UNIVERSIDAD NACIONAL DE PIURA
DPTO. ACAD. DE ECONOMETRIA Y METODOS CUANTITATIVOS

SOLUCIÓN DE LA PRIMERA PRÁCTICA CALIFICADA DE ECONOMETRIA II

1° El investigador especifica el modelo de mercado de girasol siguiente:

$$CAG = a + b\,PAG + c\,R + d\,S(-1) + e\,PAO + U1$$
$$PAG = f + g\,CAG + h\,S + i\,R + j\,PAO + U2$$
$$S = k + l\,CAG + m\,S(-1) + n\,PAO + o\,PP(-1) + U3$$

Se le pide:

1.1. Estimar la función de demanda de aceite de girasol por mínimos cuadrados bietápicos y realice el criterio económico y estadístico. (5 puntos)

Dependent Variable: CAG
Method: Two-Stage Least Squares
Sample (adjusted): 1992 2005
Included observations: 14 after adjustments
Instrument list: C R S(-1) PAO PP(-1)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-12.18484	7.396439	-1.647393	0.1339
PAG	0.093128	0.703217	0.132431	0.8976
R	0.124767	0.083181	1.499947	0.1679
S(-1)	0.003113	0.003096	1.005445	0.3409
PAO	0.225073	0.353605	0.636508	0.5403

R-squared	0.952696	Mean dependent var	1.789286
Adjusted R-squared	0.931671	S.D. dependent var	1.691929
S.E. of regression	0.442266	Sum squared resid	1.760390
F-statistic	44.86530	Durbin-Watson stat	1.760996
Prob(F-statistic)	0.000006		

1.2. Verifique si CAG se puede tratar como exógena en la función superficie cultivada. (3 puntos)

Dependent Variable: CAG
Method: Least Squares
Sample (adjusted): 1992 2005
Included observations: 14 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-11.30741	3.378943	-3.346435	0.0086
R	0.114576	0.047003	2.437626	0.0375
S(-1)	0.002828	0.002679	1.055402	0.3187
PAO	0.276219	0.082013	3.367985	0.0083
PP(-1)	-0.010702	0.088506	-0.120915	0.9064

R-squared	0.943256	Mean dependent var	1.789286
Adjusted R-squared	0.918036	S.D. dependent var	1.691929
S.E. of regression	0.484388	Akaike info criterion	1.660592
Sum squared resid	2.111686	Schwarz criterion	1.888827
Log likelihood	-6.624146	F-statistic	37.40159
Durbin-Watson stat	1.519209	Prob(F-statistic)	0.000013

Modified: 1991 2005 // eq02.fit(f=actual) cagf

1990		NA	0.125792	1.500800	0.318358
1995	0.794772	0.695860	0.567761	0.627184	1.253456
2000	1.406065	1.512533	2.925449	3.978207	3.710226
2005	5.633539	NA			

Dependent Variable: S
Method: Least Squares
Sample (adjusted): 1992 2005
Included observations: 14 after adjustments

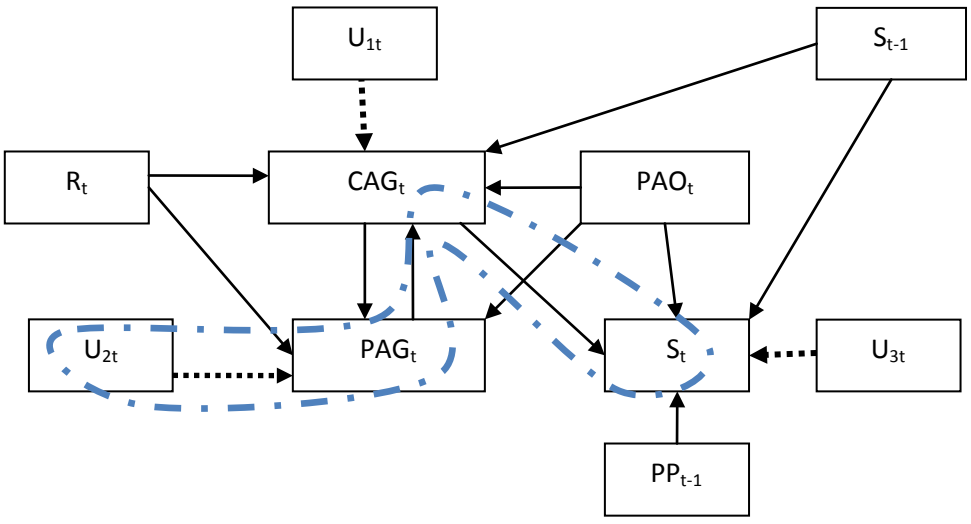
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	145.7132	142.2755	1.024162	0.3357
CAG	78.94937	21.10343	3.741067	0.0057
S(-1)	0.509899	0.239347	2.130375	0.0658
PAO	-2.508271	6.388329	-0.392633	0.7048
PP(-1)	-10.49714	5.645601	-1.859349	0.1000
CAGF	-6.763969	33.46499	-0.202121	0.8449

R-squared	0.987283	Mean dependent var	181.0643
Adjusted R-squared	0.979335	S.D. dependent var	213.3299
S.E. of regression	30.66675	Akaike info criterion	9.981762
Sum squared resid	7523.599	Schwarz criterion	10.25564
Log likelihood	-63.87234	F-statistic	124.2175
Durbin-Watson stat	3.317188	Prob(F-statistic)	0.000000

Wald Test:
Equation: EQ03

Test Statistic	Value	df	Probability
F-statistic	0.040853	(1, 8)	0.8449
Chi-square	0.040853	1	0.8398

1.3. Determine qué tipo de variable es S en el precio de mercado. (3 puntos)



$E(S_t U_{2tt+m}) = 0$ $E(S_t U_t) \neq 0$ $E(S_t U_{2t-1}) = 0$

La variable S en la segunda ecuación es variable endógena.

1.4. Verifique la causalidad de Granger entre CAG y PAG. (3 puntos)

Pairwise Granger Causality Tests
Sample: 1991 2005
Lags: 1

Null Hypothesis:	Obs	F-Statistic	Probability
PAG does not Granger Cause CAG	13	0.63634	0.44357
CAG does not Granger Cause PAG		0.00166	0.96833

Pairwise Granger Causality Tests
Sample: 1991 2005
Lags: 2

Null Hypothesis:	Obs	F-Statistic	Probability
PAG does not Granger Cause CAG	12	1.97149	0.20935
CAG does not Granger Cause PAG		0.67331	0.54020

Pairwise Granger Causality Tests
Sample: 1991 2005
Lags: 3

Null Hypothesis:	Obs	F-Statistic	Probability
PAG does not Granger Cause CAG	11	4.94761	0.07826
CAG does not Granger Cause PAG		1.90299	0.27046

Pairwise Granger Causality Tests
Sample: 1991 2005
Lags: 4

Null Hypothesis:	Obs	F-Statistic	Probability
PAG does not Granger Cause CAG	10	2.76108	0.42025
CAG does not Granger Cause PAG		20.0200	0.16590

2° Comente y fundamente su respuesta. (6 puntos)

2.1. Una variable exógena predeterminada es equivalente a la variable exógena débil.

2.2. La prueba de exogeneidad se puede aplicar a todo modelo multuecuacional.