

Handout seminar 10, ECON4150

Herman Kruse

May 1, 2014

```
tsset time
gen deltaY = D.Y
(1 missing value generated)
```

```
su deltaY if tin(1955q1, 2009q4)
```

Variable	Obs	Mean	Std. Dev.	Min	Max
deltaY	220	.0077219	.0092819	-.0274444	.0385857

```
gen AdeltaY = 400*deltaY
(1 missing value generated)
```

```
su AdeltaY if tin(1955q1, 2009q4)
```

Variable	Obs	Mean	Std. Dev.	Min	Max
AdeltaY	220	3.088771	3.712768	-10.97775	15.43427

```
corrgram deltaY if tin(1955q1, 2009q4), lags(4)
```

LAG	AC	PAC	Q	Prob>Q	-1	0	1	-1	0	1
					[Autocorrelation]		[Partial Autocor]			
1	0.3324	0.3327	24.64	0.0000	--				--	
2	0.2076	0.1101	34.296	0.0000	-					
3	0.0516	-0.0530	34.894	0.0000						
4	0.0017	-0.0295	34.895	0.0000						

```
reg deltaY L.deltaY if tin(1955q1, 2009q4), robust
```

```
Linear regression                                Number of obs =    220
                                                F( 1, 218) =    21.74
                                                Prob > F      =    0.0000
                                                R-squared    =    0.1187
                                                Root MSE    =    .00873
```

```
-----+-----
              |               Robust
deltaY |               Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-----+-----
deltaY |
  L1. |   .3433702   .0736516     4.66   0.000   .1982098   .4885306
      |
  _cons |   .0050586   .0008846     5.72   0.000   .003315   .0068021
-----+-----
```

```
di "Adjusted R-sq: " = _result(8)
Adjusted R-sq: .11464764
```

```
gen BIC_1=ln(e(rss)/e(N))+e(rank)*(ln(e(N))/e(N)) if tin(1955q1, 2009q4)
(32 missing values generated)
```

```
gen AIC_1=ln(e(rss)/e(N))+e(rank)*(2/e(N)) if tin(1955q1, 2009q4)
(32 missing values generated)
```

```
reg deltaY L2.deltaY L1.deltaY if tin(1955q1, 2009q4), robust
```

```
Linear regression                                Number of obs =    220
                                                F( 2, 217) =    11.94
                                                Prob > F      =    0.0000
                                                R-squared    =    0.1294
                                                Root MSE    =    .0087
```

```
-----+-----
              |               Robust
deltaY |               Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-----+-----
deltaY |
  L1. |   .3053322   .0796661     3.83   0.000   .1483138   .4623506
  L2. |   .1097903   .0826838     1.33   0.186   -.0531759   .2727565
      |
  _cons |   .0044984   .0010324     4.36   0.000   .0024636   .0065332
-----+-----
```

```
di "Adjusted R-sq: " = _result(8)
Adjusted R-sq: .12134217
```

```
gen BIC_2=ln(e(rss)/e(N))+e(rank)*(ln(e(N))/e(N)) if tin(1955q1, 2009q4)
(32 missing values generated)
```

```
gen AIC_2=ln(e(rss)/e(N))+e(rank)*(2/e(N)) if tin(1955q1, 2009q4)
(32 missing values generated)
```

```
. reg deltaY L.deltaY L2.deltaY L3.deltaY if tin(1955q1, 2009q4), robust
```

```
Linear regression                               Number of obs =    220
                                                F( 3, 216) =    7.89
                                                Prob > F      =  0.0001
                                                R-squared    =  0.1327
                                                Root MSE    =  .0087
```

	Coef.	Robust Std. Err.	t	P> t	[95% Conf. Interval]	
deltaY						
L1.	.3119704	.0802763	3.89	0.000	.1537453	.4701956
L2.	.1286768	.0898773	1.43	0.154	-.048472	.3058256
L3.	-.0616961	.0759268	-0.81	0.417	-.2113485	.0879562
_cons	.0047812	.0010618	4.50	0.000	.0026884	.0068741

```
di "Adjusted R-sq: " = _result(8)
```

```
Adjusted R-sq: .1206512
```

```
gen BIC_3=ln(e(rss)/e(N))+e(rank)*(ln(e(N))/e(N)) if tin(1955q1, 2009q4)
(32 missing values generated)
```

```
gen AIC_3=ln(e(rss)/e(N))+e(rank)*(2/e(N)) if tin(1955q1, 2009q4)
(32 missing values generated)
```

```
reg deltaY L.deltaY L2.deltaY L3.deltaY L4. deltaY if tin(1955q1, 2009q4), robust
```

```
Linear regression                               Number of obs =    220
                                                F( 4, 215) =    5.99
                                                Prob > F      =  0.0001
                                                R-squared    =  0.1342
                                                Root MSE    =  .00872
```

	Coef.	Robust Std. Err.	t	P> t	[95% Conf. Interval]	
deltaY						
L1.	.3093836	.079642	3.88	0.000	.1524045	.4663627
L2.	.1337497	.0923868	1.45	0.149	-.04835	.3158495
L3.	-.0488982	.0766608	-0.64	0.524	-.2000011	.1022048
L4.	-.0413429	.0815097	-0.51	0.613	-.2020033	.1193175
_cons	.004986	.0011237	4.44	0.000	.002771	.0072009

```
di "Adjusted R-sq: " = _result(8)
```

```
Adjusted R-sq: .11806315
```

```
gen BIC_4=ln(e(rss)/e(N))+e(rank)*(ln(e(N))/e(N)) if tin(1955q1, 2009q4)
(32 missing values generated)
```

```
gen AIC_4=ln(e(rss)/e(N))+e(rank)*(2/e(N)) if tin(1955q1, 2009q4)
(32 missing values generated)
```

```
su BIC* AIC*
```

Variable	Obs	Mean	Std. Dev.	Min	Max
BIC_1	220	-9.441242	0	-9.441242	-9.441242
BIC_2	220	-9.428914	0	-9.428914	-9.428914
BIC_3	220	-9.408231	0	-9.408231	-9.408231
BIC_4	220	-9.385415	0	-9.385415	-9.385415
AIC_1	220	-9.472094	0	-9.472094	-9.472094
AIC_2	220	-9.475191	0	-9.475191	-9.475191
AIC_3	220	-9.469933	0	-9.469933	-9.469933
AIC_4	220	-9.462543	0	-9.462543	-9.462543

```
gen R = D.TBillRate
(1 missing value generated)
```

```
reg deltaY L.deltaY L.R L2.R L3.R L4.R if tin(1955q1, 2009q4), robust
```

```
Linear regression                               Number of obs =    220
                                                F( 5, 214) =    8.05
                                                Prob > F      =  0.0000
                                                R-squared    =  0.1921
                                                Root MSE    =  .00844
```

	Coef.	Robust Std. Err.	t	P> t	[95% Conf. Interval]	
deltaY						
L1.	.3304833	.0810072	4.08	0.000	.170809	.4901575
R						
L1.	.0018182	.0008844	2.06	0.041	.0000749	.0035614
L2.	-.0033377	.0009575	-3.49	0.001	-.0052251	-.0014503
L3.	.0012095	.0007504	1.61	0.108	-.0002697	.0026887
L4.	-.0024893	.0008687	-2.87	0.005	-.0042017	-.000777
_cons	.0051465	.0009455	5.44	0.000	.0032829	.0070102

```
di "Adjusted R-sq: " = _result(8)
Adjusted R-sq: .1732379
```

```
test L.R L2.R L3.R L4.R
```

- (1) L.R = 0
- (2) L2.R = 0
- (3) L3.R = 0
- (4) L4.R = 0

```
F( 4, 214) = 5.11
Prob > F = 0.0006
```