README file to accompany “Firm Dynamics, On-the-Job Search and Labor Market Fluctuations,” by Elsby and Gottfries

Software used: MATLAB, 2020b, with relevant toolboxes (Optimization Toolbox version 8.5; Financial Toolbox version 5.15; Simulink version 10.1; Partial Differential Equation Toolbox version 3.4; Parallel Computing Toolbox version 7.2)

The Tables and Figures are generated by two files that we explain below:

* generate\_graphs\_OJS.m, which generates an Excel file called OJS.xlsx.
* comparison.m, which generates an Excel file called comparison.xlsx.

generate\_graphs\_OJS.m

This takes as inputs four .mat files, which are generated by running four .m files beforehand. These are as follows:

1. Parameters in the two steady states (param\_ini.mat and param\_end.mat). These are generated by main\_OJS.m, which calibrates the model. These are saved in the subfolder parameters\_OJS.
2. Output from firm simulations (output.mat), also saved in the subfolder parameters\_OJS. These are generated by the file Firm\_Simulation.m which takes the parameters (from 1) as an input.
3. Transition moments (aux\_transition.mat), also saved in the subfolder parameters\_OJS. These are generated by the file transition\_OJS.m which takes the parameters (from 1) as an input.
4. The simulation for firm lifecycles underlying Appendix C (firm\_data.mat), also saved in the subfolder parameters\_OJS. These are generated by the file Firm\_age.m which takes the parameters (from 1) as an input.

These files in turn use a number of auxiliary files which are self explanatory. The file model.m takes as inputs all the parameters (in a structure array) of the model and calculates equilibrium objects (which are also saved as a structure array). Using the output from the model, one can then calculate firm marginal value (denoted in the paper) using J\_fun.m, the quit rate (denoted in the paper) using delta\_fun.m, unemployment rate ( in the paper) using u\_fun.m, and so on.

comparison.m

This is saved in the subfolder Comparison. It takes as inputs the parameters (from 1 above), and generates the comparison of model variants in Table C1 in Appendix C. Its output is saved in comparison.xlsx.

To replicate the Figures and Tables in the paper, run the files in the following order:

1. main\_OJS.m, then
2. Firm\_Simulation.m, then
3. transition\_OJS.m, then
4. Firm\_age.m, then
5. generate\_graphs\_OJS.m, then
6. comparison.m.

This generates the Excel files OJS.xlsx, and comparison.xlsx.

The content of OJS.xlsx can then be pasted into OJS-Figures.xlsx to create all Figures and Tables in the paper (except for Table C1 in Appendix C).

The content of comparison.xlsx corresponds to Columns (2), (3) and (4) of Table C1 in Appendix C of the paper.

Note: Due to legacy changes in notation, in the code the hiring boundary (denoted in the paper) is referred to as (in the code param.m\_m); furthermore, the bargaining power of the worker is referred to as (in the code param.eta).