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REPLICATION PACKAGE

"Lives, Livelihoods, and Learning: A Global Perspective on the
Well-being Impacts of the Covid-19 Pandemic"

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This file explains how to replicate all figures and tables in the paper.
All outputs (tables and figures) are stored in /04-Results (main text) or
/06-Appendix/Results (appendix).

1. DATA AVAILABILITY STATEMENT

All datasets used are public and included in the reproducibility package.

2. INPUT DATA (/02-InputData)

1) Data name: CLASS_historical.dta

Source: Historical country income group classification from Daniel Mahler

URL: <https://github.com/GPID-WB/Class>

Notes: Historical country income group classification. No cleaning took
place. Dataset was accessed on November 2023. Dataset can be found inside the folder
OutputData of the Data URL, in a file named CLASS.dta. Please change its name to
CLASS_historical.dta

Access Date: November 2023

Access Type: Data is public and included in the reproducibility package.

2) Data name: Excess deaths WHO.xlsx

Source: WHO Estimates of Excess Mortality Associated With COVID-19 Pandemic

URL:

<https://www.who.int/data/sets/global-excess-deaths-associated-with-covid-19-modelled-estimates>

Notes: WHO dataset on global excess deaths, used to create YLL. Data was
accessed on May 2022. Please refer to "Previous releases" at the bottom of the
website provided to download the May 2022 vintage. Download is a zip file. Excel
file used is "WHO_COVID_Excess_Deaths_EstimatesByCountry.xlsx", only the tab Country
by year, sex and age. Please delete rows 1 to 11, rows 5434 to 5439, and change the
file name to "Excess deaths WHO.xlsx".

Access Date: May 2022

Access Type: Data is public and included in the reproducibility package.

3) Data name: GlobalDist_1000bins_2019-2023_sep23.dta

Source: Global binned income distribution per country and year from: The Impact of COVID-19 on Global Inequality and Poverty

URL:

<https://github.com/worldbank/covid-impact-on-inequality-and-poverty/tree/main>

Notes: Global binned income distribution per country and year. Version: 20230919_2017_01_02_PROD. To generate the database, run the do files of the Data URL. This code queries updated poverty lines from the Poverty and Inequality Platform (PIP, World Bank) publicly available at <https://pip.worldbank.org/home>. If the code provided produces updated data that differs from the data used in this paper, please refer to the dataset authors. After running the code, change the name of the variable region_code to region_pip, and obs to quantile and save the dataset as GlobalDist_1000bins_2019-2023_sep23.dta

Access Date: October 2023

Access Type: Data is public and included in the reproducibility package.

4) Data name: GlobalDist_1000bins_MYLseptember23_limitedvars.dta

Source: Development Data Hub; Authors of the paper "The Impact of COVID-19 on Global Inequality and Poverty"

URL:

https://datacatalog.worldbank.org/search/dataset/0067062/global_distribution_of_income_during_covid_version_september_2023

Notes: Welfare vectors, used to create CPY. Updated data from "The Impact of COVID-19 on Global Inequality and Poverty" (World Bank Policy Research Working Paper 10198, <http://hdl.handle.net/10986/38114>).

Access Type: Data is public and included in the reproducibility package.

Citation: Updated data of "The Impact of COVID-19 on Global Inequality and Poverty", World Bank Policy Research Working Paper 10198. <http://hdl.handle.net/10986/38114>

5) Data name: OUTPUT_default_nolinks_31March2023.xlsx

Source: Composite workbook assembled from Penn World Table 10.01; Total investment from the World Economic Outlook report for October 2022; World Bank's Human Capital Project; Barro-Lee Educational Attainment Database; National Accounts Data from the UN's Statistical Division (UNSD); UN's World Population Prospects; World Bank's World Development Indicators (WDI) - GDP per capita and labor force participation; Global Monitoring of School Closures Caused by the COVID-19 Pandemic from UNESCO

Sources by Tab/variable

Summary Tab / Labor share: Penn World Table 10.01

Summary Tab / Initial capital-to-GDP ratio: Penn World Table 10.01

Summary Tab / Depreciation rate: Penn World Table 10.01

Summary Tab / Years of school: World Bank's Human Capital Project;

Summary Tab / Quality: World Bank's Human Capital Project;

Summary Tab / LAYS: World Bank's Human Capital Project;

Summary Tab / Agriculture share: National Accounts Data from the

UN's Statistical Division (UNSD);

Summary Tab / TFP: Penn World Table 10.01

Summary Tab / Investment: World Economic Outlook report for October 2022

Summary Tab / School Closures: Global Monitoring of School Closures Caused by the COVID-19 Pandemic from UNESCO

INPUTS Tab/ Capital to output ratio: Penn World Table 10.01 and 9 Vintages, World Bank Internal Estimates (MFMOD)

INPUTS Tab/ Variables yrs_loss and initial_dtfp linked from Summary tab

URL: <https://www.rug.nl/ggdc/productivity/pwt/?lang=en> ;
<https://www.imf.org/en/Publications/WE0/Issues/2022/10/11/world-economic-outlook-october-2022> ; <https://www.worldbank.org/en/publication/human-capital> ;
<http://www.barrolee.com> ; <http://data.un.org/Explorer.aspx?d=SNAAMA> ;
<https://population.un.org/wpp/> ;
<https://datatopics.worldbank.org/world-development-indicators/> ;
<https://covid19.uis.unesco.org/global-monitoring-school-closures-covid19/>

Notes: The source data tabs are hidden in the Excel file. PWT version 10.01 is a database with information on relative levels of income, output, input and productivity, covering 183 countries between 1950 and 2019. We use data from PWT 10 to calibrate the labor share, initial capital to output ratio, depreciation rate and TFP. Labor share: The labor share is a key parameter for the impact of human capital on growth and is taken from Penn World Table 10 (PWT10) for 2019 (most recent observation) under “labsh” “Share of labour compensation in GDP at current national prices”. Depreciation rate is taken from “delta” the “average depreciation rate of the capital stock”. Initial capital-to-GDP ratio: The initial capital-to-GDP ratio is calculated using the 2019 observations on physical capital stock and GDP from PWT 10. More specifically, we compute $KY = r_{nna}/rgdpna$ where “r_{nna}” is “Capital stock at constant 2017 national prices (in mil. 2017US\$)” and “rgdpna” is “Real GDP at constant 2017 national prices (in mil. 2017US\$)”. These data was copied to columns G, H, I of the tab “Summary” of the file OUTPUT_default_nolinks_31March2023.xlsx.

Access Date: Multiple source-specific access dates; see Notes and source URLs.

Access Type: Data is public and included in the reproducibility package.

6) Data name: STATA_appF1.xlsx

Source:

sch_loss: Source: Global Monitoring of School Closures Caused by the COVID-19 Pandemic from UNESCO

Quality: World Bank's Human Capital Project

URL:

<https://covid19.uis.unesco.org/global-monitoring-school-closures-covid19/> ;
<https://www.worldbank.org/en/publication/human-capital>

Notes: Years of school closures during COVID. Quality of Education from World Bank's Human Capital Project.

Access Date: Multiple source-specific access dates; see Notes and source URLs.

Access Type: Data is public and included in the reproducibility package.

7) Data name: UN_LifeTables_2019.dta

Source: UN's life expectancy estimates, Life table data

URL: <https://population.un.org/wpp/Download/Standard/Mortality/>

Notes: The download gave life table estimates for every country and world region in each year 1986 – 2021. I extract the 2019 values in Stata and saved that as UN_LifeTables_2019.dta.

Access Date: 16 April 2024

Access Type: Data is public and included in the reproducibility package.

8) Data name: WDIEXCEL_extracted0923.csv

Source: World Bank's World Development Indicators (WDI) Database

URL: <https://datatopics.worldbank.org/world-development-indicators/>

Notes: World Bank's WDI. Dataset was accessed in September 2023. Click on “CSV download” under Bulk Downloads in the Data URL. Open WDI_CSV.zip. Change the name of WDIData.csv to WDIEXCEL_extracted0923.csv

Access Date: September 2023

Access Type: Data is public and included in the reproducibility package.

9) Data name: WE00ct2022all.xls

Source: World Economic Outlook (WEO) database by the International Monetary Fund

URL:

<https://www.imf.org/en/Publications/WEO/weo-database/2022/October/download-entire-database>

Notes: WEO Database, macroeconomic data series produced by the International Monetary Fund. Dataset was accessed in October 2022. Please click on the button “By Countries” to download the dataset and name it WE00ct2022all.xls.

Access Date: October 2022

Access Type: Data is public and included in the reproducibility package.

3. HOW TO REPLICATE ALL RESULTS

Step 1: Open 00-Master.do in Stata.

Step 2: Update the global path macro (line 23, Section 0 of 00-Master.do) to the location of this replication folder on your computer:

```
global path "C:/your/path/to/LLL_ReplicationPackage"
```

Step 3: Run 00-Master.do. This will automatically:

- (0) Set Stata environment defaults
- (1) Install required user-written ado packages (wbopendata from SSC; github and pip from GitHub)
- (2) Build core datasets (CPY, FPY, YLL, Alpha)
- (3) Produce all main text tables
- (4) Produce all main text figures
- (5) Produce all appendix tables and figures

Expected total runtime: about 30 minutes (may vary by hardware and internet speed).

Logs are saved to /05-Logs (main text) and /06-Appendix/Logs (appendix).

00-Master.do currently runs all sections in a fixed sequence (Sections 0-5) and does not include run switches.

If you only want a subset of outputs, run the relevant do files manually from Section 5 below.

Note: Main text tables/figures and appendix outputs depend on the datasets produced in Section 2 of 00-Master.do (01a-CPY.do, 01b-FPY.do, 01c-YLL.do, 01d-Alpha.do).

4. SOFTWARE REQUIREMENTS

- Stata 18.5 for Windows
- Internet access (to auto-install and use wbopendata, github, and pip; see Section 3)

Non-native Stata ado packages required:

wbopendata -- World Bank Open Data access (SSC)

Used in: 06-Appendix/DoFiles/AppendixFigure1.do

Note: when replicating the package, it came to our attention that the WBOPENDATA code

downloads different results in some cases. The verification team were unable to tell why this is so even after trying on another VDI and in that case even the default Plus folder returned a different dataset. As a workaround, the replication verification team has created a copy of the dataset.

We have also added the exact ado files used in the 01-DoFiles folder.

github -- GitHub installation helper (net install from haghish.github.io)
Used in: 00-Master.do to install pip

pip -- Poverty and Inequality Platform query command (worldbank/pip)
Used in: 01-DoFiles/01b-FPY.do

These packages are installed or installation is attempted automatically by 00-Master.do.

5. REPLICATING INDIVIDUAL TABLES OR FIGURES

To run a single do file directly, first set the global path by running Section 0 of 00-Master.do (lines 13-23), then run the individual do file.

Core dataset do files (run before any table or figure):

01-DoFiles/01a-CPY.do	Current Poverty Years (CPY)
01-DoFiles/01b-FPY.do	Future Poverty Years (FPY)
01-DoFiles/01c-YLL.do	Years of Life Lost (YLL)
01-DoFiles/01d-Alpha.do	Alpha parameter

Main text tables (output: /04-Results/Tables.xlsx):

01-DoFiles/02a-Table1.do	Table 1
01-DoFiles/02b-Table2.do	Table 2
01-DoFiles/02c-Table3.do	Table 3
01-DoFiles/02d-Table4.do	Table 4

Main text figures (output: /04-Results/):

01-DoFiles/03a-Figure1.do	Figure1.pdf
01-DoFiles/03b-Figure2.do	Figure2.pdf

Appendix tables (output: /06-Appendix/Results/AppendixTables.xlsx):

06-Appendix/DoFiles/AppendixTable1.do	Appendix Table 1
06-Appendix/DoFiles/AppendixTable2.do	Appendix Table 2

Appendix figures (output: /06-Appendix/Results/):

06-Appendix/DoFiles/AppendixFigure1.do	AppendixFigure1.pdf
06-Appendix/DoFiles/AppendixFigure2.do	AppendixFigure2.pdf

6. DIRECTORY STRUCTURE

00-Master.do	Master script -- start here
Readme.txt	This file
01-DoFiles/	Do files for main text outputs
02-InputData/	All raw input data files
03-OutputData/	Intermediate datasets (CPY, FPY, YLL, Alpha)
04-Results/	Main text tables (.xlsx) and figures (.pdf)
05-Logs/	Stata log files for main text do files
06-Appendix/	
DoFiles/	Do files for appendix outputs
Logs/	Stata log files for appendix do files
Results/	Appendix tables (.xlsx) and figures (.pdf)