**Measuring Bias in Consumer Lending**

Will Dobbie, Andres Liberman, Daniel Paravisini, Vikram Pathania

**Analysis Code**

This file contains all the programs needed to replicate the results from “Measuring Bias in Consumer Lending” in both the main text and the appendix.

* *restud\_buildfile1.do* – creates the main analysis dataset (part 1)
* *credit\_discrim\_ml.R* – runs the machine learning algorithms described in the text to create the machine learning predictions used in *buildfile2*
* *restud\_buildfile2.do* – creates the main analysis dataset (part 2) and incorporates machine learning predictions from the R script
* *restud\_tables.do* – creates all main text and appendix tables
* *restud\_figures.do –* creates all main text and appendix figures

The Stata files were written using Stata 15. They require the following non-standard packages:

* reghdfe

The R file was written using R version 3.6.1. It requires the following non-standard packages:

* gbm
* readstata13
* gridExtra
* xtable

This R file reads in “machinelearning\_data.dta” from the *restud\_buildfile1.do* file and outputs “ml\_predict\_full\_fair.dta” and “ml\_predict\_full\_all.dta” which are used in *restud\_buildfile2.do*

**File Paths**

To run the code, researchers must (1) place the dataset into a *data* folder, and (2) create a *results* folder with a “Figures” subfolder and a “Tables” subfolder.

**Data Availability Statement**

As our data contain sensitive information on individual outcomes, and per our agreement with the Lender, it is not possible for us to make our data directly available online. Researchers interested in obtaining the data should contact the authors.

**Other Papers Using the Same Dataset**

Liberman, Andres and Paravisini, Daniel and Pathania, Vikram, High-Cost Debt and Perceived Creditworthiness: Evidence from the U.K., *Forthcoming, Journal of Financial Economics*.

**Output Files**

Tables: from *restud\_tables.do*

* table\_1.tex
* table\_2.tex
* table\_3.tex
* table\_4.tex
* table\_a1.tex
* table\_a2.tex
* table\_a3.tex
* table\_a4.tex
* table\_a5.tex
* table\_a6.tex
* table\_a7.tex
* table\_a8.tex
* table\_a9.tex
* table\_a10.tex
* table\_a11.tex
* table\_a12.tex
* table\_a13.tex
* table\_a14.tex
* table\_a15.tex
* table\_a16.tex
* table\_a17.tex
* table\_a18.tex
* table\_a19.tex

Figures: from *restud\_figures.do*

* Figure 1
  + f1a.png, f1b.png, f1c.png, f1d.png
* Figure 2
  + f2a.png, f2b.png
* Figure 3
  + f3a.png, f3b.png
* Figure 4
  + f4a.png, f4b.png, f4c.png
* Figure A1
  + af1\_AGI\_weights\_discretized\*.png
* Figure A2
  + af2\_weights\_regression\*.png
* FigureA3
  + af3\_fs\_x\*.png, af3\_rf\_x\*.png
* Figure A4
  + af4.pdf
* Figure A5
  + af5\_x\*.png
* Figure A6
  + af6\_x\*.png
* Figure A7
  + af7.png
* Figure A8
  + af8a.png, af8b.png, af8c.png
* Figure A9
  + af9a.png, af9b.png
* Figure A10
  + af10a.png, af10b.png
* Figure A11
  + af11\_x\*.png
* Figure A12
  + af12a.png, af12b.png, af12c.png