```
      name:  <unnamed>
       log:  /Users/nicolaszhang/Downloads/Stata Rec 6/JapaneseHoldingsChange.
> smcl
  log type:  smcl
 opened on:  12 Nov 2020, 18:55:16

 1 . clear

 2 . constraint 1  [ChangeInInflationExpectationMIC ]L.ChangeJapaneseHoldings  =
> 0

 3 . constraint 2  [ChangeInInflationExpectationMIC]L2.ChangeJapaneseHoldings = 0

 4 . constraint 3  [ChangesInEffectiveFedFundRates]L.ChangeJapaneseHoldings = 0

 5 . constraint 4  [ChangesInEffectiveFedFundRates ]L2.ChangeJapaneseHoldings = 0

 6 . constraint 5  [ChangeInInflationExpectationMIC]L.ChangeInInflationExpectatio
> nMIC = 0

 7 . constraint 6  [ChangeInInflationExpectationMIC]L2.ChangeInInflationExpectati
> onMIC = 0

 8 . constraint 7  [ChangeInInflationExpectationMIC]L3.ChangeJapaneseHoldings = 0

 9 . constraint 8  [ChangesInEffectiveFedFundRates]L3.ChangeJapaneseHoldings = 0

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

11 .
12 .
13 .   import excel "/Users/nicolaszhang/Downloads/foreignHoldingVSTreasuryForSta
> ta.xlsx", sheet("foreignHoldingVSTreasuryForStat") firstrow
(30 vars, 244 obs)
```

```
14 .  gen monthly_date = mofd(observation_date)
(7 missing values generated)

15 .    format monthly_date %tm

16 .  tset monthly_date
        time variable:  monthly_date, 2000m4 to 2019m12
                delta:  1 month

17 .    dfuller ChangeJapaneseHoldings , trend regress

Dickey-Fuller test for unit root                   Number of obs   =       236

                                 ---------- Interpolated Dickey-Fuller ---------
                 Test         1% Critical       5% Critical      10% Critical
               Statistic           Value             Value            Value
------------------------------------------------------------------------------
 Z(t)           -12.247            -3.995            -3.432           -3.132
------------------------------------------------------------------------------
MacKinnon approximate p-value for Z(t) = 0.0000

------------------------------------------------------------------------------
> ----------
D.
ChangeJapaneseHoldings |      Coef.   Std. Err.      t    P>|t|     [95% Conf.
>  Interval]
-------------------------+----------------------------------------------------
> ----------
ChangeJapaneseHoldings |
                   L1. |  -.7766251   .0634151   -12.25   0.000    -.9015653
>  -.6516849
                       |
                 _trend |  -.0408508   .0235059    -1.74   0.084    -.0871621
>    .0054605
                 _cons |   10.03199   3.293528     3.05   0.003     3.543084
>    16.52089
------------------------------------------------------------------------------
> ----------
```

```
18 .
19 .    dfuller ChangeJapaneseHoldings  if inrange(monthly_date, tm(2000m1), tm(2
> 009m11)), trend regress

Dickey-Fuller test for unit root                    Number of obs   =       115

                                     ---------- Interpolated Dickey-Fuller ---------
                 Test                1% Critical       5% Critical      10% Critical
               Statistic                 Value             Value            Value
------------------------------------------------------------------------------
 Z(t)            -8.035                  -4.035            -3.448           -3.148
------------------------------------------------------------------------------
MacKinnon approximate p-value for Z(t) = 0.0000

------------------------------------------------------------------------------
> ----------
D.
ChangeJapaneseHoldings |      Coef.   Std. Err.      t    P>|t|     [95% Conf.
>  Interval]
-------------------------------+----------------------------------------------
> ----------
ChangeJapaneseHoldings |
                   L1. |   -.7218528   .0898368    -8.04   0.000    -.8998529
>  -.5438526
                       |
                 _trend |   -.0228071    .080487    -0.28   0.777    -.1822817
>    .1366675
                 _cons |    7.906373   5.499177     1.44   0.153    -2.989542
>    18.80229
-------------------------------+----------------------------------------------
> ----------

20 .
21 .   kpss  ChangeJapaneseHoldings

KPSS test for ChangeJapaneseHoldings

Maxlag = 14 chosen by Schwert criterion
Autocovariances weighted by Bartlett kernel

Critical values for H0: ChangeJapaneseHoldings is trend stationary

10%: 0.119  5% : 0.146  2.5%: 0.176  1% : 0.216

Lag order    Test statistic
    0           .172
    1            .14
    2           .121
    3           .109
```

```
      4           .098
      5          .0901
      6          .0834
      7          .0782
      8          .0729
      9          .0682
     10          .0649
     11           .062
     12          .0594
     13          .0573
     14          .0555

22 .
23 .  kpss ChangeJapaneseHoldings  if inrange(monthly_date, tm(2000m1), tm(2009m1
   > 1))

   KPSS test for ChangeJapaneseHoldings

   Maxlag = 12 chosen by Schwert criterion
   Autocovariances weighted by Bartlett kernel

   Critical values for H0: ChangeJapaneseHoldings is trend stationary

   10%: 0.119  5% : 0.146  2.5%: 0.176  1% : 0.216

   Lag order    Test statistic
       0           .343
       1           .269
       2           .236
       3           .208
       4           .184
       5           .166
       6           .153
       7           .142
       8           .131
       9           .121
      10           .114
      11           .109
      12           .103
```

```
24 .
25 .   vecrank  InflationlessFoodandEnergy   ChangesInEffectiveFedFundRates   Cha
   > ngeJapaneseHoldings   MOMChangesInEnergy      ChangeInInflationExpectationMI
   > C    if inrange(monthly_date, tm(2000m1), tm(2007m12)), lags(4) max levela

                        Johansen tests for cointegration
   >
   Trend: constant                                          Number of obs =      8
   > 9
   Sample:  2000m8 - 2007m12                                            Lags =
   > 4
   ------------------------------------------------------------------------------
   > —
   maximum                                       trace     5% critical  1% critica
   > l
     rank    parms       LL       eigenvalue  statistic      value        value
        0       80    -1423.0859                185.3047       68.52        76.07
        1       89     -1391.687      0.50618    122.5071       47.21        54.46
        2       96    -1361.8009      0.48911     62.7349       29.68        35.65
        3      101    -1336.2934      0.43628     11.7198*1*5   15.41        20.04
        4      104    -1332.2982      0.08587      3.7293        3.76         6.65
        5      105    -1330.4335      0.04104
   ------------------------------------------------------------------------------
   > —
   maximum                                        max      5% critical  1% critica
   > l
     rank    parms       LL       eigenvalue  statistic      value        value
        0       80    -1423.0859                62.7976       33.46        38.77
        1       89     -1391.687      0.50618    59.7722       27.07        32.24
        2       96    -1361.8009      0.48911    51.0150       20.97        25.52
        3      101    -1336.2934      0.43628     7.9905       14.07        18.63
        4      104    -1332.2982      0.08587      3.7293        3.76         6.65
        5      105    -1330.4335      0.04104
   ------------------------------------------------------------------------------
   > —

26 .
```

```
27 .
28 .   vecrank  InflationlessFoodandEnergy      ChangeJapaneseHoldings
   >   if inrange(monthly_date, tm(2000m1), tm(2007m12)), lags(4) max levela

                        Johansen tests for cointegration
   >
   Trend: constant                                          Number of obs =      8
   > 9
   Sample:  2000m8 - 2007m12                                            Lags =
   > 4
   ------------------------------------------------------------------------------
   > —
   maximum                                          trace     5% critical  1% critica
   > l
     rank    parms       LL       eigenvalue  statistic      value        value
       0       14     -566.34505                 66.5851      15.41        20.04
       1       17     -536.26535     0.49133      6.4257*1     3.76         6.65
       2       18     -533.05249     0.06965
   ------------------------------------------------------------------------------
   > —
   maximum                                           max      5% critical  1% critica
   > l
     rank    parms       LL       eigenvalue  statistic      value        value
       0       14     -566.34505                 60.1594      14.07        18.63
       1       17     -536.26535     0.49133      6.4257       3.76         6.65
       2       18     -533.05249     0.06965
   ------------------------------------------------------------------------------
   > —

29 .
30 .
31 .   var InflationlessFoodandEnergy   ChangesInEffectiveFedFundRates   ChangeJa
   > paneseHoldings    MOMChangesInEnergy     ChangeInInflationExpectationMIC
   > if inrange(monthly_date, tm(2000m1), tm(2007m12)), lutstats  dfk constraints
   > (1 2 3 4 5 6 7 8 9) exog(L3.InflationlessFoodandEnergy   L3.ChangesInEffecti
   > veFedFundRates   L3.ChangeJapaneseHoldings   L3.MonthOnMUSgdpChange     L3.C
   > hangeInInflationExpectationMIC)
   Estimating VAR coefficients
```

```
Iteration 1:   tolerance =  .03971876
Iteration 2:   tolerance =  .02146593
Iteration 3:   tolerance =  .01121646
Iteration 4:   tolerance =  .00579804
Iteration 5:   tolerance =  .00298218
Iteration 6:   tolerance =  .00153032
Iteration 7:   tolerance =  .00078453
Iteration 8:   tolerance =  .00040208
Iteration 9:   tolerance =  .00020607
Iteration 10:   tolerance =  .00010564
Iteration 11:   tolerance =  .00005416
Iteration 12:   tolerance =  .00002778
Iteration 13:   tolerance =  .00001425
Iteration 14:   tolerance =  7.310e-06
Iteration 15:   tolerance =  3.752e-06
Iteration 16:   tolerance =  1.926e-06
Iteration 17:   tolerance =  9.884e-07


Vector autoregression

Sample:  2000m7 - 2007m12                       Number of obs     =         90
Log likelihood =  -1404.193          (lutstats) AIC               =   9.751725
FPE            =   27769.21                     HQIC              =   10.31176
Det(Sigma_ml)  =   5656.802                     SBIC              =   11.14051

Equation           Parms      RMSE     R-sq      chi2     P>chi2
------------------------------------------------------------------
InflationlessF~y     16      .91165   0.5391      90.46   0.0000
ChangesInEffec~s     13     .110729   0.6639    151.6203  0.0000
ChangeJapanese~s     16     23.8971   0.3301    38.13398  0.0009
MOMChangesInEn~y     16     40.4794   0.2974    32.01367  0.0064
ChangeInInflat~C     10     52.9794   0.1947    18.33154  0.0315
------------------------------------------------------------------

 ( 1)  [ChangeInInflationExpectationMIC]L.ChangeJapaneseHoldings = 0
 ( 2)  [ChangeInInflationExpectationMIC]L2.ChangeJapaneseHoldings = 0
 ( 3)  [ChangesInEffectiveFedFundRates]L.ChangeJapaneseHoldings = 0
 ( 4)  [ChangesInEffectiveFedFundRates]L2.ChangeJapaneseHoldings = 0
 ( 5)  [ChangeInInflationExpectationMIC]L.ChangeInInflationExpectationMIC = 0
 ( 6)  [ChangeInInflationExpectationMIC]L2.ChangeInInflationExpectationMIC = 0
 ( 7)  [ChangeInInflationExpectationMIC]L3.ChangeJapaneseHoldings = 0
 ( 8)  [ChangesInEffectiveFedFundRates]L3.ChangeJapaneseHoldings = 0
 ( 9)  [ChangeInInflationExpectationMIC]L3.ChangeInInflationExpectationMIC = 0
------------------------------------------------------------------------------
> ----------------------
                             |      Coef.   Std. Err.      z    P>|z|     [
> 95% Con
>        f. Interval]
```

```
-------------------------------+----------------------------------------------------------------
> ----------------------
InflationlessFoodandEnergy     |
     InflationlessFoodandEnergy|
                           L1. |  -.7776219   .1070732    -7.26   0.000    -.
> 9874815
>           -.5677623
                           L2. |  -.3763759   .1300959    -2.89   0.004    -.
> 6313592
>           -.1213926
                               |
 ChangesInEffectiveFedFundRates|
                           L1. |  -.7039369   .9422578    -0.75   0.455    -2
> .550728
>            1.142855
                           L2. |  -1.581529   1.061201    -1.49   0.136    -3
> .661445
>            .4983867
                               |
         ChangeJapaneseHoldings|
                           L1. |   .0057586   .0041032     1.40   0.160    -.
> 0022836
>            .0138008
                           L2. |   .0072056   .0043789     1.65   0.100     -
> .001377
>            .0157881
                               |
            MOMChangesInEnergy|
                           L1. |   .0027404   .0023618     1.16   0.246    -.
> 0018886
>            .0073694
                           L2. |   .0035936    .002407     1.49   0.135     -
> .001124
>            .0083112
                               |
ChangeInInflationExpectationMIC|
                           L1. |   -.002278   .0025688    -0.89   0.375    -.
> 0073128
>            .0027568
                           L2. |  -.0005975   .0028688    -0.21   0.835    -.
> 0062203
>            .0050253
                               |
     InflationlessFoodandEnergy|
                           L3. |  -.1280829   .1070249    -1.20   0.231    -.
> 3378478
>             .081682
                               |
 ChangesInEffectiveFedFundRates|
```

```
                             L3. |   2.234679   .8913865     2.51   0.012     .
> 4875932
>            3.981764
                                 |
         ChangeJapaneseHoldings |
                             L3. |  -.0079089   .0042814    -1.85   0.065    -.
> 0163003
>            .0004825
                                 |
            MonthOnMUSgdpChange |
                             L3. |   .1063152   .1364523     0.78   0.436    -.
> 1611264
>            .3737569
                                 |
ChangeInInflationExpectationMIC |
                             L3. |   -.003289   .0025003    -1.32   0.188    -.
> 0081896
>            .0016116
                                 |
                           _cons |  -.0507238   .1136287    -0.45   0.655    -.
> 2734319
>            .1719843
-------------------------------------------------------------------------------
> ----------------------
ChangesInEffectiveFedFundRates   |
     InflationlessFoodandEnergy |
                             L1. |   .0085765   .0126975     0.68   0.499    -.
> 0163101
>            .0334631
                             L2. |   .0098903   .0156119     0.63   0.526    -.
> 0207086
>            .0404891
                                 |
 ChangesInEffectiveFedFundRates |
                             L1. |   .6101471   .1141067     5.35   0.000     .
> 3865021
>            .8337921
                             L2. |  -.0457476   .1283482    -0.36   0.722    -.
> 2973054
>            .2058102
                                 |
         ChangeJapaneseHoldings |
                             L1. |  -2.20e-20   1.07e-19    -0.21   0.837    -2
> .32e-19
>            1.88e-19
                             L2. |  -2.38e-21   1.41e-20    -0.17   0.866    -3
> .01e-20
>            2.53e-20
                                 |
```

```
             MOMChangesInEnergy |
                             L1. |  -.0002326   .0002823    -0.82   0.410    -.
> 0007859
>             .0003206
                             L2. |   .0000337     .00029     0.12   0.907    -.
> 0005346
>             .0006021
                                 |
ChangeInInflationExpectationMIC |
                             L1. |   .0003016   .0002955     1.02   0.307    -.
> 0002775
>             .0008807
                             L2. |   .0006676   .0003314     2.01   0.044     .
> 0000181
>              .001317
                                 |
     InflationlessFoodandEnergy |
                             L3. |  -.0200921   .0129322    -1.55   0.120    -.
> 0454387
>             .0052545
                                 |
 ChangesInEffectiveFedFundRates |
                             L3. |   .1169731   .1073044     1.09   0.276    -.
> 0933396
>             .3272858
                                 |
         ChangeJapaneseHoldings |
                             L3. |   1.26e-19   1.03e-19     1.22   0.221    -7
> .60e-20
>             3.28e-19
                                 |
            MonthOnMUSgdpChange |
                             L3. |   .0340196   .0159354     2.13   0.033     .
> 0027867
>             .0652525
                                 |
ChangeInInflationExpectationMIC |
                             L3. |   .0001608    .000288     0.56   0.577    -.
> 0004036
>             .0007252
                                 |
                          _cons |  -.0142104   .0128951    -1.10   0.270    -.
> 0394843
>             .0110635
-------------------------------------------------------------------------------
> ----------------------
ChangeJapaneseHoldings           |
     InflationlessFoodandEnergy  |
                             L1. |  -1.825235   2.808465    -0.65   0.516    -7
```

```
> .329725
>            3.679255
                              L2. |  -3.533373   3.412265    -1.04   0.300    -1
> 0.22129
>            3.154543
                                  |
 ChangesInEffectiveFedFundRates   |
                              L1. |  -4.326787   24.70627    -0.18   0.861    -5
> 2.75019
>            44.09661
                              L2. |   2.990542   27.82402     0.11   0.914    -5
> 1.54354
>            57.52463
                                  |
         ChangeJapaneseHoldings   |
                              L1. |   .3537223   .1088004     3.25   0.001     .
> 1404775
>             .566967
                              L2. |   .0052089   .1161104     0.04   0.964    -.
> 2223633
>            .2327811
                                  |
             MOMChangesInEnergy   |
                              L1. |   .0141363   .0619485     0.23   0.819    -.
> 1072806
>            .1355532
                              L2. |  -.0302335   .0631386    -0.48   0.632     -
> .153983
>             .093516
                                  |
ChangeInInflationExpectationMIC   |
                              L1. |  -.1620613   .0678163    -2.39   0.017    -.
> 2949788
>           -.0291439
                              L2. |  -.0611593   .0757333    -0.81   0.419    -.
> 2095938
>            .0872752
                                  |
     InflationlessFoodandEnergy   |
                              L3. |  -7.259924   2.807042    -2.59   0.010    -1
> 2.76163
>           -1.758222
                                  |
 ChangesInEffectiveFedFundRates   |
                              L3. |   -20.2966    23.3757    -0.87   0.385    -6
> 6.11213
>            25.51892
                                  |
         ChangeJapaneseHoldings   |
```

```
                            L3. |   .2654275   .1135248     2.34   0.019
> .042923
>            .4879321
                                |
            MonthOnMUSgdpChange |
                            L3. |   2.748847   3.580029     0.77   0.443     -
> 4.26788
>            9.765574
                                |
ChangeInInflationExpectationMIC |
                            L3. |  -.0698904   .0660071    -1.06   0.290     -
> .199262
>            .0594811
                                |
                          _cons |   2.480987    2.98295     0.83   0.406    -3
> .365488
>            8.327462
------------------------------------------------------------------------------
> ------------------
MOMChangesInEnergy              |
     InflationlessFoodandEnergy |
                            L1. |  -.7003239   4.757579    -0.15   0.883    -1
> 0.02501
>            8.624359
                            L2. |   1.716419   5.780154     0.30   0.767    -9
> .612474
>            13.04531
                                |
 ChangesInEffectiveFedFundRates |
                            L1. |     7.9845   41.84993     0.19   0.849    -7
> 4.03986
>            90.00886
                            L2. |   11.41227   47.13142     0.24   0.809    -8
> 0.96362
>            103.7882
                                |
         ChangeJapaneseHoldings |
                            L1. |  -.1188814   .1845679    -0.64   0.520    -.
> 4806279
>            .2428651
                            L2. |   .0141983   .1969686     0.07   0.943    -.
> 3718532
>            .4002497
                                |
            MOMChangesInEnergy |
                            L1. |  -.2086793   .1049383    -1.99   0.047    -.
> 4143546
>            -.003004
                            L2. |  -.4529477   .1069505    -4.24   0.000    -.
```

```
> 6625669
>           -.2433285
                                  |
ChangeInInflationExpectationMIC   |
                            L1.   |  -.0045474   .1148575    -0.04   0.968    -.
> 2296641
>            .2205692
                            L2.   |   -.089161   .1282645    -0.70   0.487    -.
> 3405547
>            .1622328
                                  |
     InflationlessFoodandEnergy   |
                            L3.   |   .4730529    4.75482     0.10   0.921    -8
> .846222
>            9.792328
                                  |
 ChangesInEffectiveFedFundRates   |
                            L3.   |  -52.78886   39.59677    -1.33   0.182    -1
> 30.3971
>            24.81938
                                  |
         ChangeJapaneseHoldings   |
                            L3.   |   .0787315   .1925825     0.41   0.683    -.
> 2987233
>            .4561862
                                  |
            MonthOnMUSgdpChange   |
                            L3.   |    4.21688     6.0649     0.70   0.487    -7
> .670105
>            16.10386
                                  |
ChangeInInflationExpectationMIC   |
                            L3.   |   .0144707   .1117929     0.13   0.897    -.
> 2046394
>            .2335807
                                  |
                          _cons   |  -.4319686   5.053787    -0.09   0.932    -1
> 0.33721
>            9.473272
----------------------------------+-------------------------------------------------
> ------------------
ChangeInInflationExpectationMIC   |
     InflationlessFoodandEnergy   |
                            L1.   |   14.27817   6.036535     2.37   0.018     2
> .446782
>            26.10956
                            L2.   |  -1.752775   7.279548    -0.24   0.810    -1
> 6.02043
>            12.51488
```

```
                                 |
 ChangesInEffectiveFedFundRates  |
                           L1.   |    27.2595   53.73243     0.51   0.612    -7
> 8.05413
>            132.5731
                           L2.   |  -75.99908   60.73997    -1.25   0.211    -1
> 95.0472
>            43.04908
                                 |
         ChangeJapaneseHoldings  |
                           L1.   |  -1.15e-17   3.94e-17    -0.29   0.770    -8
> .87e-17
>            6.57e-17
                           L2.   |  -1.30e-16   5.52e-17    -2.36   0.018    -2
> .39e-16
>           -2.21e-17
                                 |
             MOMChangesInEnergy  |
                           L1.   |   .0116027   .1322074     0.09   0.930    -.
> 2475189
>            .2707244
                           L2.   |  -.3798431   .1332491    -2.85   0.004    -.
> 6410065
>           -.1186797
                                 |
ChangeInInflationExpectationMIC  |
                           L1.   |  -6.39e-17   2.78e-17    -2.30   0.021    -1
> .18e-16
>           -9.51e-18
                           L2.   |  -3.75e-16   8.67e-17    -4.32   0.000    -5
> .45e-16
>           -2.05e-16
                                 |
     InflationlessFoodandEnergy  |
                           L3.   |   .5444462   5.972271     0.09   0.927    -1
> 1.16099
>            12.24988
                                 |
 ChangesInEffectiveFedFundRates  |
                           L3.   |   31.19668   50.50363     0.62   0.537    -6
> 7.78863
>             130.182
                                 |
         ChangeJapaneseHoldings  |
                           L3.   |   1.15e-17   6.63e-17     0.17   0.862    -1
> .19e-16
>            1.42e-16
                                 |
            MonthOnMUSgdpChange  |
```

```
                             L3. |   .7709379    7.61401     0.10   0.919    -1
> 4.15225
>            15.69412
                                 |
ChangeInInflationExpectationMIC  |
                             L3. |  -9.87e-17   3.93e-17    -2.51   0.012    -1
> .76e-16
>           -2.17e-17
                                 |
                           _cons |  -.0995426   6.168932    -0.02   0.987    -1
> 2.19043
>            11.99134
-------------------------------------------------------------------------------
> ------------------
```

32 . varstable

Eigenvalue stability condition

Eigenvalue	Modulus
-.1128207 + .7136565*i*	.722519
-.1128207 - .7136565*i*	.722519
-.4221858 + .5026101*i*	.656398
-.4221858 - .5026101*i*	.656398
.5098853 + .353273*i*	.62031
.5098853 - .353273*i*	.62031
-.2383939 + .1669045*i*	.291013
-.2383939 - .1669045*i*	.291013
.2522993 + .01618371*i*	.252818
.2522993 - .01618371*i*	.252818

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

33 .
34 . varlmar

Lagrange-multiplier test

lag	chi2	df	Prob > chi2
1	-5.3e+02	25	1.00000
2	-5.5e+02	25	1.00000

H0: no autocorrelation at lag order

```
35 .
36 .
37 .  vargranger
```

Granger causality Wald tests

Equation	Excluded	chi2	df	Prob > chi2
InflationlessFo~y	ChangesInEffect~s	5.0244	2	0.081
InflationlessFo~y	ChangeJapaneseH~s	6.8518	2	0.033
InflationlessFo~y	MOMChangesInEne~y	3.2426	2	0.198
InflationlessFo~y	ChangeInInflati~C	1.0204	2	0.600
InflationlessFo~y	ALL	17.649	8	0.024
ChangesInEffect~s	InflationlessFo~y	.54144	2	0.763
ChangesInEffect~s	ChangeJapaneseH~s	.	0	.
ChangesInEffect~s	MOMChangesInEne~y	.7259	2	0.696
ChangesInEffect~s	ChangeInInflati~C	4.1548	2	0.125
ChangesInEffect~s	ALL	6.1255	6	0.409
ChangeJapaneseH~s	InflationlessFo~y	1.074	2	0.585
ChangeJapaneseH~s	ChangesInEffect~s	.03136	2	0.984
ChangeJapaneseH~s	MOMChangesInEne~y	.30815	2	0.857
ChangeJapaneseH~s	ChangeInInflati~C	6.6724	2	0.036
ChangeJapaneseH~s	ALL	9.3618	8	0.313
MOMChangesInEne~y	InflationlessFo~y	.25078	2	0.882
MOMChangesInEne~y	ChangesInEffect~s	.18202	2	0.913
MOMChangesInEne~y	ChangeJapaneseH~s	.43477	2	0.805
MOMChangesInEne~y	ChangeInInflati~C	.77734	2	0.678
MOMChangesInEne~y	ALL	1.6091	8	0.991
ChangeInInflati~C	InflationlessFo~y	10.172	2	0.006
ChangeInInflati~C	ChangesInEffect~s	1.5764	2	0.455
ChangeInInflati~C	ChangeJapaneseH~s	.	0	.
ChangeInInflati~C	MOMChangesInEne~y	8.2824	2	0.016
ChangeInInflati~C	ALL	17.45	6	0.008

```
38 .
39 .  predict e, resid
   (10 missing values generated)

40 .  gen Le=e[_n-1]
   (10 missing values generated)

41 .
42 .  regress e Le if inrange(monthly_date , tm(2000m1), tm(2007m12))
```

Source	SS	df	MS	Number of obs	=	89
				F(1, 87)	=	0.10
Model	.082620936	1	.082620936	Prob > F	=	0.7570
Residual	74.5881468	87	.857335021	R-squared	=	0.0011
				Adj R-squared	=	-0.0104
Total	74.6707677	88	.848531452	Root MSE	=	.92592

e	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
Le	-.0332653	.1071574	-0.31	0.757	-.2462523	.1797216
_cons	-.0038714	.0981487	-0.04	0.969	-.1989526	.1912099

```
43 .
44 .
45 . swilk e if inrange(monthly_date , tm(2000m1), tm(2007m12))
```

Shapiro-Wilk W test for normal data

Variable	Obs	W	V	z	Prob>z
e	90	0.97717	1.727	1.205	0.11416

```
46 .
47 . quietly var InflationlessFoodandEnergy   ChangesInEffectiveFedFundRates   Ch
   > angeJapaneseHoldings    MOMChangesInEnergy     ChangeInInflationExpectationM
   > IC    if inrange(monthly_date, tm(2000m1), tm(2020m12)), lutstats dfk constr
   > aints(1 2 3 4 5 6 7 8 9) exog(L3.InflationlessFoodandEnergy   L3.ChangesInEf
   > fectiveFedFundRates   L3.ChangeJapaneseHoldings   L3.MonthOnMUSgdpChange
   >  L3.ChangeInInflationExpectationMIC)
```

```
48 .
49 . varstable
```

Eigenvalue stability condition

Eigenvalue	Modulus
-.1458354 + .5919936*i*	.609692
-.1458354 - .5919936*i*	.609692
-.2904672 + .4570503*i*	.541541
-.2904672 - .4570503*i*	.541541
.4999642	.499964
.4661115	.466111
-.3336544	.333654
.2859924	.285992
-.1495633	.149563
.03613332	.036133

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

```
50 . varlmar
```

Lagrange-multiplier test

lag	chi2	df	Prob > chi2
1	-2.8e+03	25	1.00000
2	-2.9e+03	25	1.00000

H0: no autocorrelation at lag order

```
51 . vargranger
```

Granger causality Wald tests

Equation	Excluded	chi2	df	Prob > chi2
InflationlessFo~y	ChangesInEffect~s	.47397	2	0.789
InflationlessFo~y	ChangeJapaneseH~s	2.1451	2	0.342
InflationlessFo~y	MOMChangesInEne~y	12.132	2	0.002
InflationlessFo~y	ChangeInInflati~C	5.1441	2	0.076
InflationlessFo~y	ALL	18.317	8	0.019
ChangesInEffect~s	InflationlessFo~y	.57518	2	0.750
ChangesInEffect~s	ChangeJapaneseH~s	.	0	.
ChangesInEffect~s	MOMChangesInEne~y	2.9246	2	0.232
ChangesInEffect~s	ChangeInInflati~C	3.103	2	0.212
ChangesInEffect~s	ALL	8.4609	6	0.206

ChangeJapaneseH~s	InflationlessFo~y	1.2535	2	0.534
ChangeJapaneseH~s	ChangesInEffect~s	.17503	2	0.916
ChangeJapaneseH~s	MOMChangesInEne~y	7.0809	2	0.029
ChangeJapaneseH~s	ChangeInInflati~C	11.46	2	0.003
ChangeJapaneseH~s	ALL	17.592	8	0.024
MOMChangesInEne~y	InflationlessFo~y	1.4498	2	0.484
MOMChangesInEne~y	ChangesInEffect~s	4.0841	2	0.130
MOMChangesInEne~y	ChangeJapaneseH~s	2.243	2	0.326
MOMChangesInEne~y	ChangeInInflati~C	1.6644	2	0.435
MOMChangesInEne~y	ALL	9.9219	8	0.271
ChangeInInflati~C	InflationlessFo~y	11.539	2	0.003
ChangeInInflati~C	ChangesInEffect~s	.07766	2	0.962
ChangeInInflati~C	ChangeJapaneseH~s	.	0	.
ChangeInInflati~C	MOMChangesInEne~y	12.923	2	0.002
ChangeInInflati~C	ALL	21.954	6	0.001

```
52 .  predict ee, resid
   (10 missing values generated)

53 .  gen Lee=ee[_n-1]
   (10 missing values generated)

54 .  regress ee Lee
```

Source	SS	df	MS		
Model	.449022011	1	.449022011	Number of obs	= 233
Residual	183.143655	231	.792829675	F(1, 231)	= 0.57
				Prob > F	= 0.4525
Total	183.592677	232	.791347745	R-squared	= 0.0024
				Adj R-squared	= -0.0019
				Root MSE	= .89041

ee	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
Lee	-.0494662	.0657301	-0.75	0.452	-.1789733	.080041
_cons	.0024664	.0583329	0.04	0.966	-.1124662	.117399

```
55 .
56 .  swilk ee
```

Shapiro-Wilk W test for normal data

Variable	Obs	W	V	z	Prob>z
ee	**234**	**0.99127**	**1.495**	**0.932**	**0.17571**

```
57 .  sfrancia ee
```

Shapiro-Francia W' test for normal data

Variable	Obs	W'	V'	z	Prob>z
ee	**234**	**0.99023**	**1.819**	**1.250**	**0.10571**

```
58 .  quietly var InflationlessFoodandEnergy   ChangesInEffectiveFedFundRates   C
   > hangeJapaneseHoldings    MOMChangesInEnergy     ChangeInInflationExpectation
   > MIC    if inrange(monthly_date, tm(2010m1), tm(2020m12)), lutstats dfk const
   > raints(1 2 3 4 5 6 7 8 9) exog(L3.InflationlessFoodandEnergy   L3.ChangesInE
   > ffectiveFedFundRates   L3.ChangeJapaneseHoldings L3.MonthOnMUSgdpChange
   > L3.ChangeInInflationExpectationMIC)

59 .
60 .
61 . varstable
```

Eigenvalue stability condition

Eigenvalue	Modulus
.6487442	**.648744**
-.4194644 + .4052732*i*	**.583264**
-.4194644 - .4052732*i*	**.583264**
.1181432 + .5699369*i*	**.582053**
.1181432 - .5699369*i*	**.582053**
-.5241193	**.524119**
-.1205068 + .4428235*i*	**.458928**
-.1205068 - .4428235*i*	**.458928**
.4020903	**.40209**
-.175149	**.175149**

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

62 . varlmar

Lagrange-multiplier test

lag	chi2	df	Prob > chi2
1	-9.1e+02	25	1.00000
2	-9.6e+02	25	1.00000

H0: no autocorrelation at lag order

63 . vargranger

Granger causality Wald tests

Equation	Excluded	chi2	df	Prob > chi2
InflationlessFo~y	ChangesInEffect~s	1.0787	2	0.583
InflationlessFo~y	ChangeJapaneseH~s	1.1063	2	0.575
InflationlessFo~y	MOMChangesInEne~y	5.5714	2	0.062
InflationlessFo~y	ChangeInInflati~C	.46731	2	0.792
InflationlessFo~y	ALL	9.0424	8	0.339
ChangesInEffect~s	InflationlessFo~y	.72568	2	0.696
ChangesInEffect~s	ChangeJapaneseH~s	.	0	.
ChangesInEffect~s	MOMChangesInEne~y	2.6245	2	0.269
ChangesInEffect~s	ChangeInInflati~C	.17529	2	0.916
ChangesInEffect~s	ALL	4.6202	6	0.593
ChangeJapaneseH~s	InflationlessFo~y	9.9409	2	0.007
ChangeJapaneseH~s	ChangesInEffect~s	10.227	2	0.006
ChangeJapaneseH~s	MOMChangesInEne~y	1.8216	2	0.402
ChangeJapaneseH~s	ChangeInInflati~C	2.5679	2	0.277
ChangeJapaneseH~s	ALL	25.783	8	0.001
MOMChangesInEne~y	InflationlessFo~y	9.8283	2	0.007
MOMChangesInEne~y	ChangesInEffect~s	1.7002	2	0.427
MOMChangesInEne~y	ChangeJapaneseH~s	.28366	2	0.868
MOMChangesInEne~y	ChangeInInflati~C	12.293	2	0.002
MOMChangesInEne~y	ALL	24.053	8	0.002
ChangeInInflati~C	InflationlessFo~y	2.2136	2	0.331
ChangeInInflati~C	ChangesInEffect~s	.70366	2	0.703
ChangeInInflati~C	ChangeJapaneseH~s	.	0	.
ChangeInInflati~C	MOMChangesInEne~y	7.0156	2	0.030
ChangeInInflati~C	ALL	9.5888	6	0.143

```
64 .  predict eee, resid
   (10 missing values generated)

65 .  gen Leee=eee[_n-1]
   (10 missing values generated)

66 .  regress eee Leee    if inrange(monthly_date, tm(2010m1), tm(2020m12))
```

Source	SS	df	MS	Number of obs	=	120
				F(1, 118)	=	0.13
Model	.069718799	1	.069718799	Prob > F	=	0.7167
Residual	62.1625494	118	.526801266	R-squared	=	0.0011
				Adj R-squared	=	-0.0073
Total	62.2322682	119	.522960237	Root MSE	=	.72581

eee	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
Leee	-.0332372	.0913636	-0.36	0.717	-.2141621	.1476876
_cons	-.000218	.0662599	-0.00	0.997	-.1314306	.1309946

```
67 .
68 . swilk  eee     if inrange(monthly_date, tm(2010m1), tm(2020m12))
```

Shapiro-Wilk W test for normal data

Variable	Obs	W	V	z	Prob>z
eee	120	0.98457	1.485	0.886	0.18784

```
69 . log off
       name:  <unnamed>
        log:  /Users/nicolaszhang/Downloads/Stata Rec 6/JapaneseHoldingsChange.
> smcl
  log type:  smcl
 paused on:  12 Nov 2020, 19:04:55
```