

Lucas Engelhardt, "Does Variable Shiftwork Explain Away Productivity Shocks? A Bayesian Approach", Journal of Economics and Statistics, forthcoming.

I. MacroconomicData.csv

First row contains headers. Remaining 223 rows contains data for 1964, Quarter 1 to 2019, Quarter 3. The columns are:

Date – listed by first date of the quarter, using MM/DD/YYYY format.

Consumption – Quarterly real GDP data (chained 2012 dollars) from the US Bureau of Economic Analysis's NIPA Tables.

GDP – Quarterly real GDP data (chained 2012 dollars) from the US Bureau of Economic Analysis's NIPA Tables.

Investment – Real Gross Domestic Private Investment (chained 2012 dollars) from the US Bureau of Economic Analysis' NIPA Tables.

Employment – Contains the arithmetic mean of monthly data for the quarter, raw data coming from US Bureau of Labor Statistics's Series CES0000000001

Real Wage – Contains the arithmetic mean of monthly data for the quarter, raw data coming from US Bureau of Labor Statistics's Series CEU 0500000032

II. capitalparameters.csv

No headers. 101000 rows, 18 columns containing the accepted parameter draws for the model with increased depreciation for the second shift.

Column 1 – alpha – capital share

Column 2 – delta – depreciation rate

Column 3 – psi – preference parameter governing relationship between day and night labor

Column 4 – gammabar – mean preference parameter governing leisure/consumption tradeoff

Column 5 – thetad – wage elasticity of day labor

Column 6 – thetan – wage elasticity of night labor

Column 7 – lambda – mean markup

Column 8 – phibar – maximum fixed cost

Column 9 – rhogamma – labor preference shock persistence

Column 10 – rhoz – productivity shock persistence

Column 11 – rhoeta – discount rate shock persistence

Column 12 – rholambda – markup shock persistence

Column 13 – siggamma – labor preference shock volatility

Column 14 – sigz – productivity shock volatility

Column 15 – sigeta – discount shock volatility

Column 16 – siglambda – markup shock volatility

Column 17 – sigi – investment measurement error volatility

Column 18 – sigwage – wage measurement error volatility

III. **finalgoodparameters.csv**

No headers. 101000 rows, 18 columns containing the accepted parameter draws for the model with final good cost for the second shift.

Column 1 – alpha – capital share
Column 2 – delta – depreciation rate
Column 3 – psi – preference parameter governing relationship between day and night labor
Column 4 – gammabar – mean preference parameter governing leisure/consumption tradeoff
Column 5 – thetad – wage elasticity of day labor
Column 6 – thetan – wage elasticity of night labor
Column 7 – lambda – mean markup
Column 8 – phibar – maximum fixed cost
Column 9 – rhogamma – labor preference shock persistence
Column 10 – rhoz – productivity shock persistence
Column 11 – rhoeta – discount rate shock persistence
Column 12 – rholambda – markup shock persistence
Column 13 – siggamma – labor preference shock volatility
Column 14 – sigz – productivity shock volatility
Column 15 – sigeta – discount shock volatility
Column 16 – siglambda – markup shock volatility
Column 17 – sigi – investment measurement error volatility
Column 18 – sigwage – wage measurement error volatility

IV. **laborparameters.csv**

No headers. 101000 rows, 18 columns containing the accepted parameter draws for the model with overhead labor cost for the second shift.

Column 1 – alpha – capital share
Column 2 – delta – depreciation rate
Column 3 – psi – preference parameter governing relationship between day and night labor
Column 4 – gammabar – mean preference parameter governing leisure/consumption tradeoff
Column 5 – thetad – wage elasticity of day labor
Column 6 – thetan – wage elasticity of night labor
Column 7 – lambda – mean markup
Column 8 – phibar – maximum fixed cost
Column 9 – rhogamma – labor preference shock persistence
Column 10 – rhoz – productivity shock persistence
Column 11 – rhoeta – discount rate shock persistence
Column 12 – rholambda – markup shock persistence
Column 13 – siggamma – labor preference shock volatility
Column 14 – sigz – productivity shock volatility
Column 15 – sigeta – discount shock volatility
Column 16 – siglambda – markup shock volatility
Column 17 – sigi – investment measurement error volatility
Column 18 – sigwage – wage measurement error volatility

V. `oneshiftparameters.csv`

No headers. 101000 rows, 15 columns containing the accepted parameter draws for the model with final good cost for the second shift.

Column 1 – alpha – capital share

Column 2 – delta – depreciation rate

Column 3 – gammabar – mean preference parameter governing leisure/consumption tradeoff

Column 4 – thetad – wage elasticity of day labor

Column 5 – lambda – mean markup

Column 6 – rhogamma – labor preference shock persistence

Column 7 – rhoz – productivity shock persistence

Column 8 – rhoeta – discount rate shock persistence

Column 9 – rholambda – markup shock persistence

Column 10 – siggamma – labor preference shock volatility

Column 11 – sigz – productivity shock volatility

Column 12 – sigeta – discount shock volatility

Column 13 – siglambda – markup shock volatility

Column 14 – sigi – investment measurement error volatility

Column 15 – sigwage – wage measurement error volatility

VI. Replicating Results in Matlab Code

All the remaining files contain MATLAB scripts and functions that are used to replicate the results in the paper. Put all of these files into the working directory for Matlab, and then do the following for replication:

To produce the tables in the paper, run these four scripts:

`publishedresultscapital` - gives the results for the depreciation cost version

`publishedresultsfinalgood` - gives the results for the final good cost version

`publishedresultslabor` - gives the results for the labor cost version

`publishedresultsoneshift` - gives the results for the one shift version

These will take a couple of minutes to run, as they load the parameter draws from the simulations that the paper was based on, but then redo the calculations.

To run the chains again, run these four scripts:

`capitalfullprogramwageme` - for the depreciation cost version

`finalfullprogramwageme` - for the final good cost version

`laborfullprogramwageme` - for the labor cost version

`oneshiftfullprogramwageme` - for the one shift version

Note: these programs typically take 1 - 5 hours to run. Rarely, you may get a "bad draw" which destabilizes the Kalman filter. If that happens, simply start the program again.