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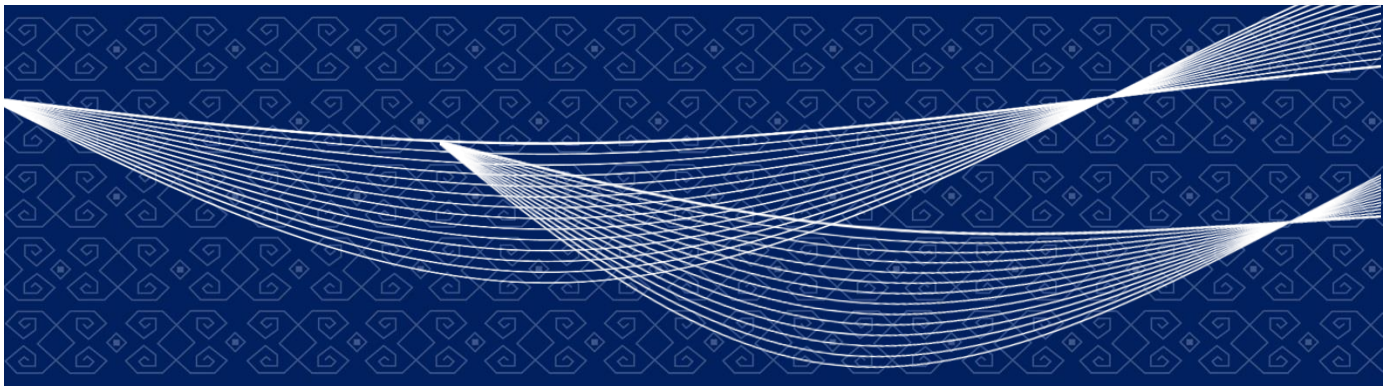

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**WORKING PAPER**

# A THE IMPACT OF COVID-19 LOCKDOWNS ON HOUSEHOLD INCOME, CONSUMPTION, AND EXPECTATION: EVIDENCE FROM HIGH

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**Abstract**

We investigate the causal impact of COVID-19, through lockdowns, on household income, consumption, and expectations in Indonesia, using high frequency data from the monthly Bank Indonesia consumer survey with more than 176,000 respondents. We find that COVID-19 lockdown has a large and significant negative impact on households' income and consumption. Moreover, COVID-19 lockdown also negatively affects expected income. This study also finds that households try to smooth consumption in the face of declining income, resulting in a significant increase in the budget allocation for consumption while reducing the shares of debt installments and savings. The impact of lockdown on households is also heterogeneous by expenditure levels, regions, and level of education. These findings have important policy implications to cushion the pandemic's impact on vulnerable households and ensure a more inclusive recovery.

**Keywords:** COVID-19, households, income, consumption, expectation

JEL Classifications: C83, D14, D84, E21, E22

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## Introduction

### 1.1 Background

The COVID-19 pandemic, which started in China in December 2019, caught everyone by surprise. Countries, firms, and individuals all grapple adjusting to a new reality where close physical interactions could invoke health hazards that may be deadly. Consequently, expectations about a rosy economic performance from 2020 onwards just before the pandemic were soon shuttered as the coronavirus outbreak continues.

Assessing the economic impact of the pandemic on countries or firms is relatively straightforward as relevant indicators are available regularly and relatively frequently, such as monthly or quarterly. Relevant indicators for households, however, are generally available less frequently. In many countries, household welfare indicators are commonly collected once a year through household surveys. Only a few developed countries conduct household surveys frequently, such as the monthly Current Population Survey in the US, the Monthly Population Survey in Australia, or the monthly Understanding Society COVID-19 survey in the UK (Crossley et al., 2021). Hence, it is generally challenging to understand the dynamics of COVID-19 impact on household welfare, especially in developing countries.

Indonesia, the world's largest archipelagic country and the fourth most populous economy, recorded the first COVID-19 positive case in early March 2020. Since then, the number of cases escalated, reaching around 4 million cumulated positive cases by the end of August 2021, with more than 130 thousand deaths recorded.[1] Like many other countries in the world, Indonesia also suffers a severe economic impact from the COVID-19 pandemic. The economy contracted by 2.1% in 2020, causing the unemployment rate to increase from 5.2% in August 2019 to 7.1% in August 2020. Despite the massive social protection program launched by the government to mitigate the social impact of the pandemic, the poverty rate still increased from 9.2% in September 2019 to 10.2% in September 2020, implying additional 2.7 million new poor people in a year.

To contain the spread of the COVID-19 virus, the Government of Indonesia has introduced lockdown measures. These measures, along with fears of contracting COVID-19, have sharply reduced people's mobility. As a result, the economy contracted as economic activity declined significantly, following lower operations or even close-downs of factories, shops, distribution channels, transports, hotels, restaurants, etc.

The reductions in economic activities are followed by workers losing their jobs and/or facing wage cuts. This is reflected in the increase in the unemployment and poverty rates, which imply a reduction in people's welfare. However, the welfare impact of COVID-19 is heterogeneous as different groups of people are affected differently, and their ability to cope with the adverse impact is also diverse. In general, the effect is more prominent in the lower end of social and economic strata (UNICEF et al., 2021).

This study investigates the impact of the COVID-19 pandemic, through lockdowns, on household income, expected future income, expenditures, and budget allocation in Indonesia. It utilizes unique high-frequency data from Bank Indonesia's monthly Consumer Survey[2] from January 2018 to February 2021. The survey is conducted in the main cities located in 18 out of 34

[1] Further details, see: https://ourworldindata.org/covid-cases

[2] Bank Indonesia (BI) is the central bank of the Republic of Indonesia.

provinces in Indonesia. The data is not publicly available and has never been used for purposes other than measuring the Consumer Confidence Index in the past.[3]

The main results of this study can be summarized as follows. First, this study confirms that the COVID-19 pandemic has a large negative and significant impact on household income, leading to a significant reduction in durable goods spending. Second, to smooth consumption amid dwindling income, households significantly increase their budget allocation for consumption, leaving less for debt installments and savings. Third, the adverse shock lowers households' expectation of future income, albeit keeping their relatively optimistic outlook about its prospects. Fourth, this study echoes the previous findings (Adams-Prassl et al., 2020; Crossley et al., 2021; UNICEF et al., 2021) on the heterogeneous impact of COVID-19 on household income and expenditure. Lower-income households tend to be more severely affected than those with higher income. Similarly, households with lower education levels are also facing a more severe impact than those with higher education levels. Fifth, the pandemic impact is found to be more severe in the regions outside Java than in Java, the center of population and economic activity in Indonesia. This is mainly a result of the lack of infrastructure in the less developed regions outside Java, making them worse off when dealing with the pandemic and lockdowns.

The rest of the paper is organized as follows. Section two reviews studies on the social and economic impact of the COVID-19 pandemic in developed and developing countries, including Indonesia. Section three explains the data and empirical estimation strategy used in this study. Section four discusses our results and findings. Finally, section five provides the conclusion and policy implications.

### 1.2 Research Objectives

1. Examine the dynamics of households' income, expected future income, expenditures, and budget allocation in the time of COVID-19 pandemic.
2. Investigate the causal impact of COVID-19, through lockdowns, on household income, consumption, and expectations.

[3] For an illustration, see: https://www.bi.go.id/en/publikasi/ruang-media/news-release/Pages/sp_239121.aspx; https://www.bi.go.id/id/publikasi/laporan/Documents/SK-Maret-2021.pdf

# 1. Literature Review

## 2.1 Social-Economic Impact of COVID-19

This study relates to the fast-growing investigation of the social-economic impact of COVID-19. For example, based on a survey of 500 consumers in the US, Binder (2020) observes concerns about the effects of COVID-19 on the condition and well-being of the US economy. McKibbin and Fernando (2020) analyzes the impact of COVID-19 on global macroeconomic outcomes and financial markets, and suggests that the pandemic will hurt the global economy in the short run. The study asserts that less developed economies would tend to be better off than the more developed ones. Using a theoretical approach, Guerrieri et al. (2020) argues that the pandemic would hurt both the demand and supply sides of the economy, and the effects of COVID-19 on different sectors of the economy would be asymmetrical due to the sector's differences in characteristics. Other studies pointed at the potential pandemic impact on industrial production. Ludvigson et al. (2020), for instance, projected a loss of industrial output by 20% in the US and a reduction in the service sector employment by around 39% due to the COVID-19 shock.

Our study is also linked to the literature on the COVID-19 impact on lockdown policies and people's mobility. Askitas et al. (2020), for example, using data from 135 countries explains the important role of differences in characteristics across places in affecting the effectiveness of lockdowns. It suggests that canceling public activities and gatherings would be more effective in limiting people's mobility than imposing workplace and school restrictions. Ferraresi et al. (2020) argue that institutional or political factors influence the decision to implement lockdowns and suggest that countries with low levels of development, lack of digital infrastructure, and significant degrees of decentralization are less likely to implement lockdowns.

## 2.2 Covid-19 Impact on Income and Consumption

This study particularly adds to the literature about the pandemic impact on income and consumption. Based on samples of US families, Han et al. (2020) argues that COVID-19 reduces income and worsens poverty, but government policies can minimize these impacts. The effects of the pandemic on income and consumption, however, are found to be heterogeneous across different individual characteristics (Adams-Prassl et al., 2020; Crossley et al., 2021; Baker et al., 2020; Dang and Nguyen, 2021). Chetty et al. (2020) shows that the pandemic reduces high-income individuals' spending in the US, especially in areas with higher intensity of COVID-19 cases. The reduction in spending is mainly associated with the loss of income and/or jobs due to the restriction policies, which is followed by falling revenues of firms that induce an economy-wide effect. Further, our study also relates to the literature on consumption smoothing behavior in the events of negative shocks to income. For example, Hirvonen et al. (2021) argues that food consumption in Addis Ababa, Ethiopia, may not be affected by job loss and/or reductions in income as consumers, at the very least, would try to maintain their consumption of food and other basic needs by way of reducing their other spending items.

Finally, our study fills the gap in the literature about the impact of the COVID-19 in Indonesia. While many studies have tried to understand the implications of COVID-19 in the country, most of these are not representative due to the lack of sample size and survey areas (UNICEF et al., 2021). Furthermore, existing studies about the impact of the pandemic on the economy are mostly descriptive, e.g. Sparrow et al. (2020) and Olivia et al. (2020), with some exceptions like Suryahadi et al. (2020), which empirically investigates the pandemic impact on

poverty in Indonesia. Therefore, evidence on the significance of the pandemic impact on household income, consumption, and expectation in Indonesia is still limited.

## 2. Data and Identification Strategy

This section describes our conceptual framework, primary data source, and the identification strategy used to estimate the impact of COVID-19 on household income, consumption, and expectation about the likely future income.

### 3.1 Key Predictions

Several testable implications follow from existing studies about the impact of lockdowns and COVID-19 on various economic indicators presented in Section 2. First, we would expect the government to impose lockdowns when observing a rising number of active COVID-19 cases. This would lead to income shocks on households due to mobility restrictions and lower economic activities, which prompt them to respond by smoothing consumption (Dutt and Padmanabhan, 2011). Therefore, households are expected to increase their share of income spent on non-durables and postpone their consumption of durables (Browning and Crossley, 2009). Consequently, one should expect households to reduce their share of income spent on savings and debt installments. However, these responses to lockdowns may vary on a different grouping of households based on the level of income, education, and region.

### 3.2 Data

We draw upon several data sources to analyze the association between people's mobility and COVID-19, through lockdowns, on income, consumption, and expectation. For the latter, we exploit the unique monthly data collected from the Bank Indonesia Consumer Survey (BI-CS) that is used specifically to measure the Consumer Confidence Index in Indonesia. The richness of this dataset allows us to gauge the extent to which our outcome variables of interest (i.e., changes in household income, consumption, expectation, and budget allocations) changed due to the pandemic.

#### A. Bank Indonesia Consumer Survey (BI-CS)

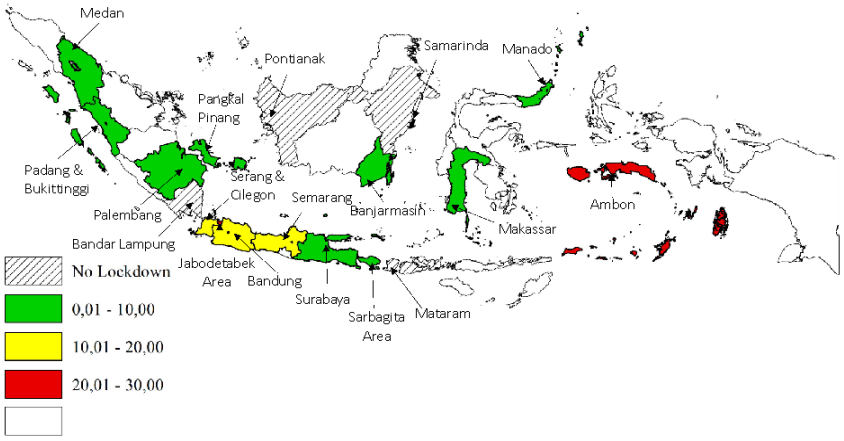
To analyze the effects of a shock, such as the lockdowns caused by the COVID-19 outbreak, on household income, consumption, and expectation, one ideally exploits data on socioeconomic indicators from household surveys. Unfortunately, such surveys in Indonesia are only done twice a year with considerable lags before publication and hence prohibits one from conducting a high frequency (monthly) data analysis on the impact of lockdowns on our outcome variables. This is where the monthly proprietary data from BI-CS comes in handy.

BI-CS is a monthly survey conducted by BI since 1999, aiming at capturing the consumer confidence, expectation, and financial conditions that are translated into several indices published monthly by BI. From 2007 onwards, around 4,600 households (represented by either the household

heads, spouses, or other adult household members) were interviewed monthly.[4] The sampling is done based on stratified random sampling method in the capital and big cities across 18 provinces; namely Jakarta, Bandung, Bodebek (Bogor, Depok, Bekasi), Semarang, Surabaya, Medan, Makassar, Bandar Lampung, Palembang, Banjarmasin, Padang, Pontianak, Samarinda, Manado, Denpasar, Mataram, Pangkal Pinang, Ambon, and Banten (Figure 1 and Figure 2 for the survey areas). The total population in these 18 provinces in 2020 is 222.5 million, almost 83% of the total population in Indonesia.[5]


Source: Authors' compilation

Figure 1 Survey Areas




Source: Authors' compilation

Figure 2 Lockdown Policies Across Survey Areas

[4] The sample in BI-CS data will be different in each survey. Therefore, we only have cross-sectional variation from the dataset.

[5] Data from Statistics Indonesia (2021). https://www.bps.go.id/indicator/12/1886/1/jumlah-penduduk-hasil-proyeksi-menurut-provinsi-dan-jenis-kelamin.html (accessed: 8 September 2021).

Due to COVID-19 outbreak considerations, BI shortened the survey questionnaire to minimize the interview time in April 2020. Only core questions required to measure Consumer Confidence Index were asked, including those on the general business condition, current income, income expectation, job availability, and consumption of durable goods. Questions on income allocations (for consumption, debt installment, and savings) were discarded between April and July 2020, except for respondents in Jakarta, West Java, and Makassar (South Sulawesi).

For the purpose of this study, we use responses to four questions from the survey for the period of January 2018 to February 2021 to create our outcome variables of interest. These are: (1) How has your income changed compared to six months ago?; (2) What is your expectation of future income six months from now?; (3) How is your consumption of durable goods today compared to six months ago?; and, (4) How many percentages of your income is allocated for consumption, debt installment/payment, and savings? Responses to the first three are ordinal, ranging from significantly decreased, slightly decreased, unchanged, slightly increased, and significantly increased. To construct our outcome variables, we convert these responses into discrete sequences ranging from -2 (denoting a significant decrease) to +2 (denoting a significant increase), with 0 representing the absence of changes. Respondents' characteristics on age, income level, educational attainment, and job category are used as covariates.

Table 1 Panel A shows the summary statistics of our outcome variables, divided into three sub-period: pre-2020 (January 2018-December 2019) to represent the pre-COVID-19 period, January 2020-February 2021 to represent the COVID-19 period, and the full sample. For the change in income relative to the six months before being surveyed, the pre-2020 mean for the change in income is 0.21, suggesting that households report a slight increase of income on average. During the pandemic, the mean declines to -0.43, implying households reporting a decrease in income on average. For the expected income in the six months after being surveyed, the mean is 0.50 in pre-2020 and declines to 0.26 during the pandemic period. This suggests that households remain optimistic about their income prospects during the sample but with some indication of fading optimism. On the consumption of durable goods (e.g., electronics, furniture, vehicles, and jewelry), the mean declines from 0.16 in pre-2020 to -0.24 afterward, indicating households cutting their consumption on durables during the pandemic period.

Data and hence the analysis for the different allocations of income represented only by observations from Jakarta, West Java, and South Sulawesi to ensure the inclusion of observations in April-July 2020, the crucial time for COVID-19 and lockdown implementations in the country. On average income is mostly allocated for consumption, with a share of 66.01% at the mean, followed by savings at 19.26% of income and debt installment at 14.73%. It is also evident that the consumption share of income increased during the pandemic relative to pre-2020, forcing downward adjustments in the allocations for savings and debt installments.

Table 1 Descriptive Statistics

| | Before 2020 | | | | Jan 2020 - Feb 2021 | | | | Full Period | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Panel A: Outcome Statistics** | mean | sd | min | max | mean | sd | min | max | mean | sd | min | max |
| Change in Income | 0.21 | 0.82 | -2.00 | 2.00 | -0.43 | 1.01 | -2.00 | 2.00 | -0.03 | 0.95 | -2.00 | 2.00 |
| Expected Future Income | 0.50 | 0.74 | -2.00 | 2.00 | 0.26 | 0.86 | -2.00 | 2.00 | 0.41 | 0.80 | -2.00 | 2.00 |
| Consumption for Durable Goods | 0.16 | 0.81 | -2.00 | 2.00 | -0.24 | 0.90 | -2.00 | 2.00 | 0.01 | 0.86 | -2.00 | 2.00 |
| Percentage of Consumption relative to Income (%) | 64.55 | 21.12 | 5.00 | 100.00 | 68.51 | 21.80 | 0.00 | 100.00 | 66.01 | 21.46 | 0.00 | 100.00 |
| Percentage of Debt Instalment relative to Income (%) | 15.03 | 17.74 | 0.00 | 90.00 | 14.23 | 18.30 | 0.00 | 90.00 | 14.73 | 17.96 | 0.00 | 90.00 |
| Percentage of Saving relative to Income (%) | 20.43 | 17.96 | 0.00 | 80.00 | 17.26 | 17.57 | 0.00 | 85.00 | 19.26 | 17.88 | 0.00 | 85.00 |
| | | | | | | | | | | | | |
| **Panel B: Main Independent Variable** | | | | | | | | | | | | |
| Dummy Lockdown | 0.00 | 0.00 | 0.00 | 0.00 | 0.32 | 0.47 | 0.00 | 1.00 | 0.12 | 0.32 | 0.00 | 1.00 |
| Length of Lockdown (days) | 0.00 | 0.00 | 0.00 | 0.00 | 7.55 | 11.96 | 0.00 | 31.00 | 2.78 | 8.12 | 0.00 | 31.00 |
| Number of Active Cases | 0.00 | 0.00 | 0.00 | 0.00 | 2782.13 | 5506.01 | 0.00 | 44527.54 | 1024.81 | 3601.11 | 0.00 | 44527.54 |
| | | | | | | | | | | | | |
| **Panel C: Control Variables** | | | | | | | | | | | | |
| Expected Future Economic Condition | 0.41 | 0.87 | -2.00 | 2.00 | 0.12 | 1.04 | -2.00 | 2.00 | 0.30 | 0.95 | -2.00 | 2.00 |
| Male | 0.46 | 0.50 | 0.00 | 1.00 | 0.45 | 0.50 | 0.00 | 1.00 | 0.46 | 0.50 | 0.00 | 1.00 |
| Female | 0.54 | 0.50 | 0.00 | 1.00 | 0.55 | 0.50 | 0.00 | 1.00 | 0.54 | 0.50 | 0.00 | 1.00 |
| Expenditure | 3.26 | 1.68 | 1.50 | 8.50 | 3.20 | 1.63 | 1.50 | 8.50 | 3.24 | 1.66 | 1.50 | 8.50 |
| Age | 36.48 | 11.08 | 25.00 | 65.00 | 36.61 | 11.39 | 25.00 | 65.00 | 36.53 | 11.20 | 25.00 | 65.00 |
| High School | 0.65 | 0.48 | 0.00 | 1.00 | 0.66 | 0.47 | 0.00 | 1.00 | 0.66 | 0.48 | 0.00 | 1.00 |
| Diploma/Bachelor | 0.33 | 0.47 | 0.00 | 1.00 | 0.32 | 0.47 | 0.00 | 1.00 | 0.32 | 0.47 | 0.00 | 1.00 |
| Master/PhD | 0.02 | 0.14 | 0.00 | 1.00 | 0.02 | 0.14 | 0.00 | 1.00 | 0.02 | 0.14 | 0.00 | 1.00 |
| Formal | 0.36 | 0.48 | 0.00 | 1.00 | 0.35 | 0.48 | 0.00 | 1.00 | 0.36 | 0.48 | 0.00 | 1.00 |
| Informal | 0.64 | 0.48 | 0.00 | 1.00 | 0.65 | 0.48 | 0.00 | 1.00 | 0.64 | 0.48 | 0.00 | 1.00 |
| | | | | | | | | | | | | |
| Observations | 111,770 | | | | 65,181 | | | | 176,951 | | | |

Source: Authors' Calculation

Note: Percentage of consumption relative to income, percentage of debt instalment relative to income, and percentage of saving relative to income responses only use data in Jakarta, Jawa Barat, and Makassar

## B. Google Mobility Index

To investigate how lockdowns affect people's mobility, we rely on google mobility data to capture variations of people's mobility in different places in Indonesia. In early March 2020, Google started publishing data documenting visit frequencies of different categories of places: Retail, Groceries, Parks, Transit, Workplaces, and Residential. The data are reported as to how visitors spent time in each area relative to the median value from 3 January 2020 to 6 February 2020 (in percentage).[6] To fit the purpose of this study, the daily mobility data is transformed into monthly averages for every province.

## C. Indonesian COVID-19 and Lockdown Data

The Indonesian COVID-19 data used in this study are obtained from Indonesian National Board for Disaster Management (*Badan Nasional Penanggulangan Bencana*, BNPB),[7] which contains daily active, death, and recovered COVID-19 cases across provinces in Indonesia. Following the approach in Coibion et al. (2020), data on total deaths and average active cases per month are considered as instruments in this study.

Lockdowns in Indonesia, commonly known as *Pembatasan Sosial Skala Besar* (PSBB) or Big Scale Social Restriction, are authorized at province levels. For example, Jakarta was first to implement PSBB on 10 April 2020, which was initially planned for two weeks but ended up continuing for months. Some provinces introduced a more relaxed version of lockdowns called PSBB *transisi*, which is supposed to be a transition from PSBB to fully opening up. On the other hand, some other provinces (e.g., Lampung) have never implemented lockdowns/PSBB at all. In early 2021, many provinces implemented the *Pemberlakuan Pembatasan Kegiatan Masyarakat* (PPKM) which is essentially another term for PSBB implemented at the district level (See Figure B.2 in Appendix B).

As there is no official compiler of lockdowns history in Indonesia and local regulations regarding provincial lockdowns are mostly not available to the public, we compile the data for lockdowns by summarizing online news about lockdowns for each province.[8] Two variables are created from this process: a dummy that indicates whether a province is under lockdowns in a given month and the number of days a province is under lockdowns for a given month. The dummy for provincial lockdowns is used in our baseline estimation, while the duration of lockdowns in a month is used as an alternative in our robustness exercise.

Figure B.2 displays the variation of lockdowns across the area covered by BI-CS. All provinces in Java, except for East Java, have implemented lockdowns for, on average, between 10 to 20 days each month throughout our sample of observations. Other provinces (i.e., North Sumatra, West Sumatra, South Sumatra, Bangka Belitung, East Java, South Kalimantan, Bali, South Sulawesi, and North Sulawesi) have an average duration of lockdowns between 1 to 10 each month. Maluku lockdowns for the whole sample, implying that once implemented, lockdowns

[6] A more detailed description of the data can be accessed from https://www.google.com/covid19/mobility/.

[7] The information can be accessed from https://bnpb-inacovid19.hub.arcgis.com/search?collection=Dataset

[8] This was done by searching PSBB news for each province per month from March 2020 to February 2021, for example "PSBB Jawa Timur Juni 2020". We also corroborate our search with the information retrieved from https://indonesien.ahk.de/en/infocenter/news/news-details/covid-19-developments-in-indonesia that compiles all the information about COVID-19 development in Indonesia.

have never been lifted during our sample period. Several other provinces, i.e., Lampung, West Kalimantan, East Kalimantan, and West Nusa Tenggara have not implemented a lockdown since April 2020. These variations allow for the estimation of the impact of lockdowns on our outcome variables.

Panel B in Table C.1 provides the key statistics for our main independent variables. During the span of January 2020-February 2021, about 32% of the provinces sampled in this study implemented lockdowns. The standard deviation, however, is rather large, suggesting considerable variations in lockdowns implementation across time and provinces. The average duration of lockdowns is about 7.55 days, also with a relatively large standard deviation of 11.96. The mean of the monthly active cases is 2,782.13 with a standard deviation of 5,506.01, suggesting significant variations in the number of active cases that make it a relevant instrument for the purpose of this study.

## 3.3. Identification Strategy

The primary research question in this study is to estimate the causal effect of the COVID-19 shock, through lockdowns, on the outcome variables of interest, namely: household income, expectations, consumption, and budget allocations. To estimate the causal effect of lockdown on the outcomes, we must satisfy several identification issues. First, lockdowns should not be endogenously determined by some other certain factors. For example, the decision to implement lockdowns by some local governments may be endogenous to local characteristics (such as awareness about COVID-19, health facilities, and local culture). Second, due to concerns about COVID-19, households may self-isolate voluntarily even without the government implementing lockdowns, which in turn may affect their income and consumption, and hence creating bias in the estimation of the lockdowns impact on our outcome variables. If these concerns are valid, then we would have a problem of omitted variable bias and endogeneity issues.

Finally, there may also be concerns about the enforcement of lockdown policies in their implementation. Technically, the government has introduced a number of lockdown policies over 2020-2021. The effectiveness, however, may not turn out to be what the government would expect. For example, the government instructed companies and businesses to reduce the number of workers on-site to certain proportions, but many ceased to comply.[9] In addition, there may also be a selection problem in the way lockdowns are proxied in our study. Thus, using lockdowns to estimate the impact of COVID-19 on our outcome variables may suffer from measurement errors.

To mitigate these identification concerns, we employ a two-stage least squares (2SLS) regression method with the following specifications:

$$Lockdown_{ipt} = \alpha + \beta_1 ActiveCase_{ipt} + X'_{ipt} + \theta_p + \gamma_t + \epsilon_{ipt} \quad (1)$$

$$Y_{ipt} = \alpha + \beta_1 \widehat{Lockdown}_{ipt} + X'_{ipt} + \theta_p + \gamma_t + \epsilon_{ipt} \quad (2)$$

Where $i$ index households in province $p$ and month $t$. $Y$ is the outcome variable. Our main variable of interest is $Lockdown_{ipt}$, a dummy variable that takes the value of one if a province $p$, where household $i$ resides, is being in a lockdown at any time $t$, and zero otherwise.[10]

[9] The Jakarta Post reports that almost half of the manufacturers did not comply with the COVID-19 regulations. https://www.thejakartapost.com/news/2020/11/05/only-half-of-manufacturers-comply-with-covid-19-reporting-requirement.html

[10] In our robustness analysis, we also use the length of lockdown (in days) as an alternative independent variable. The results for the alternative independent variable suggest a similar finding with what we obtain from using dummy lockdown. See Table C.4 for further information.

$ActiveCase_{ipt}$ is the number of active COVID-19 cases in province *p* at time *t*, which is used as the instrumental variable in this study, following Coibion et al. (2020). The vector $X$ includes a range of households' characteristics known to influence our outcome variables, such as expected future economic condition, sex, expenditure, age, level of education, and sector dummies (i.e., formal versus informal) where the respondents' works might affect our dependent variable. We include $\theta_p$ to control for unobserved time-invariant province characteristics that might affect the implementation of lockdowns and $\gamma_t$ to account for the time effect. Because the variation in lockdown policies is at a province level, we cluster the standard errors also at this level. Due to the characteristics of the consumer survey used in this study, where different household respondents were included in each wave of the survey, we can only estimate equations (1) and (2) using repeated cross-sectional data, implying that the results of our estimations are purely cross-sectional variations.

To cope with the potential identification issues, a *lockdown* policy is instrumented by $ActiveCase$, following the approach in Coibion et al. (2020). For $ActiveCase$ to be a good instrument, we need to ensure that it is statistically important in explaining changes in the probability of lockdown implementations. Health authorities in Indonesia and many other countries have used the number of active cases as a primary indicator to decide whether to implement lockdowns or not (Atalan, 2020; Coibion et al., 2020). Thus, the number of active cases is expected to have a positive association with lockdowns, whereby a higher incidence of active cases increases the probability of adopting lockdown measures.

Further, the number of active cases should affect the outcomes only through lockdowns to satisfy the exclusion restriction assumption. First, the number of active cases might not directly affect people's mobility and business activity as the two would tend to behave normally before the implementation of lockdowns. Therefore, the number of active cases would only affect the economy due to the lockdowns it invokes. Second, the number of active cases itself is mainly random or determined by the spread of coronavirus, which we assume as exogenous. In addition, we also control for a province dummy and a battery of control variables in equation (1) to account for the province-specific characteristics (e.g., unobserved province testing capacity) and other factors that may explain the dynamics in lockdown policies to ensure the validity of the number of active cases as an instrument for lockdown policies.

Table 2 First Stage Regression

| Dependent Variable: | (1) Dummy Lockdown | (3) Dummy Lockdown |
|---|---|---|
| Number of Active Cases | 0.044*** | 0.043*** |
| | (0.012) | (0.012) |
| Sector Dummies | No | Yes |
| Month Dummies | Yes | Yes |
| Province Dummies | Yes | Yes |
| Observation | 176,951 | 176,951 |
| Adj. R-squared | 0.351 | 0.363 |

Source: Authors' Calculation

Notes: Robust standard errors clustered at province level in parentheses. The

instrument here is the number of active cases (in 000). The set of covariates are the expectations of business conditions in the future, sex, total expenditure, age, education level, and the dummy for the formal sector. Dummy lockdown is instrumented by the number of active cases. * p < 0.1, ** p < 0.05, *** p < 0.0

Table 2 provides the results from our first stage regression following equation (1), which validates the use of the number of active cases as an instrument for our main independent variable. We can see the relationship from the first stage is positive and statistically significant at $\alpha = 1\%$. An increase in the number of active cases by a thousand increases the probability of lockdown policies by 4.4%. Adding some relevant covariates and sector dummies (the last column of Table 2) increases the adjusted R-squared in our first stage. This adequately suggests statistical evidence for the number of active cases as a good instrument for the variation of lockdowns in Indonesia.

Table 3 Exclusion Restriction Checks

| Dependent Variable: | (1) Income | (2) Expected Income | (3) Durable Goods | (4) Consumption Share | (5) Debt Share | (6) Savings Share |
|---|---|---|---|---|---|---|
| Number of Active Cases (in 000) | -0.115 | 0.010 | -0.033 | -3.384 | -1.082 | 4.467 |
| | (0.039) | (0.014) | (0.030) | (1.415) | (0.369) | (1.049) |
| Sector Dummies | Yes | Yes | Yes | Yes | Yes | Yes |
| Month Dummies | Yes | Yes | Yes | Yes | Yes | Yes |
| Province Dummies | Yes | Yes | Yes | Yes | Yes | Yes |
| Observation | 22,799 | 22,799 | 22,799 | 20,399 | 20,399 | 20,399 |
| Adj. R-squared | 0.028 | 0.028 | 0.010 | 0.067 | 0.058 | 0.149 |

Source: Authors' Calculation

Notes: Robust standard errors clustered at province level in parentheses. The independent variable is the number of active cases (in 000). The set of covariates are the expectations of business conditions in the future, sex, total expenditure, age, education level, and the dummy for the formal sector. Samples are only areas that never had a lockdown policies throughout the period of the study: Lampung, West Kalimantan, and East Kalimantan. The average active cases in these provinces between January 2020 and February 2021: 818.8. ** p < 0.05, *** p < 0.

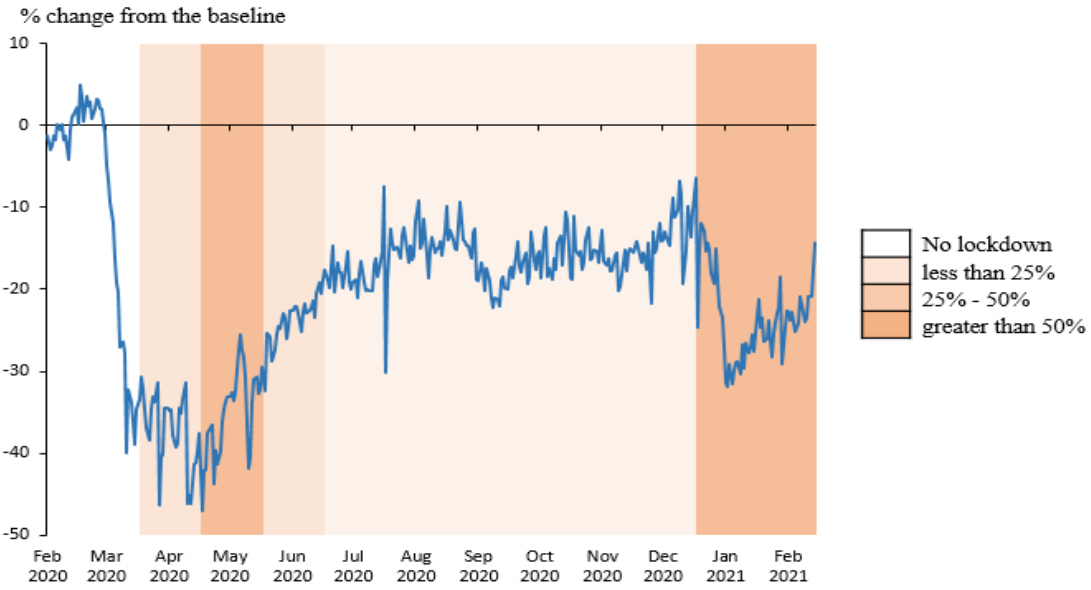
We also explore the validity of the exclusion restriction assumption in our estimation strategy. As active cases might potentially affect outcomes through other channels in addition to lockdowns, thus it may violate the exclusion restriction assumption. To ensure that active cases only affect our outcome variables through the variation of lockdown policies, we select the sample that never implemented lockdowns (e.g., Lampung, West Kalimantan, and East Kalimantan). We then test the correlation between active cases and our dependent variable. We expect that active cases in areas that had never implemented lockdowns would not affect our dependent variable. Therefore, if this is true, then we can say that our exclusion restriction assumption is satisfied. Table 3 depicts the results of our test. We can see that none of our dependent variables are affected by the variation in the active cases in areas that had never implemented lockdowns. Therefore, we can argue that active cases can only affect our dependent variable only through the implementation of lockdowns.

## 3. The Impact of COVID-19 on Households in Indonesia

This section discusses the relationships between our outcome variables and lockdowns due to COVID-19 outbreaks. The section begins by qualitatively discussing the dynamics of household reactions to lockdowns in terms of mobility, earnings, consumption, expectations, and budget allocations. We then continue to analyze the impact more formally based on regression analysis.

### 4.1. The Dynamics of COVID-19 Impact on Households

Indonesia was still considered safe when the first COVID-19 infection was detected in early March 2020. Along with the government policy to promote tourism in the country, the people's mobility index outside residential areas briefly rose above its January 2020 level (Figure 3). The mobility index started to dip below its pre-pandemic level in mid-March after the total number of infections crossed the 100 mark and reached its bottom in April as the government implemented the large-scale social restriction (PSBB)—the lockdown in short. Since then, different degrees and intensities of lockdowns or mobility restrictions have been observed, depending on how the number of active cases evolves in different areas of the country. As a result, the level of people's mobility outside residential areas has hardly ever come back to where it was before the COVID-19 crisis started.




Source: Authors' Calculation

Figure 3 Average mobility outside the residential areas

Note: The colors indicate the monthly intensity of lockdowns implemented in the country. Starting from less than 25% of the provinces declaring lockdown implementation, 25-50% of the provinces implementing lockdowns, to more than 50% of provinces are in lockdowns. Source: Authors' calculation

To get a better gauge of the dynamics in people's mobility outside residential areas, we conduct an event analysis to see how mobility evolves around lockdown implementations.

To evaluate the effect of lockdowns on people's mobility, we conduct an event analysis following that of Clarke and Schythe (2020), with the following specification:

$$Mobility_{pt} = \alpha + \sum_{j=1}^{J} j_{pt} + \sum_{k=1}^{K} k_{pt} + \mu_p + \lambda_t + \delta X_{pt} + \varepsilon_{pt} \quad (3)$$

$Mobility_{pt}$ is the average of monthly Google's Mobility index outside residential areas, which include mobility in retail, grocery, parks, transit, and workplaces, in province *p* and month *t.* This is a slight modification from, for example, Coibion et al. (2020) that focus on the impact of COVID-19 only on retail mobility. Variables of interest are $Lag\ j$ and $Lead\ k$, which indicate dummies for months before and after a lockdown takes place in a province. For each $j$, $Lag\ j$indicates a value of 1 for each $j^{th}$ month before a lockdown begins and zero otherwise. For each *k*, $Lead\ k$ indicates a value of 1 for each $k^{th}$ month after a lockdown is completed, and zero otherwise. The coefficients for each of these dummies, all the $\beta_j$ and $\gamma_k$, show how much people's mobility in the period before/after lockdowns differ from their mobility during the lockdown. Province $\mu_p$ and month $\lambda_t$ are the fixed effects included to capture the province and time-specific characteristics in the sample. Finally, $X_{pt}$ is a covariate representing the number of active cases for province *p* at time *t*, which serves as a determinant to people's mobility outside residential areas.

The determination of the maximum for both *j* and *k* is done through an iterative process, where the estimation is done repeatedly and stopped once the estimated $\beta_j$ and $\gamma_k$ ceased to become statistically different between *j*=*J* and *j*=*J*-1, and *k*=*K* and *k*=*K*-1. The values of $Lag\ J$ are at 1 up to *J* month prior to a lockdown, and 0 otherwise. Similarly, $Lead\ K$ values are set at 0 before month *K* after a lockdown is completed, and 1 otherwise. With these, $Lag\ J$ captures the possible effects of the months before *J*-1, and $Lead\ K$ represent the effects of months after *K*-1. The model is estimated using 234 observations for 18 provinces from February 2020 to February 2021. The iterative process is truncated at J=4 and K=3.

The results are shown in the table below. On average, the mobility within our sample is slightly less than 20% ($\alpha$) below the pre-pandemic level in February 2020. The level of mobility falls with the number of active cases ($\delta$), where the level of mobility is reduced further by about 0.5 percentage points for each additional active case observed. In the provinces where lockdowns were observed, the level of mobility tended to be higher by about 9 percent in four months before the lockdown and gradually dropped to only 2.7% above in a month prior to the lockdown. After completing a lockdown, additional mobility is observed for the first two months. Beyond the two months post-lockdown, the additional effect subsides and the mobility outside residential areas is again determined only by the number of active cases.

Table 4 Event Study Results

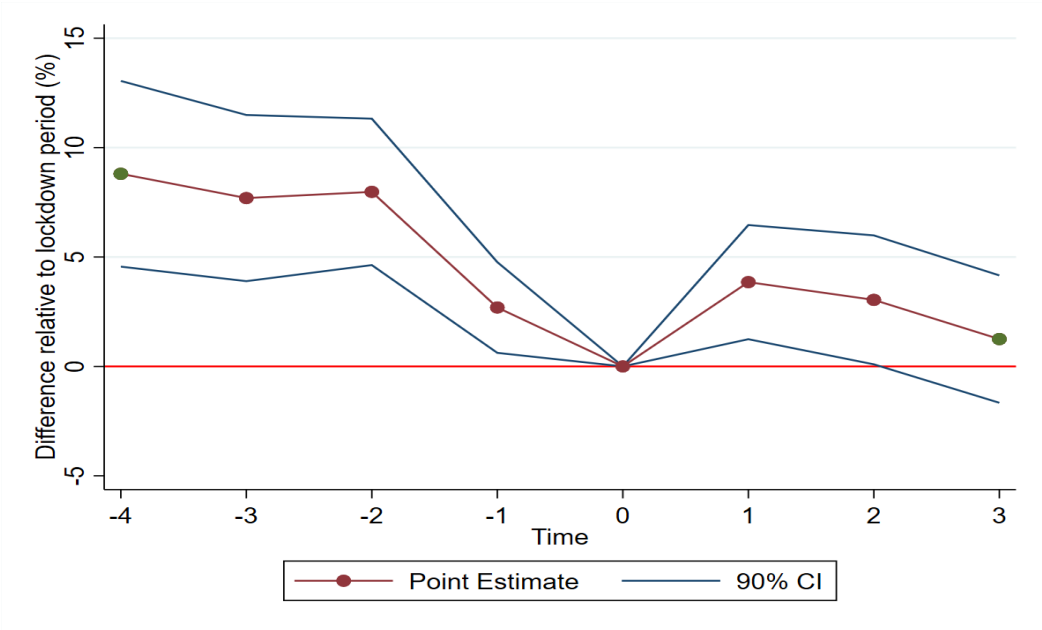
| **Dependent Variable: Mobility outside residential** | | | |
|---|---|---|---|
| δ | -0.476*** | $\gamma_1$ | 3.852* |
| | (-4.54) | | (2.57) |
| $\beta_4$ | 8.803** | $\gamma_2$ | 3.041 |
| | (3.61) | | (1.80) |
| $\beta_3$ | 7.693** | $\gamma_3$ | 1.249 |
| | (3.53) | | (0.75) |
| $\beta_2$ | 7.976*** | α | -19.94*** |
| | (4.15) | | (-14.20) |
| $\beta_1$ | 2.692* | | |
| | (2.26) | | |
| Month Dummies | | Yes | |
| Province Dummies | | Yes | |
| Observation | | 234 | |
| Adjusted R-squared | | 0.76 | |

Source: Authors' calculation

Notes: Robust standard errors clustered at province level in parentheses. * p < 0.1, ** p < 0.05, *** p < 0.0

The number of active COVID-19 cases is the main determinant for people's mobility. Mobility also varies across provinces and time due to regional-specific factors and seasonalities. In addition, we also detect changes in the dynamics of people's movements before and after the implementation of lockdowns. Figure 4 below shows how mobility tends to be higher in pre-lockdown months and returns to become more active in a month or two post-lockdown. Beyond the two months post-lockdown, the mobility restriction effect dissipates as they become statistically

insignificant, and people's movements are again driven primarily by the number of active COVID-19 cases in their area, as well as their location and time-specific factors.

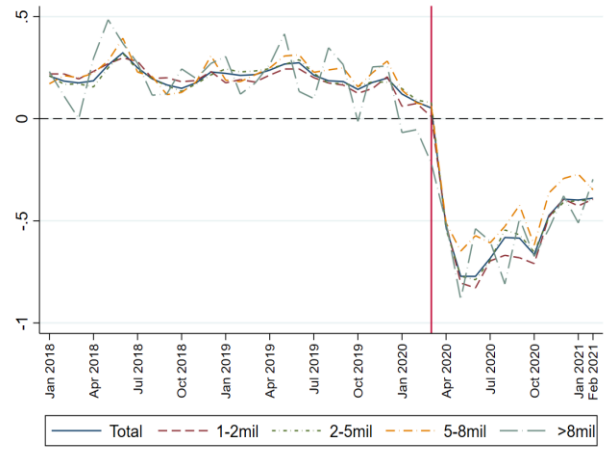



Source Authors' calculation

Figure 4 Pre and post-lockdown effect on mobility outside the residential areas

As discussed in the data section, the BI-CS allows for examinations of households' reactions to mobility restriction due to the COVID-19 pandemic. As Indonesia implemented its first massive lockdown measures, Figure 5 shows that the average household income dropped relative to six months before. The decline in income is more prominent in lower-income households, with an average income below five million rupiahs (about USD 357) a month. Higher-income households—those with monthly earnings over five million rupiahs—tend to be less severely affected. However, those earning over eight million rupiahs (USD 571) a month seem to have started to see their income falling even since January 2020. This drop in income persists as households surveyed continued to report losses of income relative to what they earned six months before being surveyed. Although the fall in income is seen plateauing over time, it still has yet to reach its bottom in early 2021.

Despite the actual falling income, households remained optimistic about their prospects. Figure 6 shows that expected income has never fallen even after the implementation of the massive lockdown measures in April 2020. The initial mobility restrictions brought down the expected increase in income quite significantly, but confidence remained and restored in the second half of the year, albeit with somewhat slower expected increases. After the initial lockdown, households earning less than five million rupiahs a month suffered more severe reductions in confidence than those with higher income. But the perception of future earnings among the different income levels converged in the second half of 2020 when the expectation of a longer-lasting pandemic became more widely accepted.




Source: Authors' calculation

Figure 5 Current income relative to six months ago.

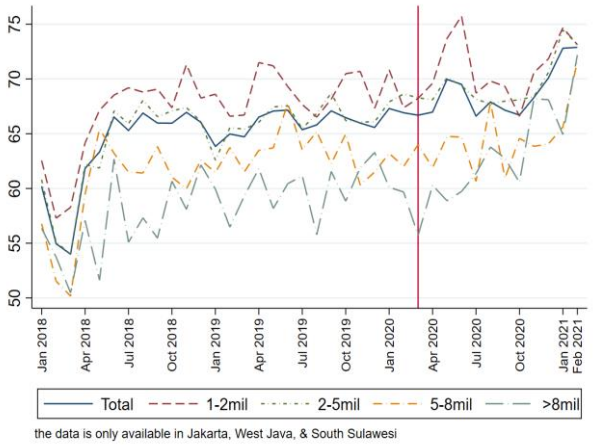

Source: Authors' calculation

Figure 6 Expected income in six months from now relative to the current.

In general, the dynamics of the consumption of durable goods closely follow the dynamics in income. Figure 7 shows that as household earnings dropped following the lockdown measures, household consumption of durable goods also fell substantially. Since April 2020, household consumption of durables has dipped below the average amount spent six months before being surveyed. Unlike income, however, the decline in durables spending is more prominent in higher-income households, particularly those with an average earning above eight million rupiahs a month. Actually, durable goods consumption for high-income households has dropped since March, following the reduction of their income since January. As expected, the impact on lower-income households—those with monthly earnings less than eight million rupiahs—is not as severe as they are spending less on durables relative to the higher incomes. Consumption of durable goods remained falling throughout the year as a consequence of the fall in income, though at a decelerating pace, particularly in early 2021.

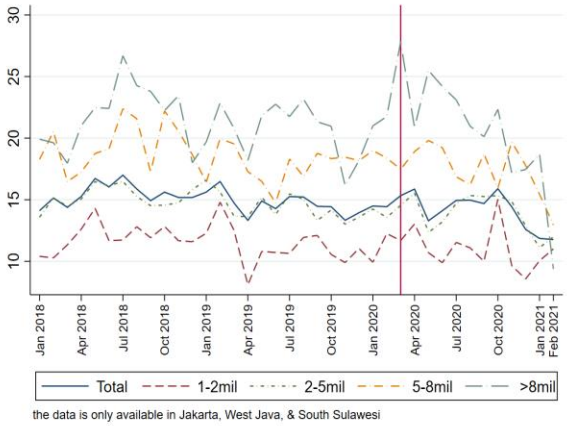

Source: Authors' calculation

Figure 7 Durable goods consumption relative to six months ago



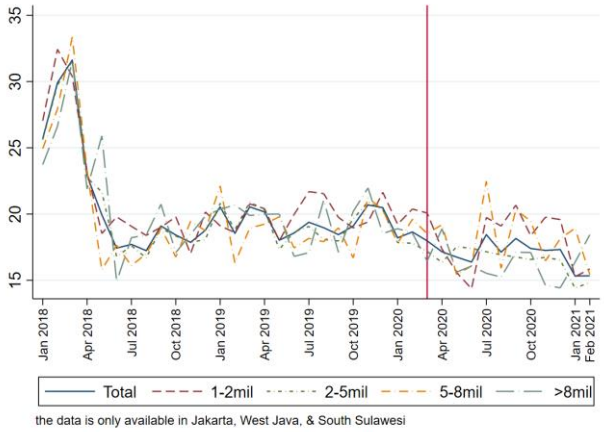

Source: Authors' calculation

Figure 7.a. Household income allocations: Consumption share




Source: Authors' calculation

Figure 7.b. Debt installment share




Source: Authors' calculation

Figure 7.c. Savings Share

In terms of budget allocations, the average households' share of consumption increases as their income falls. The average share of income allocated on debt installment remained largely constant throughout 2020, while savings declined to compensate for the increase in the share of consumption. Figure 7.a. shows that the rising share of consumption is evident in all levels of income with steeper slopes in those earning above five million rupiahs a month. The steeper rise in the consumption share of higher-income households suggests a smoothing motive to retain their consumption levels given the falling income. This rise in consumption share accelerated from October onwards, following a continuous fall in income since April.

Figure 7.b. indicates that during the first six months of the pandemic, the share allocated for debt installment does not seem to be affected much except for those earning more than eight million

rupiahs a month. However, households seem to start defaulting on debts from October onwards as more and more income is redirected for consumption. Meanwhile, Figure 7.c. shows that the share allocated on savings declined consistently since the COVID-19 outbreak began as households forgo savings to retain consumption. After a steep decline initially, the share of savings jumped up by roughly 5% of income for the lowest-income households with a monthly earning of two million rupiahs or less, partly, if not mostly, reflecting the positive impact of the targeted social assistance programs from the government.

## 4.2. Quantifying the Impact of COVID-19 on Households

This section discusses the estimated impact of COVID-19, through lockdowns, on households' income, expectation of future income, consumption of durable goods, and budget/income allocations. The results are also complemented by some heterogeneity analyses to reveal how the effects of lockdowns vary across different household characteristics.

*Income*

Table 5 shows the estimation results for the impact of lockdowns on the change of income. The dependent variable in Table 1 is the perception of the change in income relative to six months before. All results are estimated using month and province fixed effects to control for unobserved characteristics across time and cross-section units. Columns (1) and (2) are the results for both OLS and 2SLS without including covariates and sector dummies. Columns (3) and (4) are estimated by having a battery of control variables, including expectations of future business condition, gender, total expenditure, age, education level, and the dummy for economic sectors. These controls ensure that the identified impact of lockdown policies on the outcome variable is not confounded by factors that might affect the policies.[11] Reassuringly, our findings suggest that the estimation results are not sensitive to the inclusion of these controls.

Table 5 The Impact of Lockdown on Income

| | (1) OLS | (2) 2SLS | (3) OLS | (4) 2SLS |
|---|---|---|---|---|
| Dependent variable: Change in Income | | | | |
| Dummy Lockdown | -0.746*** | -1.015*** | -0.608*** | -0.829*** |
| | (0.059) | (0.156) | (0.058) | (0.144) |
| Sector Dummies | No | No | Yes | Yes |
| Month Dummies | Yes | Yes | Yes | Yes |
| Province Dummies | Yes | Yes | Yes | Yes |
| Covariates | No | No | Yes | Yes |
| Dep. Var. Mean | -0.03 | -0.03 | -0.03 | -0.03 |
| Dep. Var. Mean Before 2020 | 0.21 | 0.21 | 0.21 | 0.21 |
| Dep. Var. Mean Between Jan 20'-Feb 21' | -0.43 | -0.43 | -0.43 | -0.43 |
| Observation | 176,951 | 176,951 | 176,951 | 176,951 |
| Adjusted R-squared | 0.084 | | 0.178 | |
| Kleibergen-Paap First-stage F-Stats | | 14.039 | | 13.840 |

Source: Authors' calculation

Note: Robust standard errors clustered at province level in parentheses. The dependent variable here

[11] Throughout the analyses, our preferred model is always the 2SLS with covariates due to the endogeneity concerns in our main independent variable.

is the change in income compared to the previous six months. The value of the dependent variable is between -2 and +2. The set of covariates are the expectation of business conditions in the future, sex, total expenditure, age, education level, and the dummy for the formal sector. Dummy lockdown is instrumented by the number of active cases (in 000). * p < 0.1, ** p < 0.05, *** p < 0.01

The point estimate for all specifications suggests that lockdowns reduce the changes in income relative to six months before. All estimation results from both OLS and 2SLS specifications are robust and exhibit a statistically significant negative effect of our explanatory variable of interest on the outcome. Using the active COVID-19 cases as an instrumental variable for lockdowns dummy also passes the robustness check for weak instruments. Our preferred model in column (4) suggests that an incident of lockdown lowers income by 0.83 points. Compared to the mean of the outcome variable, -0.03, the magnitude of the lockdowns coefficient suggests that the impact of lockdowns on the changes in income is substantially negative.

This finding is the first study that estimates the causal impact of lockdowns. and therefore COVID-19, on household income in Indonesia. The results, however, reflect only the impact of lockdowns on self-assessed changes in the income of the surveyed households, not the actual amount of income changes. This said, a lockdown would decrease households' income slightly relative to its pre-2020 average, but the decline in income would tend to be significant if seen relative to the average of the first two months of 2020.[12] This is consistent with previous findings of how the pandemic lowers income levels in the US (see, for example, Han et al., 2020).

*Expectation for Future Income*

Have lockdowns as responses to COVID-19 outbreaks affected households' expectations of their future income? Table 6 shows that lockdowns lower expected income in the coming six months. The estimated coefficients for lockdown dummy in columns (1) and (2) almost double the size of those in (3) and (4), suggesting some confounding effects that bias the estimate upward when the covariates are excluded. The preferred model in column (4) suggests that lockdowns lower the expected future income by -0.386. Comparing the point estimate with the mean value of our outcome variable, at 0.41, suggests that the impact of lockdowns on the change of expectation about household future income is sizable but not to the extent of pushing households to go substantially pessimistic of their future.

Table 6 The Impact of Lockdown on Expectation for Future Income

| | (1) OLS | (2) 2SLS | (3) OLS | (4) 2SLS |
|---|---|---|---|---|
| Dependent variable: Expected Future Income | | | | |
| Dummy Lockdown | -0.410*** | -0.618*** | -0.231*** | -0.386*** |
| | (0.060) | (0.107) | (0.041) | (0.083) |
| Sector Dummies | No | No | Yes | Yes |
| Month Dummies | Yes | Yes | Yes | Yes |
| Province Dummies | Yes | Yes | Yes | Yes |
| Covariates | No | No | Yes | Yes |
| Dep. Var. Mean | 0.41 | 0.41 | 0.41 | 0.41 |
| Dep. Var. Mean Before 2020 | 0.50 | 0. 50 | 0. 50 | 0. 50 |
| Dep. Var. Mean Between Jan 20'-Feb 21' | 0.26 | 0.26 | 0.26 | 0.26 |
| Observation | 176,951 | 176,951 | 176,951 | 176,951 |

[12] An index of change in income of -0.62 relative to the pre-2020 average vs. -1.26 relative to Jan-Feb 2020 average (see Table 1 for the averages).

| | | | | |
|---|---|---|---|---|
| Adjusted R-squared | 0.084 | | 0.261 | |
| Kleibergen-Paap First-stage F-Stats | | 14.039 | | 13.840 |

Source: Authors' calculation

Note: Robust standard errors clustered at province level in parentheses. The dependent variable here is the expected income in the next six months. The value of the dependent variable is between -2 and +2. The set of covariates are the expectation of business conditions in the future, sex, total expenditure, age, education level, and the dummy for the formal sector. Dummy lockdown is instrumented by the number of active cases (in 000). * p < 0.1, ** p < 0.05, *** p < 0.01

Our finding is consistent to that reported by Coibion et al. (2020), which uses some proxy variables, such as expected unemployment rates, to gauge expectations. They argue that the expected unemployment rate will remain the same in the next 12 months before improving in a longer horizon. The result from Table 2 also suggests that households' expectations of their future income are lowered by lockdowns, which may have to do with uncertainty in economic prospects due to the pandemic. This is consistent with the relatively slow and sluggish economic recovery in Indonesia, where GDP is still contracting within 12 months after the health crisis began--growing at -0.74% (y-o-y) in Q1-2021.[13]

*Consumption of Durable Goods*

We further investigate the effect of lockdowns on the consumption of durable goods. Purchases for durable goods are cyclical because they tend to increase during good times and decrease during crises when households are financially constrained and tend to reallocate their spending to other types of consumption.

Table 3. The Impact of Lockdown on the Consumption of Durable Goods

*Table 7 The Impact of Lockdown on the Consumption of Durable Goods*

| | (1) OLS | (2) 2SLS | (3) OLS | (4) 2SLS |
|---|---|---|---|---|
| Dependent variable: Consumption of Durable Goods | | | | |
| Dummy Lockdown | -0.534*** | -0.726*** | -0.449*** | -0.609*** |
| | (0.070) | (0.130) | (0.062) | (0.126) |
| Sector Dummies | No | No | Yes | Yes |
| Month Dummies | Yes | Yes | Yes | Yes |
| Province Dummies | Yes | Yes | Yes | Yes |
| Covariates | No | No | Yes | Yes |
| Dep. Var. Mean | 0.01 | 0.01 | 0.01 | 0.01 |
| Dep. Var. Mean Before 2020 | 0.16 | 0.16 | 0.16 | 0.16 |
| Dep. Var. Mean Between Jan 20'-Feb 21' | -0.24 | -0.24 | -0.24 | -0.24 |
| Observation | 176,951 | 176,951 | 176,951 | 176,951 |
| Adjusted R-squared | 0.069 | | 0.107 | |
| Kleibergen-Paap First-stage F-Stats | | 14.039 | | 13.840 |

Source: Authors' calculation

Note: Robust standard errors clustered at province level in parentheses. The dependent variable here is the change in the consumption of durable goods. The value of the dependent variable is between -2 and +2. The set of covariates are the expectation of business conditions in the future, sex, total expenditure, age, education level, and the dummy for the formal sector. Dummy lockdown is instrumented by the number of active cases (in 000). * p < 0.1, ** p < 0.05, *** p < 0.01

[13] BPS (2021). Economic Growth of Indonesia First Quarter 2021 descended 0.74 percent (y-on-y). https://www.bps.go.id/pressrelease/2021/05/05/1812/ekonomi-indonesia-triwulan-i-2021-turun-0-74-persen--y-on-y-.html

The results in Table 7 shows that lockdowns lower household consumption of durable goods relative to six months before. Our preferred result (in column 4), which controls for all relevant covariates, suggests that a lockdown reduced the outcome variable by 0.609 points. Relative to the mean of our dependent variable (0.01), his drop is quite substantial and suggests that durable goods consumption is reduced along with dwindling income. This finding is consistent with Coibion et al. (2020) finding that consumption of durable goods in the US is reduced following lockdowns, and Baker et al. (2020) find that lower consumption in the US after the implementation of shelter in place policies.

*Household Budget Allocation: Consumption, Debt Instalment, and Saving*

As households tend to smooth consumption when faced with financial distress, adjustments in the way their income is allocated would be required. Here, we examine how lockdowns affect the share of consumption, debt installment, and savings relative to household income. Before we proceed, it is worth noting that the sample used for this analysis is adjusted down from 176,951 to 37,306 due to data limitations discussed previously. Nevertheless, the estimation results remain meaningful.

We begin by examining the effects of lockdowns on the share of income allocated for consumption, which is expected to increase as households retain and smooth their consumption, particularly on foods and other non-durables. Our estimation results suggest the share of income allocated for consumption is larger in households affected by lockdowns than in those with the same characteristics but not affected by lockdowns.

Table 4.a. The Impact of Lockdown on the Share of Consumption Relative to the Total Income

Table 8.a The Impact of Lockdown on the Share of Consumption Relative to the Total Income

| | (1) OLS | (2) 2SLS | (3) OLS | (4) 2SLS |
|---|---|---|---|---|
| Dependent variable: The Share of Consumption Relative to Income | | | | |
| Dummy Lockdown | 3.312*** | 6.135*** | 2.590* | 4.388*** |
| | (0.314) | (0.773) | (0.823) | (0.913) |
| Sector Dummies | No | No | Yes | Yes |
| Month Dummies | Yes | Yes | Yes | Yes |
| Province Dummies | Yes | Yes | Yes | Yes |
| Covariates | No | No | Yes | Yes |
| Dep. Var. Mean | 66.01 | 66.01 | 66.01 | 66.01 |
| Dep. Var. Mean Before 2020 | 64.55 | 64.55 | 64.55 | 64.55 |
| Dep. Var. Mean Between Jan 20'-Feb 21' | 68.51 | 68.51 | 68.51 | 68.51 |
| Observation | 37,306 | 37,306 | 37,306 | 37,306 |
| Adjusted R-squared | 0.009 | | 0.055 | |
| Kleibergen-Paap First-stage F-Stats | | 44.985 | | 41.315 |

Source: Authors' calculation

Note: Robust standard errors clustered at province level in parentheses. The dependent variable here is the share of consumption relative to income (in %). The set of covariates are the expectation of business conditions in the future, sex, total expenditure, age, education level, and the dummy for the formal sector. Dummy lockdown is instrumented by the number of active cases (in 000). The total number of observations drops because the sample for this question is only in Jakarta, West Java, and South Sulawesi. * p < 0.1, ** p < 0.05, *** p < 0.01

Table 8.a shows that lockdowns increase the consumption share of income by 4.38 percentage points, based on our preferred estimate in column (4), which controls for relevant covariates. Comparing this point estimate with the dependent variable's mean implies that lockdowns increase

the consumption share by about 6.63% (~4.38/66.01). This confirms our hypothesis on household consumption smoothing behavior in Indonesia, whereby as lockdowns decrease household income (see Table 5), its share spent on consumption increases. Household consumption on non-durables would not be dropped substantially, especially those related to fulfilling their basic needs. Therefore, the drop in consumption (if any) would tend to be less than the drop in income, resulting in an increase in the consumption share relative to income.

A natural follow-up from the above would be questions about what households sacrificed when trying to maintain their consumption intact. We begin by examining how the share of income spent on debt installment is affected by lockdowns. Table 8.b. suggests that households facing lockdowns responded by adjusting down the share of their income spent on debt installment. This is in line with Coibion et al. (2020) that argues COVID-19 pushes households in the US into financial difficulties, which could even force them to default on debt payments. Our 2SLS result in column (4), controlling for a battery of covariates, suggests that an incidence of lockdown reduces the share of debt installment in income by 1.89 percentage points. Relative to the mean of the income share for debt installments, this point estimate implies a substantial shrinkage in the share under lockdowns, by about 12.83% (~-1.89/14.73). An important implication of this finding is a need to consider less conventional measures for households under financial distress, such as debt restructuring, rescheduling, and alike.

Table 8.b. The Impact of Lockdown on the Share of Debt Installment Relative to the Total Income

| | (1) OLS | (2) 2SLS | (3) OLS | (4) 2SLS |
|---|---|---|---|---|
| Dependent variable: The Share of Debt Instalment Relative to Income | | | | |
| Dummy Lockdown | -0.796 | -1.643*** | -1.067* | -1.892*** |
| | (0.387) | (0.272) | (0.330) | (0.386) |
| Sector Dummies | No | No | Yes | Yes |
| Month Dummies | Yes | Yes | Yes | Yes |
| Province Dummies | Yes | Yes | Yes | Yes |
| Covariates | No | No | Yes | Yes |
| Dep. Var. Mean | 14.73 | 14.73 | 14.73 | 14.73 |
| Dep. Var. Mean Before 2020 | 15.03 | 15.03 | 15.03 | 15.03 |
| Dep. Var. Mean Between Jan 20'-Feb 21' | 14.23 | 14.23 | 14.23 | 14.23 |
| Observation | 37,306 | 37,306 | 37,306 | 37,306 |
| Adjusted R-squared | 0.001 | | 0.040 | |
| Kleibergen-Paap First-stage F-Stats | | 44.985 | | 41.315 |

Source: Authors' calculation

Note: Robust standard errors clustered at province level in parentheses. The dependent variable here is the share of debt instalment relative to income (in %). The set of covariates are the expectation of business conditions in the future, sex, total expenditure, age, education level, and the dummy for the formal sector. Dummy lockdown is instrumented by the number of active cases (in 000). The total number of observations drops because the sample for this question is only in Jakarta, West Java, and South Sulawesi. * p < 0.1, ** p < 0.05, *** p < 0.01

Next, we examine the impact of lockdowns on household savings. Table 8.c. suggests that households facing lockdowns decrease their savings share of income. All specifications from columns (1)-(4) suggest a robust negative and statistically significant relationship, at $\alpha = 1\%$, between lockdowns and the savings share. In terms of the magnitude, our preferred estimate in column (4) suggests that the share of savings in income fell by 2.50 percentage points in the event of lockdowns. Compared to the dependent variable's mean (19.26%), the impact is quite substantial,

implying a 12.96% reduction of the share of savings from its mean (~-2.50/19.26). This is qualitatively similar to Coibion et al. (2020) found that households are reducing their portfolio holdings (i.e., gold and foreign assets) due to the pandemic. On the contrary, based on data from a quick survey in 6 countries in April 2020, Dang and Ngunyen (2021) argue that women tend to reduce their consumption and increase savings amid falling income because of the pandemic. This snapshot, however, may not persist over time when the fall in income continues due to lockdowns.

Table 8.c. The Impact of Lockdown on the Share of Saving Relative to the Total Income

| | (1) OLS | (2) 2SLS | (3) OLS | (4) 2SLS |
|---|---|---|---|---|
| Dependent variable: The Share of Saving Relative to Income | | | | |
| Dummy Lockdown | -2.517*** | -4.491*** | -1.524 | -2.496*** |
| | (0.237) | (1.009) | (0.603) | (0.881) |
| Sector Dummies | No | No | Yes | Yes |
| Month Dummies | Yes | Yes | Yes | Yes |
| Province Dummies | Yes | Yes | Yes | Yes |
| Covariates | No | No | Yes | Yes |
| Dep. Var. Mean | 19.26 | 19.26 | 19.26 | 19.26 |
| Dep. Var. Mean Before 2020 | 20.43 | 20.43 | 20.43 | 20.43 |
| Dep. Var. Mean Between Jan 20'-Feb 21' | 17.26 | 17.26 | 17.26 | 17.26 |
| Observation | 37,306 | 37,306 | 37,306 | 37,306 |
| Adjusted R-squared | 0.001 | | 0.040 | |
| Kleibergen-Paap First-stage F-Stats | | 44.985 | | 41.315 |

Source: Authors' calculation

Note: Robust standard errors clustered at province level in parentheses. The dependent variable here is the share of savings relative to income (in %). The set of covariates are the expectation of business conditions in the future, sex, total expenditure, age, education level, and the dummy for the formal sector. Dummy lockdown is instrumented by the number of active cases (in 000). The total number of observations drops because the sample for this question is only in Jakarta, West Java, and South Sulawesi. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Our results support the hypothesis of households smoothing consumption as income dwindles due to lockdowns by reducing other expenditures. Households increase their consumption share of income by 4.39 percentage points, which is fully compensated by an equal reduction in the share of debt installment and savings. This highlights two important points as regards provisions of social assistance to households during the pandemic: (i) direct financial support is essential to assist households in the lower-income bracket maintaining at least their consumption of necessities; and (ii) the needs for debt restructuring and rescheduling to avoid potential ballooning of non-performing loans.

*Heterogeneity Analysis*

Many previous studies have indicated the heterogeneous effects of COVID-19 across groups with different characteristics (see, e.g., Adams-Prassl et al., 2020; Crossley et al., 2021; UNICEF et al., 2021). After establishing the substantial effects of lockdowns on several outcomes, we go on to analyze the possible heterogeneous impact of lockdowns across households' levels of monthly expenditures, education, and regions.

- Expenditure Level

First, we examine the heterogeneous impact of lockdowns based on household level of expenditures, which is often used as a proxy of income. Table 9 presents the estimation results for the impact of lockdowns on outcomes considered in this study for two expenditure groups, households with monthly expenditure up to Rp5 million in columns (1) – (4) and those with above Rp5 million in columns (5) – (8).[14]

Household spending is divided at Rp5 million a month for two reasons: (i) the mean of Indonesia's monthly income per capita based on the World Bank is around Rp4.6 million;[15] and (ii) non-taxable income in Indonesia is about Rp4.5 million per month. We repeat the estimation procedures applied in the previous analysis for both expenditure/income groups, where all specifications include the month and province dummies. Columns (3) – (4) and columns (7) – (8) control for a battery of covariates used in our previous estimations.

Panel A in Table 5 depicts the impact of lockdowns on the change in income. The results from our 2SLS model in columns (4) and (8) suggest that lockdowns induce more income reduction in the lower-income households than the higher-income ones. The point estimate for households with lower monthly expenditure is -0.883 compared to -0.608 for those with higher levels of expenditure. Both results are statistically significant at $\alpha$ =1% and qualitatively maintained across the alternative specifications. The difference in how lockdowns affect income may be explained by the difference in job characteristics between the two groups. Jobs for most of the lower-income households tend to be more manual than those of the higher-incomes. Consequently, the lower incomes would tend to be furloughed—if not laid-off—during lockdowns and experienced larger cuts in income, while the higher incomes may continue working remotely from home and retain most of their earnings.

Similar patterns persist in the other outcome variables. Panel B shows that under lockdowns households with lower monthly expenditure become more pessimistic about their expected income than those with higher monthly spending. Expected income in six months after being surveyed is down by -0.40 (Panel B column (4)) for the lower-income households, compared to -0.32 (Panel B, column (8)). Both are significant at $\alpha$ =1%. Panel C shows that, under lockdowns, reductions in durable consumptions relative to six months before being surveyed is larger for the lower-income households ($\hat{\beta}$ =-0.649) than for the higher-incomes ($\hat{\beta}$ =-0.453). Panels A, B, and C suggest that lower-income households are facing more substantial hardships due to lockdowns than those with higher incomes.

Panel D, E, and F of Table 5 present the estimation results on the share of income allocated for consumption, debt installment, and savings, respectively. To smooth consumption, lower-income households tend to increase their consumption share of income more than those of the higher incomes (by 4.64 percentage points against3.89 percentage points, respectively). Panels E and F, however, show the different impact of lockdowns on the share of income spent on debt installment and savings for the two household categories, which enrich our understanding of how different types of households finance their desire to smooth consumption. Higher-income households reduce their debt installment share of income much more than the lower-incomes (by 3.41 percentage points versus 1.60 percentage points, respectively), but sacrifice much less of their savings share of income relative to the lower-income households (by 0.49 percentage points versus

[14] USD 1 roughly equals to Rp14,500 on average in 2020.

[15] https://blogs.worldbank.org/opendata/new-world-bank-country-classifications-income-level-2021-2022

3.04 percentage points, respectively). All these suggest that, when trying to smooth their consumption, higher-income households sacrifice less of their savings and choose to backtrack on their debt obligations instead. In contrast, the lower-incomes, who may not have similar financial access as the higher-incomes, do not have the luxury to do the same and hence are forced to deplete more of their savings in order to smooth consumption.

The results in Table 9 confirm the heterogeneous impact of lockdowns, based on groups of income, on our dependent variables. Our analysis highlights that lower-income households tend to face more substantial negative impacts than higher incomes. This, therefore, implies the importance of providing targeted assistance to the more vulnerable households during the pandemic.

Table 9 Heterogeneity Impact of Lockdowns Based on Level of Expenditure

| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
|---|---|---|---|---|---|---|---|---|
| | OLS | 2SLS | OLS | 2SLS | OLS | 2SLS | OLS | 2SLS |
| | Expenditure < Rp5 million | | | | Expenditure > Rp5 million | | | |
| **Panel A** | | | | | | | | |
| **Dependent variable: Change in Income** | | | | | | | | |
| Dummy Lockdown | -0.763*** | -1.083*** | -0.618*** | -0.883*** | -0.635*** | -0.732*** | -0.556*** | -0.608*** |
| | (0.066) | (0.172) | (0.061) | (0.154) | (0.056) | (0.067) | (0.056) | (0.057) |
| Dep. Var. Mean | -0.032 | -0.032 | -0.032 | -0.032 | 0.019 | 0.019 | 0.019 | 0.019 |
| Observation | 154,310 | 154,310 | 154,310 | 154,310 | 22,641 | 22,641 | 22,641 | 22,641 |
| Adjusted R-squared | 0.087 | | 0.179 | | 0.080 | | 0.175 | |
| Kleibergen-Paap First-stage F-Stats | | 15.733 | | 15.419 | | 9.548 | | 9.729 |
| **Panel B** | | | | | | | | |
| **Dependent variable: Expected Future Income** | | | | | | | | |
| Dummy Lockdown | -0.421*** | -0.650*** | -0.234*** | -0.402*** | -0.331*** | -0.481*** | -0.210*** | -0.319*** |
| | (0.067) | (0.121) | (0.044) | (0.097) | (0.036) | (0.037) | (0.036) | (0.026) |
| Dep. Var. Mean | 0.396 | 0.396 | 0.396 | 0.396 | 0.506 | 0.506 | 0.506 | 0.506 |
| Observation | 154,310 | 154,310 | 154,310 | 154,310 | 22,641 | 22,641 | 22,641 | 22,641 |
| Adjusted R-squared | 0.087 | | 0.179 | | 0.063 | | 0.260 | |
| Kleibergen-Paap First-stage F-Stats | | 15.733 | | 15.419 | | 9.548 | | 9.729 |
| **Panel C** | | | | | | | | |
| **Dependent variable: Consumption of Durable Goods** | | | | | | | | |
| Dummy Lockdown | -0.538*** | -0.770*** | -0.453*** | -0.649*** | -0.486*** | -0.543*** | -0.423*** | -0.453*** |
| | (0.073) | (0.133) | (0.064) | (0.130) | (0.063) | (0.130) | (0.063) | (0.135) |
| Dep. Var. Mean | 0.005 | 0.005 | 0.005 | 0.005 | 0.043 | 0.043 | 0.043 | 0.043 |
| Observation | 154,310 | 154,310 | 154,310 | 154,310 | 22,641 | 22,641 | 22,641 | 22,641 |
| Adjusted R-squared | 0.074 | | 0.110 | | 0.061 | | 0.100 | |
| Kleibergen-Paap First-stage F-Stats | | 15.733 | | 15.419 | | 9.548 | | 9.729 |
| **Panel D** | | | | | | | | |
| **Dependent variable: The Share of Consumption Relative to Income** | | | | | | | | |
| Dummy Lockdown | 3.311*** | 6.169*** | 2.773* | 4.641*** | 2.986** | 5.576*** | 2.228** | 3.893*** |
| | (0.329) | (0.816) | (0.913) | (1.141) | (0.642) | (0.067) | (0.472) | (0.237) |
| Dep. Var. Mean | 67.16 | 67.16 | 67.16 | 67.16 | 61.48 | 61.48 | 61.48 | 61.48 |
| Observation | 29,681 | 29,681 | 29,681 | 29,681 | 7,625 | 7,625 | 7,625 | 7,625 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Adjusted R-squared | 0.009 | | 0.039 | | 0.012 | | 0.056 | |
| Kleibergen-Paap First-stage F-Stats | | 43.034 | | 39.455 | | 92.978 | | 80.550 |
| **Panel E** | | | | | | | | |
| **Dependent variable: The Share of Debt Instalment Relative to Income** | | | | | | | | |
| Dummy Lockdown | -0.558 | -1.103*** | -0.957 | -1.601*** | -1.353*** | -3.057*** | -1.883*** | -3.407*** |
| | (0.524) | (0.347) | (0.426) | (0.37) | (0.046) | (0.170) | (0.146) | (0.217) |
| Dep. Var. Mean | 13.59 | 13.59 | 13.59 | 13.59 | 19.18 | 19.18 | 19.18 | 19.18 |
| Observation | 29,681 | 29,681 | 29,681 | 29,681 | 7,625 | 7,625 | 7,625 | 7,625 |
| Adjusted R-squared | 0.001 | | 0.017 | | 0.007 | | 0.028 | |
| Kleibergen-Paap First-stage F-Stats | | 43.034 | | 39.455 | | 92.978 | | 80.550 |
| **Panel F** | | | | | | | | |
| **Dependent variable: The Share of Saving Relative to Income** | | | | | | | | |
| Dummy Lockdown | -2.754** | -5.067*** | -1.816* | -3.040*** | -1.633 | -2.519*** | -0.346 | -0.487* |
| | (0.385) | (1.111) | (0.612) | (0.9481) | (0.607) | (0.222) | (0.589) | (0.270) |
| Dep. Var. Mean | 19.23 | 19.23 | 19.23 | 19.23 | 19.33 | 19.33 | 19.33 | 19.33 |
| Observation | 29,681 | 29,681 | 29,681 | 29,681 | 7,625 | 7,625 | 7,625 | 7,625 |
| Adjusted R-squared | 0.010 | | 0.047 | | 0.012 | | 0.046 | |
| Kleibergen-Paap First-stage F-Stats | | 43.034 | | 39.455 | | 92.978 | | 80.550 |
| Sector Dummies | No | No | Yes | Yes | No | No | Yes | Yes |
| Month Dummies | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Province Dummies | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Covariates | No | No | Yes | Yes | No | No | Yes | Yes |

Source: Authors' calculation

Note: Robust standard errors clustered at province level in parentheses. The sample in Columns (1)-(4) are households with monthly expenditure below Rp 5 million. In columns (5)-(8), the samples are households with monthly expenditure above Rp 5 million. The set of covariates are the expectation of business conditions in the future, sex, total expenditure, age, education level, and the dummy for the formal sector. Dummy lockdown is instrumented by the number of active cases (in 000). The total number of observations drops in Panels D, E, and F because the sample for this question is only in Jakarta, West Java, and South Sulawesi. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

- Education Level

Next, we consider if the impact of lockdowns varies across education levels. Columns (1)-(4) in Table 10 show the estimated effects of lockdowns on households with high school education or lower, and columns (5)–(8) present the effects to those with tertiary education. Although they may not hold on a per case basis, the average households with tertiary education are expected to earn more than those with a high school education or lower. This average assessment seems to hold as the results in Panels A, B, and C qualitatively echo the findings reported in Table 5 for the different income groups. The reduction in the change in income, expected income and consumption of durable goods are less for households with tertiary education than those with lower levels of education.

Under lockdowns, the change in income for households with tertiary education would drop further by -0.77 points against -0.86 for those with lower levels of educational backgrounds (both estimates are statistically significant at $\alpha = 1\%$). However, the difference of the estimated coefficient between the two groups is not as striking as in the case for the different groups of income, suggesting that the difference in the educational background is not directly explaining the difference in income. Similar results are also applicable to the expected income and consumption

of durables. Panel B suggests that income expectations under lockdowns dropped more in households with lower education than in those with higher education ($\hat{\beta}$ =-0.42 against -0.33, respectively). Panel C shows that the point estimate for the lockdowns coefficient for households with lower educational backgrounds is -0.62 versus -0.60 for households with tertiary degrees.

Lockdowns impact on the allocation of income for consumption, debt installment, and savings in Panels D, E, and F suggest slightly different heterogeneous effects than those found for the different income groups. To cope with lockdowns, the consumption share of income for lower-educated households increases more than those of higher-educated, by 5.27percentage points versus 2.92 percentage points, respectively. However, reductions of the income share spent on debt installment and savings are somewhat different from those reported in Table 6. Households with lower levels of education reduce their income allocation for debt installment by -1.92 percentage points, at par with the higher-educated households who cut their allocation by -1.88 percentage points. However, the lower-educated households reduce their share for savings due to lockdowns by -3.35 percentage points against -1.04 percentage points for the higher-educated ones. These suggest that, unlike the lower incomes, the lower-educated households have similar financial access as the higher-educated ones. Regardless, the lower-educated are still the ones who ended up sacrificing more of their savings to smooth their consumption.

Our findings here highlight the differential impact of lockdowns on households based on their level of education. Higher-educated households, mostly work in formal sectors, are less impacted by lockdowns as they can still be working digitally from home. In contrast, lower-educated households are worse affected as they are most vulnerable to the restrictions in social mobility.

Table 10 Heterogeneity Impact of Lockdown Based on Level of Education

| | (1) OLS | (2) 2SLS | (3) OLS | (4) 2SLS | (5) OLS | (6) 2SLS | (7) OLS | (8) 2SLS |
|---|---|---|---|---|---|---|---|---|
| | Education: High School or below | | | | Education: University or Graduate Education | | | |
| **Panel A** | | | | | | | | |
| **Dependent variable: Change in Income** | | | | | | | | |
| Dummy Lockdown | -0.791*** | -1.084*** | -0.628** | -0.862*** | -0.666*** | -0.889*** | -0.572*** | -0.770*** |
| | (0.064) | (0.181) | (0.055) | (0.172) | (0.054) | (0.113) | (0.067) | (0.103) |
| Dep. Var. Mean | -0.087 | -0.087 | -0.087 | -0.087 | 0.093 | 0.093 | 0.093 | 0.093 |
| Observation | 115,994 | 115,994 | 115,994 | 115,994 | 60,957 | 60,957 | 60,957 | 60,957 |
| Adjusted R-squared | 0.086 | | 0.180 | | 0.078 | | 0.158 | |
| Kleibergen-Paap First-stage F-Stats | | 19.776 | | 19.625 | | 8.661 | | 8.647 |
| **Panel B** | | | | | | | | |
| **Dependent variable: Expected Future Income** | | | | | | | | |
| Dummy Lockdown | -0.437*** | -0.689*** | -0.236** | -0.420*** | -0.350*** | -0.497*** | -0.211*** | -0.328*** |
| | (0.070) | (0.130) | (0.044) | (0.102) | (0.042) | (0.062) | (0.041) | (0.052) |
| Dep. Var. Mean | 0.365 | 0.365 | 0.365 | 0.365 | 0.495 | 0.495 | 0.495 | 0.495 |
| Observation | 115,994 | 115,994 | 115,994 | 115,994 | 60,957 | 60,957 | 60,957 | 60,957 |
| Adjusted R-squared | 0.090 | | 0.274 | | 0.065 | 0.062 | 0.229 | 0.227 |
| Kleibergen-Paap First-stage F-Stats | | 19.776 | | 19.625 | | 8.661 | | 8.647 |
| **Panel C** | | | | | | | | |
| **Dependent variable: Consumption of Durable Goods** | | | | | | | | |
| Dummy Lockdown | -0.538*** | -0.749*** | -0.449** | -0.624*** | -0.515*** | -0.685*** | -0.442*** | -0.595*** |
| | (0.075) | (0.139) | (0.063) | (0.137) | (0.063) | (0.120) | (0.065) | (0.116) |
| Dep. Var. Mean | -0.014 | -0.014 | -0.014 | -0.014 | 0.056 | 0.056 | 0.056 | 0.056 |
| Observation | 115,994 | 115,994 | 115,994 | 115,994 | 60,957 | 60,957 | 60,957 | 60,957 |
| Adjusted R-squared | 0.076 | | 0.111 | | 0.061 | | 0.101 | |
| Kleibergen-Paap First-stage F-Stats | | 19.776 | | 19.625 | | 8.661 | | 8.647 |
| **Panel D** | | | | | | | | |
| **Dependent variable: The Share of Consumption Relative to Income** | | | | | | | | |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Dummy Lockdown | 4.515*** | 7.180*** | 3.643* | 5.274*** | 1.688 | 3.960*** | 1.117 | 2.923*** |
| | (0.414) | (0.852) | (1.233) | (1.413) | (0.808) | (0.159) | (0.659) | (0.274) |
| Dep. Var. Mean | 67.69 | 67.69 | 67.69 | 67.69 | 63.61 | 63.61 | 63.61 | 63.61 |
| Observation | 21,869 | 21,869 | 21,869 | 21,869 | 15,437 | 15,437 | 15,437 | 15,437 |
| Adjusted R-squared | 0.013 | | 0.046 | | 0.004 | | 0.049 | |
| Kleibergen-Paap First-stage F-Stats | | 36.576 | | 33.103 | | 123.809 | | 103.818 |
| **Panel E** | | | | | | | | |
| **Dependent variable: The Share of Debt Instalment Relative to Income** | | | | | | | | |
| Dummy Lockdown | -0.889* | -1.531*** | -1.267* | -1.925*** | -0.610 | -1.574*** | -0.754 | -1.882*** |
| | (0.245) | (0.233) | (0.303) | (0.455) | (0.665) | (0.610) | (0.481) | (0.584) |
| Dep. Var. Mean | 14.06 | 14.06 | 14.06 | 14.06 | 15.68 | 15.68 | 15.68 | 15.68 |
| Observation | 21,869 | 21,869 | 21,869 | 21,869 | 15,437 | 15,437 | 15,437 | 15,437 |
| Adjusted R-squared | 0.001 | | 0.034 | | 0.001 | | 0.044 | |
| Kleibergen-Paap First-stage F-Stats | | 36.576 | | 33.103 | | 123.809 | | 103.818 |
| **Panel F** | | | | | | | | |
| **Dependent variable: The Share of Saving Relative to Income** | | | | | | | | |
| Dummy Lockdown | -3.626** | -5.650*** | -2.377 | -3.348*** | -1.078** | -2.387*** | -0.363 | -1.042*** |
| | (0.443) | (1.056) | (0.999) | (1.151) | (0.246) | (0.501) | (0.182) | (0.350) |
| Dep. Var. Mean | 18.23 | 18.23 | 18.23 | 18.23 | 20.71 | 20.71 | 20.71 | 20.71 |
| Observation | 21,869 | 21,869 | 21,869 | 21,869 | 15,437 | 15,437 | 15,437 | 15,437 |
| Adjusted R-squared | 0.015 | | 0.045 | | 0.008 | | 0.043 | |
| Kleibergen-Paap First-stage F-Stats | | 36.576 | | 33.103 | | 123.809 | | 103.818 |
| Sector Dummies | No | No | Yes | Yes | No | No | Yes | Yes |
| Month Dummies | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Province Dummies | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Covariates | No | No | Yes | Yes | No | No | Yes | Yes |

Source: Authors' calculation

Note: Robust standard errors clustered at province level in parentheses. The sample in Columns (1)-(4) are households where households' heads have a high school degree or below. In columns (5)-(8), the samples are households where the households' heads have a university degree or higher. The set of covariates are the expectation of business conditions in the future, sex, total expenditure, age, education level, and the dummy for the formal sector. Dummy lockdown is instrumented by the number of active cases (in 000). The total number of observations drops in Panels D, E, and F because the sample for this question is only in Jakarta, West Java, and South Sulawesi. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

- Regions

We also estimate the impact of lockdowns policies based on regions. The first COVID-19 case in Indonesia was detected in Java and lockdown policies in provinces within Java are mostly initiated before those outside Java. In terms of economic structures and characteristics, the regions in Java and outside Java differ quite substantially which could lead to heterogeneous impacts of lockdowns.

Table 11 depicts our heterogeneity analysis by differentiating the sample into the regions located in Java and outside Java. The table reports only results for three main dependent variables as complete observations for the share of consumption, debt installment, and saving relative to income were only available for Jakarta, West Java, and South Sulawesi. Another important aspect that needs to be noted here is that we may have weak instrument issues for the regions outside Java as suggested by the Kleibergen-Paap First-stage F-Stats that are consistently lower than 10. This may be caused by the very small variations in the number of active COVID-19 cases outside Java, which affected the results for our first stage F-stats. Therefore, this issue needs to be considered when interpreting the results.

Panel A suggests a heterogeneous impact of lockdowns on the change in household income between Java and outside Java. Household income outside Java fell substantially due to lockdowns ($\hat{\beta}$ =-2.83), much steeper than those residing in Java ($\hat{\beta}$ =-0.68). This implies that the impact of lockdowns on income outside Java is about four times as severe as in Java. Panel B suggests that the impact of lockdowns on expected income, after controlling for the covariates, are only statistically significant for households in Java but not for those living outside Java, suggesting the household expectation in the latter area are insensitive towards lockdowns. Parallel to the drop in income, Panel C shows the drop in household consumption on durable goods in Java is much less than outside Java, with lockdowns coefficients appear to be statistically significant at $\alpha$ =1% and are estimated at -0.53 and -1.68, respectively.

These results suggest that the impact of lockdowns is more substantial outside Java than in Java. This is mainly because of the low level of development and lack of infrastructure (transportation, logistics, health infrastructure, etc.) outside Java. In addition, lockdowns also disrupt the distribution of goods and services (including medical supplies) outside Java, and hence their economic activity, due to their high dependence on supplies from Java (see the discussion in, for example, Ridhwan, 2021). Thus, the impact would be substantial even though the size of the pandemic itself was not as big as in Java. This suggests a need for better policy coordination between core and peripheral regions as regards the implementation of lockdowns by taking regional variations in economic structures and characteristics into consideration.

Table 11 Heterogeneity Impact of Lockdown Based on Java versus Non-Java

| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
|---|---|---|---|---|---|---|---|---|
| | OLS | 2SLS | OLS | 2SLS | OLS | 2SLS | OLS | 2SLS |
| | Non-Java | | | | Java | | | |
| **Panel A** | | | | | | | | |
| **Dep. Var.: Change in Income** | | | | | | | | |
| Dummy Lockdown | -0.568*** | -3.139*** | -0.431*** | -2.827*** | -0.854*** | -0.848*** | -0.716*** | -0.683*** |
| | (0.054) | (0.711) | (0.043) | (0.643) | (0.063) | (0.119) | (0.054) | (0.113) |
| Dep. Var. Mean | -0.041 | -0.041 | -0.041 | -0.041 | -0.001 | -0.001 | -0.001 | -0.001 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Observation | 108,540 | 108,540 | 108,540 | 108,540 | 68,411 | 68,411 | 68,411 | 68,411 |
| Adjusted R-squared | 0.065 | | 0.160 | | 0.112 | | 0.206 | |
| Kleibergen-Paap First-stage F-Stats | | 6.071 | | 5.991 | | 12.101 | | 11.959 |
| **Panel B** | | | | | | | | |
| **Dep. Var.: Expected Future Income** | | | | | | | | |
| Dummy Lockdown | -0.254** | -0.638*** | -0.089 | -0.144 | -0.497*** | -0.584*** | -0.300*** | -0.369*** |
| | (0.086) | (0.146) | (0.053) | (0.205) | (0.080) | (0.115) | (0.044) | (0.091) |
| Dep. Var. Mean | 0.309 | 0.309 | 0.309 | 0.309 | 0.571 | 0.571 | 0.571 | 0.571 |
| Observation | 108,540 | 108,540 | 108,540 | 108,540 | 68,411 | 68,411 | 68,411 | 68,411 |
| Adjusted R-squared | 0.061 | | 0.233 | | 0.064 | | 0.257 | |
| Kleibergen-Paap First-stage F-Stats | | 6.071 | | 5.991 | | 12.101 | | 11.959 |
| **Panel C** | | | | | | | | |
| **Dep. Var.: Consumption of Durable Goods** | | | | | | | | |
| Dummy Lockdown | -0.366*** | -1.835*** | -0.287*** | -1.675*** | -0.630*** | -0.643*** | -0.537*** | -0.529*** |
| | (0.086) | (0.369) | (0.067) | (0.336) | (0.088) | (0.118) | (0.075) | (0.120) |
| Dep. Var. Mean | 0.021 | 0.021 | 0.021 | 0.021 | -0.079 | -0.079 | -0.079 | -0.079 |
| Observation | 108,540 | 108,540 | 108,540 | 108,540 | 68,411 | 68,411 | 68,411 | 68,411 |
| Adjusted R-squared | 0.061 | | 0.099 | | 0.082 | | 0.122 | |
| Kleibergen-Paap First-stage F-Stats | | 6.071 | | 5.991 | | 12.101 | | 11.959 |
| Sector Dummies | No | No | Yes | Yes | No | No | Yes | Yes |
| Month Dummies | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Province Dummies | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Covariates | No | No | Yes | Yes | No | No | Yes | Yes |

Source: Authors' calculation

Note: Robust standard errors clustered at province level in parentheses. The sample in Columns (1)-(4) are households located outside Java. In columns (5)-(8), the samples are households located in Java. The set of covariates are expectations of business conditions in the future, sex, total expenditure, age, education level, and the dummy for the formal sector. Dummy lockdown is instrumented by the number of active cases (in 000). * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

## *Robustness Test*

To check for robustness, we substitute the lockdowns dummy by the measure of lockdown duration (in average days per month) as an alternative independent variable of interest. Unlike the lockdowns dummy that captures only the incidence of lockdown implementations, the lockdown duration captures the length of time spent on lockdowns which may also affect people's behavior. Baker et al. (2020) conclude that both the duration of lockdowns and the adoption of the "shelter in place orders" in the US have significant negative impacts on individuals' spending.

Table 12 depicts the impact of the length of lockdown policies on our main dependent variables. We employ the same estimation strategy used in our baseline results. The columns show the results from either an OLS or 2SLS estimation, instrumented by the number of active cases. The F-tests from our first stage estimation, ranging from 13.07 and 16.49, suggesting that the number of active cases is a useful instrument for the new independent variable in our model.

The results suggest that the negative impact of lockdowns on income, expected income, and consumption of durable goods worsen as the duration extends. The duration of lockdowns is also positively affecting the consumption share of income, which gets larger as the period of lockdown expands. Consequently, longer lockdowns would force households to increasingly reduce their income allocation for debt installment and savings to smooth consumption as income dwindled. These all are consistent with the results from our main estimation model and confirm the robustness of our findings.

Table 12 Robustness Test using the Length of Lockdown as an Alternative Independent Variable

| Dependent Variable | Change in Income | | Expected Future Income | | Consumption of Durable Goods | | The Share of Consumption Relative to Income | | The Share of Debt Instalment Relative to Income | | The Share of Saving Relative to Income | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | (1) OLS | (2) 2SLS | (3) OLS | (4) 2SLS | (5) OLS | (6) 2SLS | (7) OLS | (8) 2SLS | (9) OLS | (10) 2SLS | (11) OLS | (12) 2SLS |
| Length of Lockdown | -0.023*** | -0.033*** | -0.009*** | -0.016*** | -0.018*** | -0.024*** | 0.095* | 0.168*** | -0.043** | -0.072*** | -0.051 | -0.096** |
| | (0.002) | (0.006) | (0.001) | (0.004) | (0.002) | (0.005) | (0.030) | (0.035) | (0.008) | (0.009) | (0.024) | (0.038) |
| Sector Dummies | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Month Dummies | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Province Dummies | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Covariates | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Observation | 176,951 | 176,951 | 176,951 | 176,951 | 176,951 | 176,951 | 37,306 | 37,306 | 37,306 | 37,306 | 37,306 | 37,306 |
| Adjusted R-squared | 0.174 | | 0.174 | | 0.106 | | 0.055 | | 0.040 | | 0.046 | |
| Kleibergen-Paap First-stage F-Stats | | 13.073 | | 13.073 | | 13.073 | | 16.497 | | 16.497 | | 16.497 |

Source: Authors' calculation

Note: Robust standard errors clustered at province level in parentheses. The dependent variables here are change in income (columns 1 and 2), expected future income (columns 3 and 4), consumption of durable goods (columns 5 and 6), the share of consumption relative to income (columns 7 and 8), the share of debt instalment relative to income (columns 9 and 10), and the share of saving relative to income (columns 11 and 12). The main independent variable is the length of lockdown in days. The set of covariates are expectations of business conditions in the future, sex, total expenditure, age, education level, and the dummy for the formal sector. Length of lockdown is instrumented by the number of active cases (in 000). The total number of observations drops in columns 7-12 because the sample for this question is only in Jakarta, West Java, and South Sulawesi. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

# 4. Conclusion and Recommendation

## 5.1 Conclusion

The crisis due to COVID-19 has affected countries, firms, and households globally. In Indonesia, coronavirus infection was first detected in March 2020 and has escalated since, reaching around 4 million cumulative positive cases and 130,000 deaths by the end of August 2021. The economy contracted by 2.1% during 2020, the first time since the Asian financial crisis in 1998. The unemployment rate increased from 5.2% in August 2019 to 7.1% in August 2020, and the poverty rate increased from 9.2% in September 2019 to 10.2% in September 2020. This study estimates the impact of COVID-19, through lockdown policies, on household income, income expectation, consumption of durable goods, and budget allocation for consumption, debt installment, and savings using monthly consumer survey data collected by Bank Indonesia.

We confirm that lockdowns have reduced household income. In provinces that implement lockdowns, household income on average is lowered by 0.83 points relative to the mean of -0.03. In terms of magnitude, one standard deviation of increase in the implementation of lockdown leads to a decrease in income by 0.25 of a standard deviation in the change in income, which is quite substantial. Our study is the first to establish the causal impact of lockdowns on household income in Indonesia, which is also consistent with the results obtained by studies in other countries.

Our next finding is on household expectations about their future income. We find that lockdowns also lower the expected income. Our estimation results suggest that lockdowns are associated with a reduction in expected income by -0.39. Compared with the mean value of 0.41, it shows that lockdowns have a sizable impact on the change of expectation about household income. This implies that the index for household expected income remains positive but lower, meaning that households still expect an increase in future income relative to their current. However, household expectations are scaled down by lockdowns.

We further investigate the effect of lockdowns on the consumption of durable goods. Purchases of durable goods are cyclical as they tend to increase during good times and decrease otherwise. Financial constraints affect the consumption of durable goods as households prefer to reallocate their income or savings to other types of consumption. We find that households who face lockdowns are more likely to reduce their durables consumption by 0.61 points. This drop is quite substantial compared to the mean of the dependent variable of 0.01, which suggests that households under lockdown reduce their consumption of durable goods in response to an unexpected reduction in income.

Finally, we investigate the impact of lockdowns on household budget allocation. We find that lockdowns increase the share of consumption in the household budget by 4.38 percentage points. It implies that households in lockdown provinces increase their consumption share of income compared to households living in areas that do not implement lockdowns. This is a 6.63% increase relative to the mean consumption share of 66.01%, indicating household intention to smooth consumption. When income drops, households try to maintain their consumption of non-durable goods or at least minimize the decrease, and hence increasing the share of consumption in income.

The increase in the share of consumption implies reductions in the share of other allocations in the household budget. We indeed find that lockdown policies reduce the share of debt installment in income by 1.89 percentage points. In addition, households who face lockdowns also reduce the

share of their income for savings by 2.49 percentage points. Compared to the mean dependent variable of 19.26%, the effect is quite substantial.

Our results suggest that lockdowns have substantial effects on household financial conditions. However, we also find that the effects differ across groups of households. First, we find that lower-income households face greater hardships than their higher-income counterparts. Second, we find that the impact of lockdowns is more significant outside Java than in Java because of differences in the level of development and economic structures. Third, we find that the impact of lockdowns is more significant for households with lower levels of education as they face the profound effects of lockdown because they work in sectors that are more vulnerable to the restrictions of mobility and activities.

## 5.2 Policy Recommendation

The findings of this study have important implications for policies both during the pandemic and post-pandemic periods. The finding that lockdowns have caused a substantial reduction in household income confirms that lockdowns have reduced business activities, hence people lost jobs or faced a reduction in work hours, causing a reduction in income of both workers and self-employed people. Hence, social assistance to help workers who lost jobs or furloughed is critical to assist households in maintaining their welfare. This requires substantial expansions in the coverage of regular social assistance, which focuses on poor populations.

The finding that lockdowns caused lower expectations about the increase in future income might reflect the progress of economic recovery. In particular, it links to a possibility of slow and sluggish economic recovery. This implies the need for strong and credible policy measures to boost household expectations about their future income. Hence, recovery policy should be focused on assisting businesses to resume operations and achieve normal business activities without prompting workers and consumers to greater health hazards. This will allow workers of all categories to regain employment and recover their income while ensuring a more inclusive recovery at the same time. Over a longer period, efforts to improve workers' productivity are needed to guarantee workers improving their income and resilience against possible future shocks.

The finding that there has been a substantial reduction in durable goods consumption due to lockdowns implies a great pent-up demand for durable goods in the future. The implication is that the production and distribution of durable goods need to be ready for the eventual increase in demand during the post-pandemic recovery. Hence, better and easier access to financing working capital and investment for business entities are needed to ensure adequate supply for meeting up the pent-up demand.

Finally, the finding that households reallocate their budget from debt installments and savings suggests that financial support is crucial because households' income declines, their arrears on debt increase, and at the same time have to use their savings to finance their expenditure. This implies that households who face financial hardship can benefit from debt restructuring, which enables them to postpone the repayments of their debts until they regain their income after recovering from the crisis.

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## Appendix D. Bank Indonesia Consumer Survey Form

BANK INDONESIA — *Survei Konsumen Bank Indonesia*

**A. INFORMASI UMUM RESPONDEN**

Nama : _____

Alamat : _____

Desa/Kelurahan : _____ Jenis Kelamin : Laki-laki / Perempuan

Kecamatan : _____ No. Telepon / HP : ( ____ ) _____

Kabupaten/Kota : _____ No. KTP (16 digit) : _____

Pengeluaran/bulan :
- ☐ Rp1,0-2 juta
- ☐ Rp2,1-3 juta
- ☐ Rp3,1-4 juta
- ☐ Rp4,1-5 juta
- ☐ Rp5,1-6 juta
- ☐ Rp6,1-7 juta
- ☐ Rp7,1-8 juta
- ☐ >Rp8 juta

Umur :
- ☐ 20-30 tahun
- ☐ 31-40 tahun
- ☐ 41-50 tahun
- ☐ 51-60 tahun
- ☐ >60 tahun

Pendidikan :
- ☐ SMA
- ☐ Diploma
- ☐ Sarjana
- ☐ S2 / S3

Kategori pekerjaan :
- ☐ Formal
- ☐ Informal

Bidang pekerjaan :
- ☐ Pertanian, kehutanan, dan perikanan
- ☐ Pertambangan dan penggalian
- ☐ Industri pengolahan
- ☐ Pengadaan listrik dan gas
- ☐ Pengadaan air, pengelolaan sampah, limbah, dan daur ulang
- ☐ Konstruksi
- ☐ Perdagangan besar dan eceran, reparasi mobil dan sepeda motor
- ☐ Transportasi dan pergudangan
- ☐ Penyediaan akomodasi dan makan minum
- ☐ Informasi dan komunikasi
- ☐ Jasa keuangan dan Asuransi
- ☐ Real estate
- ☐ Jasa perusahaan
- ☐ Administrasi pemerintahan, pertahanan, dan jaminan sosial wajib
- ☐ Jasa pendidikan
- ☐ Jasa kesehatan dan kegiatan sosial
- ☐ Jasa lainnya
- ☐ Ibu rumah tangga
- ☐ Pensiunan

**B. KEYAKINAN KONSUMEN**

B2. Menurut perkiraan Bapak/Ibu, bagaimana **kondisi kegiatan usaha secara umum pada 6 bulan yang akan datang** dibandingkan saat ini?

☐ Semakin jauh membaik ☐ Sedikit membaik ☐ Sama ☐ Sedikit memburuk ☐ Semakin jauh memburuk

Alasan menjawab membaik (jauh/sedikit):
- ☐ Subsidi/insentif Pemerintah meningkat
- ☐ Pembiayaan perbankan semakin mudah
- ☐ Perbaikan insfrastruktur meningkat
- ☐ Kenaikan harga terkendali
- ☐ Lainnya, sebutkan: _____

Alasan menjawab memburuk (jauh/sedikit):
- ☐ Proses perizinan semakin sulit
- ☐ Pembiayaan perbankan semakin susah
- ☐ Perbaikan insfrastruktur menurun
- ☐ Kenaikan harga tidak terkendali
- ☐ Lainnya, sebutkan: _____

*Alasan perubahan kondisi kegiatan usaha dapat lebih dari 1 jawaban*

B3. Bagaimana perubahan **penghasilan Bapak/Ibu saat ini** dibandingkan 6 bulan yang lalu?

☐ Meningkat cukup banyak ☐ Sedikit meningkat ☐ Sama ☐ Sedikit menurun ☐ Menurun cukup banyak

B4. Menurut perkiraan Bapak/Ibu, bagaimana perubahan **penghasilan Bapak/Ibu pada 6 bulan yang akan datang** dibandingkan saat ini?

☐ Meningkat cukup banyak ☐ Sedikit meningkat ☐ Sama ☐ Sedikit menurun ☐ Menurun cukup banyak

Alasan menjawab meningkat (banyak/sedikit):

- ☐ Akan ada kenaikan/tambahan gaji/upah
- ☐ Akan ada kenaikan omzet
- ☐ Akan ada kenaikan tambahan pendapatan di luar gaji/upah/omzet
- ☐ Lainnya, sebutkan: _____

Alasan menjawab menurun (banyak/sedikit):

- ☐ Akan ada penurunan gaji/upah
- ☐ Akan ada penurunan omzet
- ☐ Akan ada penurunan tambahan pendapatan di luar gaji/upah/omzet
- ☐ Lainnya, sebutkan: _____

*Alasan perubahan penghasilan dapat lebih dari 1 jawaban*

B5. Bagaimana **ketersediaan lapangan kerja saat ini** dibandingkan 6 bulan yang lalu?

☐ Meningkat cukup banyak ☐ Sedikit meningkat ☐ Sama ☐ Sedikit menurun ☐ Menurun cukup banyak

B6. Menurut perkiraan Bapak/Ibu, bagaimana **ketersediaan lapangan kerja pada 6 bulan yang akan datang** dibandingkan saat ini?

☐ Meningkat cukup banyak ☐ Sedikit meningkat ☐ Sama ☐ Sedikit menurun ☐ Menurun cukup banyak

Alasan menjawab meningkat (banyak/sedikit):

- ☐ Kondisi ekonomi membaik
- ☐ Kegiatan/proyek Pemerintah/Swasta meningkat
- ☐ Perusahaan asing semakin banyak beroperasi di Indonesia
- ☐ Akses kredit ke Perbankan semakin mudah
- ☐ Lainnya, sebutkan: _____

Alasan menjawab menurun (banyak/sedikit):

- ☐ Kondisi ekonomi memburuk
- ☐ Kegiatan/proyek Pemerintah/Swasta menurun
- ☐ Perusahaan asing semakin sedikit beroperasi di Indonesia
- ☐ Akses kredit ke Perbankan semakin susah
- ☐ Lainnya, sebutkan: _____

*Alasan perubahan ketersediaan lapangan kerja dapat lebih dari 1 jawaban*

B7. Bagaimana **pengeluaran Bapak/Ibu untuk konsumsi barang-barang tahan lama (seperti barang elektronik, furnitur, kendaraan, perhiasan)** saat ini dibandingkan 6 bulan yang lalu?

☐ Meningkat cukup banyak ☐ Sedikit meningkat ☐ Sama ☐ Sedikit menurun ☐ Menurun cukup banyak

Alasan menjawab meningkat (banyak/sedikit):

- ☐ Belanja furnitur dan perabotan rumah tangga meningkat
- ☐ Belanja kendaraan (sepeda motor, mobil) meningkat
- ☐ Belanja elektronik (HP, TV, AC, lemari es) meningkat
- ☐ Belanja perhiasan meningkat
- ☐ Lainnya, sebutkan: _____

Alasan menjawab menurun (banyak/sedikit):

- ☐ Belanja furnitur dan perabotan rumah tangga menurun
- ☐ Belanja kendaraan (sepeda motor, mobil) menurun
- ☐ Belanja elektronik (HP, TV, AC, lemari es) menurun
- ☐ Belanja perhiasan menurun
- ☐ Lainnya, sebutkan: _____

*Alasan perubahan pengeluaran dapat lebih dari 1 jawaban*

## C. KONDISI KEUANGAN KONSUMEN DAN AKSES KE PERBANKAN

C5. Pada bulan ini, berapa **persen penghasilan** Bapak/Ibu yang digunakan untuk:

| | | |
|---|---|---|
| **Konsumsi** | : | _____ % |
| **Pembayaran cicilan/pinjaman** (pembayaran cicilan rumah, cicilan kendaraan, utang lainnya) | : | _____ % |
| **Tabungan** (sisa pendapatan yang tidak habis dikonsumsi) | : | _____ % |
| **TOTAL** | : | **100%** |

---------- oooooooo **TERIMA KASIH** oooooooo ----------