Replication Files for the Quantitative Model in Section 4

"Optimal Development Policies with Financial Friction"

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We provide code for three different specifications of the quantitative model:

- Dynamic optimal labor tax (Labor_Tax);
- Dynamic optimal credit subsidy (Credit_Subsidy);
- Myopic labor union allocation (Labor_Union),

as described in the paper.

For each specification, we consider three different cases with respect to the Pareto weight of entrepreneurs relative to workers, which we index with:

- 0 for zero Pareto weight on entrepreneurs;
- 1 for equal Pareto weights for workers and entrepreneurs;
- 1/2 for half as much Pareto weight for entrepreneurs as for workers.

The resulting nine different versions of the model consist of the same files, as we now describe.

For concreteness, consider the code for the case of the dynamic optimal labor tax with a zero Pareto weight on entrepreneurs contained in folder "**ReplicationSection4/ Labor_Tax_0**":

• **main_Labor_Tax_0.m** :: is the main file, which calls all other files and is the only one that needs to be executed for the model to run. Below we describe the output files that it produces.

• **opttax_measures.m** :: This file generates some of the outputted overview statistics.

• **opttax_noc_parameters.m** :: All parameters that are used in the model are inputted in this file.

• **opttax_noc_steadystate.m** :: This file solves the steady-state of the model for a specific tax rate. The structure is the same as that of the algorithm for solving stationary equilibria described in Achdou et al. (2017). Given a guess for prices, solve the stationary Hamilton-Jacobi-Bellman and Kolmogorov Forward equations. Then iterate on prices.

• **opttax_noc_transition.m** :: This file solves the model transition for a given sequence of tax rates. The structure is the same as that of the algorithm for solving transition dynamics described in Achdou et al. (2017). Given a guess for time paths of prices, solve the time-dependent Hamilton-Jacobi-Bellman and Kolmogorov Forward equations. Then iterate on the time paths of prices.

• **output.tex** :: This is needed for the latex file to be outputted.

Output files:

Running **main_Labor_Tax_0.m** produces the following output:

1. A TeX-file **texfile.tex** in a nested folder "**/optimal_tax_test4**" and EPS figures in a nest folder "**/optimal_tax_test4/graphs**" necessary to compile the TeX-file.
    - Note that this is different from the TeX file "**output.tex**" which is a necessary input into the code in order to produce texfile.tex.
    - The output TeX-file contains tables and figures describing the results of a given version of the quantitative model. In particular, it contains:
        - a table that shows the tax rate and welfare changes for various tax policies;
        - a table that shows the consumption-equivalent welfare changes for various policies;
        - a table outlining all functional forms and parameter values that this particular model version used.
        - various figures showing the behavior of aggregate variables and welfare measures throughout the transition.
    - The TeX-file, with the figures in the nested folder, can be compiled to produce a corresponding PDF-file.
    - The data compiled in this output document are then used in the text and tables of the manuscript.

2. A MAT-file **plotting_vectors.mat** which contains all the data needed to construct **Figure 4** and **Appendix Figure A9** in the paper (see **ReadMeFigures.pdf**).

3. A number of other MAT-files which contain the full set of all results for the different models that each code runs, i.e. for laissez-faire, optimal tax, optimal flat tax etc. These files are not directly used in the construction of any figures or tables in the paper.

4. A nested folder with "**/optimal_tax_test4**" which contains auxiliary MAT and M files, and a MATLAB diary file produced by the main code. This is also the folder which contains the TeX-file described above.