

MACROECONOMIC POLICIES IN RESPONSE TO COVID-19 IN BRAZIL IN 2020

Políticas macroeconômicas adotadas no Brasil em resposta à pandemia de COVID-19 em 2020

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RESUMO

Este artigo documenta as políticas macroeconômicas adotadas no Brasil para mitigar os efeitos contracionistas da pandemia de COVID-19 sobre a produção e o emprego. Organizou-se e discutiu-se as medidas fiscais, creditícias e monetárias adotadas no primeiro ano da pandemia. Ainda que não tenha havido esforços unificados do Governo Federal para controlar a expansão de casos e mortes causadas por COVID-19, as autoridades brasileiras implementaram um conjunto de políticas macroeconômicas expansivas. Argumentamos que a resposta econômica foi na direção correta, mas foi insuficiente para a recuperação no período pós-pandemia. Em termos de implicações de políticas, medidas associadas ao desenvolvimento econômico brasileiro devem ser adotadas para o período posterior à pandemia.

Palavras-chave: Políticas macroeconômicas. Pandemia de COVID-19. Crise econômica. Política fiscal. Política monetária e creditícia. Recuperação econômica

ABSTRACT

This article documents the macroeconomic policies adopted in Brazil to mitigate the contractionary effects of the COVID-19 pandemic on output and employment. We organize and discuss fiscal, credit and monetary measures adopted in the first year of the pandemic. Although there were no unified efforts of the Central Government to control the expansion of cases and deaths caused by COVID-19, Brazilian authorities have implemented a comprehensive temporary set of expansionist macroeconomic policies. We argue that the economic response was in the right direction but insufficient for economic recovery after the pandemic. In terms of policy implications, more cost-effective measures can subsidize policymakers in other developing economies in post-pandemic recovery.

KEYWORDS: Macroeconomic policies. COVID-19 pandemic. Economic crisis. Fiscal policy. Monetary and credit policies. Economic recovery.

Classificação JEL: E50. E52. E60. E62. E65

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1 INTRODUCTION

The pandemic of COVID-19 is a global phenomenon. Brazilian society has 2.7% of the world population, 6.5% confirmed cases on March 2, 2022, and 10.8% of deaths from COVID-19 (Worldometers, 2022) – it is the second developing country with more deaths and cases in the world. These data show that the pandemic deeply impacted Brazil. The enormous potential of losing lives has justified more significant public expenditures and policies to restore GDP growth, leading to a trade-off between lives and material goods (Barro et al., 2020).

A recent study by ECLAC (Economic Commission for Latin America and the Caribbean) has catalogued the multifaceted impacts of the pandemic. The consequences can be summarized in three major pillars (ECLAC, 2020): i- *worldwide impacts*: a slowing down of economic activity in the leading global players; smaller prices of commodities; an interruption in the global value chains and tourism; and a financial deterioration in global markets; ii- *macroeconomic impacts*: a retraction in aggregate demand, especially in service sectors; a fall on exports induced by the slowdown of the global economy; a rise of cost inflation as the national productive structure has experienced a bankruptcy process of firms; iii- *microeconomic effects*: smaller returns of scale; increases on jobless rate; and an enhanced social vulnerability. In the short run, the results would be a higher unemployment rate, reduced labour income, increases in income inequality, and a more fragile health care system (ECLAC, 2021). In the long run, the pandemic would reduce economic growth and create a less sophisticated productive structure (ECLAC, 2021).

Some studies have investigated the impacts of the COVID-19 pandemic on Brazil. Porsse et al. (2020) considered three economic channels, in a general equilibrium model, through which the pandemic would affect the economy: i- the disease would increase the number of unable people to work, ii- social distancing measures would damage the economic activities, and iii- the countercyclical fiscal measures adopted by the central Government. The authors' results suggest a contraction in output due to the first two channels and that adopting expansionary fiscal measures mitigates such an economic recession. Paiva et al. (2020) suggested expanding income distribution programs, such as the *Bolsa Família*, to provide a monthly income of around R\$ 450 for the poorest 10% of the population. The budgetary impact, R\$ 67 billion, would be relatively low in terms of high social costs (Paiva et al., 2020). Freire et al. (2021) assessed the impact of the emergency

cash transfer programme adopted over the first year of the pandemic in Brazil, considering the relation between workers' consumption and the sectoral linkages. The gains of the emergency cash transfer programme go beyond the mitigation of economic slowdown. By increasing the income of the poorest population, consumption and economic activity would accelerate, indirectly expanding the income of the wealthiest population (Freire et al., 2020).

Mello et al. (2020) stress an essential particularity of the COVID-19 crisis: unlike the 2008 crisis, its origins are production-related, the financial downturn is the consequence rather than the cause. The monetary policy has a secondary role in response to COVID-19 crises; the fiscal policy is the leading character (Mello et al., 2020). State intervention assumes a decisive and inevitable role in promoting aggregate demand and private investment (Mello et al., 2020). In this sense, Clemente et al. (2020) catalogued the economic policies adopted to minimize the pandemic effects on tourism firms – one of the most affected sectors, which encompasses actions such as institutional measures like laws and legal apparatus to establish formal agreements between consumers and firms, fiscal and credit policies to maintain the formal jobs, and expansion in credits line offered by public banks. More than this, comprehensive and extraordinary economic policies – especially fiscal, monetary and credit – were adopted to maintain a minimum income of workers and to protect the most vulnerable; to pursue a maintainable level of the public debt of municipalities and states; to increase the financial liquidity of small and medium firms (Silva, 2020). Together, there is evidence that the macroeconomic policies adopted in Brazil have substantially mitigated the fall in GDP and household consumption and contributed to the public debt do not increase further (Sanches et al., 2021).

This study aims to track and detail the main economic measures implemented to recover the Brazilian economic activity from the pandemic's effect in 2020. Also, it informs the direct impact on GDP and people reached by adopted actions. After that, we have a short discussion of public policies. As well as many developing countries Brazil is regionally unequal. Its labour market has many informal jobs¹, and the unemployment rate exceeds two digits in the last quarter of 2020. An expressive share of the productive structure is oriented to commodities, sub-sectors of the first and second industrial revolution and low productivity services. We believe that measures adopted in Brazil can be replicated - with appropriate adaptations - in similar economies, such as in Latin America and African

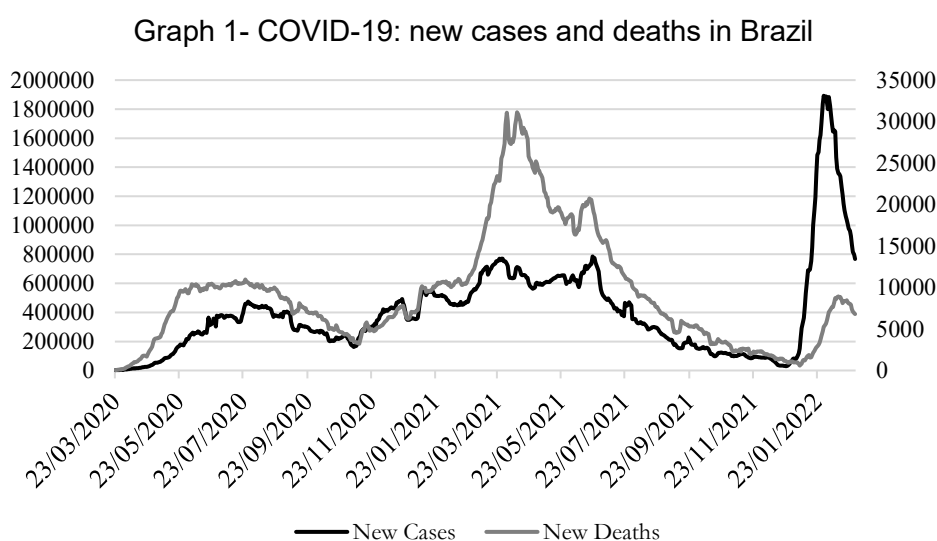
¹ "In Brazil, nearly two-thirds of businesses, 40 percent of GDP, and 35 percent of employees are informal." (ULYSSEA, 2018. p. 2015). In the last quarter of 2020, informal employment reached 39.5% (IBGE, 2021b).

countries. For example, emergency aid can be redesigned for the post-pandemic period, given the positive impact of consumption, employment, and poverty reduction.

This study has four more sections. Section 2 discusses the harmful effect of the COVID-19 pandemic in Brazil. Sections 3 and 4 present in detail, respectively, fiscal policy measures and monetary and credit policies. A short assessment of the effectiveness of macroeconomic policies to mitigate the pandemic effects were made at the end of sections 3 and 4. A final discussion closes the article.

2 STYLIZED FACTS OF BRAZIL

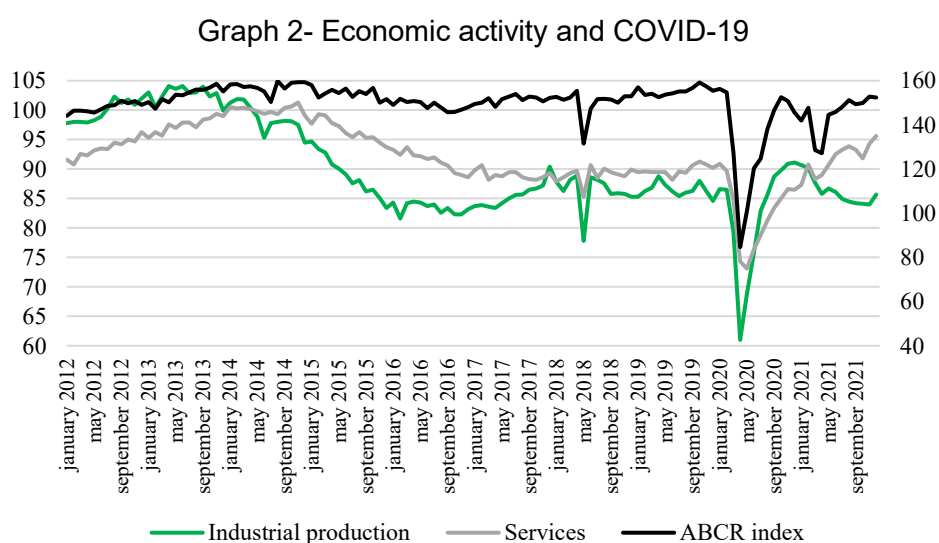
Brazil is the ninth-largest economy globally and has the third-largest GDP among developing economies after China and India (United Nations, 2020). Brazilian GDP in US dollars equals 34% of Latin American GDP, according to (United Nations, 2020). COVID-19 has strongly impacted Brazil. Graph 1 presents the daily number of new cases (scale on the left) and new deaths (scale on the right). The first confirmed case of the disease was reported on February 23, 2020, and by early April 2020, daily reported cases had surpassed a thousand. Since then, the number of cases has soared. On March 28, 2021, Brazil had reported 12.5 million cases and 311 thousand deaths from COVID-19 (Worldometers, 2021). Only the United States had more cases and deaths than Brazil (Worldometers, 2021). Although it seems to be positively associated with the number of new cases, the number of new deaths has been deaccelerating over time because of the large-scale vaccination.



Source: made by the authors from Our World in Data (available at: <https://ourworldindata.org/coronavirus/country/brazil#how-many-tests-are-performed-each-day>), accessed in 03/01/2022. Variables are presented as a 7-days-average.

Although international institutions recommended strict containment measures, Brazil did not have a national lockdown like other countries. President Jair Bolsonaro has been criticized by international institutions such as the World Health Organization (WHO) for adopting such a negationist attitude. Municipalities and Federation Units were relatively autonomous to adopt containment actions at different intensities and periods according to the virus's spread. Until mid-2020, Brazil had a consistently high average of new cases and deaths due to weak national planning. From April 2021 on, there are two large waves of new cases and deaths: the first occurred between April 2021 and September 2021, whereas the second occurred between 2021 December and 2022 March, as indicated in Figure 1.

The pandemic affected several productive activities. Retail trade, accommodation and food, personal services, and manufacturing sub-sectors have had the greatest retractions. Informal economy was also hit hard (IBGE, 2021b). Like other developing countries, the informal economy is significant, represented by 4 out of 10 Brazilian workers (IBGE, 2021b). Graph 2 displays the monthly activity of the Brazilian economy (scale on the left), between January 2012 and December 2021, in terms of industrial production, service sub-sectors revenue, and the number of cars that went over toll roads (ABCR index) (scale on the right). Economic activity fell by more than 10% in the second quarter of 2020. Since July 2020, although the number of new COVID-19 cases has skyrocketed, the impact on economic activity has slowed as emergency measures began to be implemented.



Source: made by the authors from the dataset provided by i- Brazilian Institute of Geography and Statistic (<https://sidra.ibge.gov.br>): industrial production of manufacturing sectors (Table 3653, average of 2012 = 100) and revenues of services (Table 6443, average of 2014 = 100), ii- ABCR index (<https://abcr.org.br/>). All variables are seasonally adjusted and were accessed on 03/02/2022.

Table 1 presents the quarterly evolution of the aggregate demand components in 2020 and 2021. The first and second quarters of 2020 were the worst periods of the pandemic: the GDP fell by 10.6%. All components of aggregate demand had significant retraction in the first two quarters of 2020, except for exports. Possibly, the demand regime is wage-led as the exports have not compensated for the reduced domestic demand, especially in the context of a global recession. The most expressive reductions occurred in household consumption and imports, which fell approximately 13% in the second quarter compared to 2019. Notably, the substantial investment recovery in the last quarter of 2020 is more associated with the accounting of the oil sector imports² than the recovery of industrial capacity utilization.

Table 1- Components of Aggregate Demand (average of 1995 = 100)

	GDP	Consumption	Public expenditure	Investment	Exports	Imports
Average 2019 ¹	170	184	147	150	307	252
1º quarter/2020	167	180	147	153	299	246
2º quarter/2020	152	161	135	132	304	219
3º quarter/2020	164	173	139	146	301	201
4º quarter/2020	169	178	142	167	297	240
1º quarter/2021	171	179	142	180	306	268
2º quarter/2021	171	178	143	175	349	264
3º quarter/2021	171	180	144	175	315	242

Source: made by the authors from the Brazilian Institute of Geography and Statistic dataset (<https://sidra.ibge.gov.br>). ¹Quarterly data for 2019 were averaged. All variables are seasonally adjusted.

The unemployment rate increased from 12.4% to almost 15% in the first quarter of 2021 compared to the first quarter of 2020.³ Such a scenario of economic recession, increasing unemployment, social vulnerability, and uncertainty about the future – even in the absence of unified efforts to control the expansion of cases and deaths – Brazilian

² See <https://agenciabrasil.ebc.com.br/economia/noticia/2021-03/setor-de-petroleo-impulsionou-investimentos-no-4o-trimestre-de-2020> to obtain more details.

³ This information come from the Brazilian Institute of Geography and Statistic, and it is available at: <https://sidra.ibge.gov.br/home/pnadct>.

authorities have implemented various measures of fiscal, monetary, and credit policies to circumvent the pandemic's harmful effects on the real economy.

As we shall see below, a wide range of expansionist policies was adopted. Such policies aimed to sustain household consumption – the main driver of GDP – to mitigate the recession. Although such fiscal and monetary policies have a countercyclical expansionist stance, our argument is that they were more associated with assuring the survival of the most vulnerable population and small and medium firms than with the adoption of Keynesian guidance for economic policy since there was not an expansion of public investment or a consistent plan for economic recovery. Table 1 highlights such an aspect: the public expenditure as a share of GDP did not have consistent expansion over the 4th quarter of 2020 and the 1st quarter of 2021. Fiscal policy was characterized by a microeconomic glance instead of a macroeconomic logic based on a countercyclical economic policy.

The following sections show and discuss the macroeconomic policies adopted in Brazil.

3 FISCAL POLICY

National authorities began to boost the real economy after March 2020. As the pandemic intensified, temporary measures such as emergency aid were extended. This section documents the fiscal measures adopted by the Brazilian Government, emphasizing the social approach measures and their impacts; the support for workers and companies; the corporate taxes; and the transfers to States and Municipalities. Table 2 presents the social approach measures of fiscal policy in value and as a percentage of GDP.

Table 2- Measures with a social focus

Actions	Values ¹	% of GDP ²
Emergency Aid for families	293.1	4.0
Salary advance bonus (13th salary) for retirees and pensioners	47.2	0.64
Emergency withdrawal from the Brazilian Government Severance Fund for Employees (FGTS)	36.2	0.47
Advance salary bonus allowance	6.5	0.09
Expansion of the Conditional Cash Transfer <i>Bolsa Familia</i>	0.4	0.01
Total	383.4	5.21

Notes: ¹billions of R\$; ²in values of 2019.

Source: made by the authors with data from the Ministry of Economy.

The five social measures in terms of fiscal policy adopted in 2020 consist of:

- i- *Emergency Aid for families* was a financial benefit granted by the Federal Government of Brazil to informal workers, individual microentrepreneurs, the self-employed and the unemployed. It aims to provide emergency protection during the period of the crisis caused by Covid-19. Created in April 2020, emergency aid covered 67.8 million beneficiaries⁴ with an executed budget of 4.0% of the GDP of 2019. It was paid in five monthly BRL 600 (equivalent to 57.4% of the minimum wage) between April and August and four instalments of BRL 300 between September and December, totalling a maximum of nine instalments. Single-parent mothers received two monthly instalments.
- ii- *Anticipation of the salary bonus (13th salary) for retirees and pensioners* from July to April and May, the federal Government advanced the first instalment (50% of the benefit) of the salary bonus for retirees, pensioners and people receiving sickness benefits. The second instalment, typically paid in December, was brought forward to May and June. Most beneficiaries received a minimum wage. The measure reached about 35 million people, injecting BRL 47.2 billion (0.64% of the GDP of 2019) into the economy;
- iii- *Emergency withdrawal from Brazilian Government Severance Fund for Employees (FGTS)*: the Government allowed the withdrawal of up to one minimum wage (BRL 1,045) from the FGTS accounts. This action reached 60 million beneficiaries and injected BRL 36.2 billion (0.49% of 2019 GDP) into the economy between June and September 2020. FGTS is the savings of workers managed by the Government formed by 8% of each worker's monthly salary. Generally, the worker is entitled to withdraw the accumulated FGTS balance only when dismissed, acquires a property, or retires;
- iv- *Anticipation salary bonus allowance*: workers who had a formal employment contract in 2018, receiving up to two minimum wages, received a bonus in the anniversary month, which varied from BRL 88 to BRL 1,045. Federal Government decided to advance the benefit payment by one month (from July to June). As a result, BRL 6.5 billion (0.09% of 2019 GDP) was injected into the economy for about 8 million beneficiaries;
- v- *Expansion of the Conditional Cash Transfer Bolsa Familia Program: Bolsa Familia* program serves families with children from 0 to 17 years old and living in poverty and extreme poverty. Since April 2020, the program was expanded from 1 million beneficiaries to 14.3 million. In 2020, the average benefit was BRL 192 per family, conditioned to keeping children enrolled in schools and meeting the national vaccine schedule. Approximately 95%

⁴ It is equivalent to 43% of the population over the age of 18 years.

of the *Bolsa Familia* beneficiaries could choose to receive emergency aid, the most valuable benefit.

3.1 Support for workers and companies: emergency employment maintenance program

The emergency employment maintenance program, created in April 2020, allowed the reduction of working hours and wages or the suspension of contracts for formally employed workers and aimed to prevent mass layoffs during the pandemic. According to the rules, workers with a suspended contract or reduced working hours and wages received compensation (partial compensation in most cases) paid by the Government, with payments reaching up to 100% of what they would receive from unemployment insurance in case of dismissal (which ranges from between 1 and 1.73 times the minimum wage). In return, the worker has ensured job stability for the same period for which the contract was changed. So, if a company fired workers in the grace period, it would pay a higher indemnity.

The amount of government compensation would depend on the company's revenue and working hours. In the case of contract suspension, companies earning more than BRL 4.8 million per year had to cover 30% of the salary, while the Government paid a benefit amounting to 70% of the unemployment insurance to which the worker would be entitled. On the other hand, smaller companies with gross annual revenues of up to BRL 4.8 million would not need to pay salaries, while the Government would pay the suspended worker a monthly benefit, which was the full amount of unemployment insurance to which the worker would be entitled. In the case of reduced hours and wages, the amount paid for the employee's working hours had to be maintained. Benefits paid by the Government could vary from 25% to 75% of the unemployment insurance, according to the number of reduced hours agreed with the company. Only in agreements where there was a reduction of less than 25% in the working day the worker would not receive compensation from the Government.

Initially, the programme allowed the contract to be suspended for two months, but due to the severity of the pandemic and the company's claims, the programme was extended, with a maximum term of eight months and ending in December 2020. The measure had a fiscal impact of BRL 51.5 billion (0.70% of 2019 GDP). In just over eight months, 20.1 million agreements were signed to suspend employment contracts or reduce working hours and wages, covering 9.85 million workers and 1.46 million companies.

Of the total number of formalized agreements, 11.2 million dealt with a reduction in wages and hours. The service sector was one of the most affected by the pandemic, accounting for more than half of the agreements (10.38 million). In the wholesale and retail trade sector, 4.9 million agreements were signed, and 4.1 million agreements were signed in the industry sector. Although more beneficial for companies than for workers as companies could pay their employees less, the programme has preserved the employment and income of around 25% of private-sector workers.

3.2 Taxes

Most tax measures put in place in Brazil refer to the deferment of tax payments by companies, which generated temporary relief in companies' working capital in the worst months of the pandemic. Business debts with the Government have also been suspended, postponed, and renegotiated. Business debts with the Government have also been suspended, deferred, and renegotiated. Government has temporarily reduced the tax rate in a few cases, such as the three-month exemption from the Financial Operations Tax (IOF) on credit operations. Table 3 summarises these measures.

Table 3 - Federal tax measures: reductions in tax revenue

Actions	Values ¹	% of GDP ²
Suspension, deferment, and renegotiation of acts of charging of the active debt with the Government	242.8	3.28
Deferment in the collection of federal taxes ³ between 3 and 6 months	159.8	2.16
Temporary reduction (3 months) of Taxes on Financial	19.1	0.26
Deferment (60 days) of the Income Tax Declaration of families	10	0.14
Deferment of taxes on telecommunications services companies	3.3	0.04
50% reduction in System S contributions for 3 months	2.2	0.03
Total	437.2	5.9

Notes: ¹billions of R\$; ²in values of 2019; ³ PIS/COFINS, FGTS, Simples Nacional, Special instalments (RFB e PGFN).

Source: made by the authors with data from the Ministry of Economy.

Most federal taxes for April, May and June were postponed for three months to August, October, and November, while federal taxes on micro and small businesses and microentrepreneurs were postponed to October until December. The payment of labour taxes from April to June was postponed to July to December in six instalments of equal value. The payment of state tax debts was also suspended or postponed for three months. Besides these measures, the Federal Government also created tax debt renegotiation

programmes. In these programmes, the initial instalments were lower, and the subsequent instalments had longer payment terms, of up to 84 months for medium and large companies and 145 months for micro and small companies. Discounts of up to 70% were offered for micro and small companies and 50% for medium and large companies, which allowed the debt settlement of thousands of companies.

3.3 Transfers to States and Municipalities

Table 4 shows the measures associated with transfers to states and municipalities, which is equivalent to 2.5% of the Brazilian GDP.

Table 4 – Federal government aid to states and municipalities

Actions	Values ¹	% of
Federative Emergency Financial Aid (4 months)	60.2	0.81
Suspension of State and Municipal Debts with the Federal Government	35.3	0.48
Transfers to States and Municipalities for health actions	25.9	0.35
Securitization of State and Municipal debts guaranteed by the Federal Government	20	0.27
Compensation of the Municipality and State Participation Fund	16	0.22
Restructuring of Credit Operations with Public Banks	14	0.19
Restructuring of credit operations with international institutions	10.7	0.14
Deferment of federal tributes for 3 months ³	5	0.07
Total	187.1	2.5

Notes: ¹billions of R\$; ²in values of 2019; ³Pasep and employer contribution. Source: Ministry of Economy.

Source: made by the authors with data from the Ministry of Economy.

To compensate for the loss of revenue caused by the pandemic in states and municipalities, the Federal Government launched the emergency financial aid programme, with a value of 0.81% of GDP, paid in four monthly instalments from June to September 2020. In return, states and municipalities were prohibited from increasing civil servants' salaries and personnel expenses until the end of 2021. Of the total resources, 20% would be exclusively for health and social assistance and 80% for discretionary use. The help package for states and municipalities also included the suspension and renegotiation of debts with the Federal Government (0.48% of GDP), public banks (0.19% of GDP), and international organizations that the Federal Government endorses (0,14% of GDP). The Federal Government also deferred collecting social security taxes for three months (0.07% of GDP).

The Federal Government transferred approximately 0.5% of GDP to states and municipalities to strengthen public health services. In addition, the Federal Government reserved another BRL 16 billion (0.22% of GDP) to maintain the transfers already established by law to the Municipality and State Participation Fund.

3.4 The impacts of fiscal policies

Emergency aid had the most significant fiscal impact in combating the adverse effects of the pandemic in 2020 (4.0% of 2019 GDP). It paid between 28.7% and 114.8% of the minimum wage for 4 out of 10 people in working age hardly hit by the pandemic or unemployed. This program was essential in generating minimal demand to keep markets active and avoid additional business bankruptcies, mainly in consumer goods industries. At least 44% of the country's households received aid, which temporarily reduced the number of people living below the poverty line (Duque, 2020). Because of the scale and reach of the programme, it was relatively expensive. It can hardly be reissued under the same conditions due to the public budget's lower fiscal space.

Nevertheless, the program contributed substantially to reducing the drop in GDP. In its absence, estimated GDP would have varied between -8.4% and -14.8% (Sanchez et al., 2021); however, in 2020, GDP growth was -4,1% (IBGE, 2021a). Sanchez et al. (2021) also estimated a drop of at least 5.5 percentage points greater in household consumption and an additional increase of 3 percentage points in public debt if the programme had not been in place. Moreover, other social approach measures sought to inject additional money into the economy to support a minimum level of demand and functioning of the markets and help the most vulnerable.

The Emergency Employment Maintenance Program was less costly (0.70% of GDP), preserving around 10 million jobs. It was more advantageous for companies in lowering the payroll cost than for workers who had reduced wages while preserving jobs. The program had national coverage, reached all economic sub-sectors, and provided more incentives to SMEs in 2020 – so companies widely accepted it. If the pandemic continues to hit Brazil hard, this programme could be reissued without major changes.

Although the deferred taxes and debts did not influence the fiscal result, they were vital for companies' working capital. Therefore, the measures contributed to avoiding a wave of business insolvency. In the face of a profound global crisis, the postponement of tax payments and debt renegotiation are examples of easy reinsert programs in other contexts

in developing countries. These measures have been essential in lockdown periods or reduced movement at the pandemic's peak, as revenues decreased considerably at these points.

Transfers to states and municipalities sought to keep cities and public health systems functioning. More public resources should have been allocated to weaker public health services regions due to the outbreak's severity, such as the Amazonas and other states in the North and Northeast (Ferraz et al., 2021).

Toneto (2021) estimated an econometric model panel data for 45 countries throughout 2020, it was verified "that the larger the fiscal stimulus package's size in relation to the GDP of each economy, the better the respective countries accommodated the recessive impacts of the health crisis. The Brazilian case is an example of this." (Toneto et al., 2021, p. 6). Therefore, we have evidence that fiscal measures, especially emergency aid, mitigated the recession's depth in the pandemic's first year.

4 MONETARY AND CREDIT POLICIES

In this section, we will address the multiple policies of the Central Bank of Brazil (BCB) and the National Monetary Council (CMN) implemented to provide liquidity and capital relief to banks, adjust the capitalization level of the National Financial System (SFN), and expand the supply of bank credit, especially to small and medium-sized enterprises (SMEs). These measures are discussed in what follows.⁵

4.1 Liquidity support

Table 5 summarizes the liquidity measures adopted by the Brazilian monetary authority.

Table 5 - Liquidity support

Actions	Values ¹	% of GDP ²
Loans backed by Financial Letters guaranteed by credit	670	9.05
New Term Deposit with Special Guarantees - DPGE	200	2.70
Reduction in reserve requirement ratio on term deposits	117	1.58
Loans backed by debentures	91	1.23
Regulation enhancement on Liquidity Coverage Ratio (LCR)	86	1.16
Change on reserve requirement on savings deposits	55.8	0.75

⁵ For all measures and their values mentioned in this section, see (BCB, 2021a, 2021c, 2021b).

Notes: ¹billions of R\$; ²in values of 2019
Source: Central Bank of Brazil

Among the several financial measures taken described in Table 5, the Liquidity support provided by the monetary authority was:

- i- CMN allowed BCB to grant loans to financial institutions backed by financial letters that were collateralized by loan pools or securities through the Special Temporary Liquidity Facility (LTEL-LFG). In practice, the money leaves the BCB for banks offering financial letters as collateral and returns to the BCB within a year. The measure aims to increase liquidity up to BRL 670 billion to the financial system to support the credit market. The New Term Deposit with Special Guarantees (DPGE) was created as an alternative fundraising instrument for all financial institutions that are members of the Credit Guarantee Fund (FGC). The mechanism allows institutions to take higher deposits guaranteed by the FGC, contributing to the continuity of the credit provided to the economy. The new regulation increased the coverage from BRL 20 million to BRL 40 million per depositor (if the depositor is not an FGC member institution). The potential impact is an increase of BRL 200 billion in liquidity;
- ii- The minimum reserve requirement ratio on term deposits was reduced from 31% to 25% in February 2020 (freeing up BRL 49 billion), and later to 17% on March 31, 2020 (freeing up BRL 68 billion), valid until April 2021. BCB created the Temporary Liquidity Line in domestic currency to grant loans backed by financial institutions' debentures. Through this temporary facility, it is expected to guarantee liquidity and the normal functioning of the private corporate credit market during the crisis. The potential liquidity released is BRL 91 billion;
- iii- The BCB has increased the share of reserve requirements to be considered in the Leverage Coverage Ratio. Some requirements that were not eligible will now be part of the banks' High-Quality Liquid Assets, so the measure reduces liquidity requirements with a potential impact of BRL 86 billion;
- iv- Financial institutions can deduct up to 30% of their reserve requirements on savings, for up to three years, provided that the deducted amount is used in credit operations for SMEs. The deduction may also be applied to the balance of interbank transfers made by cooperative banks to individual cooperatives. Financial institutions should have given 5% of the loans to SMEs by August 2020 and another 5% by September 2020 to receive a

remuneration of 30% on its savings-reserve balance until the end of 2020. The expected impact is an expansion of BRL 55.8 billion in credit for SMEs;

v- The BCB started to offer liquidity operations in dollars by purchasing sovereign dollar-denominated Brazilian bonds held by national financial institutions. The BCB purchased bonds with a 10% discount compared to market prices. The objective was to provide long-term liquidity, which will offset the demand for very short-term liquidity by households and companies. The measure went into effect in March with the potential to release BRL 50 billion.

4.2 Capital relief

Table 6 summarizes the measures of capital relief.

Table 6 - Capital relief

Actions	Values ¹	% of GDP ²
Releasing the Capital Conservation Buffer (from 2.5% to 1.25%)	640	8.64
Over hedge of investments (tax effects)	520	7.02
Reduction in the capital requirement for credit operations for SMEs	35	0.47
Temporary reduction of capital requirement for smaller financial institutions	16.5	0.22
Reduction of capital requirement on DPGE exposures	12.5	0.17
Total	1,224.0	16.5

Notes: ¹billions of R\$; ²in values of 2019

Source: Central Bank of Brazil.

The information in the Table indicates that:

i- The Capital Conservation Buffer was reduced from 2.5% to 1.25% of risk-weighted assets (RWA) up to March 2021, with an additional year to re-establish the initial buffer rate. This measure strengthened banks' willingness to provide credit and improved the conditions for renegotiations, helping financial institutions to maintain or expand the flow of credit provision. Expected impact of BRL 56 billion of capital relief, creating room for credit supply expansion of BRL 640 billion. The measure defines that the tax effects arising from banks' foreign exchange hedge operations will not be deducted from their equity. Banks hedge their investments on equity held abroad to obtain protection against exchange rate fluctuations. The measure aims at providing confidence to financial institutions to maintain and expand their credit provision plans. According to the BCB, it has estimated a capital relief of BRL 46 billion to enable a potential expansion of BRL 520 billion in credit operations;

- ii- BCB decreased the minimum capital requirement of credit operations for enterprises with annual gross revenue of BRL 15 million to BRL 300 million. The amount of RWA relative to credit risk exposures of these operations has been decreased from 100% to 85%, a criterion also valid for new or restructured operations carried out from April to December 2020. It expects a capital relief of about BRL 3.2 billion for new operations and potential debt restructuring agreements of up to BRL 35 billion for SMEs responsible for a significant share of the production and employment. This action reduces the capital requirement for financial institutions allocated in the regulatory Segment 5 (S5), including those with a smaller and simplified risk profile. The return to the initial capital requirement will be gradual over the period May 2021 to May 2022. The action has a potential liquidity increase of BRL 1.3 billion that may increase the provision of credit up to BRL 16.5 billion, thereby increasing the capacity of smaller financial institutions and maintaining the flow of credit to the economy;
- iii- BCB determined the reduction of the capital risk-weighting factor for exposures in DPGE, from 50% to 35%. The measure aims to encourage better liquidity distribution, fostering funding to small financial institutions that often operate in segments that large financial institutions do not serve. It may increase the expansion of credit by up to BRL 12.7 billion.⁶

4.3 Credit directed to SMEs

It is a challenge for SMEs to obtain new loans in times of economic crisis due to uncertainty about their financial sustainability and the risk of them defaulting on repayments. Financial institutions generally adopt stricter criteria for loan eligibility and reduce credit supply. The Government created five specific credit lines to support SMEs through the crisis, valid until December 2020. These are summarized in Table 7.

Table 7 - Credit lines for SMEs

Requirements	Credit Lines				
	PEAC-FGI	PRONAMPE- FGO	CGPE	PESE	PEAC- maquininhas
Credit granting potential	BRL 100 billion	BRL 43 billion	BRL 120 billion	BRL 40 billion	BRL 10 billion

⁶ The values in Tables 5 and 6 represent the potential amount and not necessarily the amount released for loans, which depend on banks and borrowers' decision (companies and families).

Credit granted until December 31, 2020 Target	BRL 92 billion (1.24% of GDP) Companies with revenues between BRL 360 thousand and BRL 300 million	BRL 37.5 billion (0.51% of GDP) Companies with revenues of up to BRL 4.8 million	BRL 14.4 billion (0.19% of GDP) Companies with revenues of BRL 100 to 300 million, with a minimum of 50% of the credit for companies with revenues of up to BRL 100 million	BRL 7.95 billion (0.11% of GDP) Companies with revenues between BRL 360 thousand to BRL 10 million	BRL 3.2 billion (0.04% of GDP) Entrepreneurs and companies with revenues of up to BRL 4.8 million
Risk assumed by the Government	80%	85%	0%	85%	100%
Risk assumed by the financial institution	20%	15%	100%	15%	0%
Interest rate	average of 0.89% a.m. (11.2% p.a.)	1.25% p.a. + base rate (2.0 to 3.25% p.a.)	Market rate	3.75% p.a.	6% p.a.
Operation term	12 to 60 months (grace period 6 to 12 months)	36 months (grace period 8 months)	(a minimum grace period of six months for amortization)	36 months	
Credit contract term	31 Dec. 2020	19 Nov. 2020	12 Nov. 2020	31 Oct. 2020	31 Dec. 2020

Source: made by the authors from BCB, Ministry of Economy and BNDES.

The credit policy directed to SMEs consisted of five credit lines:

- i- *Emergency Credit Access Program - Investment Guarantee Fund (PEAC - FGI)*: This program, created in June 2020, provided financing without collateral for companies with revenues between BRL 360 and BRL 300 million. Part of the resources came from the Investment Guarantee Fund (FGI) of the National Bank for Economic and Social Development (BNDES). Interest rates were lower than market rates for companies in this revenue bracket, while grace periods and financing were higher than the other SME lines. Limited to BRL 10 million in each financial institution, financing operations have been larger than the other SME lines. The program had a potential impact of BRL 100 billion and provided BRL 92.1 billion (1.24% of GDP);
- ii- *National Support Program for Micro and Small Enterprises (PRONAMPE)*: this program, created in May 2020, provided credit with the lowest interest rates in the market

(between 3.25% and 4.50% p.a.) for micro and small companies with up to BRL 4.8 million of revenue. In return, companies preserved the number of employees up to 60 days after receiving the last instalment. Up to 30% of the companies' revenue could be financed with a guarantee of up to 85% by the National Treasury. The program, which was expanded three times, had a potential impact of BRL 43 billion and provided BRL 37.5 billion (0.51% of GDP). This credit line has been in high demand by companies, rapidly depleting the resources of the first two phases;

iii- *Working Capital Program to preserve business continuity (CGPE)*: this program provided working capital to SMEs in 2020. It is based on the optimization of regulatory capital allocation of institutions licensed by the BCB (except credit unions and consortium administrators), which will be able to use the capital related to contingent fiscal liabilities for new loans. Without negatively affecting the fiscal situation and financial stability (since the lending institutions will bear the credit risk and use their own resources), the CGPE will partially complement and support other government programmes such as PRONATE, FGI and PESE. The potential impact is BRL 120 billion as new loans. Until December 2020, the program had financed less than 10% of the expected;

iv- *Emergency program provides payroll financing to SMEs to preserve employment in the segment (PESE)*: this program supported the payroll costs of SMEs in 2020. The two monthly tranches of BRL 20 billion financed up to two minimum wages (BRL 2,040) per worker per month. The participating company cannot fire its workers while in the program. The emergency payroll financing could reach up to 12.2 million employees working at 1.4 million companies. However, the program reached 2.6 million workers from 131.7 thousand companies for BRL 7.95 billion financed (0,11% do PIB). Among the companies that sought this financing, approximately 96% were served;

v- *Emergency Credit Access Program (PEAC-MAQUININHAS)*: The program, established in October 2020, supported individual entrepreneurs, micro and small businesses with annual sales of up to BRL 4.8 million. The program granted up to BRL 50 thousand in credit, guaranteeing 8% of future revenues from sales made with digital payment machines (via credit, debit or prepaid). Despite the availability of BRL 10 billion, only BRL 3.2 billion (0.04% of GDP) was granted until the end of the program on December 31, 2020. The low adhesion is due to the bureaucracy in the initial implantation (technological adequacy) and the short validity period.

4.4 The impacts of monetary and credit policies

Under high uncertainty resulting from the Covid-19 pandemic, the tendency would be for credit supply retraction. However, after the monetary authorities' actions, credit stock grew by 15.2%, compared to 2019, and from 47.0% to 54.2% of GDP (BCB, 2021a). Credit has seen an annual expansion of 21.1% for companies and 10.4% for families. In 2020, compared to 2019, credit grew by 51.5% for micro-enterprises, 37.7% for small companies, 29.6% for medium-sized companies, and 14.6% for large companies (BCB, 2021a). The five new credit lines granted a credit of 2.1% of GDP to SMEs in 2020 (BCB, 2021a). Credit for working capital saw an annual expansion of 46.3%. Also, the granting of credit has expanded in most sub-sectors (BCB, 2021a).

The monetary authorities lowered the interest rate to stimulate economic activity. In 2020, the interest rate was reduced from 4.5% to 2.0% between January and August, stabilizing at this level. As the inflation rate halted at 4.5% in 2020, the real interest rate was negative, a situation that has rarely occurred in the last 30 years. In 2020, the exchange rate of the Brazilian currency (BRL) against the US dollar (USD) depreciated by 30.7% in relation to 2019 (IPEA, 2021), contributing to the third-largest trade surplus in history (USD 50.9 billion) (Lis, 2021). This value was obtained by the resilience of exports – mainly commodities to Asia –, and a 9.7% drop in imports due to weak domestic demand and more expensive imports due to exchange rate depreciation.

In summary, throughout 2020, monetary policy was quite expansionary. Monetary authorities acted quickly to lower interest rates and to adopt various measures that increased liquidity and credit for companies and families. However, in our view, credit release to SMEs took too long at the beginning of the crisis, and some programmes, such as CGPE, PESE, PEAC-MACHININHAS, were poorly implemented. For this reason, the way SME-oriented policies are designed needs to be improved, and some programmes need to be reinstated so that SMEs can continue to be supported. Together, debt renegotiation, abundant and cheap credit, and the expressive emergency aid program contributed to the lowest default rate in history, at 2.1% in December 2020 (Garcia, 2021).

5 DISCUSSION AND CONCLUSION

This study is an effort to document and organize the macroeconomic measures adopted by the Brazilian Government adopted in 2020 - the first year of the pandemic. President Jair Bolsonaro's negationist attitude reinforced the harmful effects of the COVID-

19 pandemic. Since the pandemic's beginning, the successive exchanges of health ministers – four in all – have weakened national planning in addressing the health crisis. However, the economic response was in the right direction. State intervention – especially the expansionist fiscal, monetary and credit policies - was essential to maintain formal jobs and generate minimal demand, which kept the markets functioning and avoided additional bankruptcies.

Macroeconomic policies were quite expansionary. Fiscal policy has focused on pursuing a minimum level of family consumption - the main driver of Brazilian GDP - and mitigating the magnitude of economic recession on small and medium firms. So, fiscal policy largely sought to preserve household income and the survival of companies. Brazil ended 2020 with a primary deficit of 10.0% of GDP and a fiscal deterioration of 8.7 p.p. compared to 2019 (Pires, 2021), in its majority due to temporary emergency measures. The lowest projection of 2020 GDP growth made by the financial institutions consulted by the Central Bank in the Focus Bulletin was -11% in June 2020 (Sanchez et al., 2021), but GDP growth was -4.1% in 2020 (IBGE, 2021a). In this vein, it is essential to be clear that, since 2015, GDP per capita has deteriorated, and public debt has increased, reaching 89.3% of GDP in 2020 – an increase of 15 percentage points compared to 2019 (Martello, 2021). Therefore, the fiscal space for new stimulus was smaller than in 2008 and even more limited in the pandemic' second year than in the first, which magnifies the efforts of fiscal expansion in response to the COVID-19 pandemic in Brazil. In turn, monetary policy was also attuned to the expansionist principles of macroeconomic policy insofar as monetary authorities fostered liquidity in the credit market, benefiting families and companies with increased concessions and negative real interest rates.

Together, monetary, credit and fiscal measures have alleviated the pandemic's impact on GDP and employment. The unemployment rate (formal and informal) increased from 11.0% to 13.9% in the pandemic's first year (IBGE, 2021b). However, formal employment – the target of some government actions – achieved a positive balance of 142.7 thousand occupations in 2020. North and Northeast regions – areas with higher informality, where emergency aid was more needed – had a substantial increase in formal employment in 2020 (Fagundes et al., 2021).

Nevertheless, we call attention to the fact that the expansionary policies adopted in Brazil over the first year of the pandemic should be analysed realistically. There were no changes in the macroeconomic logic – required for Brazil's economic development and social reconstruction after the pandemic – based on the inflation target regime and tripod of

fiscal austerity, floating exchange rate and inflation target. The countercyclical measures were temporarily adopted to assure the survival of the most vulnerable population and small and medium firms. Ergo, although this set of economic policies was in the right correction, it has played a limited role in paving the road for a sustainable growth path, either because of the absence of a consistent expansion of public investment or because there is not a consistent plan for economic development after the pandemic. Further, understanding the measures taken can help similar countries point the way to overcoming the socioeconomic impact of the pandemic or post-pandemic recovery more effectively.

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