



# BonhommeLamadonManresa2021

Replication code for: “Discretizing Unobserved Heterogeneity”, by Bonhomme, Lamadon and Manresa

Download the latest zip file with all results and source code: [Download zip](#)

This repository  [gh BonhommeLamadonManresa2021](#) contains all the code to replicate the results presented in the paper. Reproducing the results should be close to be as simple as typing `make all` in your terminal. See however the required dependencies below.

As an alternative we provide a separate repository  [gh pygrpfe](#) with a pip package and notebooks written in python to reproduce the results from the first model of the paper. You can launch the notebook either on google colab or using binder:

-  [Open in Colab](#)
-  [launch binder](#)

## Generated figures:

- Figure 1
- Figure 2
- Table S1
- Table S2
- Table S3

## Overview

- The matlab folder contains the code to generate the simulations used in the paper
- The Makefile can be used to regenerate all the results. Each matlab file can also be used to generate individual results where parameters can be changed easily
- The results folder contains the results that we generate for the paper using the random seed defined in the makefile

## Dependencies

- To generate the mat files you only need access to matlab. You can use the makefile directly with `make sims`
- To generate the table and plots from the mat files you will need a few python dependencies. You can either:

- install then by using the provided conda environment file: `conda env create --file conda-env.yml` and then activating `blm2-env`
- install it through pip with `pip install numpy pandas matplotlib tqdm seaborn scipy`
- To compile the tables you need a working copy of latex.

## Code content

The matlab folder contains 6 matlab files:

- `Code_Earnings_Time_Invariant.m` replicates Figure 1 in the paper and Table S1 in the Supplemental Material
- `Code_Probit_Time_Varying.m` replicates Figure 2 in the paper and Table S2 in the Supplemental Material
- `Code_Probit_Time_Invariant_BinaryCov.m` replicates Table S3 in the Supplemental Material
- `lik.m`, `lik_bb.m`, and `lik_IFE2.m` are functions to compute the likelihood function and scores & hessians of probit models.

## Final notes

Thank you for using our codes.

For any feedback, please contact:

- Stephane at [sbonhomme@uchicago.edu](mailto:sbonhomme@uchicago.edu)
- Thibaut at [lamadon@uchicago.edu](mailto:lamadon@uchicago.edu)
- Elena at [elena.manresa@nyu.edu](mailto:elena.manresa@nyu.edu)