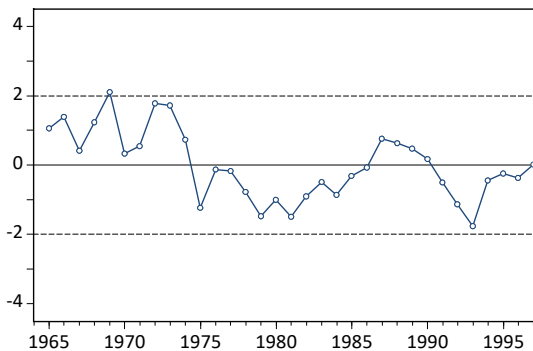


OPERACIONES CON EViews

Introducción al Uso de EViews 4.1 (2021 J.A.M.): Sección 19 pp. 80-94 + 98-105.

EJEMPLO 1.1 - ST02 : Y = TVPIB

SERIE Y = TVPIB



N = 33 - MEDIA = 3.3556 - DT = 2.3947

MODELO M1 [W = Y] AR(1) CON MEDIA

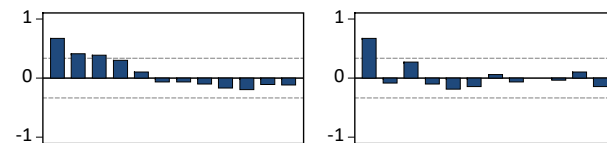
Dependent Variable: TVPIB				
Sample(adjusted): 1966 1997				
Included observations: 32 after adjusting endpoints				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	3.113314	0.963375	3.231673	0.0030
AR(1)	0.674728	0.130195	5.182453	0.0000
S.E. of regression	1.763676	Akaike info criterion	4.033139	
Sum squared resid	93.31659	Schwarz criterion	4.124748	
Log likelihood	-62.53022	F-statistic	26.85782	
Durbin-Watson stat	1.934843	Prob(F-statistic)	0.000014	

$$(1 - 0.6747B)(y_t - 3.1133) = \hat{a}_t,$$

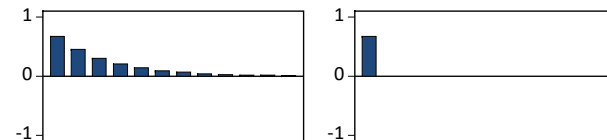
$$(0.1302) \quad (0.9634)$$

$n = 32, \hat{\sigma}_A = 1.7637, AIC = 4.0331, BIC = 4.1247.$

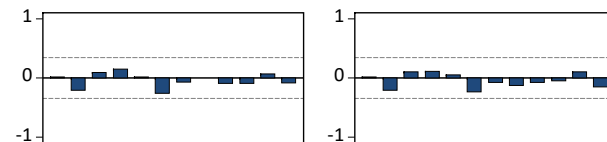
ACF - PACF MUESTRALES SERIE W = Y



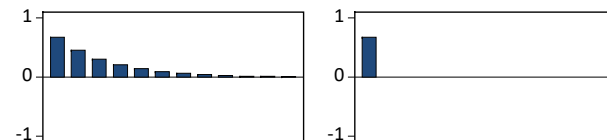
ACF - PACF TEÓRICAS MODELO M1 [W = Y]



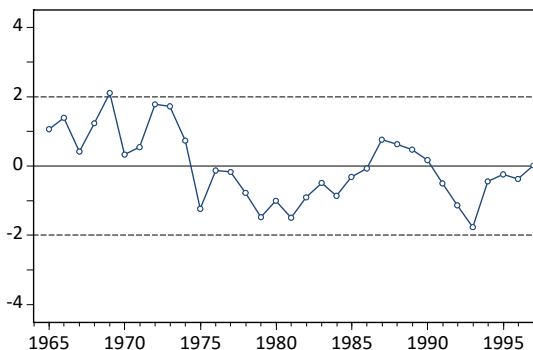
ACF - PACF RESIDUALES MODELO M1



COEFICIENTES PSI - PI MODELO M1 [Y]

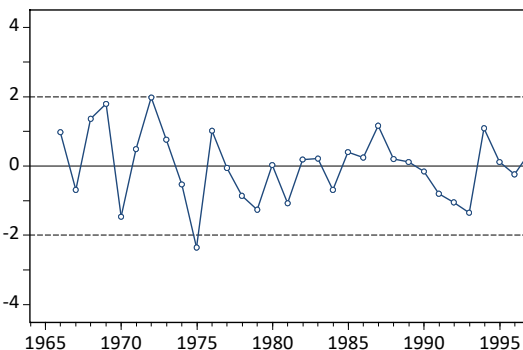


SERIE W = Y



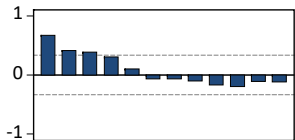
N = 33 - MEDIA = 3.3556 (0.0000) - DT = 2.3947

RESIDUOS M1

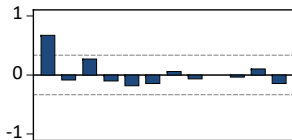


N = 32 - MEDIA = -0.000 (0.9999) - DT = 1.7349

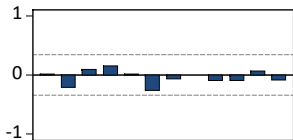
ACF



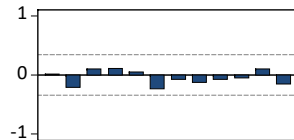
PACF



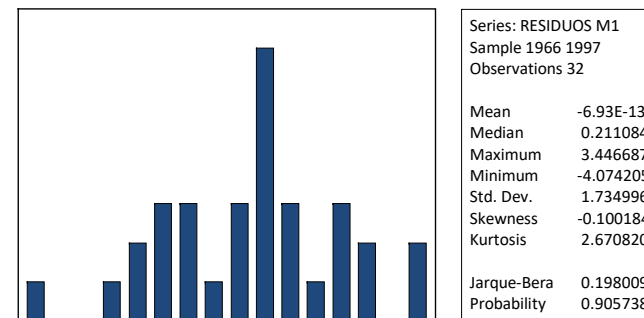
ACF



PACF

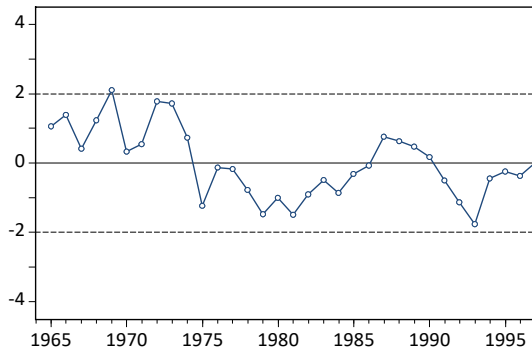


LJUNG-BQX Q(11) = 7.3435 (PROB = 0.7706) ARMA = 1



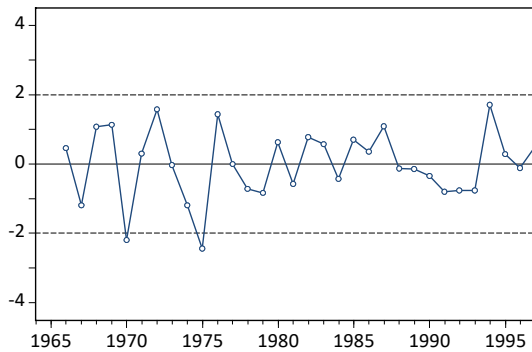
EJEMPLO 1.2 - ST02 : Y = TVPIB

SERIE Y = TVPIB



N = 33 - MEDIA = 3.3556 - DT = 2.3947

SERIE W = D(Y)



N = 32 - MEDIA = -0.078 (0.8172) - DT = 1.9069

MODELO M2 [W] ARMA(1,1) [Y] ARIMA(1,1,1)

Dependent Variable: D(TVPIB)				
Sample(adjusted): 1967 1997				
Included observations: 31 after adjusting endpoints				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
AR(1)	0.641104	0.166891	3.841461	0.0006
MA(1)	-0.964866	0.076901	-12.54686	0.0000
S.E. of regression	1.806798	Akaike info criterion	4.083330	
Sum squared resid	94.67102	Schwarz criterion	4.175845	
Log likelihood	-61.29162	Durbin-Watson stat	1.822715	

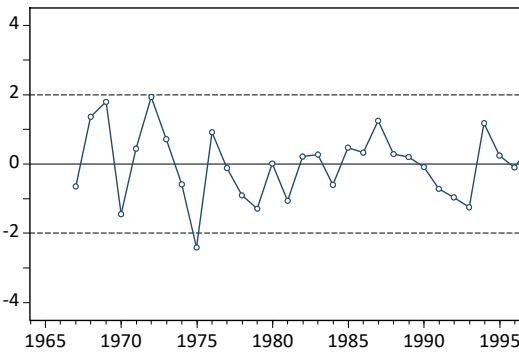
$$(1 - 0.6411B) \nabla y_t = (1 - 0.9649B) \hat{a}_t,$$

(0.1669) (0.0769)

$n = 31, \hat{\sigma}_A = 1.8068, AIC = 4.0833, BIC = 4.1758.$

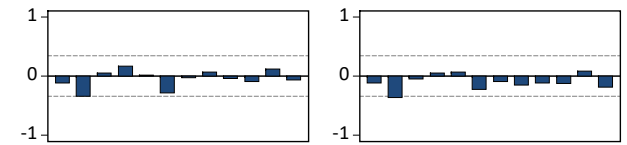
No rechazar $\theta_1 = 1 \Rightarrow$ Volver a M1.

RESIDUOS M2

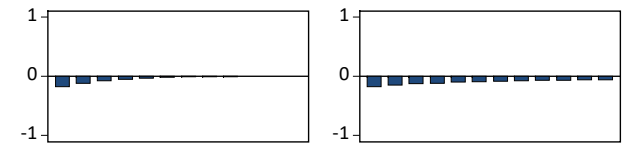


N = 31 - MEDIA = -0.286 (0.3691) - DT = 1.7523

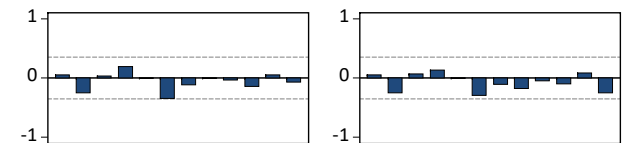
ACF - PACF MUESTRALES SERIE W



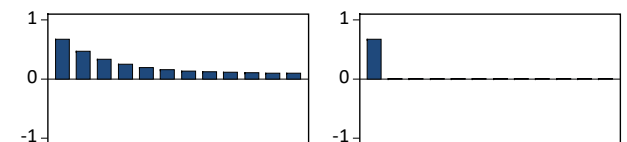
ACF - PACF TEÓRICAS MODELO M2 [W]



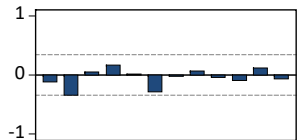
ACF - PACF RESIDUALES MODELO M2



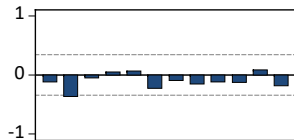
COEFICIENTES PSI - PI MODELO M2 [Y]



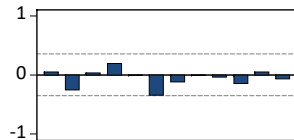
ACF



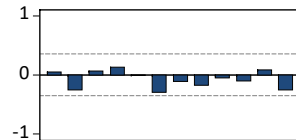
PACF



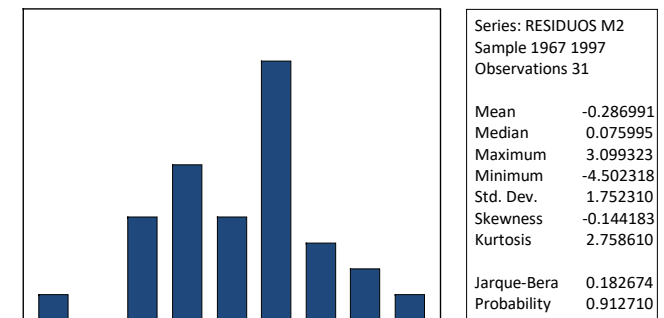
ACF



PACF

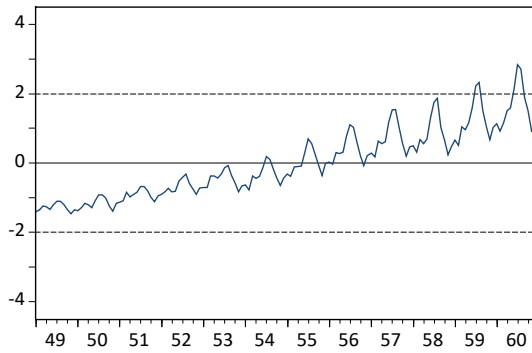


LJUNG-BQX Q(10) = 10.554 (PROB = 0.3932) ARMA = 2



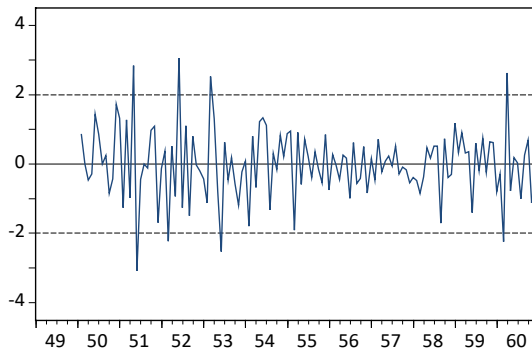
EJEMPLO 2.1 - ST19 : Y = AIRLINE

SERIE Y = AIRLINE



N = 144 - MEDIA = 280.29 - DT = 119.96

SERIE W = DLOG(Y, 1, 12)



N = 131 - MEDIA = 0.0002 (0.9422) - DT = 0.0458

MODELO M1 [W] MA(1)×MA(1)₁₂ [LOG(Y)] IMA(1,1)×IMA(1,1)₁₂ ["AIRLINE MODEL"]

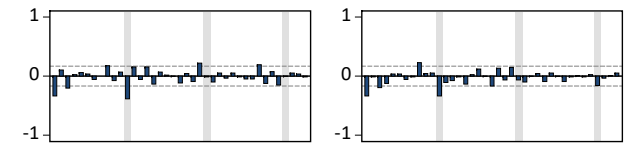
Dependent Variable: DLOG(AIRLINE, 1, 12)				
Sample(adjusted): 1950:02 1960:12				
Included observations: 131 after adjusting endpoints				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
MA(1)	-0.404855	0.080238	-5.045651	0.0000
SMA(12)	-0.631572	0.069841	-9.042955	0.0000
S.E. of regression	0.036500	Akaike info criterion	-3.767866	
Sum squared resid	0.171859	Schwarz criterion	-3.723970	
Log likelihood	248.7952	Durbin-Watson stat	1.933726	

$$\nabla \nabla_{12} \ln y_t = (1 - 0.4049B) (1 - 0.6316B^{12}) \hat{a}_t,$$

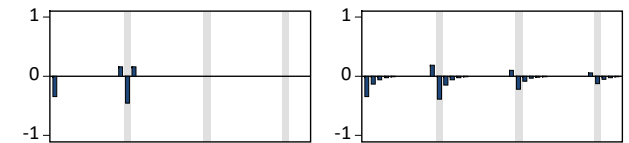
(0.0802) (0.0698)

$n = 131, \hat{\sigma}_A = 0.0365, AIC = -3.7679, BIC = -3.7240.$

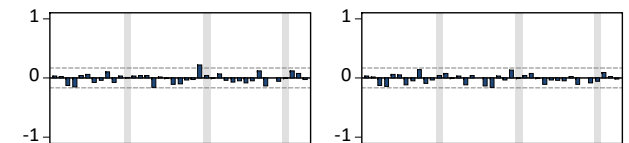
ACF - PACF MUESTRALES SERIE W



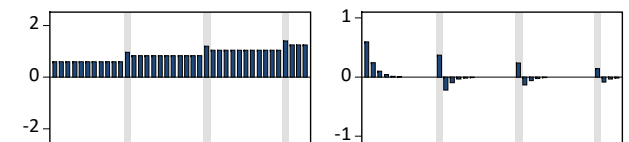
ACF - PACF TEÓRICAS MODELO M1 [W]



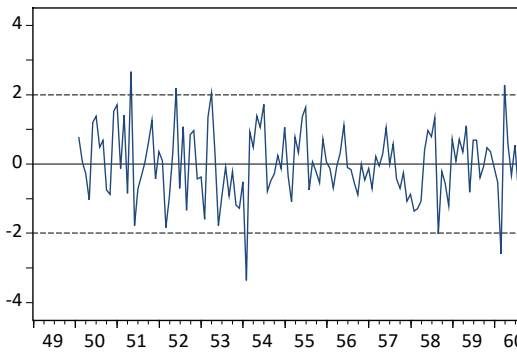
ACF - PACF RESIDUALES MODELO M1



COEFICIENTES PSI - PI MODELO M1 [LOG(Y)]

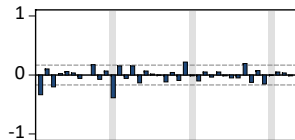


RESIDUOS M1

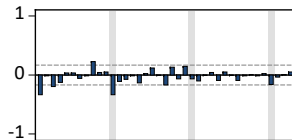


N = 131 - MEDIA = 0.0003 (0.9143) - DT = 0.0363

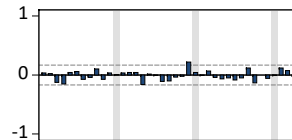
ACF



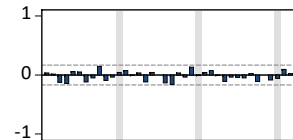
PACF



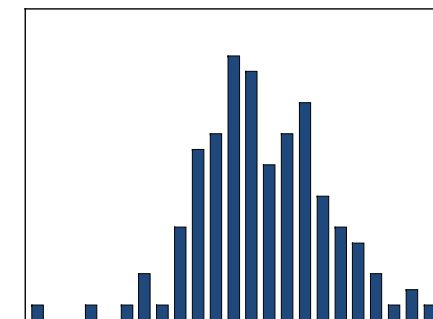
ACF



PACF



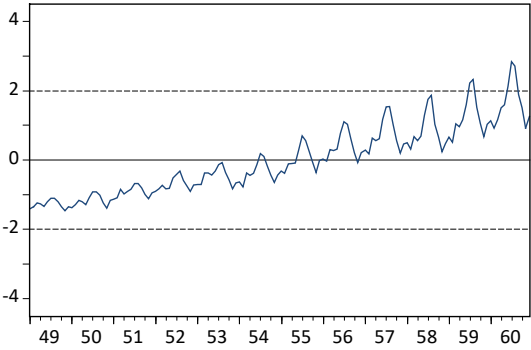
LJUNG-BOX Q(37) = 39.789 (PROB = 0.3469) ARMA = 2



Series: RESIDUOS M1	
Sample	1950:02 1960:12
Observations	131
Mean	0.000342
Median	-0.002962
Maximum	0.097408
Minimum	-0.122032
Std. Dev.	0.036358
Skewness	-0.082868
Kurtosis	3.475025
Jarque-Bera	1.381596
Probability	0.501176

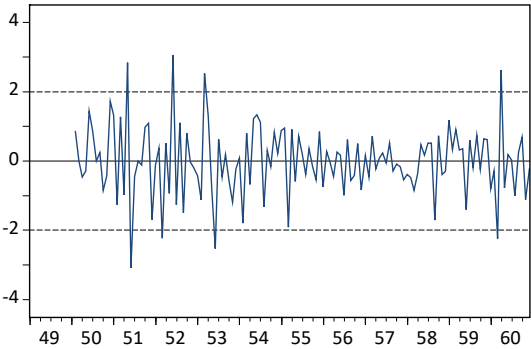
EJEMPLO 2.3 - ST19 : Y = AIRLINE

SERIE Y = AIRLINE



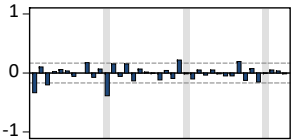
N = 144 - MEDIA = 280.29 - DT = 119.96

SERIE W = DLOG(Y, 1, 12)

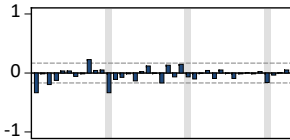


N = 131 - MEDIA = 0.0002 (0.9422) - DT = 0.0458

ACF



PACF



MODELO M3 [W] ARMA(1,1)×MA(1)12 [LOG(Y)] ARIMA(1,1,1)×IMA(1,1)12

Dependent Variable: DLOG(AIRLINE, 1, 12)				
Sample(adjusted): 1950:03 1960:12				
Included observations: 130 after adjusting endpoints				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
AR(1)	0.228962	0.169046	1.354438	0.1780
MA(1)	-0.600411	0.136506	-4.398417	0.0000
SMA(12)	-0.656061	0.067298	-9.748628	0.0000
S.E. of regression	0.036608	Akaike info criterion	-3.754284	
Sum squared resid	0.170200	Schwarz criterion	-3.688110	
Log likelihood	247.0285	Durbin-Watson stat	2.026388	

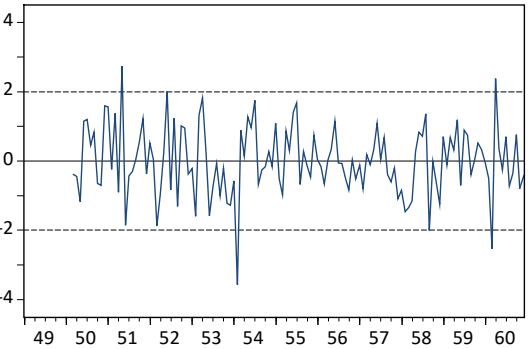
$$(1 - 0.2290) \nabla \nabla_{12} \ln y_t = (1 - 0.6004B) (1 - 0.6561B^{12}) \hat{a}_t,$$

(0.1690) (0.1365) (0.0673)

$n = 130, \hat{\sigma}_A = 0.0366, AIC = -3.7543, BIC = -3.6881.$

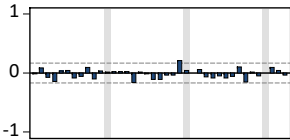
ϕ_1 no significativo, $\text{corr}[\hat{\phi}_1, \hat{\theta}_1] = -0.8571.$

RESIDUOS M3

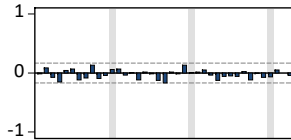


N = 130 - MEDIA = -0.000 (0.8072) - DT = 0.0363

ACF

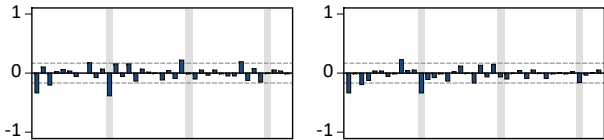


PACF

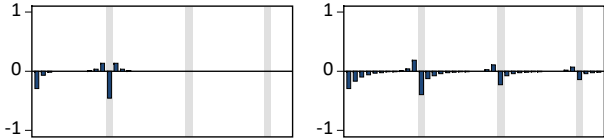


LJUNG-BOX Q(36) = 38.601 (PROB = 0.3528) ARMA = 3

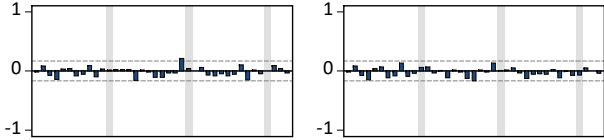
ACF - PACF MUESTRALES SERIE W



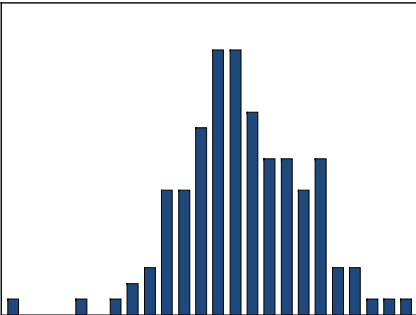
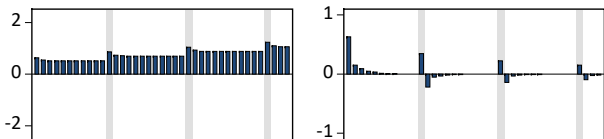
ACF - PACF TEÓRICAS MODELO M3 [W]



ACF - PACF RESIDUALES MODELO M3



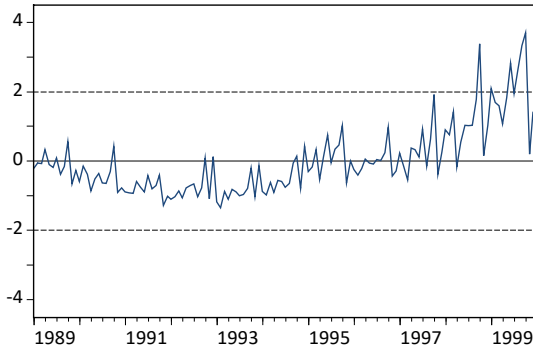
COEFICIENTES PSI - PI MODELO M3 [LOG(Y)]



Series: RESIDUOS M3	
Sample 1950:03 1960:12	
Observations 130	
Mean	-0.000778
Median	-0.003250
Maximum	0.098781
Minimum	-0.130651
Std. Dev.	0.036315
Skewness	-0.150029
Kurtosis	3.713991
Jarque-Bera	3.249017
Probability	0.197008

EJEMPLO 3.1 - ST14 : Y = VIVIN (1989:01 - 1999:12)

SERIE Y = VIVIN



N = 132 - MEDIA = 24.214 - DT = 9.0226

MODELO M1 [W] AR(2)×MA(1)₁₂ [LOG(Y)] AR(2,1)×IMA(1,1)₁₂

Dependent Variable: DLOG(VIVIN, 1, 12)				
Sample(adjusted): 1990:04 1999:12				
Included observations: 117 after adjusting endpoints				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
AR(1)	-0.540389	0.083098	-6.503034	0.0000
AR(2)	-0.458262	0.083140	-5.511961	0.0000
MA(12)	-0.880889	0.024155	-36.46818	0.0000
S.E. of regression	0.135919	Akaike info criterion	-1.128208	
Sum squared resid	2.106035	Schwarz criterion	-1.057383	
Log likelihood	69.00017	Durbin-Watson stat	2.016477	

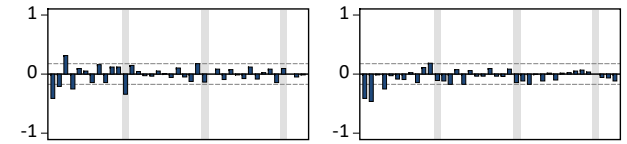
$$(1 + 0.5404B + 0.4583B^2) \nabla \nabla_{12} \ln y_t = (1 - 0.8809B^{12}) \hat{a}_t,$$

$$(0.0831) \quad (0.0831) \quad (0.0242)$$

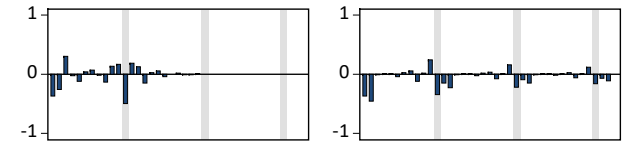
$n = 117, \hat{\sigma}_A = 0.1359, AIC = -1.1282, BIC = -1.0574.$

$$\hat{\phi}(x) = 0 \Rightarrow x_1^*, x_2^* = -0.59 \mp 1.35i \Rightarrow d = 1.48 > 1.$$

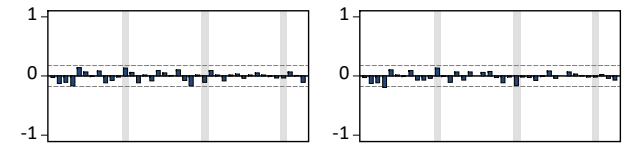
ACF - PACF MUESTRALES SERIE W



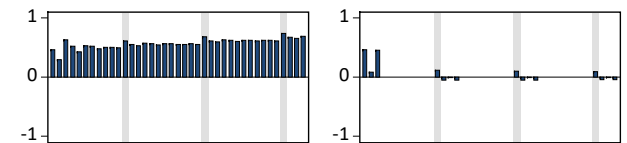
ACF - PACF TEÓRICAS MODELO M1 [W]



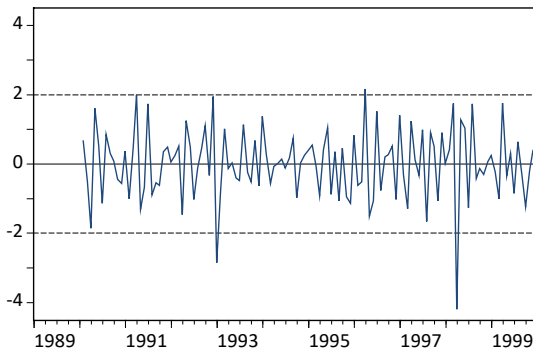
ACF - PACF RESIDUALES MODELO M1



COEFICIENTES PSI - PI MODELO M1 [LOG(Y)]

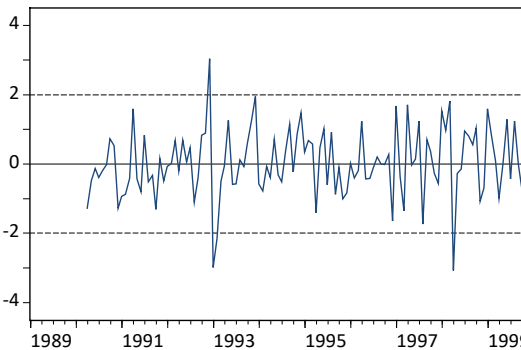


SERIE W = DLOG(Y, 1, 12)



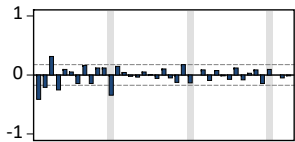
N = 119 - MEDIA = 0.0022 (0.9049) - DT = 0.2031

RESIDUOS M1

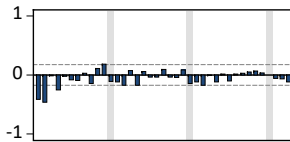


N = 117 - MEDIA = 0.0073 (0.5534) - DT = 0.1345

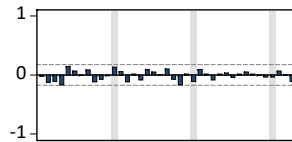
ACF



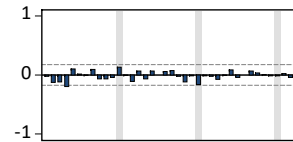
PACF



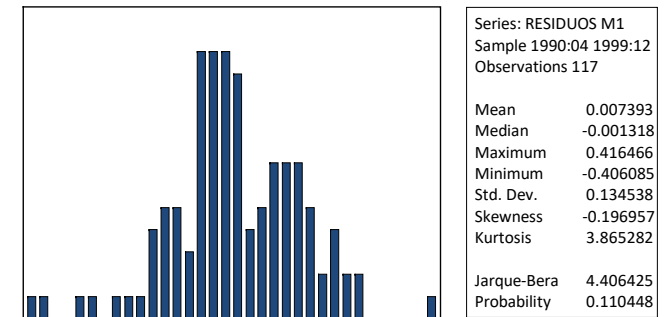
ACF



PACF

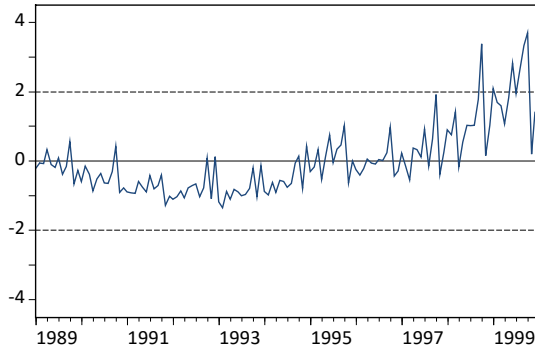


LIJUNG-BQX Q(36) = 35.708 (PROB = 0.4823) ARMA = 3



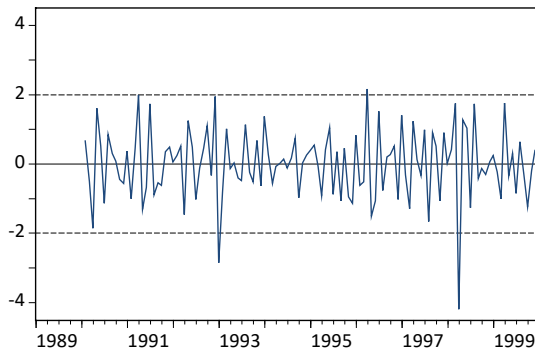
EJEMPLO 3.2 - ST14 : Y = VIVIN (1989:01 - 1999:12)

SERIE Y = VIVIN



N = 132 - MEDIA = 24.214 - DT = 9.0226

SERIE W = DLOG(Y, 1, 12)



N = 119 - MEDIA = 0.0022 (0.9049) - DT = 0.2031

MODELO M2 [W] MA(1)×MA(1)₁₂ [LOG(Y)] IMA(1,1)×IMA(1,1)₁₂ ["AIRLINE MODEL"]

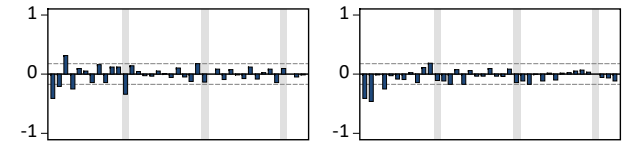
Dependent Variable: DLOG(VIVIN, 1, 12)				
Sample(adjusted): 1990:02 1999:12				
Included observations: 119 after adjusting endpoints				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
MA(1)	-0.675318	0.069979	-9.650227	0.0000
SMA(12)	-0.891754	0.023624	-37.74739	0.0000
S.E. of regression	0.137109	Akaike info criterion	-1.119418	
Sum squared resid	2.199467	Schwarz criterion	-1.072710	
Log likelihood	68.60538	Durbin-Watson stat	1.923266	

$$\nabla \nabla_{12} \ln y_t = (1 - 0.6753B) (1 - 0.8918B^{12}) \hat{a}_t,$$

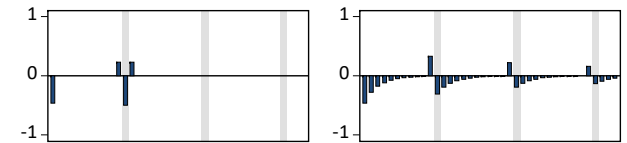
(0.0700) (0.0236)

$n = 119, \hat{\sigma}_A = 0.1371, AIC = -1.1194, BIC = -1.0727.$

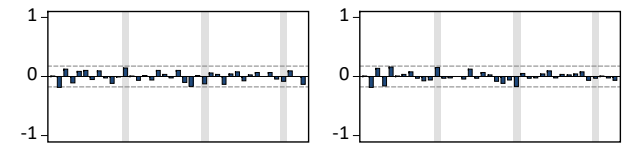
ACF - PACF MUESTRALES SERIE W



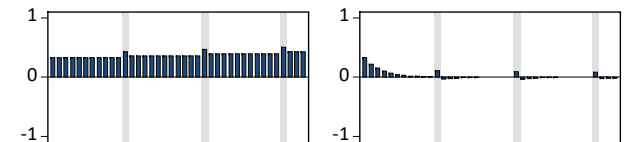
ACF - PACF TEÓRICAS MODELO M2 [W]



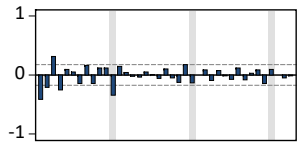
ACF - PACF RESIDUALES MODELO M2



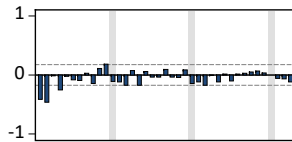
COEFICIENTES PSI - PI MODELO M2 [LOG(Y)]



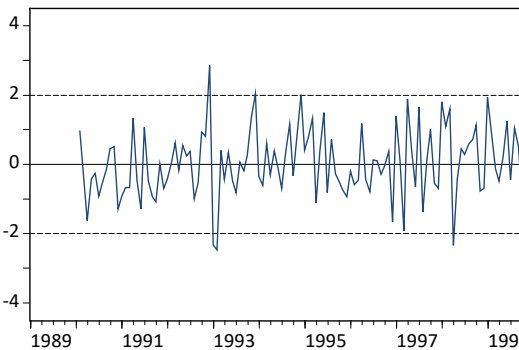
ACF



PACF

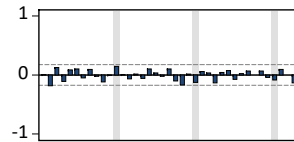


RESIDUOS M2

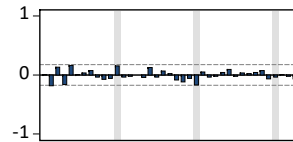


N = 119 - MEDIA = 0.0189 (0.1289) - DT = 0.1351

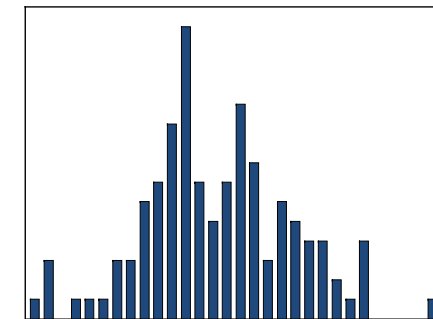
ACF



PACF



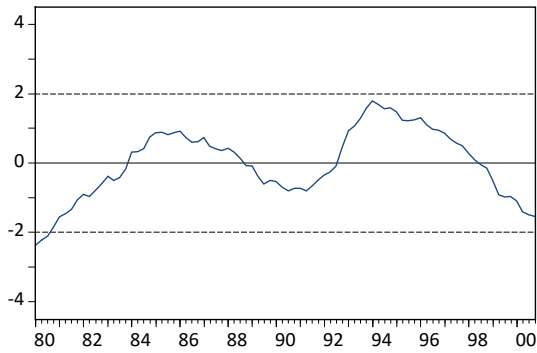
LUJNG-BOX Q(37) = 42.397 (PROB = 0.2495) ARMA = 2



Series: RESIDUOS M2	
Sample	1990:02 1999:12
Observations	119
Mean	0.018948
Median	0.001226
Maximum	0.405127
Minimum	-0.313931
Std. Dev.	0.135194
Skewness	0.079117
Kurtosis	3.088950
Jarque-Bera	0.163377
Probability	0.921559

EJEMPLO 5 - ST20 : Y = TPARO

SERIE Y = TPARO



N = 84 - MEDIA = 18.557 - DT = 3.3472

MODELO M1 [W] MA(1)×MA(1)₄ [Y] IMA(2,1)×IMA(1,1)₄

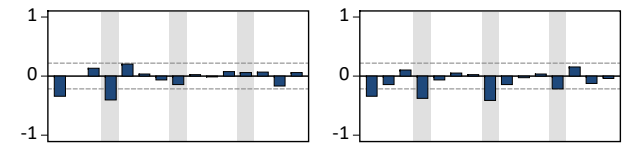
Dependent Variable: D(TPARO, 2, 4)				
Sample(adjusted): 1981:3 2000:4				
Included observations: 78 after adjusting endpoints				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
MA(1)	-0.366535	0.101409	-3.614440	0.0005
SMA(4)	-0.902203	0.039382	-22.90915	0.0000
S.E. of regression	0.378918	Akaike info criterion	0.922314	
Sum squared resid	10.91201	Schwarz criterion	0.982742	
Log likelihood	-33.97025	Durbin-Watson stat	1.977777	

$$\nabla^2 \nabla_4 y_t = (1 - 0.3665B)(1 - 0.9022B^4) \hat{a}_t,$$

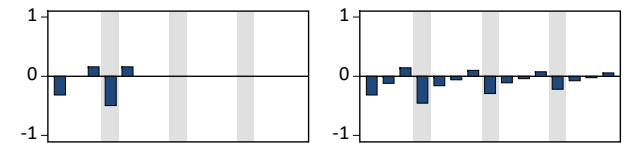
(0.1014) (0.0394)

$$n = 78, \hat{\sigma}_A = 0.3789, AIC = 0.9223, BIC = 0.9827.$$

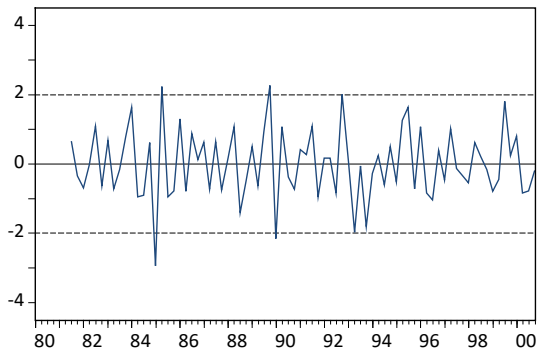
ACF - PACF MUESTRALES SERIE W



ACF - PACF TEÓRICAS MODELO M1 [W]

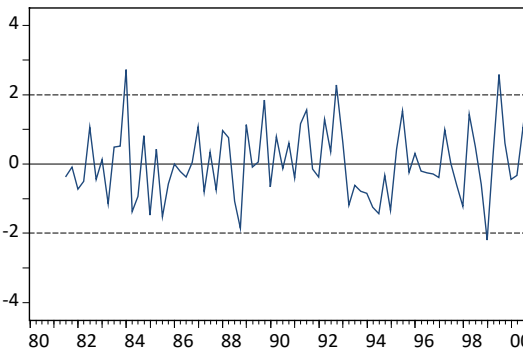


SERIE W = D(Y, 2, 4)



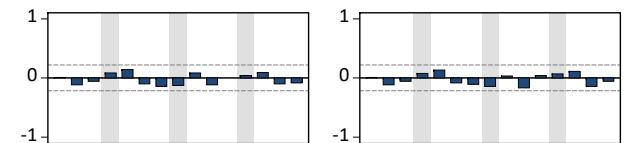
N = 78 - MEDIA = 0.0008 (0.9878) - DT = 0.5206

RESIDUOS M1

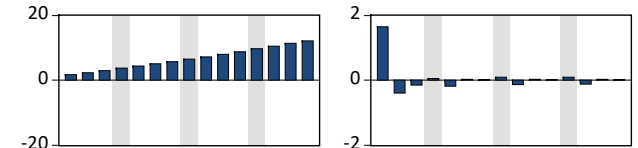


N = 78 - MEDIA = -0.021 (0.6210) - DT = 0.3758

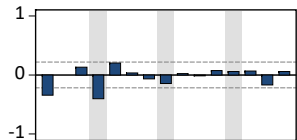
ACF - PACF RESIDUALES MODELO M1



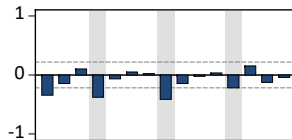
COEFICIENTES PSI - PI MODELO M1 [Y]



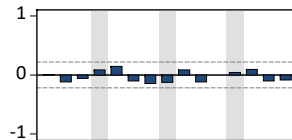
ACF



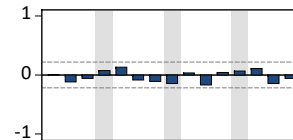
PACF



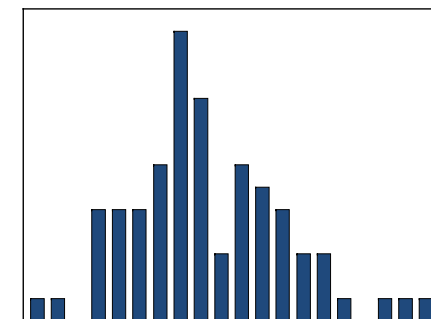
ACF



PACF



LJUNG-BOX Q(13) = 12.681 (PROB = 0.4727) ARMA = 2



Series: RESIDUOS M1	
Sample 1981:3 2000:4	
Observations 78	
Mean	-0.021124
Median	-0.083196
Maximum	1.002727
Minimum	-0.847173
Std. Dev.	0.375849
Skewness	0.451928
Kurtosis	3.126850
Jarque-Bera	2.707405
Probability	0.258282