This file contains the name, format, and purpose of all the major folders and files included in the replication folder for the paper titled "**Empirical evidence on the Euler equation for investment in the US**" by Guido Ascari, Qazi Haque, Leandro Magnusson, and Sophocles Mavroeidis. It also includes instructions to replicate the results in the paper.

Files/folders:

Below are the contents of the main replication folder "`Data and Program Files`". It contains:

- **Data files**:
  - '`Data_JPT.xlsx`': Justiniano, Primiceri and Tambalotti (2010)'s dataset for the observables used in the Bayesian estimations including data sources. The observables are the seven quarterly U.S. macroeconomic time series used in JPT (2010) and the data construction closely follows their paper.
  - '`Data_SW.xlsx`': Smets and Wouters (2007)'s dataset for the observables used in the Bayesian estimations. The observables are the seven quarterly U.S. macroeconomic time series used in SW (2010).

- **Folders**:
  - **'Figure 1'**: Run '`Figure_1.m`', which generates Figure 1 in the paper.
  - **'Figure 2'**: Run '`irf_output_investment.m`' for replicating Figure 2 in the paper.
  - **'Figure 3'**: Run '`irf_rho_grid.m`' for generating the graphs of Figure 3 in the paper.
  - **'Figure 4_5_6_S1_S2_S3_S4_S5'**:
    - **Subfolder JPT**:
      Run `` `p_linear_iac_util_3D.m' `` and `` `p_linear_iac_util_3D.m' `` to generate matlab data files. Once finished, run `` `PLOTS_iac_util_3D.m' `` and `` `PLOTS_cac_util_3D.m' `` to generate the graphs included in Figure 4(b)-(d), Figure 6, Figure S.1(c)-(d)-(g)-(h), Figure S.2(c)-(d)-(g)-(h), Figure S.4, Figure S.5(b)-(d).
    - **Subfolder SW:**
      Run `` `p_linear_iac_util_3D.m' `` and `` `p_linear_iac_util_3D.m' `` to generate matlab data files. Once finished, run `` `PLOTS_iac_util_3D.m' `` and `` `PLOTS_cac_util_3D.m' `` to generate the graphs included in Figure 4(a)-(c), Figure 5, Figure S.1(a)-(b)-(e)-(f), Figure S.2(a)-(b)-(e)-(f), Figure S.3, Figure S.5(a)-(c).
  - **'Figure ' 7**: Run '`p_linear_iac_util_3D_mikusheva.m`' to generate matlab data files. Then, run `` `PLOTS_iac_util_3D_jpt.m' `` and `` `PLOTS_iac_util_3D_sw.m' `` to generate the graphs included in Figure 4(a)-(c) and Figure 4(b)-(d), respectively.
  - **`Figure 8'**:
    - **Subfolder JPT**:
      Run `` `p_linear_iac_util_2D.m' `` to generate matlab data files. Once finished, run `` `PLOTS_iac_util_2D.m' `` to generate the graphs included in Figure 8 – Panel B.

- **Subfolder SW:**
  Run `p_linear_iac_util_2D.m' to generate matlab data files. Once finished, run `PLOTS_iac_util_2D.m' to generate the graphs included in Figure 8 – Panel A.

- **`Figure 9'**: Run 'invest_euler.do' to generate the excel data files. Then, run `scatter_plot.m' to generate the graphs included in Figure 9.

- **'Figure 10'**: Run 'irf_S_set_kappa.m' for generating the graphs of Figure 10.

- **'Figure 11'**: Run 'irf_S_set_zeta.m' for generating the graphs of Figure 10.

- **'Figure 12'**: contains Matlab codes for replicating Figure 12 in the paper.
  - Run 'vardecom_jpt.m' to compute the range of forecast error variance decompositions (FEVDs) of output growth in JPT's model when both ζ and κ are varying.
  - Run 'vardecom_jpt_onlykappa.m' to compute the range of FEVDs of output growth in JPT's model when only κ is varying.
  - Run 'vardecom_jpt_onlyzeta.m' to compute the range of FEVDs of output growth in JPT's model when only ζ is varying.
  - Run 'vardecom_plot_bar.m' to plot Figure 12.

- **'Figure 13'**: contains Matlab/Dynare codes for replicating Figure 13 in the paper.
  - **Subfolders**:
    - JPT Model -> JPT Data -> Baseline: run 'JPT_2010_baseline.mod' to estimate JPT (2010)'s baseline model using JPT (2010)'s dataset
    - JPT Model -> JPT Data -> Correlated Shocks: run 'JPT_2010_correlatedshocks.mod' to estimate JPT (2010)'s model with correlated shocks using JPT (2010)'s dataset
    - JPT Model -> JPT Data -> DSGE-VAR -> lambda=1: run 'JPT_2010_lambda1.mod' to estimate JPT (2010)'s model using JPT (2010)'s dataset with DSGE-VAR methodology (lambda =1).
    - JPT Model -> JPT Data -> DSGE-VAR -> lambda=5: run 'JPT_2010_lambda5.mod' to estimate JPT (2010)'s model using JPT (2010)'s dataset with DSGE-VAR methodology (lambda =5).

  - **Files**:
    - 'Fig_13_Plot.m': Matlab file to plot Figure 13 based on the posterior estimates from the Bayesian estimations above. The posterior estimates are stored in the following files:
      'JPT_2010_results_baseline.mat'
      'JPT_2010_results_correlatedshocks.mat'
      'JPT_2010_results_DSGEVAR_lambda1.mat'
      'JPT_2010_results_DSGEVAR_lambda5.mat'

- **'Figure S6'**: contains Matlab/Dynare codes for replicating Figure S.6 in the appendix.
  - **Subfolders**:
    - JPT Model -> SW Data -> Baseline Model: run 'JPT_2010_baseline.mod' to estimate JPT (2010)'s baseline model using SW (2007)'s dataset

- JPT Model -> SW Data -> Correlated Shocks: run 'JPT_2010_correlatedshocks.mod' to estimate JPT (2010)'s model with correlated shocks using SW (2007)'s dataset
- JPT Model -> SW Data -> DSGE-VAR -> lambda=1: run 'JPT_2010_lambda1.mod' to estimate JPT (2010)'s model using SW (2007)'s dataset with DSGE-VAR methodology (lambda =1).
- JPT Model -> SW Data -> DSGE-VAR -> lambda=5: run 'JPT_2010_lambda5.mod' to estimate JPT (2010)'s model using SW (2007)'s dataset with DSGE-VAR methodology (lambda =5).

- **Files**:
  - 'Figure_S.6_Plot.m': Matlab file to plot Figure S.6 based on the posterior estimates from the Bayesian estimations above. The posterior estimates are stored in the following files:
    'JPT_2010_results_baseline.mat'
    'JPT_2010_results_correlatedshocks.mat'
    'JPT_2010_results_DSGEVAR_lambda1.mat'
    'JPT_2010_results_DSGEVAR_lambda5.mat'

- **'Figure S7'**: contains Matlab/Dynare codes for replicating Figure S.7 in the appendix.
  - **Subfolders**:
    - SW Model -> JPT Data -> Baseline: run 'SW_2007_baseline.mod' to estimate SW (2007)'s baseline model using JPT (2010)'s dataset
    - SW Model -> JPT Data -> Correlated Shocks: run 'SW_2007_correlatedshocks.mod' to estimate SW (2007)'s model with correlated shocks using JPT (2010)'s dataset
    - SW Model -> JPT Data -> DSGE-VAR -> lambda=1: run 'SW_2007_lambda1.mod' to estimate SW (2007)'s model using JPT (2010)'s dataset with DSGE-VAR methodology (lambda =1).
    - SW Model -> JPT Data -> DSGE-VAR -> lambda=5: run 'SW_2007_lambda5.mod' to estimate SW (2007)'s model using JPT (2010)'s dataset with DSGE-VAR methodology (lambda =5).

  - **Files**:
    - 'Figure_S.7_Plot.m': Matlab file to plot Figure S.7 based on the posterior estimates from the Bayesian estimations above. The posterior estimates are stored in the following files:
      'SW_2007_baseline.mat'
      'SW_2007_correlatedshocks.mat'
      'SW_2007_DSGEVAR_lambda1.mat'
      'SW_2007_DSGEVAR_lambda5.mat'

- **'Table 1'**: contains Matlab codes for replicating the variance decomposition of output growth in JPT's model for different calibration of ζ and κ.
  - Run 'vardecom_jpt.m'; to set different value of ζ and κ change the value of 'param(16)' and 'param(17)', respectively.

Notes:

The Bayesian estimations are performed using Dynare (https://www.dynare.org/wp-repo/dynarewp001.pdf). The posterior distributions are based on 500,000 draws, with the first 250,000 draws discarded as burn-in draws. The average acceptance rate is around 25-30%. The respective folders contain the data files and mode files needed to run the estimations.