```
      name:  <unnamed>
       log:  /Users/nicolaszhang/Downloads/Stata Rec 6/VARandGrangerChina.smcl
  log type:  smcl
 opened on:  12 Nov 2020, 18:19:04

 1 . clear

 2 .
 3 .
 4 .  import excel "/Users/nicolaszhang/Downloads/InflationvReservesForStatawGDP.
   > xlsx", sheet("InflationvReservesForStata") firstrow
   (13 vars, 479 obs)

 5 .
 6 .
 7 .  gen monthly_date = mofd(date )
   (2 missing values generated)

 8 .
 9 .
10 .   format monthly_date %tm

11 .
12 .   tset monthly_date
          time variable:  monthly_date, 1980m9 to 2020m5
                  delta:  1 month

13 .
14 .
15 .   constraint  1  [ChangeInInflationExpectationMIC]L.ChinaReserveChangeInPerc
   > ent  = 0

16 .
17 .   constraint 2 [ChangeInInflationExpectationMIC]L2.ChinaReserveChangeInPerce
   > nt  = 0
```

```
18 .
19 .  constraint 3 [ChangesInEffectiveFedFundRates]L.ChinaReserveChangeInPercent
   >  = 0

20 .
21 .  constraint 4 [ChangesInEffectiveFedFundRates]L2.ChinaReserveChangeInPercent
   >   = 0

22 .
23 .
24 .   constraint 5 [ChangeInInflationExpectationMIC]L.ChangeInInflationExpectati
   > onMIC = 0

25 .
26 .
27 .   constraint 6  [ChangeInInflationExpectationMIC]L2.ChangeInInflationExpecta
   > tionMIC = 0

28 .
29 .
30 .  var InflationMOMLessFoodEnergy  ChangesInEffectiveFedFundRates  ChinaReserv
   > eChangeInPercent     ChangeInInflationExpectationMIC MonthOnMUSgdpChange
   >   if inrange(monthly_date, tm(2012m1), tm(2015m10)), lutstats  dfk constrain
   > ts(1 2 3 4 5 6 )
   Estimating VAR coefficients

   Iteration 1:   tolerance =   .3559116
   Iteration 2:   tolerance =   .2643746
   Iteration 3:   tolerance =   .1763705
   Iteration 4:   tolerance =    .104928
   Iteration 5:   tolerance =  .05714996
   Iteration 6:   tolerance =  .02642176
   Iteration 7:   tolerance =  .01257543
   Iteration 8:   tolerance =  .00606579
   Iteration 9:   tolerance =  .00294447
   Iteration 10:   tolerance =  .00143369
   Iteration 11:   tolerance =  .00069911
   Iteration 12:   tolerance =  .00034116
   Iteration 13:   tolerance =  .00016654
   Iteration 14:   tolerance =  .00008131
   Iteration 15:   tolerance =   .0000397
   Iteration 16:   tolerance =  .00001939
   Iteration 17:   tolerance =  9.467e-06
   Iteration 18:   tolerance =  4.623e-06
   Iteration 19:   tolerance =  2.258e-06
   Iteration 20:   tolerance =  1.102e-06
   Iteration 21:   tolerance =  5.383e-07
```

Vector autoregression

Sample: **2012m1 - 2015m10** Number of obs = **46**
Log likelihood = **-104.6684** (lutstats) AIC = **-13.99806**
FPE = **8.25e-07** HQIC = **-13.25347**
Det(Sigma_ml) = **9.48e-08** SBIC = **-12.0104**

Equation	Parms	RMSE	R-sq	chi2	P>chi2
InflationMOMLe~y	**11**	**.619859**	**0.3155**	**20.08928**	**0.0284**
ChangesInEffec~s	**9**	**.01368**	**0.0268**	**6.661015**	**0.5736**
ChinaReserveCh~t	**11**	**1.1919**	**0.1629**	**11.07032**	**0.3521**
ChangeInInflat~C	**7**	**10.9681**	**0.1193**	**4.901716**	**0.5565**
MonthOnMUSgdpC~e	**11**	**.091425**	**0.9857**	**2493.401**	**0.0000**

(1) **[ChangeInInflationExpectationMIC]L.ChinaReserveChangeInPercent = 0**
(2) **[ChangeInInflationExpectationMIC]L2.ChinaReserveChangeInPercent = 0**
(3) **[ChangesInEffectiveFedFundRates]L.ChinaReserveChangeInPercent = 0**
(4) **[ChangesInEffectiveFedFundRates]L2.ChinaReserveChangeInPercent = 0**
(5) **[ChangeInInflationExpectationMIC]L.ChangeInInflationExpectationMIC = 0**
(6) **[ChangeInInflationExpectationMIC]L2.ChangeInInflationExpectationMIC = 0**

	Coef.	Std. Err.	z	P>|z|	[95% Conf. Interval]
InflationMOMLessFoodEnergy					
InflationMOMLessFoodEnergy					
L1.	**-.3048048**	**.1489846**	**-2.05**	**0.041**	**-.5968093 -.0128003**
L2.	**-.347645**	**.1551513**	**-2.24**	**0.025**	**-.651736 -.043554**
ChangesInEffectiveFedFundRates					
L1.	**.1136613**	**8.08407**	**0.01**	**0.989**	**-15.73082 15.95815**
L2.	**-6.216003**	**8.098275**	**-0.77**	**0.443**	**-22.08833 9.656326**
ChinaReserveChangeInPercent					
L1.	**-.2081972**	**.0833669**	**-2.50**	**0.013**	**-.3715934**

```
>            -.044801
                              L2. |   .1168357   .0824604     1.42   0.157    -.
> 0447836
>            .2784551
                                  |
ChangeInInflationExpectationMIC   |
                              L1. |   .0206347   .0115756     1.78   0.075    -.
> 0020532
>            .0433225
                              L2. |   .0221239   .0113768     1.94   0.052    -.
> 0001742
>             .044422
                                  |
            MonthOnMUSgdpChange   |
                              L1. |   .4822235   .4433262     1.09   0.277    -.
> 3866799
>            1.351127
                              L2. |  -.5404148   .4486203    -1.20   0.228    -1
> .419695
>            .3388649
                                  |
                           _cons  |    .052977   .1130423     0.47   0.639    -.
> 1685819
>            .2745358
-----------------------------------+------------------------------------------------
> ———————————————————
ChangesInEffectiveFedFundRates    |
     InflationMOMLessFoodEnergy   |
                              L1. |   .0008224   .0031465     0.26   0.794    -.
> 0053447
>            .0069895
                              L2. |   .0004942   .0033299     0.15   0.882    -.
> 0060323
>            .0070207
                                  |
 ChangesInEffectiveFedFundRates   |
                              L1. |  -.0627651     .17805    -0.35   0.724    -.
> 4117367
>            .2862066
                              L2. |   .0958888   .1765756     0.54   0.587     -
> .250193
>            .4419706
                                  |
    ChinaReserveChangeInPercent   |
                              L1. |   1.55e-19   2.06e-19     0.75   0.453    -2
> .49e-19
>            5.59e-19
                              L2. |   3.80e-19   8.01e-19     0.47   0.635    -1
> .19e-18
```

```
>            1.95e-18
                                 |
ChangeInInflationExpectationMIC  |
                          L1.    |  -.0004158   .0002431    -1.71   0.087    -.
> 0008923
>            .0000608
                          L2.    |  -.0001468   .0002384    -0.62   0.538     -
> .000614
>            .0003204
                                 |
            MonthOnMUSgdpChange  |
                          L1.    |  -.0030842   .0093823    -0.33   0.742    -.
> 0214732
>            .0153048
                          L2.    |   .0075373   .0094365     0.80   0.424    -.
> 0109579
>            .0260324
                                 |
                         _cons   |  -.0001138    .002402    -0.05   0.962    -.
> 0048217
>            .0045942
---------------------------------+------------------------------------------------
> ------------------
ChinaReserveChangeInPercent      |
     InflationMOMLessFoodEnergy  |
                          L1.    |   -.073071   .2866884    -0.25   0.799    -.
> 6349699
>            .4888279
                          L2.    |  -.0430362   .2986024    -0.14   0.885    -.
> 6282861
>            .5422136
                                 |
 ChangesInEffectiveFedFundRates  |
                          L1.    |  -8.384895   15.55185    -0.54   0.590    -3
> 8.86597
>            22.09618
                          L2.    |  -11.79543   15.57906    -0.76   0.449    -4
> 2.32983
>            18.73896
                                 |
    ChinaReserveChangeInPercent  |
                          L1.    |   .1383991   .1617112     0.86   0.392     -
> .178549
>            .4553471
                          L2.    |   .1302325   .1599526     0.81   0.416    -.
> 1832689
>            .4437338
                                 |
ChangeInInflationExpectationMIC  |
```

```
                           L1. |   .0361736   .0224699     1.61   0.107    -.
> 0078666
>            .0802137
                           L2. |   .0091685   .0220838     0.42   0.678     -
> .034115
>            .0524519
                               |
            MonthOnMUSgdpChange |
                           L1. |   .8076224   .8530604     0.95   0.344    -.
> 8643453
>             2.47959
                           L2. |  -.9273023   .8633383    -1.07   0.283    -2
> .619414
>            .7648096
                               |
                         _cons |   .2754132   .2175044     1.27   0.205    -.
> 1508876
>            .7017139
-------------------------------+----------------------------------------------
> ------------------
ChangeInInflationExpectationMIC |
     InflationMOMLessFoodEnergy |
                           L1. |  -2.603339   2.522567    -1.03   0.302    -7
> .547479
>            2.340801
                           L2. |   4.278667   2.606719     1.64   0.101     -
> .830409
>            9.387742
                               |
 ChangesInEffectiveFedFundRates |
                           L1. |  -1.351787   139.4366    -0.01   0.992    -2
> 74.6425
>            271.9389
                           L2. |   119.4687   139.6209     0.86   0.392    -1
> 54.1833
>            393.1206
                               |
    ChinaReserveChangeInPercent |
                           L1. |  -1.80e-16   1.59e-16    -1.13   0.258    -4
> .91e-16
>            1.31e-16
                           L2. |  -1.89e-16   6.47e-17    -2.92   0.003    -3
> .16e-16
>           -6.22e-17
                               |
ChangeInInflationExpectationMIC |
                           L1. |  -3.26e-19   1.15e-17    -0.03   0.977    -2
> .29e-17
>            2.23e-17
```

```
                            L2. |  -4.64e-17   2.31e-17    -2.01   0.044    -9
> .17e-17
>           -1.23e-18
                                |
            MonthOnMUSgdpChange |
                            L1. |   1.288145   7.519557     0.17   0.864    -1
> 3.44992
>            16.02621
                            L2. |  -1.678087   7.560085    -0.22   0.824    -1
> 6.49558
>            13.13941
                                |
                          _cons |   .0650951    1.92537     0.03   0.973    -3
> .708561
>            3.838751
------------------------------------------------------------------------------
> ------------------
MonthOnMUSgdpChange             |
     InflationMOMLessFoodEnergy |
                            L1. |  -.0205863   .0220535    -0.93   0.351    -.
> 0638103
>            .0226378
                            L2. |  -.0282268     .02298    -1.23   0.219    -.
> 0732669
>            .0168132
                                |
 ChangesInEffectiveFedFundRates |
                            L1. |  -.5990161   1.194888    -0.50   0.616    -2
> .940954
>            1.742922
                            L2. |  -.6893044    1.19703    -0.58   0.565    -3
> .035441
>            1.656832
                                |
    ChinaReserveChangeInPercent |
                            L1. |  -.0077223   .0128115    -0.60   0.547    -.
> 0328324
>            .0173878
                            L2. |   -.002699   .0126722    -0.21   0.831    -.
> 0275361
>            .0221381
                                |
ChangeInInflationExpectationMIC |
                            L1. |  -.0001331   .0017789    -0.07   0.940    -.
> 0036197
>            .0033534
                            L2. |  -5.59e-06   .0017483    -0.00   0.997    -.
> 0034323
>            .0034211
```

```
                            |
             MonthOnMUSgdpChange |
                           L1. |   1.830256   .0656145    27.89   0.000     1
> .701654
>            1.958858
                           L2. |  -.9366964   .0664315   -14.10   0.000
> -1.0669
>            -.806493
                            |
                         _cons |   .0185741   .0167254     1.11   0.267     -
> .014207
>            .0513552
-----------------------------+------------------------------------------------

> ------------------
```

```
31 .
32 . varstable
```

Eigenvalue stability condition

Eigenvalue	Modulus
.9050803 + .3198781*i*	.959944
.9050803 - .3198781*i*	.959944
-.1334782 + .6706707*i*	.683824
-.1334782 - .6706707*i*	.683824
.4804679	.480468
-.3602866 + .1525869*i*	.391266
-.3602866 - .1525869*i*	.391266
.3207703 + .2153177*i*	.386336
.3207703 - .2153177*i*	.386336
-.343554	.343554

All the eigenvalues lie inside the unit circle.
VAR satisfies stability condition.

```
33 . varlmar
```

Lagrange-multiplier test

lag	chi2	df	Prob > chi2
1	-1.2e+02	25	1.00000
2	-1.6e+02	25	1.00000

H0: no autocorrelation at lag order

```
34 . vargranger
```

Granger causality Wald tests

Equation	Excluded	chi2	df	Prob > chi2
InflationMOMLes~y	ChangesInEffect~s	.59158	2	0.744
InflationMOMLes~y	ChinaReserveCha~t	7.0591	2	0.029
InflationMOMLes~y	ChangeInInflati~C	4.2433	2	0.120
InflationMOMLes~y	MonthOnMUSgdpCh~e	1.4887	2	0.475
InflationMOMLes~y	ALL	11.755	8	0.162
ChangesInEffect~s	InflationMOMLes~y	.07907	2	0.961
ChangesInEffect~s	ChinaReserveCha~t	.	0	.
ChangesInEffect~s	ChangeInInflati~C	3.3174	2	0.190
ChangesInEffect~s	MonthOnMUSgdpCh~e	2.4452	2	0.294
ChangesInEffect~s	ALL	5.9962	6	0.424
ChinaReserveCha~t	InflationMOMLes~y	.07288	2	0.964
ChinaReserveCha~t	ChangesInEffect~s	.82799	2	0.661
ChinaReserveCha~t	ChangeInInflati~C	3.29	2	0.193
ChinaReserveCha~t	MonthOnMUSgdpCh~e	1.2156	2	0.545
ChinaReserveCha~t	ALL	6.8631	8	0.551
ChangeInInflati~C	InflationMOMLes~y	4.5077	2	0.105
ChangeInInflati~C	ChangesInEffect~s	.73263	2	0.693
ChangeInInflati~C	ChinaReserveCha~t	.	0	.
ChangeInInflati~C	MonthOnMUSgdpCh~e	.06433	2	0.968
ChangeInInflati~C	ALL	4.9017	6	0.556
MonthOnMUSgdpCh~e	InflationMOMLes~y	1.959	2	0.375
MonthOnMUSgdpCh~e	ChangesInEffect~s	.55638	2	0.757
MonthOnMUSgdpCh~e	ChinaReserveCha~t	.48517	2	0.785
MonthOnMUSgdpCh~e	ChangeInInflati~C	.00921	2	0.995
MonthOnMUSgdpCh~e	ALL	2.4185	8	0.965

```
35 .  predict e, resid
   (5 missing values generated)

36 .
37 .
38 .  gen Le=e[_n-1]
   (5 missing values generated)

39 .
40 .  regress e Le  if inrange(monthly_date, tm(2012m1), tm(2015m10))
```

Source	SS	df	MS	Number of obs	=	46
				F(1, 44)	=	0.51
Model	.20140761	1	.20140761	Prob > F	=	0.4801
Residual	17.4729356	44	.397112172	R-squared	=	0.0114
				Adj R-squared	=	-0.0111
Total	17.6743432	45	.392763182	Root MSE	=	.63017

e	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
Le	-.1068222	.1499962	-0.71	0.480	-.4091197	.1954752
_cons	.0003958	.0929149	0.00	0.997	-.1868619	.1876535

```
41 .
42 . swilk e  if inrange(monthly_date, tm(2012m1), tm(2015m10))
```

Shapiro-Wilk W test for normal data

Variable	Obs	W	V	z	Prob>z
e	46	0.97462	1.118	0.236	0.40653

```
43 . sfrancia e  if inrange(monthly_date, tm(2012m1), tm(2015m10))
```

Shapiro-Francia W' test for normal data

Variable	Obs	W'	V'	z	Prob>z
e	46	0.98146	0.905	-0.188	0.57451

```
44 . var InflationMOMLessFoodEnergy  ChangesInEffectiveFedFundRates  ChinaReserve
   > ChangeInPercent     ChangeInInflationExpectationMIC MonthOnMUSgdpChange
   >  if inrange(monthly_date, tm(2002m1), tm(2011m10)), lutstats  dfk constraint
   > s(1 2 3 4 5 6 )
   Estimating VAR coefficients

   Iteration 1:   tolerance =  .03577572
   Iteration 2:   tolerance =  .02185142
   Iteration 3:   tolerance =  .01491705
   Iteration 4:   tolerance =  .01026129
   Iteration 5:   tolerance =  .00709181
   Iteration 6:   tolerance =  .00491703
   Iteration 7:   tolerance =  .00341668
   Iteration 8:   tolerance =  .00237776
   Iteration 9:   tolerance =  .00165649
   Iteration 10:   tolerance =  .00115486
   Iteration 11:   tolerance =  .00080554
   Iteration 12:   tolerance =  .00056209
   Iteration 13:   tolerance =  .00039231
   Iteration 14:   tolerance =  .00027386
   Iteration 15:   tolerance =  .00019119
   Iteration 16:   tolerance =  .00013349
   Iteration 17:   tolerance =  .00009321
   Iteration 18:   tolerance =  .00006509
   Iteration 19:   tolerance =  .00004545
   Iteration 20:   tolerance =  .00003174
   Iteration 21:   tolerance =  .00002216
   Iteration 22:   tolerance =  .00001548
   Iteration 23:   tolerance =  .00001081
   Iteration 24:   tolerance =  7.548e-06
   Iteration 25:   tolerance =  5.271e-06
   Iteration 26:   tolerance =  3.681e-06
   Iteration 27:   tolerance =  2.571e-06
   Iteration 28:   tolerance =  1.795e-06
   Iteration 29:   tolerance =  1.254e-06
   Iteration 30:   tolerance =  8.755e-07


   Vector autoregression

   Sample:  2002m1 - 2011m10                       Number of obs     =        118
   Log likelihood =  -801.0257          (lutstats) AIC               =  -11.77322
   FPE            =   7.59e-06                     HQIC              =  -11.29653
   Det(Sigma_ml)  =   3.30e-06                     SBIC              =   -10.5992
```

Equation	Parms	RMSE	R-sq	chi2	P>chi2
InflationMOMLe~y	11	1.05514	0.2390	46.87674	0.0000
ChangesInEffec~s	9	.125467	0.5015	109.0224	0.0000
ChinaReserveCh~t	11	1.47574	0.1188	15.46062	0.1161
ChangeInInflat~C	7	35.7753	0.0616	7.097471	0.3119
MonthOnMUSgdpC~e	11	.116328	0.9948	20697.71	0.0000

(1) [ChangeInInflationExpectationMIC]L.ChinaReserveChangeInPercent = 0
(2) [ChangeInInflationExpectationMIC]L2.ChinaReserveChangeInPercent = 0
(3) [ChangesInEffectiveFedFundRates]L.ChinaReserveChangeInPercent = 0
(4) [ChangesInEffectiveFedFundRates]L2.ChinaReserveChangeInPercent = 0
(5) [ChangeInInflationExpectationMIC]L.ChangeInInflationExpectationMIC = 0
(6) [ChangeInInflationExpectationMIC]L2.ChangeInInflationExpectationMIC = 0

	Coef.	Std. Err.	z	P>|z|	[95% Conf. Interval]
InflationMOMLessFoodEnergy					
InflationMOMLessFoodEnergy					
L1.	**-.5434028**	**.098069**	**-5.54**	**0.000**	**-.7356145 -.351191**
L2.	**-.1996055**	**.0990351**	**-2.02**	**0.044**	**-.3937108 -.0055002**
ChangesInEffectiveFedFundRates					
L1.	**.2650514**	**.8110495**	**0.33**	**0.744**	**-1.324576 1.854679**
L2.	**.3591071**	**.789844**	**0.45**	**0.649**	**-1.188959 1.907173**
ChinaReserveChangeInPercent					
L1.	**-.0796074**	**.0644936**	**-1.23**	**0.217**	**-.2060126 .0467978**
L2.	**-.0174417**	**.0678429**	**-0.26**	**0.797**	**-.1504114 .115528**
ChangeInInflationExpectationMIC					
L1.	**.0052615**	**.0022161**	**2.37**	**0.018**	**.**

```
> 0009181
>            .0096049
                              L2. |   .0053815   .0021581     2.49   0.013     .
> 0011517
>            .0096113
                                  |
                MonthOnMUSgdpChange |
                              L1. |  -.0189692   .2731481    -0.07   0.945    -.
> 5543295
>            .5163912
                              L2. |   .0423564   .2713384     0.16   0.876     -
> .489457
>            .5741699
                                  |
                             _cons |   .2235787   .2181926     1.02   0.306    -.
> 2040709
>            .6512284
-----------------------------------+------------------------------------------------------------
> ------------------
ChangesInEffectiveFedFundRates     |
     InflationMOMLessFoodEnergy    |
                              L1. |   .0087701   .0115796     0.76   0.449    -.
> 0139255
>            .0314656
                              L2. |   .0099851   .0116593     0.86   0.392    -.
> 0128667
>            .0328369
                                  |
 ChangesInEffectiveFedFundRates   |
                              L1. |   .5483652   .0963841     5.69   0.000     .
> 3594558
>            .7372746
                              L2. |   .0547286   .0938443     0.58   0.560    -.
> 1292028
>              .23866
                                  |
    ChinaReserveChangeInPercent   |
                              L1. |  -2.43e-19   9.01e-19    -0.27   0.787    -2
> .01e-18
>            1.52e-18
                              L2. |   5.85e-20   5.23e-20     1.12   0.263    -4
> .39e-20
>            1.61e-19
                                  |
ChangeInInflationExpectationMIC   |
                              L1. |  -.000073   .0002725    -0.27   0.789     -
> .000607
>            .0004611
                              L2. |   .0001595   .0002669     0.60   0.550    -.
```

```
> 0003636
>            .0006826
                                  |
            MonthOnMUSgdpChange |
                            L1. |   .0849279   .0324439     2.62   0.009     .
> 0213391
>            .1485167
                            L2. |  -.0705112   .0322145    -2.19   0.029    -.
> 1336504
>           -.0073719
                                  |
                          _cons |  -.0062324   .0122097    -0.51   0.610     -
> .030163
>            .0176983
------------------------------+---------------------------------------------
> ------------------
ChinaReserveChangeInPercent   |
     InflationMOMLessFoodEnergy |
                            L1. |   .1045905   .1373657     0.76   0.446    -.
> 1646413
>            .3738223
                            L2. |   .1132313   .1389895     0.81   0.415    -.
> 1591831
>            .3856456
                                  |
 ChangesInEffectiveFedFundRates |
                            L1. |   .3538817   1.134537     0.31   0.755    -1
> .869771
>            2.577534
                            L2. |  -1.083891   1.105105    -0.98   0.327    -3
> .249857
>            1.082074
                                  |
    ChinaReserveChangeInPercent |
                            L1. |   .2132266   .0952464     2.24   0.025     .
> 0265471
>            .3999061
                            L2. |   .0932434   .1001928     0.93   0.352    -.
> 1031309
>            .2896176
                                  |
ChangeInInflationExpectationMIC |
                            L1. |  -.0018004   .0032233    -0.56   0.576    -.
> 0081178
>            .0045171
                            L2. |   .0011352   .0031384     0.36   0.718    -.
> 0050158
>            .0072863
                                  |
```

```
            MonthOnMUSgdpChange |
                             L1. |   .4704271   .3822608     1.23   0.218    -.
> 2787902
>            1.219644
                             L2. |  -.3107745   .3797103    -0.82   0.413    -1
> .054993
>             .433444
                                 |
                           _cons |   1.599828   .3185342     5.02   0.000     .
> 9755126
>            2.224144
-----------------------------------+------------------------------------------------
> ------------------
ChangeInInflationExpectationMIC |
     InflationMOMLessFoodEnergy |
                             L1. |   3.693253   3.274213     1.13   0.259    -2
> .724087
>            10.11059
                             L2. |   -2.50027   3.229449    -0.77   0.439    -8
> .829873
>            3.829333
                                 |
 ChangesInEffectiveFedFundRates |
                             L1. |    3.69684   27.45166     0.13   0.893    -5
> 0.10742
>             57.5011
                             L2. |   33.11859   26.66891     1.24   0.214    -1
> 9.15151
>            85.38868
                                 |
    ChinaReserveChangeInPercent |
                             L1. |   1.47e-17   3.89e-17     0.38   0.706    -6
> .15e-17
>            9.09e-17
                             L2. |  -3.01e-16   1.82e-16    -1.65   0.098    -6
> .57e-16
>            5.55e-17
                                 |
ChangeInInflationExpectationMIC |
                             L1. |   1.50e-16   1.74e-17     8.58   0.000     1
> .16e-16
>            1.84e-16
                             L2. |   3.60e-17   8.61e-18     4.19   0.000     1
> .92e-17
>            5.29e-17
                                 |
            MonthOnMUSgdpChange |
                             L1. |  -7.163726   9.198335    -0.78   0.436    -2
> 5.19213
```

```
>            10.86468
                              L2. |   5.917194   9.144172     0.65   0.518    -1
> 2.00505
>            23.83944
                                  |
                            _cons |  -1.967208    3.48128    -0.57   0.572    -8
> .790391
>            4.855976
------------------------------------+---------------------------------------------
> ------------------
MonthOnMUSgdpChange                 |
     InflationMOMLessFoodEnergy     |
                              L1. |  -.0022736   .0108182    -0.21   0.834    -.
> 0234769
>            .0189297
                              L2. |  -.0108287   .0109321    -0.99   0.322    -.
> 0322551
>            .0105978
                                  |
 ChangesInEffectiveFedFundRates   |
                              L1. |  -.0882351   .0894226    -0.99   0.324    -.
> 2635002
>              .08703
                              L2. |   .2691962   .0870907     3.09   0.002     .
> 0985015
>            .4398908
                                  |
    ChinaReserveChangeInPercent   |
                              L1. |  -.0060452   .0072879    -0.83   0.407    -.
> 0203291
>            .0082387
                              L2. |  -.0084099   .0076663    -1.10   0.273    -.
> 0234357
>            .0066158
                                  |
ChangeInInflationExpectationMIC   |
                              L1. |   .0005252   .0002474     2.12   0.034     .
> 0000403
>            .0010101
                              L2. |   .0001996   .0002409     0.83   0.407    -.
> 0002725
>            .0006717
                                  |
            MonthOnMUSgdpChange   |
                              L1. |   1.891607   .0301205    62.80   0.000     1
> .832572
>            1.950643
                              L2. |  -.9500198   .0299207   -31.75   0.000    -1
> .008663
```

```
> -.8913763
                                    _cons |   .0406102   .0245243     1.66   0.098    -.
> 0074565
>              .088677
------------------------------------------+---------------------------------------------
> ------------------
```

```
45 .
46 . varstable
```

Eigenvalue stability condition

Eigenvalue	Modulus
.9450933 + .2201106*i*	.970387
.9450933 - .2201106*i*	.970387
.6429621	.642962
-.356167 + .3536436*i*	.501915
-.356167 - .3536436*i*	.501915
.4133146	.413315
.1422332 + .3057536*i*	.337217
.1422332 - .3057536*i*	.337217
-.2136596	.21366
-.1951396	.19514

All the eigenvalues lie inside the unit circle.
VAR satisfies stability condition.

```
47 . varlmar
```

Lagrange-multiplier test

lag	chi2	df	Prob > chi2
1	-1.1e+03	25	1.00000
2	-1.2e+03	25	1.00000

H0: no autocorrelation at lag order

```
48 . vargranger
```

Granger causality Wald tests

Equation	Excluded	chi2	df	Prob > chi2
InflationMOMLes~y	ChangesInEffect~s	.76848	2	0.681
InflationMOMLes~y	ChinaReserveCha~t	1.848	2	0.397
InflationMOMLes~y	ChangeInInflati~C	7.959	2	0.019
InflationMOMLes~y	MonthOnMUSgdpCh~e	.11164	2	0.946
InflationMOMLes~y	ALL	10.76	8	0.216
ChangesInEffect~s	InflationMOMLes~y	.87962	2	0.644
ChangesInEffect~s	ChinaReserveCha~t	.	0	.
ChangesInEffect~s	ChangeInInflati~C	.77513	2	0.679
ChangesInEffect~s	MonthOnMUSgdpCh~e	8.4302	2	0.015
ChangesInEffect~s	ALL	9.8509	6	0.131
ChinaReserveCha~t	InflationMOMLes~y	.82775	2	0.661
ChinaReserveCha~t	ChangesInEffect~s	1.0811	2	0.582
ChinaReserveCha~t	ChangeInInflati~C	.84529	2	0.655
ChinaReserveCha~t	MonthOnMUSgdpCh~e	3.2913	2	0.193
ChinaReserveCha~t	ALL	5.6039	8	0.692
ChangeInInflati~C	InflationMOMLes~y	3.7074	2	0.157
ChangeInInflati~C	ChangesInEffect~s	2.78	2	0.249
ChangeInInflati~C	ChinaReserveCha~t	.	0	.
ChangeInInflati~C	MonthOnMUSgdpCh~e	.75607	2	0.685
ChangeInInflati~C	ALL	7.0975	6	0.312
MonthOnMUSgdpCh~e	InflationMOMLes~y	1.0947	2	0.578
MonthOnMUSgdpCh~e	ChangesInEffect~s	10.73	2	0.005
MonthOnMUSgdpCh~e	ChinaReserveCha~t	2.4696	2	0.291
MonthOnMUSgdpCh~e	ChangeInInflati~C	4.5673	2	0.102
MonthOnMUSgdpCh~e	ALL	16.618	8	0.034

```
49 .  predict e2, resid
   (5 missing values generated)

50 .  gen Le2=e2[_n-1]
   (5 missing values generated)

51 .  regress e2 Le2  if inrange(monthly_date, tm(2002m1), tm(2011m10))
```

Source	SS	df	MS	Number of obs	=	118
				F(1, 116)	=	0.01
Model	.011093123	1	.011093123	Prob > F	=	0.9213
Residual	131.360485	116	1.13241797	R-squared	=	0.0001
				Adj R-squared	=	-0.0085
Total	131.371578	117	1.122834	Root MSE	=	1.0642

e2	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
Le2	-.0091951	.0929037	-0.10	0.921	-.1932025	.1748123
_cons	.0000105	.0979631	0.00	1.000	-.1940179	.1940388

```
52 .
53 . swilk e2  if inrange(monthly_date, tm(2002m1), tm(2011m10))
```

Shapiro-Wilk W test for normal data

Variable	Obs	W	V	z	Prob>z
e2	118	0.98551	1.375	0.713	0.23792

```
54 . sfrancia e2 if inrange(monthly_date, tm(2002m1), tm(2011m10))
```

Shapiro-Francia W' test for normal data

Variable	Obs	W'	V'	z	Prob>z
e2	118	0.98568	1.494	0.802	0.21115

```
55 .  constraint 7 [ChangeInInflationExpectationMIC]L3.ChinaReserveChangeInPercen
   > t  = 0

56 .
57 .    constraint 8 [ChangesInEffectiveFedFundRates]L3.ChinaReserveChangeInPerce
   > nt  = 0

58 .
59 .  constraint 9 [ChangeInInflationExpectationMIC]L3.ChangeInInflationExpectati
   > onMIC = 0

60 .
61 .
62 .
63 .   var InflationMOMLessFoodEnergy  ChangesInEffectiveFedFundRates  ChinaReser
   > veChangeInPercent     ChangeInInflationExpectationMIC       if inrange(month
   > ly_date,tm(2012m1), tm(2015m10)), lutstats  dfk constraints(1 2 3 4 5 6 7 8
   > 9) exog(L3.InflationMOMLessFoodEnergy  L3.ChangesInEffectiveFedFundRates  L3
   > .ChinaReserveChangeInPercent     L3.ChangeInInflationExpectationMIC L3.Month
   > OnMUSgdpChange)
   Estimating VAR coefficients

   Iteration 1:   tolerance =   .7793447
   Iteration 2:   tolerance =   1.758994
   Iteration 3:   tolerance =   .4348961
   Iteration 4:   tolerance =   .1662801
   Iteration 5:   tolerance =   .1033747
   Iteration 6:   tolerance =  .06355387
   Iteration 7:   tolerance =    .037386
   Iteration 8:   tolerance =  .02138624
   Iteration 9:   tolerance =  .01203051
   Iteration 10:   tolerance =  .00670214
   Iteration 11:   tolerance =   .0037131
   Iteration 12:   tolerance =  .00205066
   Iteration 13:   tolerance =  .00113051
   Iteration 14:   tolerance =   .0006226
   Iteration 15:   tolerance =  .00034267
   Iteration 16:   tolerance =  .00018854
   Iteration 17:   tolerance =  .00010371
   Iteration 18:   tolerance =  .00005704
   Iteration 19:   tolerance =  .00003136
   Iteration 20:   tolerance =  .00001725
   Iteration 21:   tolerance =  9.483e-06
   Iteration 22:   tolerance =  5.214e-06
   Iteration 23:   tolerance =  2.866e-06
   Iteration 24:   tolerance =  1.576e-06
   Iteration 25:   tolerance =  8.662e-07
```

```
Vector autoregression

Sample:  2012m1 - 2015m10                       Number of obs     =         46
Log likelihood =  -136.6763          (lutstats) AIC               =  -8.297088
FPE            =   .0005011                     HQIC              =  -7.820552
Det(Sigma_ml)  =    .000062                     SBIC              =  -7.024989

Equation           Parms      RMSE     R-sq      chi2     P>chi2
------------------------------------------------------------------
InflationMOMLe~y     14     .605815   0.3462   23.49918   0.0361
ChangesInEffec~s     11     .013108   0.1065   9.310842   0.5029
ChinaReserveCh~t     14     1.08135   0.3110    34.6092   0.0010
ChangeInInflat~C      8     10.7828   0.1488   5.985545   0.5414
------------------------------------------------------------------

 ( 1)  [ChangeInInflationExpectationMIC]L.ChinaReserveChangeInPercent = 0
 ( 2)  [ChangeInInflationExpectationMIC]L2.ChinaReserveChangeInPercent = 0
 ( 3)  [ChangesInEffectiveFedFundRates]L.ChinaReserveChangeInPercent = 0
 ( 4)  [ChangesInEffectiveFedFundRates]L2.ChinaReserveChangeInPercent = 0
 ( 5)  [ChangeInInflationExpectationMIC]L.ChangeInInflationExpectationMIC = 0
 ( 6)  [ChangeInInflationExpectationMIC]L2.ChangeInInflationExpectationMIC = 0
 ( 7)  [ChangeInInflationExpectationMIC]L3.ChinaReserveChangeInPercent = 0
 ( 8)  [ChangesInEffectiveFedFundRates]L3.ChinaReserveChangeInPercent = 0
 ( 9)  [ChangeInInflationExpectationMIC]L3.ChangeInInflationExpectationMIC = 0
------------------------------------------------------------------------------
> ----------------------------------
                                    |      Coef.   Std. Err.      z    P>|z|     [
> 95% Con
>        f. Interval]
------------------------------------+-----------------------------------------
> ----------------------------------
InflationMOMLessFoodEnergy          |
     InflationMOMLessFoodEnergy     |
                               L1.  |  -.4209349   .1777648    -2.37   0.018    -.
> 7693475
>           -.0725223
                               L2.  |  -.3705439   .1578024    -2.35   0.019    -.
> 6798309
>            -.061257
                                    |
 ChangesInEffectiveFedFundRates     |
                               L1.  |  -.0190861   8.489985    -0.00   0.998    -1
> 6.65915
>            16.62098
                               L2.  |  -8.068017    8.27118    -0.98   0.329    -2
> 4.27923
>            8.143197
                                    |
    ChinaReserveChangeInPercent     |
```

```
                            L1. |  -.2309308   .0879322    -2.63   0.009    -.
> 4032748
>           -.0585868
                            L2. |   .1027562   .0865018     1.19   0.235    -.
> 0667842
>            .2722966
                                |
ChangeInInflationExpectationMIC |
                            L1. |   .0249073   .0138803     1.79   0.073    -.
> 0022976
>            .0521123
                            L2. |   .0205913   .0173005     1.19   0.234     -
> .013317
>            .0544995
                                |
     InflationMOMLessFoodEnergy |
                            L3. |  -.2905184   .1758026    -1.65   0.098    -.
> 6350852
>            .0540484
                                |
 ChangesInEffectiveFedFundRates |
                            L3. |  -1.014105    8.55205    -0.12   0.906    -1
> 7.77582
>            15.74761
                                |
    ChinaReserveChangeInPercent |
                            L3. |    .069492   .0883384     0.79   0.431    -.
> 1036482
>            .2426321
                                |
ChangeInInflationExpectationMIC |
                            L3. |  -.0028388   .0131463    -0.22   0.829    -.
> 0286051
>            .0229276
                                |
            MonthOnMUSgdpChange |
                            L3. |  -.0997422   .1432601    -0.70   0.486    -.
> 3805269
>            .1810425
                                |
                          _cons |   .0394435   .1172537     0.34   0.737    -.
> 1903695
>            .2692565
----------------------------------+-------------------------------------------
> ----------------------
ChangesInEffectiveFedFundRates  |
     InflationMOMLessFoodEnergy |
                            L1. |   .0027556   .0033855     0.81   0.416    -.
> 0038798
```

```
>             .009391
                            L2. |   .0014779   .0033036     0.45   0.655    -.
> 0049971
>            .0079528
                                |
 ChangesInEffectiveFedFundRates |
                            L1. |   -.041929   .1786015    -0.23   0.814    -.
> 3919815
>            .3081235
                            L2. |     .08882   .1770392     0.50   0.616    -.
> 2581705
>            .4358106
                                |
    ChinaReserveChangeInPercent |
                            L1. |   2.94e-19   2.27e-19     1.30   0.195    -1
> .51e-19
>            7.39e-19
                            L2. |   3.66e-19   2.73e-19     1.34   0.180    -1
> .69e-19
>            9.02e-19
                                |
ChangeInInflationExpectationMIC |
                            L1. |  -.0004155   .0002807    -1.48   0.139    -.
> 0009657
>            .0001347
                            L2. |   -.000082   .0003443    -0.24   0.812    -.
> 0007568
>            .0005928
                                |
     InflationMOMLessFoodEnergy |
                            L3. |   .0057681    .003616     1.60   0.111    -.
> 0013192
>            .0128554
                                |
 ChangesInEffectiveFedFundRates |
                            L3. |  -.0321066   .1763194    -0.18   0.856    -.
> 3776863
>            .3134731
                                |
    ChinaReserveChangeInPercent |
                            L3. |  -1.64e-18   1.00e-18    -1.63   0.103    -3
> .60e-18
>            3.28e-19
                                |
ChangeInInflationExpectationMIC |
                            L3. |    .000024   .0002667     0.09   0.928    -.
> 0004987
>            .0005468
                                |
```

```
            MonthOnMUSgdpChange |
                            L3. |   .0049287   .0030222     1.63   0.103    -.
> 0009946
>              .010852
                                |
                          _cons |   -.000423   .0023864    -0.18   0.859    -.
> 0051001
>             .0042542
--------------------------------+-------------------------------------------
> ------------------
ChinaReserveChangeInPercent     |
     InflationMOMLessFoodEnergy |
                            L1. |   .0706521   .3090269     0.23   0.819    -.
> 5350295
>             .6763338
                            L2. |   .1840803   .2790439     0.66   0.509    -.
> 3628356
>             .7309962
                                |
 ChangesInEffectiveFedFundRates |
                            L1. |   4.973126   14.98114     0.33   0.740    -2
> 4.38937
>             34.33563
                            L2. |  -11.54752   14.62464    -0.79   0.430    -4
> 0.21129
>             17.11625
                                |
    ChinaReserveChangeInPercent |
                            L1. |   .1466027   .1401618     1.05   0.296    -.
> 1281094
>             .4213149
                            L2. |   .1345314   .1378817     0.98   0.329    -.
> 1357118
>             .4047747
                                |
ChangeInInflationExpectationMIC |
                            L1. |   .0613199    .022287     2.75   0.006     .
> 0176381
>             .1050017
                            L2. |   .0435289   .0277722     1.57   0.117    -.
> 0109037
>             .0979614
                                |
     InflationMOMLessFoodEnergy |
                            L3. |   .7858073   .3086315     2.55   0.011     .
> 1809008
>             1.390714
                                |
 ChangesInEffectiveFedFundRates |
```

```
                            L3. |  -10.52805   15.05713    -0.70   0.484    -4
> 0.03948
>            18.98339
                                |
    ChinaReserveChangeInPercent |
                            L3. |   .3351847   .1408093     2.38   0.017     .
> 0592036
>            .6111658
                                |
ChangeInInflationExpectationMIC |
                            L3. |   .0120334   .0211095     0.57   0.569    -.
> 0293404
>            .0534073
                                |
            MonthOnMUSgdpChange |
                            L3. |  -.2309346   .2543068    -0.91   0.364    -.
> 7293667
>            .2674975
                                |
                          _cons |   .1394905    .206791     0.67   0.500    -.
> 2658124
>            .5447934
--------------------------------+-------------------------------------------------
> ----------------------
ChangeInInflationExpectationMIC |
     InflationMOMLessFoodEnergy |
                            L1. |  -3.630097   2.728783    -1.33   0.183    -8
> .978412
>            1.718219
                            L2. |   3.780112   2.674063     1.41   0.157    -1
> .460954
>            9.021179
                                |
 ChangesInEffectiveFedFundRates |
                            L1. |  -13.04182   142.0625    -0.09   0.927    -2
> 91.4792
>            265.3955
                            L2. |   121.8256    139.851     0.87   0.384    -1
> 52.2772
>            395.9285
                                |
    ChinaReserveChangeInPercent |
                            L1. |  -3.42e-16   4.81e-16    -0.71   0.476    -1
> .28e-15
>            6.00e-16
                            L2. |  -3.65e-16   1.83e-16    -1.99   0.046    -7
> .25e-16
>           -6.33e-18
                                |
```

```
ChangeInInflationExpectationMIC |
                            L1. |   4.77e-16   1.18e-16     4.04   0.000     2
> .45e-16
>            7.08e-16
                            L2. |   7.58e-16   2.06e-16     3.69   0.000     3
> .55e-16
>            1.16e-15
                                |
     InflationMOMLessFoodEnergy |
                            L3. |  -3.095857   2.857812    -1.08   0.279    -8
> .697066
>            2.505353
                                |
 ChangesInEffectiveFedFundRates |
                            L3. |  -8.750163   141.4489    -0.06   0.951    -2
> 85.9849
>            268.4846
                                |
    ChinaReserveChangeInPercent |
                            L3. |   1.66e-15   8.29e-16     2.00   0.045     3
> .33e-17
>            3.28e-15
                                |
ChangeInInflationExpectationMIC |
                            L3. |   6.67e-16   2.19e-16     3.05   0.002     2
> .38e-16
>            1.10e-15
                                |
            MonthOnMUSgdpChange |
                            L3. |  -.3971169   2.479484    -0.16   0.873    -5
> .256815
>            4.462582
                                |
                          _cons |   .1110332    1.96062     0.06   0.955    -3
> .731711
>            3.953777
------------------------------------------------------------------------------

> ------------------
```

```
64 .
65 . varstable
```

Eigenvalue stability condition

Eigenvalue	Modulus
-.1956088 + .7099084*i*	.736365
-.1956088 - .7099084*i*	.736365
.4463562	.446356
-.4360225 + .01884875*i*	.43643
-.4360225 - .01884875*i*	.43643
.2859243 + .2372709*i*	.371551
.2859243 - .2372709*i*	.371551
-.07120341	.071203

All the eigenvalues lie inside the unit circle.
VAR satisfies stability condition.

```
66 . varlmar
```

Lagrange-multiplier test

lag	chi2	df	Prob > chi2
1	-98.1601	16	1.00000
2	-1.1e+02	16	1.00000

H0: no autocorrelation at lag order

```
67 . vargranger
```

Granger causality Wald tests

Equation	Excluded	chi2	df	Prob > chi2
InflationMOMLes~y	ChangesInEffect~s	.9528	2	0.621
InflationMOMLes~y	ChinaReserveCha~t	7.8056	2	0.020
InflationMOMLes~y	ChangeInInflati~C	3.2651	2	0.195
InflationMOMLes~y	ALL	10.499	6	0.105
ChangesInEffect~s	InflationMOMLes~y	.74665	2	0.688
ChangesInEffect~s	ChinaReserveCha~t	.	0	.
ChangesInEffect~s	ChangeInInflati~C	3.5465	2	0.170
ChangesInEffect~s	ALL	4.3231	4	0.364
ChinaReserveCha~t	InflationMOMLes~y	.43999	2	0.803
ChinaReserveCha~t	ChangesInEffect~s	.75153	2	0.687
ChinaReserveCha~t	ChangeInInflati~C	8.0712	2	0.018

ChinaReserveCha~t	ALL	**10.407**	**6**	**0.109**
ChangeInInflati~C	InflationMOMLes~y	**4.8788**	**2**	**0.087**
ChangeInInflati~C	ChangesInEffect~s	**.767**	**2**	**0.681**
ChangeInInflati~C	ChinaReserveCha~t	**.**	**0**	**.**
ChangeInInflati~C	ALL	**5.2971**	**4**	**0.258**

```
68 .  predict ee, resid
   (6 missing values generated)

69 .  gen Lee=ee[_n-1]
   (6 missing values generated)

70 . regress ee Lee  if inrange(monthly_date,tm(2012m1), tm(2015m10))
```

Source	SS	df	MS		
Model	**.074159589**	**1**	**.074159589**	Number of obs	= **46**
Residual	**16.8083958**	**44**	**.382008996**	F(1, 44)	= **0.19**
				Prob > F	= **0.6617**
Total	**16.8825554**	**45**	**.375167899**	R-squared	= **0.0044**
				Adj R-squared	= **-0.0182**
				Root MSE	= **.61807**

ee	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
Lee	**-.0659965**	**.1497869**	**-0.44**	**0.662**	**-.3678721**	**.2358791**
_cons	**-.0007634**	**.0911457**	**-0.01**	**0.993**	**-.1844555**	**.1829288**

```
71 .
72 . swilk ee if inrange(monthly_date,tm(2012m1), tm(2015m10))
```

Shapiro-Wilk W test for normal data

Variable	Obs	W	V	z	Prob>z
ee	**46**	**0.96723**	**1.444**	**0.779**	**0.21797**

```
73 . sfrancia  ee if inrange(monthly_date,tm(2012m1), tm(2015m10))

                    Shapiro-Francia W' test for normal data

    Variable |       Obs       W'          V'        z       Prob>z
-------------+--------------------------------------------------------
          ee |        46    0.96834      1.546     0.819     0.20648

74 .  var InflationMOMLessFoodEnergy  ChangesInEffectiveFedFundRates  ChinaReserv
   > eChangeInPercent     ChangeInInflationExpectationMIC       if inrange(monthl
   > y_date,tm(2002m1), tm(2011m10)), lutstats  dfk constraints(1 2 3 4 5 6 7 8 9
   > ) exog(L3.InflationMOMLessFoodEnergy  L3.ChangesInEffectiveFedFundRates  L3.
   > ChinaReserveChangeInPercent     L3.ChangeInInflationExpectationMIC L3.MonthO
   > nMUSgdpChange)
   Estimating VAR coefficients

   Iteration 1:   tolerance =  .01750229
   Iteration 2:   tolerance =  .01111783
   Iteration 3:   tolerance =  .00837094
   Iteration 4:   tolerance =  .00626212
   Iteration 5:   tolerance =  .00467425
   Iteration 6:   tolerance =  .00348343
   Iteration 7:   tolerance =  .00259286
   Iteration 8:   tolerance =  .00192825
   Iteration 9:   tolerance =  .00143304
   Iteration 10:   tolerance =  .00106447
   Iteration 11:   tolerance =  .00079041
   Iteration 12:   tolerance =  .00058674
   Iteration 13:   tolerance =  .00043547
   Iteration 14:   tolerance =  .00032314
   Iteration 15:   tolerance =  .00023977
   Iteration 16:   tolerance =  .00017789
   Iteration 17:   tolerance =  .00013197
   Iteration 18:   tolerance =   .0000979
   Iteration 19:   tolerance =  .00007262
   Iteration 20:   tolerance =  .00005387
   Iteration 21:   tolerance =  .00003996
   Iteration 22:   tolerance =  .00002964
   Iteration 23:   tolerance =  .00002199
   Iteration 24:   tolerance =  .00001631
   Iteration 25:   tolerance =   .0000121
   Iteration 26:   tolerance =  8.973e-06
   Iteration 27:   tolerance =  6.656e-06
   Iteration 28:   tolerance =  4.937e-06
   Iteration 29:   tolerance =  3.662e-06
   Iteration 30:   tolerance =  2.716e-06
   Iteration 31:   tolerance =  2.015e-06
   Iteration 32:   tolerance =  1.494e-06
   Iteration 33:   tolerance =  1.108e-06
```

```
Iteration 34:   tolerance =  8.222e-07


Vector autoregression

Sample:  2002m1 - 2011m10                       Number of obs     =        118
Log likelihood =  -886.4107          (lutstats) AIC               =  -4.592991
FPE            =   .0130874                     HQIC              =  -4.287912
Det(Sigma_ml)  =   .0058849                     SBIC              =  -3.841619

Equation           Parms      RMSE     R-sq      chi2     P>chi2
------------------------------------------------------------------
InflationMOMLe~y     14      .998718   0.3182   56.73357   0.0000
ChangesInEffec~s     11      .128817   0.4745   95.91071   0.0000
ChinaReserveCh~t     14      1.42979   0.1728   22.27579   0.0512
ChangeInInflat~C      8       35.701   0.0655   7.441178   0.3844
------------------------------------------------------------------

 ( 1)  [ChangeInInflationExpectationMIC]L.ChinaReserveChangeInPercent = 0
 ( 2)  [ChangeInInflationExpectationMIC]L2.ChinaReserveChangeInPercent = 0
 ( 3)  [ChangesInEffectiveFedFundRates]L.ChinaReserveChangeInPercent = 0
 ( 4)  [ChangesInEffectiveFedFundRates]L2.ChinaReserveChangeInPercent = 0
 ( 5)  [ChangeInInflationExpectationMIC]L.ChangeInInflationExpectationMIC = 0
 ( 6)  [ChangeInInflationExpectationMIC]L2.ChangeInInflationExpectationMIC = 0
 ( 7)  [ChangeInInflationExpectationMIC]L3.ChinaReserveChangeInPercent = 0
 ( 8)  [ChangesInEffectiveFedFundRates]L3.ChinaReserveChangeInPercent = 0
 ( 9)  [ChangeInInflationExpectationMIC]L3.ChangeInInflationExpectationMIC = 0
------------------------------------------------------------------------------
> ----------------------
                             |      Coef.   Std. Err.      z    P>|z|     [
> 95% Con
>        f. Interval]
-------------------------------+----------------------------------------------
> ----------------------
InflationMOMLessFoodEnergy     |
     InflationMOMLessFoodEnergy|
                           L1. |  -.5544094   .0958282    -5.79   0.000    -.
> 7422293
>           -.3665895
                           L2. |  -.2975412   .1119691    -2.66   0.008    -.
> 5169965
>           -.0780859
                               |
 ChangesInEffectiveFedFundRates|
                           L1. |   .5225825   .7630078     0.68   0.493    -.
> 9728853
>             2.01805
                           L2. |   .8750978   .8864809     0.99   0.324    -.
> 8623729
```

```
>            2.612568
                                    |
    ChinaReserveChangeInPercent
                             L1.    |  -.0763637   .0629858    -1.21   0.225    -.
> 1998136
>            .0470862
                             L2.    |  -.0175164   .0667764    -0.26   0.793    -.
> 1483958
>            .1133629
                                    |
ChangeInInflationExpectationMIC
                             L1.    |   .0021101   .0024404     0.86   0.387     -
> .002673
>            .0068932
                             L2.    |   .0020989   .0027713     0.76   0.449    -.
> 0033328
>            .0075306
                                    |
     InflationMOMLessFoodEnergy
                             L3.    |  -.1645655   .0972569    -1.69   0.091    -.
> 3551856
>            .0260546
                                    |
 ChangesInEffectiveFedFundRates
                             L3.    |  -1.087981   .7481959    -1.45   0.146    -2
> .554418
>            .3784563
                                    |
    ChinaReserveChangeInPercent
                             L3.    |  -.0259427   .0663049    -0.39   0.696    -.
> 1558978
>            .1040125
                                    |
ChangeInInflationExpectationMIC
                             L3.    |  -.0046668   .0023506    -1.99   0.047    -.
> 0092739
>           -.0000597
                                    |
            MonthOnMUSgdpChange
                             L3.    |   .0465759   .0719499     0.65   0.517    -.
> 0944433
>            .1875952
                                    |
                           _cons    |    .269559   .2417621     1.11   0.265    -.
> 2042861
>            .7434041
------------------------------------+---------------------------------------------
> ------------------
ChangesInEffectiveFedFundRates      |
```

```
     InflationMOMLessFoodEnergy |
                             L1. |   .0047393   .0122535     0.39   0.699    -.
> 0192772
>            .0287558
                             L2. |   -.000612   .0141435    -0.04   0.965    -.
> 0283327
>            .0271087
                                 |
 ChangesInEffectiveFedFundRates |
                             L1. |   .6179873    .098091     6.30   0.000     .
> 4257326
>            .8102421
                             L2. |   .0422766   .1141581     0.37   0.711    -.
> 1814691
>            .2660222
                                 |
    ChinaReserveChangeInPercent |
                             L1. |   1.87e-19   9.59e-19     0.20   0.845    -1
> .69e-18
>            2.07e-18
                             L2. |   4.73e-19   5.52e-19     0.86   0.392    -6
> .09e-19
>            1.55e-18
                                 |
ChangeInInflationExpectationMIC |
                             L1. |   .0001732     .00032     0.54   0.588    -.
> 0004541
>            .0008004
                             L2. |   .0004143    .000364     1.14   0.255    -.
> 0002992
>            .0011278
                                 |
     InflationMOMLessFoodEnergy |
                             L3. |   -.015541   .0123524    -1.26   0.208    -.
> 0397513
>            .0086693
                                 |
 ChangesInEffectiveFedFundRates |
                             L3. |   .0408036   .0960694     0.42   0.671    -.
> 1474888
>            .2290961
                                 |
    ChinaReserveChangeInPercent |
                             L3. |  -3.96e-19   5.97e-19    -0.66   0.507    -1
> .57e-18
>            7.74e-19
                                 |
ChangeInInflationExpectationMIC |
                             L3. |    .000059    .000311     0.19   0.850    -.
```

```
> 0005505
>            .0006685
                                  |
            MonthOnMUSgdpChange
                            L3.   |   .0035878   .0089421     0.40   0.688    -.
> 0139384
>            .0211141
                                  |
                           _cons  |   -.002617   .0126705    -0.21   0.836    -.
> 0274507
>            .0222168
------------------------------------+---------------------------------------------
> ------------------
ChinaReserveChangeInPercent       |
     InflationMOMLessFoodEnergy
                            L1.   |   .0902347   .1373473     0.66   0.511     -
> .178961
>            .3594304
                            L2.   |   .1623519   .1607355     1.01   0.312    -.
> 1526839
>            .4773876
                                  |
 ChangesInEffectiveFedFundRates
                            L1.   |   .4950434   1.092788     0.45   0.651    -1
> .646782
>            2.636869
                            L2.   |  -2.656432   1.269441    -2.09   0.036    -5
> .144491
>           -.1683737
                                  |
    ChinaReserveChangeInPercent
                            L1.   |   .2357168   .0936941     2.52   0.012     .
> 0520798
>            .4193539
                            L2.   |   .0780395   .0993328     0.79   0.432    -.
> 1166491
>            .2727282
                                  |
ChangeInInflationExpectationMIC
                            L1.   |   .0007612   .0035839     0.21   0.832    -.
> 0062632
>            .0077856
                            L2.   |   .0038365   .0040698     0.94   0.346    -.
> 0041401
>            .0118131
                                  |
     InflationMOMLessFoodEnergy
                            L3.   |   .0434347   .1396217     0.31   0.756    -.
> 2302187
```

```
>            .3170881
                                 |
 ChangesInEffectiveFedFundRates
                          L3.    |   2.840699   1.072014     2.65   0.008     .
> 7395902
>            4.941808
                                 |
    ChinaReserveChangeInPercent
                          L3.    |   .1140006   .0986313     1.16   0.248    -.
> 0793132
>            .3073145
                                 |
ChangeInInflationExpectationMIC
                          L3.    |   .0026839   .0034513     0.78   0.437    -.
> 0040805
>            .0094483
                                 |
           MonthOnMUSgdpChange
                          L3.    |   .0138902   .1033015     0.13   0.893     -
> .188577
>            .2163573
                                 |
                        _cons    |   1.360829   .3574352     3.81   0.000     .
> 6602693
>            2.061389
-------------------------------------------------------------------------------
> ------------------
ChangeInInflationExpectationMIC  |
     InflationMOMLessFoodEnergy
                          L1.    |   3.393686    3.36596     1.01   0.313    -3
> .203474
>            9.990847
                          L2.    |  -3.08259    3.834088    -0.80   0.421    -1
> 0.59726
>            4.432084
                                 |
 ChangesInEffectiveFedFundRates
                          L1.    |  -1.220779   27.11028    -0.05   0.964    -5
> 4.35595
>             51.9144
                          L2.    |   17.08131   31.55868     0.54   0.588    -4
> 4.77257
>            78.93519
                                 |
    ChinaReserveChangeInPercent
                          L1.    |  -6.00e-18   1.16e-16    -0.05   0.959    -2
> .34e-16
>            2.22e-16
                          L2.    |   6.30e-16   2.81e-16     2.25   0.025     8
```

```
> .01e-17
>            1.18e-15
                                 |
ChangeInInflationExpectationMIC  |
                          L1.    |   2.74e-16   3.51e-17     7.81   0.000      2
> .05e-16
>            3.43e-16
                          L2.    |   1.70e-16   4.27e-17     3.98   0.000      8
> .64e-17
>            2.54e-16
                                 |
     InflationMOMLessFoodEnergy  |
                          L3.    |  -1.503546   3.317849    -0.45   0.650     -8
> .006411
>            4.999319
                                 |
 ChangesInEffectiveFedFundRates  |
                          L3.    |   25.92051   26.39167     0.98   0.326     -2
> 5.80621
>            77.64724
                                 |
    ChinaReserveChangeInPercent  |
                          L3.    |  -1.92e-16   1.57e-16    -1.22   0.221     -4
> .99e-16
>            1.15e-16
                                 |
ChangeInInflationExpectationMIC  |
                          L3.    |   2.26e-17   8.69e-18     2.59   0.009      5
> .51e-18
>            3.96e-17
                                 |
            MonthOnMUSgdpChange  |
                          L3.    |  -.8190517   2.476817    -0.33   0.741     -5
> .673523
>             4.03542
                                 |
                        _cons    |    -1.8622   3.511226    -0.53   0.596     -8
> .744076
>            5.019677
---------------------------------+------------------------------------------------
> ------------------
```

```
75 .
76 . varstable
```

Eigenvalue stability condition

Eigenvalue	Modulus
.7068817	.706882
-.2973719 + .4373115*i*	.52884
-.2973719 - .4373115*i*	.52884
.4074656	.407466
.05483747 + .2498468*i*	.255794
.05483747 - .2498468*i*	.255794
-.1649919 + .01090558*i*	.165352
-.1649919 - .01090558*i*	.165352

All the eigenvalues lie inside the unit circle.
VAR satisfies stability condition.

```
77 . varlmar
```

Lagrange-multiplier test

lag	chi2	df	Prob > chi2
1	-8.8e+02	16	1.00000
2	-8.8e+02	16	1.00000

H0: no autocorrelation at lag order

```
78 . vargranger
```

Granger causality Wald tests

Equation	Excluded	chi2	df	Prob > chi2
InflationMOMLes~y	ChangesInEffect~s	2.8537	2	0.240
InflationMOMLes~y	ChinaReserveCha~t	1.7704	2	0.413
InflationMOMLes~y	ChangeInInflati~C	.8191	2	0.664
InflationMOMLes~y	ALL	5.0397	6	0.539
ChangesInEffect~s	InflationMOMLes~y	.22594	2	0.893
ChangesInEffect~s	ChinaReserveCha~t	.	0	.
ChangesInEffect~s	ChangeInInflati~C	1.3517	2	0.509
ChangesInEffect~s	ALL	1.5636	4	0.815
ChinaReserveCha~t	InflationMOMLes~y	1.0461	2	0.593
ChinaReserveCha~t	ChangesInEffect~s	4.8674	2	0.088
ChinaReserveCha~t	ChangeInInflati~C	1.1435	2	0.565

ChinaReserveCha~t	ALL	**6.9399**	**6**	**0.326**
ChangeInInflati~C	InflationMOMLes~y	**3.4648**	**2**	**0.177**
ChangeInInflati~C	ChangesInEffect~s	**.36347**	**2**	**0.834**
ChangeInInflati~C	ChinaReserveCha~t	**.**	**0**	**.**
ChangeInInflati~C	ALL	**3.6188**	**4**	**0.460**

```
79 .  predict ee2, resid
   (6 missing values generated)

80 .  gen Lee2=ee2[_n-1]
   (6 missing values generated)

81 .  regress ee2 Lee2    if inrange(monthly_date,tm(2002m1), tm(2011m10))
```

Source	SS	df	MS		
Model	**.475418509**	**1**	**.475418509**	Prob > F	**0.4941**
Residual	**117.222301**	**116**	**1.01053708**	R-squared	**0.0040**
Total	**117.69772**	**117**	**1.00596342**	Root MSE	**1.0053**

Number of obs	=	**118**			
F(1, 116)	=	**0.47**			
Prob > F	=	**0.4941**			
R-squared	=	**0.0040**			
Adj R-squared	=	**-0.0045**			
Root MSE	=	**1.0053**			

ee2	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
Lee2	**-.0634878**	**.0925611**	**-0.69**	**0.494**	**-.2468166**	**.119841**
_cons	**-.0000873**	**.0925413**	**-0.00**	**0.999**	**-.183377**	**.1832024**

```
82 .
83 . swilk ee2     if inrange(monthly_date,tm(2002m1), tm(2011m10))
```

Shapiro-Wilk W test for normal data

Variable	Obs	W	V	z	Prob>z
ee2	**118**	**0.99047**	**0.904**	**-0.225**	**0.58890**

```
84 . sfrancia ee2     if inrange(monthly_date,tm(2002m1), tm(2011m10))

                  Shapiro-Francia W' test for normal data

    Variable |       Obs       W'          V'        z       Prob>z
-------------+--------------------------------------------------------
         ee2 |       118    0.98902      1.146     0.273    0.39261

85 . quietly var InflationMOMLessFoodEnergy  ChangesInEffectiveFedFundRates Month
   > OnMUSgdpChange  ChinaReserveChangeInPercent     ChangeInInflationExpectation
   > MIC       if inrange(monthly_date,tm(2000m1), tm(2020m12)), lutstats  dfk co
   > nstraints(1 2 3 4 5 6 7 8 9) exog(L3.InflationMOMLessFoodEnergy  L3.ChangesI
   > nEffectiveFedFundRates  L3.ChinaReserveChangeInPercent     L3.ChangeInInflat
   > ionExpectationMIC L3.MonthOnMUSgdpChange)

86 .
87 . varstable

     Eigenvalue stability condition

+---------------------------------+-----------+
|            Eigenvalue           |  Modulus  |
|---------------------------------+-----------|
|                .7104732         |   .710473 |
|          .5033652 + .1952316i   |     .5399 |
|          .5033652 - .1952316i   |     .5399 |
|         -.2133028 + .4841434i   |   .529049 |
|         -.2133028 - .4841434i   |   .529049 |
|                .446526          |   .446526 |
|               -.37386           |    .37386 |
|         -.1528077 + .2060229i   |   .256507 |
|         -.1528077 - .2060229i   |   .256507 |
|         -.1429165               |   .142917 |
+---------------------------------+-----------+

     All the eigenvalues lie inside the unit circle.
     VAR satisfies stability condition.

88 . varlmar

     Lagrange-multiplier test

+-------+--------------+----+-----------+
|  lag  |     chi2     | df | Prob > chi2 |
|-------+--------------+----+-------------|
|     1 |   -3.0e+03   | 25 |    1.00000  |
|     2 |   -3.1e+03   | 25 |    1.00000  |
+-------+--------------+----+-------------+

     H0: no autocorrelation at lag order
```

```
89 . vargranger
```

Granger causality Wald tests

Equation	Excluded	chi2	df	Prob > chi2
InflationMOMLes~y	ChangesInEffect~s	1.0832	2	0.582
InflationMOMLes~y	MonthOnMUSgdpCh~e	33.345	2	0.000
InflationMOMLes~y	ChinaReserveCha~t	1.8772	2	0.391
InflationMOMLes~y	ChangeInInflati~C	2.7592	2	0.252
InflationMOMLes~y	ALL	48.129	8	0.000
ChangesInEffect~s	InflationMOMLes~y	.88789	2	0.642
ChangesInEffect~s	MonthOnMUSgdpCh~e	4.4556	2	0.108
ChangesInEffect~s	ChinaReserveCha~t	.	0	.
ChangesInEffect~s	ChangeInInflati~C	3.0395	2	0.219
ChangesInEffect~s	ALL	8.2322	6	0.222
MonthOnMUSgdpCh~e	InflationMOMLes~y	1.4312	2	0.489
MonthOnMUSgdpCh~e	ChangesInEffect~s	.0371	2	0.982
MonthOnMUSgdpCh~e	ChinaReserveCha~t	.70592	2	0.703
MonthOnMUSgdpCh~e	ChangeInInflati~C	1.0836	2	0.582
MonthOnMUSgdpCh~e	ALL	2.806	8	0.946
ChinaReserveCha~t	InflationMOMLes~y	3.3803	2	0.184
ChinaReserveCha~t	ChangesInEffect~s	3.0072	2	0.222
ChinaReserveCha~t	MonthOnMUSgdpCh~e	.57766	2	0.749
ChinaReserveCha~t	ChangeInInflati~C	.61189	2	0.736
ChinaReserveCha~t	ALL	7.3432	8	0.500
ChangeInInflati~C	InflationMOMLes~y	6.2783	2	0.043
ChangeInInflati~C	ChangesInEffect~s	.87585	2	0.645
ChangeInInflati~C	MonthOnMUSgdpCh~e	3.0281	2	0.220
ChangeInInflati~C	ChinaReserveCha~t	.	0	.
ChangeInInflati~C	ALL	9.7087	6	0.137

```
90 .  predict ee3, resid
   (6 missing values generated)

91 .
92 .   gen Lee3=ee3[_n-1]
   (6 missing values generated)

93 .   regress ee3 Lee3    if inrange(monthly_date,tm(2000m1), tm(2020m12))
```

Source	SS	df	MS	Number of obs	=	245
				F(1, 243)	=	0.83
Model	.749572423	1	.749572423	Prob > F	=	0.3624
Residual	218.737468	243	.900154189	R-squared	=	0.0034
				Adj R-squared	=	-0.0007
Total	219.48704	244	.899537051	Root MSE	=	.94876

ee3	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
Lee3	-.0584374	.0640387	-0.91	0.362	-.1845793	.0677044
_cons	-.0000334	.0606144	-0.00	1.000	-.11943	.1193632

```
94 .
95 . swilk  ee3     if inrange(monthly_date,tm(2000m1), tm(2020m12))
```

Shapiro-Wilk W test for normal data

Variable	Obs	W	V	z	Prob>z
ee3	245	0.98390	2.868	2.449	0.00717

```
96 . sfrancia   ee3     if inrange(monthly_date,tm(2000m1), tm(2020m12))
```

Shapiro-Francia W' test for normal data

Variable	Obs	W'	V'	z	Prob>z
ee3	245	0.98087	3.706	2.745	0.00303

```
97 . * regression on the entire 2000-2020 period is not significant here (serial
   > correlation in errors, underlying breaks in data...)

98 . log off
         name:  <unnamed>
          log:  /Users/nicolaszhang/Downloads/Stata Rec 6/VARandGrangerChina.smcl
     log type:  smcl
    paused on:  12 Nov 2020, 18:30:52
-------------------------------------------------------------------------------
-------------------------------------------------------------------------------
         name:  <unnamed>
          log:  /Users/nicolaszhang/Downloads/Stata Rec 6/VARandGrangerChina.smcl
     log type:  smcl
   resumed on:  12 Nov 2020, 18:40:23

99 . var InflationMOMLessFoodEnergy  ChangesInEffectiveFedFundRates   ChinaReserv
   > eChangeInPercent     ChangeInInflationExpectationMIC   MonthtomonthchangeinE
   > nergy     if inrange(monthly_date,tm(2017m2), tm(2020m12)), lutstats  dfk co
   > nstraints(1 2 3 4 5 6 7 8 9) exog(L3.InflationMOMLessFoodEnergy  L3.ChangesI
   > nEffectiveFedFundRates  L3.ChinaReserveChangeInPercent     L3.ChangeInInflat
   > ionExpectationMIC L3.MonthtomonthchangeinEnergy )
   Estimating VAR coefficients

   Iteration 1:   tolerance =   .8375448
   Iteration 2:   tolerance =  .08624325
   Iteration 3:   tolerance =  .04027795
   Iteration 4:   tolerance =  .01762477
   Iteration 5:   tolerance =  .00793273
   Iteration 6:   tolerance =  .00360559
   Iteration 7:   tolerance =  .00164582
   Iteration 8:   tolerance =  .00075288
   Iteration 9:   tolerance =  .00034485
   Iteration 10:   tolerance =  .00015809
   Iteration 11:   tolerance =  .00007252
   Iteration 12:   tolerance =  .00003329
   Iteration 13:   tolerance =  .00001529
   Iteration 14:   tolerance =  7.024e-06
   Iteration 15:   tolerance =  3.229e-06
   Iteration 16:   tolerance =  1.485e-06
   Iteration 17:   tolerance =  6.831e-07


   Vector autoregression

   Sample:  2017m2 - 2020m5                        Number of obs     =         40
   Log likelihood =  -370.8874          (lutstats) AIC               =   3.869321
   FPE            =   160.9113                     HQIC              =   4.632628
   Det(Sigma_ml)  =   3.932681                     SBIC              =   5.980421
```

Equation	Parms	RMSE	R-sq	chi2	P>chi2
InflationMOMLe~y	16	.836601	0.6972	60.87231	0.0000
ChangesInEffec~s	13	.156571	0.4080	21.19893	0.0475
ChinaReserveCh~t	16	.425744	0.3626	17.31523	0.3004
ChangeInInflat~C	10	9.64852	0.4539	21.44097	0.0108
Monthtomonthch~y	16	23.6783	0.5517	30.85037	0.0092

(1) [ChangeInInflationExpectationMIC]L.ChinaReserveChangeInPercent = 0
(2) [ChangeInInflationExpectationMIC]L2.ChinaReserveChangeInPercent = 0
(3) [ChangesInEffectiveFedFundRates]L.ChinaReserveChangeInPercent = 0
(4) [ChangesInEffectiveFedFundRates]L2.ChinaReserveChangeInPercent = 0
(5) [ChangeInInflationExpectationMIC]L.ChangeInInflationExpectationMIC = 0
(6) [ChangeInInflationExpectationMIC]L2.ChangeInInflationExpectationMIC = 0
(7) [ChangeInInflationExpectationMIC]L3.ChinaReserveChangeInPercent = 0
(8) [ChangesInEffectiveFedFundRates]L3.ChinaReserveChangeInPercent = 0
(9) [ChangeInInflationExpectationMIC]L3.ChangeInInflationExpectationMIC = 0

		Coef.	Std. Err.	z	P>|z|	[95% Conf. Interval]
InflationMOMLessFoodEnergy						
InflationMOMLessFoodEnergy	L1.	-.6272708	.2233683	-2.81	0.005	-1.065065 -.1894771
	L2.	-.3570261	.2639125	-1.35	0.176	-.8742852 .1602329
ChangesInEffectiveFedFundRates	L1.	4.589527	1.278303	3.59	0.000	2.084099 7.094956
	L2.	-3.500931	1.529985	-2.29	0.022	-6.499647 -.5022154
ChinaReserveChangeInPercent	L1.	.6825955	.3079861	2.22	0.027	.0789539 1.286237
	L2.	-.1873929	.3420576	-0.55	0.584	-.8578135 .4830278

```
                                 |
ChangeInInflationExpectationMIC  |
                           L1.   |   .0338966   .0253304     1.34   0.181
> -.01575
>            .0835433
                           L2.   |   .0010311   .0331938     0.03   0.975    -.
> 0640275
>            .0660896
                                 |
     MonthtomonthchangeinEnergy  |
                           L1.   |   .0074845   .0070014     1.07   0.285    -.
> 0062379
>             .021207
                           L2.   |   .0086474   .0075005     1.15   0.249    -.
> 0060534
>            .0233481
                                 |
     InflationMOMLessFoodEnergy  |
                           L3.   |   -.114055   .2400758    -0.48   0.635     -
> .584595
>             .356485
                                 |
 ChangesInEffectiveFedFundRates  |
                           L3.   |  -.0083108   1.839368    -0.00   0.996    -3
> .613405
>            3.596783
                                 |
    ChinaReserveChangeInPercent  |
                           L3.   |   .2459244   .2799549     0.88   0.380    -.
> 3027772
>            .7946259
                                 |
ChangeInInflationExpectationMIC  |
                           L3.   |   .0150603   .0276008     0.55   0.585    -.
> 0390364
>             .069157
                                 |
     MonthtomonthchangeinEnergy  |
                           L3.   |  -.0042035   .0072675    -0.58   0.563    -.
> 0184476
>            .0100406
                                 |
                         _cons   |   -.158969   .1777654    -0.89   0.371    -.
> 5073828
>            .1894449
---------------------------------+------------------------------------------------
> ----------------------
ChangesInEffectiveFedFundRates   |
     InflationMOMLessFoodEnergy  |
```

```
                            L1. |  -.0124294   .0389855    -0.32   0.750    -.
> 0888396
>            .0639807
                            L2. |   -.081113   .0451683    -1.80   0.073    -.
> 1696412
>            .0074152
                                |
 ChangesInEffectiveFedFundRates |
                            L1. |   .5255627   .2320862     2.26   0.024     .
> 0706822
>            .9804433
                            L2. |  -.0109154   .2836189    -0.04   0.969    -.
> 5667982
>            .5449674
                                |
    ChinaReserveChangeInPercent |
                            L1. |   1.75e-17   1.02e-17     1.72   0.085    -2
> .44e-18
>            3.75e-17
                            L2. |   4.63e-18   1.44e-17     0.32   0.748    -2
> .36e-17
>            3.28e-17
                                |
ChangeInInflationExpectationMIC |
                            L1. |   .0073725    .004292     1.72   0.086    -.
> 0010397
>            .0157847
                            L2. |   .0020378    .005537     0.37   0.713    -.
> 0088144
>            .0128901
                                |
     MonthtomonthchangeinEnergy |
                            L1. |  -.0000112   .0012932    -0.01   0.993    -.
> 0025458
>            .0025234
                            L2. |   .0008226   .0013894     0.59   0.554    -.
> 0019005
>            .0035458
                                |
     InflationMOMLessFoodEnergy |
                            L3. |   .0006827   .0429492     0.02   0.987    -.
> 0834962
>            .0848617
                                |
 ChangesInEffectiveFedFundRates |
                            L3. |   .4732967     .33845     1.40   0.162    -.
> 1900531
>            1.136647
                                |
```

```
    ChinaReserveChangeInPercent |
                             L3. |  -1.29e-17   6.12e-18    -2.11   0.035    -2
> .49e-17
>           -8.97e-19
                                 |
ChangeInInflationExpectationMIC |
                             L3. |   .0020477   .0046384     0.44   0.659    -.
> 0070433
>            .0111387
                                 |
     MonthtomonthchangeinEnergy |
                             L3. |   .0010279   .0013501     0.76   0.446    -.
> 0016183
>             .003674
                                 |
                           _cons |  -.0290429   .0329316    -0.88   0.378    -.
> 0935876
>            .0355019
-------------------------------------------------------------------------------
> ------------------
ChinaReserveChangeInPercent      |
     InflationMOMLessFoodEnergy |
                             L1. |  -.1654815   .1172154    -1.41   0.158    -.
> 3952195
>            .0642565
                             L2. |  -.0548973   .1394763    -0.39   0.694    -.
> 3282657
>            .2184712
                                 |
 ChangesInEffectiveFedFundRates |
                             L1. |  -.2448214   .6593199    -0.37   0.710    -1
> .537065
>            1.047422
                             L2. |   .2044058   .7814971     0.26   0.794
> -1.3273
>            1.736112
                                 |
    ChinaReserveChangeInPercent |
                             L1. |   .1653057   .1914224     0.86   0.388    -.
> 2098753
>            .5404866
                             L2. |   .3703024   .2125988     1.74   0.082    -.
> 0463837
>            .7869884
                                 |
ChangeInInflationExpectationMIC |
                             L1. |   .0220789   .0132634     1.66   0.096    -.
> 0039168
>            .0480746
```

```
                           L2. |  -.0032738     .01749    -0.19   0.852    -.
> 0375536
>            .0310059
                               |
     MonthtomonthchangeinEnergy |
                           L1. |   .0011936   .0035792     0.33   0.739    -.
> 0058215
>            .0082087
                           L2. |    .000019   .0038287     0.00   0.996    -.
> 0074851
>            .0075232
                               |
     InflationMOMLessFoodEnergy |
                           L3. |   .2000683   .1246423     1.61   0.108    -.
> 0442261
>            .4443628
                               |
 ChangesInEffectiveFedFundRates |
                           L3. |   .2701058   .9435066     0.29   0.775    -1
> .579133
>            2.119345
                               |
    ChinaReserveChangeInPercent |
                           L3. |  -.2524631   .1740002    -1.45   0.147    -.
> 5934971
>             .088571
                               |
ChangeInInflationExpectationMIC |
                           L3. |  -.0010797   .0145004    -0.07   0.941    -.
> 0294999
>            .0273405
                               |
     MonthtomonthchangeinEnergy |
                           L3. |    .001352   .0037068     0.36   0.715    -.
> 0059133
>            .0086173
                               |
                         _cons |   .0196168   .0909067     0.22   0.829     -
> .158557
>            .1977907
-------------------------------+----------------------------------------------
> ----------------------
ChangeInInflationExpectationMIC |
     InflationMOMLessFoodEnergy |
                           L1. |   -.380899   2.374805    -0.16   0.873    -5
> .035431
>            4.273633
                           L2. |  -4.642799   2.691741    -1.72   0.085    -9
> .918515
```

```
>            .6329169
                                 |
 ChangesInEffectiveFedFundRates |
                           L1.   |  -5.904523   13.93856    -0.42   0.672     -
> 33.2236
>            21.41455
                           L2.   |  -22.00429   17.02002    -1.29   0.196    -5
> 5.36291
>            11.35434
                                 |
    ChinaReserveChangeInPercent |
                           L1.   |   5.52e-16   2.47e-15     0.22   0.823    -4
> .28e-15
>            5.38e-15
                           L2.   |  -2.23e-15   1.46e-15    -1.53   0.125    -5
> .09e-15
>            6.22e-16
                                 |
ChangeInInflationExpectationMIC  |
                           L1.   |  -6.02e-16   2.15e-16    -2.80   0.005    -1
> .02e-15
>           -1.80e-16
                           L2.   |   9.92e-17   2.31e-16     0.43   0.668    -3
> .54e-16
>            5.52e-16
                                 |
     MonthtomonthchangeinEnergy  |
                           L1.   |   .0136182   .0754736     0.18   0.857    -.
> 1343074
>            .1615437
                           L2.   |   -.064819   .0809099    -0.80   0.423    -.
> 2233995
>            .0937615
                                 |
     InflationMOMLessFoodEnergy  |
                           L3.   |  -1.969772   2.583051    -0.76   0.446    -7
> .032458
>            3.092915
                                 |
 ChangesInEffectiveFedFundRates  |
                           L3.   |   4.671923   20.73746     0.23   0.822    -3
> 5.97275
>             45.3166
                                 |
    ChinaReserveChangeInPercent  |
                           L3.   |  -8.75e-16   1.17e-15    -0.75   0.455    -3
> .17e-15
>            1.42e-15
                                 |
```

```
ChangeInInflationExpectationMIC |
                            L3. |  -2.06e-16   1.22e-16    -1.70   0.090    -4
> .44e-16
>            3.19e-17
                                |
     MonthtomonthchangeinEnergy |
                            L3. |  -.0130875    .080055    -0.16   0.870    -.
> 1699924
>            .1438174
                                |
                          _cons |   .2842019   2.026007     0.14   0.888    -3
> .686699
>            4.255103
------------------------------------------------------------------------------
> ------------------
MonthtomonthchangeinEnergy      |
     InflationMOMLessFoodEnergy |
                            L1. |   2.107435     6.5267     0.32   0.747    -1
> 0.68466
>            14.89953
                            L2. |  -11.65699    7.76942    -1.50   0.134    -2
> 6.88478
>             3.57079
                                |
 ChangesInEffectiveFedFundRates |
                            L1. |   30.18435   36.69579     0.82   0.411    -4
> 1.73809
>            102.1068
                            L2. |  -52.22167   43.48208    -1.20   0.230     -
> 137.445
>            33.00164
                                |
    ChinaReserveChangeInPercent |
                            L1. |   11.19781   10.70862     1.05   0.296    -9
> .790688
>            32.18631
                            L2. |   7.349031   11.89328     0.62   0.537    -1
> 5.96136
>            30.65942
                                |
ChangeInInflationExpectationMIC |
                            L1. |  -.2315241   .7416039    -0.31   0.755    -1
> .685041
>            1.221993
                            L2. |   .0824332   .9779518     0.08   0.933    -1
> .834317
>            1.999184
                                |
     MonthtomonthchangeinEnergy |
```

```
                            L1. |  -.3508547    .199205    -1.76   0.078    -.
> 7412893
>              .03958
                            L2. |  -.2163952   .2130889    -1.02   0.310    -.
> 6340417
>             .2012513
                                |
     InflationMOMLessFoodEnergy |
                            L3. |  -.7902319   6.938628    -0.11   0.909    -1
> 4.38969
>             12.80923
                                |
 ChangesInEffectiveFedFundRates |
                            L3. |   44.21351   52.49232     0.84   0.400    -5
> 8.66954
>             147.0966
                                |
    ChinaReserveChangeInPercent |
                            L3. |   1.185258   9.733977     0.12   0.903    -1
> 7.89299
>              20.2635
                                |
ChangeInInflationExpectationMIC |
                            L3. |    .058829   .8107807     0.07   0.942    -1
> .530272
>              1.64793
                                |
     MonthtomonthchangeinEnergy |
                            L3. |  -.1025485   .2062624    -0.50   0.619    -.
> 5068153
>             .3017183
                                |
                          _cons |  -5.209208   5.056865    -1.03   0.303    -1
> 5.12048
>             4.702065
------------------------------------------------------------------------------

> ------------------
```

```
100 .
101 . varstable
```

Eigenvalue stability condition

Eigenvalue	Modulus
.3711759 + .8724516*i*	.948126
.3711759 - .8724516*i*	.948126
-.4838672 + .5304207*i*	.717965
-.4838672 - .5304207*i*	.717965
.6513658	.651366
-.6277257 + .05848374*i*	.630444
-.6277257 - .05848374*i*	.630444
.4686403	.46864
.03678538 + .21927*i*	.222334
.03678538 - .21927*i*	.222334

All the eigenvalues lie inside the unit circle.
VAR satisfies stability condition.

```
102 . varlmar
```

Lagrange-multiplier test

lag	chi2	df	Prob > chi2
1	-29.9304	25	1.00000
2	-38.2452	25	1.00000

H0: no autocorrelation at lag order

```
103 . vargranger
```

Granger causality Wald tests

Equation	Excluded	chi2	df	Prob > chi2
InflationMOMLes~y	ChangesInEffect~s	16.348	2	0.000
InflationMOMLes~y	ChinaReserveCha~t	4.968	2	0.083
InflationMOMLes~y	ChangeInInflati~C	3.7155	2	0.156
InflationMOMLes~y	Monthtomonthcha~y	1.9677	2	0.374
InflationMOMLes~y	ALL	38.075	8	0.000
ChangesInEffect~s	InflationMOMLes~y	3.5647	2	0.168
ChangesInEffect~s	ChinaReserveCha~t	.	0	.
ChangesInEffect~s	ChangeInInflati~C	4.3156	2	0.116
ChangesInEffect~s	Monthtomonthcha~y	.37795	2	0.828
ChangesInEffect~s	ALL	7.9383	6	0.243

ChinaReserveCha~t	InflationMOMLes~y	2.1047	2	0.349
ChinaReserveCha~t	ChangesInEffect~s	.18504	2	0.912
ChinaReserveCha~t	ChangeInInflati~C	7.3039	2	0.026
ChinaReserveCha~t	Monthtomonthcha~y	.11836	2	0.943
ChinaReserveCha~t	ALL	13.047	8	0.110
ChangeInInflati~C	InflationMOMLes~y	3.5945	2	0.166
ChangeInInflati~C	ChangesInEffect~s	1.9793	2	0.372
ChangeInInflati~C	ChinaReserveCha~t	.	0	.
ChangeInInflati~C	Monthtomonthcha~y	.83933	2	0.657
ChangeInInflati~C	ALL	21.001	6	0.002
Monthtomonthcha~y	InflationMOMLes~y	3.6981	2	0.157
Monthtomonthcha~y	ChangesInEffect~s	1.9028	2	0.386
Monthtomonthcha~y	ChinaReserveCha~t	1.6921	2	0.429
Monthtomonthcha~y	ChangeInInflati~C	.32106	2	0.852
Monthtomonthcha~y	ALL	17.496	8	0.025

```
104 .  predict eee, resid
    (6 missing values generated)

105 .   gen Leee=eee[_n-1]
    (6 missing values generated)

106 .  regress eee Leee    if inrange(monthly_date,tm(2017m2), tm(2020m12))
```

Source	SS	df	MS		
Model	.029813249	1	.029813249	Prob > F	0.8416
Residual	27.9662626	38	.735954278	R-squared	0.0011
Total	27.9960758	39	.717848097	Adj R-squared	-0.0252
				Root MSE	.85788

Number of obs = 40
F(1, 38) = 0.04

eee	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
Leee	-.0315987	.1569966	-0.20	0.842	-.3494218	.2862243
_cons	.0009656	.1357272	0.01	0.994	-.2737998	.2757309

```
107 .
108 . swilk eee     if inrange(monthly_date,tm(2017m2), tm(2020m12))

                    Shapiro-Wilk W test for normal data

    Variable |        Obs       W           V         z       Prob>z
-------------+--------------------------------------------------------
         eee |         40    0.97558       0.965    -0.075    0.52981

109 . sfrancia eee     if inrange(monthly_date,tm(2017m2), tm(2020m12))

                   Shapiro-Francia W' test for normal data

    Variable |        Obs       W'          V'         z       Prob>z
-------------+--------------------------------------------------------
         eee |         40    0.97045       1.295     0.482    0.31492

110 . log off
       name:  <unnamed>
        log:  /Users/nicolaszhang/Downloads/Stata Rec 6/VARandGrangerChina.smcl
  log type:  smcl
 paused on:  12 Nov 2020, 18:41:56
-------------------------------------------------------------------------------
```