The SAS System

The AUTOREG Procedure

Dependent Variable	return

The SAS System

The AUTOREG Procedure

Ordinary Least Squares Estimates			
SSE	0.64491032	**DFE**	1509
MSE	0.0004274	**Root MSE**	0.02067
SBC	-7422.8343	**AIC**	-7428.1541
MAE	0.01447432	**AICC**	-7428.1515
MAPE	115.633514	**HQC**	-7426.1729
Durbin-Watson	2.2221	**Total R-Square**	0.0000

Parameter Estimates

Variable	DF	Estimate	Standard Error	t Value	Approx Pr > |t|
Intercept	1	0.001001	0.000532	1.88	0.0600

Algorithm converged.

The SAS System

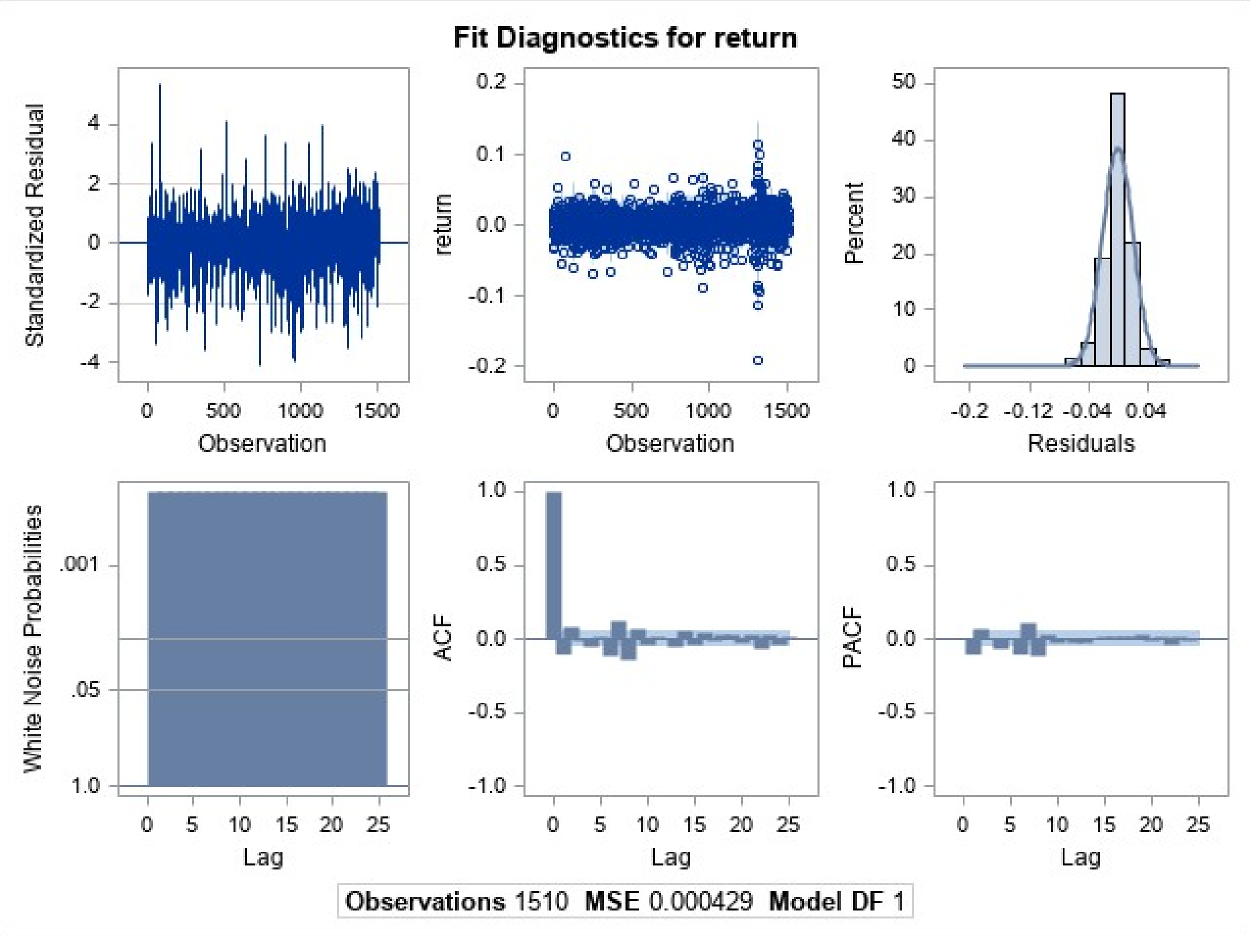
The AUTOREG Procedure

GARCH Estimates			
SSE	0.64295717	Observations	1510
MSE	0.0004258	Uncond Var	.
Log Likelihood	3875.5305	Total R-Square	0.0030
SBC	-7714.4617	AIC	-7741.061
MAE	0.01445365	AICC	-7741.0211
MAPE	119.766191	HQC	-7731.1551
		Normality Test	243.4870
		Pr > ChiSq	<.0001

Parameter Estimates					
Variable	DF	Estimate	Standard Error	t Value	Approx Pr > |t|
Intercept	1	-0.001784	0.002310	-0.77	0.4400
ARCH0	1	0.0000366	7.1267E-6	5.14	<.0001
ARCH1	1	0.1264	0.0186	6.81	<.0001
GARCH1	1	0.7776	0.0323	24.04	<.0001
DELTA	1	0.1617	0.1303	1.24	0.2147

The SAS System

The AUTOREG Procedure



The SAS System

The AUTOREG Procedure

Dependent Variable	return

The SAS System

The AUTOREG Procedure

Ordinary Least Squares Estimates			
SSE	0.64491032	DFE	1509
MSE	0.0004274	Root MSE	0.02067
SBC	-7422.8343	AIC	-7428.1541
MAE	0.01447432	AICC	-7428.1515
MAPE	115.633514	HQC	-7426.1729
Durbin-Watson	2.2221	Total R-Square	0.0000

Parameter Estimates

Variable	DF	Estimate	Standard Error	t Value	Approx Pr > |t|
Intercept	1	0.001001	0.000532	1.88	0.0600

WARNING: Optimization cannot improve the function value.

The SAS System

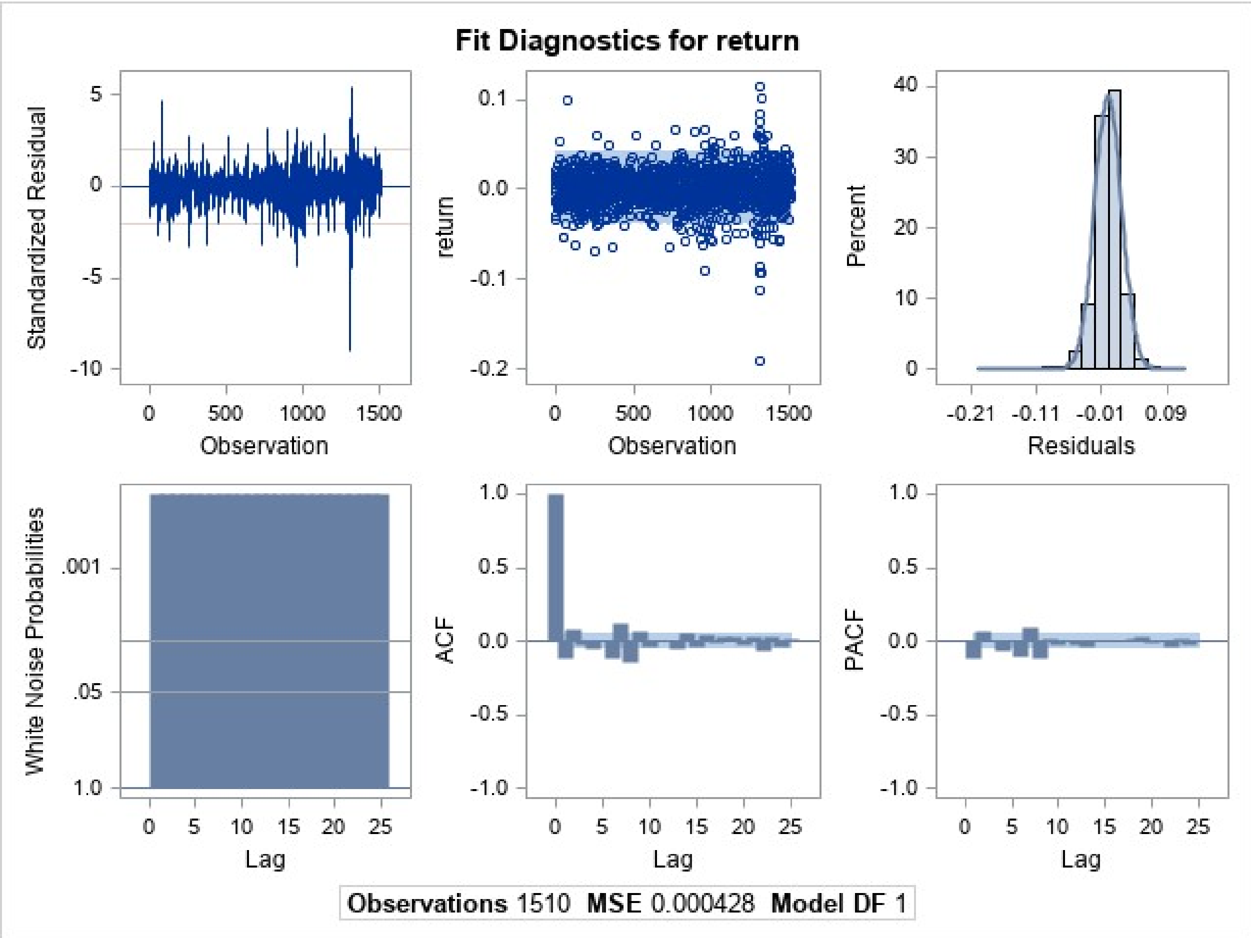
The AUTOREG Procedure

GARCH Estimates			
SSE	0.64491038	Observations	1510
MSE	0.0004271	Uncond Var	.
Log Likelihood	3721.95121	Total R-Square	.
SBC	-7421.9428	AIC	-7437.9024
MAE	0.01447408	AICC	-7437.8865
MAPE	115.757242	HQC	-7431.9589
		Normality Test	3427.6785
		Pr > ChiSq	<.0001

Parameter Estimates					
Variable	DF	Estimate	Standard Error	t Value	Approx Pr > |t|
Intercept	1	0.001008	0.0873	0.01	0.9908
ARCH0	1	0.000423	0.000377	1.12	0.2624
ARCH1	1	0.001743	0.002933	0.59	0.5524
ARCH2	1	0.002134	0.002621	0.81	0.4156
GARCH1	1	0	1.0238	0.00	1.0000
GARCH2	1	1.1012E-6	0.4407	0.00	1.0000
DELTA	1	1.2055E-6	4.2307	0.00	1.0000

The SAS System

The AUTOREG Procedure



The SAS System

The AUTOREG Procedure

Dependent Variable	return

The SAS System

The AUTOREG Procedure

Ordinary Least Squares Estimates			
SSE	0.64491032	DFE	1509
MSE	0.0004274	Root MSE	0.02067
SBC	-7422.8343	AIC	-7428.1541
MAE	0.01447432	AICC	-7428.1515
MAPE	115.633514	HQC	-7426.1729
Durbin-Watson	2.2221	Total R-Square	0.0000

Parameter Estimates

Variable	DF	Estimate	Standard Error	t Value	Approx Pr > |t|
Intercept	1	0.001001	0.000532	1.88	0.0600

ERROR: Convergence not attained in 50 iterations. Interpret the estimates with care.

The SAS System

The AUTOREG Procedure

GARCH Estimates			
SSE	0.64327642	Observations	1510
MSE	0.0004260	Uncond Var	.
Log Likelihood	3880.73108	Total R-Square	0.0025
SBC	-7717.543	AIC	-7749.4622
MAE	0.0144707	AICC	-7749.4063
MAPE	127.891295	HQC	-7737.5751
		Normality Test	234.2855
		Pr > ChiSq	<.0001

Parameter Estimates					
Variable	DF	Estimate	Standard Error	t Value	Approx Pr > |t|
Intercept	1	-0.003870	0.002222	-1.74	0.0816
ARCH0	1	0.0000555	0.0000134	4.14	<.0001
ARCH1	1	0.1452	0.0240	6.04	<.0001
ARCH2	1	0.0734	0.0234	3.14	0.0017
ARCH3	1	0.002921	0.0259	0.11	0.9101
GARCH1	1	-0.0804	0.0754	-1.07	0.2860
GARCH2	1	0.0514	0.0730	0.70	0.4810
GARCH3	1	0.6599	0.0684	9.65	<.0001
DELTA	1	0.2859	0.1253	2.28	0.0225

The SAS System

The AUTOREG Procedure