COVID-19 sends the bill:
Socially disadvantaged workers suffer the severest losses in earnings

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Abstract

This work uses a nationally representative household survey conducted by phone during the COVID-19 pandemic to estimate the short-term impacts of lockdown measures on employment and income in Brazil. In May 2020, 18 percent of the employed population (around 15.7 million workers) were temporarily absent from their jobs due to the lockdown policies while 56.6 percent of them were no longer earning an income from work. This decrease in employment has generated a fall of 18 percent in the average work income and an increase of 0.014 points in the Gini coefficient. The vulnerable among the population have been hit hardest by the pandemic: the average earnings of the lowest income decile decreased from BRL 389.07 to 0 while for the second-lowest a 70.2 percent reduction has been seen (from BRL 878.08 to BRL 262.06). Thanks to the implementation of the COVID-19 Emergency Aid, the Brazilian government has been able to reduce the losses in income for all social classes. Nevertheless, the average income of the first decile is 5 percent lower than the value pre-pandemic while for the second decile the equivalent figure is 15.2 percent.

Keywords: COVID-19, lockdown effects, income, employment, emergency aid, Brazil

JEL classification: D31, E24, H12, O15

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†This work is a research notes aims at presenting the collected data and preliminary analyses.

1 Introduction

Since the outbreak of the novel coronavirus disease in China, COVID-19 has profoundly affected the daily routine of the great majority of the global population and plunged the world into a crisis of unprecedented scope (Berg et al., 2020). At an early stage herein, the goal was to avoid the overburdening of the health system. Many countries have worked to "flatten the curve", taking such restrictive measures as travel bans, lockdowns, stay-at-home orders, and quarantines —some of them extremely stringent —to reduce the movement of persons, and, consequently, to slow down the spread of the virus (Nicola et al., 2020).

As the pandemic unfolded, Brazil would become a global hotspot. On the day of the creation of the first draft of this paper, the seventh-most populous nation on the planet was then the second-worst-affected country worldwide with more than two million confirmed cases and 78,000 deaths due to SARS-CoV-2. Since the confirmation of the first COVID-19 case in Brazil on February 26, 2020, the policy responses to combat the spread of the pandemic have been scattered and uncoordinated (Ajzenman et al., 2020). The federal and local governments have found themselves in constant disagreement over the lockdown measures necessary to flatten the curve (Aquino et al., 2020). However, despite the opposition of President Jair Bolsonaro, all twenty-seven Brazilian states would implement between March 13 and 24, 2020, lockdown measures to reduce the circulation of persons and consequently the spread of the virus. In subsequent weeks, the municipalities followed suit, enacting additional legislation to regulate these stay-at-home orders.

Some empirical studies have already been able to confirm that these lockdown policies were successful in increasing social distancing during the pandemic. Leone (2020), for example, used geolocation data from nearly sixty million smartphone users in Brazil to show that the population numbers socially distancing grew considerably after the implementation of the lockdown measures. While the share of stay-at-home individuals in the pre-pandemic phase (January and February 2020) was close to 20 percent, this number increased to 50 percent in the first weeks after lockdown policies were introduced. Similar results were also reported for Italy (see Durante et al., 2020), Sweden (see Dahlberg et al., 2020), and the United States (see Chiou and Tucker, 2020; Farboodi et al., 2020; Sears et al., 2020).

It is therefore no surprise that the impacts of the pandemic go way beyond the mortality rate, and the government responses to it will certainly cause turmoil for the economy. Fernandes (2020) estimates a decline of 10.4 percent in global gross domestic product under the scenario whereby the lockdowns last until the end of July. In contrast to many European countries who can mitigate at least parts of their lockdowns' economic disruption through welfare states, in developing ones the most vulnerable among the population have tended to be the biggest losers during the pandemic given the lack of social security coverage (Blofield et al., 2020). A World Bank study concluded that, at the global level, COVID-19 is pushing between forty and sixty million into extreme poverty (see Mahler et al., 2020). Sumner et al. (2020) also used simulation models to quantify the potential short-term economic impact of the lockdown policies, highlighting that in some regions of the world the pandemic could result in poverty levels being reached similar to those recorded thirty years ago. Based on the worst-case scenario —whereby the per capita income decreases 20 percent —the number of people living in poverty could increase by up to 580 million as compared to 2018.

Despite the valuable contribution of all these empirical simulations of the economic costs related to COVID-19, it is high time to abandon the forecasts and start to estimate the real socioeconomic consequences of the pandemic. This is exactly the main

contribution of this paper to the literature. Using a (national) representative household survey conducted by phone with 349,306 Brazilian residents during the pandemic, this study will quantify the short-term impacts of COVID-19-related social-distancing measures on income and employment levels in Brazil. Overall, the findings suggest that the measures to flatten the curve have led to a reduction in employment and income —with more significant losses occurring for the most vulnerable parts of the Brazilian populace.

2 Data and Method

This paper uses data from PNAD COVID19, a recent nationally representative longitudinal survey conducted by the IBGE (Brazilian Institute of Geography and Statistics) with 193,662 households (349,306 individuals). The intention behind it is to continuously produce information about the health status and labor-market characteristics of the domestic population during the pandemic (May–July 2020). Data collection was carried out remotely via telephone calls, and drew on the sample of the PNAD-Contínua (Continuous National Household Sample Survey).

To provide information in real time about the pandemic, PNAD COVID19 adopts a rotating panel scheme of interviews to produce weekly and monthly consolidated data. This means that every week one-quarter of the involved households are interviewed, and the ongoing main descriptive statistics are published immediately. Then, at the end of the month, the data for the whole sample (193,662 households) are consolidated and made available to the public in the form of microdata. Given the panel structure of the survey, the households can be correctly identified across all three months of PNAD COVID19, and they can be also linked with the data of the Continuous PNAD —thereby providing the relevant information for the period pre-coronavirus too.

From the PNAD COVID19 sample, two main pieces of information related to personal income will be used in this study here. The first variable (C10) refers to the (normal) earnings before lockdown policies were implemented in March 2020, while the latter (C11a) investigates the same type of income during the pandemic itself. In addition, I use the information on the allocation of COVID-19 Emergency Aid (D0051) to estimate the effects of this social scheme on income distribution.

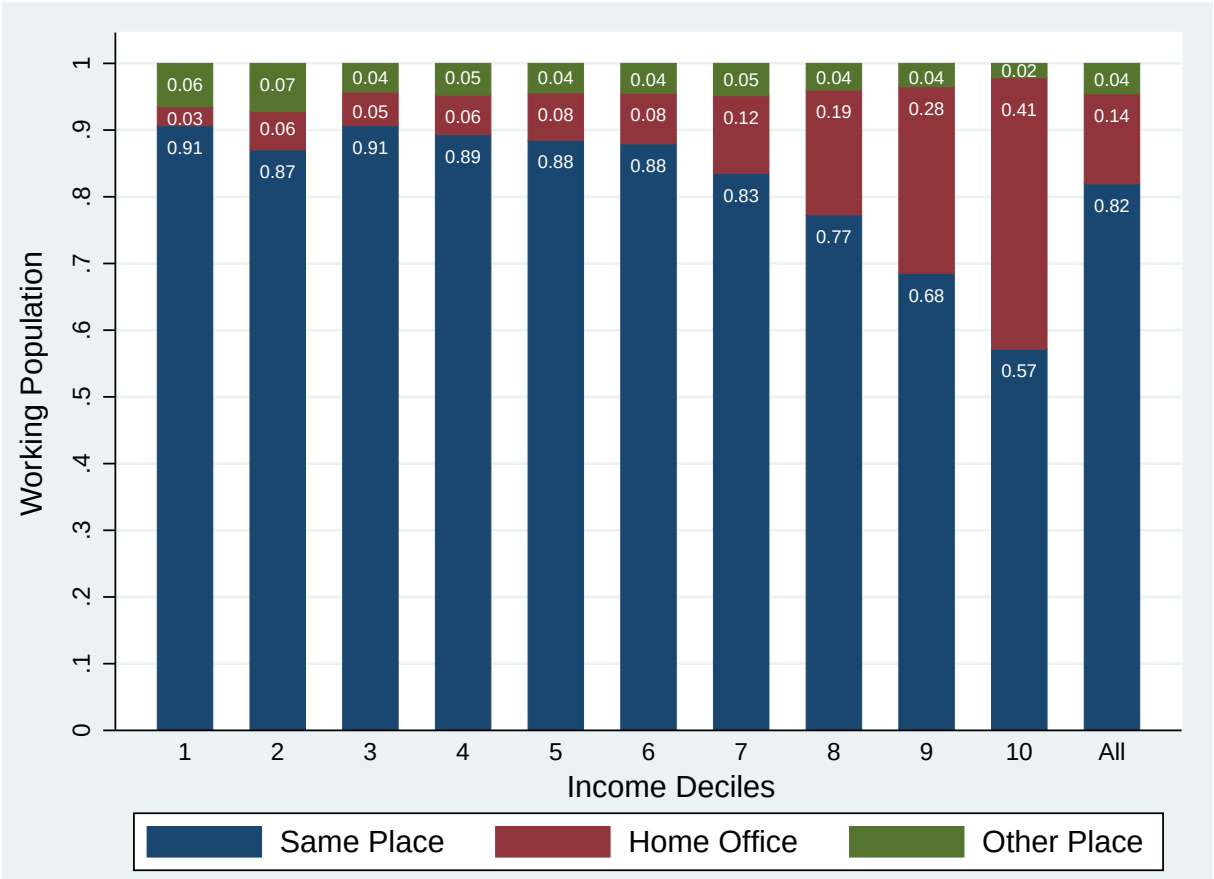
In a first step, the paper identifies the economically active population from the sample, which corresponds to employed and unemployed persons aged fifteen to sixty-four. Employed are those individuals who have worked at least one hour during the reference week or who were temporarily absent from their job; unemployed persons meanwhile are those who were not employed but made some specific active effort to find a job in the same reference week. PNAD COVID19 shows that the lockdown policies have deeply affected job-seeking, since many people were dissuaded from leaving the home or have anticipated that companies would postpone their new hires. For this reason, this paper assumes as unemployed also those persons who have not looked for a job but wanted to be working during the identified reference week. Finally, this paper differentiates between the population employed in the formal and informal labor markets. Informal are those workers with no employment contract registered via the Work and Social Security Card and self-employed persons who do not pay social security contributions (INSS).

3 Home office option

In order to reduce the negative labor-market impacts arising from the lockdown measures to flatten the curve, many governments are encouraging their residents to work

from home (Mongey and Weinberg, 2020). A recent policy brief of the International Labour Organization indicated that with the pandemic, fifty-nine countries had implemented telework for nonessential publicly employed staff (see Berg et al., 2020). In Brazil, a phone-interview survey conducted on 03/20/2020 reported that 46 percent of respondents believed that it would indeed be possible to carry out their employment duties via home office (see Carta Capital, 2020). However empirical evidence shows that the chance to work from home is not distributed equally across the population, since many occupations such as construction workers or street vendors cannot be fulfilled from there (see Berg et al., 2020). Saltiel (2020), for example, found that work-from-home jobs are strong correlated with the educational levels of the workforce; therefore, vulnerable groups are more likely to suffer the negative economic impacts of the coronavirus as their jobs cannot be done from home.

Figure 1 below examines this hypothesis with the data obtained from the Brazilian case during the month of May 2020. For that, the individuals who have worked in the reference week are sorted according to their (personal) work earnings pre-lockdown and then divided into income deciles.



Notes: Income deciles use (normal) personal work income pre-lockdown. Working population refers to individuals aged 15–64 that have worked in the reference week. Percentages are weighted for population size. Workplace in May 2020.
Source: Author's own estimates, based on PNAD COVID19.

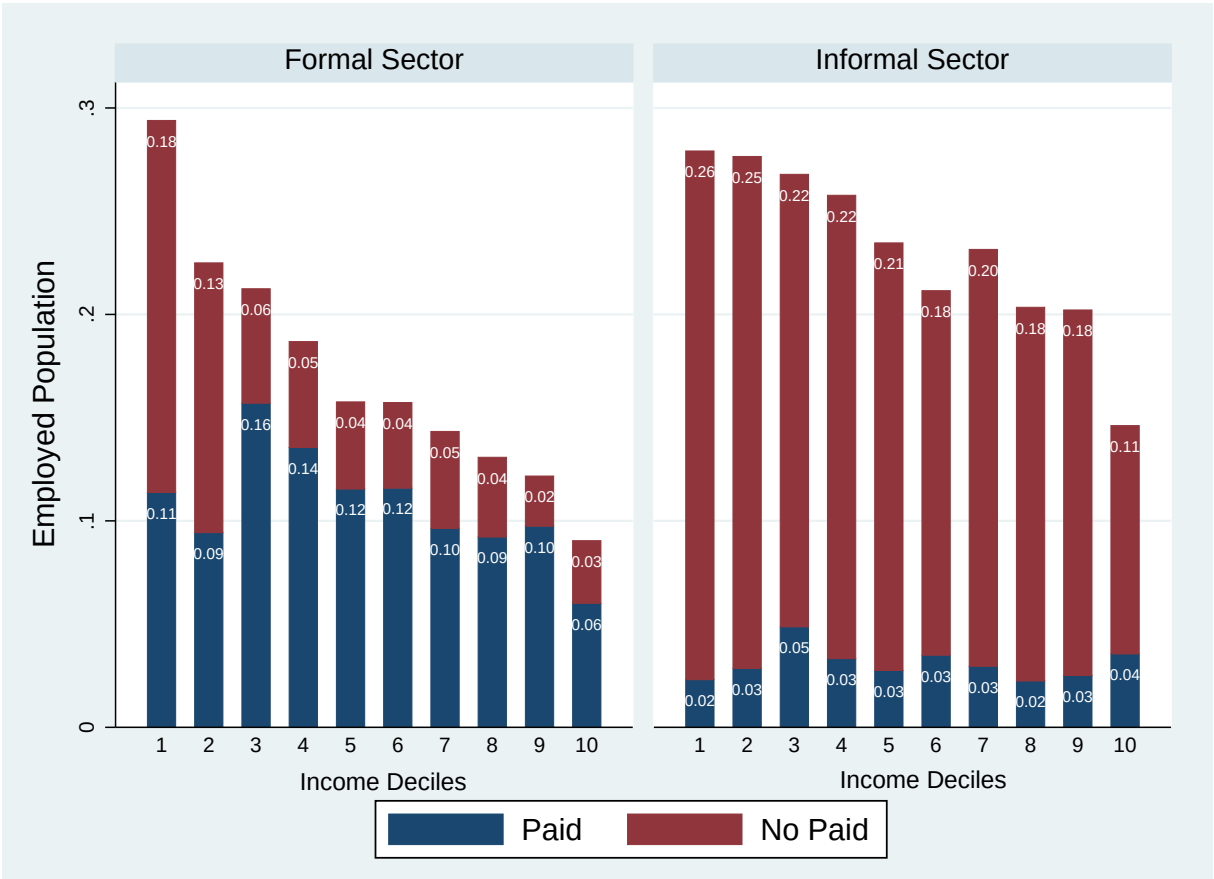
Fig. 1. Workplace during the Lockdown

During the pandemic, 81.9 percent of employees —meaning those who had worked in the reference week —conducted this activity in the same workplace as in the time pre-coronavirus and only 13.5 percent were working from home. However, as predicted in the literature, the chances to work via home office differ greatly according to socioeconomic status. This share is 2.8 percent for the bottom 10 percent of the income distribution, and 40.7 percent for the highest income decile meanwhile.

Looking beyond employment functions can help us to understand this difference across income deciles. PNAD COVID19 data show that employees with occupations requiring more extensive higher education qualifications were more often found to be working from home during the pandemic. Some 45.4 percent of teachers and 39.6 percent of lawyers, engineers, and journalists were doing home office, while these figures were close to 0 for domestic workers (0.0), doorkeeper (0.2) farmers (0.2), butchers and bakers (0.4).

4 Work absenteeism

Figure 1 was limited to the individuals who continued to work during the pandemic. However, the coronavirus crisis has had also a strong impact on the employment status of workers. Figure 2 reports the share of the employed population who had a job before the lockdown measures but who are temporarily absent from it due to the lockdown policies.



Notes: Income deciles using (normal) personal work income pre-lockdown. Employed population refers to individuals aged 15–64 who worked or were temporarily absent from their jobs in the reference week. Percentages are weighted for population size. Absenteeism related to the month of May 2020.
Source: Author's own estimates, based on PNAD COVID19.

Fig. 2. Temporary Work Absenteeism due to Lockdown

In May 2020, 18.8 percent of the employed population of Brazil —equivalent to 15.7 million workers —were temporarily absent from their job due to social-distancing measures. From this total, 56.9 percent continued to receive (at least one part of) their work earnings, while 43.1 percent had a complete loss of such income. Figure 2 confirms that vulnerable workers have been hit hardest by the pandemic. The lower the work income, the higher the chance of having become detached from the labor market as a direct result of the lockdown. Informal workers have been especially affected by this trend because they have —independent of their income —a higher chance of being absent from their

job, and are more likely to lose all their income in case of work leave. Some 65.5 percent of informal workers who were absent from their job due to the lockdown received no work income in May 2020, compared with a figure of 11.6 percent among the formally employed.

5 Impact on income distribution

To highlight the impact of this lockdown-related temporary work absenteeism on income levels, Table 1 below reports the income distribution in Brazil both before and during the pandemic. Measured are (personal) work incomes for the economically active population aged fifteen to sixty-four, and in the third block (Columns 6 to 7) I add to the investigation the COVID-19 Emergency Aid provided by the Brazilian government to mitigate the economic impact of the lockdown measures.

Table 1. Income Distribution before and during Lockdown

	No Lockdown			**With Lockdown**		**Lockdown with COVID-19 Aid**		**Variation in Income**	
Income Deciles	N (1)	Mean (2)	SD (3)	Mean (4)	SD (5)	Mean (6)	SD (7)	A (2) to (4)	B (2) to (6)
1	16,402	389.07	165.64	0.00	0.00	369.46	265.99	-100.0%	-5.0%
2	12,346	878.07	119.32	262.06	119.18	744.20	56.66	-70.2%	-15.2%
3	16,615	1,044.74	1.96	649.06	118.18	995.51	62.94	-37.9%	-4.7%
4	13,075	1,159.40	55.43	1,020.15	41.90	1,149.24	54.91	-12.0%	-0.9%
5	16,660	1,423.94	89.75	1,155.65	56.40	1,408.45	88.55	-18.8%	-1.1%
6	5,482	1,624.69	49.60	1,420.43	90.48	1,623.83	28.57	-12.6%	-0.1%
7	12,670	1,940.66	88.25	1,689.03	91.58	1,878.85	110.99	-13.0%	-3.2%
8	16,340	2,614.84	325.28	2,164.81	217.58	2,331.64	192.59	-17.2%	-10.8%
9	8,012	3,787.96	402.86	3,290.82	446.96	3,300.09	422.25	-13.1%	-12.9%
10	11,247	9,159.61	7,220.26	8,581.21	6,044.45	8,412.53	5,951.34	-6.3%	-8.2%
Total	**128,849**	**2,302.18**	**3,272.54**	**1,888.13**	**2,854.72**	**2,121.55**	**2,797.30**	**-18.0%**	**-7.8%**
GINI		**0.467**		**0.481**		**0.433**			

Notes: Calculation using personal income of the economically active population aged 15–64. No lockdown refers to work income before the pandemic. With Lockdown denotes the work income in May 2020. Lockdown with COVID-19 Aid adds to the work income of May 2020 the emergency support of BRL 600 per person paid by the Brazilian government. Values are in BRL, and weighted for population size.
Source: Author's own estimates, based on PNAD COVID19.

As shown in the table 1, lockdown increased income inequality within Brazilian society (Gini coefficient rose from 0.467 to 0.481) and reduced the average monthly (work) income of the population by 18 percent (from BRL 2,320.18 to BRL 1,888.13). It is worth mentioning that all social classes were affected by this income reduction. However, in relative terms, it is the bottom decile who have suffered the greatest losses. The average income of this group —which was BRL 389.07 in the period pre-lockdown —decreased to 0 in May 2020; in other words, around 8.5 million people have lost their entire work income during the course of the pandemic.

PNAD COVID19 reports that 68 million Brazilian households (38.7 percent) have benefited from COVID-19 Emergency Aid. Therefore, as shown in Table 1, this financial support has helped to mitigate the economic losses induced by lockdown and has made all the income deciles better off than they would otherwise be. However, the deciles in the center of the income distribution (fourth, fifth, and sixth) enjoyed the greatest benefit in relative terms: the (average) income including also the emergency aid of the fourth decile, for example, was only 0.9 percent lower than the value pre-coronavirus. The second income decile has experienced the highest percentage loss of income meanwhile: between earnings and COVID-19 emergency aid, this group had an average income of BRL 744.20 in May 2020, which is 15.2 percent lower than the equivalent figure pre-pandemic (BRL 878.07).

6 Conclusion

Using data from a recently published (national) representative phone survey, this paper is the first to calculate the impact of the COVID-19-related lockdown policies on employment status and income levels in Brazil. Linking the socioeconomic variables of 349,306 individuals across 193,662 households before and during the imposed social-distancing measures (May 2020), this paper found that home office is a significant option only for the more advantaged sections of society. For the bottom deciles vis-à-vis income distribution, the chance to work from home remains a distant dream.

With the pandemic, 18.8 percent of the employed population in Brazil (around 15.7 million workers) have been temporarily absent from their professional activities and 56.6 percent of them have completely lost their work income. This reduction in employment has generated a fall of 18 percent in the average work income, with more significant losses for the poorest sectors of the population: the average work income of the lowest income decile decreased from BRL 389.07 to 0 and for the second decile the reduction has been 70.2 percent (from BRL 878.08 to BRL 262.06). Informal workers have been doubly economically burdened during the pandemic, since they have a greater probability of being absent from their job, and —if out of work —they are more likely to completely lose their work income.

In addition, this paper has addressed the importance of state interventions to mitigate the negative impact of social-distancing measures on the socioeconomic environment of the domestic population. The COVID-19 Emergency Aid implemented by the Brazilian (federal) government has compensated—at least in part—for the income losses due to the enforced lockdown policies, increasing the average income from BRL 1,888.13 to BRL 2,121.55. However, this value is still 7.8 percent lower than the average work income amount pre-coronavirus.

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