Notes:
1. Unicode is supported; see help unicode_advice.

Checking for updates...
(contacting http://www.stata.com)
host not found
http://www.stata.com did not respond or is not a valid update site
unable to check for update; verify Internet settings are correct.

```
1 . use "C:\Users\HP\Desktop\Korea controlled.dta"

2 . tsset quarter
        time variable:  quarter, 2010q1 to 2019q4
                delta:  1 quarter

3 . varsoc logrealgdp logmcap logstockturnover logcredit logbaserate
```

Selection-order criteria
Sample: **2011q1 - 2019q4** Number of obs = **36**

lag	LL	LR	df	p	FPE	AIC	HQIC	SBIC
0	141.217				3.6e-10	-7.56763	-7.49086	-7.34769
1	291.029	299.62	25	0.000	3.5e-13*	-14.5016	-14.0411*	-13.182*
2	316.869	51.679	25	0.001	3.7e-13	-14.5483	-13.7039	-12.129
3	339.145	44.554	25	0.009	5.4e-13	-14.397	-13.1688	-10.878
4	373.101	67.912*	25	0.000	5.4e-13	-14.8945*	-13.2825	-10.2759

Endogenous: logrealgdp logmcap logstockturnover logcredit logbaserate
Exogenous: _cons

```
4 . vecrank logrealgdp  logmcap logstockturnover logcredit logbaserate, trend(constant) lags(4) max
```

Johansen tests for cointegration
Trend: constant Number of obs = **36**
Sample: **2011q1 - 2019q4** Lags = **4**

maximum rank	parms	LL	eigenvalue	trace statistic	5% critical value
0	80	330.04706	.	86.1084	68.52
1	89	353.3557	0.72608	39.4911*	47.21
2	96	364.10061	0.44951	18.0013	29.68
3	101	369.42647	0.25612	7.3496	15.41
4	104	372.61555	0.16236	0.9714	3.76
5	105	373.10127	0.02662		

maximum rank	parms	LL	eigenvalue	max statistic	5% critical value
0	80	330.04706	.	46.6173	33.46

1	89	353.3557	0.72608	21.4898	27.07
2	96	364.10061	0.44951	10.6517	20.97
3	101	369.42647	0.25612	6.3782	14.07
4	104	372.61555	0.16236	0.9714	3.76
5	105	373.10127	0.02662		

5 . var logrealgdp logmcap logstockturnover logcredit logbaserate, lags(1/4)

Vector autoregression

Sample: 2011q1 - 2019q4 Number of obs = 36
Log likelihood = 373.1013 AIC = -14.89452
FPE = 5.43e-13 HQIC = -13.2825
Det(Sigma_ml) = 6.85e-16 SBIC = -10.27592

Equation	Parms	RMSE	R-sq	chi2	P>chi2
logrealgdp	21	.042154	0.8745	250.8854	0.0000
logmcap	21	.077956	0.8975	315.3358	0.0000
logstockturnover	21	.186682	0.8144	157.9476	0.0000
logcredit	21	.04349	0.9596	854.269	0.0000
logbaserate	21	.107333	0.9594	850.984	0.0000

	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
logrealgdp						
logrealgdp						
L1.	-1.787368	1.578141	-1.13	0.257	-4.880467	1.305731
L2.	2.135037	1.897749	1.13	0.261	-1.584483	5.854558
L3.	2.62534	2.019694	1.30	0.194	-1.333189	6.583868
L4.	-3.437425	1.481529	-2.32	0.020	-6.341168	-.5336827
logmcap						
L1.	.4082175	.0878262	4.65	0.000	.2360813	.5803537
L2.	.023086	.1138609	0.20	0.839	-.2000773	.2462492
L3.	.0112896	.1320408	0.09	0.932	-.2475057	.2700849
L4.	-.0569575	.1151538	-0.49	0.621	-.2826548	.1687397
logstockturnover						
L1.	.006246	.0419467	0.15	0.882	-.0759679	.08846
L2.	-.0423182	.0438971	-0.96	0.335	-.128355	.0437186
L3.	.0240278	.0447459	0.54	0.591	-.0636726	.1117282
L4.	-.0137544	.045225	-0.30	0.761	-.1023939	.074885
logcredit						
L1.	1.790643	1.510568	1.19	0.236	-1.170016	4.751302
L2.	-2.337115	1.88364	-1.24	0.215	-6.028983	1.354752
L3.	-2.449093	1.98834	-1.23	0.218	-6.346168	1.447981
L4.	3.431433	1.537153	2.23	0.026	.4186684	6.444198
logbaserate						
L1.	-.0789789	.0616042	-1.28	0.200	-.1997209	.0417631
L2.	.1650432	.0781258	2.11	0.035	.0119194	.318167
L3.	-.0895636	.0719212	-1.25	0.213	-.2305266	.0513994
L4.	.0672499	.0609845	1.10	0.270	-.0522774	.1867773
_cons	7.3112	3.233842	2.26	0.024	.9729875	13.64941
logmcap						
logrealgdp						
L1.	-4.724866	2.91851	-1.62	0.105	-10.44504	.9953084
L2.	-1.155151	3.509573	-0.33	0.742	-8.033789	5.723486
L3.	9.330931	3.73509	2.50	0.012	2.010289	16.65157
L4.	-3.116417	2.739842	-1.14	0.255	-8.486408	2.253574

logmcap						
L1.	.3817894	.1624201	2.35	0.019	.063452	.7001269
L2.	.8716508	.2105668	4.14	0.000	.4589474	1.284354
L3.	-.049681	.2441876	-0.20	0.839	-.52828	.4289179
L4.	-.5936639	.2129578	-2.79	0.005	-1.011054	-.1762743
logstockturnover						
L1.	-.1765722	.0775734	-2.28	0.023	-.3286133	-.0245311
L2.	-.071643	.0811805	-0.88	0.377	-.2307539	.0874678
L3.	-.2251934	.0827501	-2.72	0.007	-.3873807	-.0630061
L4.	.1738818	.0836362	2.08	0.038	.0099578	.3378058
logcredit						
L1.	3.803815	2.793546	1.36	0.173	-1.671434	9.279064
L2.	2.071198	3.483481	0.59	0.552	-4.756299	8.898696
L3.	-9.436112	3.677105	-2.57	0.010	-16.64311	-2.229118
L4.	3.5072	2.84271	1.23	0.217	-2.06441	9.078809
logbaserate						
L1.	.1957983	.1139267	1.72	0.086	-.027494	.4190907
L2.	-.2448104	.1444808	-1.69	0.090	-.5279875	.0383667
L3.	.4287231	.1330064	3.22	0.001	.1680354	.6894108
L4.	-.6179486	.1127807	-5.48	0.000	-.8389947	-.3969026
_cons	7.060448	5.980454	1.18	0.238	-4.661027	18.78192
logstockturnover						
logrealgdp						
L1.	-20.11044	6.988984	-2.88	0.004	-33.8086	-6.412285
L2.	25.94478	8.404409	3.09	0.002	9.472443	42.41712
L3.	13.53164	8.944457	1.51	0.130	-3.999175	31.06245
L4.	-17.04583	6.561125	-2.60	0.009	-29.9054	-4.186259
logmcap						
L1.	.0652231	.3889489	0.17	0.867	-.6971027	.8275489
L2.	.2817945	.5042464	0.56	0.576	-.7065104	1.270099
L3.	-1.290488	.5847585	-2.21	0.027	-2.436594	-.1443824
L4.	-2.486099	.5099721	-4.87	0.000	-3.485626	-1.486572
logstockturnover						
L1.	.3027602	.1857658	1.63	0.103	-.0613341	.6668545
L2.	.1551874	.1944037	0.80	0.425	-.225837	.5362117
L3.	.1331179	.1981626	0.67	0.502	-.2552737	.5215094
L4.	.1606842	.2002845	0.80	0.422	-.2318662	.5532346
logcredit						
L1.	19.95782	6.689731	2.98	0.003	6.846191	33.06945
L2.	-24.65784	8.341926	-2.96	0.003	-41.00771	-8.307967
L3.	-9.72252	8.8056	-1.10	0.270	-26.98118	7.536138
L4.	17.39535	6.807465	2.56	0.011	4.052968	30.73774
logbaserate						
L1.	.7408703	.2728215	2.72	0.007	.2061501	1.275591
L2.	.2171041	.3459895	0.63	0.530	-.4610229	.895231
L3.	-1.136018	.3185117	-3.57	0.000	-1.76029	-.5117469
L4.	.0764491	.270077	0.28	0.777	-.452892	.6057903
_cons	-21.13666	14.32145	-1.48	0.140	-49.20619	6.932869
logcredit						
logrealgdp						
L1.	-2.600377	1.628161	-1.60	0.110	-5.791513	.5907588
L2.	2.178273	1.957899	1.11	0.266	-1.659139	6.015685
L3.	2.686195	2.083709	1.29	0.197	-1.397801	6.77019
L4.	-3.613609	1.528486	-2.36	0.018	-6.609387	-.6178315

logmcap						
L1.	.3869364	.0906099	4.27	0.000	.2093443	.5645286
L2.	.0172919	.1174697	0.15	0.883	-.2129446	.2475283
L3.	.0028954	.1362259	0.02	0.983	-.2641025	.2698932
L4.	-.0770903	.1188036	-0.65	0.516	-.3099411	.1557605
logstockturnover						
L1.	.0205406	.0432762	0.47	0.635	-.0642792	.1053604
L2.	-.0506885	.0452885	-1.12	0.263	-.1394523	.0380753
L3.	.0455649	.0461641	0.99	0.324	-.0449151	.136045
L4.	-.0162263	.0466585	-0.35	0.728	-.1076752	.0752226
logcredit						
L1.	2.683118	1.558446	1.72	0.085	-.3713803	5.737616
L2.	-2.405415	1.943343	-1.24	0.216	-6.214297	1.403468
L3.	-2.470277	2.051361	-1.20	0.229	-6.49087	1.550317
L4.	3.616803	1.585874	2.28	0.023	.5085479	6.725059
logbaserate						
L1.	-.0830425	.0635568	-1.31	0.191	-.2076115	.0415264
L2.	.170203	.080602	2.11	0.035	.0122259	.3281801
L3.	-.0922544	.0742008	-1.24	0.214	-.2376853	.0531765
L4.	.0713019	.0629174	1.13	0.257	-.0520139	.1946177
_cons	6.390387	3.336339	1.92	0.055	-.1487177	12.92949
logbaserate						
logrealgdp						
L1.	-6.606406	4.018338	-1.64	0.100	-14.4822	1.269391
L2.	13.00627	4.83214	2.69	0.007	3.535446	22.47709
L3.	-.6165143	5.142643	-0.12	0.905	-10.69591	9.46288
L4.	-7.279592	3.772339	-1.93	0.054	-14.67324	.1140564
logmcap						
L1.	.354053	.2236273	1.58	0.113	-.0842485	.7923545
L2.	.6012045	.289918	2.07	0.038	.0329757	1.169433
L3.	-.3042935	.3362087	-0.91	0.365	-.9632504	.3546634
L4.	-.201754	.29321	-0.69	0.491	-.776435	.3729271
logstockturnover						
L1.	-.0064969	.1068066	-0.06	0.951	-.215834	.2028402
L2.	.1744503	.111773	1.56	0.119	-.0446208	.3935214
L3.	.0351671	.1139342	0.31	0.758	-.1881398	.258474
L4.	.0910613	.1151542	0.79	0.429	-.1346367	.3167593
logcredit						
L1.	5.424624	3.846281	1.41	0.158	-2.113948	12.9632
L2.	-12.94036	4.796215	-2.70	0.007	-22.34077	-3.539954
L3.	.6816866	5.062806	0.13	0.893	-9.241231	10.6046
L4.	6.784732	3.913973	1.73	0.083	-.8865131	14.45598
logbaserate						
L1.	.700072	.1568595	4.46	0.000	.392633	1.007511
L2.	-.1177212	.1989277	-0.59	0.554	-.5076124	.2721699
L3.	.2106644	.1831292	1.15	0.250	-.1482623	.5695911
L4.	.176391	.1552816	1.14	0.256	-.1279552	.4807373
_cons	8.766862	8.234162	1.06	0.287	-7.371799	24.90552

```
6 . vec logrealgdp logmcap logstockturnover logcredit logbaserate, trend(constant) lags(4)

Vector error-correction model

Sample:  2011q1 - 2019q4                        Number of obs     =         36
                                                AIC               =  -14.68643
Log likelihood =  353.3557                      HQIC              =  -13.32005
Det(Sigma_ml)  =  2.05e-15                      SBIC              =  -10.77162

Equation           Parms      RMSE     R-sq      chi2     P>chi2
------------------------------------------------------------------
D_logrealgdp          17     .040467   0.7744     65.215   0.0000
D_logmcap             17     .077536   0.7729   64.66495   0.0000
D_logstockturn~r      17     .178219   0.6934   42.97741   0.0005
D_logcredit           17     .040962   0.7695   63.41421   0.0000
D_logbaserate         17     .105069   0.5483   23.06077   0.1473
------------------------------------------------------------------

------------------------------------------------------------------------------
             |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
D_logrealgdp |
        _ce1 |
         L1. |  -.1648043   .1186677    -1.39   0.165    -.3973887    .0677801
             |
  logrealgdp |
         LD. |  -1.231012   2.053304    -0.60   0.549    -5.255414    2.793389
        L2D. |   1.151377   1.851515     0.62   0.534    -2.477525    4.780279
        L3D. |   4.272473   1.827882     2.34   0.019      .689891    7.855056
             |
     logmcap |
         LD. |   .3254782   .1529007     2.13   0.033     .0257983    .6251581
        L2D. |   .2470413   .1854167     1.33   0.183    -.1163687    .6104513
        L3D. |   .1336025   .1437551     0.93   0.353    -.1481524    .4153574
             |
logstockturnover |
         LD. |  -.0686726   .0502242    -1.37   0.172    -.1671103    .0297651
        L2D. |   -.105367   .0538789    -1.96   0.051    -.2109678    .0002338
        L3D. |  -.0536799   .0499869    -1.07   0.283    -.1516524    .0442926
             |
    logcredit |
         LD. |   .6694144   1.968775     0.34   0.734    -3.189314    4.528143
        L2D. |  -1.663809   1.824673    -0.91   0.362    -5.240102    1.912484
        L3D. |  -4.458707   1.897033    -2.35   0.019    -8.176823   -.7405903
             |
   logbaserate |
         LD. |  -.1231879     .09231    -1.33   0.182    -.3041122    .0577364
        L2D. |   .0380362   .0917911     0.41   0.679     -.141871    .2179433
        L3D. |  -.0502296    .089237    -0.56   0.574    -.2251309    .1246716
             |
       _cons |   .0407086   .0218856     1.86   0.063    -.0021864    .0836036
-------------+----------------------------------------------------------------
D_logmcap    |
        _ce1 |
         L1. |   .7136357    .227372     3.14   0.002     .2679948    1.159277
             |
  logrealgdp |
         LD. |  -5.501661   3.934211    -1.40   0.162    -13.21257    2.209251
        L2D. |  -5.106936   3.547575    -1.44   0.150    -12.06005    1.846184
        L3D. |   5.959994   3.502293     1.70   0.089    -.9043747    12.82436
             |
     logmcap |
         LD. |   .2445084   .2929638     0.83   0.404      -.32969    .8187068
        L2D. |   1.102133   .3552657     3.10   0.002     .4058248    1.798441
        L3D. |   .8487088   .2754405     3.08   0.002     .3088553    1.388562
             |
logstockturnover |
```

LD.	.0262678	.0962316	0.27	0.785	-.1623426	.2148783
L2D.	-.0180638	.1032342	-0.17	0.861	-.2203991	.1842714
L3D.	-.221884	.0957769	-2.32	0.021	-.4096032	-.0341648
logcredit						
LD.	3.510999	3.772251	0.93	0.352	-3.882478	10.90447
L2D.	4.288796	3.496145	1.23	0.220	-2.563522	11.14111
L3D.	-6.564034	3.63479	-1.81	0.071	-13.68809	.5600236
logbaserate						
LD.	.3651702	.1768696	2.06	0.039	.0185121	.7118283
L2D.	.1622409	.1758753	0.92	0.356	-.1824683	.5069502
L3D.	.5850037	.1709815	3.42	0.001	.2498861	.9201214
_cons	.021974	.0419337	0.52	0.600	-.0602145	.1041625
D_logstockturnover						
_ce1						
L1.	2.174158	.5226209	4.16	0.000	1.14984	3.198477
logrealgdp						
LD.	-25.44817	9.042895	-2.81	0.005	-43.17192	-7.724423
L2D.	-1.755416	8.154201	-0.22	0.830	-17.73736	14.22652
L3D.	10.22015	8.05012	1.27	0.204	-5.557799	25.99809
logmcap						
LD.	2.186925	.6733854	3.25	0.001	.867114	3.506736
L2D.	2.770479	.8165881	3.39	0.001	1.169995	4.370962
L3D.	1.995854	.6331078	3.15	0.002	.7549852	3.236722
logstockturnover						
LD.	-.1249265	.221191	-0.56	0.572	-.558453	.3085999
L2D.	-.1136221	.2372866	-0.48	0.632	-.5786953	.3514511
L3D.	-.0449467	.2201458	-0.20	0.838	-.4764246	.3865311
logcredit						
LD.	21.26454	8.670625	2.45	0.014	4.270429	38.25865
L2D.	-1.86887	8.035987	-0.23	0.816	-17.61912	13.88138
L3D.	-10.48568	8.354667	-1.26	0.209	-26.86052	5.889169
logbaserate						
LD.	.9597944	.4065398	2.36	0.018	.1629911	1.756598
L2D.	1.064318	.4042543	2.63	0.008	.2719942	1.856642
L3D.	-.0216772	.3930059	-0.06	0.956	-.7919545	.7486001
_cons	-.0055101	.0963857	-0.06	0.954	-.1944226	.1834025
D_logcredit						
_ce1						
L1.	-.1796141	.1201194	-1.50	0.135	-.4150437	.0558156
logrealgdp						
LD.	-1.317245	2.078423	-0.63	0.526	-5.390879	2.756388
L2D.	.9996037	1.874165	0.53	0.594	-2.673692	4.672899
L3D.	4.191582	1.850243	2.27	0.023	.5651731	7.817991
logmcap						
LD.	.2842691	.1547712	1.84	0.066	-.0190768	.587615
L2D.	.2268846	.1876849	1.21	0.227	-.1409711	.5947403
L3D.	.1352019	.1455137	0.93	0.353	-.1499998	.4204036
logstockturnover						
LD.	-.0596429	.0508386	-1.17	0.241	-.1592848	.039999
L2D.	-.1108655	.054538	-2.03	0.042	-.2177581	-.0039729
L3D.	-.0428705	.0505984	-0.85	0.397	-.1420415	.0563006
logcredit						

LD.	.8235485	1.99286	0.41	0.679	-3.082385	4.729482
L2D.	-1.519338	1.846994	-0.82	0.411	-5.139381	2.100704
L3D.	-4.372434	1.92024	-2.28	0.023	-8.136035	-.6088333
logbaserate						
LD.	-.1297011	.0934393	-1.39	0.165	-.3128387	.0534365
L2D.	.0340164	.092914	0.37	0.714	-.1480916	.2161245
L3D.	-.0547386	.0903286	-0.61	0.545	-.2317794	.1223023
_cons	.0451197	.0221533	2.04	0.042	.0017	.0885395
D_logbaserate						
_ce1						
L1.	-.6543078	.3081116	-2.12	0.034	-1.258195	-.0504201
logrealgdp						
LD.	-8.325932	5.331247	-1.56	0.118	-18.77498	2.12312
L2D.	6.098155	4.807316	1.27	0.205	-3.324012	15.52032
L3D.	7.474496	4.745955	1.57	0.115	-1.827405	16.7764
logmcap						
LD.	-.1433215	.396995	-0.36	0.718	-.9214173	.6347743
L2D.	.6388821	.4814202	1.33	0.184	-.3046841	1.582448
L3D.	.3177178	.3732492	0.85	0.395	-.4138372	1.049273
logstockturnover						
LD.	-.2448847	.1304034	-1.88	0.060	-.5004706	.0107012
L2D.	-.128824	.1398925	-0.92	0.357	-.4030084	.1453603
L3D.	-.0972654	.1297872	-0.75	0.454	-.3516436	.1571127
logcredit						
LD.	8.042231	5.111774	1.57	0.116	-1.976662	18.06113
L2D.	-6.344343	4.737623	-1.34	0.181	-15.62991	2.941228
L3D.	-7.354298	4.925501	-1.49	0.135	-17.0081	2.299507
logbaserate						
LD.	-.3053104	.2396759	-1.27	0.203	-.7750665	.1644457
L2D.	-.4322036	.2383285	-1.81	0.070	-.8993188	.0349116
L3D.	-.194788	.231697	-0.84	0.401	-.6489057	.2593297
_cons	-.0169819	.0568243	-0.30	0.765	-.1283555	.0943917

Cointegrating equations

Equation	Parms	chi2	P>chi2
_ce1	4	92.5072	0.0000

Identification: beta is exactly identified

Johansen normalization restriction imposed

beta	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
_ce1						
logrealgdp	1	.	.	.	.	.
logmcap	-1.024324	.378702	-2.70	0.007	-1.766567	-.282082
logstockturnover	-.2886372	.107742	-2.68	0.007	-.4998077	-.0774667
logcredit	.630988	.425728	1.48	0.138	-.2034235	1.4654
logbaserate	-.135899	.061861	-2.20	0.028	-.2571444	-.0146535
_cons	-2.890345	.	.	.	.	.

```
7 . vargranger
vargranger only works with estimates from var or svar
r(198);

8 .
```