



Collapse and Recovery *How the COVID-19 Pandemic Eroded Human Capital and What to Do about It*

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This review verifies the reproducibility of the exhibits included in the publication “*Collapse and Recovery: How the COVID-19 Pandemic Eroded Human Capital and What to Do about It*”.

Contents in this review:

1. Main findings
2. Reproducibility assessment
3. List of exhibits and reproducibility status

Main findings

1. The code ran after following the instructions provided in the README
2. All outputs were stable across successive runs of the code
3. Nine exhibits did not reproduce as shown in the report. The README explains that this is due to updates to the input data posterior to the publication of the report, so this was expected by the reviewers. Details of the discrepancies found are shown in section List of exhibits and reproducibility status

Reproducibility assessment

We used the report downloaded on October 02, 2023 from a link provided by the team and compared the code results against the report exhibits to verify they are reproducible.

Paper exhibits were attempted to be reproduced in a computer with the following specifications:

- OS: Windows 10 Enterprise, version 21H2
- Processor: Intel(R) Xeon(R) Gold 6226R CPU @ 2.9GHz (20 CPUs)
- Memory available: 128 GB
- Software version: Stata 17.0 MP

The README of the reproducibility package specifies that some exhibits will not reproduce as shown in the report due to changes in the input data after the report was published. As expected, the results obtained differ for all exhibits mentioned in the README and reproduced as shown in the report for all the others. The differences found are described in the next section.

List of exhibits and reproducibility status

Exhibits in the Executive Summary

- **Figure ES.1** Does not apply: exhibit shows analysis results from other studies
- **Figure ES.2** Does not apply: exhibit shows analysis results from other studies
- **Figure ES.3** Does not apply: exhibit shows analysis results from other studies
- **Figure ES.4** Does not apply: exhibit shows analysis results from other studies
- **Figure ES.5** Does not apply: exhibit shows analysis results from other studies
- **Table ES.1** Does not apply: exhibit shows analysis results from other studies

Exhibits in Chapter 1

- **Figure 1.1** Does not apply: exhibit shows analysis results from other studies
- **Figure 1.2** Does not apply: exhibit shows analysis results from other studies
- **Figure 1.3** Does not apply: exhibit shows analysis results from other studies

Exhibits in Chapter 2

- **Table 2.1** Does not apply: exhibit shows analysis results from other studies
- **Figure 2.1** Does not apply: exhibit shows analysis results from other studies
- **Figure 2.2** Does not apply: exhibit shows analysis results from other studies
- **Figure 2.3** Reproduced
- **Figure 2.4** Results reproduced with a small difference of +0.1 for the percentage point of Brazil (-13.0 in the report exhibit versus -12.9 in the code output). The reviewers attribute this to rounding differences and do not consider that it breaks the reproducibility of results
- **Figure 2.5** Does not apply: exhibit shows analysis results from other studies
- **Figure 2.6** Does not apply: exhibit shows analysis results from other studies
- **Figure 2.7** Does not apply: exhibit shows analysis results from other studies
- **Figure 2.8** Does not apply: exhibit shows analysis results from other studies

Exhibits in Chapter 3

- **Figure 3.1 - Panel a** Reproduced
- **Figure 3.1 - Panel b** Reproduced
- **Figure 3.2** Results reproduced with a small difference of +0.1 for the percentage point of Brazil (-1.0 in the report exhibit versus -0.9 in the code output). The reviewers attribute this to rounding differences and do not consider that it breaks the reproducibility of results
- **Figure 3.3 - Panel a** Results reproduced with a difference for one indicator. The README explains this difference is expected due to changes in the input data posterior to the publication of the report

Figure 3.3 - Panel a	Report exhibit	Code output
At least some post-secondary education, Mexico	−0.2	−0.5

- **Figure 3.3 - Panel b** Results reproduced with a difference for one indicator. The README explains this difference is expected due to changes in the input data posterior to the publication of the report

Figure 3.3 - Panel b	Report exhibit	Code output
At least some post-secondary education, Mexico	−0.1	−0.3

- **Figure 3.4** Reproduced
- **Figure 3.5** Reproduced
- **Figure 3.6** Reproduced
- **Figure 3.7** Reproduced
- **Figure 3.8** Reproduced
- **Figure 3.9** Does not apply: exhibit shows analysis results from other studies
- **Figure B3.2.1 - Panel a** Reproduced. The exhibit was compared against *Ch3_Fig3Box_1PanelA_GDPpercapita_v_School_Closures.wmf*
- **Figure B3.2.1 - Panel b** Reproduced. The exhibit was compared against *Ch3_Fig3Box_1PanelB_GovEffectiveness_v_School_Closures.wmf*
- **Table 3A.1** Does not apply: exhibit is produced with restricted-access data

Exhibits in Chapter 4

- **Figure 4.1** Reproduced
- **Figure 4.2 - panel a** Results reproduced with a difference for two indicators. The README explains this difference is expected due to changes in the input data posterior to the publication of the report

Figure 4.2 - panel a	Report exhibit	Code output
2020:Q2, Brazil	−6	−5
2020:Q4, Brazil	6	5

- **Figure 4.2 - panel b** Reproduced

- **Figure 4.3** Results reproduced with a difference for ten indicators. The README explains this difference is expected due to changes in the input data posterior to the publication of the report

Figure 4.3	Report exhibit	Code output
2020:Q2, Youth employment, Brazil	−15	−12
2020:Q2, Youth wages, Brazil	−2	−1
2021:Q1, Youth employment, Brazil	−6	−4
2021:Q1, Youth wages, Brazil	−1	0
2021:Q4, Youth employment, Brazil	16	14
2021:Q1, Youth wages, India	−22	−21
2020:Q2, Youth employment, Mexico	−20	−21
2020:Q2, Youth wages, Mexico	1	0
2021:Q1, Youth employment, Mexico	−3	−4
2021:Q1, Youth wages, Mexico	2	1

- **Figure B4.1.1 - panel a** Reproduced
- **Figure B4.1.1 - panel b** Reproduced
- **Figure B4.1.1 - panel c** Reproduced
- **Figure 4.4 - panel a** Results reproduced with a difference for six indicators for panel a and eight for panel b. The README explains these differences are expected due to changes in the input data posterior to the publication of the report

Figure 4.4 - panel a	Report exhibit	Code output
2020:Q2, Youth enrollment rate, Brazil	2	1
2021:Q1, Youth enrollment rate, Brazil	5	3
2021:Q4, Youth enrollment rate, Brazil	1	2
2020:Q2, Youth enrollment rate, Mexico	−1	1
2021:Q1, At least 2-6 months since schools reopened, Mexico	Yes	No
2021:Q1, At least 2-6 months since schools reopened, South Africa	Yes	No

- **Figure 4.4 - panel b** Results reproduced with a difference for eight indicators. The README explains this difference is expected due to changes in the input data posterior to the publication of the report

Figure 4.4 - panel b	Report exhibit	Code output
2020:Q2, Youth male enrollment rate, Brazil	2	1
2020:Q2, Youth female enrollment rate, Brazil	3	1
2021:Q1, Youth male enrollment rate, Brazil	4	3
2021:Q1, Youth female enrollment rate, Brazil	5	4
2021:Q4, Youth male enrollment rate, Brazil	0	1
2021:Q4, Youth female enrollment rate, Brazil	2	3
2020:Q2, Youth male enrollment rate, Mexico	−1	4
2021:Q1, At least 2-6 months since schools reopened, South Africa	Yes	No

- **Figure 4.5 - panel a** Results reproduced with a difference for two indicators. The README explains this difference is expected due to changes in the input data posterior to the publication of the report

Figure 4.5 - panel a	Report exhibit	Code output
2021:Q1, Share of NEETs, Brazil	−3	−2
2021:Q4, Share of NEETs, Brazil	−4	−5

- **Figure 4.5 - panel b** Results reproduced with a difference for three indicators. The README explains this difference is expected due to changes in the input data posterior to the publication of the report

Figure 4.5 - panel b	Report exhibit	Code output
2020:Q2, Youth female NEETs, Brazil	1	2
2021:Q1, Youth female NEETs, Brazil	−3	−2
2021:Q4, Youth female NEETs, Brazil	−4	−5

- **Figure 4.6 - panel a** Reproduced
- **Figure 4.6 - panel b** Reproduced
- **Figure 4.7 - panel a** Reproduced
- **Figure 4.7 - panel b** Reproduced
- **Figure 4.8 - panel a** Reproduced

- **Figure 4.8 - panel b** Results reproduced with a difference for five indicators. The README explains this difference is expected due to changes in the input data posterior to the publication of the report

Figure 4.8 - panel b	Report exhibit	Code output
2020:Q2, Youth employment (ages 15-24), Brazil	−6	−5
2020:Q2, Adult employment (ages 25-64), Brazil	−7	−6
2021:Q1, Adult employment (ages 25-64), Brazil	−5	−3
2021:Q4, Youth employment (ages 15-24), Brazil	6	5
2021:Q4, Adult employment (ages 25-64), Brazil	1	0

- **Figure 4A.1 - panel a** Reproduced
- **Figure 4A.1 - panel b** Reproduced

Exhibits in Chapter 5

- **Figure B5.2.1** Does not apply: exhibit shows analysis results from other studies

Exhibits in Chapter 6

- **Figure 6.1** Does not apply: exhibit shows analysis results from other studies
- **Figure B6.1.1** Does not apply: exhibit shows analysis results from other studies
- **Table 6.1** Does not apply: exhibit shows analysis results from other studies