percent of disposable income)



Source: World Bank

HOUSEHOLD EXPOSURE:

Employment shocks

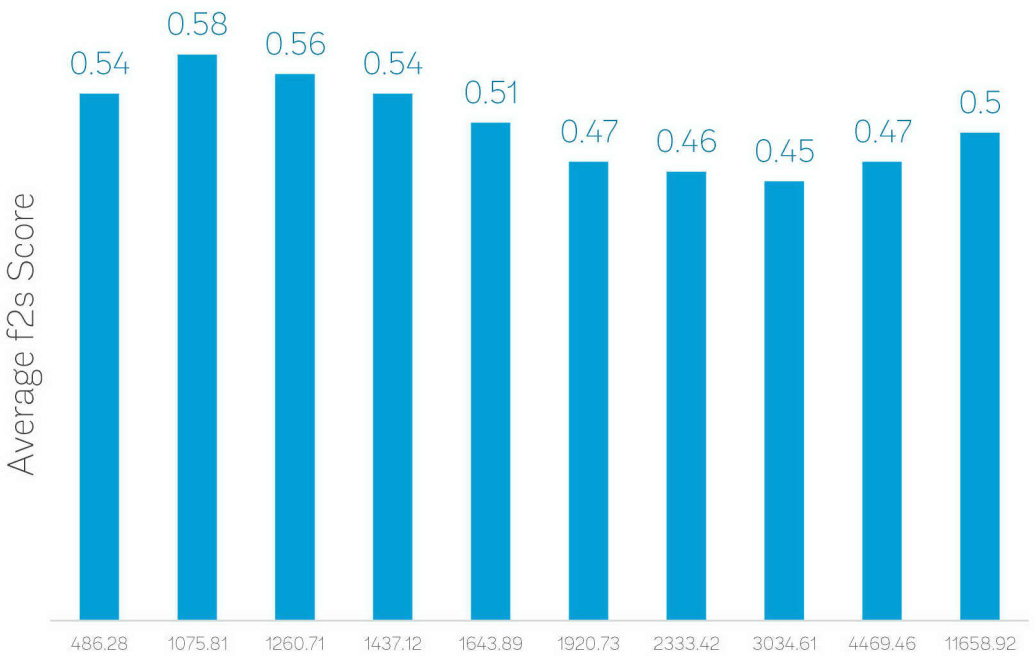
Employment vulnerability:

Sectors more reliant on face to face interactions are more vulnerable to employment interruptions

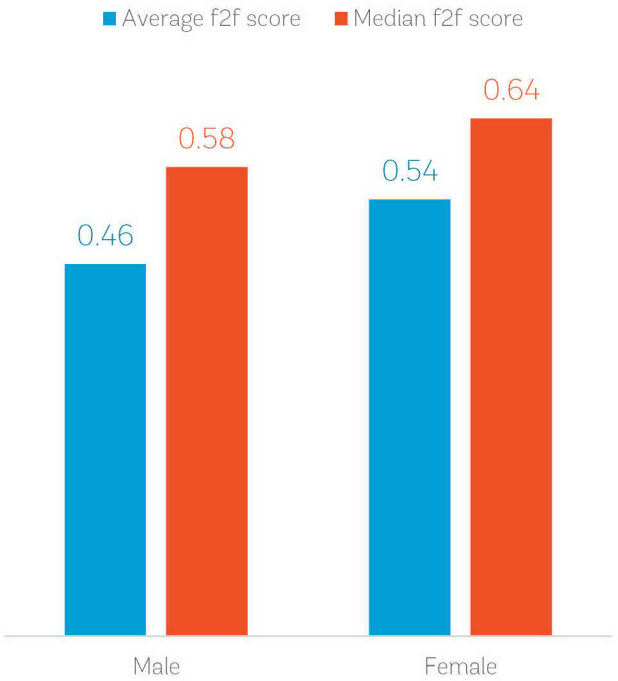
Lower income CLT workers and women are more likely to be in high face-to-face jobs and hence more likely to face interrupted employment

Source: World Bank

Face to face interactions by salary



Face to face interactions by gender



HOUSEHOLD EXPOSURE:

Employment shocks

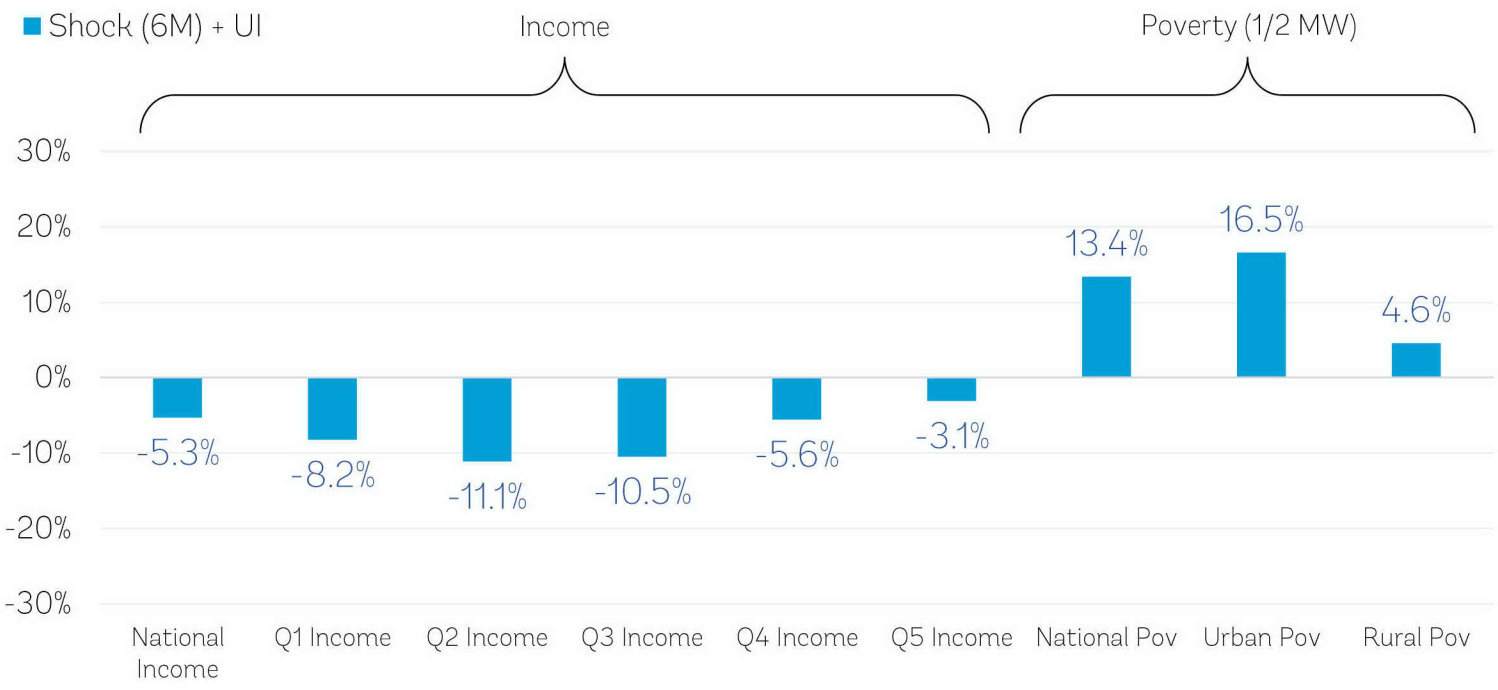
Impact of employment shocks on poverty:

8.4 million new poor

Four-month unemployment shocks derived from CGE-based sector effects are expected to increase the % of population living on less than ½ minimum salary **by 13.4%** nationally **(to 33%)**. Urban areas would suffer the greatest increase as poverty would rise by 16.5%.

Source: World Bank

Simulation: Impact of CGE-based 6 months shock



HOUSEHOLD EXPOSURE: With well implemented social protection and labor measures, the number of new poor can be reduced significantly – but vulnerabilities remain

R600 transfer to informal/low income workers

- Three monthly payments of R$ 600 to informal workers, MEI, **autonomous, and unemployed individuals**,
- Under a baseline scenario, by increasing the income of the poorest two quintiles, the transfers would **reverse** the expected national poverty increase (poverty could fall by about 1.4m, already considering the PBF Extension).
- Under the downside scenario, it would increase the number of poor by 1.1m.

Expansion of Bolsa Familia (PBF)

- Expansion of PBF to add **1,225,000** families (approximate 3.3 million people) from waiting list at a **cost of R$3.1B**.
- This increases PBF coverage to **14.26** million families.
- It will reduce the share of the population living on less than **R$ 178** per month per capita marginally (0.1 p.p.).

HOUSEHOLD EXPOSURE: With well implemented social protection and labor measures, the number of new poor can be reduced significantly – but vulnerabilities remain

Policy response

- Relaxing of labor rules to facilitate telework, leave pay, temporary decrease in hours/replace with training; Anticipate salary top-up for low-wage formal workers
- Increased credit/lending to SMEs and households;
- Local and federal initiatives for food (redirecting school feeding), PPE and hygiene items distribution, free water utilities, installation of hand washing stations, targeted communication and awareness campaigns involving community leaders; federal decree defining that production, distribution, commercialization, and delivery of food and beverages, along with the transportation of cargos constitute essential services.
- Housing: Construction of subsidized housing and temporary suspension of mortgage payments for Minha Casa Minha Vida beneficiaries. Temporary resettlement of at-risk groups to government-managed facilities.

Remaining vulnerabilities

- Bolsa Familia: Low generosity (60% of families receive less than R$ 200 per month) and low coverage (upwards of 450,000 more families already eligible and waiting, plus the likely effects of C19);
- Urban housing/services access and overcrowding are hard to address in the short-term
- Exclusion and additional barriers to access for IP, traditional communities, forest communities, and disabled individuals.

Sources of resilience

- Large formal sector with some unemployment protection and savings;
- Older Brazilians are universally covered by pensions/social security;
- Important social protection infrastructure in place to facilitate emergency measures, including 76.4 million in Cadastro Unico;
- An existing network of NGOs supporting the Government's immediate response in favelas.

HOUSEHOLD EXPOSURE (EDUCATION):

Human capital shock

Impact of school closures on learning poverty

- Considers that the schools are not able to recover 90 regular school days, which can be equally interpreted as 180 days of remote learning at a 50% efficiency (or coverage). However, if mitigation strategies are partially successful – for example, with 70% effectiveness - the impact will be equivalent to 60 days of learning losses
- Brazil has steadily decreased Learning Poverty in recent years, from 60.3% in 2011 to 42.2% in 2017, an average annual improvement of 3 percentage points. With the spread of the coronavirus, **the education system could backtrack the equivalent of 1.5 years of the recent progress.**

Simulated impacts of school closures on Learning Poverty (Index)

Indicator	Baseline 2017	60 days	90 days	120 days
Learning Poverty	42.2	43.5	44.8	46.1
Out-of-school	4.8	4.8	4.9	5.0
Below Min. Proficiency	39.3	40.6	41.9	43.2

Source: World Bank

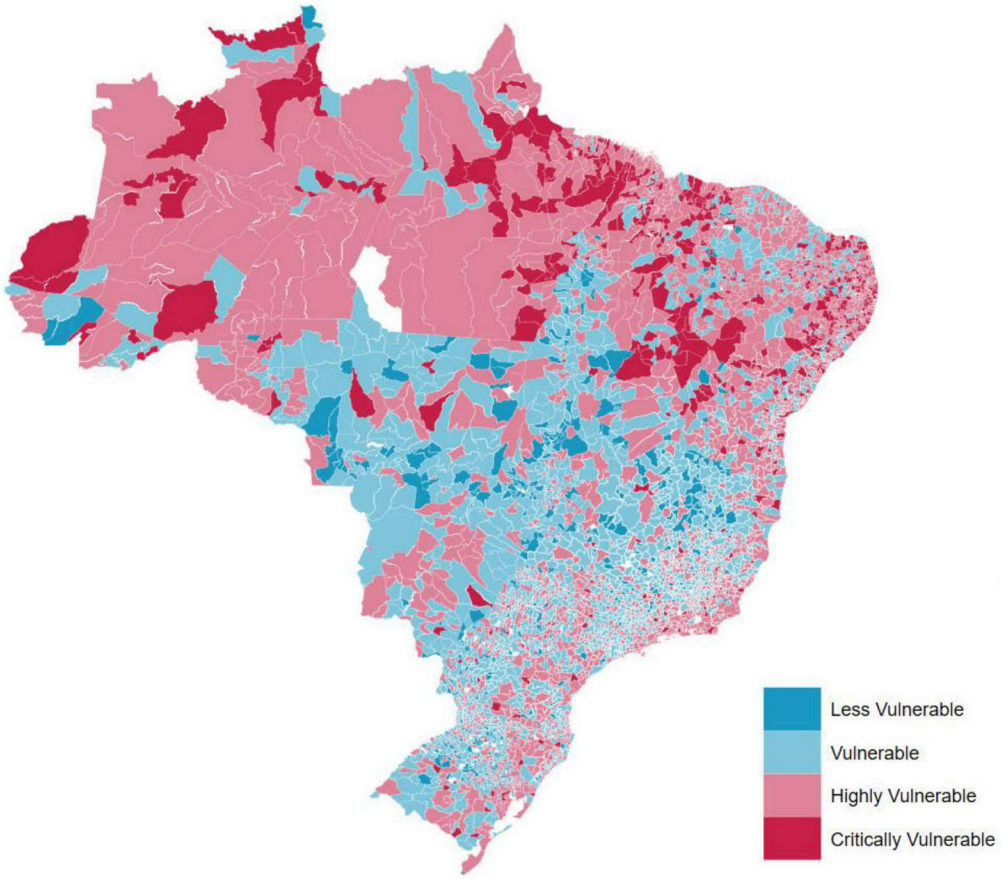
HOUSEHOLD EXPOSURE (EDUCATION):

Human capital shock

Students vulnerability Index

The index weights:

- **Availability of School Meals:** if students depend on school meals;
- **Teachers preparedness:** Teacher's experience on online teaching;
- **Family supports** on homeschooling
- **Learning:** low-performing students, if the student works, dropouts and reprobation.



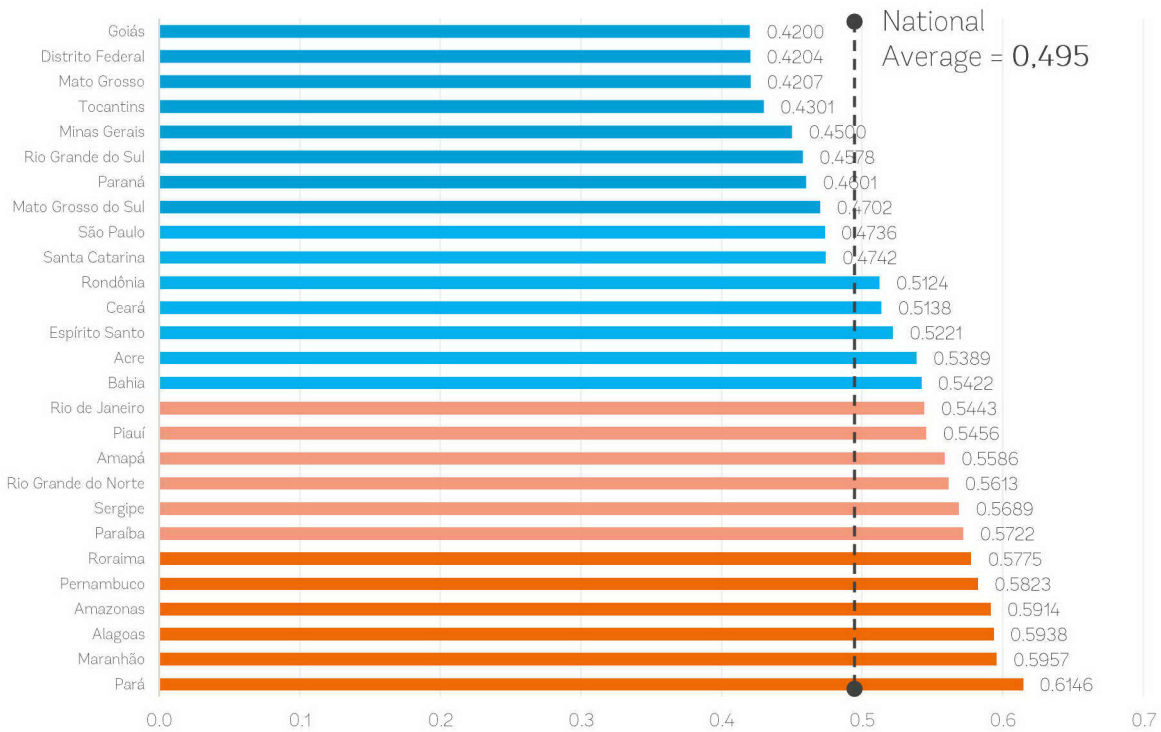
HOUSEHOLD EXPOSURE (EDUCATION):

Policy response and remaining vulnerabilities

Policy response

- States are improving connectivity and internet access by negotiating with local providers;
- Governments are providing multichannel access to remote learning by exploring Television, Radio and Internet;
- A Law was sanctioned by the Senate to fighting against nutritional vulnerability of students through the National School Feeding Program (PNAE);
- Providing guidance for teachers to implement online teaching in different contexts;
- Need to start preparing schools for re-opening stage: establishing schools' re-opening protocols; setting-up early warning systems and remedial learning programs; supporting shorter and more flexible technical programs; and other interventions to support recovery and reform of education systems.

Student vulnerability per state, SAEB/17



CORPORATE EXPOSURE (SMEs):

SMEs are highly vulnerable facing cash and capacity constraints...

Transmission channels

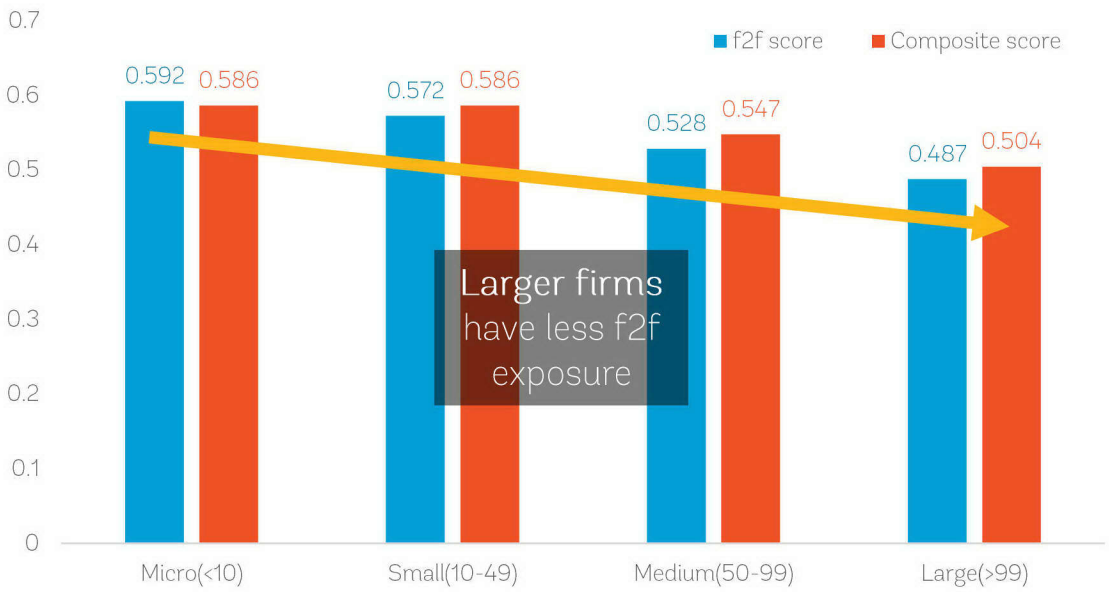
	CHARACTERISTICS	IMPLICATIONS FOR FIRMS
Demand Shocks	▪ Reduced consumer spending on services like travel, entertainment, restaurants ▪ Reduced consumer demand for goods as lockdown measures are adopted ▪ Reduced demand from other firms ▪ Fall in exports due to disruption to supply chains	▪ Liquidity problems as reduced sales results in an inability to pay creditors (banks, suppliers) ▪ Inability of buyers to pay past receipts ▪ Inability to pay workers and maintain workforce levels
Supply Shocks	▪ Reduced access to imported inputs due to disruption to supply chains ▪ Temporary closures, reduced business hours, lockdowns (either mandatory or voluntary) ▪ Worker absenteeism due to illness lockdown measures ▪ Reduced labor productivity as a result of illness, remote work arrangements, etc. ▪ Lower total factor productivity due to adjustments in factor composition, skill mix, organizational changes required to adapt to new ways of working	▪ Reduced output ▪ Worker layoffs ▪ Liquidity problems as reduced sales result in an inability to pay creditors
Financial Shocks	▪ Liquidity squeeze and high volatility in financial markets with extraordinarily high levels of risk aversion affecting negatively financial intermediation (volume and prices) ▪ Pressure in all firms, but especially in highly leveraged corporates, which in turn affects credit availability to SMEs and increases interest rates ▪ In extremis, potential financial crises	▪ Reduced access to working capital ▪ Liquidity problems as lack of access to credit results in an inability to pay creditors ▪ Rush to liquidation as a tool for debt enforcement ▪ Widespread debt default that hampers credit ratings and inhibits future recovery ▪ Investments are postponed due to credit restraints
Uncertainty Shocks	▪ Novelty of COVID19 creates apprehension about length of the outbreak and depth of its impact on human health, and hence on the economy ▪ Panic in extreme circumstances	▪ Investments postponed due to uncertainty ▪ Firms overreact to the crisis and reduce employment more drastically

CORPORATE EXPOSURE (SMEs):

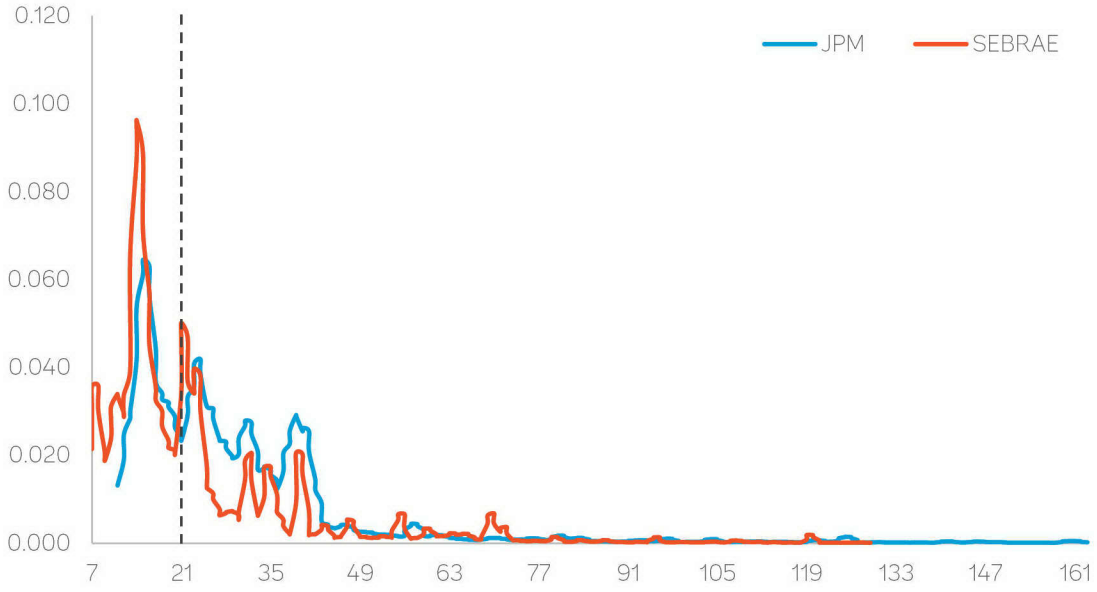
SMEs are highly vulnerable facing cash and capacity constraints...

Transmission channels

Exposure by firm size (f2f scores)



Cash buffers for SMEs in São Paulo (number of days)



CORPORATE EXPOSURE (SMEs):

Policy response and remaining vulnerabilities

Policy response

Finance measures:

- More than 60bn on credit facilities for SMEs through public banks
- Deferrals on BNDEs loan payments.
- Credit line for wage payments
- Credit lines for production – 5bn
- Support to coffee growers (Funcafé) and rural producers (Prograo)

Taxes

- Deferrals on tax credits, SIMPLES, PIS, PASEP COFINS,..

Labor

- Subsidies to finance wages for reduction of working days up to 75% for 60 days and wage subsidies to freeze of labor contracts
- Advancement of holidays and bank holidays
- Coronavoucher of 600R-1200R including informal micro entrepreneurs and self-employed (also see section on households)

Regulatory:

- Flexibilization of Inmetro processes

Remaining vulnerabilities

- Duration of lock-down and potential persistence over time of social distance measures.
- Government measures not reaching firms or SMEs not being able to accessing them –i.e. Access to credit and guarantees, access to wage subsidies.
- Risk to government suppliers: state arrears
- Costly business environment – insolvency law, minority protection,...
- Low productivity and high distortions

Sources of resilience

- Large internal market

CORPORATE EXPOSURE (ENERGY):

High financial and operational risks for energy utilities particularly in poorer states

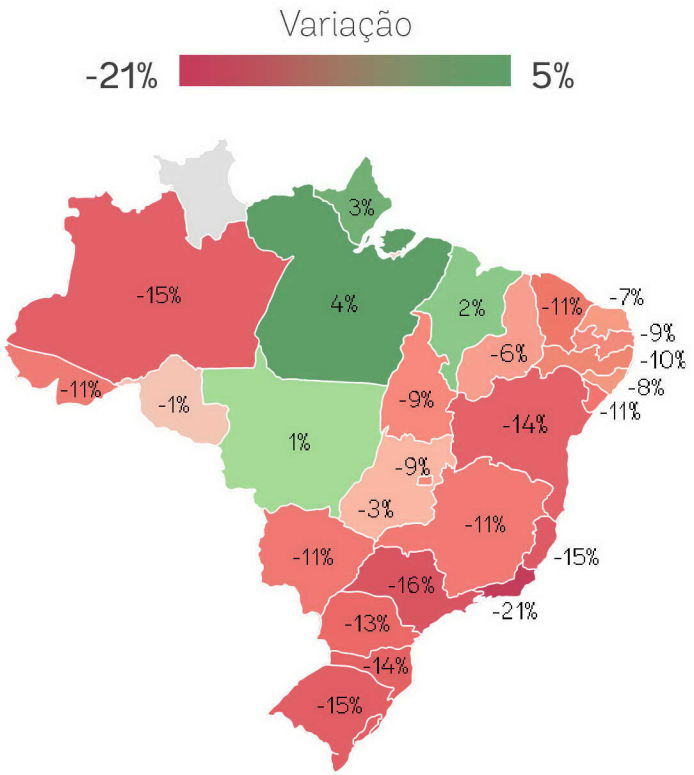
Transmission channels and impacts

- **Generation:** Risks of non-payments due to force majeure in take-or-pay IPPs and EPC contracts; for renewable projects disruption on supply of solar PV modules from China;
- **Transmission:** Difficulties in balancing the system (which requires extra flexibility);
- **Distribution:** demand shocks from electricity reduction (due to lockdown), particularly for free market during peak hours changing the load profile to weekends and expected non-payments from residential users from recent measures;
- **Demand shocks** will cause liquidity crunches and deterioration of financials and potential outages;
- **Supply shocks** and Disruption in Supply Chains provision of crucial fuels for isolated communities in the Amazon;
- **Additional costs** to keep essential on site workers to avoid power outages.

CORPORATE EXPOSURE (ENERGY):

High financial and operational risks for energy utilities particularly in poorer states

Decrease in electricity demand due to lock-down



CORPORATE EXPOSURE (ENERGY):

High financial and operational risks for energy utilities particularly in poorer states

Highest exposure

- Utilities more reliant on sales to commercial and industrial consumers and those higher commercial losses
- Utilities with lower quality who will face challenges to keep "light on"

Industrial and commercial users (% sales, MWh)

Non technical commercial losses (% sales)

DEC index (duration of power outages)

CORPORATE EXPOSURE (ENERGY):

Policy response and remaining vulnerabilities

Policy response

- Disconnection due non-payment for 90 days. Social Tariff program subject the periodic checks. Bolsa Família reinforced;
- A possible emergency loan package has been requested by electricity distributors. This could involve loans from BNDES (a similar measure in 2014-15 offered US$ 22 billion reais in loans);
- ANEEL has indefinitely postponed power auctions in 2020 (replacing diesel-fired plants with gas-fired units, as part of Novo Mercado;
- Eletrobras announced indefinite delay in the expected privatization;
- Mergers and acquisitions and expected listings are being delayed.

Remaining vulnerabilities

- Further losses of revenues (due to protracted lockdown). PSR already estimated a loss of revenue of 20% and potential defaults costing 15 billion reais ($2.82 billion) for the sector.
- Losses compounded by increased non-payments due to reduced income of consumers
- Lower tax revenues from electricity posing fiscal challenges too for some states
- Key foreign investors in sector may be facing multiple shocks in home and host countries

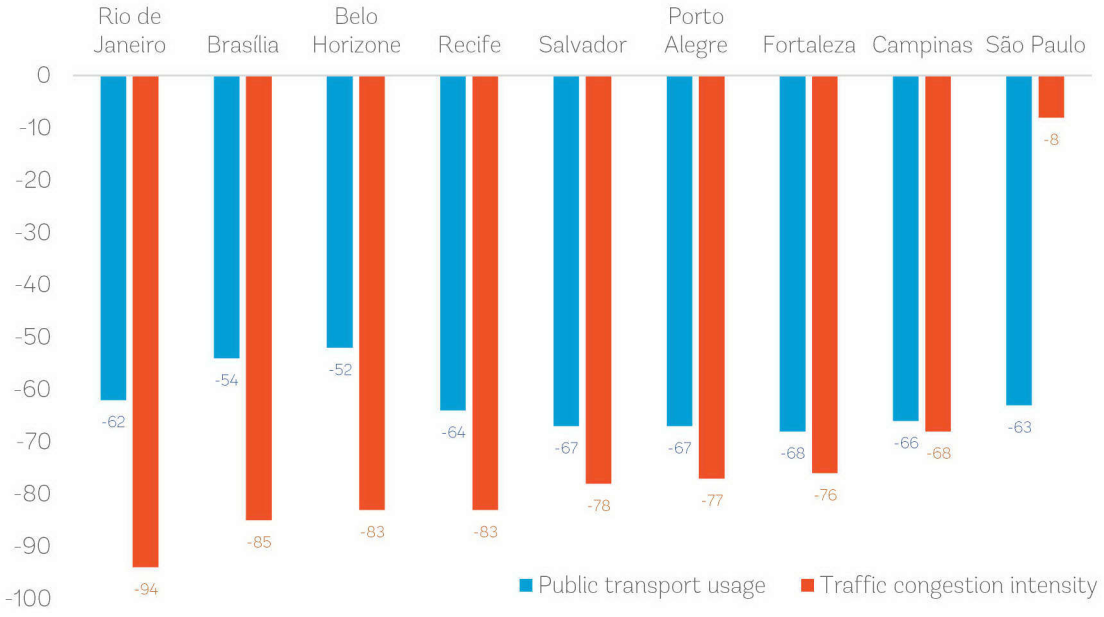
Sources of resilience

- Power systems where fuel is a major expense, may be able to some offset the effect of lower sales through lower purchases (to some extent)
- Utilities with healthier cash balances may be able further buffer the impact of disruptions (according to S&P, larger utilities less affected in infra. sector)

CORPORATE EXPOSURE (TRANSPORT): Transport disruptions lead to drop in demand and increased financing pressures on public transport companies

- **Strong drop in demand in some sectors, particularly air transport and urban mobility:** ~90% reduction for air transport, 50-75% for public transport
- **Significant drop in demand on interregional road-based transport:** 60% for passenger, 15% for cargo. Domestic supply chains (e.g. trucking) for basic products rather resilient.
- **Oil shock:** an opportunity for the transport sector, but limited impact on pump prices (-5% diesel last 4 weeks)
- **Situation likely to lead to a supply shock resulting from massive transport firms insolvencies:** (i) GOL, LATAM, Azul with less than two months of cash; (ii) about 80,000 road-based transport firms (cargo, passengers) with less than one month of working capital. (iii) buffer not clear about large infrastructure concessionaires (urban rail, highways, airports)
- **At stake:** 2.6m direct jobs in transport/logistics

Transport: Public transport use and congestion intensity (Percentage change)



Note: public transport: 7 April relative to week of 7 January 2020; congestion: 8 April relative to week of 1 March 2020
Source: Moovit (public transport) and Waze (congestion) via IADB.

CORPORATE EXPOSURE (TRANSPORT):

Policy response and remaining vulnerabilities

Policy response

- Transport infrastructure and services set as "essential services" by Presidential decree. Yet, some cacophony re transport/movement restrictions federal/state/municipal levels
- Communication, sanitization and health protection measures for customers and workers (across modes)
- BNDES, BB and Caixa lines of credit for small firms (and large operators) working capital - Not effective yet. Similar actions at subnational.
- Urban mobility: adequation of public transport supply
- Road transport: flexibilization of documentation and operational compliance requirements, measures supporting operations (health, food, rest, fix)
- Air transport: flexibilization of fees and payment requirements from airport concessionaires and air carriers

Remaining vulnerabilities

- Unknown number of Covid-19 infected transport workers
- Transport sector typically low-margin, sensitive to demand shocks. Firms with limited cash buffer
- Many transport infrastructure concession contracts to be renegotiated / rebalanced (all subsectors)
- Scale-up effect in a context of public sector already in dire fiscal situation for possible rescue plans

Sources of resilience

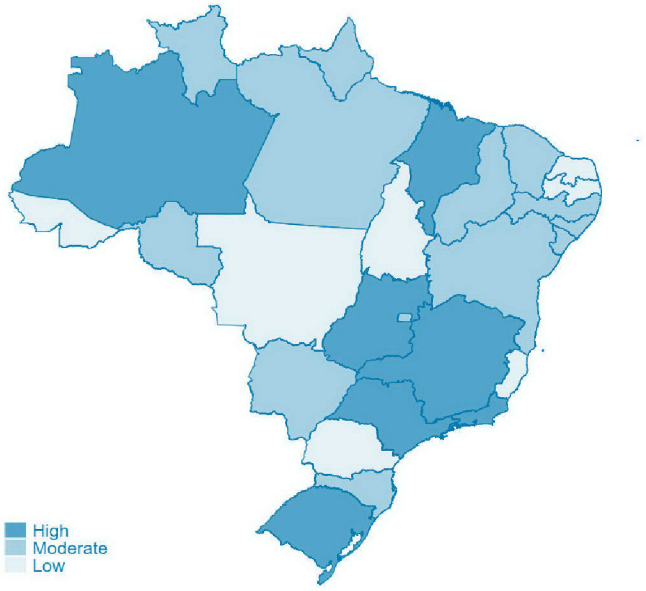
- Atomized road-based transport sector: redundancy in transport supply
- Upcoming crop season for agro-products: source of revenue for cargo transport sector

CORPORATE EXPOSURE (WATER):

Water utilities are exposed due to underfunding, foregone revenues and higher costs of inputs

State level risks for state-owned entities in water & sanitation

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



Note: Categories were defined according tothe following: lower than -0.25 is low; between -0.24 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)

*** 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. * The cohort categories of risk are lower than -0.25 is low risk. Index standardized with mean 0 and SD 1, ranging from -1 (lowest risk) to 1 (highest risk).**

Water utilities exposure

- **Forgone revenue:** demand shock
- **Financial:** higher costs of inputs relative to staff costs, reduced op. margins
- **Budgetary:** severe underfunding of the sector (losses as percentage of water investments over the last 15 years)

Estimates of losses of forgone revenue reach 100 to 125 US million annually and between **US$ 1 and 1.3 bn over 10 years**. The total budget of the sector is largely insufficient, around US$ 31 bn over the last 15 years.

States with high exposure in water SOEs based on GDP and state's revenue shocks are: Amazonas, Goias, Maranhão, Minas Gerais, Rio de Janeiro, Rio Grande do Sul, and Sao Paulo. Those states make up to more than half of the entire population.

CORPORATE EXPOSURE (WATER):

Policy response and remaining vulnerabilities

Policy response

Budgetary support needed for WSS SOEs given tightening fiscal and budgetary resources

- Prioritizing States/SOEs with combination of financial and budgetary (highest) risks

Emergency support to water and sanitation utilities to ensure continuity of water supplies, enhanced monitoring

- Reorienting subsidies: targeting water and sanitation bill waivers
- Coordinate with Social Protection operations: priority for those households with unemployed, with high dependency ratios and receiving social programs
- Enhance options for liquidity so that the production and service delivery of large-scale utilities are not at risk of stoppage

Typology of measures for WSS SOEs (scale up nationally)

- assure water supply to defaulter clients under social tariff/reducing water bills during this period
- negotiating debt and grants
- Reduce uncertainty on constraints on supply chain of products and inputs for WSS SOEs operations

Remaining vulnerabilities

- If **financial gaps increase considerably** utilities will not be able to provide service in some states.
- The **limited financial performance and convoluted institutional arrangements** for federal transfers and state budget implementation makes it difficult to respond effectively (extraordinary measures needed)
- **Other contingencies** like droughts or floods may even push WSS SOEs to very risky financial position
- Climate change / **drought**

Sources of resilience

- **Tackling vulnerability** of disruptions in WSS supply
- **Assess responsiveness** and capacity of SOEs
- **Prioritization for SOEs** with highest populations that could be affected with droughts or floods this year
- **Identify supply chain disruptions** that generate service interruptions, increase costs, due to scarcity of inputs and materials.
- **WSS investments need to be scaled up**, given the risks to budgets and finances of SOEs. Shocks can accrue fast.

ENVIRONMENTAL EXPOSURE:

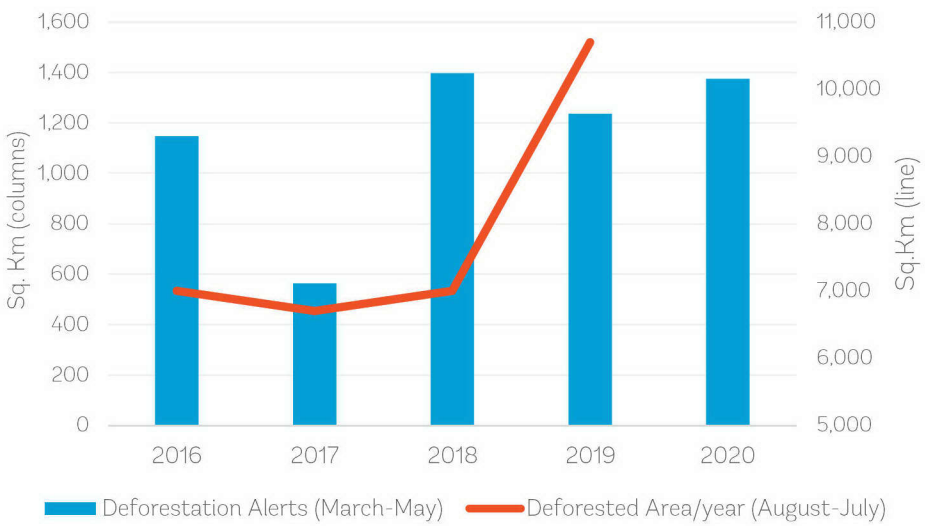
Climate risks could be exacerbated by Covid-19

Sector	Possible impacts on climate
Transport	> **Potential reduction** in air pollution and GHG emissions from industrial and transport sectors due to low economic activity - supply and demand shocks
Land-use change and forestry	> **Reduced demand** for wood products represents a disincentive for illegal logging
	> **Reduction of environmental** law enforcement due to social distancing measures increases incentive for squatters and illegal logging
Energy	> **Reduce incentives** to increase fossil fuel supply and reduce incentive to switch to greener energy sources. Inconclusive long-term impacts on climate change

Remaining vulnerabilities

- Covid-19 "short-ism"could lead to less appetite for climate change policy reforms and weaker enforcement of legislation and control of deforestation;
- Decreasing oil prices might hinder ethanol production/consumption and increase urban pollution after quarantine

Amazon deforestation rates



Sources of resilience

- Strong environmental policy framework;
- Agribusiness business models that are environmentally friendly
- Large percentage of public lands in the Amazon region suitable for protection

PUBLIC SECTOR MANAGEMENT EXPOSURE:

Policy response and remaining vulnerabilities

Policy response

- Coordination of government action to help develop an integrated cross-government response
- Strategies for maintaining the provision of essential services, including access to digital services
- Public employment and management assessments and alternative work modalities
- Public financial management measures to identify and make available additional budgetary and financial resources along simplified procurement processes
- Domestic Revenue Mobilization actions that can streamline and automate tax and customs procedures
- Transparency and Accountability initiatives to ensure that funds reach the intended beneficiaries

Remaining vulnerabilities

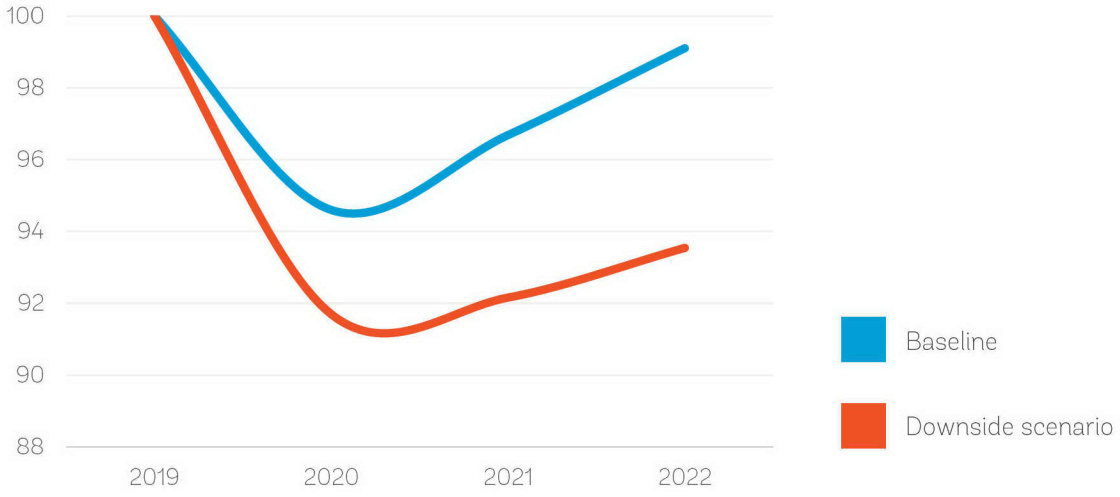
- Poor coordination between the three levels of Government affected by political dynamics
- Possibility of misuse or misappropriation of COVID-19 resources
- Lack of tools and information on alternative work modalities for public officials
- Uneven access to digital services for citizens

Sources of resilience

- Interest across levels of government in public sector management reforms needed for potential future outbreaks and fiscal adjustment
- Active civil society can strengthen accountability across levels of government

RECOVERY SCENARIOS:

Duration of the lockdown affects recovery prospects



	GDP growth (%)	Primary balance (% of GDP)	States' financing needs (% of GDP)	Change in number of poor (1/2 MW)	Poverty rate (1/2 MW)
Baseline (2020)	-8.0	-9.6	0.3	-1.4m	28.4%
Downside (2020)	-10.9	-11.3	0.6	+1.1m	29.6%

Lock-down in place (months)		
4 months (end-June)	5 months (end-July)	6 months
Consumer spending rebounds	Confidence takes longer-term damage, household indebtedness rises	← Worsening
Firms re-hire, household income flow restored	Firms struggle to obtain credit; government arrears	← Worsening
Banks provide credit, supported by effective policy measures	Deeper damage to corporate and household balance sheets / ineffective policy reduce credit provision	← Worsening
Return of **foreign capital**	Persistent wealth effects, weak exchange rate raises costs of imported inputs, FX risks materialize	← Worsening
States receive sufficient liquidity, embark on fiscal adjustment	Delayed fiscal adjustment or strong pro-cylical response	← Worsening

PUBLIC SECTOR MANAGEMENT EXPOSURE:

Policy response and remaining vulnerabilities

1. Save lives

- Shore up health system to contain damage
- Invest in medical equipment; health personnel; massive testing capacity and real time data/monitoring

2. Protect the poorest and the most vulnerable

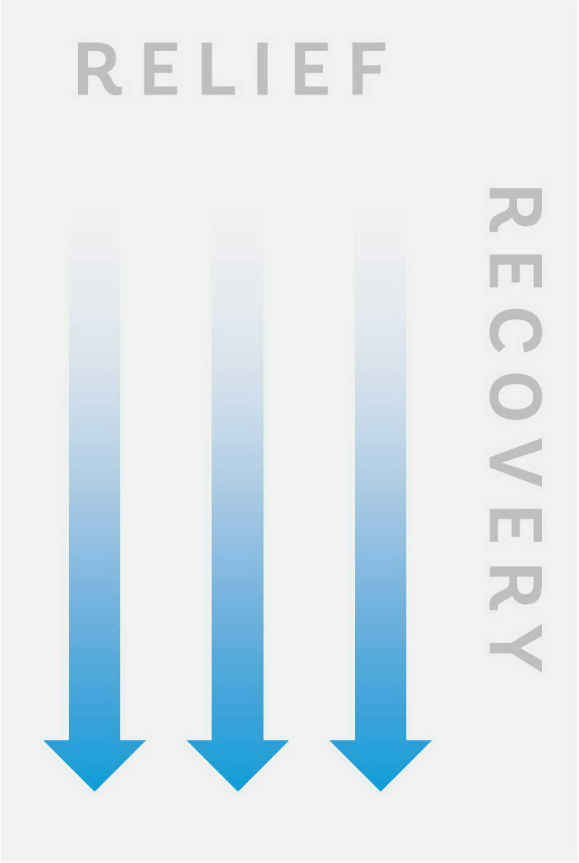
- Cash transfers and insurance to smooth income shock

3. Support firms and jobs

- Liquidity injection, credit insurance, TA support to SMEs and vulnerable corporates

4. Build a resilient and sustainable recovery

- Strengthen fiscal sustainability of states and SOE/asset management; provide liquidity support and TA to SMEs; adopt reforms supporting investment climate, trade, competition, labor and capital markets; strengthen public sector management and transparency; and shore up protection of natural resources



COVID-19 IN BRAZIL

Annex

WORLD BANK GROUP

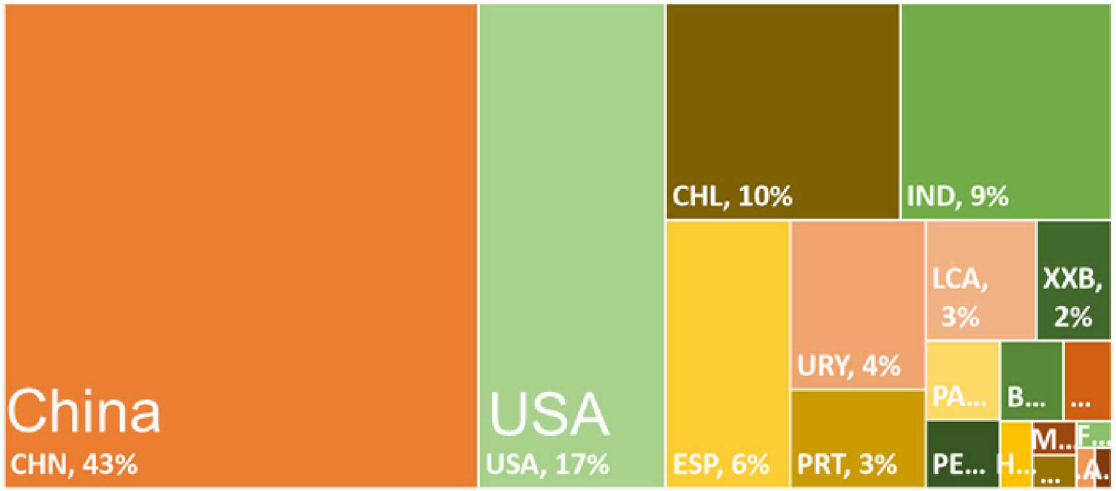
CORPORATE EXPOSURE (OIL SECTOR):

Oil net exporters, particularly high-cost producers, are particularly hit by the oil price shock

Negative impact of oil shock on:

- **Oil net exporters:** Petrobras, oil and gas companies, particularly high cost producers, ethanol producers, mining sector
- **Federal government:** disruption of export of oil and metals to China and other countries
- **States**, losing royalties and revenues from oil production

Brazil crude oil exports (by destination)



PUBLIC SECTOR MANAGEMENT EXPOSURE:

Policy response and remaining vulnerabilities

Policy response

- **Petrobras** announced **production cuts** (200,000 barrels per day), **deferral of payment** of up to 30% of the salaries of top executives and **dividends**
- International and national oil companies are starting to **cutting on marginal fields**.
- Until the price of oil bounce back, **widespread bankruptcies and restructurings** expected among high cost producers, such as shale oil producers and marginal fields, that were profitable only when oil prices were high.

Remaining vulnerabilities

- Other international companies not cutting oil production, delaying oil price recovery
- Dependency on China for oil supplies to independent refiners (most exposed to reduced demand), and iron ore—lack of diversification.
- Cancellations of supplies using ***force majeure*** (the flow of oil from Brazil to China has stopped since January)
- Lack of prioritization of fuel supplies for emergency response (transport for medical supplies, food chain, and power generation in isolated communities in the Amazon)

Sources of resilience

- Oil and gas companies with **healthier cash balances** can better buffer the impact and with smoothing price formulae to mitigate pass-through of fuel prices on consumers

HOUSEHOLD EXPOSURE:

Formal workers are relatively well protected

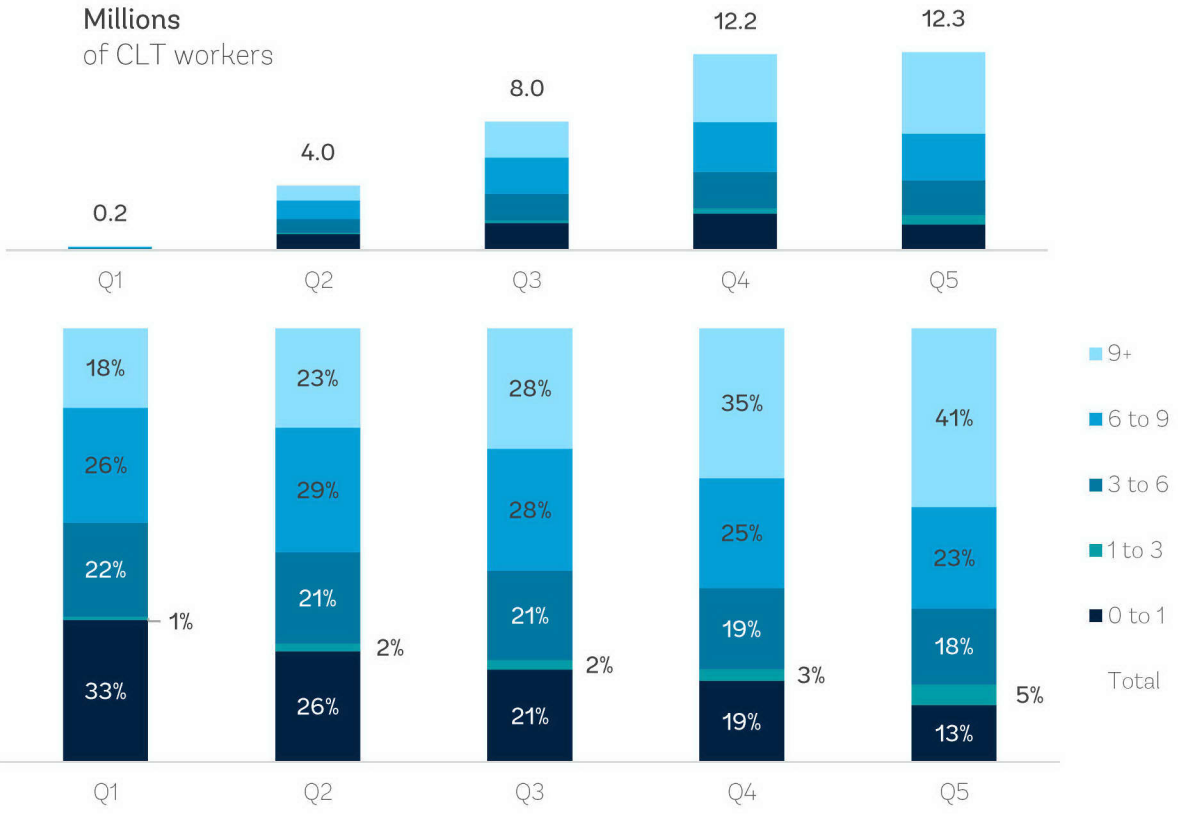
Formal workers (CLT) are protected by 3 mechanisms:

- **Unemployment Benefit:** 0, 4 or, 5 months, based on tenure and last salary
- **FGTS account balance:** 8% of salary over tenure, with discount rates, yearly yield, and age-based withdrawal rates applied
- **Severance pay:** 40% of FGTS balance

Main takeaways:

- A majority of CLT workers have some income protection through these mechanisms, but 40% would suffer an income shock if facing employment spells longer than 6 months
- **Only 60% of CLT workers have at least 6 months of salary protected** – overrepresented among the top 40%
- **20% of CLT workers has less than 1 month of salary protection** (at least 12 months of work history are needed for a first time UI request)
- Only 12% of CLT workers are in the poorest 40%, and less than 1% in the bottom 20% of the population

Number of months of protected salary, by quintile



COVID-19 IN BRAZIL

WORLD BANK GROUP