**Data and Program Files for Replicating**

**“Trend Inflation and the Nature of Structural Breaks**

**in the New Keynesian Phillips Curve”**

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The data and programs are stored in the zip file Archive\_MS12-304.zip.

1. **Data**

data.prn: a data file that stores the quarterly dates, GDP chain-type price index, RGDP, HP-filtered output gap, the Congressional budget office’s measure of the output gap, real unit labor cost, CPI for all urban consumers, PCE, GDP implicit price deflator, core CPI, core PCE, in that order. The data is used to estimate the unobserved components models in the paper.

graphs.xlsx: an excel data file that contains the output from estimating UCconstrained1\_SB2.prg and UCconstrained2\_SB2.prg. Column 1 contains the quarterly dates and column 5 contains actual PCE inflation. The output associated with UCconstrained1\_SB2.prg are in columns 2-4, and 6-10, which are the smoothed probabilities of regimes 1, 2 and 3, trend inflation estimates and their lower and upper 90% confidence bands, the inflation cycle and the inflation gap, in that order. The trend inflation estimates associated with UCconstrained2\_SB2.prg is stored in column 11. The data file is called upon by the MATLAB program graphs.m to produce Figures 1-4.

stdprederr.xlsx: an excel data file that contains the standardized prediction errors obtained from estimating the models in UCconstrained1\_SB0.prg, UCconstrained1\_SB1.prg, UCconstrained1\_SB2.prg, and UCconstrained1\_MSM2.prg, in that order. This data file is called upon by the MATLAB program stdprederr.m to produce Tables A1, A2, and A4 in the unpublished appendix.

1. **Program files**

UCunconstrained\_SB2.prg: this is a GAUSS program file that estimates an unconstrained unobserved components model for inflation that is consistent with the NKPC in the presence of stochastic trend inflation. The model is unconstrained as the parameters of the model as well as the variability of the shocks to both the permanent and transitory components of inflation are allowed to undergo two unknown structural breaks.

UCconstrained1\_SB2.prg: this is a GAUSS program file that estimates a constrained unobserved components model for inflation that is consistent with the NKPC in the presence of stochastic trend inflation. The parameters of the model as well as the variability of the shocks to the transitory component of inflation are allowed to undergo two unknown structural breaks, but the variability of shocks to the permanent component of inflation is constrained to be constant.

UCconstrained2\_SB2.prg: this is a GAUSS program file that estimates a constrained unobserved components model for inflation that is consistent with the NKPC in the presence of stochastic trend inflation. The parameters of the model as well as the variability of the shocks to the permanent component of inflation are allowed to undergo two unknown structural breaks. However, the transitory component zt in the model is assumed to be serially uncorrelated and the variability of its shocks is constrained to be constant.

UCconstrained1\_SB0.prg and UCconstrained1\_SB1.prg: these are both GAUSS program files that estimate the models similar to the one in UCconstrained1\_SB2.prg but they restrict the number of unknown structural breaks to zero and one respectively.

UCconstrained1\_MSM2.prg: this is a GAUSS program file that estimates a similar model to the one in UCconstrained1.prg but allows for two-state Markov-switching instead.

bivarUC\_SB2.prg: this is a GAUSS program file that extends the model in UCconstrained1.prg to a bivariate unobserved components model in inflation and real output which allows the output gap to be treated as an unobserved variable.

stdprederr.m: this is a MATLAB file that reads the excel file stdprederr.xlsx and calculates the p-values associated with the Q-statistic under the null of no serial correlation in the standardized prediction errors for the inflation series obtained from UCconstrained1\_SB0.prg, UCconstrained1\_SB1.prg, UCconstrained1\_SB2.prg and UCconstrained1\_MSM2.prg. The results are used to produce Tables A1, A2, and A4 of the unpublished appendix.

graphs.m: this is a MATLAB file that reads the series stored in graphs.xlsx to produce Figures 1-4.

shade.m and shadenber.m: these are MATLAB data files that are called by graphs.m to produce the shaded NBER recession periods in Figure 3.

1. **Tables**

Table 1: the results in columns 2-4 are obtained by estimating UCunconstrained\_SB2.prg

UCconstrained1\_SB2.prg and UCconstrained2\_SB2.prg respectively.

The following tables in the unpublished appendix are provided for robustness and diagnostic checks:

Tables A1-A2: produced by stdprederr.m.

Table A3: produced by UCconstrained1\_MSM2.prg

Table A4: produced by stdprederr.m.

Table A5: produced by bivarUC\_SB2.prg

Tables A6-A7: the results in columns 2-4 are obtained by estimating UCunconstrained\_SB2.prg

UCconstrained1\_SB2.prg and UCconstrained2\_SB2.prg respectively with the price series changed to the GDP chain-type price index for Table A6 and the CPI for Table A7.

1. **Figures**

Figures 1-4: produced by graphs.m.

Figure A1 produced by UCconstrained1\_MSM.prg

Figure A2 produced by UCconstrained1\_SB2.prg.

Figure A3 produced by bivarUC\_SB2.jpg.

Figure A4 produced by bivarUC\_SB2.jpg.

Figure A5 produced by bivarUC\_SB2.jpg.

Figure A6 produced by bivarUC\_SB2.jpg.

Figure A7 produced with UCconstrained1\_SB2.prg (change the price series to the GDP chain-type price index on line 43).

Figure A8 produced by UCconstrained1\_SB2.prg (change the price series to the CPI on line 43).

Figure A9 produced by UCconstrained1\_SB2.prg (change the price series to the GDP chain-type price index on line 43).

Figure A10 produced by UCconstrained1\_SB2.prg (change the price series to the CPI on line 43).

Figure A11 produced by UCconstrained1\_SB2.prg (change the price series to the GDP chain-type price index on line 43).

Figure A12 produced by UCconstrained1\_SB2.prg (change the price series to the CPI on line 43).