

Online appendix for “Student Debt Incidence: Recent Data and Conceptual Issues”^{*}

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This document provides a guide to the replication materials for “Student Debt Incidence: Recent Data and Conceptual Issues”. All code is written in Python 3.6.5 and is located at https://github.com/tphelanECON/student_debt_SCF. If you have questions please email Thomas Phelan at tom.phelan@clev.frb.org.

1 Figures

There are four scripts: `main`, `scf_data_clean`, `scf_figures`, and `scf_lifetime_wealth`. The scripts produce 24 figures in total. Figures in the *Commentary* and the files upon which they draw:

- Figure 1: `BvsNBincome` and `BvsNBnetwork`;
- Figure 2: `SDquintileincome` and `SDquintilenetwork`;
- Figure 3: `networkhmmAGE` and `incomemmmAGE`;
- Figure 4: `SDquintilelifetime_wealth04`.
- Figure 5: `cancelincomequintile10000`, `cancelnetworkquintile10000`, `cancelincomequintile50000` and `cancelnetworkquintile50000`.
- Figure 6: `cancellifetime_wealthquintile1000004` and `cancellifetime_wealthquintile5000004`.

^{*}The views stated herein are those of the authors and are not necessarily those of the Federal Reserve Bank of Cleveland or the Board of Governors of the Federal Reserve System.

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- Figure 7: `percap_income_debt_count` and `lifetime_wealth_debt_count04`.

In addition to the above 15 figures we have the following 9 supplementary figures:

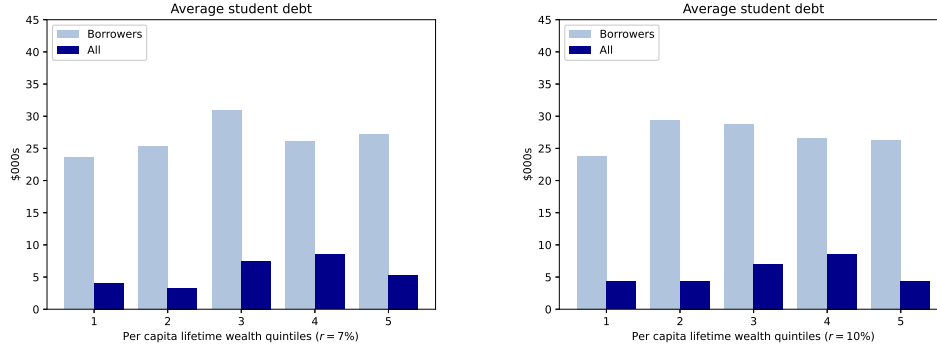
- distribution of student debt by lifetime wealth for higher interest rates (analogues of Figure 4): `SDquintilelifetime_wealth07` and `SDquintilelifetime_wealth010`.
- distribution of cancellation benefits by lifetime wealth for higher interest rates (analogues of Figure 6): `cancellifetime_wealthquintile1000007`, `cancellifetime_wealthquintile5000007`, `cancellifetime_wealthquintile10000010` and `cancellifetime_wealthquintile50000010`.
- debtor counts (analogues of Figure 7 for higher interest rates): `lifetime_wealth_debt_count07` and `lifetime_wealth_debt_count010`, as well as the figure for net worth, `percap_networth_debt_count`.

2 Code description

The scripts perform the following tasks:

1. `main`: runs `scf_data_clean`, `scf_figures` and `scf_lifetime_wealth` and creates a figures folder if one does not exist.
2. `scf_data_clean`:
 - downloads both full public dataset and summary dataset for the 2019 SCF from the Board of Governors website www.federalreserve.gov, keeps variables relevant for student debt and creates dataframes for those with and without student debt.
 - creates lists for debt cancellation and brackets.
 - calculates the loans held by each household as well as deciles and quintiles for networth and income for the whole population and by age.
 - computes benefits of cancellation for each household.
3. `scf_figures`: produces the majority of the figures in the *Commentary* (all except the lifetime wealth figures, which have their own script).
4. `scf_lifetime_wealth`: calculates the quantities relevant for the lifetime wealth calculates and produces the analogous figures.

Figure 1: Student Debt by Lifetime Wealth.



3 Supplementary figures

Figure 4 in the *Commentary* depicts the average student debt by quintiles of lifetime wealth for both borrowers and the general population, assuming $r = 4\%$. We claimed that the qualitative features of the plot was unchanged for higher discount rates. Figure 1 depicts the analogous figures for $r = 7\%$ and $r = 10\%$, and shows that average debt levels are not concentrated in the lowest quintile.

Figure 6 in the *Commentary* depicts the average benefits from student debt cancellation by lifetime wealth quintiles (for the whole population). Figure 2 depicts the analogous figures for higher interest rates.

Finally, Figure 7 in the *Commentary* depicts the fraction of each quintile (for income and lifetime wealth) that lies within fixed brackets for student debt. Figure 3 depicts the analogous figures for higher interest rates.

Figure 2: Per Capita Benefits by Lifetime Wealth.

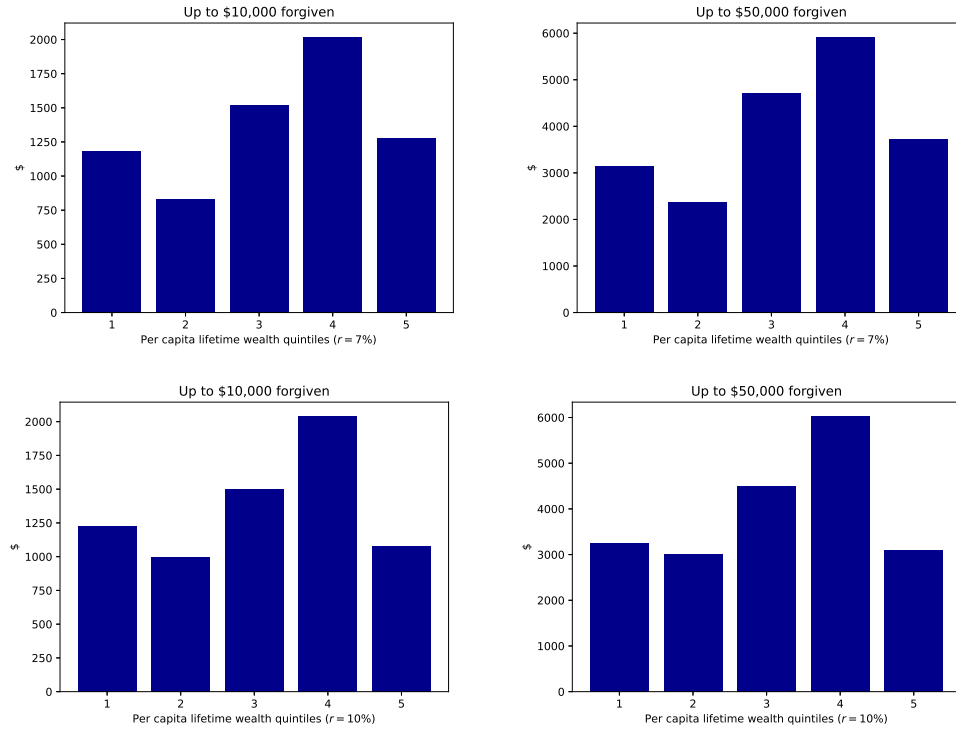


Figure 3: Breakdown of Debt within Quintiles.

