Documentation of data and Matlab code for Bauer/Rudebusch/Wu "Comment on 'Term Premia and Inflation Uncertainty: Empirical Evidence from an International Panel Dataset'"

1. Data

1.1. Wright's data

The data in the directory `data` was used in Jonathan Wright's original article. It is available, together with detailed documentation, at http://www.aeaweb.org/articles.php?doi=10.1257/aer.101.4.1514.

1.2. Additional data

The additional data used in our comment is quarterly real GDP growth, from the OECD, and the OECD's index of composite leading indicators (CLI). This data is located in the directory `data_new`.

These are the identifiers from the OECD's statistical database:

GDP growth
Subject: *B1_GE: Gross domestic product - expenditure approach*
Measure: *GPSA: Growth rate compared to previous quarter, seasonally adjusted*

CLI
Dataset: *Composite Leading Indicators (MEI)*
Subject: *Amplitude adjusted (CLI)*

2. Code

2.1. Estimation code

`tpestaffine2_new.m`

This is the code used for estimation of the term structure models, both to obtain the conventional (OLS) estimates that replicate Wright results and the bias-corrected (BC) estimates.

The code in this file is based on the Matlab estimation code provided to us by Jonathan Wright (in particular, his file `tpestaffine2.m`).

The model specification is that of Wright's baseline model, a macro-finance DTSM with unspanned macro risks.

2.2. Analysis

`analyze_tp.m`

Here we analyze and visualize the behavior of risk-neutral rates and term premia across countries. This code produces table 1, table 2, figure 1, and figure 2.

analyze_macro.m

Here we analyze the cyclical behavior of term premia in each country, using country-by-country regressions of term premium estimates on cyclical indicators. This code produces table 5.

maketable5_new.m

Here we conduct the panel regressions of term premium estimates on (a) measures of uncertainty and (b) cyclical indicators. This code produces the results in table 3 and 4.

This code is based on Matlab code provided to us by Jonathan Wright (in particular, his file `maketable5.m`).

2.3. Additional m-files

Utility files

The files get_exp.m, load_macro.m, and load_tp.m contain functions that are used in the analysis. They are documented in the source code.

Files from Jonathan Wright

The files `blockbootstrap.m, duplication.m, jpslikel.m, ols.m, olswhite.m, panelreg.m` and `varest.m` are part of Jonathan Wright's original estimation code.

The only material edits we made are to `jpslikel.m` to reflect slightly loser parameter constraints (this is documented in `tpestaffine2_new.m`).

2.4. Library "BC"

Matlab-files in the folder `BC` are used for bias-corrected estimation of the VAR system. The main function is in the file `est_bc_var.r`.

The methodology for bias-corrected estimation is explained in detail in the following paper:

Bauer, Michael D., Glenn D. Rudebusch, and Jing Cynthia Wu. 2012. "Correcting Estimation Bias in Dynamic Term Structure Models." Journal of Business and Economic Statistics, 30(3): 454–467.

2.5. Library "JSZ"

Matlab-files in the folder `jsz-libary` provide the functionality to obtain yield loadings and parameter rotations for an affine Gaussian DTSM, based on the methodology laid out in

Joslin, Scott, Kenneth J. Singleton, and Haoxiang Zhu. 2011. "A New Perspective on Gaussian Dynamic Term Structure Models." Review of Financial Studies, 24(3): 926–970.

The version of the JSZ code used here is the same as used by Jonathan Wright. The newest version of this library is available on Scott Joslin's website.