Covid-19: Impact on income inequality in India

Even as global inequality was falling, income inequality in India increased during 1990-2019. With the occurrence of Covid-19, the trend of increasing income inequality in the country is expected to not only continue but worsen. Analysing data from the Consumer Pyramids Households Survey, this article shows that inequality has risen sharply during the pandemic, with lower income households having experienced a larger decline in earnings.

Economic growth, as well as the distribution of income, have been severely affected in India by the Covid-19 pandemic. Evidence shows that the long-run decline in global income inequality (weighted for population) since the 1990s has recently been reversed *solely* due to the economic contraction of India's national income (Dhingra and Ghatak 2021, Ferreira 2021). But, even as global inequality was falling, income inequality in India increased between 1990 and 2019. World Inequality Database (WID) documents this rise in inequality, with the share in the national income of the top 1% of the population going up from 11% in 1990 to 21% in 2019 (Yang 2020). Further, pandemics have been shown to lead to worsening inequality. A study using a sample of 64 countries and five major pandemics of this century (much smaller in magnitude than Covid-19), finds that the income shares of the top deciles increase and that of the bottom decile decline after a pandemic (Furceri *et al.* 2021).

Consequently, with the occurrence of the Covid-19 pandemic, the trend of increasing income inequality in India is expected to not only continue, but worsen. Moreover, while the immediate, short-term effect on income inequality may depend on factors such as the role of the State in supporting the vulnerable sections of the society through suitable policies, the long-term effects of the pandemic have been shown to be more predictable, in terms of lesser equity and social mobility (Hill and Narayan 2020)

Documenting the impact of Covid-19 on household and individual income

In a recent study, we document the impact of the Covid-19 pandemic and the subsequent containment measures, on household and individual incomes in India, through an 'event study model' (Azim Premji University, 2021). We estimate income losses during the lockdown months[1] and the subsequent recovery in the post-lockdown period. The data for the study comes from the income module of the Consumer Pyramids Households Survey (CPHS), released by the Centre for Monitoring Indian Economy (CMIE)[2].

We report our results in terms of seasonally adjusted per capita real household incomes. The rationale behind making these seasonal adjustments[3] is to account for the monthly differences in income patterns, particularly in the rural areas[4].

In order to estimate the causal impact of the pandemic on household incomes, it is important to consider that different households are differently equipped to weather the crisis – resilience varies with occupation, caste, location, and many other factors. We thus perform an 'event study regression' to measure the extent of income changes, while controlling for such observed and unobserved household characteristics that do not change in this period but that may affect the ability to withstand the shock ('fixed effects'[5]). This helps us isolate the impact of the pandemic on incomes. Our variable of interest is seasonally adjusted per capita monthly household income in constant terms. We estimate the impact of the event (the start of the pandemic, and the subsequent lockdown) on the above income variable, factoring in fixed effects.

Our model assesses the impact by evaluating the movement of the outcome variable in the pre and post time period of the event, while controlling for other time-invariant characteristics of households. We build our model around the month of March 2020, which was the month in which the lockdown was first imposed, and report the impact as a proportionate change in the per capita household income vis-à-vis February 2020. We report results for rural and urban sectors separately, and also for different deciles[6] within these sectors. We use the term 'pre-Covid-19' to refer to July 2019-February 2020, and 'Covid-19' for March-October 2020. The selection of the pre-Covid period (eight months) was dictated by the availability of data for the Covid period (eight months) at the time of the analysis.

Incomes declined across the distribution

The entire distribution of incomes shifted to the left as all groups experienced a decline in incomes (Figure 1). We arrange households from lowest to highest incomes and group them into clusters of Rs. 1,000 based on their seasonally adjusted average per-capita monthly income in the pre-Covid-19 and the Covid-19 months. We find that the percentage of households that have an average monthly income below Rs. 4,000 per capita (for a typical family of four this is equivalent to Rs. 16,000) in both rural and urban areas increased in the Covid months – from roughly 50% in pre-Covid-19 period to close to 65% during the Covid-19 period in the rural sector – while it declined for all incomes groupings with income higher than Rs. 4,000 per capita per month.

Figure 1. Rural (top panel) and urban (bottom panel) per capita income distribution (Rs.), before and during Covid-19 period

Rural Per Capita Income Categories

Urban Per Capita Income Categories
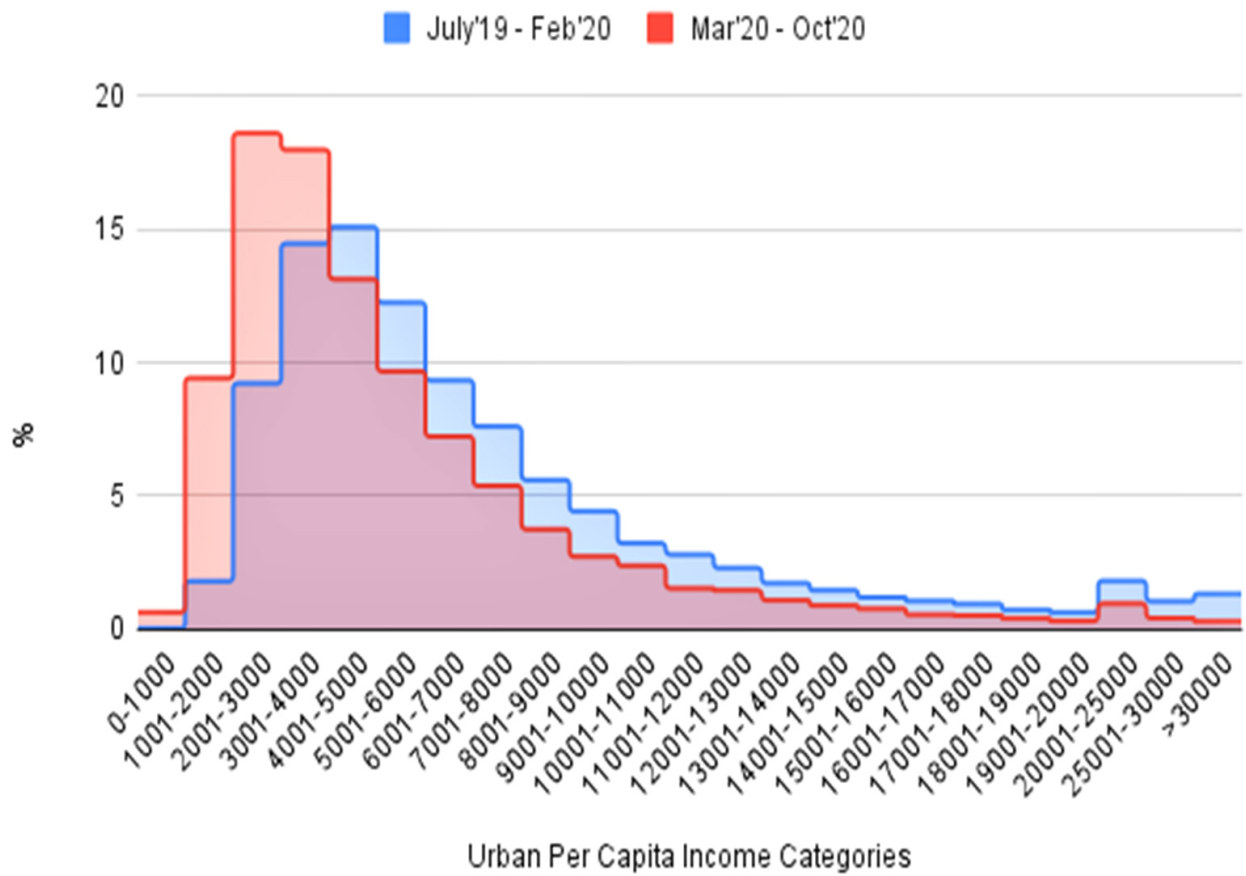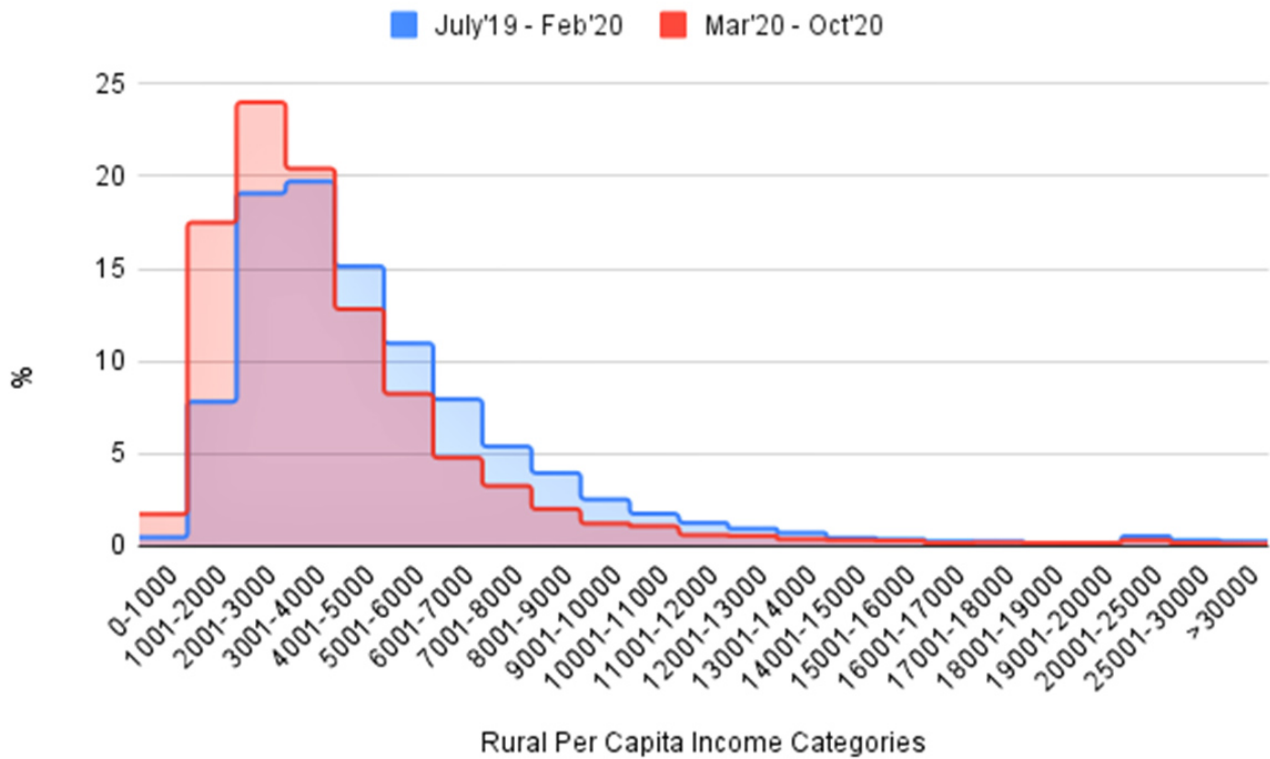
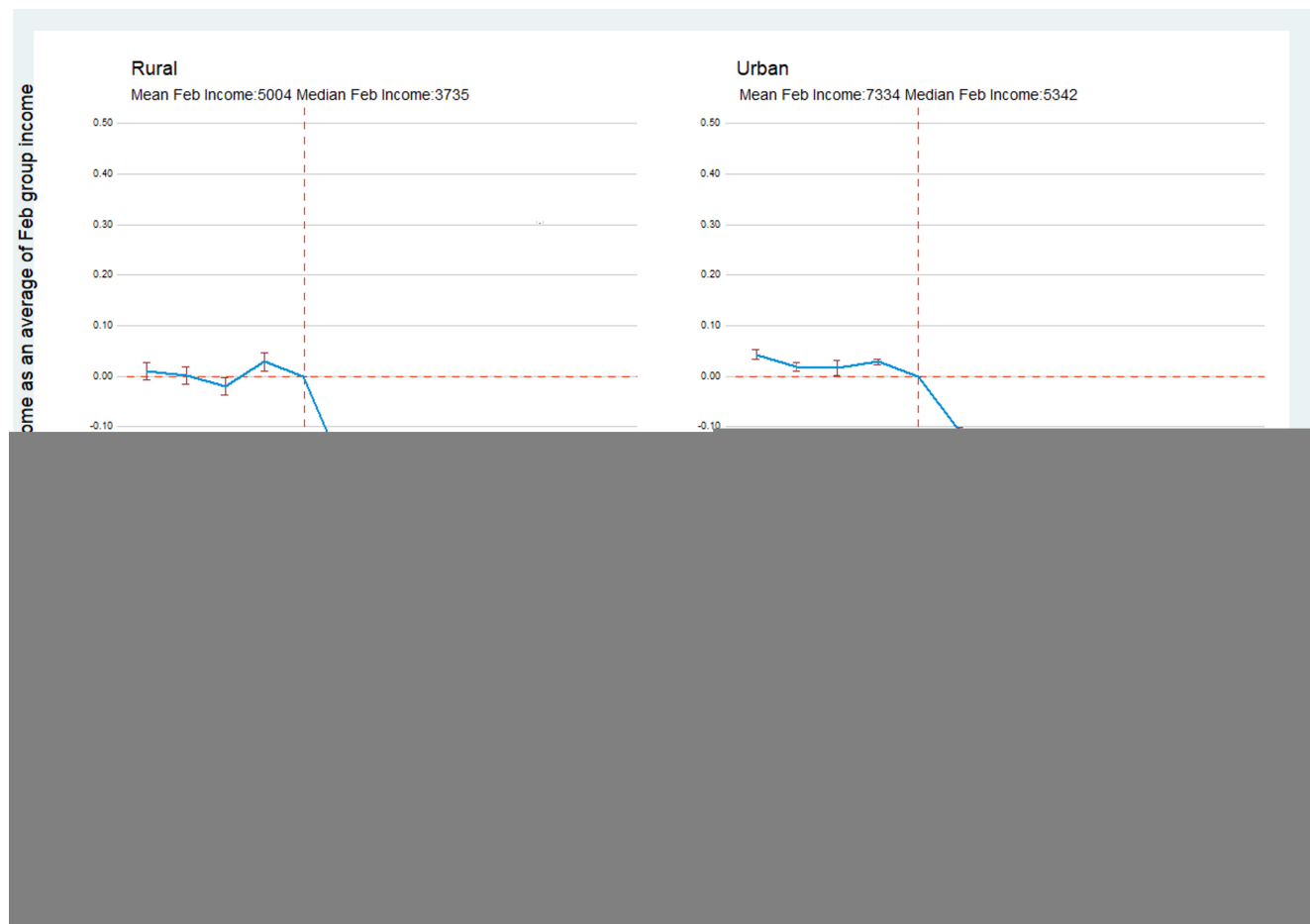*Source: Authors' calculations based on CMIE-CPHS data.*

Notes: (i) Only households for which income data are reported in the survey in all the pre-Covid-19 months (July 2019-February 2020) are used to estimate the pre-Covid-19 income distribution. And similarly, only households for which income data is reported in all the Covid-19 months (March 2020-October 2020) are used to estimate the Covid-19 income distribution.

Immediate drop in incomes due to pandemic was more drastic for urban sector

We find that the pandemic and the subsequent lockdown caused a 47% decline in the average seasonally adjusted per capita real household income in April 2020 relative to February 2020 (42% in rural, and 53% in urban areas) (Figure 2).

Figure 2. Rural and urban income decline and recovery

Source: Authors' calculations based on CMIE-CPHS.

As expected, after the relaxation of the national lockdown restrictions, incomes started recovering – albeit partially. Income levels in both the rural and urban sectors vis-à-vis February 2020 started recovering from May and recovered strongly till June 2020, after which recovery slowed down significantly till August 2020, and thereafter, recovery stagnated till October 2020. In October 2020, income levels were around 16-18% below February 2020 levels, in both rural and urban areas.

Bottom deciles experienced larger declines, but recovery was slower among top deciles

Next, we analyse the decline in income for each decile. Decile groups are defined in each month separately, on the basis of incomes in that particular month[7]. On average, the bottom 20% of rural households in April 2020 did not earn any income due to the lockdown (Figure 3). After seven months – in October 2020, the average income of the bottom decile was 15%-20% lower than the bottom decile's average income in February 2020. As can be seen in Figure 3, the difference in the average incomes between February and April was the largest for the bottom decile, and this difference became smaller for the higher deciles. The pattern of this differential impact by deciles is evident even among the urban households.

Figure 3. Impact of Covid-19 on monthly incomes in rural (top panel) and urban (bottom panel) areas, by income deciles
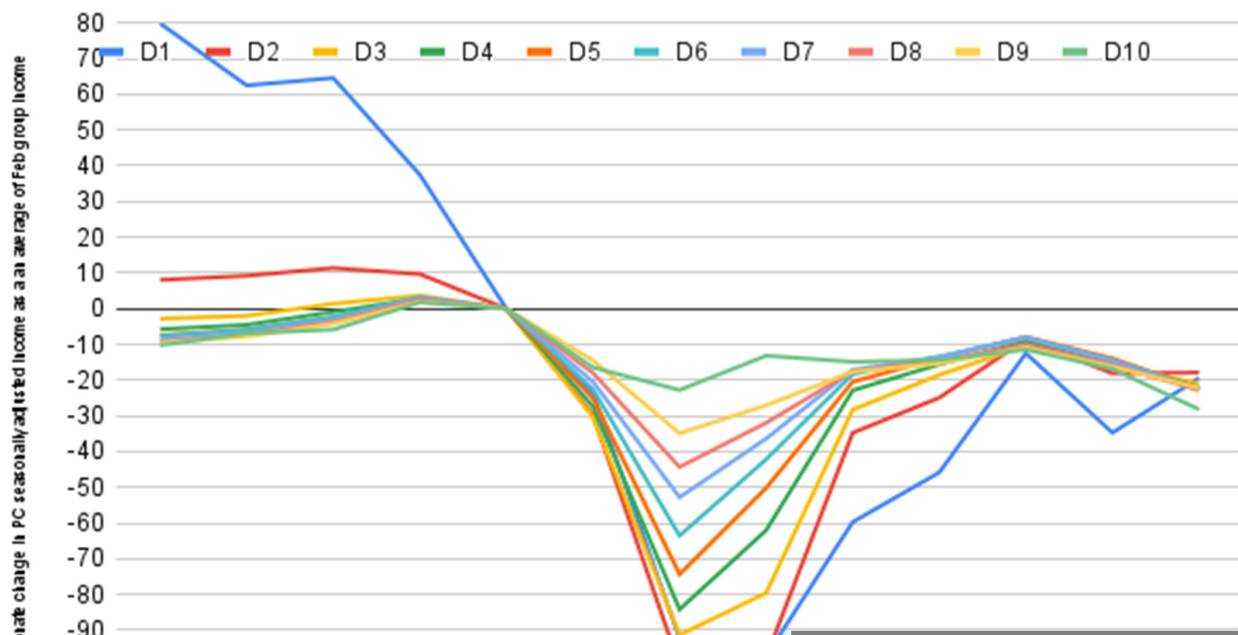
Source: Authors' calculations based on CMIE-CPHS.

Notes: Change in monthly incomes is reported relative to incomes in February 2020.

The average income of the top decile dropped to a much lesser extent initially, but the recovery from the decline was very slow[8]. The average incomes for the top decile in April 2020, in both the rural and the urban sector, were 20%-25% lower than the top decile's average income in February. However, even after seven months the recovery was minimal – the average income for the top decile in October 2020 remained close to 20% lower than the average income for the top decile in February 2020. And note, these are estimates after controlling for household characteristics.

A possible reason for the slower recovery in the top decile is the nature of employment. The households belonging to the top decile are more likely to have individuals who work as permanent salaried workers. If they lose jobs, finding jobs with the same salary is often difficult.

Concluding remarks

Our analysis establishes that inequality increased sharply during the pandemic, and lower income households are likely to have experienced a larger decline in earnings. It is also worth noting that incomes were already on a downward trend prior to the Covid-19 shock,

possibly due to the slowdown of 2019.This has led to an increase in food insecurity, hunger, and indebtedness for a significant proportion of the population as documented by several other household surveys (Azim Premji University, 2021).

As the pandemic continues to rage, with each subsequent wave, the impacts are likely to persist in the longer term. In light of these long-term implications of the crisis we believe that our results offer crucial documentation to facilitate the formulation and implementation of policy measures to support households, and ensure a minimum standard of well-being in these unprecedented times.

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Notes:

1. March-May 2020, with April 2020 being the only entire month under complete nationwide lockdown.
2. CMIE-CPHS is the only source of nationally-representative household survey data for the year 2020. However, there has been some debate recently over its representativeness. For instance, Drèze and Somanchi (2021) argue that due to the manner in which the data are collected, the survey underrepresents the poorest households and is biased towards better-off households.
3. Seasonality adjustment factors for each month are estimated by calculating the average deviation in monthly incomes from the trendline during the 2017-2019 period.
4. One typically expects rural incomes to be higher around the months of March and October, reflecting the raised farm incomes from harvesting of the crops.
5. Fixed effects control for time-invariant unobserved individual characteristics.
6. A decile measure ranks and divides the dataset into 10 equal parts such that if values of consumption are listed in ascending order, the bottom decile would refer to the bottom 10% values in terms of consumption.
7. Due to the dynamic nature in which decile groups are defined, we do not follow the same set of people over time. The composition of households within any decile will change from month to month due to change in incomes of households.
8. Note that household surveys typically are unable to capture incomes of the rich accurately, both due to non-response, as well as under-reporting. The average monthly household income for the top 5% in CMIE-CPHS is only approximately Rs. 80,000. Hence, our results are unlikely to accurately capture the impact of the pandemic on the upper income households of the country.

Further Reading

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- Furceri, D, P Loungani, JD Ostry and P Pizzuto (2021), 'Will COVID-19 Affect Inequality? Evidence from Past Pandemics', IMF Working paper No. 2021/27.
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