ANALYSIS OF USDA HISTORICAL GRAIN PRICE DATA
CONTENTS OF GRAINS DATASET

The CONTENTS Procedure

Data Set Name	HOME.GRAINS	**Observations**	571
Member Type	DATA	**Variables**	16
Engine	V9	**Indexes**	0
Created	04/25/2022 21:34:52	**Observation Length**	160
Last Modified	04/25/2022 21:34:52	**Deleted Observations**	0
Protection		**Compressed**	NO
Data Set Type		**Sorted**	YES
Label			
Data Representation	SOLARIS_X86_64, LINUX_X86_64, ALPHA_TRU64, LINUX_IA64		
Encoding	utf-8 Unicode (UTF-8)		

Engine/Host Dependent Information	
Data Set Page Size	131072
Number of Data Set Pages	1
First Data Page	1
Max Obs per Page	818
Obs in First Data Page	571
Number of Data Set Repairs	0
Filename	/home/u59465388/SAS-Grain-Prices/grains.sas7bdat
Release Created	9.0401M6
Host Created	Linux
Inode Number	4409550049
Access Permission	rw-r--r--
Owner Name	u59465388
File Size	256KB
File Size (bytes)	262144

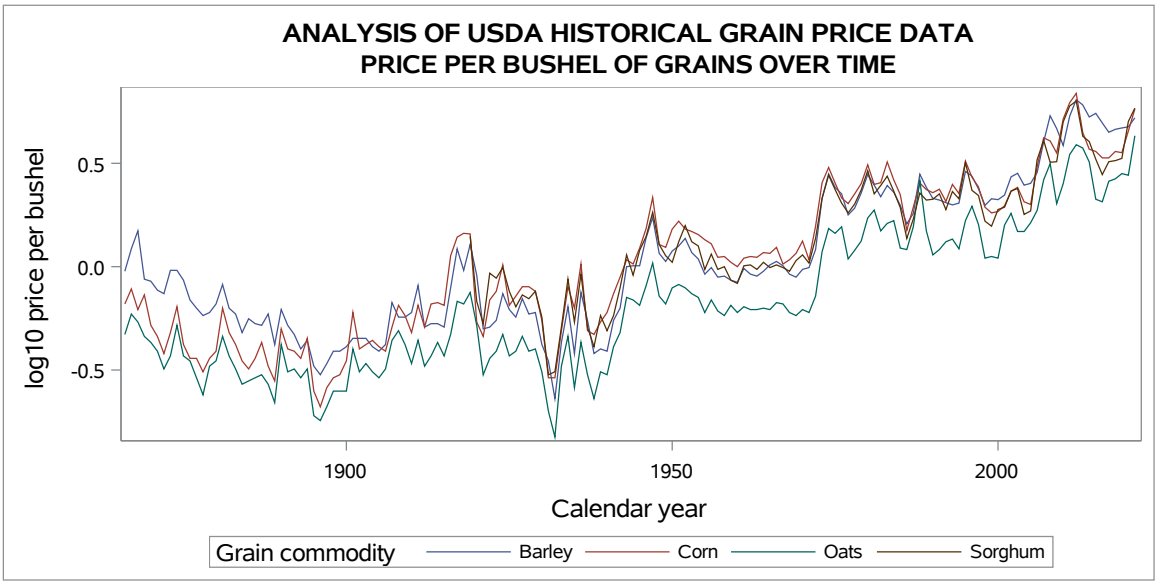
Alphabetic List of Variables and Attributes				
#	**Variable**	**Type**	**Len**	**Label**
3	ACR	Num	8	Acerage (M)
1	GRN	Char	8	Grain commodity
4	HVT	Num	8	Acres harvested (M)
12	INFL	Num	8	Rate of inflation
8	LNR	Num	8	Loan rate per bushel
10	LPE	Num	8	log10 price per bushel

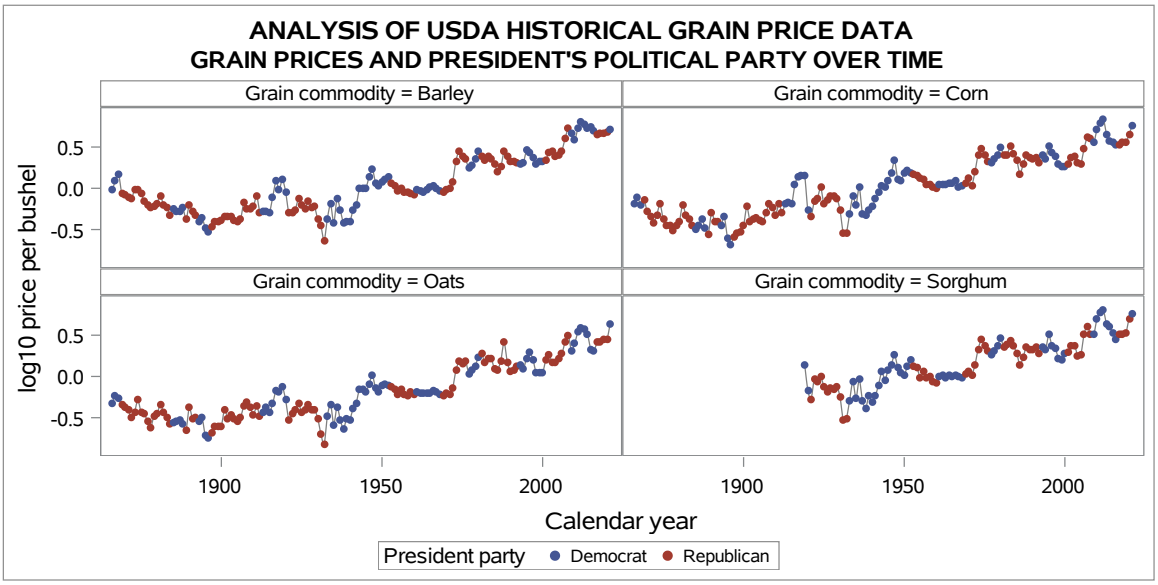
Job run by Zane Billings on 26APR22 at 01:34

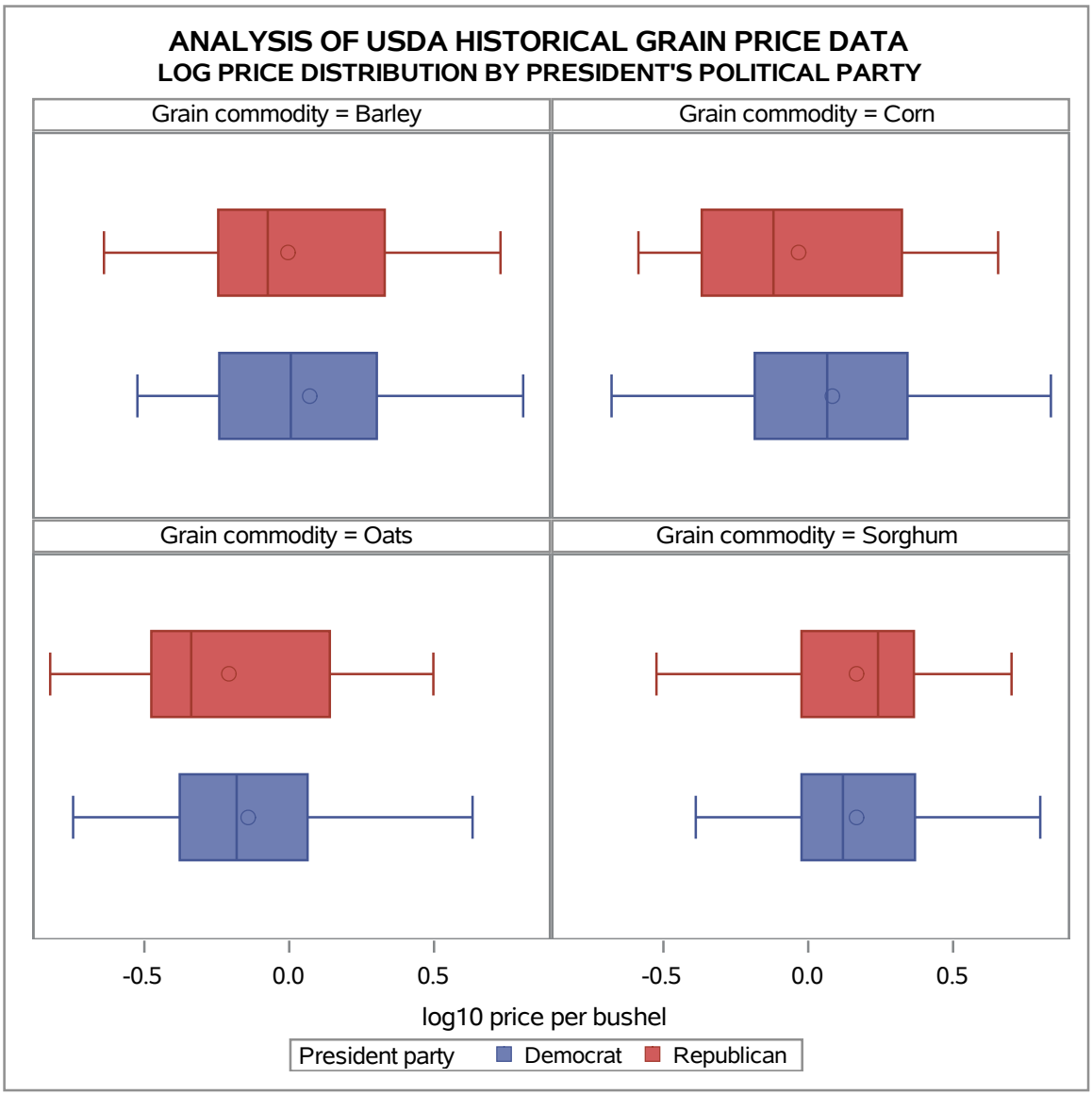
The CONTENTS Procedure

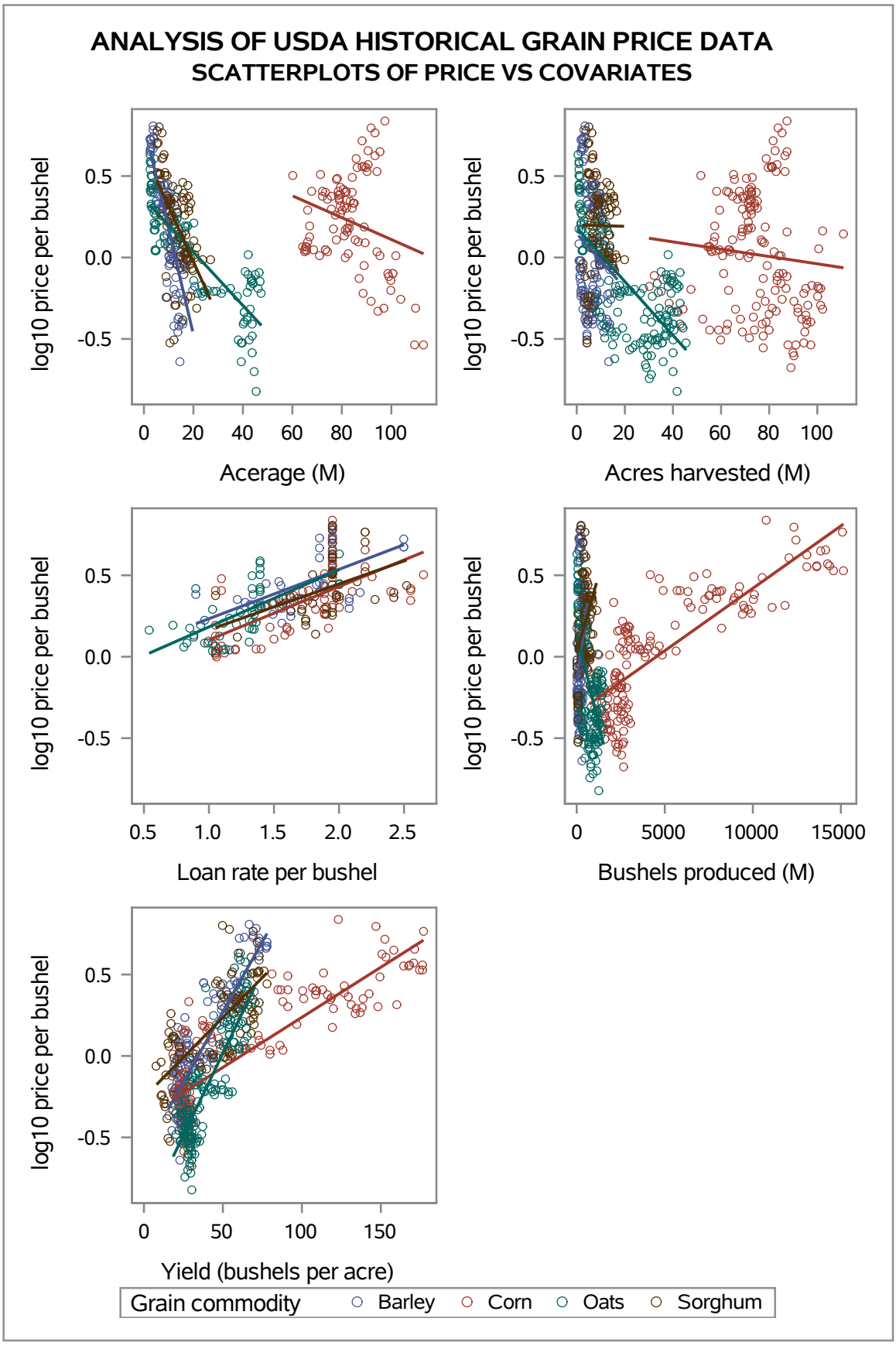
Alphabetic List of Variables and Attributes				
#	**Variable**	**Type**	**Len**	**Label**
15	PARTY	Char	25	President party
7	PCE	Num	8	Price per bushel
9	PCT	Num	8	Pct change in price
5	PRD	Num	8	Bushels produced (M)
14	PRES	Char	20	President name
13	PWR	Num	8	Buying power
16	TEMP	Num	8	Temperature diff. (deg. C)
11	VALUE	Num	8	Adjusted value
2	YEAR	Num	8	Calendar year
6	YLD	Num	8	Yield (bushels per acre)

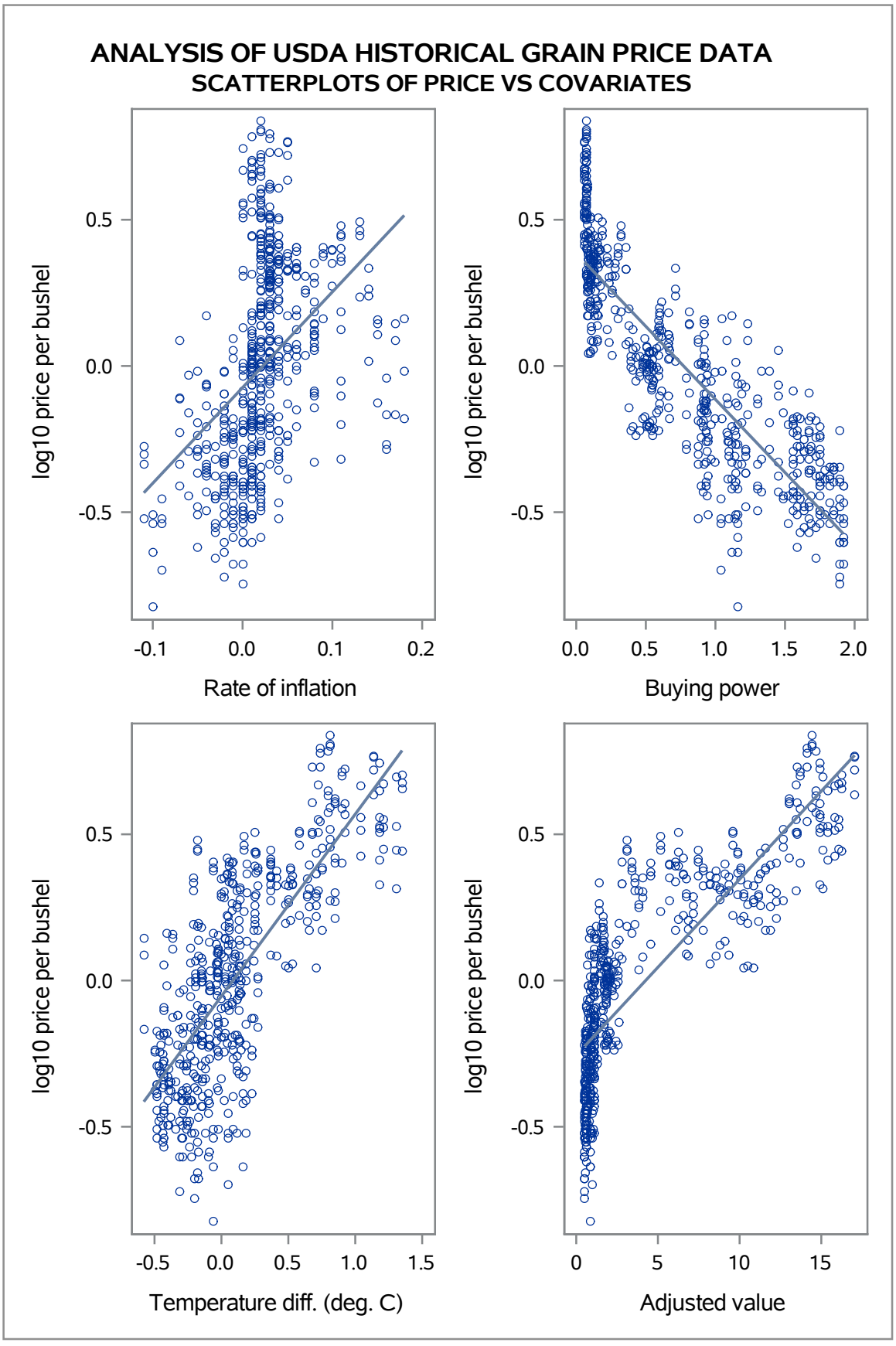
Sort Information	
Sortedby	GRN YEAR
Validated	YES
Character Set	ASCII

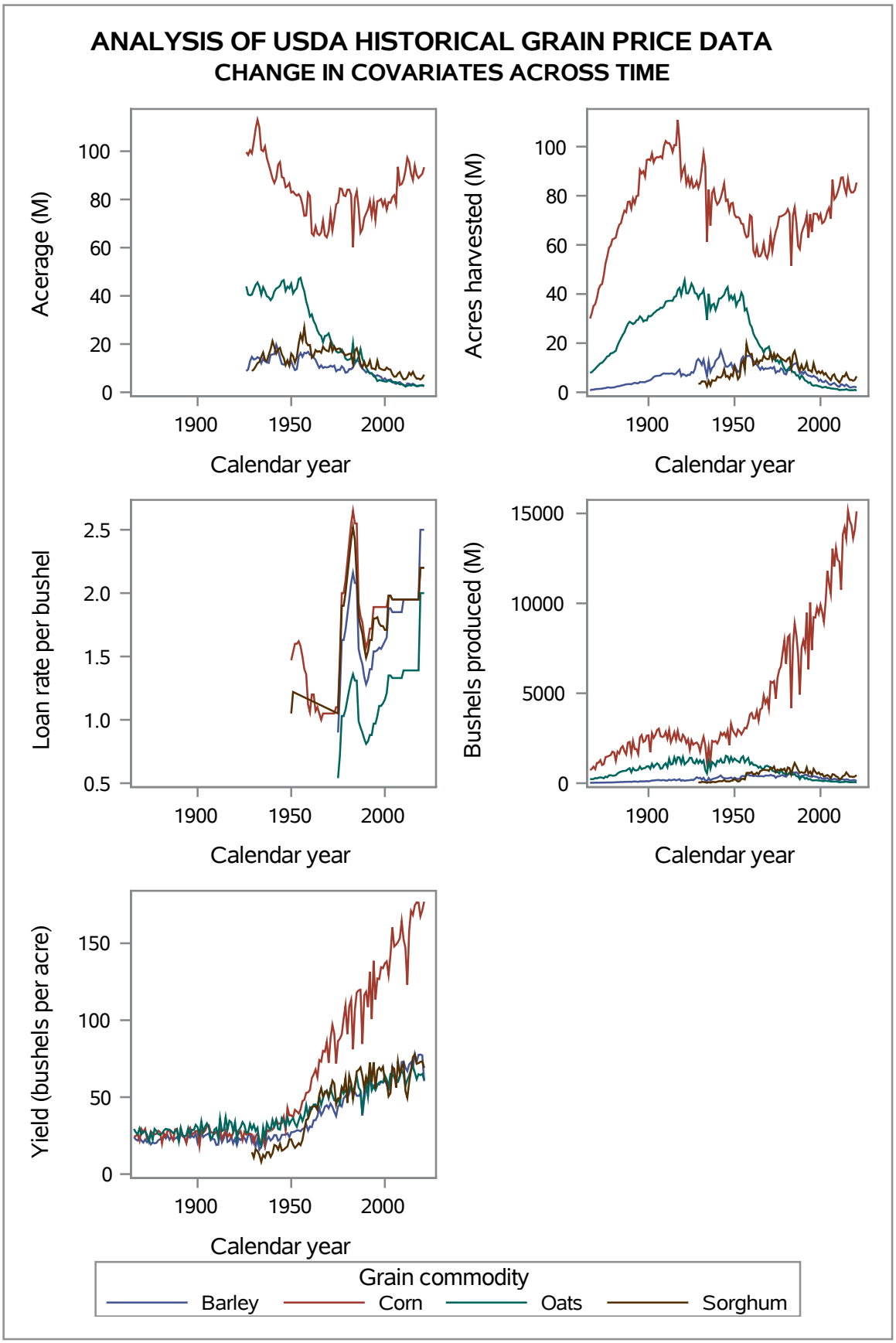

ANALYSIS OF USDA HISTORICAL GRAIN PRICE DATA
PRICE PER BUSHEL OF GRAINS OVER TIME
log10 price per bushel
0.5
0.0
-0.5
1900
1950
2000
Calendar year
Grain commodity
Barley
Corn
Oats
Sorghum

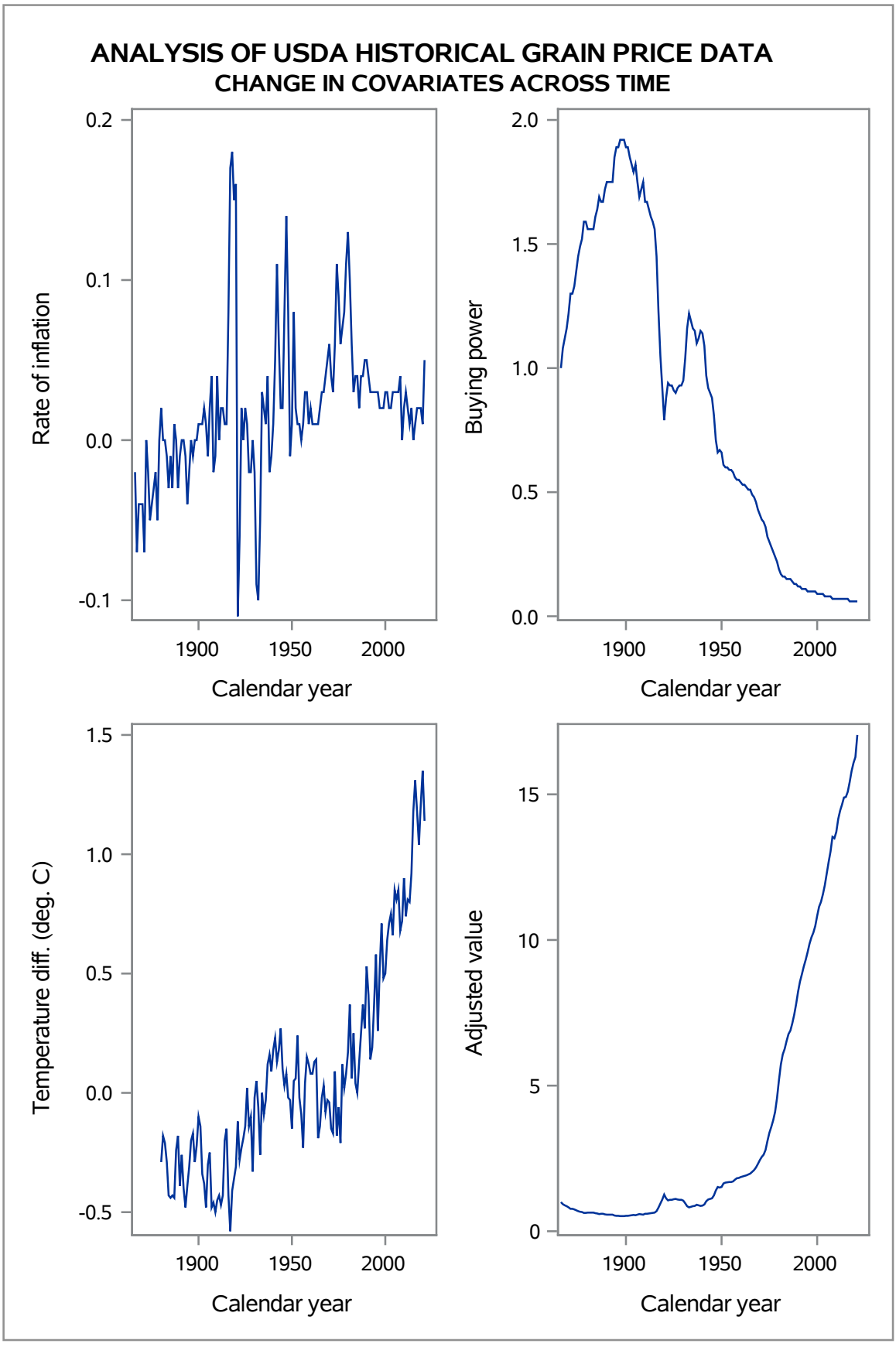

ANALYSIS OF USDA HISTORICAL GRAIN PRICE DATA
GRAIN PRICES AND PRESIDENT'S POLITICAL PARTY OVER TIME
Grain commodity = Barley
Grain commodity = Corn
Grain commodity = Oats
Grain commodity = Sorghum
log10 price per bushel
0.5
0.0
-0.5
1900
1950
2000
Calendar year
President party
Democrat
Republican


ANALYSIS OF USDA HISTORICAL GRAIN PRICE DATA
LOG PRICE DISTRIBUTION BY PRESIDENT'S POLITICAL PARTY
Grain commodity = Barley
Grain commodity = Corn
Grain commodity = Oats
Grain commodity = Sorghum
-0.5
0.0
0.5
-0.5
0.0
0.5
log10 price per bushel
President party
Democrat
Republican


ANALYSIS OF USDA HISTORICAL GRAIN PRICE DATA
SCATTERPLOTS OF PRICE VS COVARIATES
log10 price per bushel
0.5
0.0
-0.5
0
20
40
60
80
100
Acerage (M)
Acres harvested (M)
0.5
1.0
1.5
2.0
2.5
Loan rate per bushel
5000
10000
15000
Bushels produced (M)
50
100
150
Yield (bushels per acre)
Grain commodity
Barley
Corn
Oats
Sorghum


ANALYSIS OF USDA HISTORICAL GRAIN PRICE DATA
SCATTERPLOTS OF PRICE VS COVARIATES
log10 price per bushel
0.5
0.0
-0.5
-0.1
0.0
0.1
0.2
Rate of inflation
log10 price per bushel
0.5
0.0
-0.5
0.0
0.5
1.0
1.5
2.0
Buying power
log10 price per bushel
0.5
0.0
-0.5
-0.5
0.0
0.5
1.0
1.5
Temperature diff. (deg. C)
log10 price per bushel
0.5
0.0
-0.5
0
5
10
15
Adjusted value


ANALYSIS OF USDA HISTORICAL GRAIN PRICE DATA
CHANGE IN COVARIATES ACROSS TIME
Acerage (M)
Acres harvested (M)
Loan rate per bushel
Bushels produced (M)
Yield (bushels per acre)
Calendar year
1900
1950
2000
Grain commodity
Barley
Corn
Oats
Sorghum


ANALYSIS OF USDA HISTORICAL GRAIN PRICE DATA
CHANGE IN COVARIATES ACROSS TIME
Rate of inflation
0.2
0.1
0.0
-0.1
1900
1950
2000
Calendar year
Buying power
2.0
1.5
1.0
0.5
0.0
1900
1950
2000
Calendar year
Temperature diff. (deg. C)
1.5
1.0
0.5
0.0
-0.5
1900
1950
2000
Calendar year
Adjusted value
15
10
5
0
1900
1950
2000
Calendar year

The UNIVARIATE Procedure
Variable: LPE (log10 price per bushel)
GRN = Barley

Moments			
N	156	Sum Weights	156
Mean	0.02934465	Sum Observations	4.57776484
Std Deviation	0.34244617	Variance	0.11726938
Skewness	0.49208948	Kurtosis	-0.6915247
Uncorrected SS	18.3110869	Corrected SS	18.176754
Coeff Variation	1166.98006	Std Error Mean	0.02741764

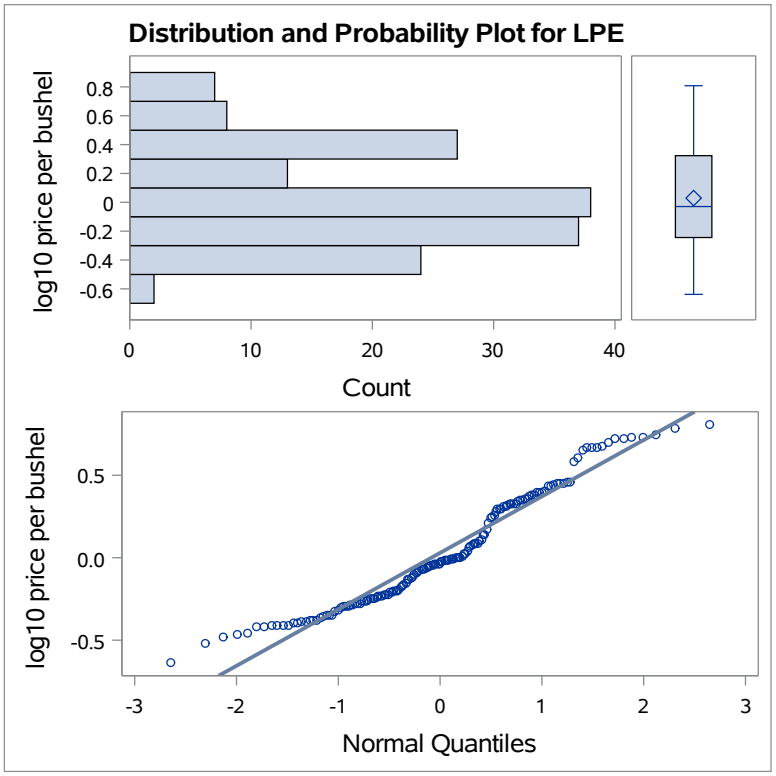
Basic Statistical Measures			
Location		Variability	
Mean	0.02934	Std Deviation	0.34245
Median	-0.02924	Variance	0.11727
Mode	-0.40894	Range	1.44648
		Interquartile Range	0.56738

Tests for Location: Mu0=0				
Test	Statistic		p Value	
Student's t	t	1.070284	Pr > |t|	0.2862
Sign	M	-9.5	Pr >= |M|	0.1480
Signed Rank	S	262	Pr >= |S|	0.6412

Quantiles (Definition 5)	
Level	Quantile
100% Max	0.8082110
99%	0.7824726
95%	0.6954817
90%	0.4608978
75% Q3	0.3232509
50% Median	-0.0292443
25% Q1	-0.2441251
10%	-0.3767507
5%	-0.4089354
1%	-0.5228787
0% Min	-0.6382722

The UNIVARIATE Procedure
Variable: LPE (log10 price per bushel)
GRN = Barley

Extreme Observations			
Lowest		Highest	
Value	Obs	Value	Obs
-0.638272	67	0.728354	146
-0.522879	31	0.729974	143
-0.481486	30	0.741939	150
-0.468521	32	0.782473	148
-0.455932	66	0.808211	147



The UNIVARIATE Procedure
Variable: LPE (log10 price per bushel)
GRN = Corn

Moments			
N	156	Sum Weights	156
Mean	0.01785547	Sum Observations	2.78545281
Std Deviation	0.36155338	Variance	0.13072085
Skewness	0.16806346	Kurtosis	-0.9939676
Uncorrected SS	20.3114672	Corrected SS	20.2617316
Coeff Variation	2024.88901	Std Error Mean	0.02894744

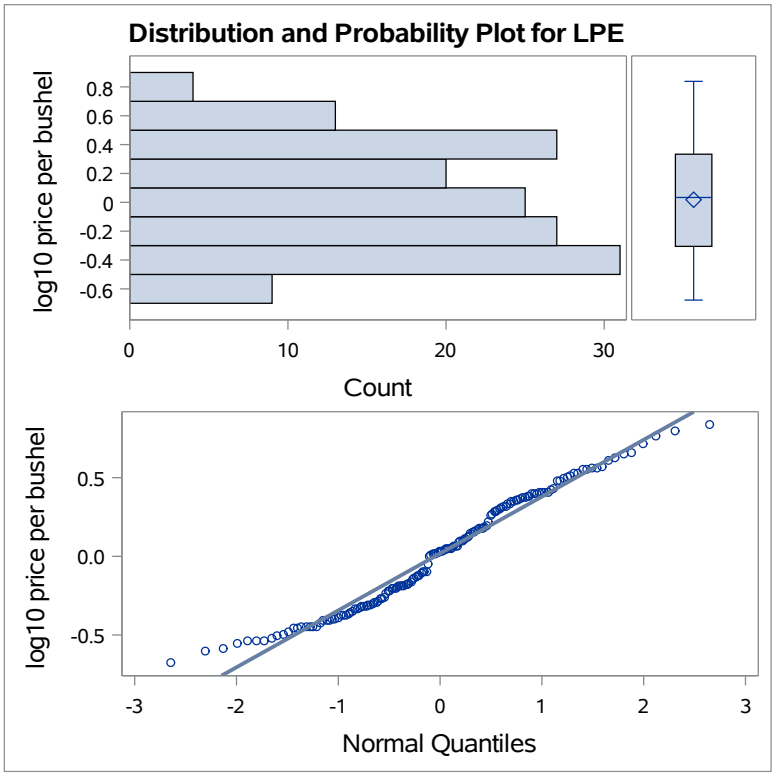
Basic Statistical Measures			
Location		Variability	
Mean	0.01786	Std Deviation	0.36155
Median	0.03342	Variance	0.13072
Mode	-0.44370	Range	1.51600
		Interquartile Range	0.63886

Tests for Location: Mu0=0				
Test	Statistic		p Value	
Student's t	t	0.616824	Pr > |t|	0.5383
Sign	M	6.5	Pr >= |M|	0.3351
Signed Rank	S	218.5	Pr >= |S|	0.6976

Quantiles (Definition 5)	
Level	Quantile
100% Max	0.8382192
99%	0.7937904
95%	0.6085260
90%	0.5105450
75% Q3	0.3334461
50% Median	0.0334238
25% Q1	-0.3054170
10%	-0.4436975
5%	-0.5228787
1%	-0.6020600
0% Min	-0.6777807

The UNIVARIATE Procedure
Variable: LPE (log10 price per bushel)
GRN = Corn

Extreme Observations			
Lowest		Highest	
Value	Obs	Value	Obs
-0.677781	187	0.656098	311
-0.602060	186	0.714330	301
-0.585027	188	0.763428	312
-0.552842	180	0.793790	302
-0.537602	223	0.838219	303



The UNIVARIATE Procedure
Variable: LPE (log10 price per bushel)
GRN = Oats

Moments			
N	156	Sum Weights	156
Mean	-0.1786223	Sum Observations	-27.865073
Std Deviation	0.33844514	Variance	0.11454511
Skewness	0.50076016	Kurtosis	-0.6999746
Uncorrected SS	22.7318144	Corrected SS	17.754492
Coeff Variation	-189.47534	Std Error Mean	0.0270973

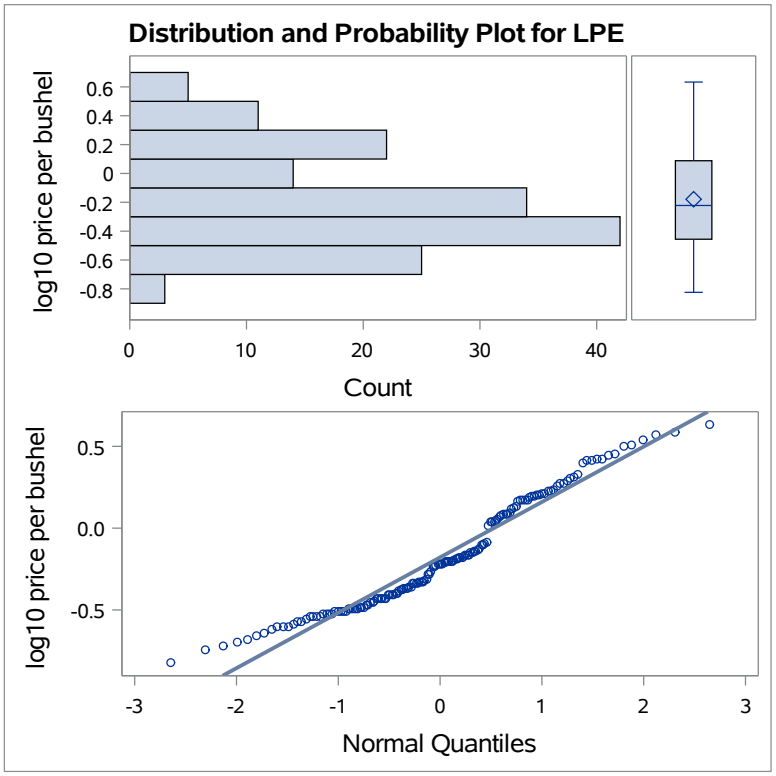
Basic Statistical Measures			
Location		Variability	
Mean	-0.17862	Std Deviation	0.33845
Median	-0.22185	Variance	0.11455
Mode	-0.43180	Range	1.45738
		Interquartile Range	0.54406

Tests for Location: Mu0=0				
Test	Statistic		p Value	
Student's t	t	-6.59188	Pr > |t|	<.0001
Sign	M	-28	Pr >= |M|	<.0001
Signed Rank	S	-3325	Pr >= |S|	<.0001

Quantiles (Definition 5)	
Level	Quantile
100% Max	0.6334685
99%	0.5899496
95%	0.4424798
90%	0.3053514
75% Q3	0.0881325
50% Median	-0.2218487
25% Q1	-0.4559320
10%	-0.5376020
5%	-0.6197888
1%	-0.7447275
0% Min	-0.8239087

The UNIVARIATE Procedure
Variable: LPE (log10 price per bushel)
GRN = Oats

Extreme Observations			
Lowest		Highest	
Value	Obs	Value	Obs
-0.823909	379	0.506505	461
-0.744727	343	0.542825	458
-0.721246	342	0.574031	460
-0.698970	378	0.589950	459
-0.677781	344	0.633468	468



The UNIVARIATE Procedure
Variable: LPE (log10 price per bushel)
GRN = Sorghum

Moments			
N	103	Sum Weights	103
Mean	0.16719027	Sum Observations	17.2205977
Std Deviation	0.28964023	Variance	0.08389146
Skewness	-0.0109097	Kurtosis	-0.4297184
Uncorrected SS	11.4360457	Corrected SS	8.55692937
Coeff Variation	173.239887	Std Error Mean	0.0285391

Basic Statistical Measures			
Location		Variability	
Mean	0.16719	Std Deviation	0.28964
Median	0.14613	Variance	0.08389
Mode	-0.01323	Range	1.32428
		Interquartile Range	0.38776

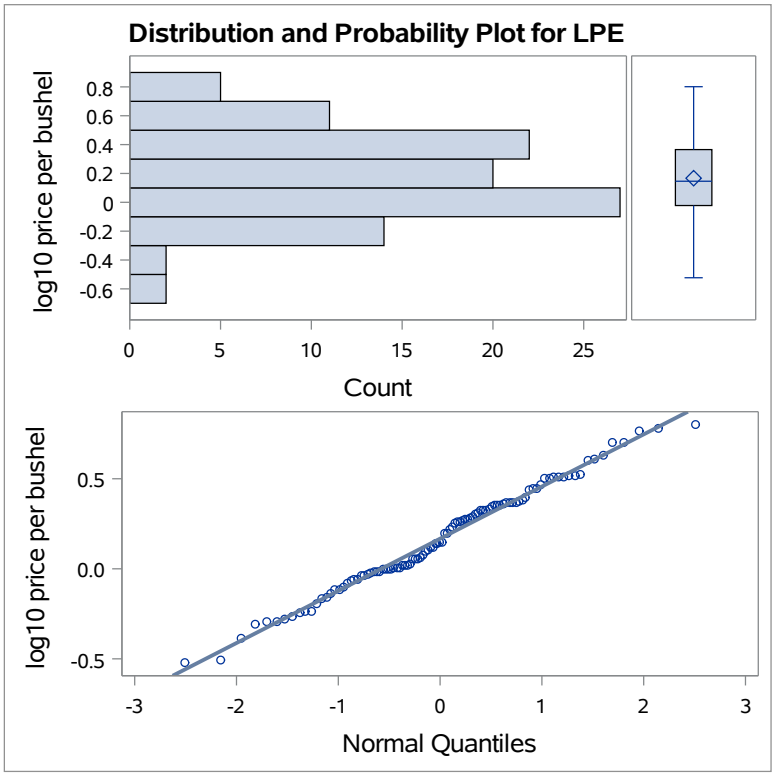
Note: The mode displayed is the smallest of 2 modes with a count of 3.

Tests for Location: Mu0=0				
Test	Statistic		p Value	
Student's t	t	5.858288	Pr > |t|	<.0001
Sign	M	19	Pr >= |M|	0.0002
Signed Rank	S	1508.5	Pr >= |S|	<.0001

Quantiles (Definition 5)	
Level	Quantile
100% Max	0.8014037
99%	0.7774268
95%	0.6314438
90%	0.5171959
75% Q3	0.3654880
50% Median	0.1461280
25% Q1	-0.0222764
10%	-0.2365720
5%	-0.2924298
1%	-0.5086383
0% Min	-0.5228787

The UNIVARIATE Procedure
Variable: LPE (log10 price per bushel)
GRN = Sorghum

Extreme Observations			
Lowest		Highest	
Value	Obs	Value	Obs
-0.522879	481	0.700704	560
-0.508638	482	0.702431	570
-0.387216	488	0.767156	571
-0.309804	490	0.777427	561
-0.292430	487	0.801404	562



The CORR Procedure

Grain commodity=Barley

10 Variables:	LPE	ACR	HVT	LNR	PRD	YLD	INFL	PWR	TEMP	VALUE

Simple Statistics

Variable	N	Mean	Std Dev	Median	Minimum	Maximum	Label
LPE	156	0.02934	0.34245	-0.02924	-0.63827	0.80821	log10 price per bushel
ACR	96	9.80260	4.31682	10.20500	2.49000	19.69000	Acerage (M)
HVT	156	7.05577	3.91155	7.27000	0.75000	16.96000	Acres harvested (M)
LNR	47	1.76660	0.32874	1.85000	0.90000	2.50000	Loan rate per bushel
PRD	156	240.32865	144.25389	218.59000	18.10000	608.53000	Bushels produced (M)
YLD	156	35.95103	17.45752	26.15000	15.90000	77.90000	Yield (bushels per acre)
INFL	156	0.01897	0.04584	0.02000	-0.11000	0.18000	Rate of inflation
PWR	156	0.85154	0.63364	0.88000	0.06000	1.92000	Buying power
TEMP	142	0.07908	0.43795	-0.01000	-0.58000	1.35000	Temperature diff. (deg. C)
VALUE	156	3.85526	4.77324	1.13000	0.52000	17.04000	Adjusted value

Pearson Correlation Coefficients
Prob > |r| under H0: Rho=0
Number of Observations

	LPE	ACR	HVT	LNR	PRD	YLD	INFL	PWR	TEMP	VALUE
LPE **log10 price per bushel**	1.00000 156	-0.83160 <.0001 96	-0.19061 0.0172 156	0.57832 <.0001 47	0.34251 <.0001 156	0.87753 <.0001 156	0.38697 <.0001 156	-0.85844 <.0001 156	0.80330 <.0001 142	0.87771 <.0001 156
ACR **Acerage (M)**	-0.83160 <.0001 96	1.00000 96	0.98160 <.0001 96	-0.44658 0.0017 47	0.46113 <.0001 96	-0.86785 <.0001 96	-0.06361 0.5381 96	0.75187 <.0001 96	-0.79342 <.0001 96	-0.89244 <.0001 96
HVT **Acres harvested (M)**	-0.19061 0.0172 156	0.98160 <.0001 96	1.00000 156	-0.45137 0.0015 47	0.73833 <.0001 156	-0.19599 0.0142 156	0.29331 0.0002 156	-0.19291 0.0158 156	-0.26360 0.0015 142	-0.30081 0.0001 156
LNR **Loan rate per bushel**	0.57832 <.0001 47	-0.44658 0.0017 47	-0.45137 0.0015 47	1.00000 47	-0.39747 0.0057 47	0.56827 <.0001 47	-0.25302 0.0862 47	-0.49403 0.0004 47	0.59275 <.0001 47	0.58272 <.0001 47
PRD **Bushels produced (M)**	0.34251 <.0001 156	0.46113 <.0001 96	0.73833 <.0001 156	-0.39747 0.0057 47	1.00000 156	0.41031 <.0001 156	0.42965 <.0001 156	-0.66293 <.0001 156	0.19077 0.0230 142	0.22018 0.0057 156
YLD **Yield (bushels per acre)**	0.87753 <.0001 156	-0.86785 <.0001 96	-0.19599 0.0142 156	0.56827 <.0001 47	0.41031 <.0001 156	1.00000 156	0.24899 0.0017 156	-0.81989 <.0001 156	0.85221 <.0001 142	0.94836 <.0001 156
INFL **Rate of inflation**	0.38697 <.0001 156	-0.06361 0.5381 96	0.29331 0.0002 156	-0.25302 0.0862 47	0.42965 <.0001 156	0.24899 0.0017 156	1.00000 156	-0.36552 <.0001 156	0.05425 0.5214 142	0.16130 0.0443 156
PWR **Buying power**	-0.85844 <.0001 156	0.75187 <.0001 96	-0.19291 0.0158 156	-0.49403 0.0004 47	-0.66293 <.0001 156	-0.81989 <.0001 156	-0.36552 <.0001 156	1.00000 156	-0.75610 <.0001 142	-0.76001 <.0001 156

ANALYSIS OF USDA HISTORICAL GRAIN PRICE DATA
BIVARIATE CORRELATIONS ACROSS NUMERICAL VARIABLES

The CORR Procedure

Grain commodity=Barley

Pearson Correlation Coefficients
Prob > |r| under H0: Rho=0
Number of Observations

	LPE	ACR	HVT	LNR	PRD	YLD	INFL	PWR	TEMP	VALUE
TEMP **Temperature diff. (deg. C)**	0.80330 <.0001 142	-0.79342 <.0001 96	-0.26360 0.0015 142	0.59275 <.0001 47	0.19077 0.0230 142	0.85221 <.0001 142	0.05425 0.5214 142	-0.75610 <.0001 142	1.00000 142	0.91319 <.0001 142
VALUE **Adjusted value**	0.87771 <.0001 156	-0.89244 <.0001 96	-0.30081 0.0001 156	0.58272 <.0001 47	0.22018 0.0057 156	0.94836 <.0001 156	0.16130 0.0443 156	-0.76001 <.0001 156	0.91319 <.0001 142	1.00000 156

Spearman Correlation Coefficients
Prob > |r| under H0: Rho=0
Number of Observations

	LPE	ACR	HVT	LNR	PRD	YLD	INFL	PWR	TEMP	VALUE
LPE **log10 price per bushel**	1.00000 156	-0.84740 <.0001 96	-0.10113 0.2091 156	0.56439 <.0001 47	0.41006 <.0001 156	0.74751 <.0001 156	0.54181 <.0001 156	-0.89434 <.0001 156	0.72553 <.0001 142	0.89425 <.0001 156
ACR **Acerage (M)**	-0.84740 <.0001 96	1.00000 96	0.97157 <.0001 96	-0.45494 0.0013 47	0.43882 <.0001 96	-0.84569 <.0001 96	-0.12863 0.2117 96	0.85968 <.0001 96	-0.66783 <.0001 96	-0.85940 <.0001 96
HVT **Acres harvested (M)**	-0.10113 0.2091 156	0.97157 <.0001 96	1.00000 156	-0.46520 0.0010 47	0.77283 <.0001 156	0.01627 0.8402 156	0.36870 <.0001 156	-0.10530 0.1908 156	-0.04681 0.5801 142	0.10502 0.1920 156
LNR **Loan rate per bushel**	0.56439 <.0001 47	-0.45494 0.0013 47	-0.46520 0.0010 47	1.00000 47	-0.44004 0.0020 47	0.51253 0.0002 47	-0.33598 0.0209 47	-0.51468 0.0002 47	0.50440 0.0003 47	0.52498 0.0002 47
PRD **Bushels produced (M)**	0.41006 <.0001 156	0.43882 <.0001 96	0.77283 <.0001 156	-0.44004 0.0020 47	1.00000 156	0.57650 <.0001 156	0.60647 <.0001 156	-0.60027 <.0001 156	0.44532 <.0001 142	0.59968 <.0001 156
YLD **Yield (bushels per acre)**	0.74751 <.0001 156	-0.84569 <.0001 96	0.01627 0.8402 156	0.51253 0.0002 47	0.57650 <.0001 156	1.00000 156	0.46585 <.0001 156	-0.82312 <.0001 156	0.74993 <.0001 142	0.82292 <.0001 156
INFL **Rate of inflation**	0.54181 <.0001 156	-0.12863 0.2117 96	0.36870 <.0001 156	-0.33598 0.0209 47	0.60647 <.0001 156	0.46585 <.0001 156	1.00000 156	-0.50784 <.0001 156	0.30456 0.0002 142	0.50673 <.0001 156
PWR **Buying power**	-0.89434 <.0001 156	0.85968 <.0001 96	-0.10530 0.1908 156	-0.51468 0.0002 47	-0.60027 <.0001 156	-0.82312 <.0001 156	-0.50784 <.0001 156	1.00000 156	-0.84402 <.0001 142	-0.99985 <.0001 156
TEMP **Temperature diff. (deg. C)**	0.72553 <.0001 142	-0.66783 <.0001 96	-0.04681 0.5801 142	0.50440 0.0003 47	0.44532 <.0001 142	0.74993 <.0001 142	0.30456 0.0002 142	-0.84402 <.0001 142	1.00000 142	0.84474 <.0001 142
VALUE **Adjusted value**	0.89425 <.0001 156	-0.85940 <.0001 96	0.10502 0.1920 156	0.52498 0.0002 47	0.59968 <.0001 156	0.82292 <.0001 156	0.50673 <.0001 156	-0.99985 <.0001 156	0.84474 <.0001 142	1.00000 156

The CORR Procedure

Grain commodity=Corn

10 Variables:	LPE	ACR	HVT	LNR	PRD	YLD	INFL	PWR	TEMP	VALUE

Simple Statistics

Variable	N	Mean	Std Dev	Median	Minimum	Maximum	Label
LPE	156	0.01786	0.36155	0.03342	-0.67778	0.83822	log10 price per bushel
ACR	96	83.35083	11.25231	82.21000	60.21000	113.02000	Acerage (M)
HVT	156	74.73481	15.48441	73.85500	30.02000	110.89000	Acres harvested (M)
LNR	71	1.71479	0.43731	1.89000	1.00000	2.65000	Loan rate per bushel
PRD	156	4752	3851	2815	730.81000	15148	Bushels produced (M)
YLD	156	64.30615	49.43043	32.80000	18.20000	177.02000	Yield (bushels per acre)
INFL	156	0.01897	0.04584	0.02000	-0.11000	0.18000	Rate of inflation
PWR	156	0.85154	0.63364	0.88000	0.06000	1.92000	Buying power
TEMP	142	0.07908	0.43795	-0.01000	-0.58000	1.35000	Temperature diff. (deg. C)
VALUE	156	3.85526	4.77324	1.13000	0.52000	17.04000	Adjusted value

Pearson Correlation Coefficients
Prob > |r| under H0: Rho=0
Number of Observations

	LPE	ACR	HVT	LNR	PRD	YLD	INFL	PWR	TEMP	VALUE
LPE **log10 price per bushel**	1.00000 156	-0.26180 0.0100 96	-0.09614 0.2325 156	0.67365 <.0001 71	0.81613 <.0001 156	0.84078 <.0001 156	0.48431 <.0001 156	-0.90964 <.0001 156	0.75982 <.0001 142	0.81163 <.0001 156
ACR **Acerage (M)**	-0.26180 0.0100 96	1.00000 96	0.90457 <.0001 96	0.53180 <.0001 71	-0.03390 0.7430 96	-0.21630 0.0343 96	-0.37479 0.0002 96	0.47602 <.0001 96	0.10676 0.3005 96	-0.00455 0.9649 96
HVT **Acres harvested (M)**	-0.09614 0.2325 156	0.90457 <.0001 96	1.00000 156	0.58833 <.0001 71	0.08932 0.2675 156	-0.07122 0.3769 156	0.15835 0.0483 156	0.26732 0.0007 156	-0.20708 0.0134 142	0.01560 0.8467 156
LNR **Loan rate per bushel**	0.67365 <.0001 71	0.53180 <.0001 71	0.58833 <.0001 71	1.00000 71	0.61316 <.0001 71	0.59751 <.0001 71	0.09388 0.4362 71	-0.71810 <.0001 71	0.53912 <.0001 71	0.63534 <.0001 71
PRD **Bushels produced (M)**	0.81613 <.0001 156	-0.03390 0.7430 96	0.08932 0.2675 156	0.61316 <.0001 71	1.00000 156	0.97992 <.0001 156	0.23663 0.0029 156	-0.76995 <.0001 156	0.88325 <.0001 142	0.97082 <.0001 156
YLD **Yield (bushels per acre)**	0.84078 <.0001 156	-0.21630 0.0343 96	-0.07122 0.3769 156	0.59751 <.0001 71	0.97992 <.0001 156	1.00000 156	0.24634 0.0019 156	-0.83709 <.0001 156	0.86862 <.0001 142	0.95665 <.0001 156
INFL **Rate of inflation**	0.48431 <.0001 156	-0.37479 0.0002 96	0.15835 0.0483 156	0.09388 0.4362 71	0.23663 0.0029 156	0.24634 0.0019 156	1.00000 156	-0.36552 <.0001 156	0.05425 0.5214 142	0.16130 0.0443 156
PWR **Buying power**	-0.90964 <.0001 156	0.47602 <.0001 96	0.26732 0.0007 156	-0.71810 <.0001 71	-0.76995 <.0001 156	-0.83709 <.0001 156	-0.36552 <.0001 156	1.00000 156	-0.75610 <.0001 142	-0.76001 <.0001 156

The CORR Procedure

Grain commodity=Corn

Pearson Correlation Coefficients
Prob > |r| under H0: Rho=0
Number of Observations

	LPE	ACR	HVT	LNR	PRD	YLD	INFL	PWR	TEMP	VALUE
TEMP **Temperature diff. (deg. C)**	0.75982 <.0001 142	0.10676 0.3005 96	-0.20708 0.0134 142	0.53912 <.0001 71	0.88325 <.0001 142	0.86862 <.0001 142	0.05425 0.5214 142	-0.75610 <.0001 142	1.00000 142	0.91319 <.0001 142
VALUE **Adjusted value**	0.81163 <.0001 156	-0.00455 0.9649 96	0.01560 0.8467 156	0.63534 <.0001 71	0.97082 <.0001 156	0.95665 <.0001 156	0.16130 0.0443 156	-0.76001 <.0001 156	0.91319 <.0001 142	1.00000 156

Spearman Correlation Coefficients
Prob > |r| under H0: Rho=0
Number of Observations

	LPE	ACR	HVT	LNR	PRD	YLD	INFL	PWR	TEMP	VALUE
LPE **log10 price per bushel**	1.00000 156	-0.14574 0.1565 96	-0.15603 0.0518 156	0.70504 <.0001 71	0.80958 <.0001 156	0.78472 <.0001 156	0.62132 <.0001 156	-0.91894 <.0001 156	0.75309 <.0001 142	0.91872 <.0001 156
ACR **Acerage (M)**	-0.14574 0.1565 96	1.00000 96	0.89574 <.0001 96	0.62415 <.0001 71	-0.21093 0.0391 96	-0.25852 0.0110 96	-0.33548 0.0008 96	0.25069 0.0138 96	0.07013 0.4972 96	-0.24829 0.0147 96
HVT **Acres harvested (M)**	-0.15603 0.0518 156	0.89574 <.0001 96	1.00000 156	0.69827 <.0001 71	0.05560 0.4906 156	-0.17394 0.0299 156	-0.01754 0.8280 156	0.26899 0.0007 156	-0.31493 0.0001 142	-0.26828 0.0007 156
LNR **Loan rate per bushel**	0.70504 <.0001 71	0.62415 <.0001 71	0.69827 <.0001 71	1.00000 71	0.67343 <.0001 71	0.64216 <.0001 71	0.07610 0.5282 71	-0.65947 <.0001 71	0.61368 <.0001 71	0.66043 <.0001 71
PRD **Bushels produced (M)**	0.80958 <.0001 156	-0.21093 0.0391 96	0.05560 0.4906 156	0.67343 <.0001 71	1.00000 156	0.93603 <.0001 156	0.57987 <.0001 156	-0.82988 <.0001 156	0.73737 <.0001 142	0.83009 <.0001 156
YLD **Yield (bushels per acre)**	0.78472 <.0001 156	-0.25852 0.0110 96	-0.17394 0.0299 156	0.64216 <.0001 71	0.93603 <.0001 156	1.00000 156	0.51623 <.0001 156	-0.86260 <.0001 156	0.80161 <.0001 142	0.86276 <.0001 156
INFL **Rate of inflation**	0.62132 <.0001 156	-0.33548 0.0008 96	-0.01754 0.8280 156	0.07610 0.5282 71	0.57987 <.0001 156	0.51623 <.0001 156	1.00000 156	-0.50784 <.0001 156	0.30456 0.0002 142	0.50673 <.0001 156
PWR **Buying power**	-0.91894 <.0001 156	0.25069 0.0138 96	0.26899 0.0007 156	-0.65947 <.0001 71	-0.82988 <.0001 156	-0.86260 <.0001 156	-0.50784 <.0001 156	1.00000 156	-0.84402 <.0001 142	-0.99985 <.0001 156
TEMP **Temperature diff. (deg. C)**	0.75309 <.0001 142	0.07013 0.4972 96	-0.31493 0.0001 142	0.61368 <.0001 71	0.73737 <.0001 142	0.80161 <.0001 142	0.30456 0.0002 142	-0.84402 <.0001 142	1.00000 142	0.84474 <.0001 142
VALUE **Adjusted value**	0.91872 <.0001 156	-0.24829 0.0147 96	-0.26828 0.0007 156	0.66043 <.0001 71	0.83009 <.0001 156	0.86276 <.0001 156	0.50673 <.0001 156	-0.99985 <.0001 156	0.84474 <.0001 142	1.00000 156

The CORR Procedure

Grain commodity=Oats

10 Variables:	LPE	ACR	HVT	LNR	PRD	YLD	INFL	PWR	TEMP	VALUE

Simple Statistics

Variable	N	Mean	Std Dev	Median	Minimum	Maximum	Label
LPE	156	-0.17862	0.33845	-0.22185	-0.82391	0.63347	log10 price per bushel
ACR	96	22.66292	16.40564	19.30000	2.35000	47.49000	Acerage (M)
HVT	156	21.86167	14.59255	22.17500	0.65000	45.54000	Acres harvested (M)
LNR	47	1.21383	0.30076	1.31000	0.54000	2.00000	Loan rate per bushel
PRD	156	724.40276	442.06888	762.95500	39.84000	1524	Bushels produced (M)
YLD	156	40.28654	14.35811	34.40000	18.50000	70.20000	Yield (bushels per acre)
INFL	156	0.01897	0.04584	0.02000	-0.11000	0.18000	Rate of inflation
PWR	156	0.85154	0.63364	0.88000	0.06000	1.92000	Buying power
TEMP	142	0.07908	0.43795	-0.01000	-0.58000	1.35000	Temperature diff. (deg. C)
VALUE	156	3.85526	4.77324	1.13000	0.52000	17.04000	Adjusted value

Pearson Correlation Coefficients
Prob > |r| under H0: Rho=0
Number of Observations

	LPE	ACR	HVT	LNR	PRD	YLD	INFL	PWR	TEMP	VALUE
LPE **log10 price per bushel**	1.00000 156	-0.84277 <.0001 96	-0.71020 <.0001 156	0.64061 <.0001 47	-0.58945 <.0001 156	0.85487 <.0001 156	0.42936 <.0001 156	-0.87432 <.0001 156	0.79135 <.0001 142	0.87373 <.0001 156
ACR **Acerage (M)**	-0.84277 <.0001 96	1.00000 96	0.99047 <.0001 96	-0.55070 <.0001 47	0.95339 <.0001 96	-0.93733 <.0001 96	-0.19375 0.0586 96	0.91120 <.0001 96	-0.71822 <.0001 96	-0.88988 <.0001 96
HVT **Acres harvested (M)**	-0.71020 <.0001 156	0.99047 <.0001 96	1.00000 156	-0.55939 <.0001 47	0.93554 <.0001 156	-0.75072 <.0001 156	-0.03748 0.6423 156	0.61060 <.0001 156	-0.72039 <.0001 142	-0.77162 <.0001 156
LNR **Loan rate per bushel**	0.64061 <.0001 47	-0.55070 <.0001 47	-0.55939 <.0001 47	1.00000 47	-0.52812 0.0001 47	0.59862 <.0001 47	-0.35766 0.0136 47	-0.60327 <.0001 47	0.73693 <.0001 47	0.73005 <.0001 47
PRD **Bushels produced (M)**	-0.58945 <.0001 156	0.95339 <.0001 96	0.93554 <.0001 156	-0.52812 0.0001 47	1.00000 156	-0.55816 <.0001 156	0.12630 0.1162 156	0.41932 <.0001 156	-0.68345 <.0001 142	-0.72393 <.0001 156
YLD **Yield (bushels per acre)**	0.85487 <.0001 156	-0.93733 <.0001 96	-0.75072 <.0001 156	0.59862 <.0001 47	-0.55816 <.0001 156	1.00000 156	0.33684 <.0001 156	-0.86643 <.0001 156	0.79697 <.0001 142	0.87923 <.0001 156
INFL **Rate of inflation**	0.42936 <.0001 156	-0.19375 0.0586 96	-0.03748 0.6423 156	-0.35766 0.0136 47	0.12630 0.1162 156	0.33684 <.0001 156	1.00000 156	-0.36552 <.0001 156	0.05425 0.5214 142	0.16130 0.0443 156
PWR **Buying power**	-0.87432 <.0001 156	0.91120 <.0001 96	0.61060 <.0001 156	-0.60327 <.0001 47	0.41932 <.0001 156	-0.86643 <.0001 156	-0.36552 <.0001 156	1.00000 156	-0.75610 <.0001 142	-0.76001 <.0001 156

The CORR Procedure

Grain commodity=Oats

Pearson Correlation Coefficients
Prob > |r| under H0: Rho=0
Number of Observations

	LPE	ACR	HVT	LNR	PRD	YLD	INFL	PWR	TEMP	VALUE
TEMP **Temperature diff. (deg. C)**	0.79135 <.0001 142	-0.71822 <.0001 96	-0.72039 <.0001 142	0.73693 <.0001 47	-0.68345 <.0001 142	0.79697 <.0001 142	0.05425 0.5214 142	-0.75610 <.0001 142	1.00000 142	0.91319 <.0001 142
VALUE **Adjusted value**	0.87373 <.0001 156	-0.88988 <.0001 96	-0.77162 <.0001 156	0.73005 <.0001 47	-0.72393 <.0001 156	0.87923 <.0001 156	0.16130 0.0443 156	-0.76001 <.0001 156	0.91319 <.0001 142	1.00000 156

Spearman Correlation Coefficients
Prob > |r| under H0: Rho=0
Number of Observations

	LPE	ACR	HVT	LNR	PRD	YLD	INFL	PWR	TEMP	VALUE
LPE **log10 price per bushel**	1.00000 156	-0.83300 <.0001 96	-0.62198 <.0001 156	0.71818 <.0001 47	-0.50151 <.0001 156	0.78901 <.0001 156	0.59799 <.0001 156	-0.90382 <.0001 156	0.73980 <.0001 142	0.90362 <.0001 156
ACR **Acerage (M)**	-0.83300 <.0001 96	1.00000 96	0.98147 <.0001 96	-0.76980 <.0001 47	0.95326 <.0001 96	-0.91219 <.0001 96	-0.18219 0.0756 96	0.94330 <.0001 96	-0.74566 <.0001 96	-0.94309 <.0001 96
HVT **Acres harvested (M)**	-0.62198 <.0001 156	0.98147 <.0001 96	1.00000 156	-0.77907 <.0001 47	0.94133 <.0001 156	-0.60452 <.0001 156	-0.15359 0.0556 156	0.62442 <.0001 156	-0.61813 <.0001 142	-0.62451 <.0001 156
LNR **Loan rate per bushel**	0.71818 <.0001 47	-0.76980 <.0001 47	-0.77907 <.0001 47	1.00000 47	-0.77055 <.0001 47	0.65682 <.0001 47	-0.57181 <.0001 47	-0.78065 <.0001 47	0.77409 <.0001 47	0.79170 <.0001 47
PRD **Bushels produced (M)**	-0.50151 <.0001 156	0.95326 <.0001 96	0.94133 <.0001 156	-0.77055 <.0001 47	1.00000 156	-0.38347 <.0001 156	0.01051 0.8964 156	0.48393 <.0001 156	-0.52294 <.0001 142	-0.48410 <.0001 156
YLD **Yield (bushels per acre)**	0.78901 <.0001 156	-0.91219 <.0001 96	-0.60452 <.0001 156	0.65682 <.0001 47	-0.38347 <.0001 156	1.00000 156	0.55485 <.0001 156	-0.87086 <.0001 156	0.76845 <.0001 142	0.87081 <.0001 156
INFL **Rate of inflation**	0.59799 <.0001 156	-0.18219 0.0756 96	-0.15359 0.0556 156	-0.57181 <.0001 47	0.01051 0.8964 156	0.55485 <.0001 156	1.00000 156	-0.50784 <.0001 156	0.30456 0.0002 142	0.50673 <.0001 156
PWR **Buying power**	-0.90382 <.0001 156	0.94330 <.0001 96	0.62442 <.0001 156	-0.78065 <.0001 47	0.48393 <.0001 156	-0.87086 <.0001 156	-0.50784 <.0001 156	1.00000 156	-0.84402 <.0001 142	-0.99985 <.0001 156
TEMP **Temperature diff. (deg. C)**	0.73980 <.0001 142	-0.74566 <.0001 96	-0.61813 <.0001 142	0.77409 <.0001 47	-0.52294 <.0001 142	0.76845 <.0001 142	0.30456 0.0002 142	-0.84402 <.0001 142	1.00000 142	0.84474 <.0001 142
VALUE **Adjusted value**	0.90362 <.0001 156	-0.94309 <.0001 96	-0.62451 <.0001 156	0.79170 <.0001 47	-0.48410 <.0001 156	0.87081 <.0001 156	0.50673 <.0001 156	-0.99985 <.0001 156	0.84474 <.0001 142	1.00000 156

The CORR Procedure

Grain commodity=Sorghum

10 Variables:	LPE	ACR	HVT	LNR	PRD	YLD	INFL	PWR	TEMP	VALUE

Simple Statistics

Variable	N	Mean	Std Dev	Median	Minimum	Maximum	Label
LPE	103	0.16719	0.28964	0.14613	-0.52288	0.80140	log10 price per bushel
ACR	93	13.42828	4.83863	13.36000	5.27000	26.89000	Acerage (M)
HVT	93	9.22172	4.03361	8.54000	2.40000	19.68000	Acres harvested (M)
LNR	48	1.86063	0.30301	1.95000	1.05000	2.52000	Loan rate per bushel
PRD	93	445.08301	274.05948	475.86000	19.21000	1120	Bushels produced (M)
YLD	93	45.88387	21.78882	52.60000	8.00000	77.90000	Yield (bushels per acre)
INFL	103	0.02922	0.04329	0.03000	-0.11000	0.16000	Rate of inflation
PWR	103	0.46825	0.37811	0.41000	0.06000	1.22000	Buying power
TEMP	103	0.23738	0.40905	0.12000	-0.36000	1.35000	Temperature diff. (deg. C)
VALUE	103	5.50786	5.14760	2.44000	0.82000	17.04000	Adjusted value

Pearson Correlation Coefficients
Prob > |r| under H0: Rho=0
Number of Observations

	LPE	ACR	HVT	LNR	PRD	YLD	INFL	PWR	TEMP	VALUE
LPE **log10 price per bushel**	1.00000 103	-0.56604 <.0001 93	-0.00585 0.9556 93	0.49343 0.0004 48	0.36168 0.0004 93	0.74104 <.0001 93	0.35150 0.0003 103	-0.86843 <.0001 103	0.70269 <.0001 103	0.83468 <.0001 103
ACR **Acerage (M)**	-0.56604 <.0001 93	1.00000 93	0.67448 <.0001 93	-0.26711 0.0665 48	0.18851 0.0704 93	-0.46563 <.0001 93	0.17852 0.0869 93	0.46830 <.0001 93	-0.75916 <.0001 93	-0.78446 <.0001 93
HVT **Acres harvested (M)**	-0.00585 0.9556 93	0.67448 <.0001 93	1.00000 93	-0.15738 0.2854 48	0.80185 <.0001 93	0.25264 0.0146 93	0.35022 0.0006 93	-0.26058 0.0116 93	-0.41240 <.0001 93	-0.26855 0.0092 93
LNR **Loan rate per bushel**	0.49343 0.0004 48	-0.26711 0.0665 48	-0.15738 0.2854 48	1.00000 48	0.06836 0.6443 48	0.40373 0.0044 48	-0.04241 0.7747 48	-0.55583 <.0001 48	0.39211 0.0058 48	0.40695 0.0041 48
PRD **Bushels produced (M)**	0.36168 0.0004 93	0.18851 0.0704 93	0.80185 <.0001 93	0.06836 0.6443 48	1.00000 93	0.72826 <.0001 93	0.34458 0.0007 93	-0.64920 <.0001 93	-0.01047 0.9206 93	0.21293 0.0404 93
YLD **Yield (bushels per acre)**	0.74104 <.0001 93	-0.46563 <.0001 93	0.25264 0.0146 93	0.40373 0.0044 48	0.72826 <.0001 93	1.00000 93	0.17361 0.0961 93	-0.92236 <.0001 93	0.61662 <.0001 93	0.79106 <.0001 93
INFL **Rate of inflation**	0.35150 0.0003 103	0.17852 0.0869 93	0.35022 0.0006 93	-0.04241 0.7747 48	0.34458 0.0007 93	0.17361 0.0961 93	1.00000 103	-0.25087 0.0106 103	-0.04585 0.6456 103	0.01383 0.8898 103
PWR **Buying power**	-0.86843 <.0001 103	0.46830 <.0001 93	-0.26058 0.0116 93	-0.55583 <.0001 48	-0.64920 <.0001 93	-0.92236 <.0001 93	-0.25087 0.0106 103	1.00000 103	-0.65438 <.0001 103	-0.81993 <.0001 103

The CORR Procedure

Grain commodity=Sorghum

Pearson Correlation Coefficients
Prob > |r| under H0: Rho=0
Number of Observations

	LPE	ACR	HVT	LNR	PRD	YLD	INFL	PWR	TEMP	VALUE
TEMP **Temperature diff. (deg. C)**	0.70269 <.0001 103	-0.75916 <.0001 93	-0.41240 <.0001 93	0.39211 0.0058 48	-0.01047 0.9206 93	0.61662 <.0001 93	-0.04585 0.6456 103	-0.65438 <.0001 103	1.00000 103	0.91425 <.0001 103
VALUE **Adjusted value**	0.83468 <.0001 103	-0.78446 <.0001 93	-0.26855 0.0092 93	0.40695 0.0041 48	0.21293 0.0404 93	0.79106 <.0001 93	0.01383 0.8898 103	-0.81993 <.0001 103	0.91425 <.0001 103	1.00000 103

Spearman Correlation Coefficients
Prob > |r| under H0: Rho=0
Number of Observations

	LPE	ACR	HVT	LNR	PRD	YLD	INFL	PWR	TEMP	VALUE
LPE **log10 price per bushel**	1.00000 103	-0.59558 <.0001 93	0.00785 0.9405 93	0.59066 <.0001 48	0.32828 0.0013 93	0.73920 <.0001 93	0.34935 0.0003 103	-0.89447 <.0001 103	0.65834 <.0001 103	0.89401 <.0001 103
ACR **Acerage (M)**	-0.59558 <.0001 93	1.00000 93	0.63883 <.0001 93	-0.33092 0.0216 48	0.24190 0.0195 93	-0.50224 <.0001 93	0.18291 0.0793 93	0.64332 <.0001 93	-0.70496 <.0001 93	-0.64275 <.0001 93
HVT **Acres harvested (M)**	0.00785 0.9405 93	0.63883 <.0001 93	1.00000 93	-0.28737 0.0477 48	0.84310 <.0001 93	0.20328 0.0507 93	0.41617 <.0001 93	-0.05764 0.5832 93	-0.32482 0.0015 93	0.05876 0.5758 93
LNR **Loan rate per bushel**	0.59066 <.0001 48	-0.33092 0.0216 48	-0.28737 0.0477 48	1.00000 48	-0.14393 0.3291 48	0.16286 0.2687 48	-0.11985 0.4171 48	-0.39210 0.0058 48	0.41090 0.0037 48	0.39853 0.0050 48
PRD **Bushels produced (M)**	0.32828 0.0013 93	0.24190 0.0195 93	0.84310 <.0001 93	-0.14393 0.3291 48	1.00000 93	0.61396 <.0001 93	0.45406 <.0001 93	-0.44038 <.0001 93	-0.00636 0.9517 93	0.44214 <.0001 93
YLD **Yield (bushels per acre)**	0.73920 <.0001 93	-0.50224 <.0001 93	0.20328 0.0507 93	0.16286 0.2687 48	0.61396 <.0001 93	1.00000 93	0.17054 0.1022 93	-0.90725 <.0001 93	0.63394 <.0001 93	0.90852 <.0001 93
INFL **Rate of inflation**	0.34935 0.0003 103	0.18291 0.0793 93	0.41617 <.0001 93	-0.11985 0.4171 48	0.45406 <.0001 93	0.17054 0.1022 93	1.00000 103	-0.21628 0.0282 103	0.05180 0.6033 103	0.21307 0.0307 103
PWR **Buying power**	-0.89447 <.0001 103	0.64332 <.0001 93	-0.05764 0.5832 93	-0.39210 0.0058 48	-0.44038 <.0001 93	-0.90725 <.0001 93	-0.21628 0.0282 103	1.00000 103	-0.73956 <.0001 103	-0.99946 <.0001 103
TEMP **Temperature diff. (deg. C)**	0.65834 <.0001 103	-0.70496 <.0001 93	-0.32482 0.0015 93	0.41090 0.0037 48	-0.00636 0.9517 93	0.63394 <.0001 93	0.05180 0.6033 103	-0.73956 <.0001 103	1.00000 103	0.74148 <.0001 103
VALUE **Adjusted value**	0.89401 <.0001 103	-0.64275 <.0001 93	0.05876 0.5758 93	0.39853 0.0050 48	0.44214 <.0001 93	0.90852 <.0001 93	0.21307 0.0307 103	-0.99946 <.0001 103	0.74148 <.0001 103	1.00000 103

The MEANS Procedure

Grain commodity=Barley

Analysis Variable : LPE log10 price per bushel					
President party	N Obs	Mean	Std Error	Median	Range
Democrat	68	0.0716753	0.0428029	0.0064608	1.3310897
Republican	88	-0.0033654	0.0354361	-0.0731509	1.3682464

Grain commodity=Corn

Analysis Variable : LPE log10 price per bushel					
President party	N Obs	Mean	Std Error	Median	Range
Democrat	68	0.0839426	0.0429087	0.0663219	1.5159999
Republican	88	-0.0332119	0.0384980	-0.1191864	1.2411249

Grain commodity=Oats

Analysis Variable : LPE log10 price per bushel					
President party	N Obs	Mean	Std Error	Median	Range
Democrat	68	-0.1401061	0.0409049	-0.1804561	1.3781960
Republican	88	-0.2083847	0.0360550	-0.3372422	1.3222193

Grain commodity=Sorghum

Analysis Variable : LPE log10 price per bushel					
President party	N Obs	Mean	Std Error	Median	Range
Democrat	51	0.1669931	0.0427354	0.1205739	1.1886199
Republican	52	0.1673836	0.0383474	0.2416510	1.2253093

The GLM Procedure

Class Level Information		
Class	**Levels**	**Values**
GRN	4	Barley Corn Oats Sorghum

Number of Observations Read	571
Number of Observations Used	571

The GLM Procedure

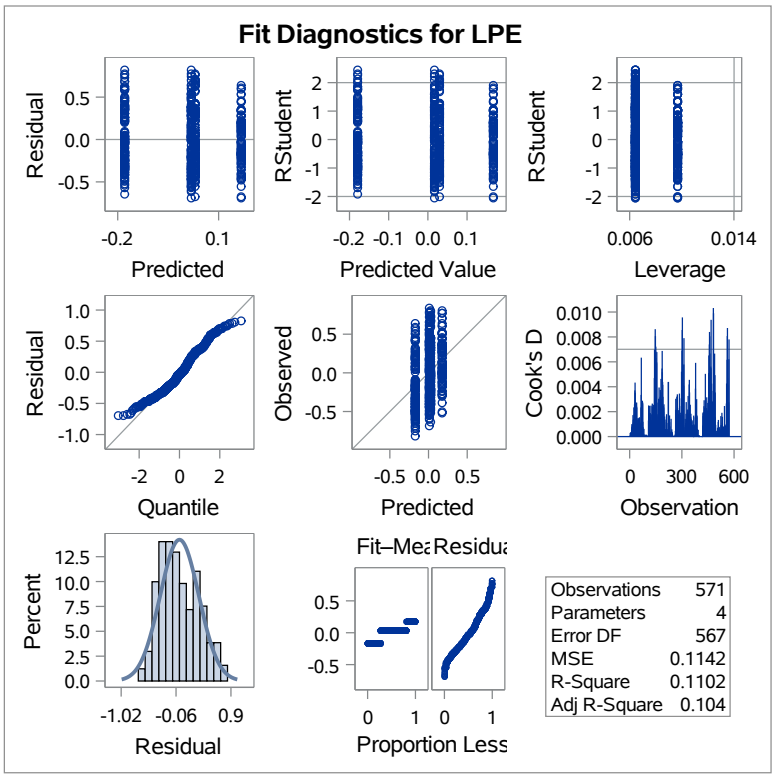
Dependent Variable: LPE log10 price per bushel

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	4	8.04050723	2.01012681	17.60	<.0001
Error	567	64.74990700	0.11419737		
Uncorrected Total	571	72.79041422			

R-Square	Coeff Var	Root MSE	LPE Mean
0.110231	-5880.630	0.337931	-0.005747

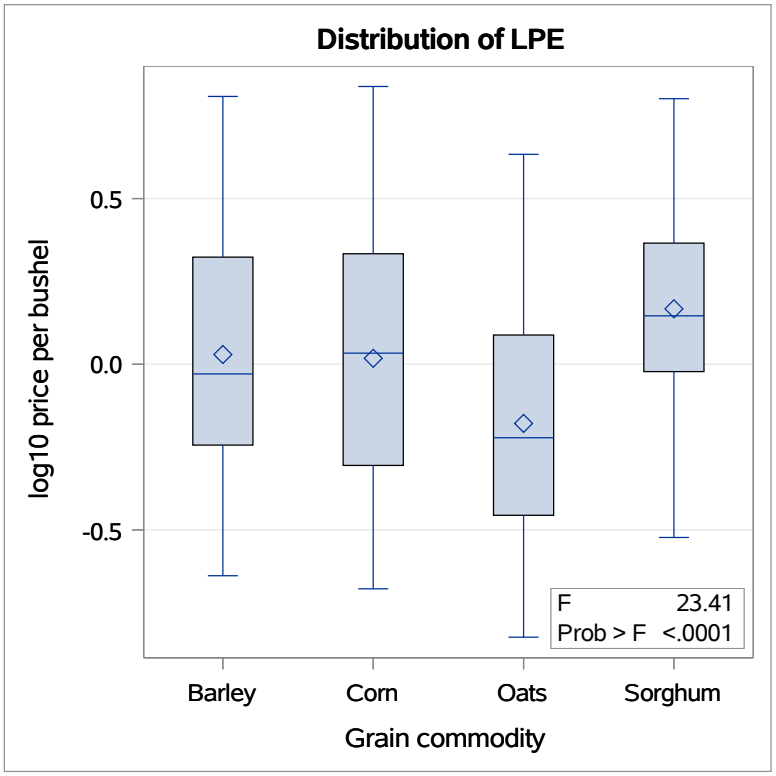
Source	DF	Type I SS	Mean Square	F Value	Pr > F
GRN	4	8.04050723	2.01012681	17.60	<.0001

Source	DF	Type III SS	Mean Square	F Value	Pr > F
GRN	4	8.04050723	2.01012681	17.60	<.0001



The GLM Procedure

Dependent Variable: LPE log10 price per bushel



The GLM Procedure

Class Level Information		
Class	**Levels**	**Values**
GRN	4	Barley Corn Oats Sorghum

Number of Observations Read	571
Number of Observations Used	381

The GLM Procedure

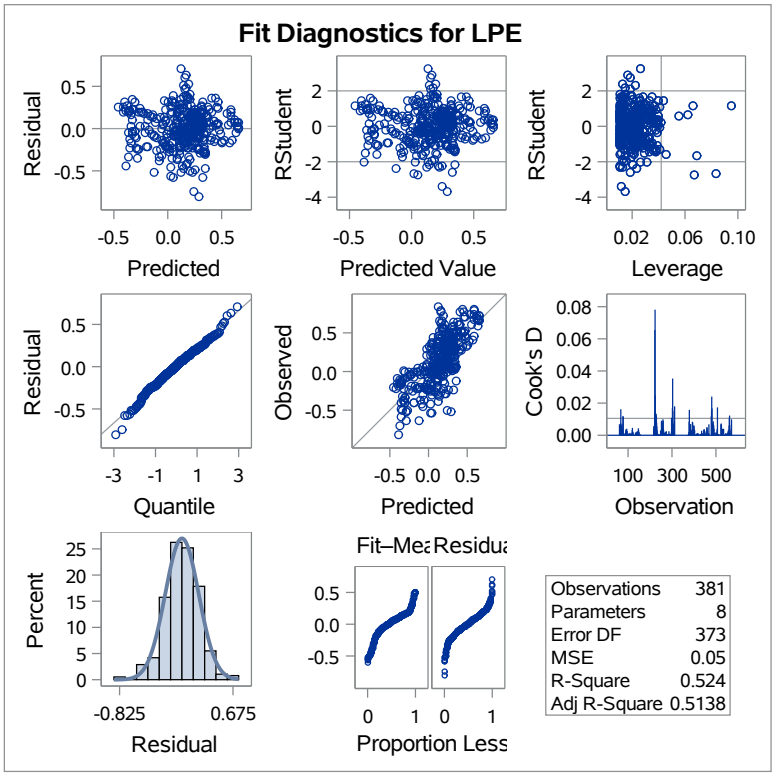
Dependent Variable: LPE log10 price per bushel

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	8	28.88305487	3.61038186	72.16	<.0001
Error	373	18.66250273	0.05003352		
Uncorrected Total	381	47.54555760			

R-Square	Coeff Var	Root MSE	LPE Mean
0.524028	151.2190	0.223682	0.147919

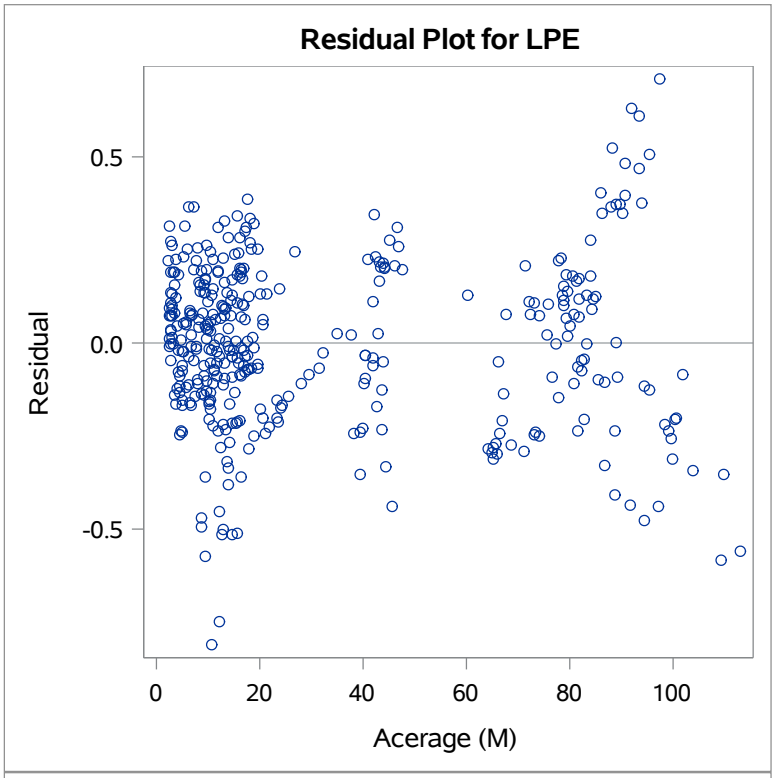
Source	DF	Type I SS	Mean Square	F Value	Pr > F
ACR	1	2.82042057	2.82042057	56.37	<.0001
GRN	4	20.16851408	5.04212852	100.78	<.0001
ACR*GRN	3	5.89412022	1.96470674	39.27	<.0001

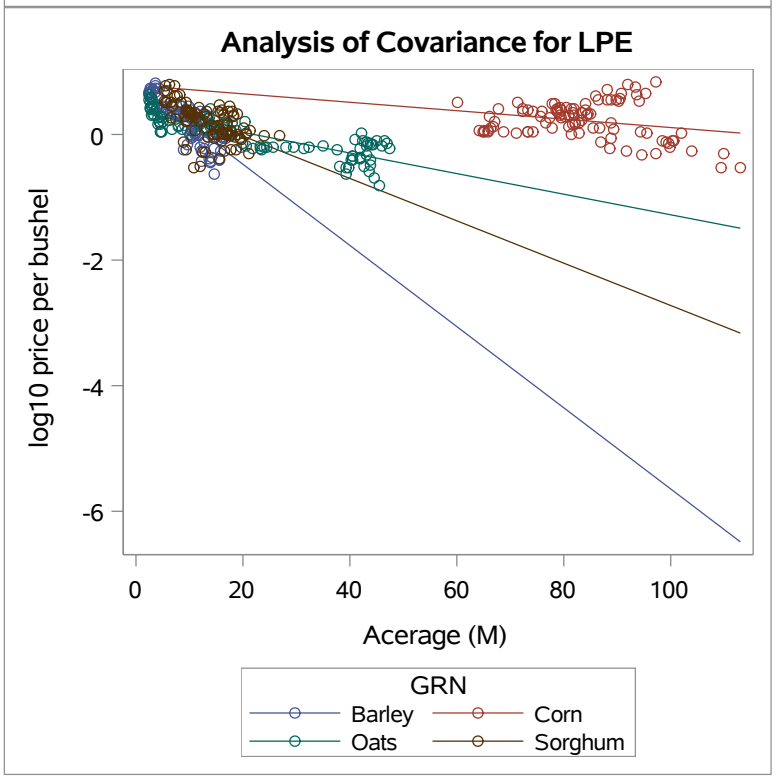
Source	DF	Type III SS	Mean Square	F Value	Pr > F
ACR	1	12.81613728	12.81613728	256.15	<.0001
GRN	4	20.14757500	5.03689375	100.67	<.0001
ACR*GRN	3	5.89412022	1.96470674	39.27	<.0001



The GLM Procedure

Dependent Variable: LPE log10 price per bushel





The GLM Procedure

Class Level Information		
Class	**Levels**	**Values**
GRN	4	Barley Corn Oats Sorghum

Number of Observations Read	571
Number of Observations Used	561

The GLM Procedure

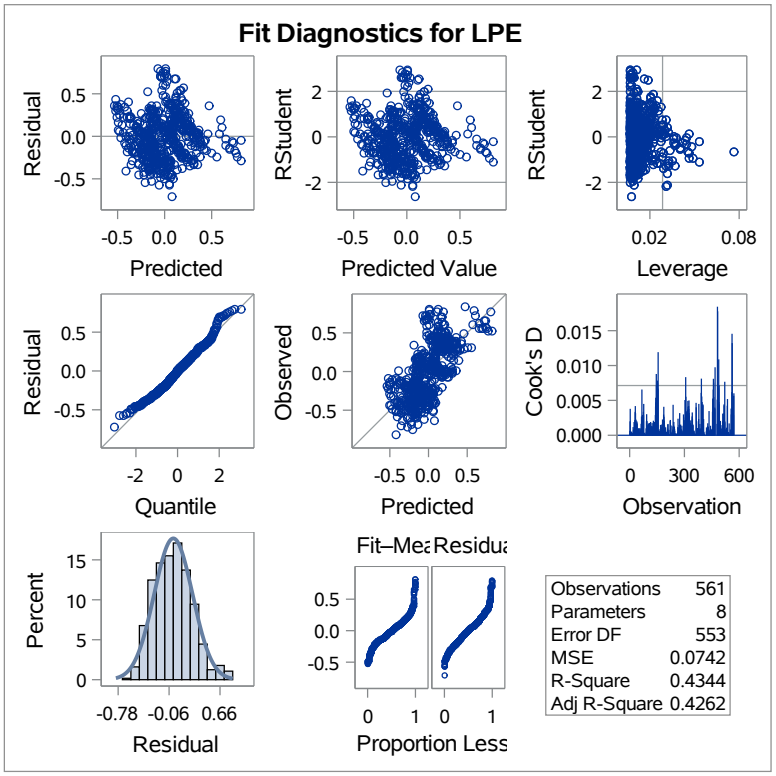
Dependent Variable: LPE log10 price per bushel

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	8	31.52546836	3.94068355	53.10	<.0001
Error	553	41.04097399	0.07421514		
Uncorrected Total	561	72.56644235			

R-Square	Coeff Var	Root MSE	LPE Mean
0.434363	-6679.099	0.272425	-0.004079

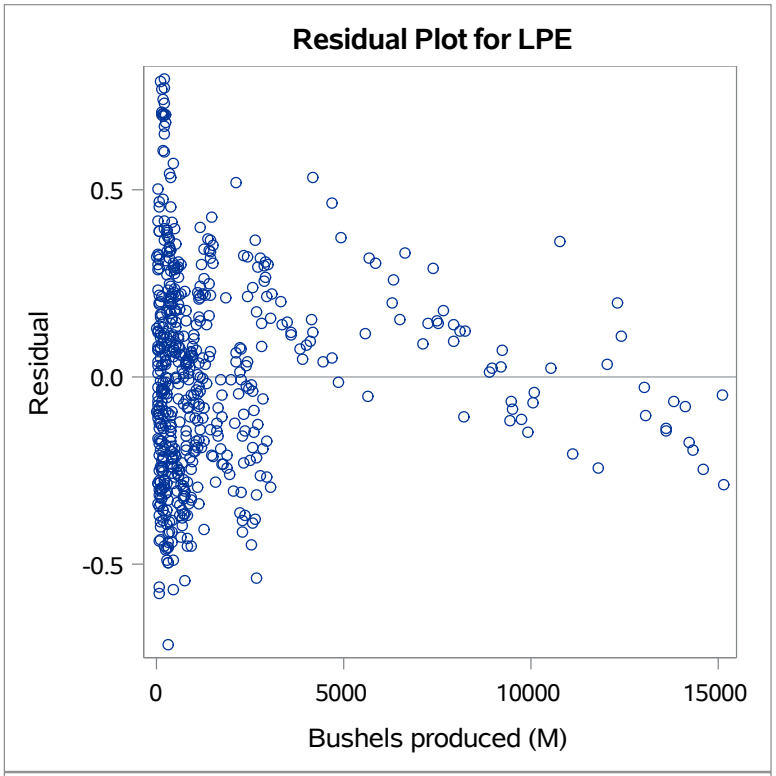
Source	DF	Type I SS	Mean Square	F Value	Pr > F
PRD	1	4.83890347	4.83890347	65.20	<.0001
GRN	4	15.91470398	3.97867599	53.61	<.0001
PRD*GRN	3	10.77186091	3.59062030	48.38	<.0001

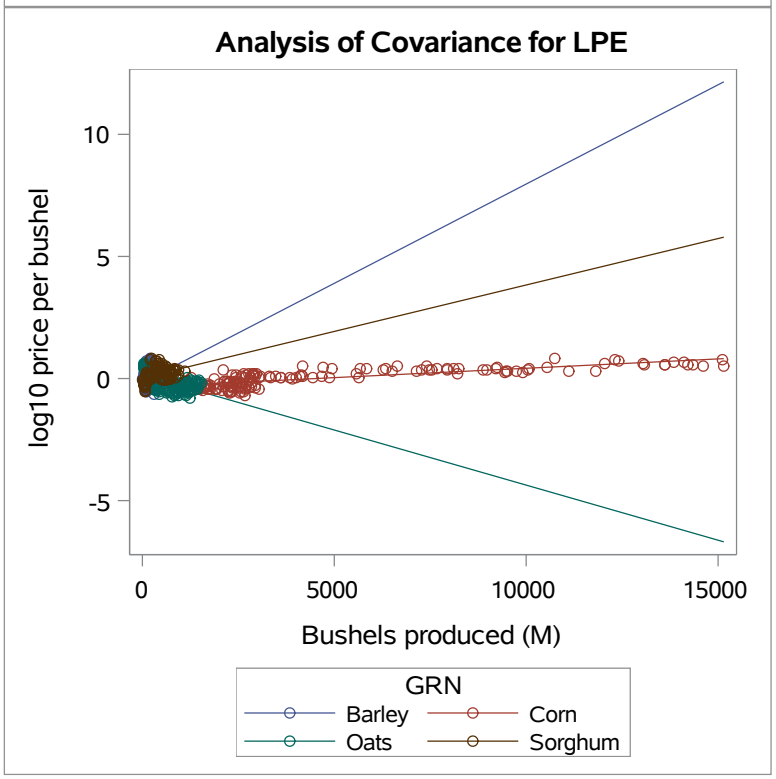
Source	DF	Type III SS	Mean Square	F Value	Pr > F
PRD	1	1.37349877	1.37349877	18.51	<.0001
GRN	4	9.46309189	2.36577297	31.88	<.0001
PRD*GRN	3	10.77186091	3.59062030	48.38	<.0001



The GLM Procedure

Dependent Variable: LPE log10 price per bushel





The GLM Procedure

Class Level Information		
Class	**Levels**	**Values**
GRN	4	Barley Corn Oats Sorghum

Number of Observations Read	571
Number of Observations Used	571

The GLM Procedure

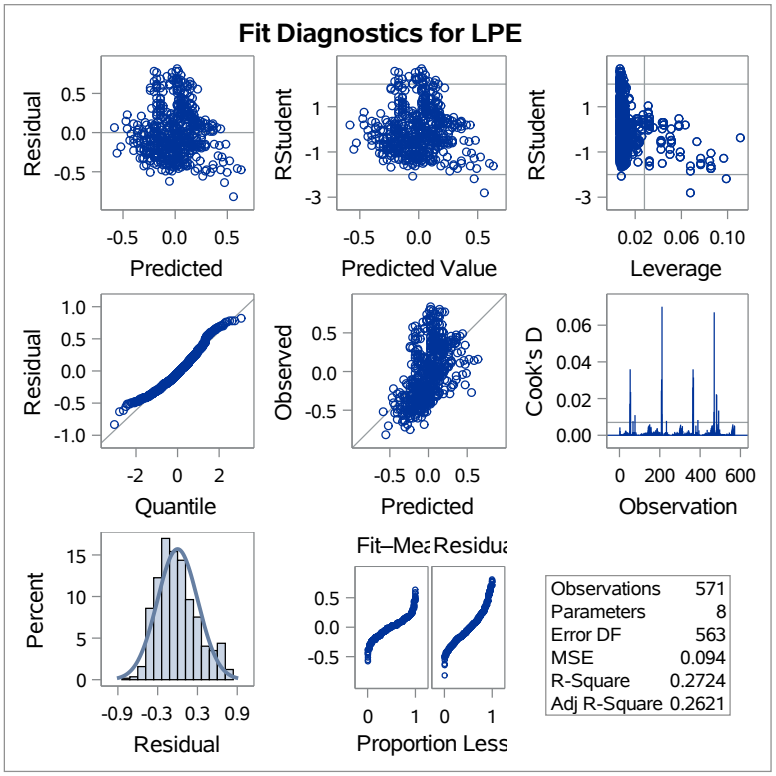
Dependent Variable: LPE log10 price per bushel

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	8	19.84529588	2.48066198	26.38	<.0001
Error	563	52.94511834	0.09404106		
Uncorrected Total	571	72.79041422			

R-Square	Coeff Var	Root MSE	LPE Mean
0.272448	-5336.476	0.306661	-0.005747

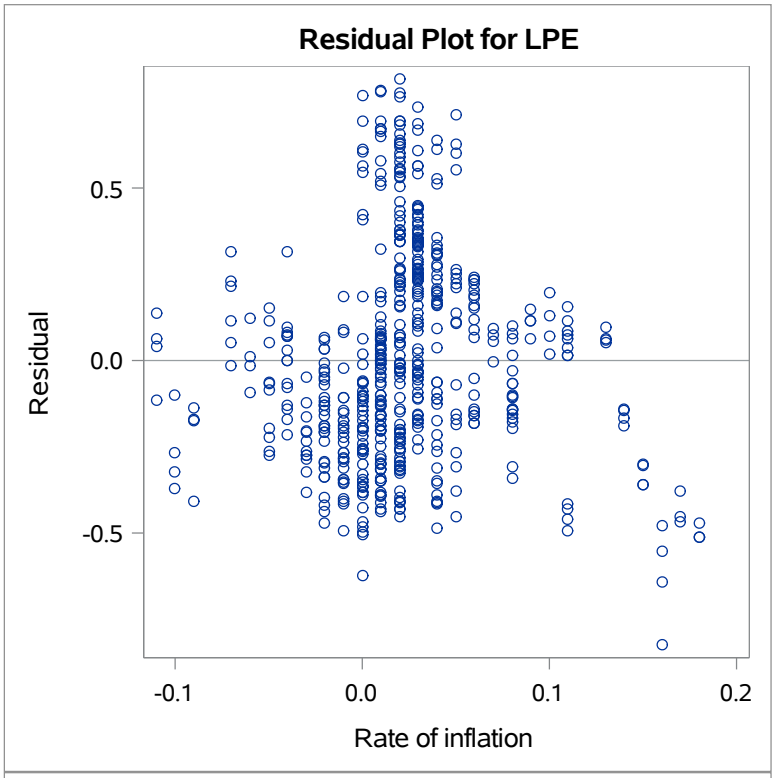
Source	DF	Type I SS	Mean Square	F Value	Pr > F
INFL	1	10.03920357	10.03920357	106.75	<.0001
GRN	4	9.51619364	2.37904841	25.30	<.0001
INFL*GRN	3	0.28989868	0.09663289	1.03	0.3799

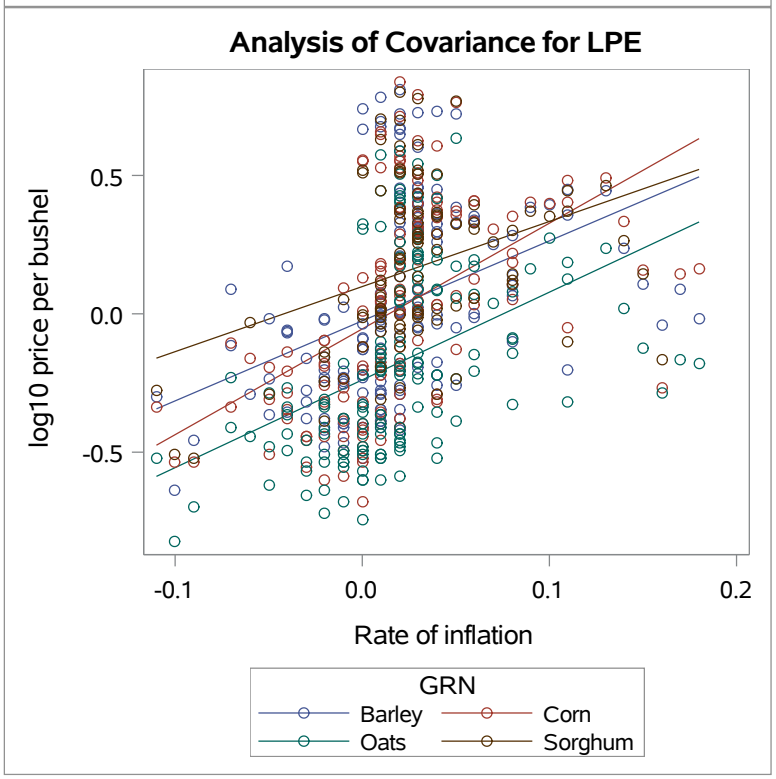
Source	DF	Type III SS	Mean Square	F Value	Pr > F
INFL	1	10.36122259	10.36122259	110.18	<.0001
GRN	4	8.75353805	2.18838451	23.27	<.0001
INFL*GRN	3	0.28989868	0.09663289	1.03	0.3799



The GLM Procedure

Dependent Variable: LPE log10 price per bushel





The GLM Procedure

Class Level Information		
Class	**Levels**	**Values**
GRN	4	Barley Corn Oats Sorghum

Number of Observations Read	571
Number of Observations Used	529

The GLM Procedure

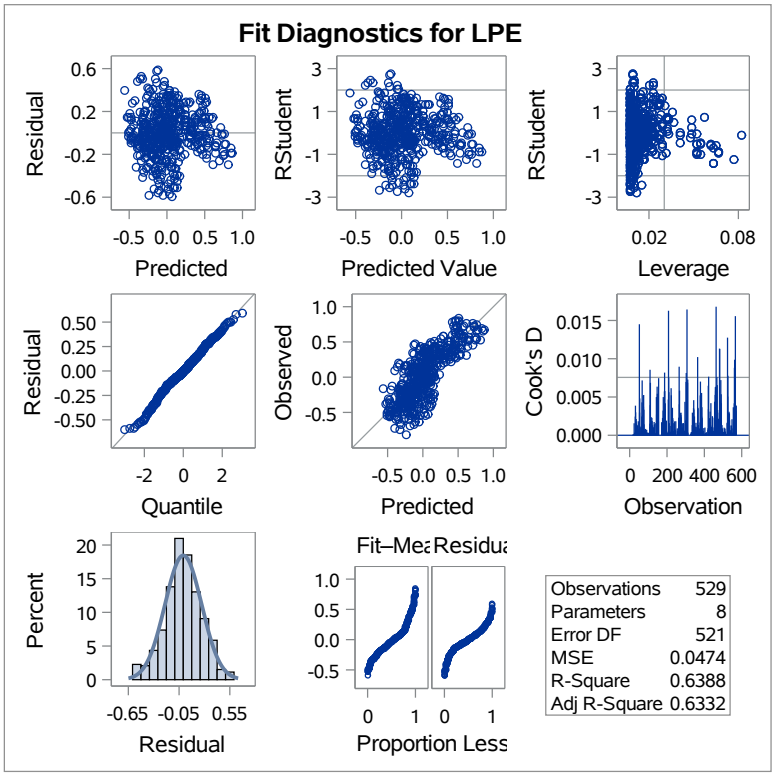
Dependent Variable: LPE log10 price per bushel

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	8	43.78091551	5.47261444	115.48	<.0001
Error	521	24.69096831	0.04739149		
Uncorrected Total	529	68.47188381			

R-Square	Coeff Var	Root MSE	LPE Mean
0.638784	1465.941	0.217696	0.014850

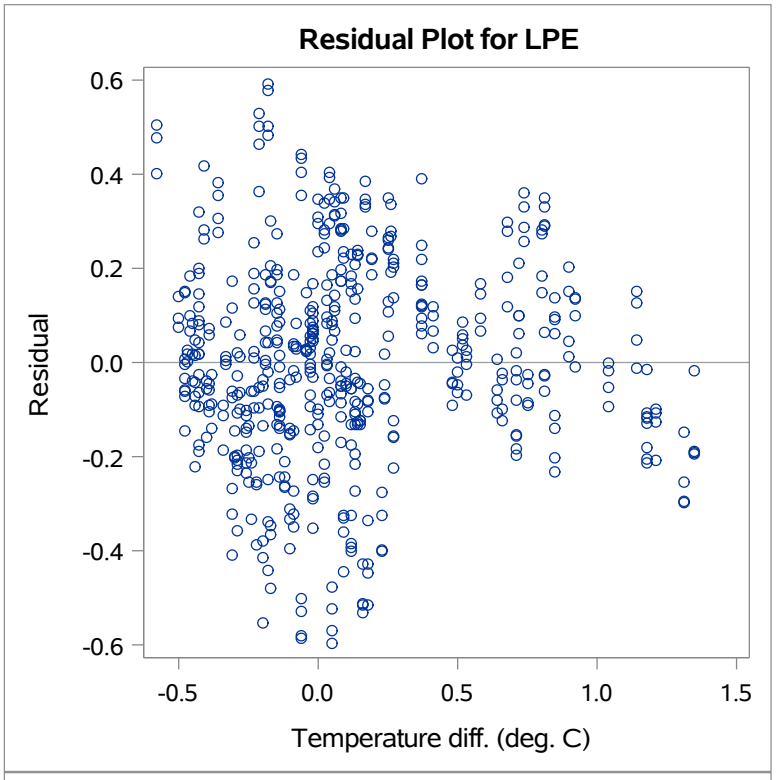
Source	DF	Type I SS	Mean Square	F Value	Pr > F
TEMP	1	37.53294681	37.53294681	791.98	<.0001
GRN	4	5.97184621	1.49296155	31.50	<.0001
TEMP*GRN	3	0.27612249	0.09204083	1.94	0.1218

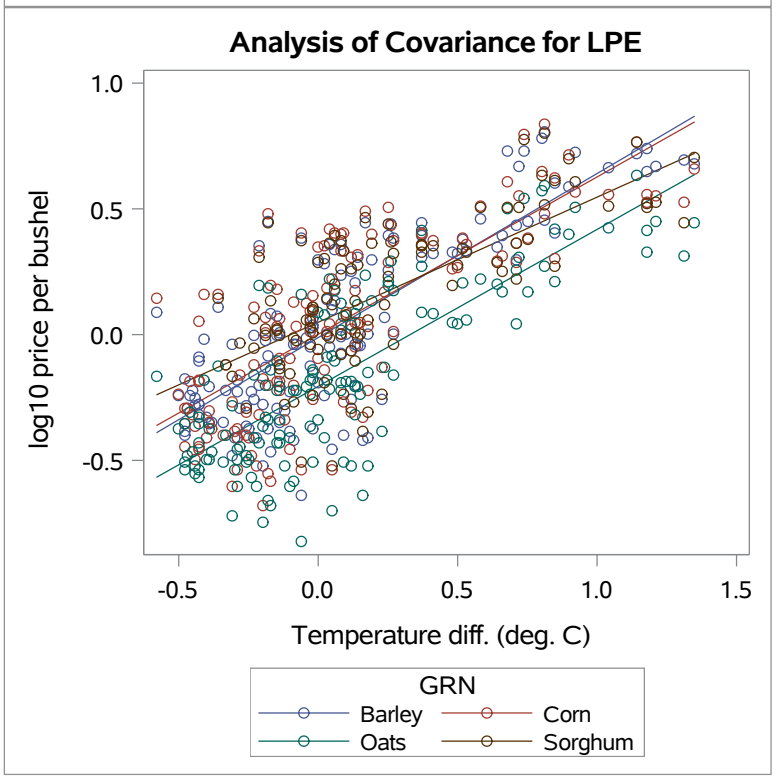
Source	DF	Type III SS	Mean Square	F Value	Pr > F
TEMP	1	33.96190658	33.96190658	716.62	<.0001
GRN	4	6.01678326	1.50419582	31.74	<.0001
TEMP*GRN	3	0.27612249	0.09204083	1.94	0.1218



The GLM Procedure

Dependent Variable: LPE log10 price per bushel





The GLM Procedure

Class Level Information		
Class	**Levels**	**Values**
GRN	4	Barley Corn Oats Sorghum

Number of Observations Read	571
Number of Observations Used	571

The GLM Procedure

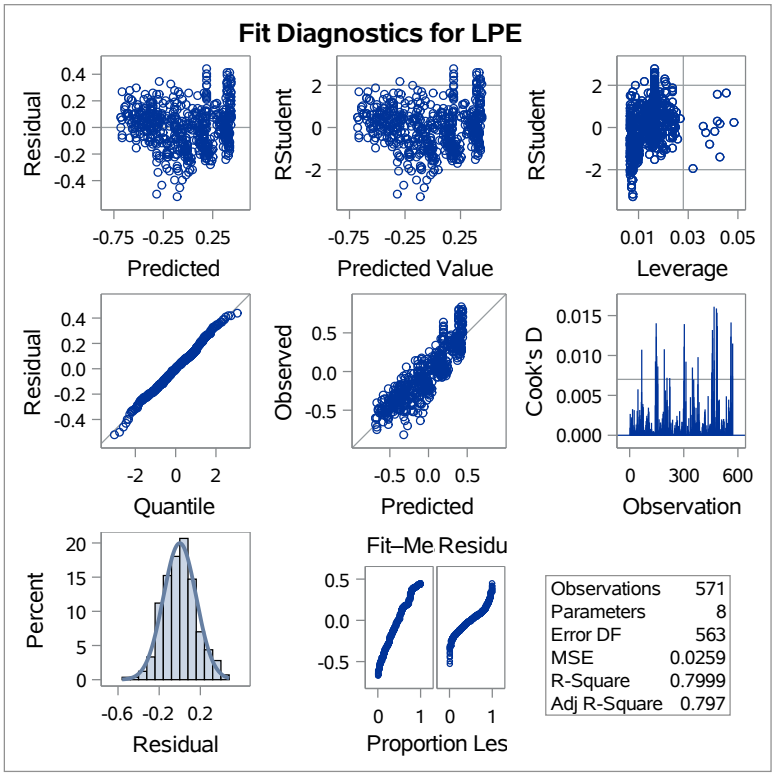
Dependent Variable: LPE log10 price per bushel

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	8	58.22644651	7.27830581	281.36	<.0001
Error	563	14.56396771	0.02586850		
Uncorrected Total	571	72.79041422			

R-Square	Coeff Var	Root MSE	LPE Mean
0.799867	-2798.862	0.160837	-0.005747

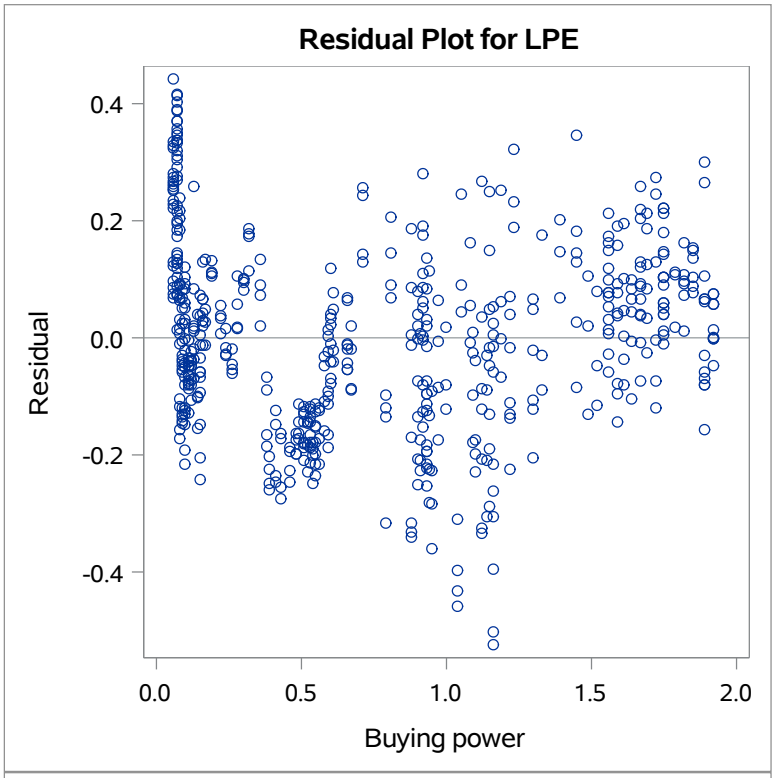
Source	DF	Type I SS	Mean Square	F Value	Pr > F
PWR	1	21.22307614	21.22307614	820.42	<.0001
GRN	4	36.43646807	9.10911702	352.13	<.0001
PWR*GRN	3	0.56690231	0.18896744	7.30	<.0001

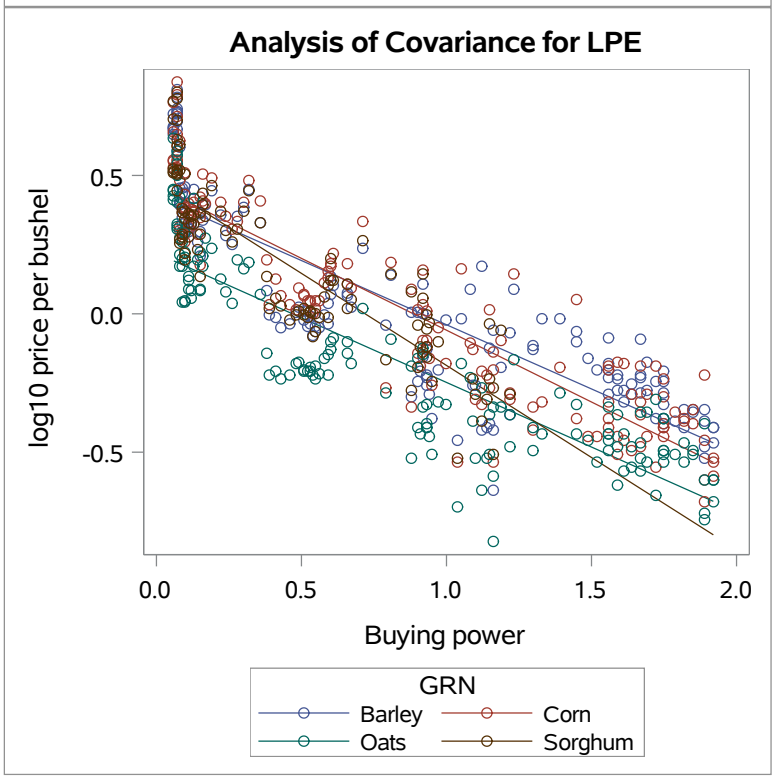
Source	DF	Type III SS	Mean Square	F Value	Pr > F
PWR	1	38.31234485	38.31234485	1481.04	<.0001
GRN	4	33.59612218	8.39903054	324.68	<.0001
PWR*GRN	3	0.56690231	0.18896744	7.30	<.0001



The GLM Procedure

Dependent Variable: LPE log10 price per bushel





The GLM Procedure

Class Level Information		
Class	**Levels**	**Values**
GRN	4	Barley Corn Oats Sorghum

Number of Observations Read	571
Number of Observations Used	571

The GLM Procedure

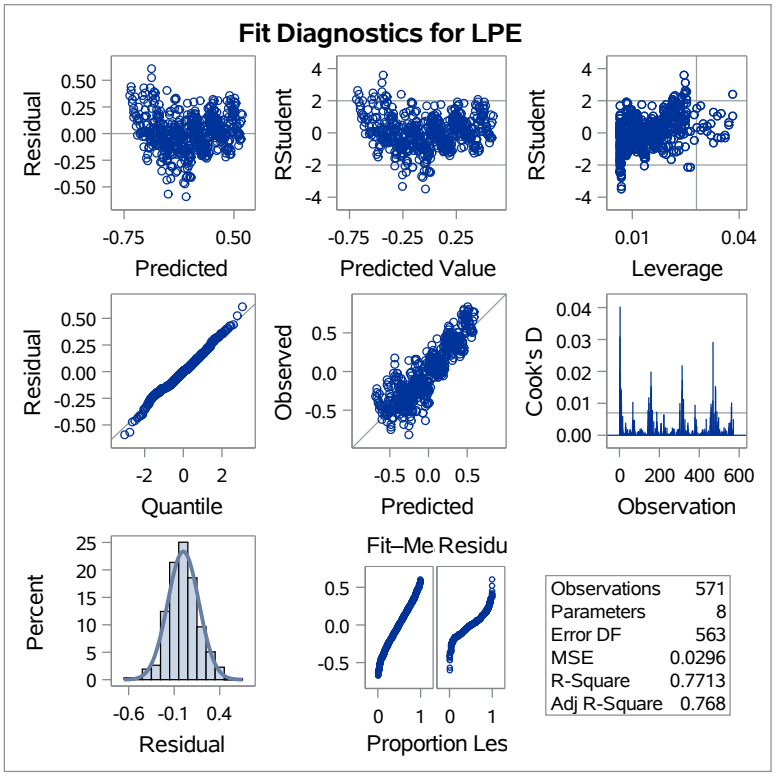
Dependent Variable: LPE log10 price per bushel

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	8	56.14493752	7.01811719	237.37	<.0001
Error	563	16.64547670	0.02956568		
Uncorrected Total	571	72.79041422			

R-Square	Coeff Var	Root MSE	LPE Mean
0.771264	-2992.194	0.171947	-0.005747

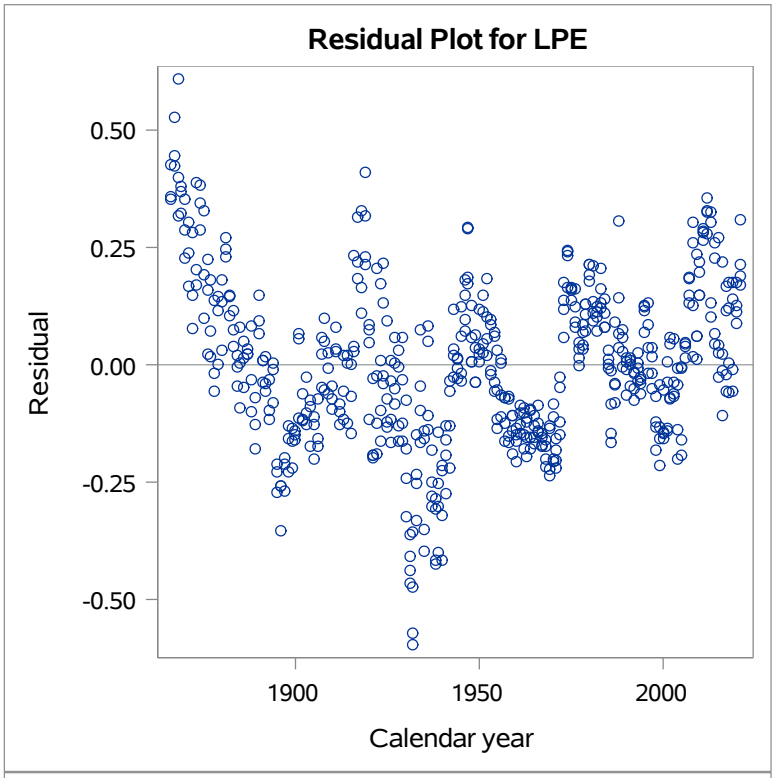
Source	DF	Type I SS	Mean Square	F Value	Pr > F
YEAR	1	0.00057812	0.00057812	0.02	0.8888
GRN	4	55.69595320	13.92398830	470.95	<.0001
YEAR*GRN	3	0.44840620	0.14946873	5.06	0.0018

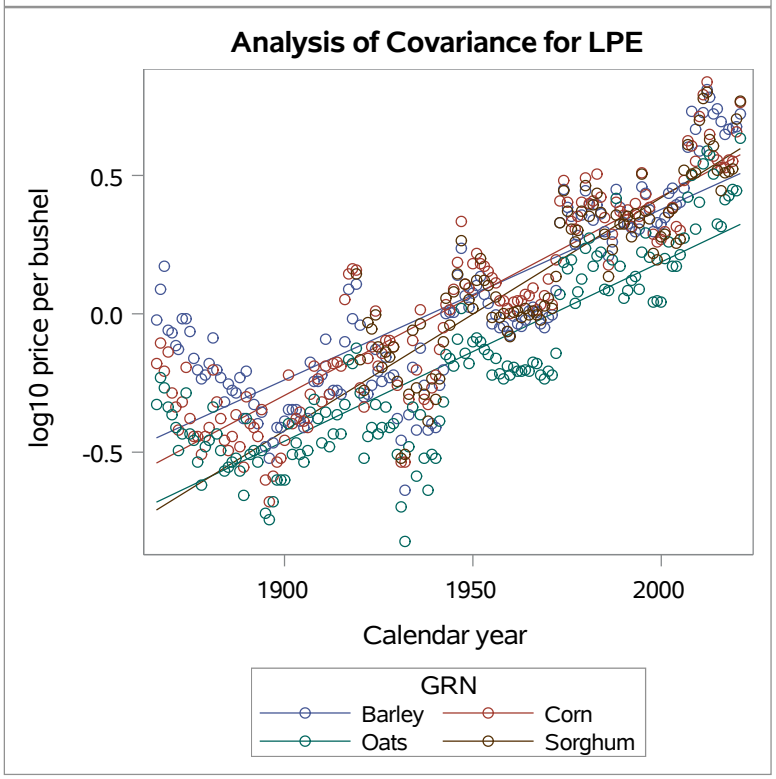
Source	DF	Type III SS	Mean Square	F Value	Pr > F
YEAR	1	39.00825364	39.00825364	1319.38	<.0001
GRN	4	48.22963952	12.05740988	407.82	<.0001
YEAR*GRN	3	0.44840620	0.14946873	5.06	0.0018



The GLM Procedure

Dependent Variable: LPE log10 price per bushel





The GLM Procedure

Class Level Information		
Class	**Levels**	**Values**
GRN	4	Barley Corn Oats Sorghum
PARTY	2	Democrat Republican

Number of Observations Read	571
Number of Observations Used	571

The GLM Procedure

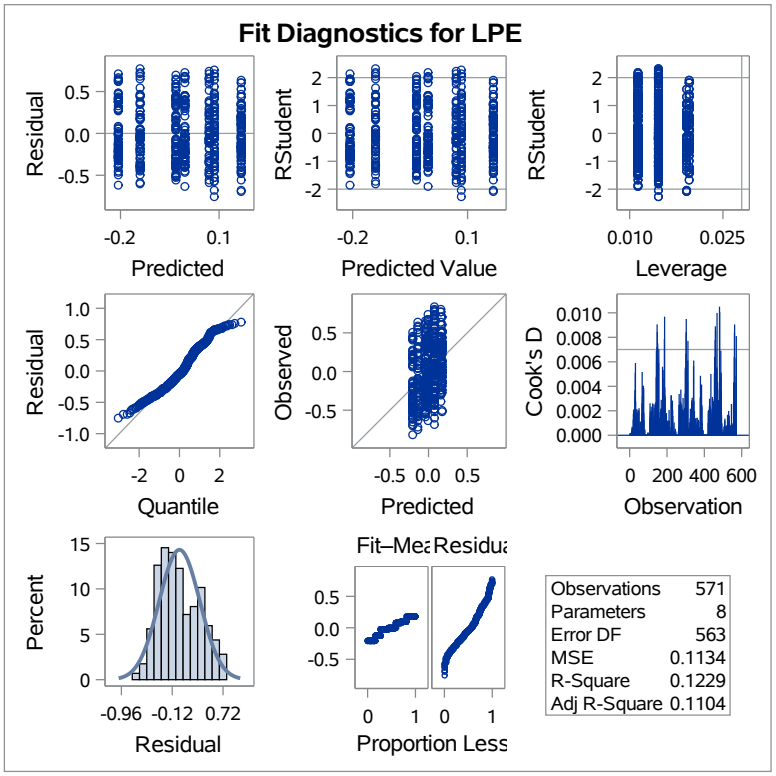
Dependent Variable: LPE log10 price per bushel

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	8	8.96182690	1.12022836	9.88	<.0001
Error	563	63.82858732	0.11337227		
Uncorrected Total	571	72.79041422			

R-Square	Coeff Var	Root MSE	LPE Mean
0.122891	-5859.347	0.336708	-0.005747

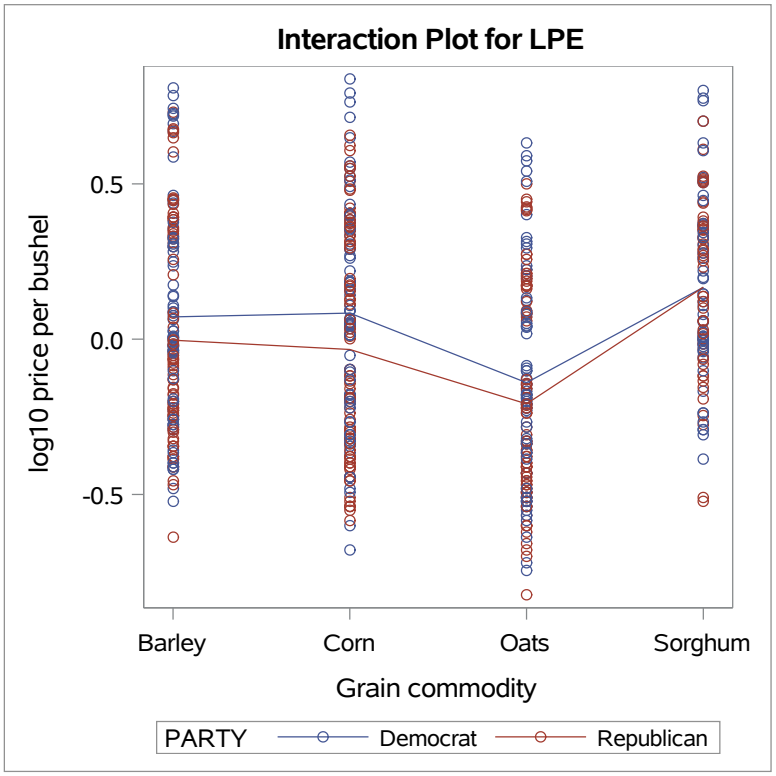
Source	DF	Type I SS	Mean Square	F Value	Pr > F
GRN	4	8.04050723	2.01012681	17.73	<.0001
PARTY	1	0.70747223	0.70747223	6.24	0.0128
GRN*PARTY	3	0.21384745	0.07128248	0.63	0.5967

Source	DF	Type III SS	Mean Square	F Value	Pr > F
GRN	3	7.81477029	2.60492343	22.98	<.0001
PARTY	1	0.57791507	0.57791507	5.10	0.0243
GRN*PARTY	3	0.21384745	0.07128248	0.63	0.5967



The GLM Procedure

Dependent Variable: LPE log10 price per bushel



The Mixed Procedure

Model Information	
Data Set	HOME.GRAINS
Dependent Variable	LPE
Covariance Structure	Diagonal
Estimation Method	REML
Residual Variance Method	Profile
Fixed Effects SE Method	Model-Based
Degrees of Freedom Method	Residual

Class Level Information		
Class	**Levels**	**Values**
GRN	4	Barley Corn Oats Sorghum
PARTY	2	Democrat Republican

Dimensions	
Covariance Parameters	1
Columns in X	39
Columns in Z	0
Subjects	1
Max Obs per Subject	561

Number of Observations	
Number of Observations Read	571
Number of Observations Used	561
Number of Observations Not Used	10

Covariance Parameter Estimates	
Cov Parm	**Estimate**
Residual	0.01250

Fit Statistics	
-2 Res Log Likelihood	-643.9
AIC (Smaller is Better)	-641.9
AICC (Smaller is Better)	-641.9
BIC (Smaller is Better)	-637.6

The Mixed Procedure

Solution for Fixed Effects							
Effect	**Grain commodity**	**President party**	**Estimate**	**Standard Error**	**DF**	**t Value**	**Pr > |t|**
GRN	Barley		-2.8704	1.0158	533	-2.83	0.0049
GRN	Corn		-0.5539	1.6268	533	-0.34	0.7336
GRN	Oats		-4.7336	1.0153	533	-4.66	<.0001
GRN	Sorghum		-10.0665	3.6378	533	-2.77	0.0059
HVT			0.001795	0.007151	533	0.25	0.8019
PRD			-0.00034	0.000113	533	-3.02	0.0027
INFL			2.0406	0.3632	533	5.62	<.0001
PWR			-0.4236	0.1382	533	-3.07	0.0023
YEAR			0.005317	0.001802	533	2.95	0.0033
PARTY		Democrat	0.02167	0.02582	533	0.84	0.4018
PARTY		Republican	0	.	.	.	.
HVT*GRN	Barley		-0.03393	0.008348	533	-4.06	<.0001
HVT*GRN	Corn		-0.00176	0.007212	533	-0.24	0.8074
HVT*GRN	Oats		0.003426	0.007565	533	0.45	0.6508
HVT*GRN	Sorghum		0	.	.	.	.
PRD*GRN	Barley		0.000129	0.000193	533	0.67	0.5023
PRD*GRN	Corn		0.000367	0.000113	533	3.25	0.0012
PRD*GRN	Oats		-0.00007	0.000134	533	-0.54	0.5870
PRD*GRN	Sorghum		0	.	.	.	.
INFL*GRN	Barley		-0.6573	0.4278	533	-1.54	0.1250
INFL*GRN	Corn		-0.6234	0.4307	533	-1.45	0.1483
INFL*GRN	Oats		-0.2952	0.4329	533	-0.68	0.4956
INFL*GRN	Sorghum		0	.	.	.	.
PWR*GRN	Barley		0.04278	0.1434	533	0.30	0.7655
PWR*GRN	Corn		0.09316	0.1493	533	0.62	0.5328
PWR*GRN	Oats		0.2134	0.1440	533	1.48	0.1389
PWR*GRN	Sorghum		0	.	.	.	.
YEAR*GRN	Barley		-0.00353	0.001873	533	-1.88	0.0602
YEAR*GRN	Corn		-0.00496	0.001990	533	-2.49	0.0129
YEAR*GRN	Oats		-0.00280	0.001872	533	-1.50	0.1354
YEAR*GRN	Sorghum		0	.	.	.	.
GRN*PARTY	Barley	Democrat	-0.02661	0.03218	533	-0.83	0.4086
GRN*PARTY	Barley	Republican	0	.	.	.	.
GRN*PARTY	Corn	Democrat	0.000521	0.03191	533	0.02	0.9870

The Mixed Procedure

Solution for Fixed Effects

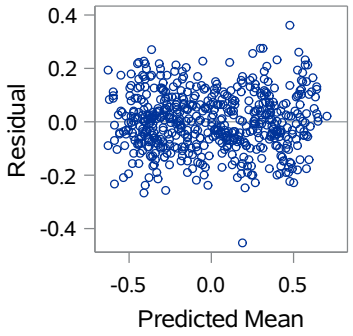
Effect	Grain commodity	President party	Estimate	Standard Error	DF	t Value	Pr > |t|
GRN*PARTY	Corn	Republican	0	.	.	.	.
GRN*PARTY	Oats	Democrat	-0.03541	0.03197	533	-1.11	0.2686
GRN*PARTY	Oats	Republican	0	.	.	.	.
GRN*PARTY	Sorghum	Democrat	0	.	.	.	.
GRN*PARTY	Sorghum	Republican	0	.	.	.	.

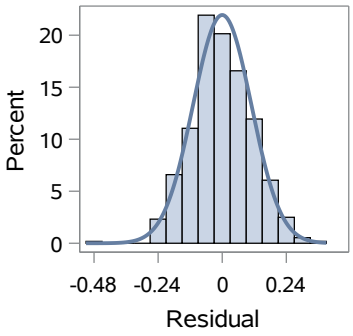
Type 3 Tests of Fixed Effects

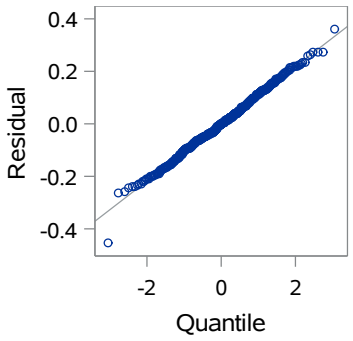
Effect	Num DF	Den DF	F Value	Pr > F
GRN	3	533	2.81	0.0392
HVT	1	533	8.21	0.0043
PRD	1	533	20.66	<.0001
INFL	1	533	148.51	<.0001
PWR	1	533	71.28	<.0001
YEAR	1	533	22.22	<.0001
PARTY	1	533	0.36	0.5466
HVT*GRN	3	533	19.92	<.0001
PRD*GRN	3	533	16.42	<.0001
INFL*GRN	3	533	1.12	0.3418
PWR*GRN	3	533	3.44	0.0167
YEAR*GRN	3	533	2.80	0.0394
GRN*PARTY	3	533	0.84	0.4740

The Mixed Procedure

Residuals for LPE

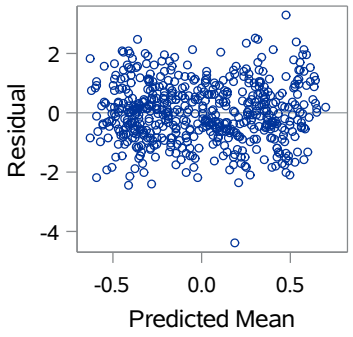


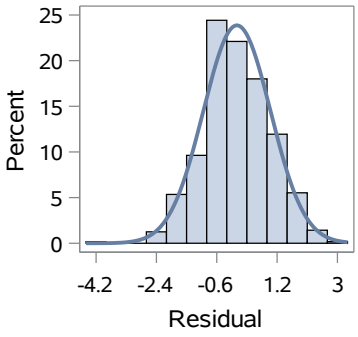


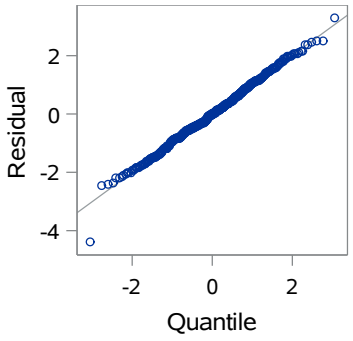


Residual Statistics	
Observations	561
Minimum	-0.455
Mean	-9E-16
Maximum	0.3614
Std Dev	0.1091
Fit Statistics	
Objective	-643.9
AIC	-641.9
AICC	-641.9
BIC	-637.6

Studentized Residuals for LPE

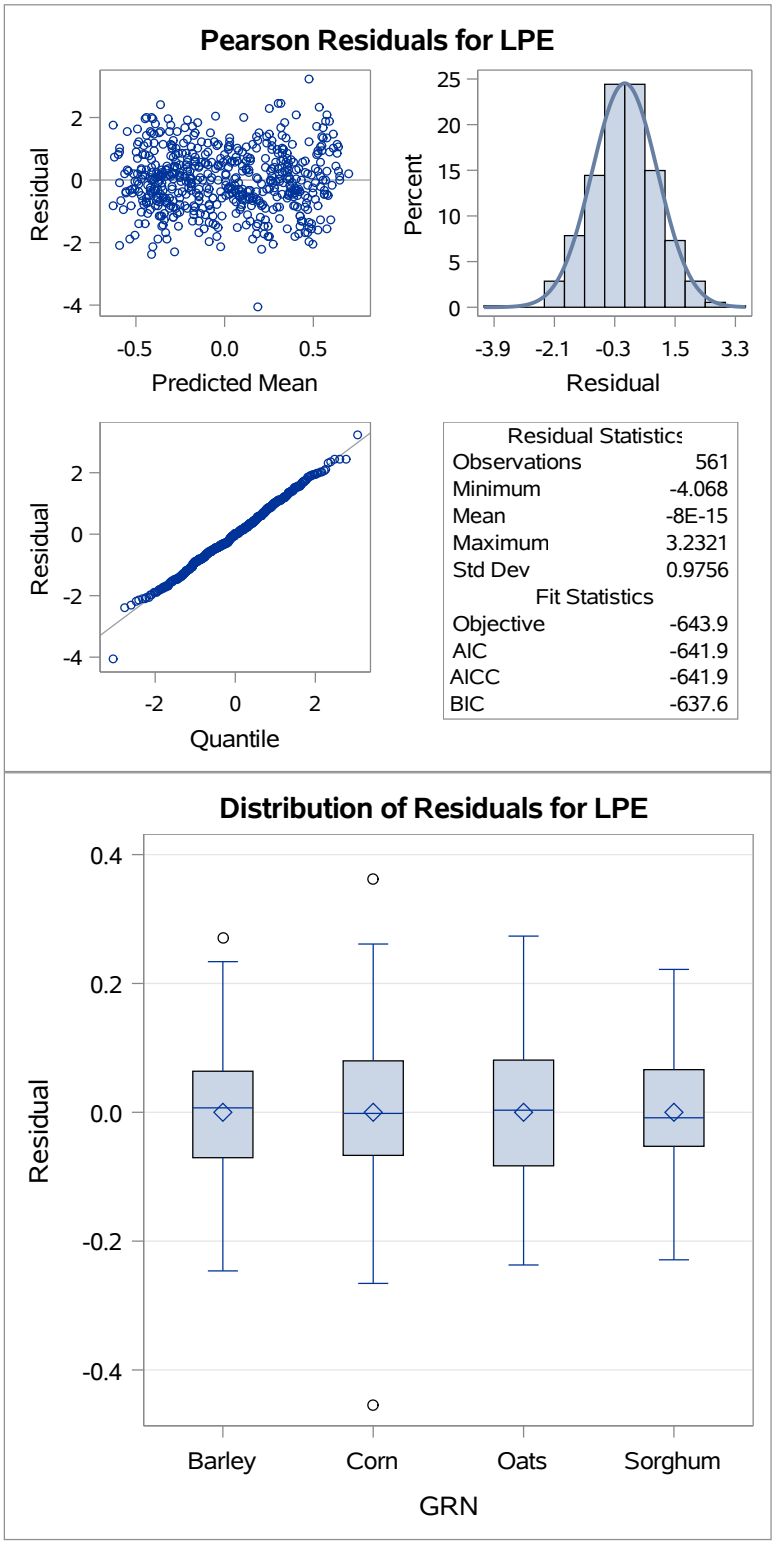




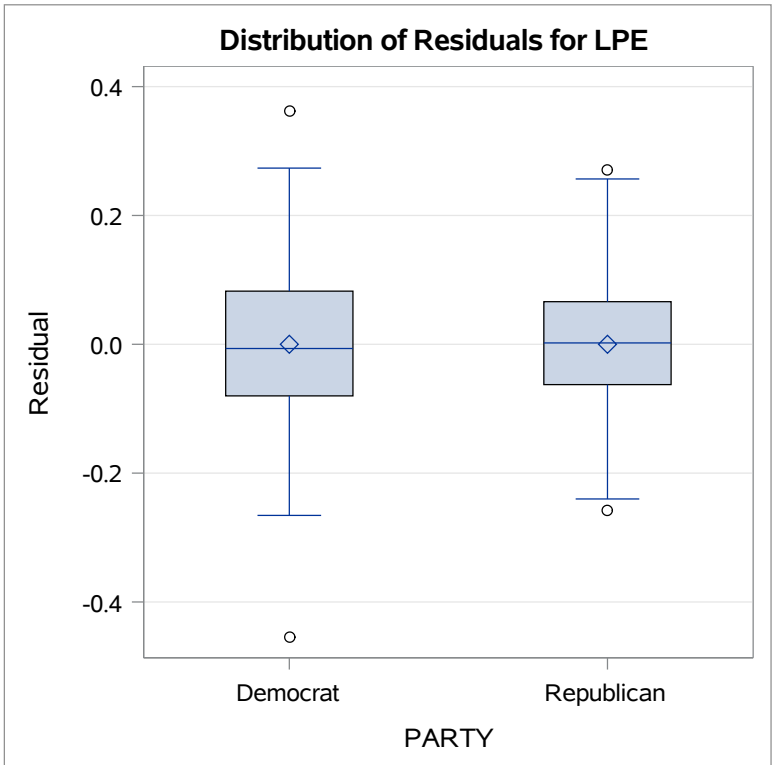


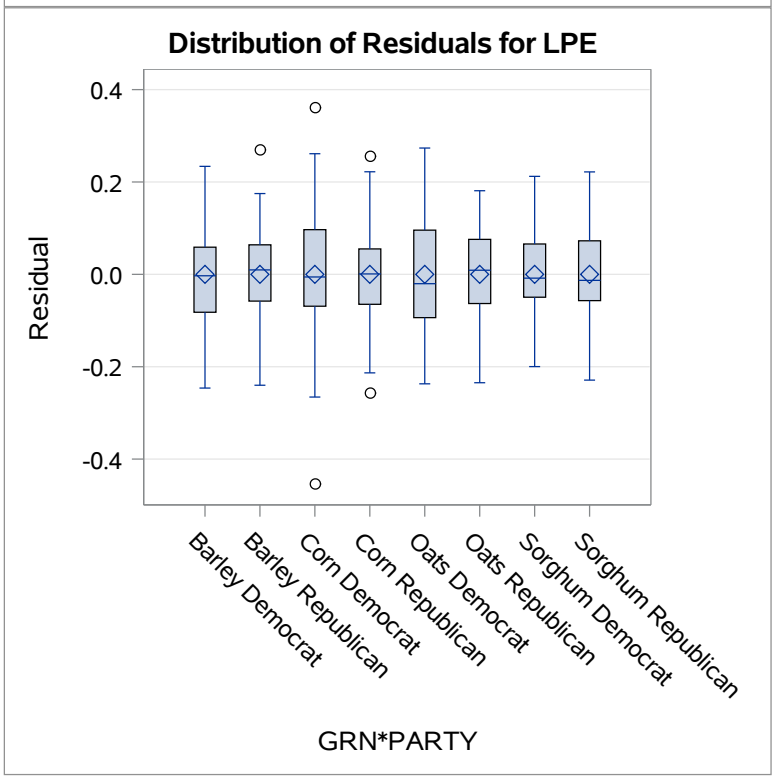
Residual Statistics	
Observations	561
Minimum	-4.398
Mean	0.0008
Maximum	3.2965
Std Dev	1.003
Fit Statistics	
Objective	-643.9
AIC	-641.9
AICC	-641.9
BIC	-637.6

The Mixed Procedure



The Mixed Procedure





The Mixed Procedure

Model Information	
Data Set	HOME.GRAINS
Dependent Variable	LPE
Covariance Structure	Diagonal
Estimation Method	REML
Residual Variance Method	Profile
Fixed Effects SE Method	Model-Based
Degrees of Freedom Method	Residual

Class Level Information		
Class	**Levels**	**Values**
PARTY	2	Democrat Republican
GRN	4	Barley Corn Oats Sorghum

Dimensions	
Covariance Parameters	1
Columns in X	42
Columns in Z	0
Subjects	1
Max Obs per Subject	519

Number of Observations	
Number of Observations Read	571
Number of Observations Used	519
Number of Observations Not Used	52

Covariance Parameter Estimates	
Cov Parm	**Estimate**
Residual	0.01163

Fit Statistics	
-2 Res Log Likelihood	-610.7
AIC (Smaller is Better)	-608.7
AICC (Smaller is Better)	-608.7
BIC (Smaller is Better)	-604.5

The Mixed Procedure

Solution for Fixed Effects

Effect	President party	Grain commodity	Estimate	Standard Error	DF	t Value	Pr > |t|
GRN		Barley	-7.2507	1.7792	489	-4.08	<.0001
GRN		Corn	-5.7205	2.2755	489	-2.51	0.0123
GRN		Oats	-8.5325	1.8820	489	-4.53	<.0001
GRN		Sorghum	-9.2675	3.7702	489	-2.46	0.0143
HVT			0.000715	0.006900	489	0.10	0.9175
PRD			-0.00033	0.000109	489	-3.00	0.0029
INFL			2.1475	0.3512	489	6.12	<.0001
PWR			-0.4228	0.1354	489	-3.12	0.0019
YEAR			0.004918	0.001874	489	2.62	0.0090
PARTY	Democrat		-0.01010	0.02605	489	-0.39	0.6983
PARTY	Republican		0	.	.	.	.
TEMP			-0.02515	0.02940	489	-0.86	0.3927
HVT*GRN		Barley	-0.02750	0.008160	489	-3.37	0.0008
HVT*GRN		Corn	0.000277	0.006970	489	0.04	0.9683
HVT*GRN		Oats	0.005849	0.007325	489	0.80	0.4250
HVT*GRN		Sorghum	0	.	.	.	.
PRD*GRN		Barley	0.000110	0.000188	489	0.58	0.5595
PRD*GRN		Corn	0.000344	0.000110	489	3.13	0.0019
PRD*GRN		Oats	-0.00007	0.000129	489	-0.57	0.5701
PRD*GRN		Sorghum	0	.	.	.	.
INFL*GRN		Barley	-0.3441	0.4198	489	-0.82	0.4128
INFL*GRN		Corn	-0.3883	0.4214	489	-0.92	0.3572
INFL*GRN		Oats	-0.03114	0.4241	489	-0.07	0.9415
INFL*GRN		Sorghum	0	.	.	.	.
PWR*GRN		Barley	0.1867	0.1455	489	1.28	0.1999
PWR*GRN		Corn	0.2024	0.1485	489	1.36	0.1736
PWR*GRN		Oats	0.3162	0.1442	489	2.19	0.0288
PWR*GRN		Sorghum	0	.	.	.	.
YEAR*GRN		Barley	-0.00097	0.001944	489	-0.50	0.6191
YEAR*GRN		Corn	-0.00197	0.002141	489	-0.92	0.3577
YEAR*GRN		Oats	-0.00052	0.001969	489	-0.26	0.7929
YEAR*GRN		Sorghum	0	.	.	.	.
PARTY*GRN	Democrat	Barley	-0.01790	0.03194	489	-0.56	0.5755
PARTY*GRN	Democrat	Corn	0.005879	0.03181	489	0.18	0.8534

The Mixed Procedure

Solution for Fixed Effects

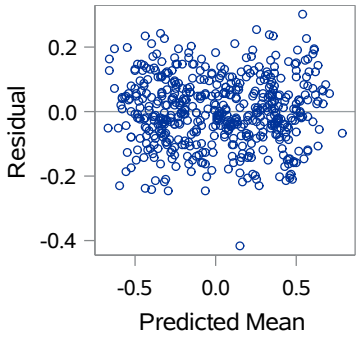
Effect	President party	Grain commodity	Estimate	Standard Error	DF	t Value	Pr > |t|
PARTY*GRN	Democrat	Oats	-0.03276	0.03184	489	-1.03	0.3041
PARTY*GRN	Democrat	Sorghum	0	.	.	.	.
PARTY*GRN	Republican	Barley	0	.	.	.	.
PARTY*GRN	Republican	Corn	0	.	.	.	.
PARTY*GRN	Republican	Oats	0	.	.	.	.
PARTY*GRN	Republican	Sorghum	0	.	.	.	.
TEMP*PARTY	Democrat		0.09660	0.02278	489	4.24	<.0001
TEMP*PARTY	Republican		0	.	.	.	.

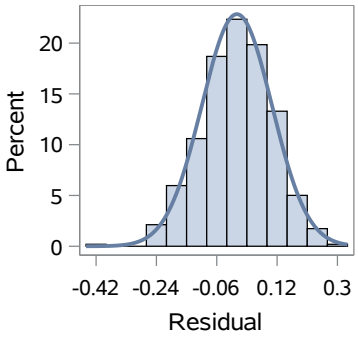
Type 3 Tests of Fixed Effects

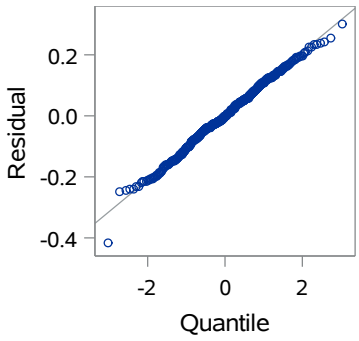
Effect	Num DF	Den DF	F Value	Pr > F
GRN	3	489	0.41	0.7471
HVT	1	489	4.65	0.0315
PRD	1	489	19.81	<.0001
INFL	1	489	203.95	<.0001
PWR	1	489	33.77	<.0001
YEAR	1	489	31.14	<.0001
PARTY	1	489	3.73	0.0539
TEMP	1	489	0.67	0.4126
HVT*GRN	3	489	15.29	<.0001
PRD*GRN	3	489	14.32	<.0001
INFL*GRN	3	489	0.61	0.6061
PWR*GRN	3	489	2.16	0.0919
YEAR*GRN	3	489	0.43	0.7315
PARTY*GRN	3	489	0.79	0.4973
TEMP*PARTY	1	489	17.98	<.0001

The Mixed Procedure

Residuals for LPE

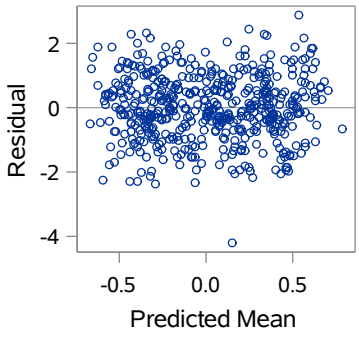


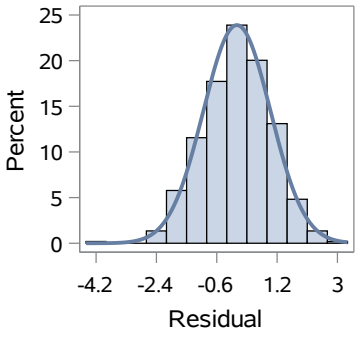


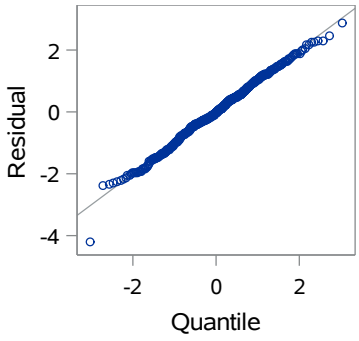


Residual Statistics	
Observations	519
Minimum	-0.418
Mean	-5E-16
Maximum	0.3021
Std Dev	0.1048
Fit Statistics	
Objective	-610.7
AIC	-608.7
AICC	-608.7
BIC	-604.5

Studentized Residuals for LPE

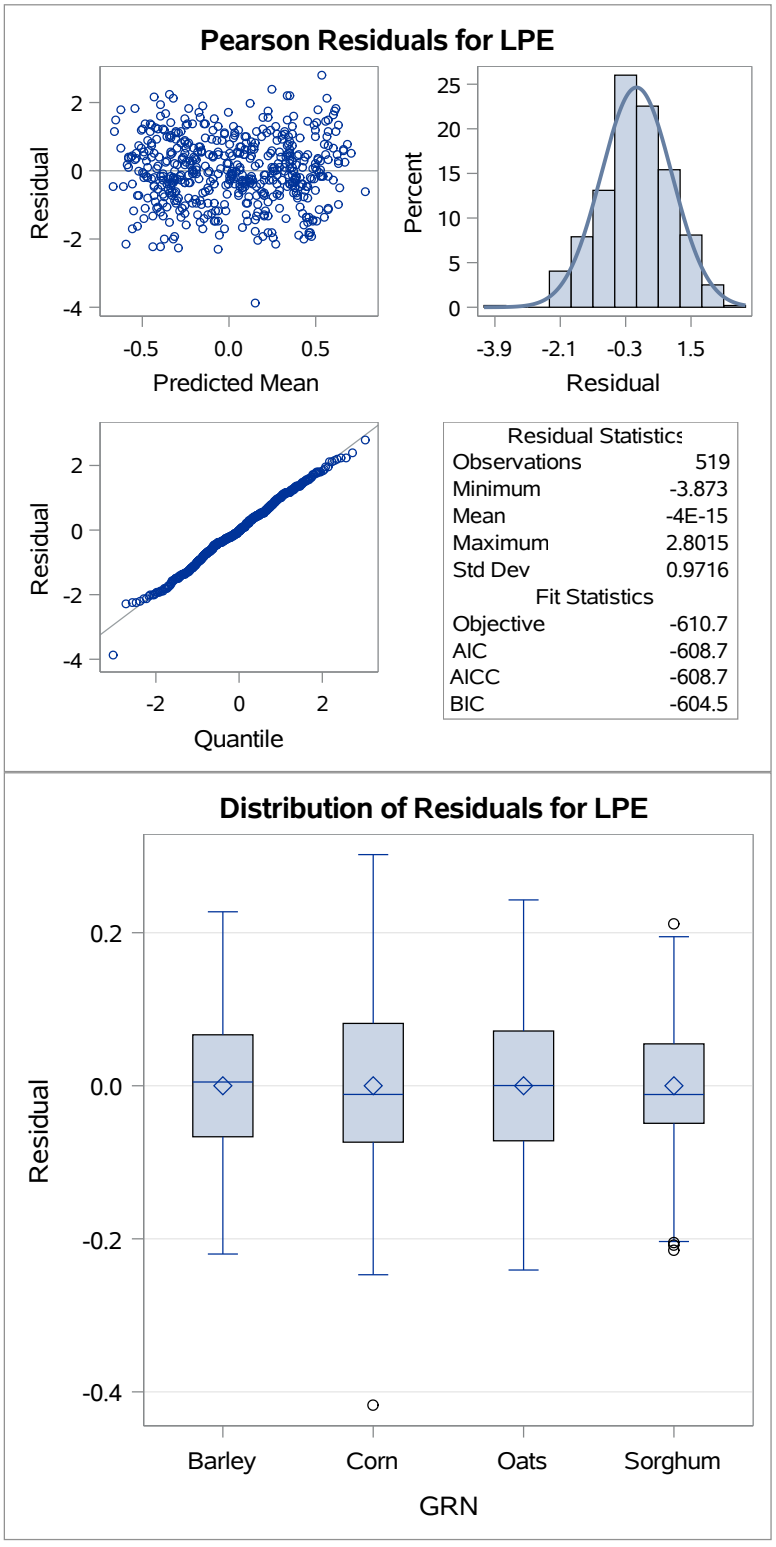




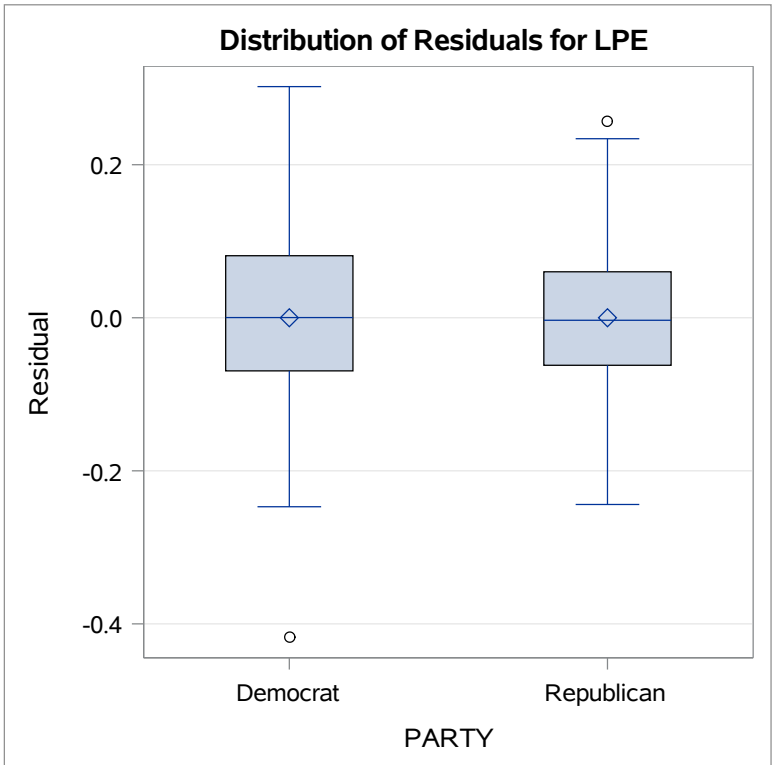


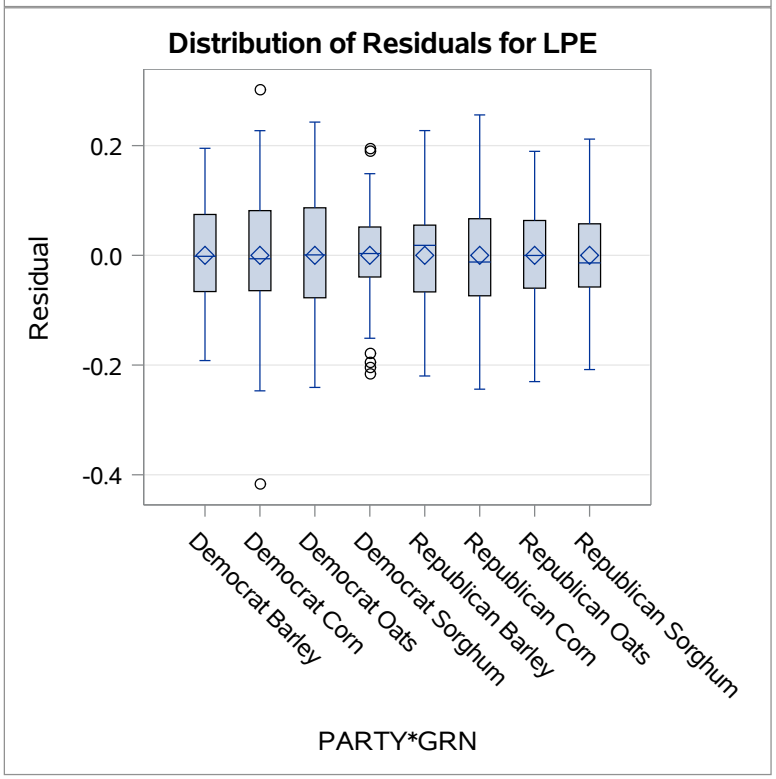
Residual Statistics	
Observations	519
Minimum	-4.215
Mean	0.0009
Maximum	2.8804
Std Dev	1.0018
Fit Statistics	
Objective	-610.7
AIC	-608.7
AICC	-608.7
BIC	-604.5

The Mixed Procedure



The Mixed Procedure





The Mixed Procedure

Model Information	
Data Set	HOME.GRAINS
Dependent Variable	LPE
Covariance Structure	Variance Components
Estimation Method	REML
Residual Variance Method	Parameter
Fixed Effects SE Method	Model-Based
Degrees of Freedom Method	Between-Within

Class Level Information		
Class	**Levels**	**Values**
GRN	4	Barley Corn Oats Sorghum

Dimensions	
Covariance Parameters	1
Columns in X	17
Columns in Z	0
Subjects	571
Max Obs per Subject	1

Number of Observations	
Number of Observations Read	571
Number of Observations Used	561
Number of Observations Not Used	10

Iteration History			
Iteration	**Evaluations**	**-2 Res Log Like**	**Criterion**
0	1	-639.28790249	
1	1	-639.28790249	0.00000000

Convergence criteria met.

Covariance Parameter Estimates	
Cov Parm	**Estimate**
Residual	0.01412

The Mixed Procedure

Fit Statistics	
-2 Res Log Likelihood	-639.3
AIC (Smaller is Better)	-637.3
AICC (Smaller is Better)	-637.3
BIC (Smaller is Better)	-632.9

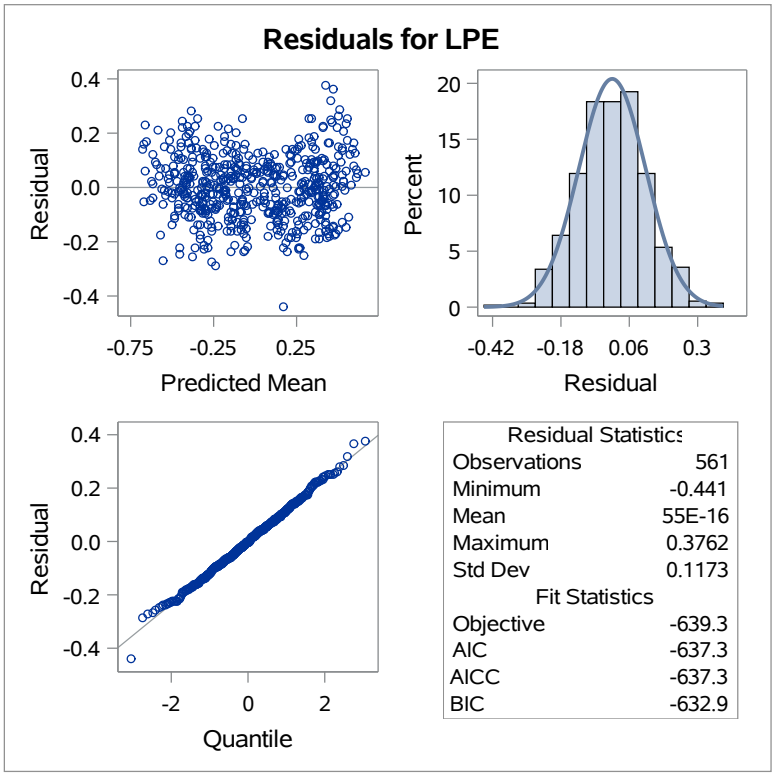
Null Model Likelihood Ratio Test		
DF	Chi-Square	Pr > ChiSq
0	0.00	1.0000

Solution for Fixed Effects						
Effect	Grain commodity	Estimate	Standard Error	DF	t Value	Pr > |t|
HVT		-0.02782	0.005328	546	-5.22	<.0001
PRD		0.000277	0.000080	546	3.49	0.0005
INFL		1.5095	0.1276	546	11.83	<.0001
PWR		-0.3065	0.02562	546	-11.96	<.0001
YEAR		0.002032	0.000341	546	5.96	<.0001
GRN	Barley	-3.4323	0.6791	546	-5.05	<.0001
GRN	Corn	-3.7516	0.6600	546	-5.68	<.0001
GRN	Oats	-3.7391	0.6807	546	-5.49	<.0001
GRN	Sorghum	-3.6019	0.6876	546	-5.24	<.0001
HVT*GRN	Barley	-0.01055	0.006375	546	-1.65	0.0985
HVT*GRN	Corn	0.02770	0.005377	546	5.15	<.0001
HVT*GRN	Oats	0.03718	0.005595	546	6.64	<.0001
HVT*GRN	Sorghum	0	.	.	.	.
PRD*GRN	Barley	-0.00021	0.000132	546	-1.62	0.1061
PRD*GRN	Corn	-0.00026	0.000079	546	-3.35	0.0009
PRD*GRN	Oats	-0.00078	0.000099	546	-7.87	<.0001
PRD*GRN	Sorghum	0	.	.	.	.

The Mixed Procedure

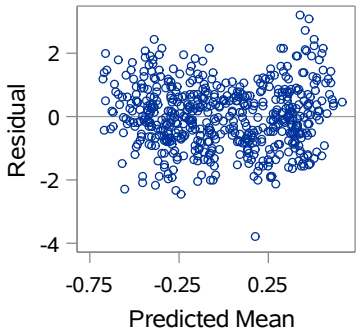
Type 3 Tests of Fixed Effects

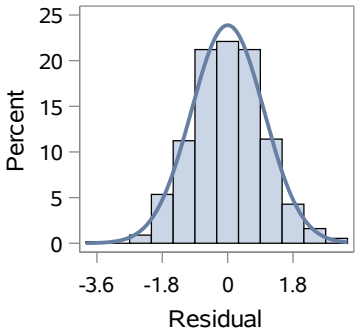
Effect	Num DF	Den DF	Chi-Square	F Value	Pr > ChiSq	Pr > F
HVT	1	546	56.47	56.47	<.0001	<.0001
PRD	1	546	0.64	0.64	0.4255	0.4258
INFL	1	546	139.90	139.90	<.0001	<.0001
PWR	1	546	143.09	143.09	<.0001	<.0001
YEAR	1	546	35.56	35.56	<.0001	<.0001
GRN	4	546	156.56	39.14	<.0001	<.0001
HVT*GRN	3	546	158.24	52.75	<.0001	<.0001
PRD*GRN	3	546	77.94	25.98	<.0001	<.0001

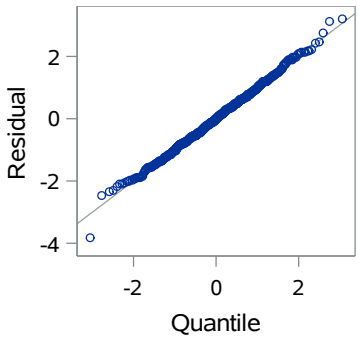


The Mixed Procedure

Studentized Residuals for LPE

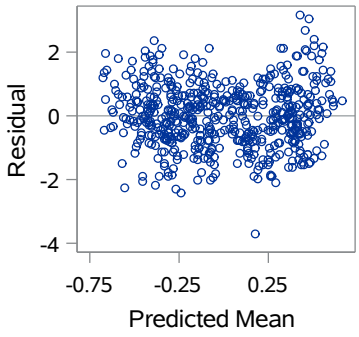


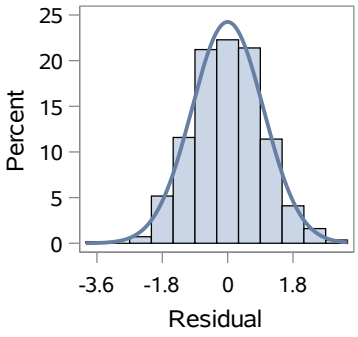


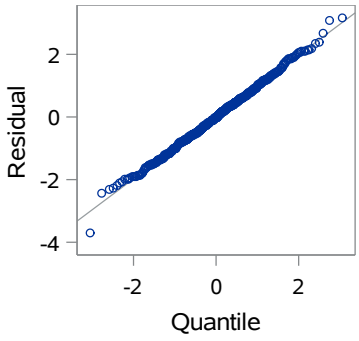


Residual Statistics	
Observations	561
Minimum	-3.806
Mean	0.0011
Maximum	3.2074
Std Dev	1.0024
Fit Statistics	
Objective	-639.3
AIC	-637.3
AICC	-637.3
BIC	-632.9

Pearson Residuals for LPE

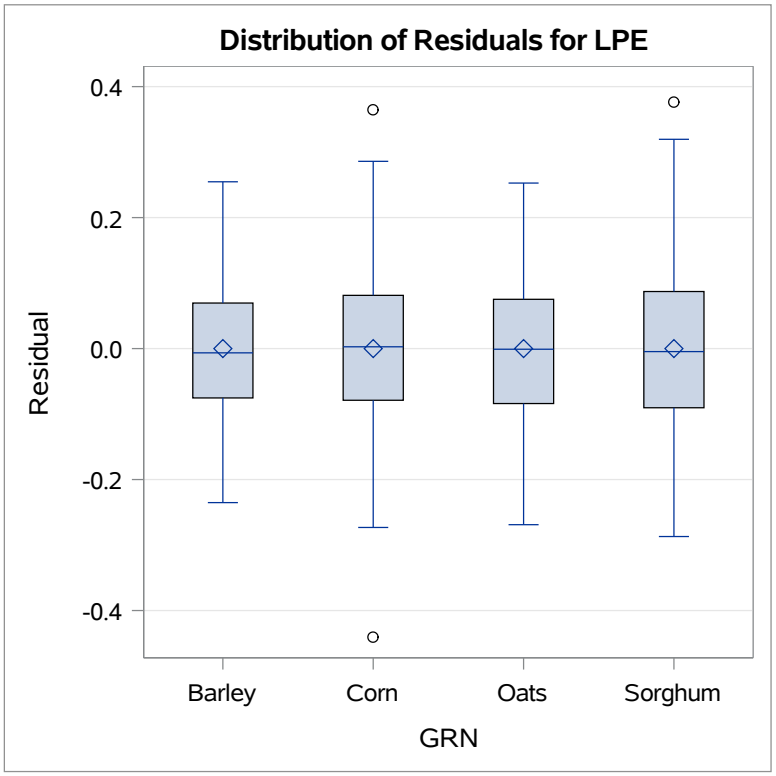






Residual Statistics	
Observations	561
Minimum	-3.71
Mean	46E-15
Maximum	3.1655
Std Dev	0.9874
Fit Statistics	
Objective	-639.3
AIC	-637.3
AICC	-637.3
BIC	-632.9

The Mixed Procedure



The ARIMA Procedure

Grain commodity=Barley

Name of Variable = LPE	
Mean of Working Series	0.029345
Standard Deviation	0.341347
Number of Observations	156

Autocorrelation Check for White Noise									
To Lag	**Chi-Square**	**DF**	**Pr > ChiSq**	**Autocorrelations**					
6	723.41	6	<.0001	0.949	0.904	0.870	0.838	0.817	0.799
12	1208.81	12	<.0001	0.779	0.748	0.716	0.676	0.630	0.599
18	1502.72	18	<.0001	0.571	0.542	0.521	0.517	0.517	0.500
24	1728.70	24	<.0001	0.483	0.466	0.445	0.443	0.444	0.439
30	1939.71	30	<.0001	0.439	0.442	0.438	0.429	0.419	0.403

Squared Canonical Correlation Estimates						
Lags	**MA 0**	**MA 1**	**MA 2**	**MA 3**	**MA 4**	**MA 5**
AR 0	0.9241	0.8591	0.8163	0.7759	0.7572	0.7453
AR 1	0.0019	0.0168	0.0006	0.0236	0.0028	<.0001
AR 2	0.0176	0.0065	0.0097	0.0116	0.0002	0.0025
AR 3	0.0013	0.0097	0.0004	0.0089	0.0090	0.0191
AR 4	0.0314	0.0134	0.0092	0.0029	0.0126	<.0001
AR 5	0.0079	0.0003	0.0115	0.0126	0.0074	0.0111

SCAN Chi-Square[1] Probability Values						
Lags	**MA 0**	**MA 1**	**MA 2**	**MA 3**	**MA 4**	**MA 5**
AR 0	<.0001	<.0001	<.0001	<.0001	<.0001	0.0002
AR 1	0.5825	0.1068	0.7736	0.0622	0.5345	0.9899
AR 2	0.0983	0.4040	0.2859	0.2721	0.8735	0.5626
AR 3	0.6550	0.2835	0.8326	0.3340	0.4095	0.1708
AR 4	0.0277	0.2416	0.3155	0.6091	0.3159	0.9952
AR 5	0.2741	0.8568	0.3561	0.3054	0.4687	0.3646

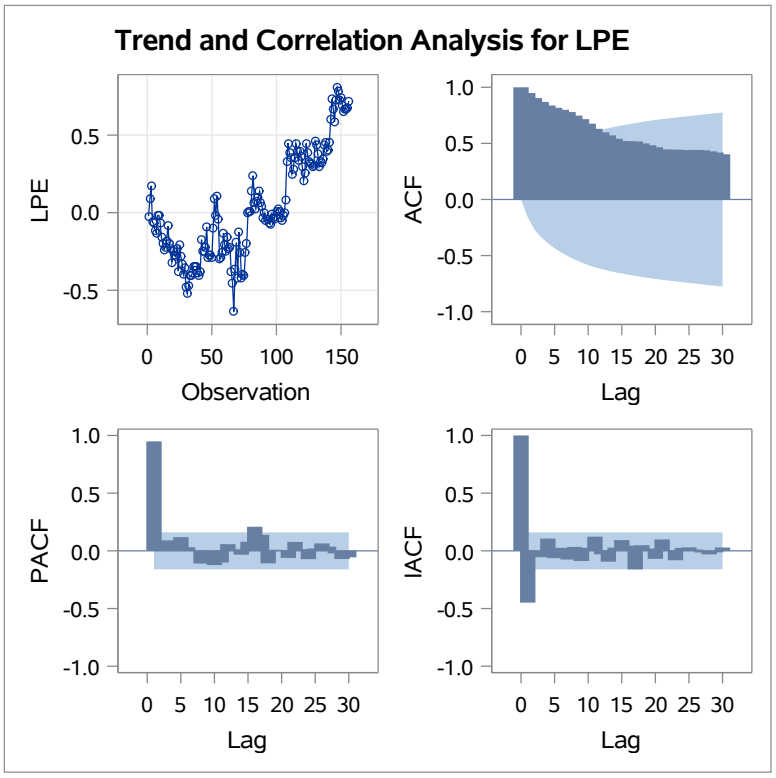
The ARIMA Procedure

Grain commodity=Barley

ARMA(p+d,q) Tentative Order Selection Tests	
SCAN	
p+d	q
1	1
5	0

(5% Significance Level)

Random Walk with Drift Tests			
Type	Lags	Tau	Pr < Tau
Drift	0	-1.09	0.2762
	1	-0.96	0.3364
	2	-0.66	0.5123
	3	-0.55	0.5823
	4	-0.17	0.8631
	5	0.02	0.9847
	6	0.17	0.8659
	7	-0.11	0.9121
	8	-0.02	0.9804
	9	-0.35	0.7283
	10	-0.69	0.4914



The ARIMA Procedure

Grain commodity=Corn

Name of Variable = LPE	
Mean of Working Series	0.017855
Standard Deviation	0.360393
Number of Observations	156

Autocorrelation Check for White Noise									
To Lag	**Chi-Square**	**DF**	**Pr > ChiSq**	**Autocorrelations**					
6	710.49	6	<.0001	0.940	0.888	0.852	0.832	0.817	0.802
12	1228.29	12	<.0001	0.783	0.758	0.734	0.709	0.675	0.630
18	1562.69	18	<.0001	0.600	0.575	0.557	0.550	0.556	0.543
24	1830.71	24	<.0001	0.523	0.502	0.488	0.483	0.487	0.478
30	2072.09	30	<.0001	0.479	0.473	0.470	0.461	0.442	0.421

Squared Canonical Correlation Estimates						
Lags	**MA 0**	**MA 1**	**MA 2**	**MA 3**	**MA 4**	**MA 5**
AR 0	0.9108	0.8301	0.7774	0.7532	0.7406	0.7284
AR 1	0.0001	0.0185	0.0286	0.0047	<.0001	0.0004
AR 2	0.0184	0.0043	0.0041	0.0005	0.0004	<.0001
AR 3	0.0316	0.0029	0.0007	<.0001	0.0005	0.0045
AR 4	0.0120	<.0001	<.0001	0.0006	0.0005	0.0038
AR 5	0.0053	<.0001	<.0001	0.0005	0.0001	0.0006

SCAN Chi-Square[1] Probability Values						
Lags	**MA 0**	**MA 1**	**MA 2**	**MA 3**	**MA 4**	**MA 5**
AR 0	<.0001	<.0001	<.0001	<.0001	<.0001	0.0002
AR 1	0.8868	0.0899	0.0400	0.4221	0.9891	0.8261
AR 2	0.0907	0.4755	0.4972	0.8020	0.8258	0.9926
AR 3	0.0267	0.5854	0.8146	0.9986	0.8087	0.4817
AR 4	0.1756	0.9816	0.9556	0.8083	0.8162	0.6035
AR 5	0.3699	0.9576	0.9886	0.8154	0.9101	0.8405

The ARIMA Procedure

Grain commodity=Corn

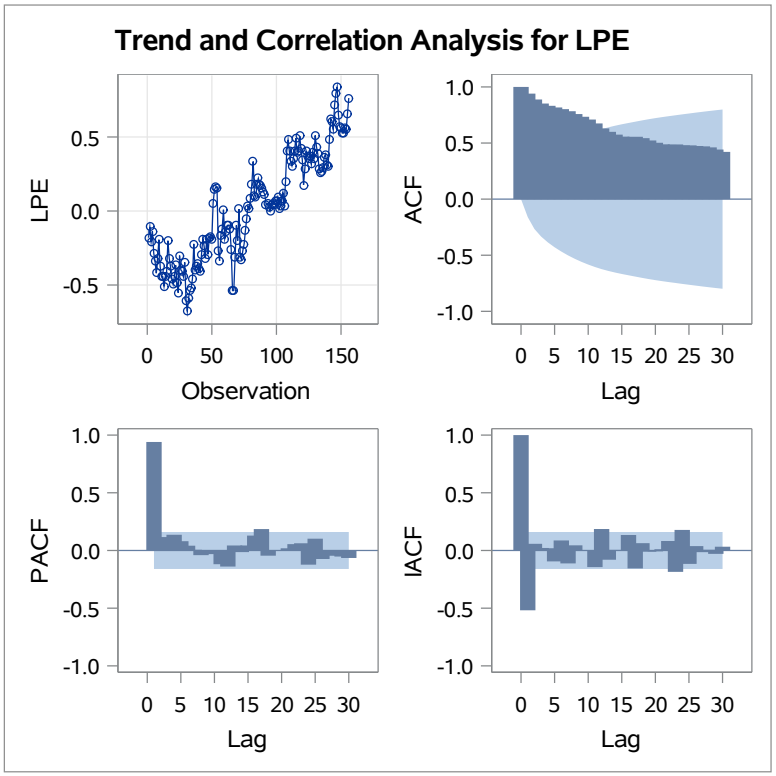
ARMA(p+d,q) Tentative Order Selection Tests	
SCAN	
p+d	q
2	1
1	3
4	0

(5% Significance Level)

Random Walk with Drift Tests			
Type	Lags	Tau	Pr < Tau
Drift	0	-1.33	0.1869
	1	-1.24	0.2154
	2	-0.97	0.3317
	3	-0.59	0.5560
	4	-0.45	0.6532
	5	-0.35	0.7251
	6	-0.32	0.7531
	7	-0.34	0.7368
	8	-0.22	0.8295
	9	-0.11	0.9099
	10	-0.42	0.6761

The ARIMA Procedure

Grain commodity=Corn



The ARIMA Procedure

Grain commodity=Oats

Name of Variable = LPE	
Mean of Working Series	-0.17862
Standard Deviation	0.337359
Number of Observations	156

Autocorrelation Check for White Noise									
To Lag	**Chi-Square**	**DF**	**Pr > ChiSq**	**Autocorrelations**					
6	705.87	6	<.0001	0.934	0.884	0.854	0.829	0.812	0.802
12	1206.76	12	<.0001	0.788	0.753	0.723	0.688	0.650	0.612
18	1523.36	18	<.0001	0.594	0.568	0.546	0.539	0.531	0.512
24	1770.11	24	<.0001	0.499	0.485	0.464	0.463	0.467	0.464
30	1998.60	30	<.0001	0.467	0.463	0.454	0.443	0.430	0.415

Squared Canonical Correlation Estimates						
Lags	**MA 0**	**MA 1**	**MA 2**	**MA 3**	**MA 4**	**MA 5**
AR 0	0.9074	0.8322	0.7949	0.7667	0.7537	0.7495
AR 1	0.0031	0.0439	0.0025	0.0081	0.0011	0.0009
AR 2	0.0463	0.0220	0.0048	0.0025	0.0013	0.0011
AR 3	0.0072	0.0098	<.0001	0.0033	0.0015	0.0071
AR 4	0.0258	0.0055	0.0033	0.0005	0.0054	0.0004
AR 5	0.0109	<.0001	0.0038	0.0119	0.0150	0.0159

SCAN Chi-Square[1] Probability Values						
Lags	**MA 0**	**MA 1**	**MA 2**	**MA 3**	**MA 4**	**MA 5**
AR 0	<.0001	<.0001	<.0001	<.0001	<.0001	0.0002
AR 1	0.4906	0.0088	0.5533	0.2917	0.6990	0.7244
AR 2	0.0069	0.1148	0.4443	0.6092	0.6825	0.7046
AR 3	0.2916	0.3119	0.9933	0.5500	0.7259	0.3747
AR 4	0.0463	0.4562	0.5496	0.8240	0.4545	0.8462
AR 5	0.1977	0.9883	0.6022	0.2652	0.2745	0.2510

The ARIMA Procedure

Grain commodity=Oats

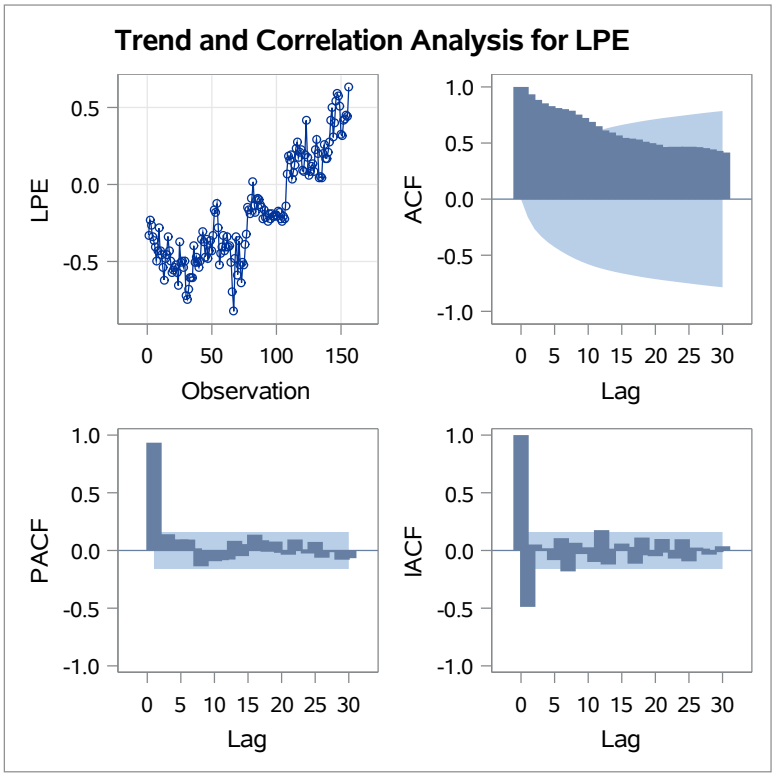
ARMA(p+d,q) Tentative Order Selection Tests	
SCAN	
p+d	q
2	1
1	2
5	0

(5% Significance Level)

Random Walk with Drift Tests			
Type	Lags	Tau	Pr < Tau
Drift	0	-1.40	0.1635
	1	-1.22	0.2245
	2	-0.89	0.3761
	3	-0.80	0.4243
	4	-0.63	0.5293
	5	-0.57	0.5718
	6	-0.59	0.5549
	7	-0.68	0.4996
	8	-0.52	0.6050
	9	-0.71	0.4775
	10	-0.83	0.4087

The ARIMA Procedure

Grain commodity=Oats



The ARIMA Procedure

Grain commodity=Sorghum

Warning: The value of NLAG is larger than 25% of the series length. The asymptotic approximations used for correlation based statistics and confidence intervals may be poor.

Name of Variable = LPE	
Mean of Working Series	0.16719
Standard Deviation	0.288231
Number of Observations	103

Autocorrelation Check for White Noise									
To Lag	**Chi-Square**	**DF**	**Pr > ChiSq**	**Autocorrelations**					
6	393.62	6	<.0001	0.905	0.818	0.767	0.741	0.722	0.695
12	608.38	12	<.0001	0.656	0.610	0.584	0.543	0.493	0.430
18	688.22	18	<.0001	0.383	0.350	0.321	0.295	0.309	0.306
24	735.17	24	<.0001	0.279	0.252	0.234	0.232	0.232	0.225
30	782.23	30	<.0001	0.216	0.226	0.242	0.251	0.240	0.227

Squared Canonical Correlation Estimates						
Lags	**MA 0**	**MA 1**	**MA 2**	**MA 3**	**MA 4**	**MA 5**
AR 0	0.8558	0.7335	0.6711	0.6392	0.6203	0.5822
AR 1	0.0001	0.0223	0.0288	0.0026	0.0096	0.0028
AR 2	0.0233	0.0013	0.0097	0.0116	0.0064	0.0002
AR 3	0.0317	0.0085	0.0032	0.0003	0.0010	0.0053
AR 4	0.0083	0.0042	0.0009	0.0010	0.0001	0.0057
AR 5	0.0012	0.0002	0.0002	0.0008	0.0028	0.0019

SCAN Chi-Square[1] Probability Values						
Lags	**MA 0**	**MA 1**	**MA 2**	**MA 3**	**MA 4**	**MA 5**
AR 0	<.0001	<.0001	<.0001	0.0003	0.0014	0.0043
AR 1	0.9064	0.1316	0.0912	0.6252	0.3546	0.6209
AR 2	0.1225	0.7455	0.4038	0.3195	0.4530	0.9166
AR 3	0.0725	0.4587	0.7001	0.9041	0.8320	0.5265
AR 4	0.3651	0.5706	0.8207	0.8305	0.9244	0.5245
AR 5	0.7281	0.9056	0.9084	0.7968	0.7061	0.7539

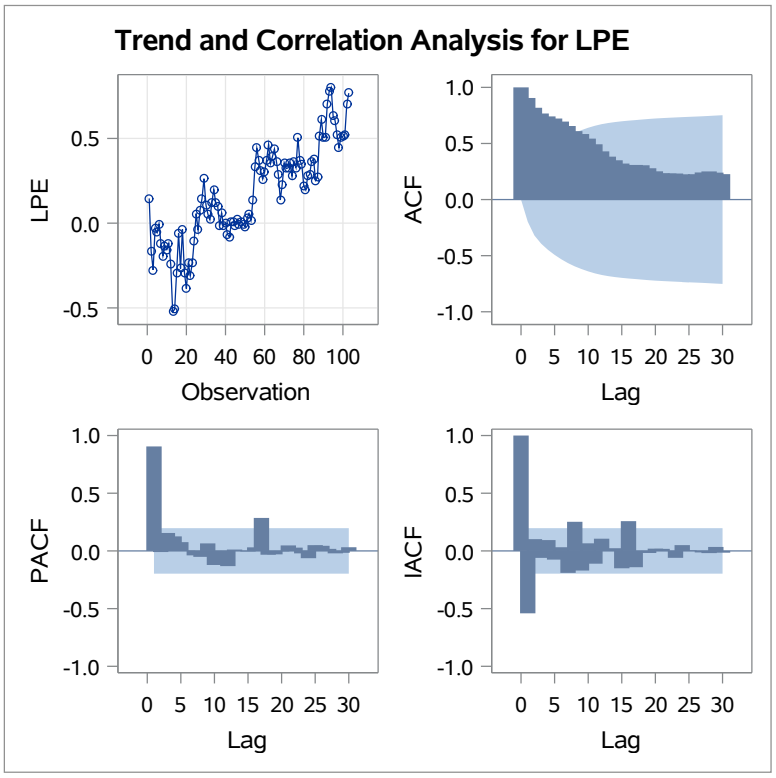
The ARIMA Procedure

Grain commodity=Sorghum

ARMA(p+d,q) Tentative Order Selection Tests	
SCAN	
p+d	q
1	0

(5% Significance Level)

Random Walk with Drift Tests			
Type	Lags	Tau	Pr < Tau
Drift	0	-0.94	0.3473
	1	-0.81	0.4197
	2	-0.45	0.6562
	3	-0.08	0.9327
	4	0.10	0.9241
	5	0.05	0.9571
	6	0.06	0.9514
	7	0.07	0.9477
	8	0.35	0.7254
	9	0.31	0.7576
	10	0.19	0.8492

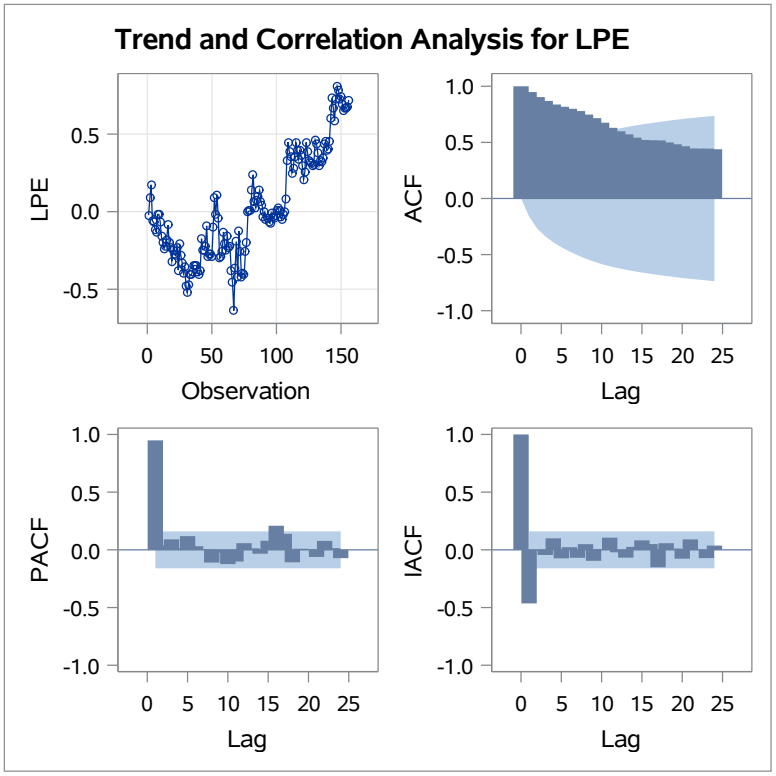


The ARIMA Procedure

Grain commodity=Barley

Name of Variable = LPE	
Mean of Working Series	0.029345
Standard Deviation	0.341347
Number of Observations	156

Autocorrelation Check for White Noise									
To Lag	Chi-Square	DF	Pr > ChiSq	Autocorrelations					
6	723.41	6	<.0001	0.949	0.904	0.870	0.838	0.817	0.799
12	1208.81	12	<.0001	0.779	0.748	0.716	0.676	0.630	0.599
18	1502.72	18	<.0001	0.571	0.542	0.521	0.517	0.517	0.500
24	1728.70	24	<.0001	0.483	0.466	0.445	0.443	0.444	0.439



Conditional Least Squares Estimation					
Parameter	Estimate	Standard Error	t Value	Approx Pr > |t|	Lag
MU	-0.0016227	0.09059	-0.02	0.9857	0
AR1,1	0.97553	0.02245	43.46	<.0001	1

The ARIMA Procedure

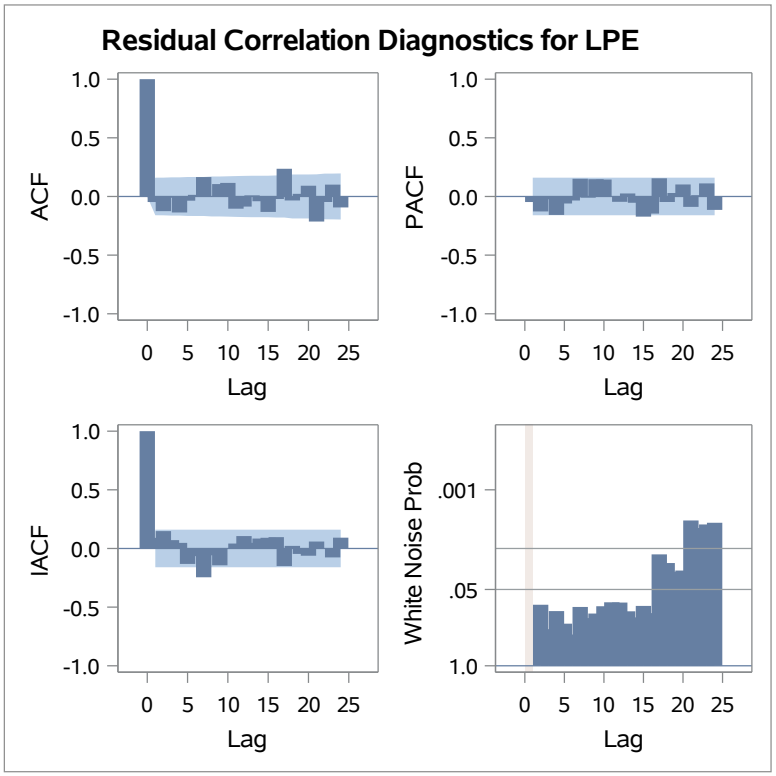
Grain commodity=Barley

Constant Estimate	-0.00004
Variance Estimate	0.008965
Std Error Estimate	0.094685
AIC	-290.751
SBC	-284.651
Number of Residuals	156

*** AIC and SBC do not include log determinant.**

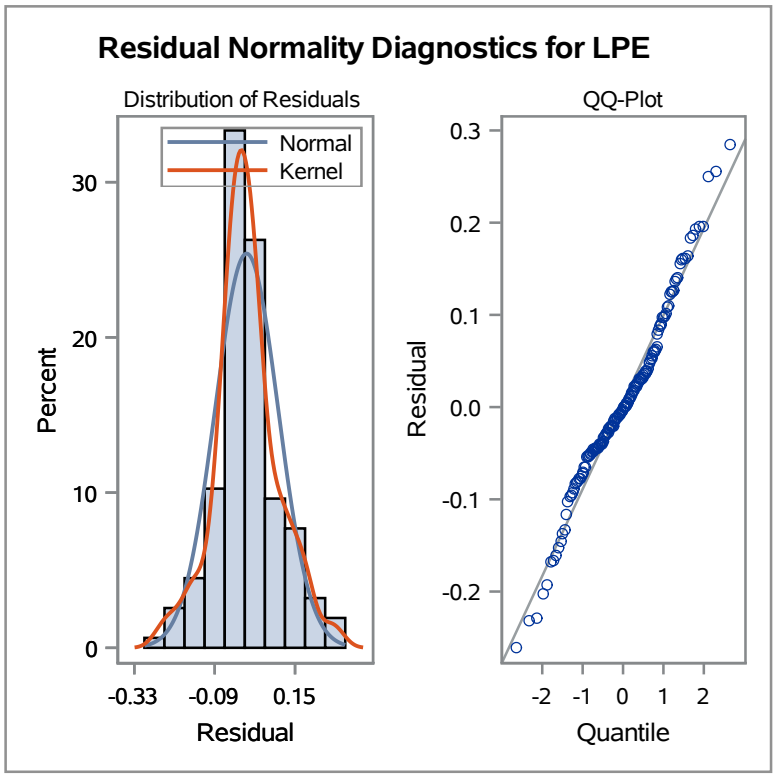
Correlations of Parameter Estimates		
Parameter	**MU**	**AR1,1**
MU	1.000	-0.022
AR1,1	-0.022	1.000

Autocorrelation Check of Residuals									
To Lag	**Chi-Square**	**DF**	**Pr > ChiSq**	**Autocorrelations**					
6	5.80	5	0.3258	-0.044	-0.122	-0.009	-0.133	-0.033	0.017
12	17.73	11	0.0881	0.168	-0.001	0.109	0.118	-0.101	-0.083
18	31.16	17	0.0191	0.013	-0.037	-0.129	-0.020	0.238	-0.031
24	44.82	23	0.0042	0.025	0.093	-0.211	-0.045	0.103	-0.090
30	53.16	29	0.0040	-0.065	0.081	0.156	0.023	0.068	0.058



The ARIMA Procedure

Grain commodity=Barley



Model for variable LPE	
Estimated Mean	-0.00162

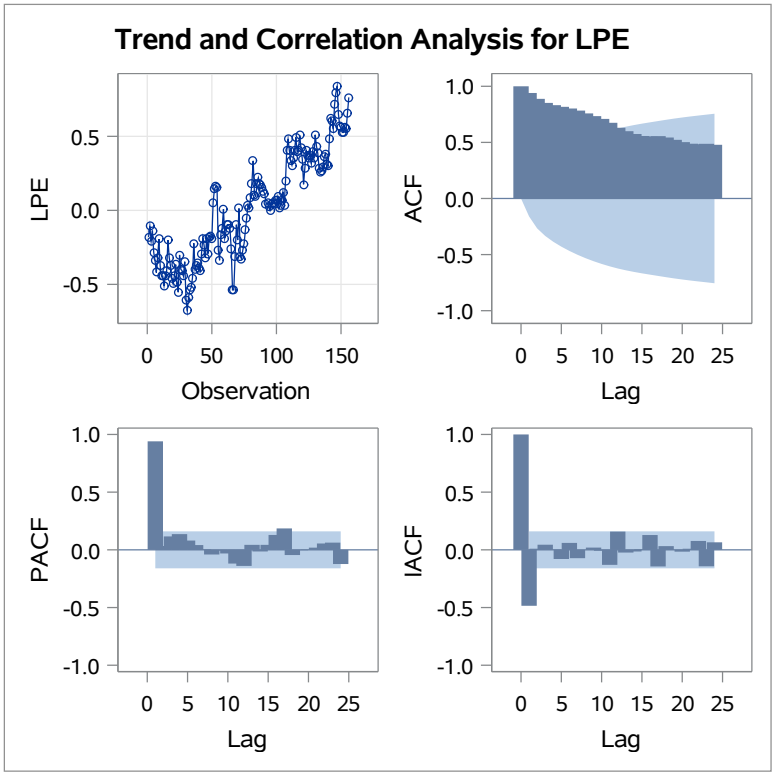
Autoregressive Factors	
Factor 1:	1 - 0.97553 B**(1)

The ARIMA Procedure

Grain commodity=Corn

Name of Variable = LPE	
Mean of Working Series	0.017855
Standard Deviation	0.360393
Number of Observations	156

Autocorrelation Check for White Noise									
To Lag	Chi-Square	DF	Pr > ChiSq	Autocorrelations					
6	710.49	6	<.0001	0.940	0.888	0.852	0.832	0.817	0.802
12	1228.29	12	<.0001	0.783	0.758	0.734	0.709	0.675	0.630
18	1562.69	18	<.0001	0.600	0.575	0.557	0.550	0.556	0.543
24	1830.71	24	<.0001	0.523	0.502	0.488	0.483	0.487	0.478



Conditional Least Squares Estimation					
Parameter	Estimate	Standard Error	t Value	Approx Pr > |t|	Lag
MU	-0.14982	0.10568	-1.42	0.1583	0
AR1,1	0.97917	0.02237	43.76	<.0001	1

The ARIMA Procedure

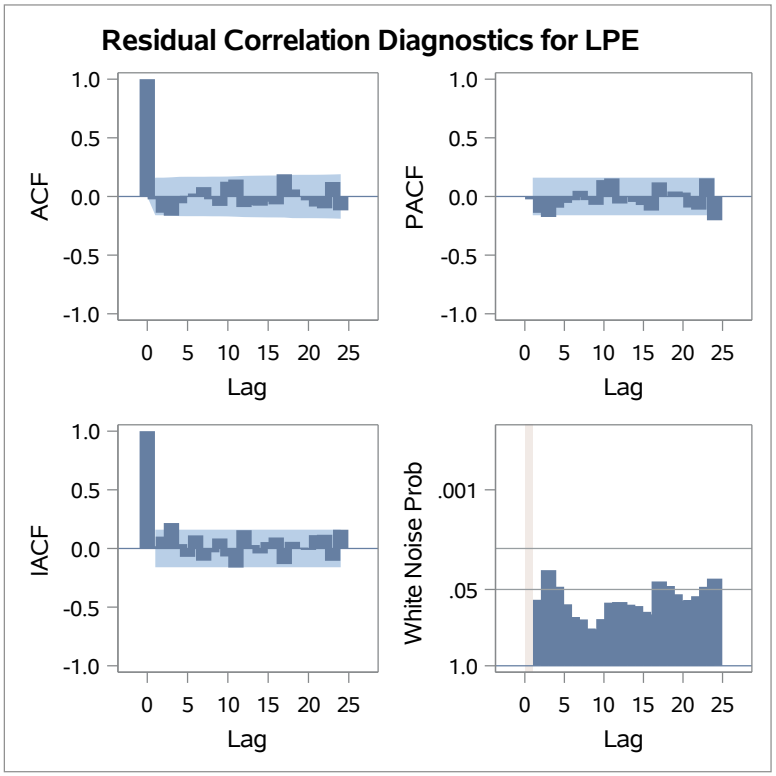
Grain commodity=Corn

Constant Estimate	-0.00312
Variance Estimate	0.01179
Std Error Estimate	0.108582
AIC	-248.021
SBC	-241.922
Number of Residuals	156

*** AIC and SBC do not include log determinant.**

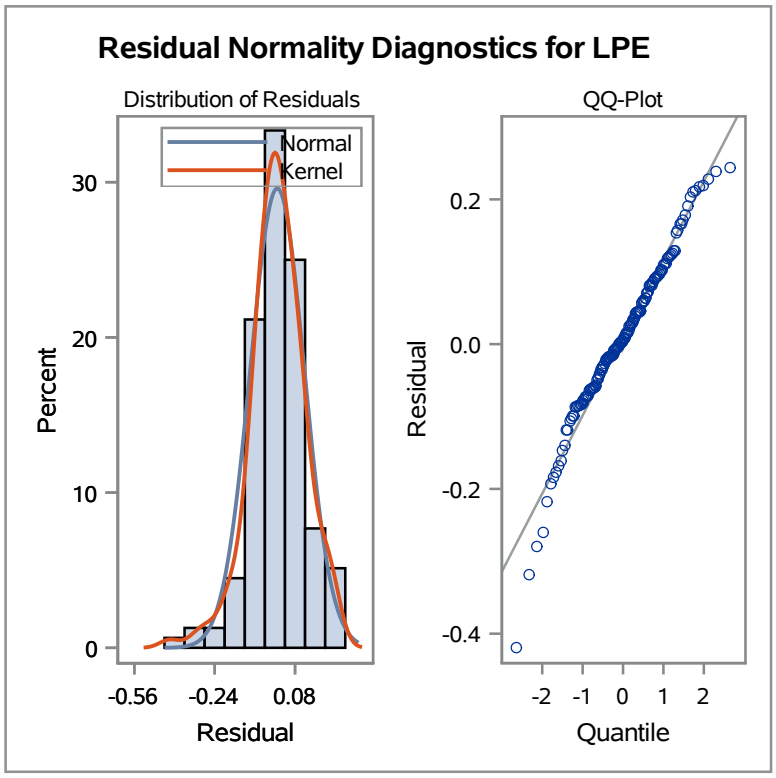
Correlations of Parameter Estimates		
Parameter	MU	AR1,1
MU	1.000	-0.104
AR1,1	-0.104	1.000

Autocorrelation Check of Residuals									
To Lag	Chi-Square	DF	Pr > ChiSq	Autocorrelations					
6	7.39	5	0.1932	-0.017	-0.132	-0.156	-0.052	0.012	0.032
12	17.59	11	0.0917	0.086	-0.016	-0.072	0.133	0.151	-0.082
18	27.49	17	0.0513	-0.064	-0.070	-0.038	-0.062	0.194	0.066
24	35.77	23	0.0436	0.008	-0.026	-0.079	-0.095	0.129	-0.110
30	43.16	29	0.0440	0.051	-0.053	0.134	0.111	0.036	-0.040



The ARIMA Procedure

Grain commodity=Corn



Model for variable LPE	
Estimated Mean	-0.14982

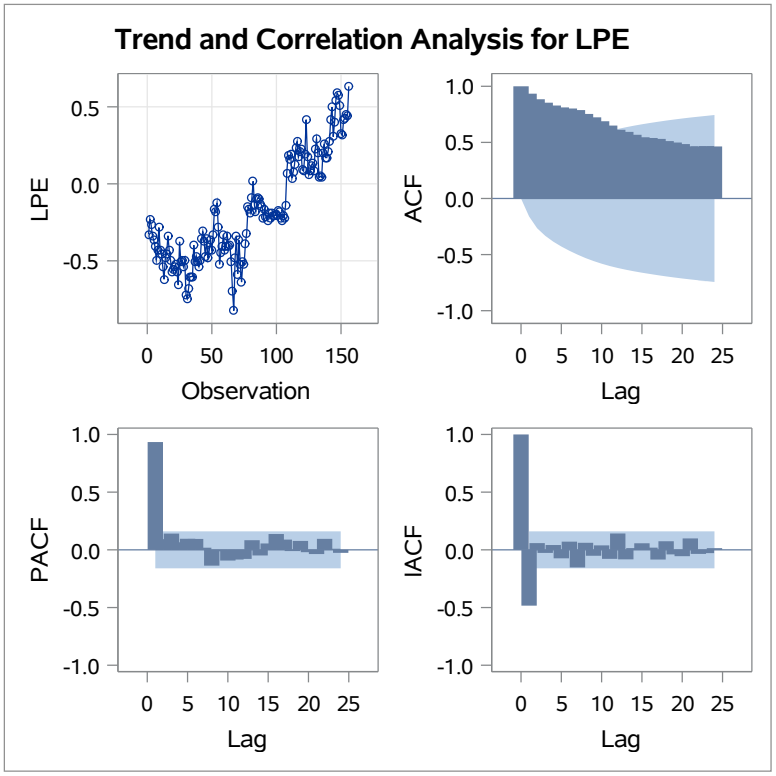
Autoregressive Factors	
Factor 1:	1 - 0.97917 B**(1)

The ARIMA Procedure

Grain commodity=Oats

Name of Variable = LPE	
Mean of Working Series	-0.17862
Standard Deviation	0.337359
Number of Observations	156

Autocorrelation Check for White Noise									
To Lag	Chi-Square	DF	Pr > ChiSq	Autocorrelations					
6	705.87	6	<.0001	0.934	0.884	0.854	0.829	0.812	0.802
12	1206.76	12	<.0001	0.788	0.753	0.723	0.688	0.650	0.612
18	1523.36	18	<.0001	0.594	0.568	0.546	0.539	0.531	0.512
24	1770.11	24	<.0001	0.499	0.485	0.464	0.463	0.467	0.464



Conditional Least Squares Estimation					
Parameter	Estimate	Standard Error	t Value	Approx Pr > |t|	Lag
MU	-0.30058	0.10065	-2.99	0.0033	0
AR1,1	0.97952	0.02371	41.32	<.0001	1

The ARIMA Procedure

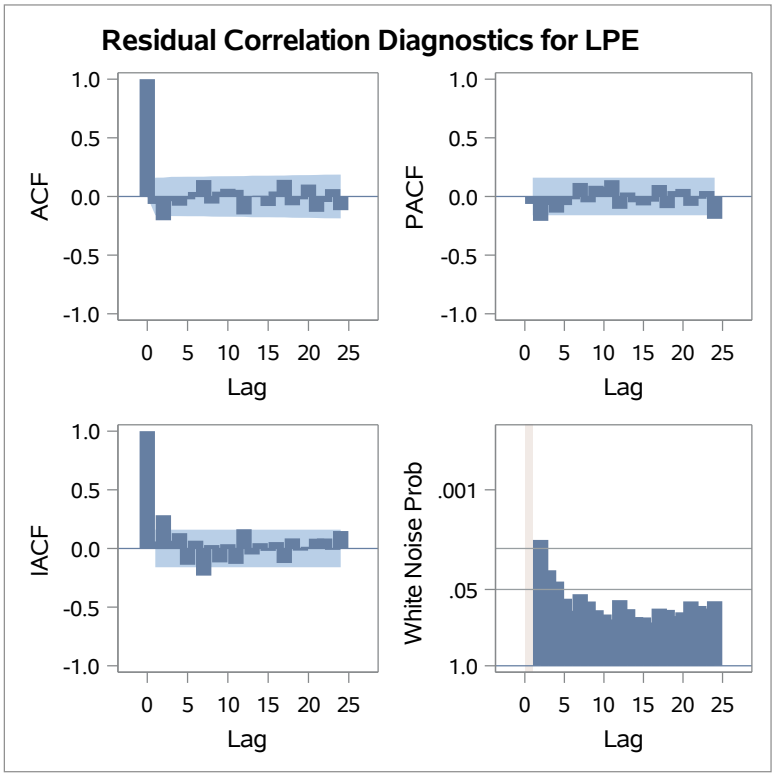
Grain commodity=Oats

Constant Estimate	-0.00616
Variance Estimate	0.010718
Std Error Estimate	0.103528
AIC	-262.894
SBC	-256.794
Number of Residuals	156

*** AIC and SBC do not include log determinant.**

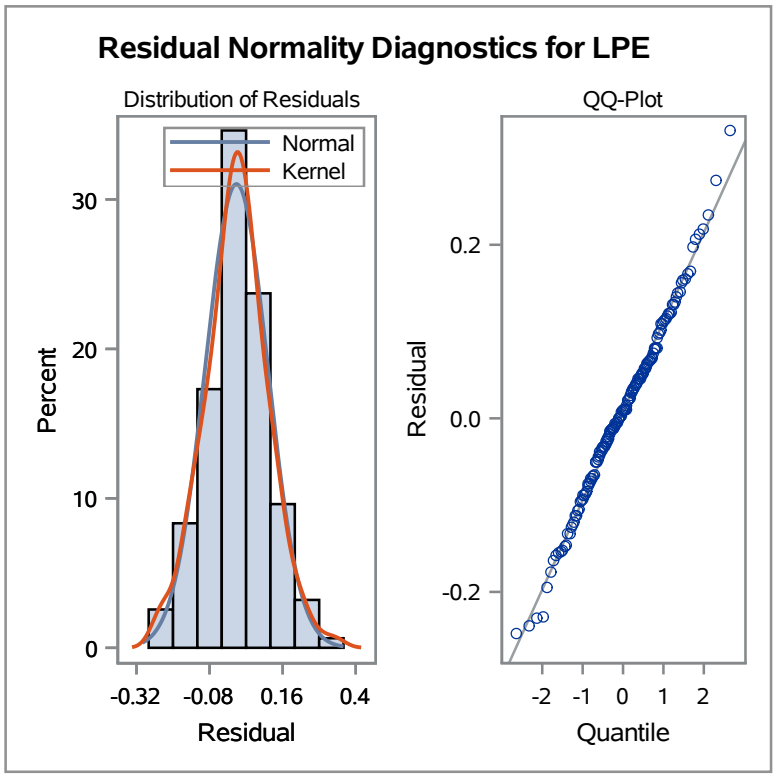
Correlations of Parameter Estimates		
Parameter	**MU**	**AR1,1**
MU	1.000	-0.082
AR1,1	-0.082	1.000

Autocorrelation Check of Residuals									
To Lag	**Chi-Square**	**DF**	**Pr > ChiSq**	**Autocorrelations**					
6	8.12	5	0.1498	-0.058	-0.196	-0.035	-0.073	-0.019	0.043
12	17.65	11	0.0901	0.146	-0.053	0.047	0.072	0.062	-0.146
18	23.67	17	0.1286	0.003	0.012	-0.076	0.046	0.146	-0.070
24	32.09	23	0.0984	-0.018	0.106	-0.126	-0.042	0.067	-0.110
30	36.01	29	0.1733	0.027	0.093	0.099	0.007	0.012	0.033



The ARIMA Procedure

Grain commodity=Oats



Model for variable LPE	
Estimated Mean	-0.30058

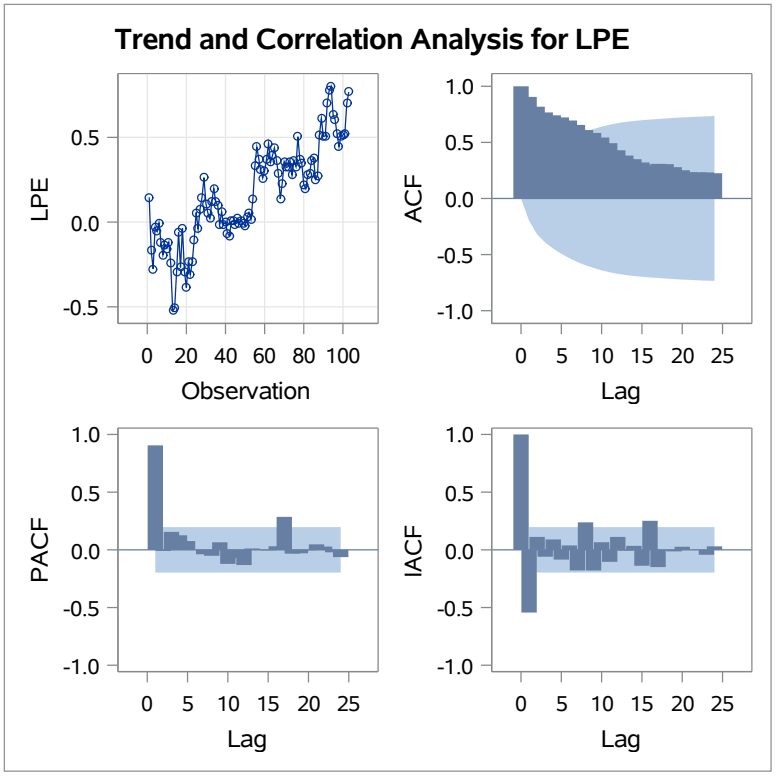
Autoregressive Factors	
Factor 1:	1 - 0.97952 B**(1)

The ARIMA Procedure

Grain commodity=Sorghum

Name of Variable = LPE	
Mean of Working Series	0.16719
Standard Deviation	0.288231
Number of Observations	103

Autocorrelation Check for White Noise									
To Lag	Chi-Square	DF	Pr > ChiSq	Autocorrelations					
6	393.62	6	<.0001	0.905	0.818	0.767	0.741	0.722	0.695
12	608.38	12	<.0001	0.656	0.610	0.584	0.543	0.493	0.430
18	688.22	18	<.0001	0.383	0.350	0.321	0.295	0.309	0.306
24	735.17	24	<.0001	0.279	0.252	0.234	0.232	0.232	0.225



Conditional Least Squares Estimation					
Parameter	Estimate	Standard Error	t Value	Approx Pr > |t|	Lag
MU	0.17594	0.09650	1.82	0.0712	0
AR1,1	0.94464	0.03858	24.49	<.0001	1

The ARIMA Procedure

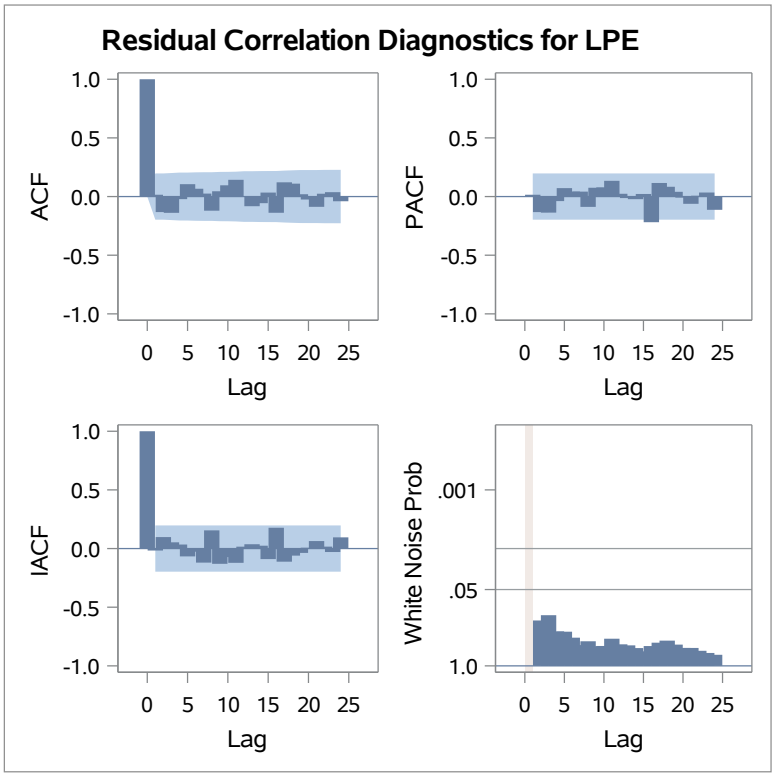
Grain commodity=Sorghum

Constant Estimate	0.009741
Variance Estimate	0.012218
Std Error Estimate	0.110536
AIC	-159.416
SBC	-154.147
Number of Residuals	103

*** AIC and SBC do not include log determinant.**

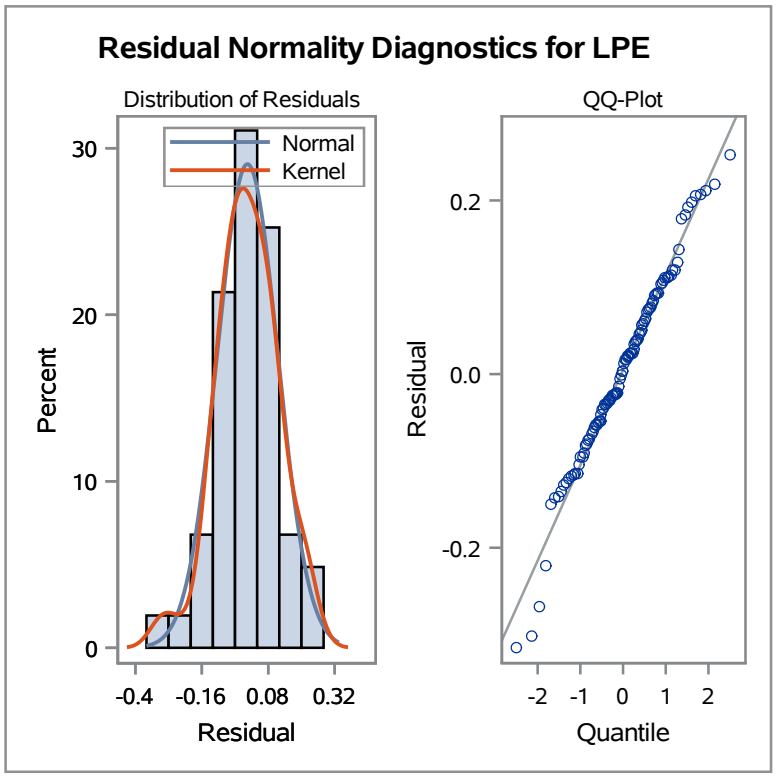
Correlations of Parameter Estimates		
Parameter	MU	AR1,1
MU	1.000	0.025
AR1,1	0.025	1.000

Autocorrelation Check of Residuals									
To Lag	Chi-Square	DF	Pr > ChiSq	Autocorrelations					
6	5.65	5	0.3419	0.017	-0.130	-0.136	-0.020	0.107	0.068
12	11.18	11	0.4285	0.028	-0.117	0.048	0.099	0.145	0.001
18	18.23	17	0.3747	-0.078	-0.052	0.037	-0.137	0.123	0.111
24	19.81	23	0.6535	0.022	-0.022	-0.085	0.026	0.039	-0.038



The ARIMA Procedure

Grain commodity=Sorghum



Model for variable LPE	
Estimated Mean	0.175944

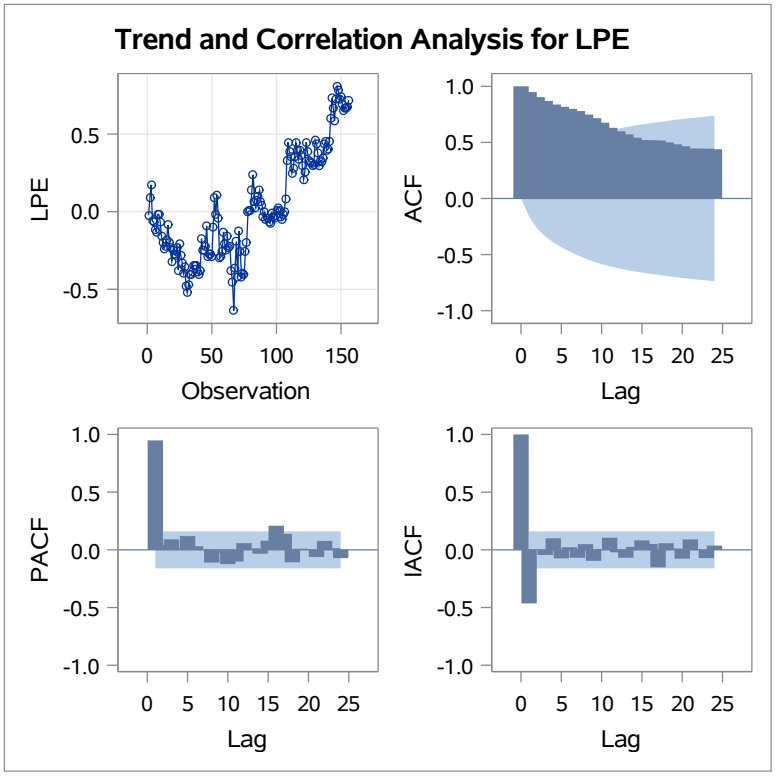
Autoregressive Factors	
Factor 1:	1 - 0.94464 B**(1)

The ARIMA Procedure

Grain commodity=Barley

Name of Variable = LPE	
Mean of Working Series	0.029345
Standard Deviation	0.341347
Number of Observations	156

Autocorrelation Check for White Noise									
To Lag	Chi-Square	DF	Pr > ChiSq	Autocorrelations					
6	723.41	6	<.0001	0.949	0.904	0.870	0.838	0.817	0.799
12	1208.81	12	<.0001	0.779	0.748	0.716	0.676	0.630	0.599
18	1502.72	18	<.0001	0.571	0.542	0.521	0.517	0.517	0.500
24	1728.70	24	<.0001	0.483	0.466	0.445	0.443	0.444	0.439



Conditional Least Squares Estimation					
Parameter	Estimate	Standard Error	t Value	Approx Pr > |t|	Lag
MU	0.0017242	0.09129	0.02	0.9850	0
AR1,1	0.93099	0.08087	11.51	<.0001	1
AR1,2	0.04678	0.08192	0.57	0.5688	2

The ARIMA Procedure

Grain commodity=Barley

Constant Estimate	0.000038
Variance Estimate	0.009005
Std Error Estimate	0.094893
AIC	-289.081
SBC	-279.932
Number of Residuals	156

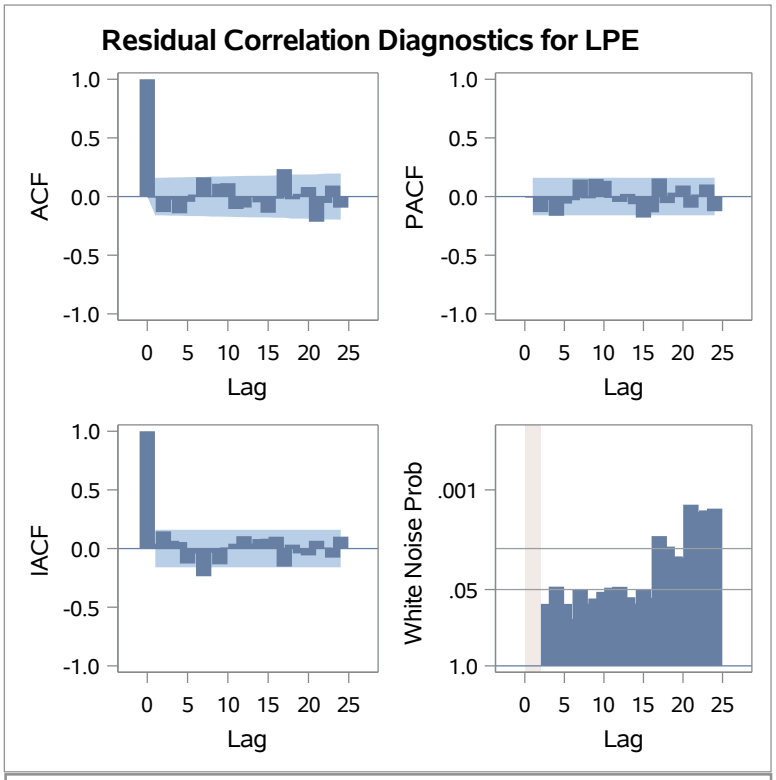
*** AIC and SBC do not include log determinant.**

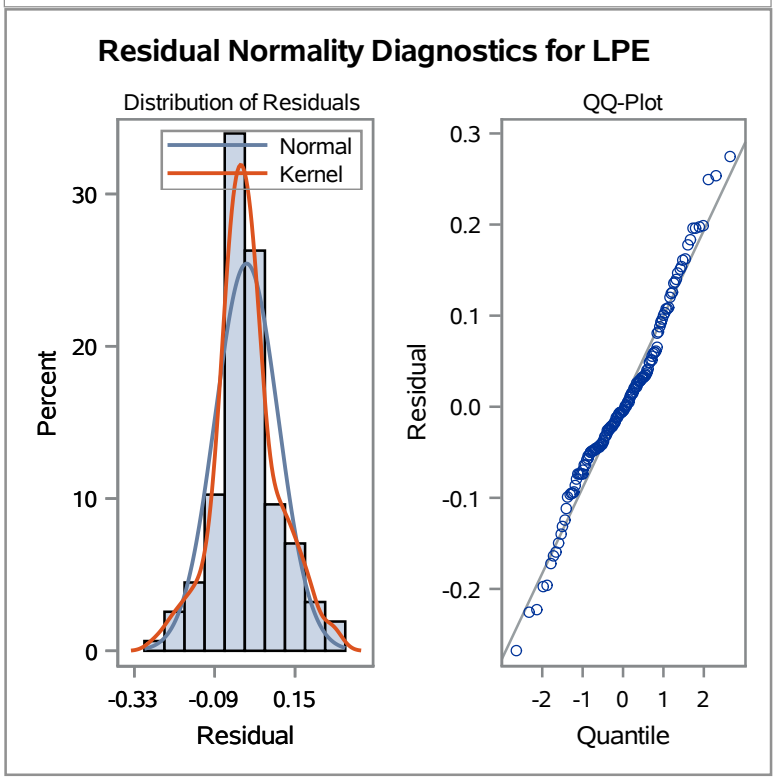
Correlations of Parameter Estimates			
Parameter	**MU**	**AR1,1**	**AR1,2**
MU	1.000	-0.013	0.008
AR1,1	-0.013	1.000	-0.960
AR1,2	0.008	-0.960	1.000

Autocorrelation Check of Residuals									
To Lag	**Chi-Square**	**DF**	**Pr > ChiSq**	**Autocorrelations**					
6	6.26	4	0.1805	-0.006	-0.129	-0.024	-0.139	-0.042	0.021
12	18.47	10	0.0475	0.167	0.009	0.112	0.117	-0.103	-0.090
18	31.97	16	0.0101	0.004	-0.046	-0.135	-0.017	0.235	-0.021
24	45.29	22	0.0024	0.026	0.083	-0.212	-0.052	0.096	-0.091
30	54.20	28	0.0021	-0.067	0.084	0.160	0.033	0.071	0.056

The ARIMA Procedure

Grain commodity=Barley





Model for variable LPE	
Estimated Mean	0.001724

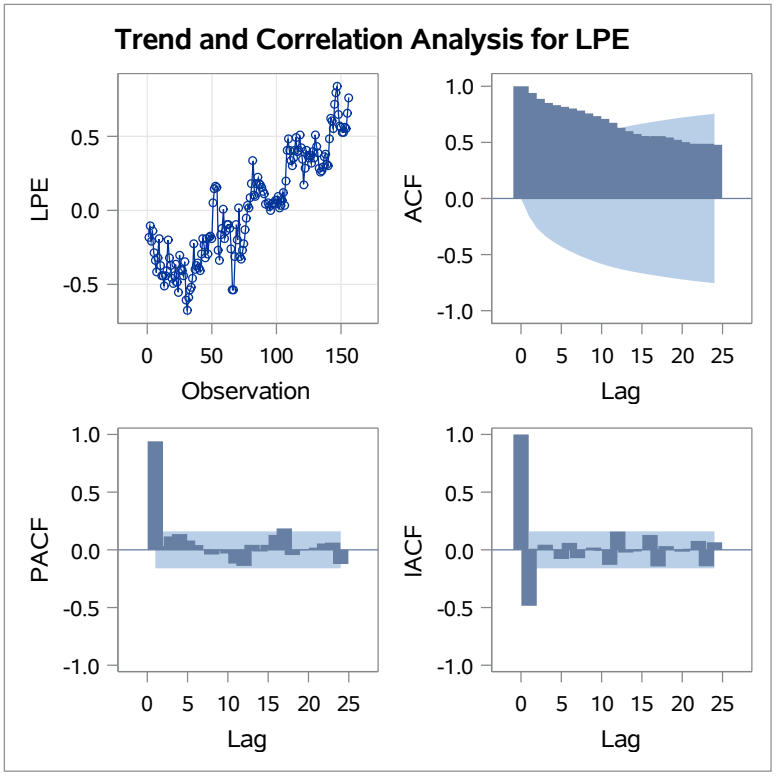
Autoregressive Factors	
Factor 1:	1 - 0.93099 B**(1) - 0.04678 B**(2)

The ARIMA Procedure

Grain commodity=Corn

Name of Variable = LPE	
Mean of Working Series	0.017855
Standard Deviation	0.360393
Number of Observations	156

Autocorrelation Check for White Noise									
To Lag	Chi-Square	DF	Pr > ChiSq	Autocorrelations					
6	710.49	6	<.0001	0.940	0.888	0.852	0.832	0.817	0.802
12	1228.29	12	<.0001	0.783	0.758	0.734	0.709	0.675	0.630
18	1562.69	18	<.0001	0.600	0.575	0.557	0.550	0.556	0.543
24	1830.71	24	<.0001	0.523	0.502	0.488	0.483	0.487	0.478



Conditional Least Squares Estimation					
Parameter	Estimate	Standard Error	t Value	Approx Pr > |t|	Lag
MU	-0.15012	0.10621	-1.41	0.1596	0
AR1,1	0.96171	0.08120	11.84	<.0001	1
AR1,2	0.01844	0.08232	0.22	0.8230	2

The ARIMA Procedure

Grain commodity=Corn

Constant Estimate	-0.00298
Variance Estimate	0.011863
Std Error Estimate	0.108919
AIC	-246.072
SBC	-236.923
Number of Residuals	156

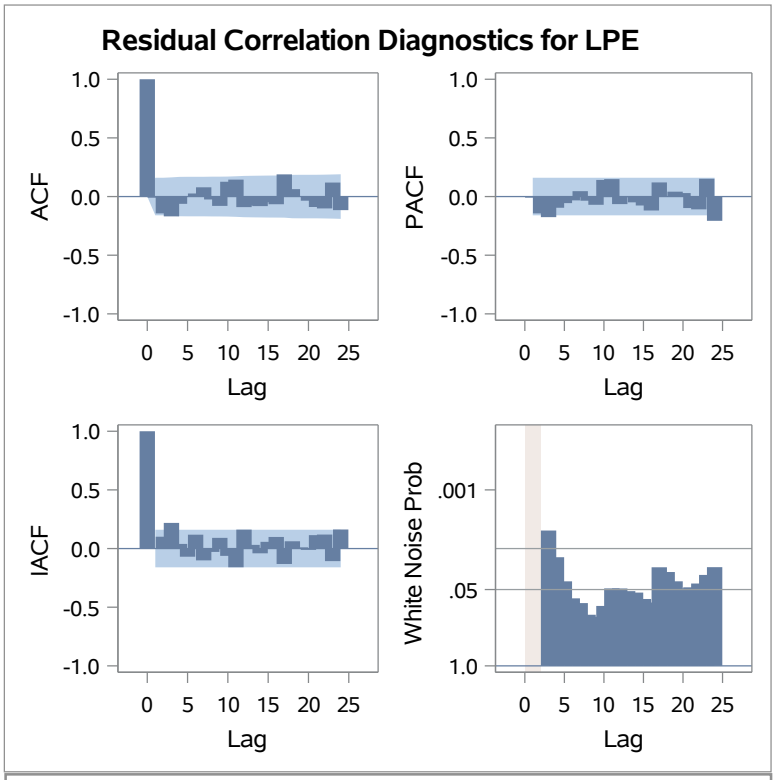
*** AIC and SBC do not include log determinant.**

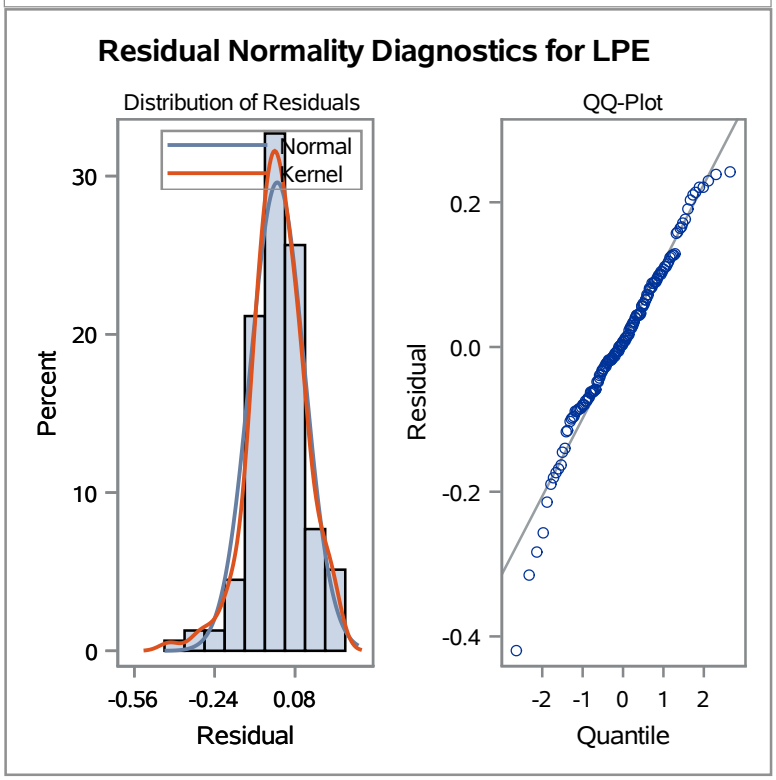
Correlations of Parameter Estimates			
Parameter	**MU**	**AR1,1**	**AR1,2**
MU	1.000	-0.020	-0.008
AR1,1	-0.020	1.000	-0.961
AR1,2	-0.008	-0.961	1.000

Autocorrelation Check of Residuals									
To Lag	**Chi-Square**	**DF**	**Pr > ChiSq**	**Autocorrelations**					
6	7.88	4	0.0961	-0.003	-0.137	-0.161	-0.056	0.011	0.033
12	18.05	10	0.0541	0.086	-0.017	-0.071	0.133	0.151	-0.082
18	28.19	16	0.0300	-0.068	-0.073	-0.041	-0.060	0.193	0.069
24	36.27	22	0.0284	0.008	-0.029	-0.082	-0.095	0.125	-0.108
30	43.73	28	0.0296	0.047	-0.051	0.134	0.114	0.036	-0.043

The ARIMA Procedure

Grain commodity=Corn





Model for variable LPE	
Estimated Mean	-0.15012

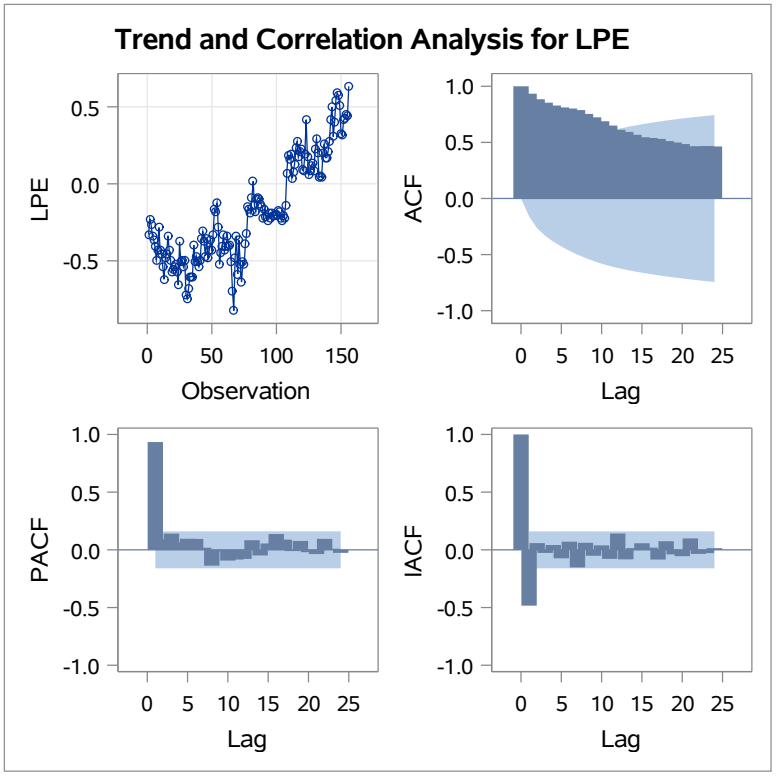
Autoregressive Factors	
Factor 1:	1 - 0.96171 B**(1) - 0.01844 B**(2)

The ARIMA Procedure

Grain commodity=Oats

Name of Variable = LPE	
Mean of Working Series	-0.17862
Standard Deviation	0.337359
Number of Observations	156

Autocorrelation Check for White Noise									
To Lag	Chi-Square	DF	Pr > ChiSq	Autocorrelations					
6	705.87	6	<.0001	0.934	0.884	0.854	0.829	0.812	0.802
12	1206.76	12	<.0001	0.788	0.753	0.723	0.688	0.650	0.612
18	1523.36	18	<.0001	0.594	0.568	0.546	0.539	0.531	0.512
24	1770.11	24	<.0001	0.499	0.485	0.464	0.463	0.467	0.464



Conditional Least Squares Estimation					
Parameter	Estimate	Standard Error	t Value	Approx Pr > |t|	Lag
MU	-0.29947	0.10135	-2.95	0.0036	0
AR1,1	0.92076	0.08180	11.26	<.0001	1
AR1,2	0.06219	0.08299	0.75	0.4548	2

The ARIMA Procedure

Grain commodity=Oats

Constant Estimate	-0.00511
Variance Estimate	0.010749
Std Error Estimate	0.103676
AIC	-261.465
SBC	-252.315
Number of Residuals	156

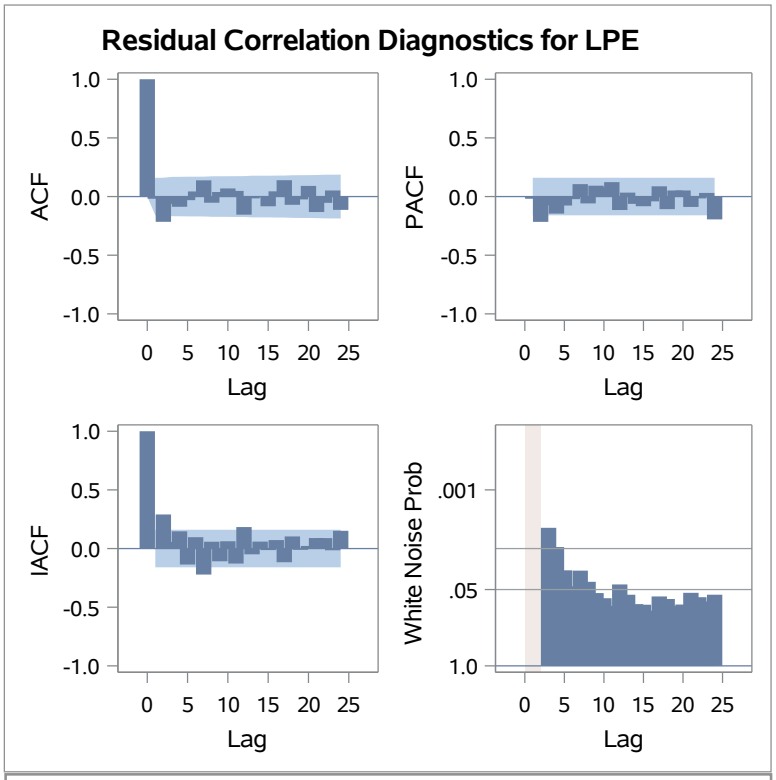
*** AIC and SBC do not include log determinant.**

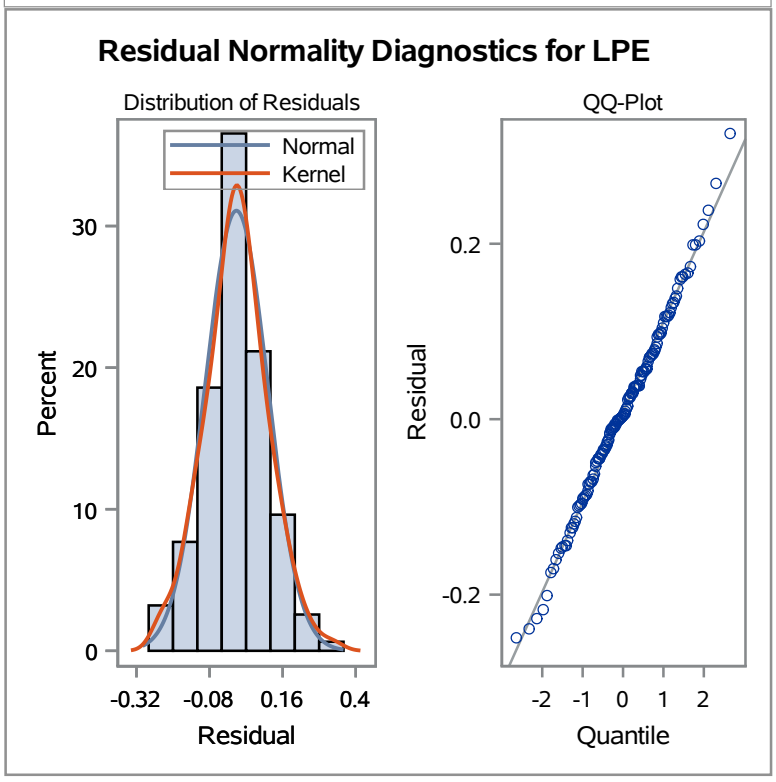
Correlations of Parameter Estimates			
Parameter	**MU**	**AR1,1**	**AR1,2**
MU	1.000	-0.015	-0.005
AR1,1	-0.015	1.000	-0.957
AR1,2	-0.005	-0.957	1.000

Autocorrelation Check of Residuals									
To Lag	**Chi-Square**	**DF**	**Pr > ChiSq**	**Autocorrelations**					
6	9.08	4	0.0590	-0.013	-0.209	-0.057	-0.081	-0.026	0.049
12	18.36	10	0.0491	0.144	-0.046	0.045	0.075	0.054	-0.148
18	24.20	16	0.0853	-0.008	0.004	-0.077	0.048	0.143	-0.065
24	31.97	22	0.0779	-0.018	0.095	-0.126	-0.048	0.056	-0.107
30	36.17	28	0.1384	0.024	0.099	0.104	0.012	0.012	0.023

The ARIMA Procedure

Grain commodity=Oats





Model for variable LPE	
Estimated Mean	-0.29947

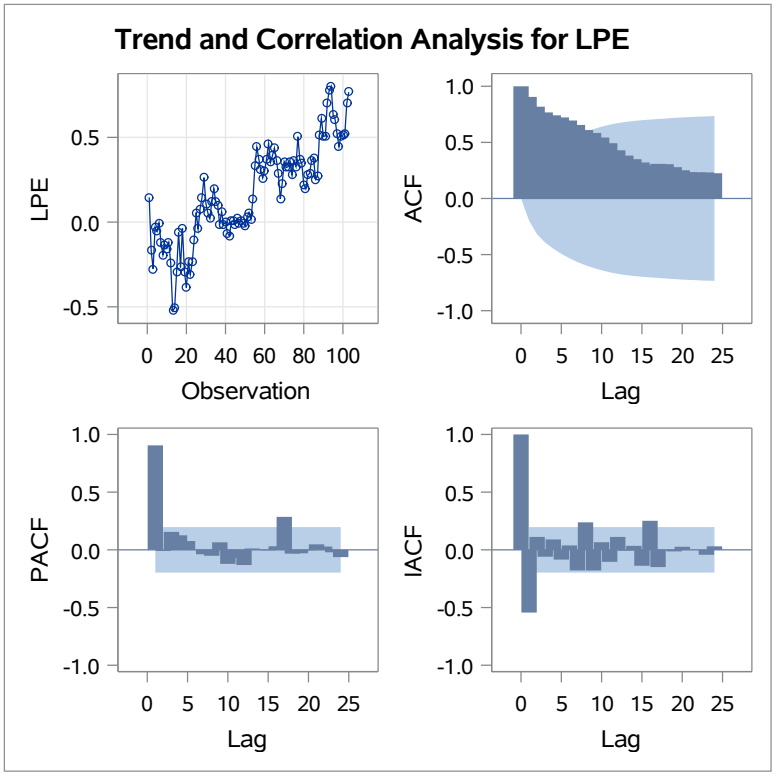
Autoregressive Factors	
Factor 1:	1 - 0.92076 B**(1) - 0.06219 B**(2)

The ARIMA Procedure

Grain commodity=Sorghum

Name of Variable = LPE	
Mean of Working Series	0.16719
Standard Deviation	0.288231
Number of Observations	103

Autocorrelation Check for White Noise									
To Lag	Chi-Square	DF	Pr > ChiSq	Autocorrelations					
6	393.62	6	<.0001	0.905	0.818	0.767	0.741	0.722	0.695
12	608.38	12	<.0001	0.656	0.610	0.584	0.543	0.493	0.430
18	688.22	18	<.0001	0.383	0.350	0.321	0.295	0.309	0.306
24	735.17	24	<.0001	0.279	0.252	0.234	0.232	0.232	0.225



Conditional Least Squares Estimation					
Parameter	Estimate	Standard Error	t Value	Approx Pr > |t|	Lag
MU	0.18099	0.09622	1.88	0.0629	0
AR1,1	0.96283	0.10036	9.59	<.0001	1
AR1,2	-0.02034	0.10210	-0.20	0.8425	2

The ARIMA Procedure

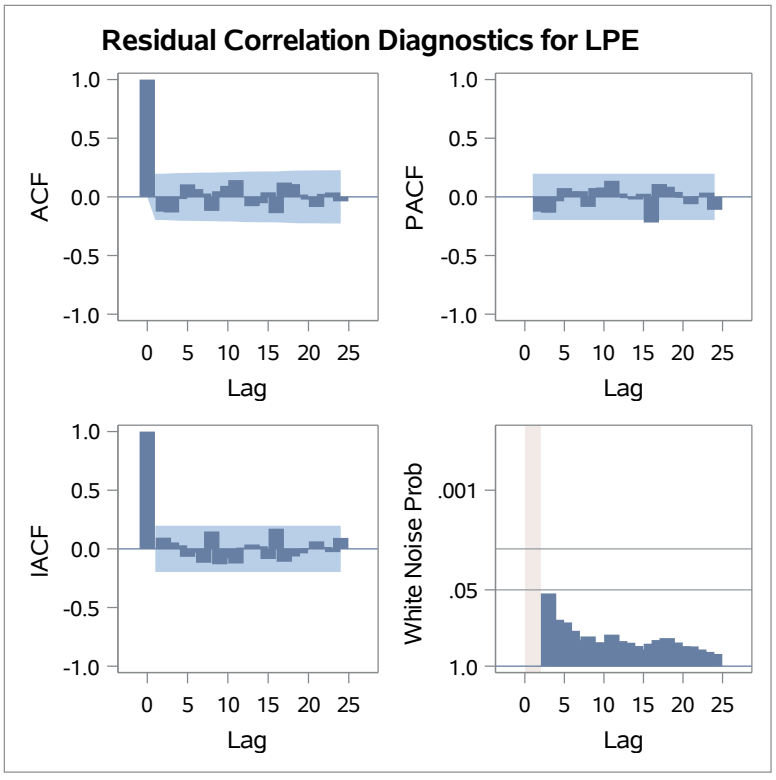
Grain commodity=Sorghum

Constant Estimate	0.01041
Variance Estimate	0.012336
Std Error Estimate	0.111066
AIC	-157.455
SBC	-149.55
Number of Residuals	103

*** AIC and SBC do not include log determinant.**

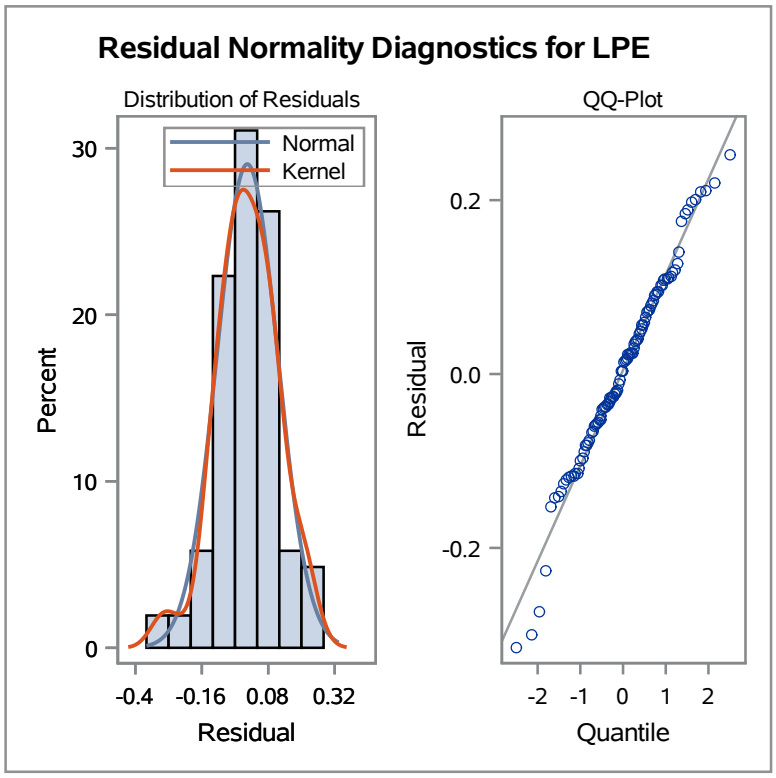
Correlations of Parameter Estimates			
Parameter	**MU**	**AR1,1**	**AR1,2**
MU	1.000	-0.017	0.033
AR1,1	-0.017	1.000	-0.923
AR1,2	0.033	-0.923	1.000

Autocorrelation Check of Residuals									
To Lag	**Chi-Square**	**DF**	**Pr > ChiSq**	**Autocorrelations**					
6	5.30	4	0.2578	0.003	-0.123	-0.131	-0.017	0.108	0.068
12	10.81	10	0.3724	0.031	-0.117	0.051	0.096	0.145	0.003
18	17.83	16	0.3342	-0.076	-0.051	0.041	-0.138	0.123	0.110
24	19.36	22	0.6229	0.022	-0.021	-0.084	0.028	0.040	-0.036



The ARIMA Procedure

Grain commodity=Sorghum



Model for variable LPE	
Estimated Mean	0.180995

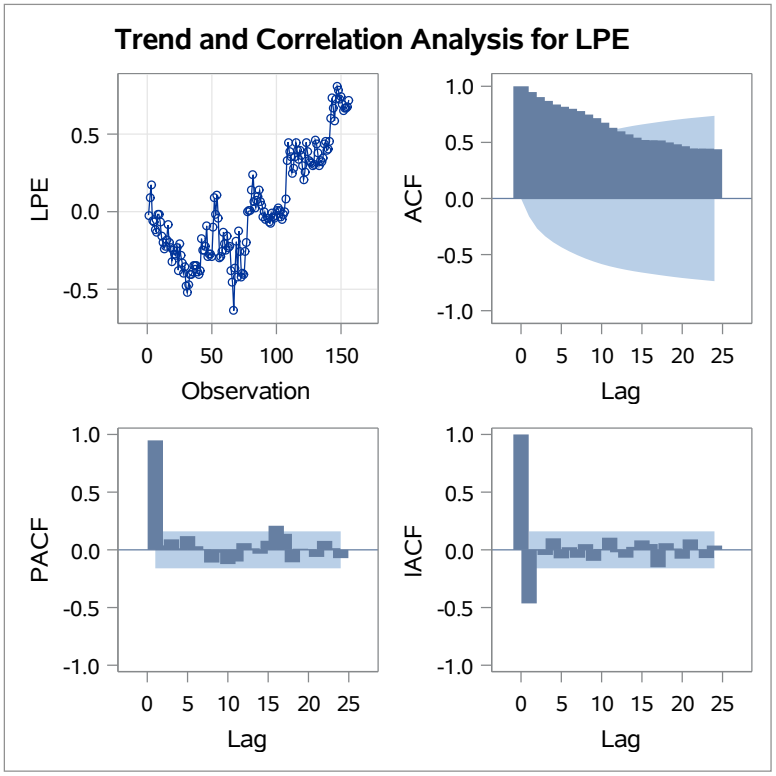
Autoregressive Factors	
Factor 1:	1 - 0.96283 B**(1) + 0.02034 B**(2)

The ARIMA Procedure

Grain commodity=Barley

Name of Variable = LPE	
Mean of Working Series	0.029345
Standard Deviation	0.341347
Number of Observations	156

Autocorrelation Check for White Noise									
To Lag	Chi-Square	DF	Pr > ChiSq	Autocorrelations					
6	723.41	6	<.0001	0.949	0.904	0.870	0.838	0.817	0.799
12	1208.81	12	<.0001	0.779	0.748	0.716	0.676	0.630	0.599
18	1502.72	18	<.0001	0.571	0.542	0.521	0.517	0.517	0.500
24	1728.70	24	<.0001	0.483	0.466	0.445	0.443	0.444	0.439



Conditional Least Squares Estimation					
Parameter	Estimate	Standard Error	t Value	Approx Pr > |t|	Lag
MU	0.03209	0.02995	1.07	0.2856	0
MA1,1	-0.89317	0.03724	-23.98	<.0001	1

The ARIMA Procedure

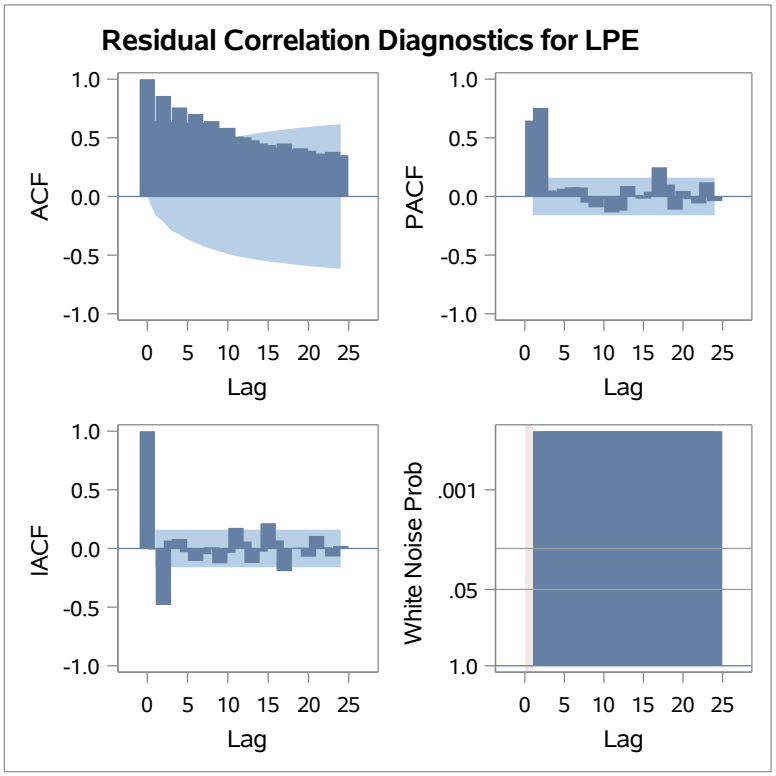
Grain commodity=Barley

Constant Estimate	0.032091
Variance Estimate	0.040262
Std Error Estimate	0.200654
AIC	-56.4295
SBC	-50.3298
Number of Residuals	156

*** AIC and SBC do not include log determinant.**

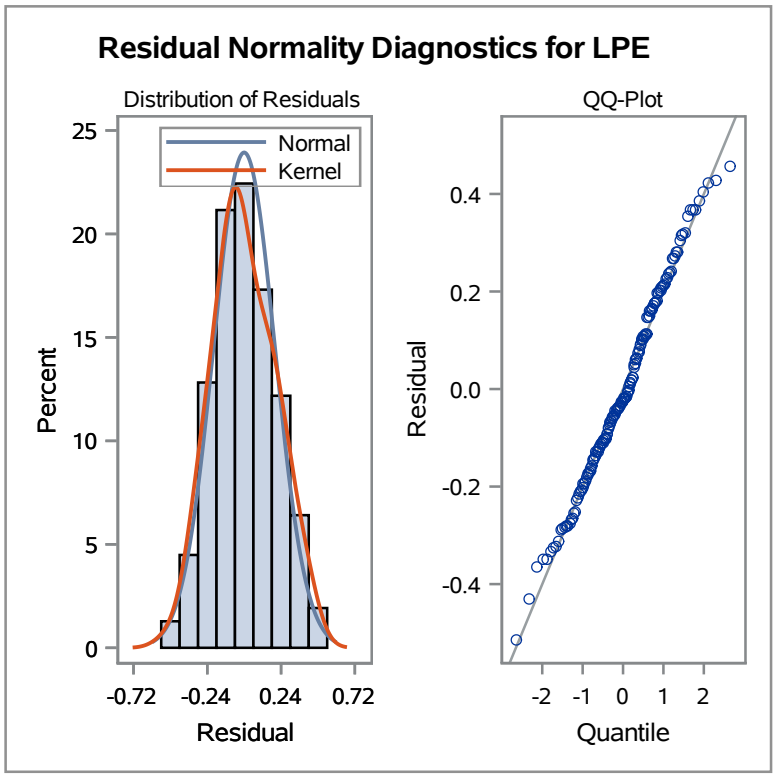
Correlations of Parameter Estimates		
Parameter	MU	MA1,1
MU	1.000	-0.007
MA1,1	-0.007	1.000

Autocorrelation Check of Residuals									
To Lag	Chi-Square	DF	Pr > ChiSq	Autocorrelations					
6	488.27	5	<.0001	0.647	0.857	0.637	0.759	0.628	0.703
12	824.61	11	<.0001	0.626	0.642	0.584	0.585	0.511	0.504
18	1028.77	17	<.0001	0.479	0.453	0.439	0.417	0.452	0.400
24	1185.18	23	<.0001	0.411	0.390	0.364	0.364	0.380	0.352
30	1333.84	29	<.0001	0.373	0.364	0.376	0.351	0.348	0.344



The ARIMA Procedure

Grain commodity=Barley



Model for variable LPE	
Estimated Mean	0.032091

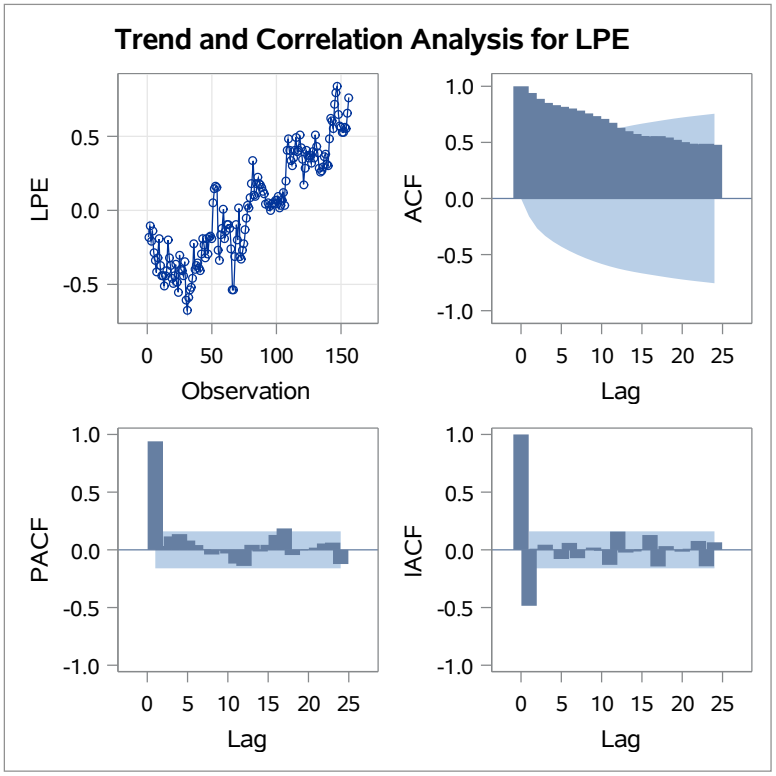
Moving Average Factors	
Factor 1:	1 + 0.89317 B**(1)

The ARIMA Procedure

Grain commodity=Corn

Name of Variable = LPE	
Mean of Working Series	0.017855
Standard Deviation	0.360393
Number of Observations	156

Autocorrelation Check for White Noise									
To Lag	Chi-Square	DF	Pr > ChiSq	Autocorrelations					
6	710.49	6	<.0001	0.940	0.888	0.852	0.832	0.817	0.802
12	1228.29	12	<.0001	0.783	0.758	0.734	0.709	0.675	0.630
18	1562.69	18	<.0001	0.600	0.575	0.557	0.550	0.556	0.543
24	1830.71	24	<.0001	0.523	0.502	0.488	0.483	0.487	0.478



Conditional Least Squares Estimation					
Parameter	Estimate	Standard Error	t Value	Approx Pr > |t|	Lag
MU	0.01259	0.03216	0.39	0.6960	0
MA1,1	-0.82762	0.04540	-18.23	<.0001	1

The ARIMA Procedure

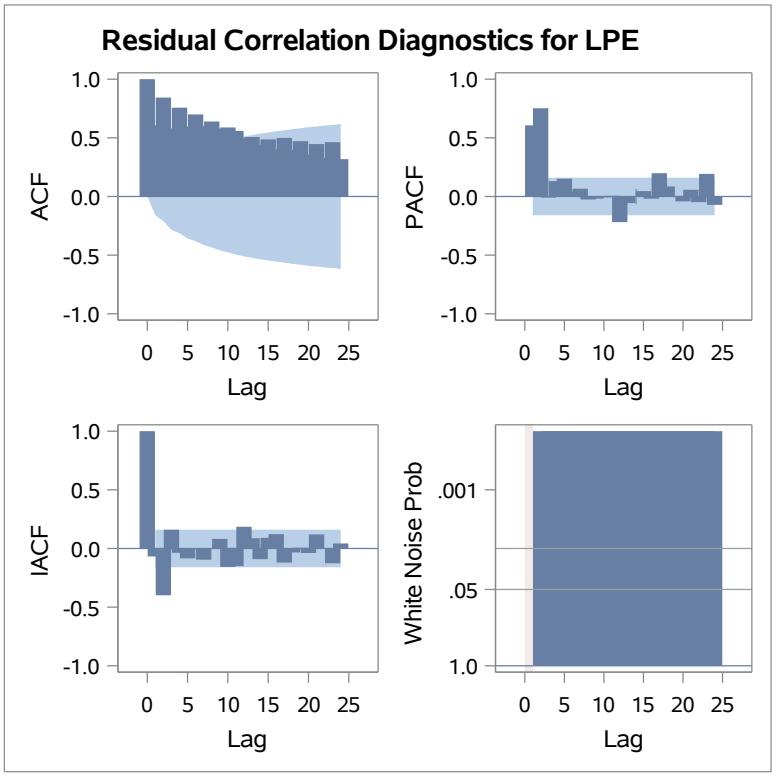
Grain commodity=Corn

Constant Estimate	0.012589
Variance Estimate	0.049214
Std Error Estimate	0.221841
AIC	-25.1114
SBC	-19.0117
Number of Residuals	156

*** AIC and SBC do not include log determinant.**

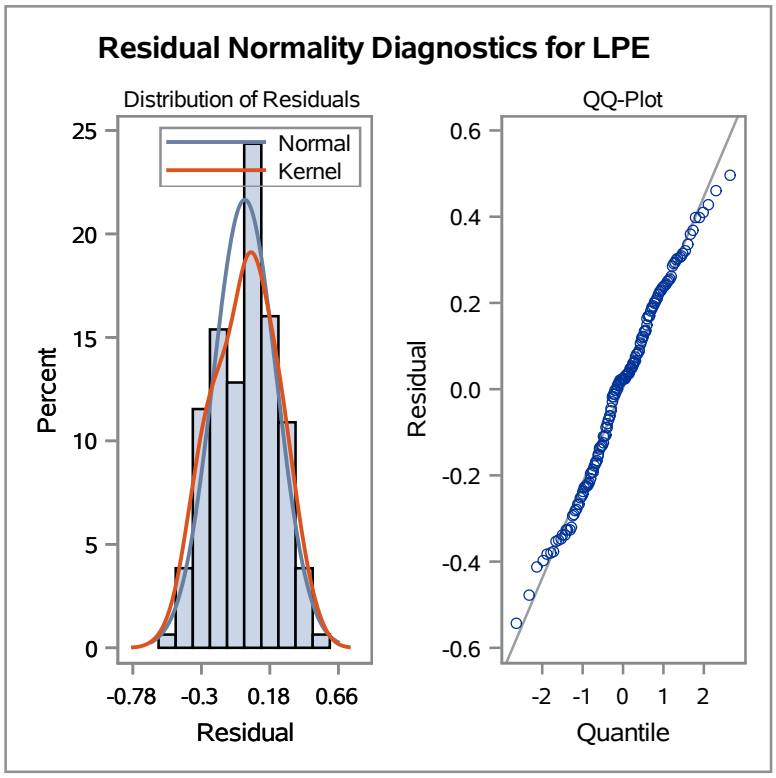
Correlations of Parameter Estimates		
Parameter	MU	MA1,1
MU	1.000	0.032
MA1,1	0.032	1.000

Autocorrelation Check of Residuals									
To Lag	Chi-Square	DF	Pr > ChiSq	Autocorrelations					
6	456.95	5	<.0001	0.606	0.843	0.580	0.756	0.594	0.699
12	793.25	11	<.0001	0.599	0.638	0.578	0.587	0.558	0.494
18	1011.86	17	<.0001	0.506	0.439	0.486	0.401	0.498	0.393
24	1188.67	23	<.0001	0.470	0.355	0.446	0.326	0.462	0.317
30	1354.86	29	<.0001	0.449	0.332	0.422	0.350	0.370	0.343



The ARIMA Procedure

Grain commodity=Corn



Model for variable LPE	
Estimated Mean	0.012589

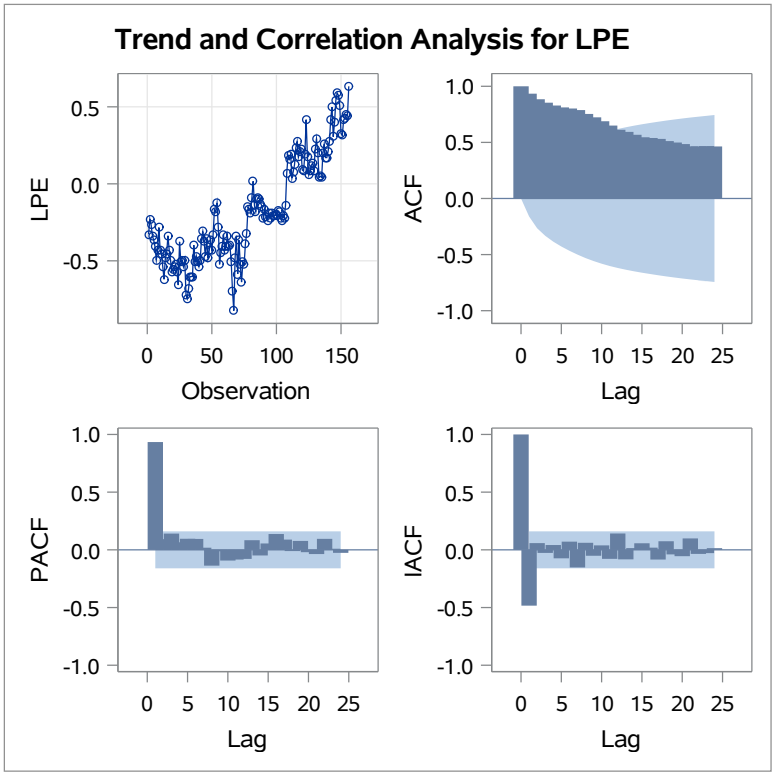
Moving Average Factors	
Factor 1:	1 + 0.82762 B**(1)

The ARIMA Procedure

Grain commodity=Oats

Name of Variable = LPE	
Mean of Working Series	-0.17862
Standard Deviation	0.337359
Number of Observations	156

Autocorrelation Check for White Noise									
To Lag	Chi-Square	DF	Pr > ChiSq	Autocorrelations					
6	705.87	6	<.0001	0.934	0.884	0.854	0.829	0.812	0.802
12	1206.76	12	<.0001	0.788	0.753	0.723	0.688	0.650	0.612
18	1523.36	18	<.0001	0.594	0.568	0.546	0.539	0.531	0.512
24	1770.11	24	<.0001	0.499	0.485	0.464	0.463	0.467	0.464



Conditional Least Squares Estimation					
Parameter	Estimate	Standard Error	t Value	Approx Pr > |t|	Lag
MU	-0.18308	0.03027	-6.05	<.0001	0
MA1,1	-0.91896	0.03199	-28.73	<.0001	1

The ARIMA Procedure

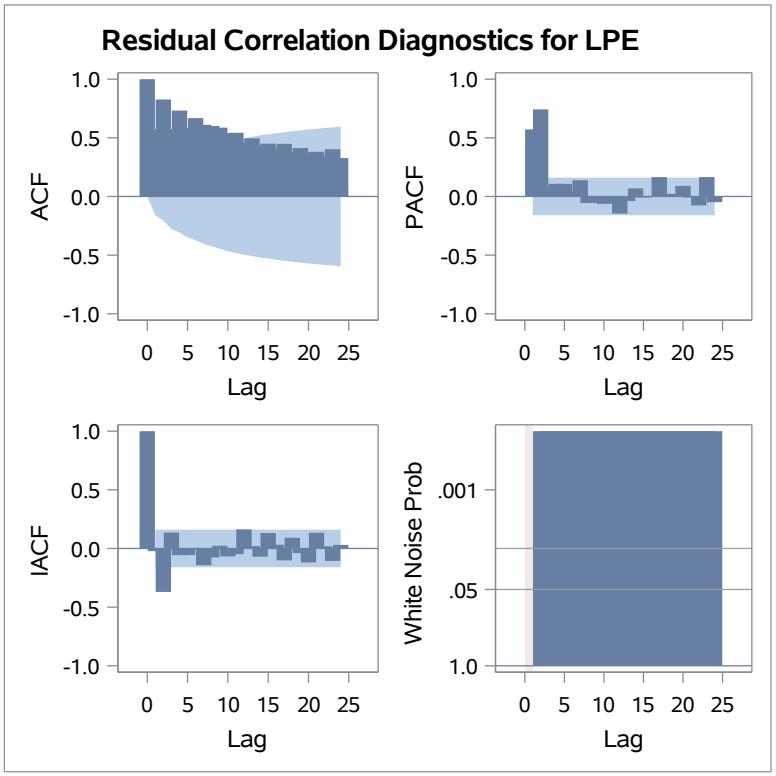
Grain commodity=Oats

Constant Estimate	-0.18308
Variance Estimate	0.0403
Std Error Estimate	0.200748
AIC	-56.2846
SBC	-50.1849
Number of Residuals	156

*** AIC and SBC do not include log determinant.**

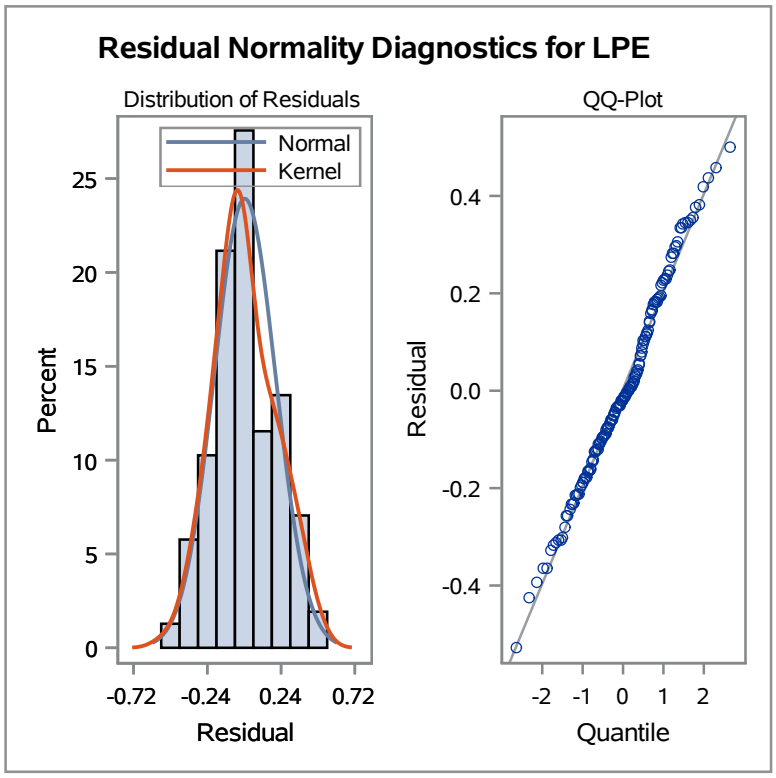
Correlations of Parameter Estimates		
Parameter	MU	MA1,1
MU	1.000	0.049
MA1,1	0.049	1.000

Autocorrelation Check of Residuals									
To Lag	Chi-Square	DF	Pr > ChiSq	Autocorrelations					
6	430.01	5	<.0001	0.572	0.826	0.573	0.732	0.585	0.667
12	742.74	11	<.0001	0.610	0.599	0.585	0.536	0.541	0.456
18	942.93	17	<.0001	0.494	0.436	0.448	0.406	0.447	0.378
24	1095.30	23	<.0001	0.411	0.374	0.379	0.337	0.401	0.326
30	1242.39	29	<.0001	0.404	0.344	0.381	0.334	0.345	0.333



The ARIMA Procedure

Grain commodity=Oats



Model for variable LPE	
Estimated Mean	-0.18308

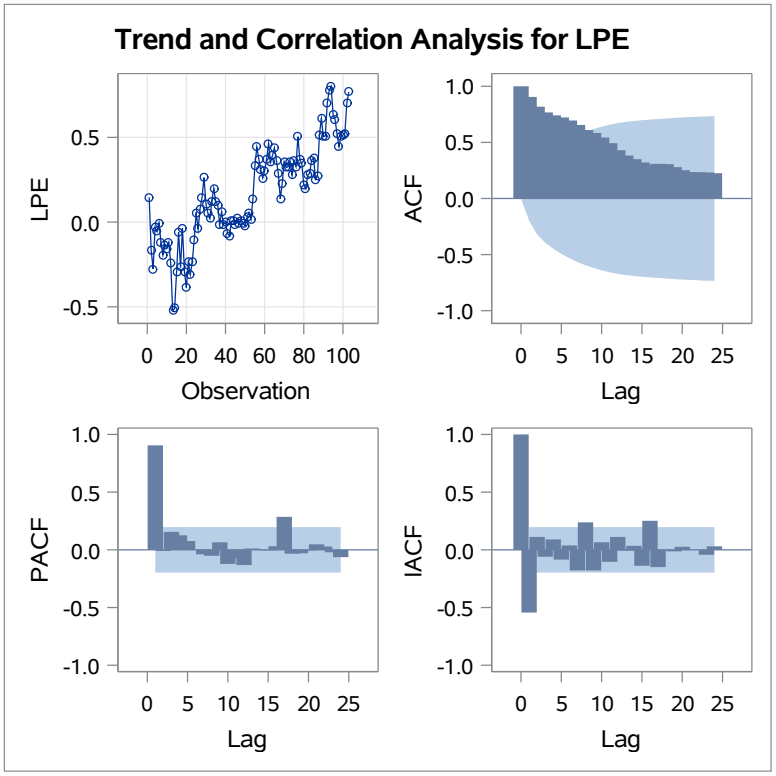
Moving Average Factors	
Factor 1:	1 + 0.91896 B**(1)

The ARIMA Procedure

Grain commodity=Sorghum

Name of Variable = LPE	
Mean of Working Series	0.16719
Standard Deviation	0.288231
Number of Observations	103

Autocorrelation Check for White Noise									
To Lag	Chi-Square	DF	Pr > ChiSq	Autocorrelations					
6	393.62	6	<.0001	0.905	0.818	0.767	0.741	0.722	0.695
12	608.38	12	<.0001	0.656	0.610	0.584	0.543	0.493	0.430
18	688.22	18	<.0001	0.383	0.350	0.321	0.295	0.309	0.306
24	735.17	24	<.0001	0.279	0.252	0.234	0.232	0.232	0.225



Conditional Least Squares Estimation					
Parameter	Estimate	Standard Error	t Value	Approx Pr > |t|	Lag
MU	0.16863	0.03259	5.17	<.0001	0
MA1,1	-0.82964	0.05576	-14.88	<.0001	1

The ARIMA Procedure

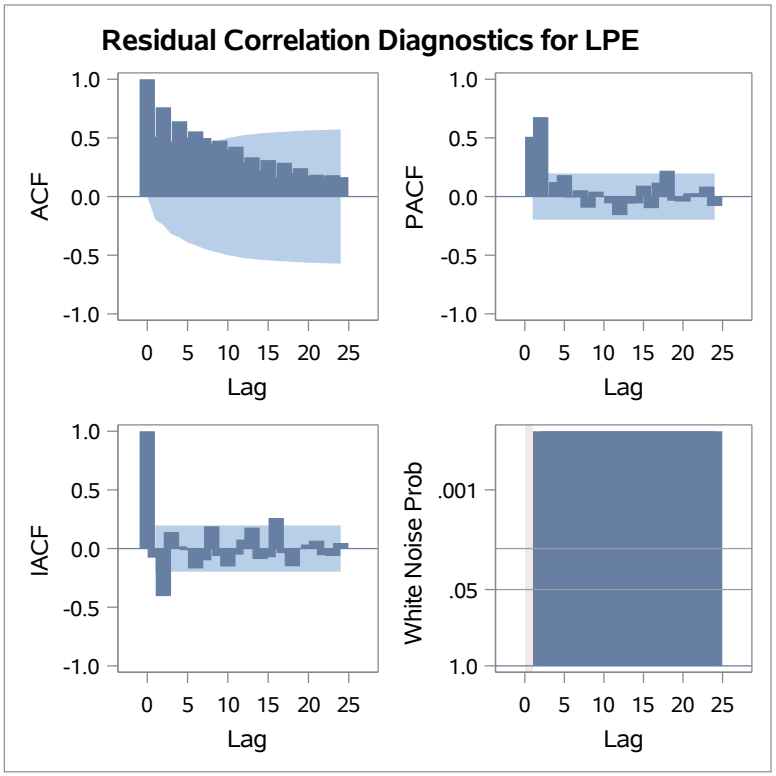
Grain commodity=Sorghum

Constant Estimate	0.168626
Variance Estimate	0.033663
Std Error Estimate	0.183474
AIC	-55.0284
SBC	-49.7589
Number of Residuals	103

*** AIC and SBC do not include log determinant.**

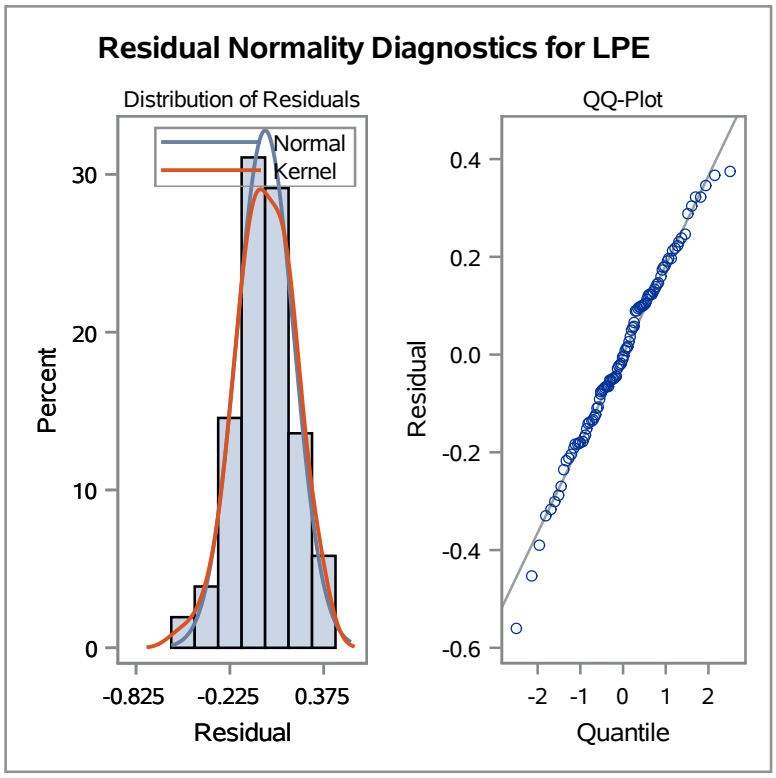
Correlations of Parameter Estimates		
Parameter	MU	MA1,1
MU	1.000	0.005
MA1,1	0.005	1.000

Autocorrelation Check of Residuals									
To Lag	Chi-Square	DF	Pr > ChiSq	Autocorrelations					
6	220.60	5	<.0001	0.509	0.761	0.469	0.642	0.503	0.555
12	346.83	11	<.0001	0.499	0.448	0.476	0.394	0.425	0.290
18	396.66	17	<.0001	0.335	0.219	0.311	0.160	0.288	0.199
24	424.77	23	<.0001	0.242	0.173	0.186	0.169	0.182	0.166



The ARIMA Procedure

Grain commodity=Sorghum



Model for variable LPE	
Estimated Mean	0.168626

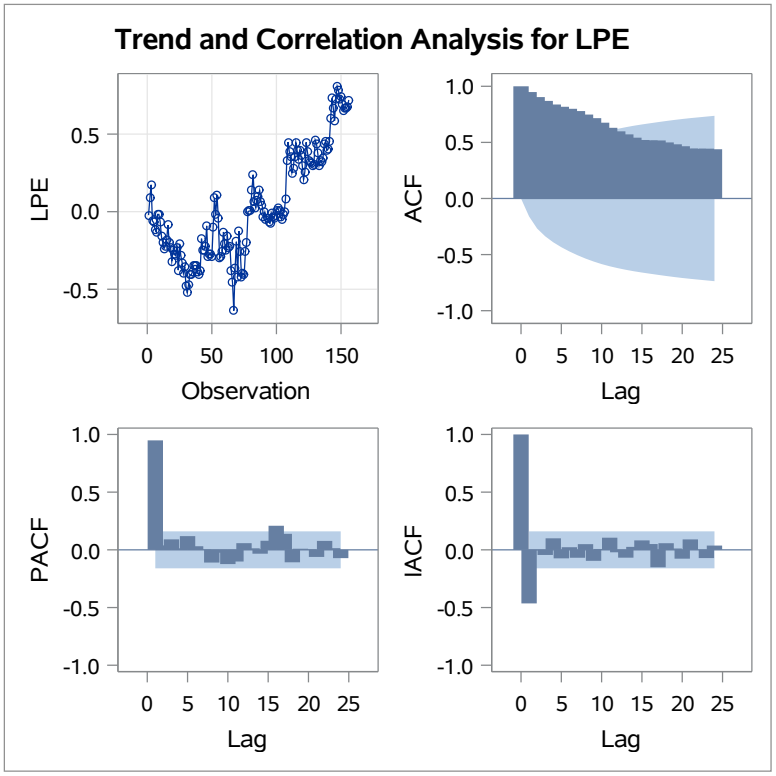
Moving Average Factors	
Factor 1:	1 + 0.82964 B**(1)

The ARIMA Procedure

Grain commodity=Barley

Name of Variable = LPE	
Mean of Working Series	0.029345
Standard Deviation	0.341347
Number of Observations	156

Autocorrelation Check for White Noise									
To Lag	Chi-Square	DF	Pr > ChiSq	Autocorrelations					
6	723.41	6	<.0001	0.949	0.904	0.870	0.838	0.817	0.799
12	1208.81	12	<.0001	0.779	0.748	0.716	0.676	0.630	0.599
18	1502.72	18	<.0001	0.571	0.542	0.521	0.517	0.517	0.500
24	1728.70	24	<.0001	0.483	0.466	0.445	0.443	0.444	0.439



Conditional Least Squares Estimation					
Parameter	Estimate	Standard Error	t Value	Approx Pr > |t|	Lag
MU	0.0032642	0.09143	0.04	0.9716	0
MA1,1	0.06704	0.08388	0.80	0.4254	1
AR1,1	0.98030	0.02188	44.80	<.0001	1

The ARIMA Procedure

Grain commodity=Barley

Constant Estimate	0.000064
Variance Estimate	0.008997
Std Error Estimate	0.094854
AIC	-289.21
SBC	-280.06
Number of Residuals	156

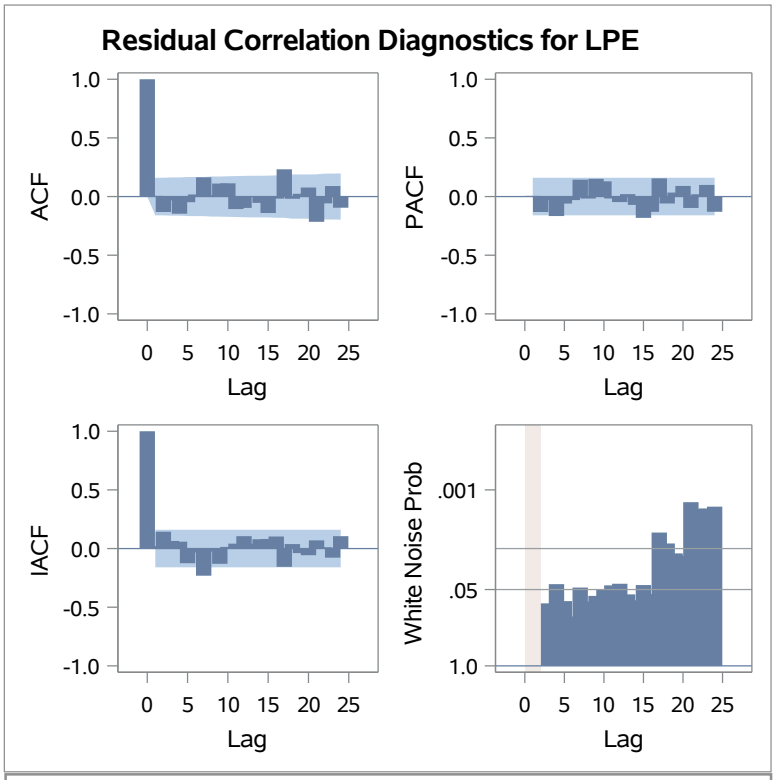
*** AIC and SBC do not include log determinant.**

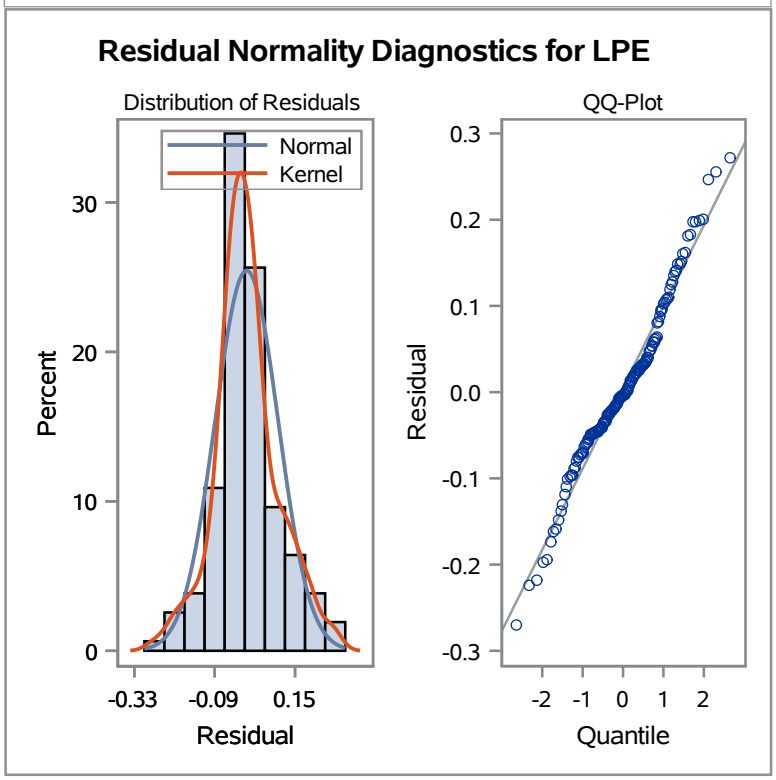
Correlations of Parameter Estimates			
Parameter	**MU**	**MA1,1**	**AR1,1**
MU	1.000	0.010	-0.013
MA1,1	0.010	1.000	0.270
AR1,1	-0.013	0.270	1.000

Autocorrelation Check of Residuals									
To Lag	**Chi-Square**	**DF**	**Pr > ChiSq**	**Autocorrelations**					
6	6.51	4	0.1643	0.009	-0.129	-0.030	-0.143	-0.045	0.021
12	18.86	10	0.0421	0.167	0.014	0.114	0.116	-0.103	-0.093
18	32.37	16	0.0089	-0.000	-0.050	-0.137	-0.016	0.234	-0.016
24	45.53	22	0.0023	0.026	0.079	-0.212	-0.055	0.091	-0.092
30	54.68	28	0.0019	-0.067	0.085	0.162	0.037	0.073	0.055

The ARIMA Procedure

Grain commodity=Barley





Model for variable LPE	
Estimated Mean	0.003264

Autoregressive Factors	
Factor 1:	1 - 0.9803 B**(1)

The ARIMA Procedure

Grain commodity=Barley

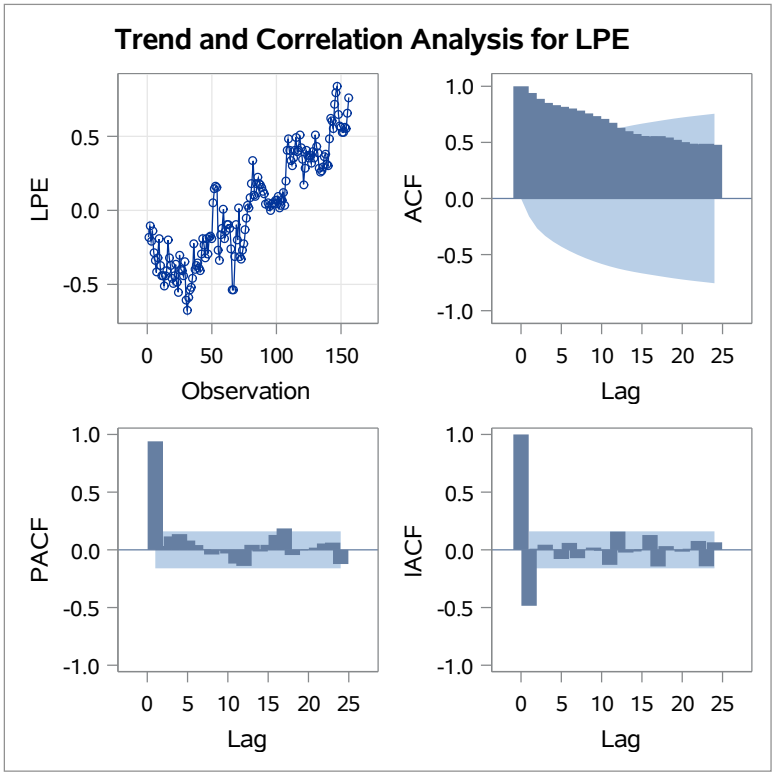
Moving Average Factors	
Factor 1:	1 - 0.06704 B**(1)

The ARIMA Procedure

Grain commodity=Corn

Name of Variable = LPE	
Mean of Working Series	0.017855
Standard Deviation	0.360393
Number of Observations	156

Autocorrelation Check for White Noise									
To Lag	Chi-Square	DF	Pr > ChiSq	Autocorrelations					
6	710.49	6	<.0001	0.940	0.888	0.852	0.832	0.817	0.802
12	1228.29	12	<.0001	0.783	0.758	0.734	0.709	0.675	0.630
18	1562.69	18	<.0001	0.600	0.575	0.557	0.550	0.556	0.543
24	1830.71	24	<.0001	0.523	0.502	0.488	0.483	0.487	0.478



Conditional Least Squares Estimation					
Parameter	Estimate	Standard Error	t Value	Approx Pr > |t|	Lag
MU	-0.15038	0.10629	-1.41	0.1592	0
MA1,1	0.02726	0.08406	0.32	0.7462	1
AR1,1	0.98115	0.02260	43.41	<.0001	1

The ARIMA Procedure

Grain commodity=Corn

Constant Estimate	-0.00283
Variance Estimate	0.011862
Std Error Estimate	0.108911
AIC	-246.094
SBC	-236.945
Number of Residuals	156

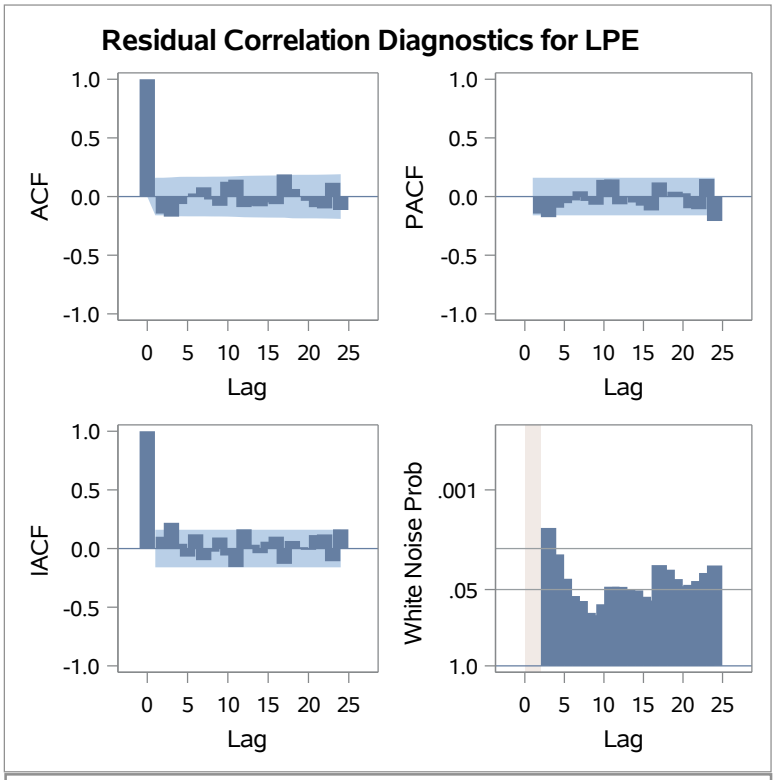
*** AIC and SBC do not include log determinant.**

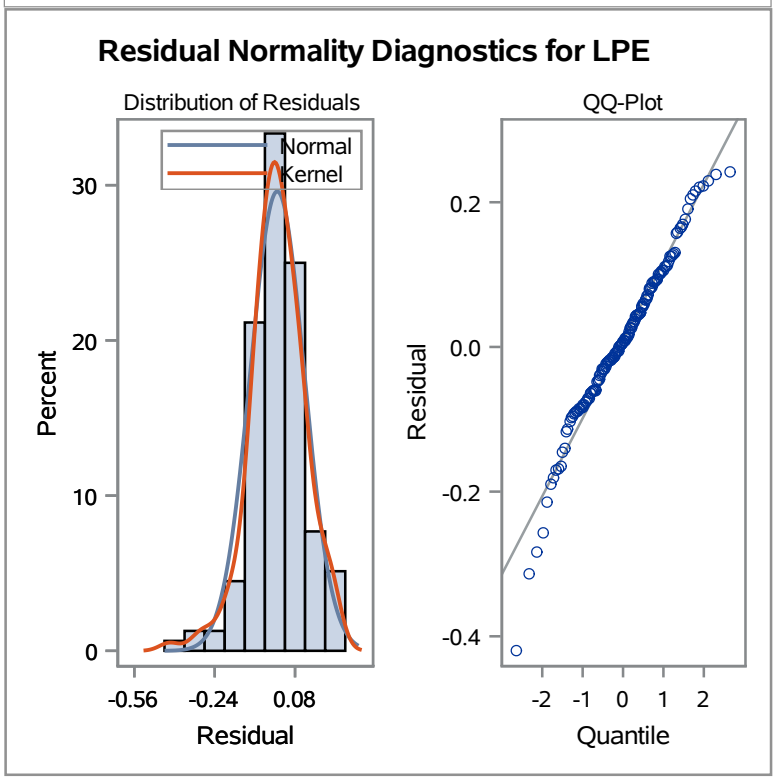
Correlations of Parameter Estimates			
Parameter	**MU**	**MA1,1**	**AR1,1**
MU	1.000	-0.007	-0.096
MA1,1	-0.007	1.000	0.259
AR1,1	-0.096	0.259	1.000

Autocorrelation Check of Residuals									
To Lag	**Chi-Square**	**DF**	**Pr > ChiSq**	**Autocorrelations**					
6	8.11	4	0.0878	0.004	-0.138	-0.164	-0.058	0.010	0.033
12	18.26	10	0.0508	0.085	-0.017	-0.071	0.134	0.151	-0.082
18	28.50	16	0.0275	-0.070	-0.075	-0.043	-0.059	0.193	0.070
24	36.52	22	0.0267	0.008	-0.030	-0.084	-0.095	0.123	-0.107
30	44.01	28	0.0277	0.046	-0.050	0.134	0.115	0.036	-0.043

The ARIMA Procedure

Grain commodity=Corn





Model for variable LPE	
Estimated Mean	-0.15038

Autoregressive Factors	
Factor 1:	1 - 0.98115 B**(1)

The ARIMA Procedure

Grain commodity=Corn

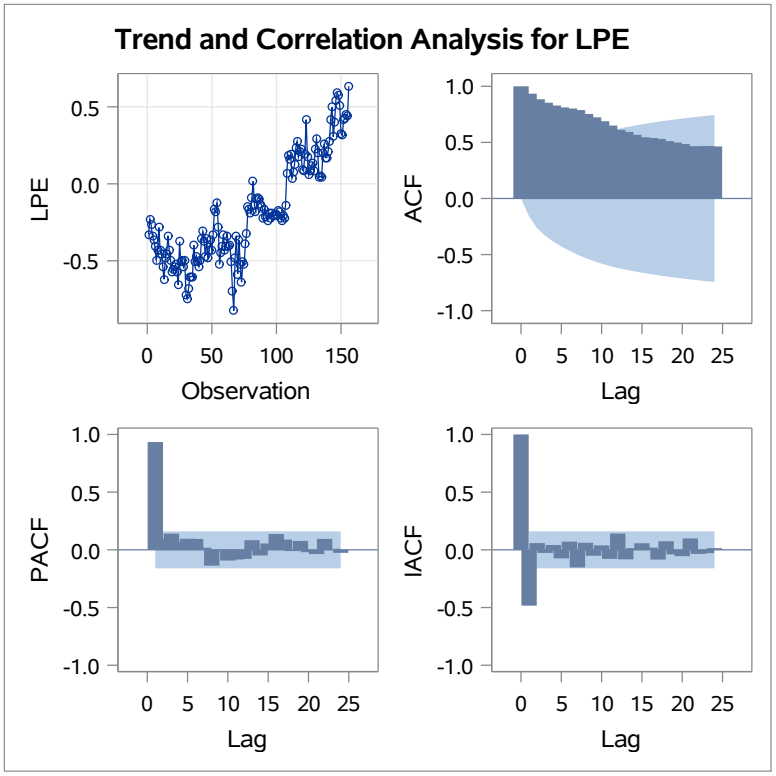
Moving Average Factors	
Factor 1:	1 - 0.02726 B**(1)

The ARIMA Procedure

Grain commodity=Oats

Name of Variable = LPE	
Mean of Working Series	-0.17862
Standard Deviation	0.337359
Number of Observations	156

Autocorrelation Check for White Noise									
To Lag	Chi-Square	DF	Pr > ChiSq	Autocorrelations					
6	705.87	6	<.0001	0.934	0.884	0.854	0.829	0.812	0.802
12	1206.76	12	<.0001	0.788	0.753	0.723	0.688	0.650	0.612
18	1523.36	18	<.0001	0.594	0.568	0.546	0.539	0.531	0.512
24	1770.11	24	<.0001	0.499	0.485	0.464	0.463	0.467	0.464



Conditional Least Squares Estimation					
Parameter	Estimate	Standard Error	t Value	Approx Pr > |t|	Lag
MU	-0.29971	0.10138	-2.96	0.0036	0
MA1,1	0.12089	0.08411	1.44	0.1527	1
AR1,1	0.98830	0.02170	45.55	<.0001	1

The ARIMA Procedure

Grain commodity=Oats

Constant Estimate	-0.00351
Variance Estimate	0.010714
Std Error Estimate	0.10351
AIC	-261.963
SBC	-252.814
Number of Residuals	156

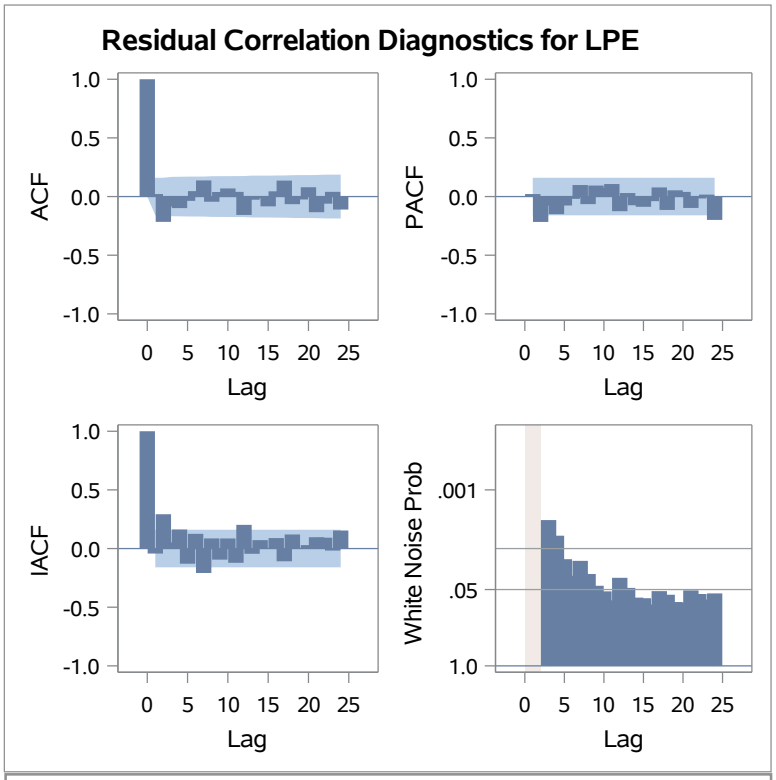
*** AIC and SBC do not include log determinant.**

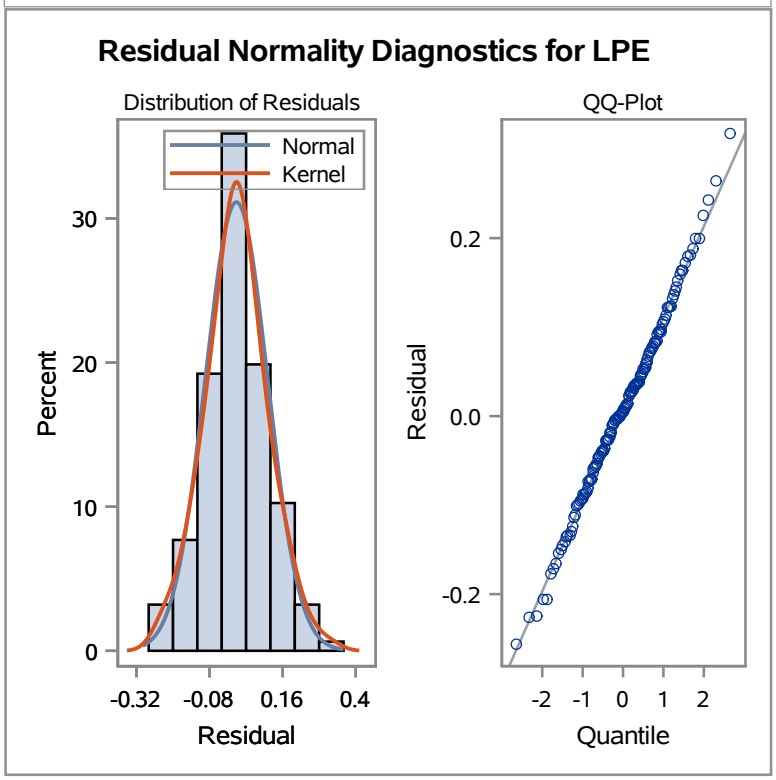
Correlations of Parameter Estimates			
Parameter	**MU**	**MA1,1**	**AR1,1**
MU	1.000	-0.003	-0.052
MA1,1	-0.003	1.000	0.258
AR1,1	-0.052	0.258	1.000

Autocorrelation Check of Residuals									
To Lag	**Chi-Square**	**DF**	**Pr > ChiSq**	**Autocorrelations**					
6	10.09	4	0.0390	0.027	-0.209	-0.078	-0.092	-0.031	0.051
12	19.19	10	0.0379	0.143	-0.037	0.045	0.075	0.046	-0.150
18	24.82	16	0.0731	-0.019	-0.006	-0.078	0.049	0.140	-0.059
24	32.11	22	0.0756	-0.019	0.084	-0.128	-0.055	0.045	-0.104
30	36.65	28	0.1268	0.024	0.104	0.108	0.018	0.012	0.014

The ARIMA Procedure

Grain commodity=Oats





Model for variable LPE	
Estimated Mean	-0.29971

Autoregressive Factors	
Factor 1:	1 - 0.9883 B**(1)

The ARIMA Procedure

Grain commodity=Oats

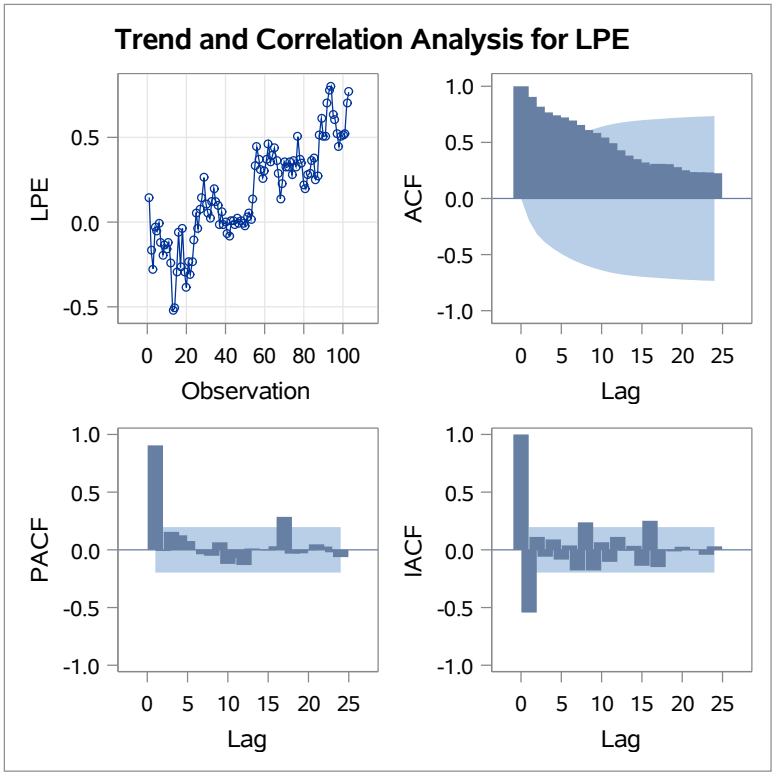
Moving Average Factors	
Factor 1:	1 - 0.12089 B**(1)

The ARIMA Procedure

Grain commodity=Sorghum

Name of Variable = LPE	
Mean of Working Series	0.16719
Standard Deviation	0.288231
Number of Observations	103

Autocorrelation Check for White Noise									
To Lag	Chi-Square	DF	Pr > ChiSq	Autocorrelations					
6	393.62	6	<.0001	0.905	0.818	0.767	0.741	0.722	0.695
12	608.38	12	<.0001	0.656	0.610	0.584	0.543	0.493	0.430
18	688.22	18	<.0001	0.383	0.350	0.321	0.295	0.309	0.306
24	735.17	24	<.0001	0.279	0.252	0.234	0.232	0.232	0.225



Conditional Least Squares Estimation					
Parameter	Estimate	Standard Error	t Value	Approx Pr > |t|	Lag
MU	0.18290	0.09590	1.91	0.0594	0
MA1,1	-0.03042	0.10809	-0.28	0.7790	1
AR1,1	0.93991	0.04289	21.92	<.0001	1

The ARIMA Procedure

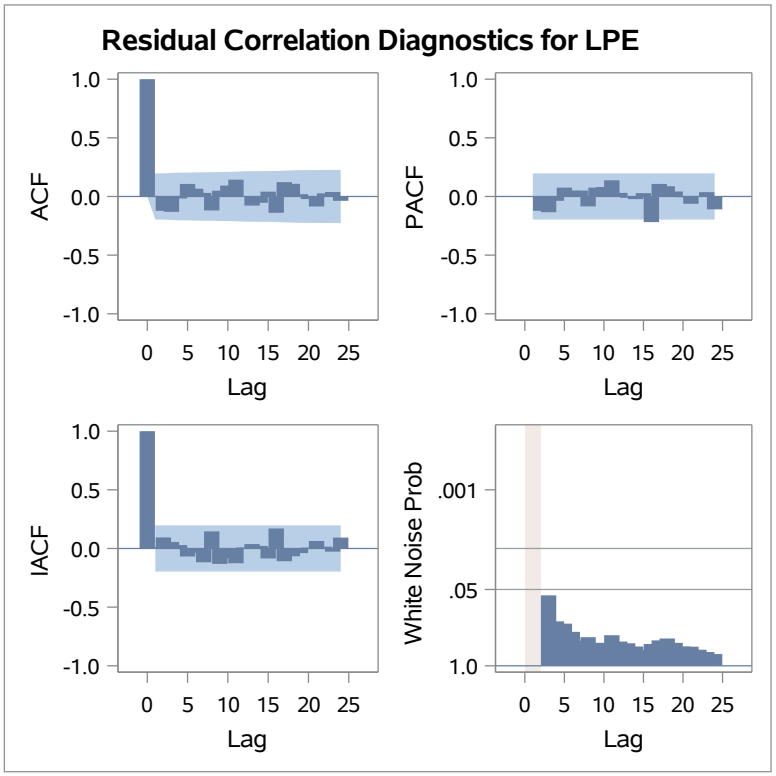
Grain commodity=Sorghum

Constant Estimate	0.010991
Variance Estimate	0.012334
Std Error Estimate	0.111057
AIC	-157.471
SBC	-149.567
Number of Residuals	103

*** AIC and SBC do not include log determinant.**

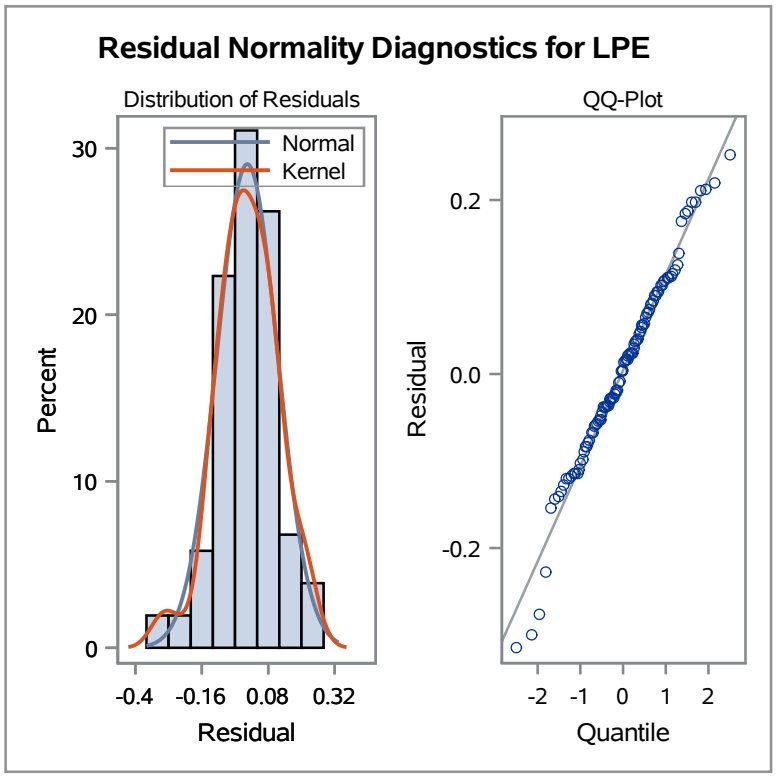
Correlations of Parameter Estimates			
Parameter	MU	MA1,1	AR1,1
MU	1.000	0.033	0.047
MA1,1	0.033	1.000	0.374
AR1,1	0.047	0.374	1.000

Autocorrelation Check of Residuals									
To Lag	Chi-Square	DF	Pr > ChiSq	Autocorrelations					
6	5.15	4	0.2718	-0.003	-0.120	-0.129	-0.016	0.108	0.067
12	10.65	10	0.3852	0.032	-0.116	0.052	0.095	0.145	0.003
18	17.66	16	0.3444	-0.075	-0.050	0.043	-0.138	0.123	0.109
24	19.17	22	0.6346	0.021	-0.020	-0.083	0.028	0.039	-0.035



The ARIMA Procedure

Grain commodity=Sorghum



Model for variable LPE	
Estimated Mean	0.1829

Autoregressive Factors	
Factor 1:	1 - 0.93991 B**(1)

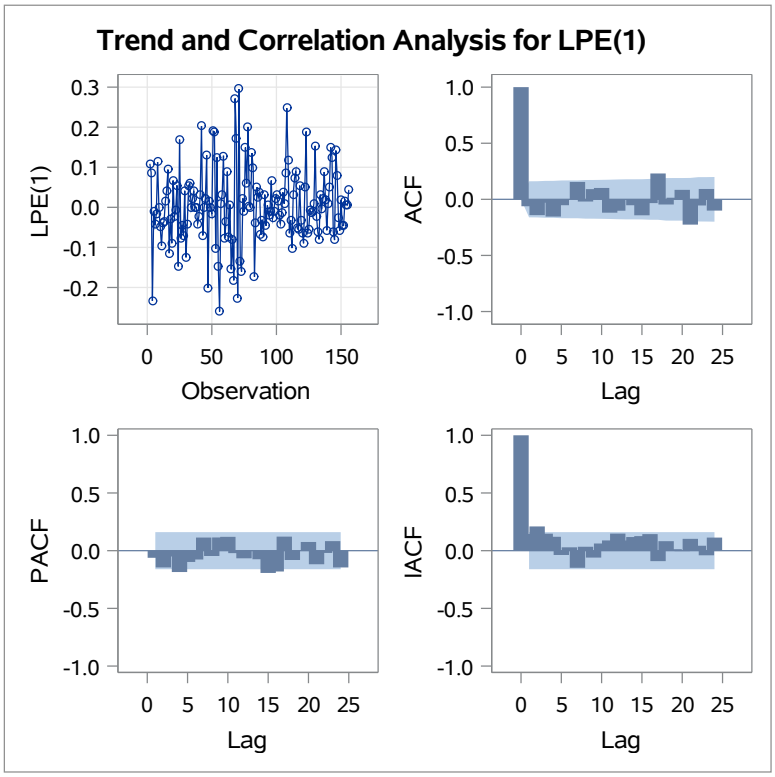
Moving Average Factors	
Factor 1:	1 + 0.03042 B**(1)

The ARIMA Procedure

Grain commodity=Barley

Name of Variable = LPE	
Period(s) of Differencing	1
Mean of Working Series	0.00479
Standard Deviation	0.094606
Number of Observations	155
Observation(s) eliminated by differencing	1

Autocorrelation Check for White Noise									
To Lag	Chi-Square	DF	Pr > ChiSq	Autocorrelations					
6	8.15	6	0.2270	-0.062	-0.141	-0.030	-0.154	-0.052	-0.002
12	19.42	12	0.0788	0.155	-0.020	0.091	0.101	-0.119	-0.102
18	33.35	18	0.0151	-0.004	-0.053	-0.142	-0.034	0.230	-0.046
24	47.90	24	0.0026	0.014	0.084	-0.225	-0.055	0.092	-0.100



Conditional Least Squares Estimation					
Parameter	Estimate	Standard Error	t Value	Approx Pr > |t|	Lag
MU	0.0047386	0.0071920	0.66	0.5110	0
AR1,1	-0.06182	0.08073	-0.77	0.4450	1

The ARIMA Procedure

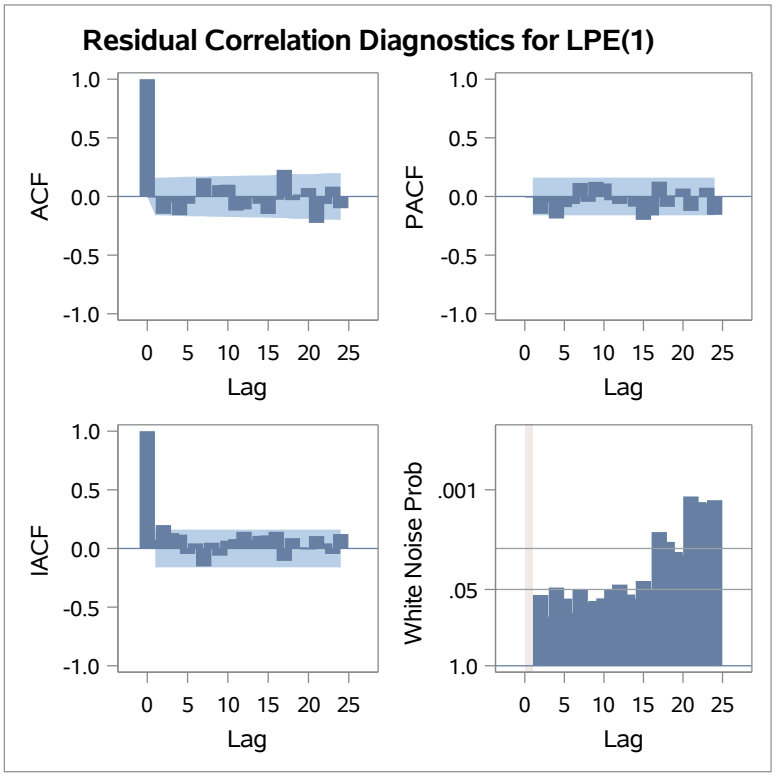
Grain commodity=Barley

Constant Estimate	0.005032
Variance Estimate	0.009033
Std Error Estimate	0.09504
AIC	-287.713
SBC	-281.626
Number of Residuals	155

*** AIC and SBC do not include log determinant.**

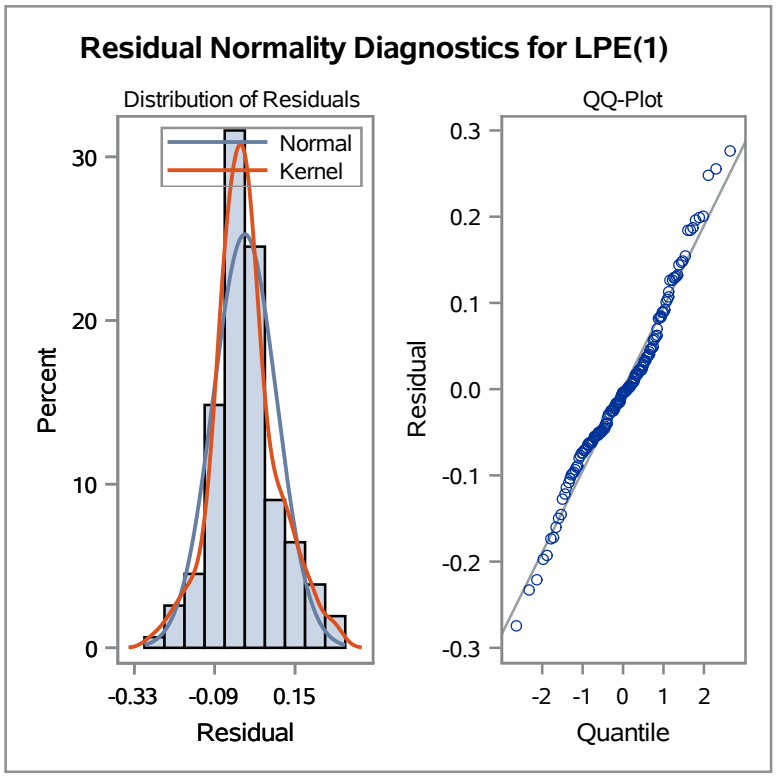
Correlations of Parameter Estimates		
Parameter	**MU**	**AR1,1**
MU	1.000	0.002
AR1,1	0.002	1.000

Autocorrelation Check of Residuals									
To Lag	**Chi-Square**	**DF**	**Pr > ChiSq**	**Autocorrelations**					
6	8.62	5	0.1253	-0.009	-0.148	-0.049	-0.160	-0.062	0.005
12	20.31	11	0.0413	0.155	-0.004	0.097	0.100	-0.120	-0.110
18	34.28	17	0.0077	-0.014	-0.062	-0.149	-0.028	0.227	-0.031
24	48.37	23	0.0015	0.017	0.072	-0.225	-0.064	0.083	-0.100
30	56.41	29	0.0017	-0.081	0.074	0.154	0.027	0.061	0.045



The ARIMA Procedure

Grain commodity=Barley



Model for variable LPE	
Estimated Mean	0.004739
Period(s) of Differencing	1

Autoregressive Factors	
Factor 1:	1 + 0.06182 B**(1)

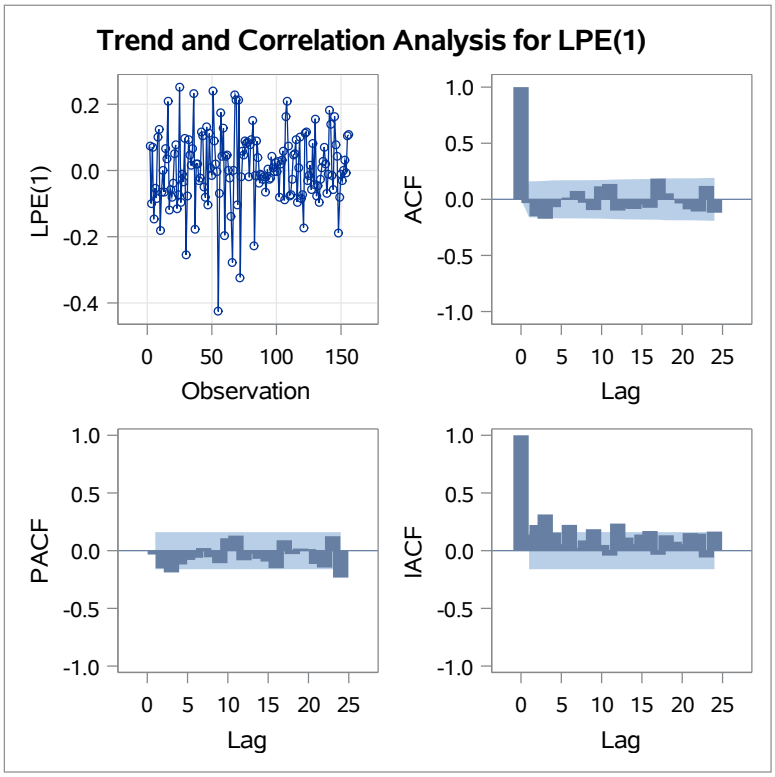
ANALYSIS OF USDA HISTORICAL GRAIN PRICE DATA
ARIMA(1, 1, 0)

The ARIMA Procedure

Grain commodity=Corn

Name of Variable = LPE	
Period(s) of Differencing	1
Mean of Working Series	0.00609
Standard Deviation	0.10834
Number of Observations	155
Observation(s) eliminated by differencing	1

Autocorrelation Check for White Noise									
To Lag	**Chi-Square**	**DF**	**Pr > ChiSq**	**Autocorrelations**					
6	9.45	6	0.1500	-0.033	-0.151	-0.173	-0.070	-0.004	0.016
12	19.17	12	0.0846	0.074	-0.031	-0.096	0.116	0.137	-0.100
18	29.50	18	0.0426	-0.080	-0.086	-0.048	-0.076	0.185	0.053
24	38.64	24	0.0297	-0.005	-0.037	-0.089	-0.109	0.119	-0.120



Conditional Least Squares Estimation					
Parameter	**Estimate**	**Standard Error**	**t Value**	**Approx Pr > |t|**	**Lag**
MU	0.0060550	0.0084729	0.71	0.4759	0
AR1,1	-0.03340	0.08103	-0.41	0.6808	1

The ARIMA Procedure

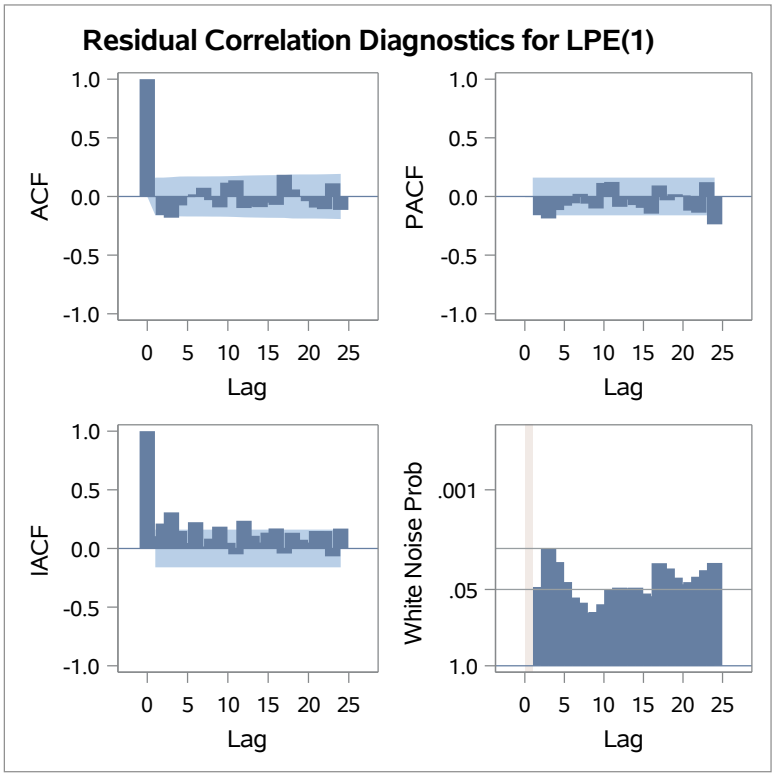
Grain commodity=Corn

Constant Estimate	0.006257
Variance Estimate	0.011878
Std Error Estimate	0.108985
AIC	-245.27
SBC	-239.183
Number of Residuals	155

*** AIC and SBC do not include log determinant.**

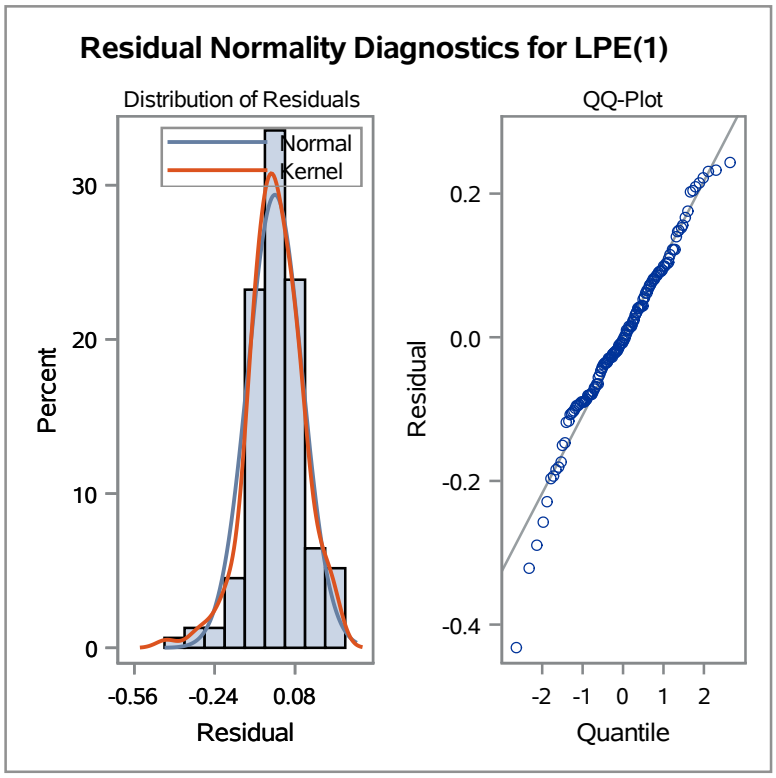
Correlations of Parameter Estimates		
Parameter	MU	AR1,1
MU	1.000	0.006
AR1,1	0.006	1.000

Autocorrelation Check of Residuals									
To Lag	Chi-Square	DF	Pr > ChiSq	Autocorrelations					
6	10.24	5	0.0686	-0.005	-0.159	-0.181	-0.076	-0.005	0.018
12	19.91	11	0.0465	0.074	-0.031	-0.093	0.117	0.138	-0.098
18	30.67	17	0.0219	-0.086	-0.091	-0.053	-0.072	0.185	0.060
24	39.46	23	0.0177	-0.004	-0.040	-0.094	-0.108	0.112	-0.114
30	46.38	29	0.0215	0.032	-0.063	0.125	0.108	0.022	-0.058



The ARIMA Procedure

Grain commodity=Corn



Model for variable LPE	
Estimated Mean	0.006055
Period(s) of Differencing	1

Autoregressive Factors	
Factor 1:	1 + 0.0334 B**(1)

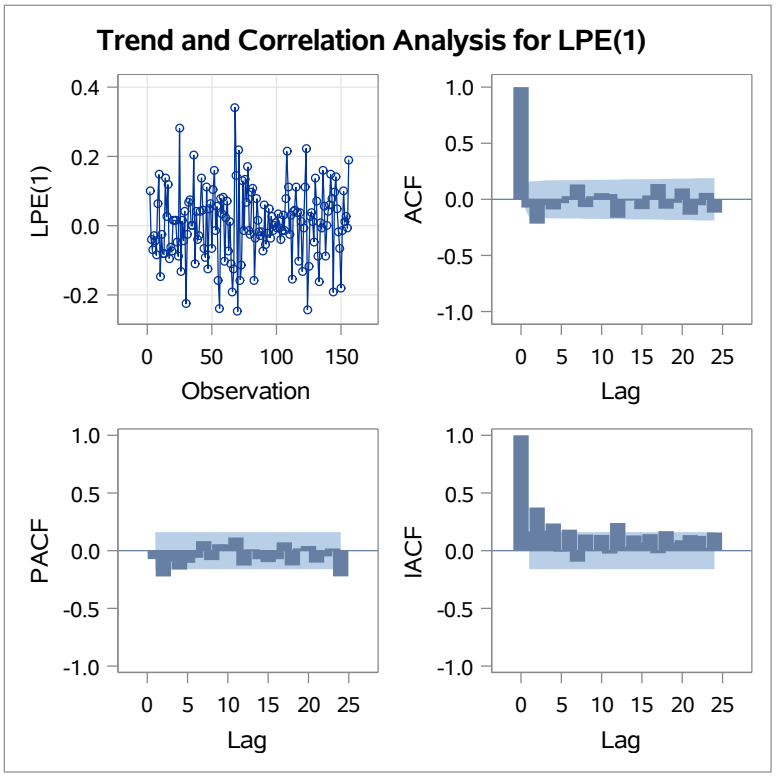
ANALYSIS OF USDA HISTORICAL GRAIN PRICE DATA
ARIMA(1, 1, 0)

The ARIMA Procedure

Grain commodity=Oats

Name of Variable = LPE	
Period(s) of Differencing	1
Mean of Working Series	0.006202
Standard Deviation	0.103235
Number of Observations	155
Observation(s) eliminated by differencing	1

Autocorrelation Check for White Noise									
To Lag	Chi-Square	DF	Pr > ChiSq	Autocorrelations					
6	10.41	6	0.1085	-0.073	-0.217	-0.053	-0.090	-0.034	0.028
12	19.70	12	0.0730	0.133	-0.069	0.027	0.055	0.047	-0.164
18	25.76	18	0.1053	-0.011	-0.002	-0.087	0.034	0.136	-0.083
24	34.78	24	0.0717	-0.031	0.097	-0.137	-0.053	0.057	-0.119



Conditional Least Squares Estimation					
Parameter	Estimate	Standard Error	t Value	Approx Pr > |t|	Lag
MU	0.0060808	0.0077486	0.78	0.4338	0
AR1,1	-0.07469	0.08148	-0.92	0.3608	1

The ARIMA Procedure

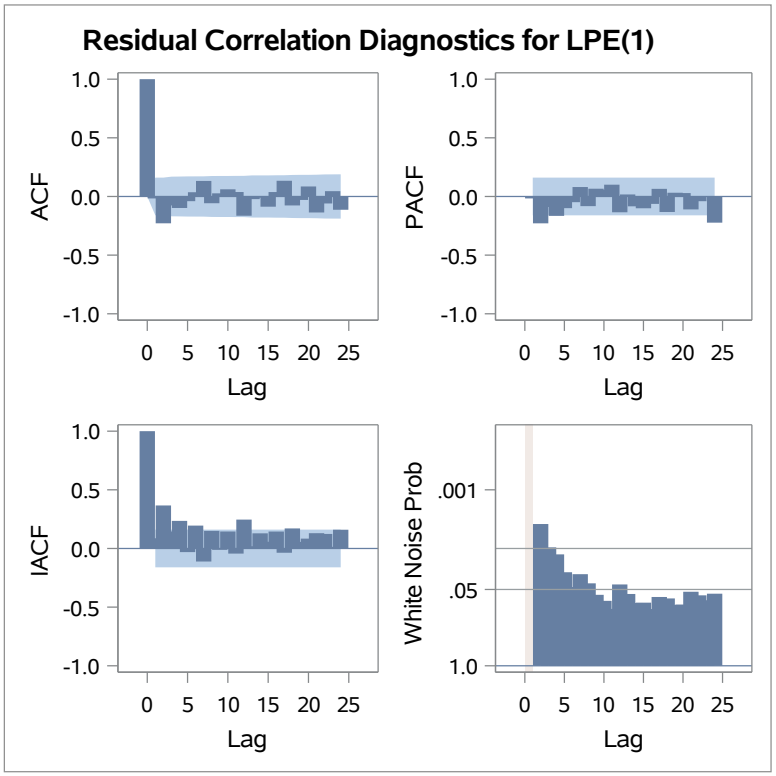
Grain commodity=Oats

Constant Estimate	0.006535
Variance Estimate	0.010738
Std Error Estimate	0.103624
AIC	-260.909
SBC	-254.822
Number of Residuals	155

*** AIC and SBC do not include log determinant.**

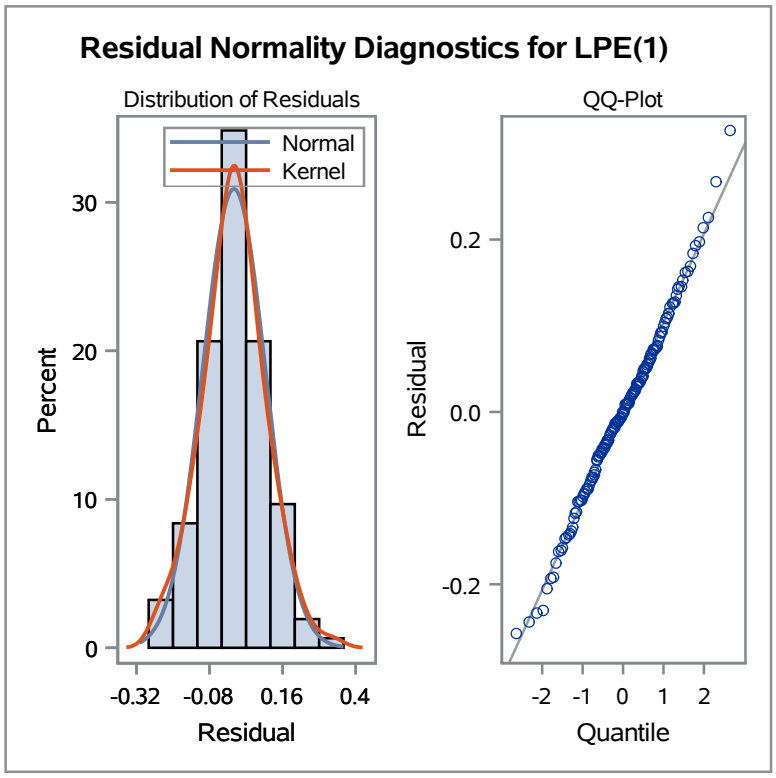
Correlations of Parameter Estimates		
Parameter	MU	AR1,1
MU	1.000	0.010
AR1,1	0.010	1.000

Autocorrelation Check of Residuals									
To Lag	Chi-Square	DF	Pr > ChiSq	Autocorrelations					
6	11.32	5	0.0454	-0.017	-0.229	-0.076	-0.098	-0.040	0.036
12	20.33	11	0.0410	0.133	-0.058	0.027	0.061	0.038	-0.164
18	26.19	17	0.0710	-0.022	-0.010	-0.087	0.038	0.134	-0.076
24	34.44	23	0.0590	-0.030	0.085	-0.136	-0.060	0.045	-0.113
30	37.87	29	0.1254	0.011	0.092	0.097	0.004	-0.002	0.011



The ARIMA Procedure

Grain commodity=Oats



Model for variable LPE	
Estimated Mean	0.006081
Period(s) of Differencing	1

Autoregressive Factors	
Factor 1:	1 + 0.07469 B**(1)

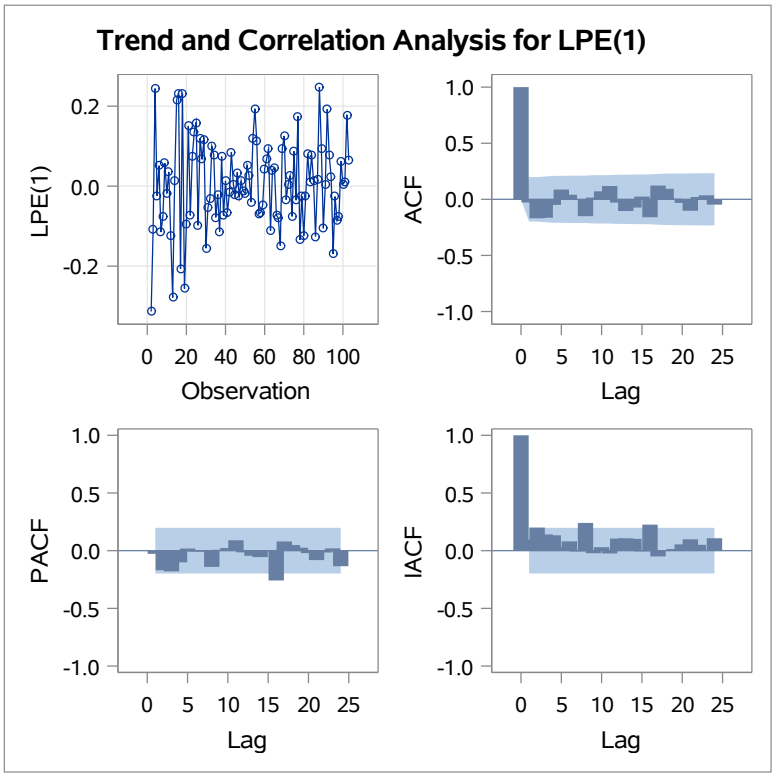
ANALYSIS OF USDA HISTORICAL GRAIN PRICE DATA
ARIMA(1, 1, 0)

The ARIMA Procedure

Grain commodity=Sorghum

Name of Variable = LPE	
Period(s) of Differencing	1
Mean of Working Series	0.006089
Standard Deviation	0.110903
Number of Observations	102
Observation(s) eliminated by differencing	1

Autocorrelation Check for White Noise									
To Lag	Chi-Square	DF	Pr > ChiSq	Autocorrelations					
6	7.27	6	0.2970	-0.028	-0.169	-0.164	-0.050	0.087	0.041
12	12.16	12	0.4327	-0.003	-0.150	0.015	0.071	0.119	-0.029
18	20.30	18	0.3160	-0.104	-0.073	0.024	-0.160	0.123	0.094
24	22.32	24	0.5603	0.006	-0.031	-0.102	0.021	0.036	-0.047



Conditional Least Squares Estimation					
Parameter	Estimate	Standard Error	t Value	Approx Pr > |t|	Lag
MU	0.0061552	0.01079	0.57	0.5697	0
AR1,1	-0.02771	0.10010	-0.28	0.7825	1

The ARIMA Procedure

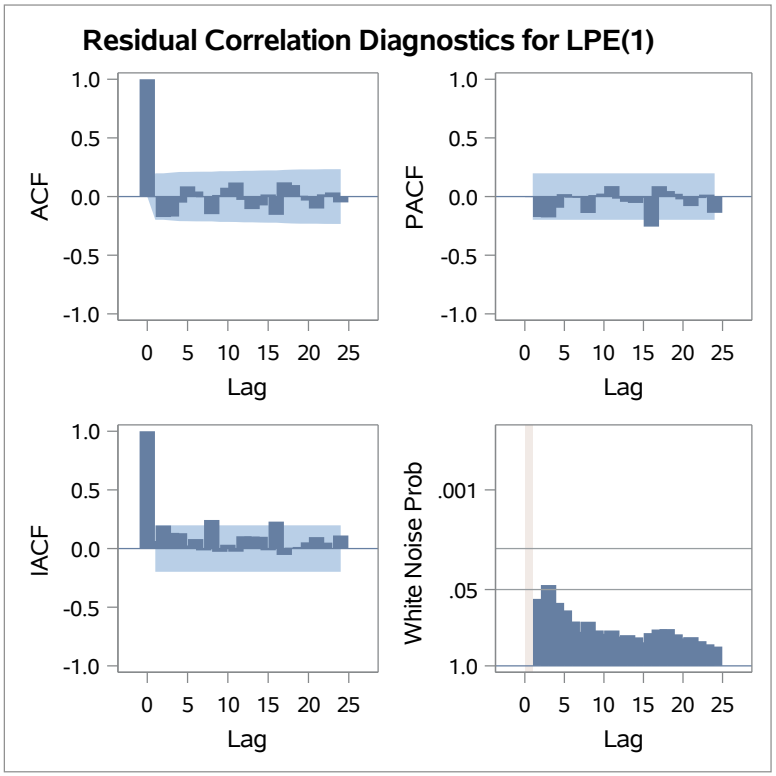
Grain commodity=Sorghum

Constant Estimate	0.006326
Variance Estimate	0.012536
Std Error Estimate	0.111963
AIC	-155.231
SBC	-149.981
Number of Residuals	102

*** AIC and SBC do not include log determinant.**

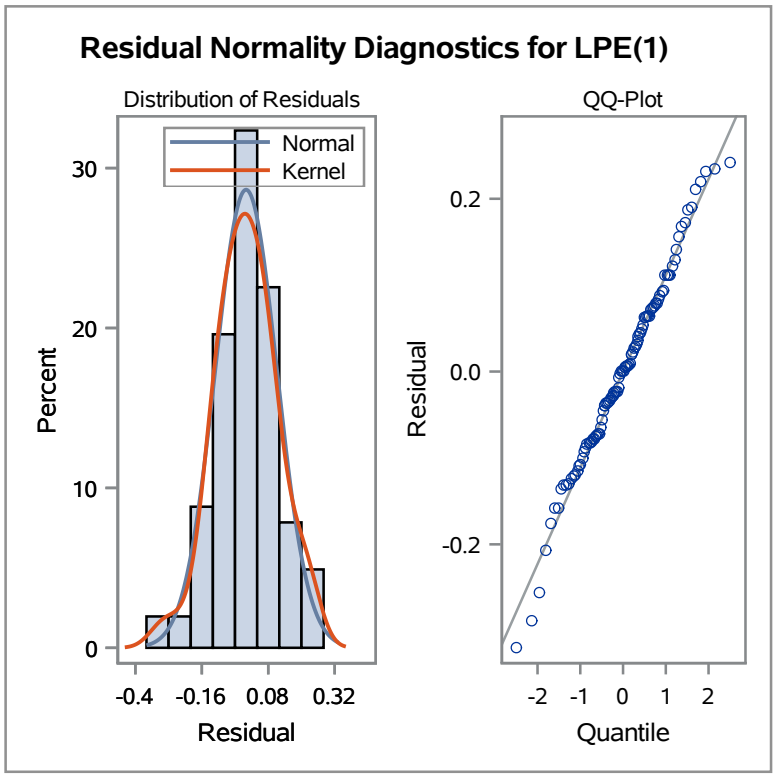
Correlations of Parameter Estimates		
Parameter	**MU**	**AR1,1**
MU	1.000	0.006
AR1,1	0.006	1.000

Autocorrelation Check of Residuals									
To Lag	**Chi-Square**	**DF**	**Pr > ChiSq**	**Autocorrelations**					
6	7.67	5	0.1754	-0.005	-0.175	-0.170	-0.052	0.087	0.043
12	12.66	11	0.3165	-0.006	-0.150	0.014	0.075	0.120	-0.029
18	20.79	17	0.2360	-0.107	-0.076	0.018	-0.156	0.121	0.098
24	22.86	23	0.4690	0.007	-0.034	-0.102	0.019	0.035	-0.050



The ARIMA Procedure

Grain commodity=Sorghum



Model for variable LPE	
Estimated Mean	0.006155
Period(s) of Differencing	1

Autoregressive Factors	
Factor 1:	1 + 0.02771 B**(1)

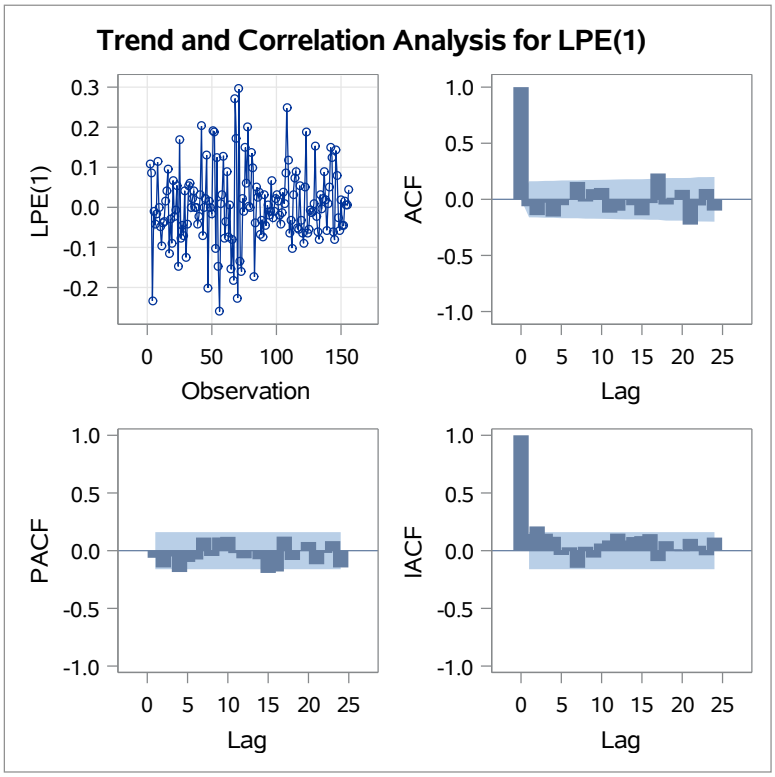
ANALYSIS OF USDA HISTORICAL GRAIN PRICE DATA
ARIMA(1, 1, 1)

The ARIMA Procedure

Grain commodity=Barley

Name of Variable = LPE	
Period(s) of Differencing	1
Mean of Working Series	0.00479
Standard Deviation	0.094606
Number of Observations	155
Observation(s) eliminated by differencing	1

Autocorrelation Check for White Noise									
To Lag	Chi-Square	DF	Pr > ChiSq	Autocorrelations					
6	8.15	6	0.2270	-0.062	-0.141	-0.030	-0.154	-0.052	-0.002
12	19.42	12	0.0788	0.155	-0.020	0.091	0.101	-0.119	-0.102
18	33.35	18	0.0151	-0.004	-0.053	-0.142	-0.034	0.230	-0.046
24	47.90	24	0.0026	0.014	0.084	-0.225	-0.055	0.092	-0.100



Conditional Least Squares Estimation					
Parameter	Estimate	Standard Error	t Value	Approx Pr > |t|	Lag
MU	0.0048667	0.0037499	1.30	0.1963	0
MA1,1	0.86227	0.10804	7.98	<.0001	1
AR1,1	0.71780	0.14869	4.83	<.0001	1

The ARIMA Procedure

Grain commodity=Barley

Constant Estimate	0.001373
Variance Estimate	0.00875
Std Error Estimate	0.093544
AIC	-291.648
SBC	-282.518
Number of Residuals	155

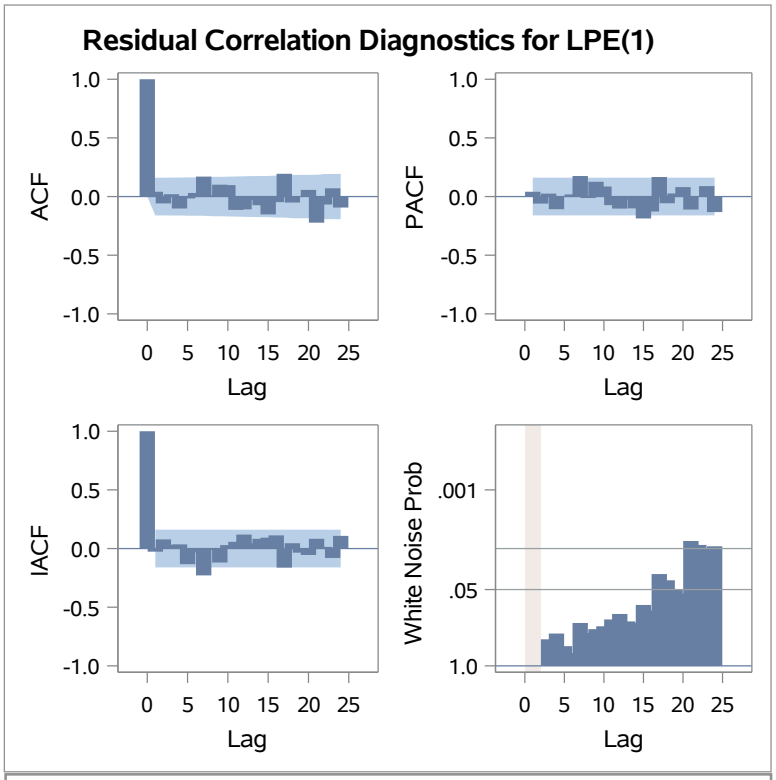
*** AIC and SBC do not include log determinant.**

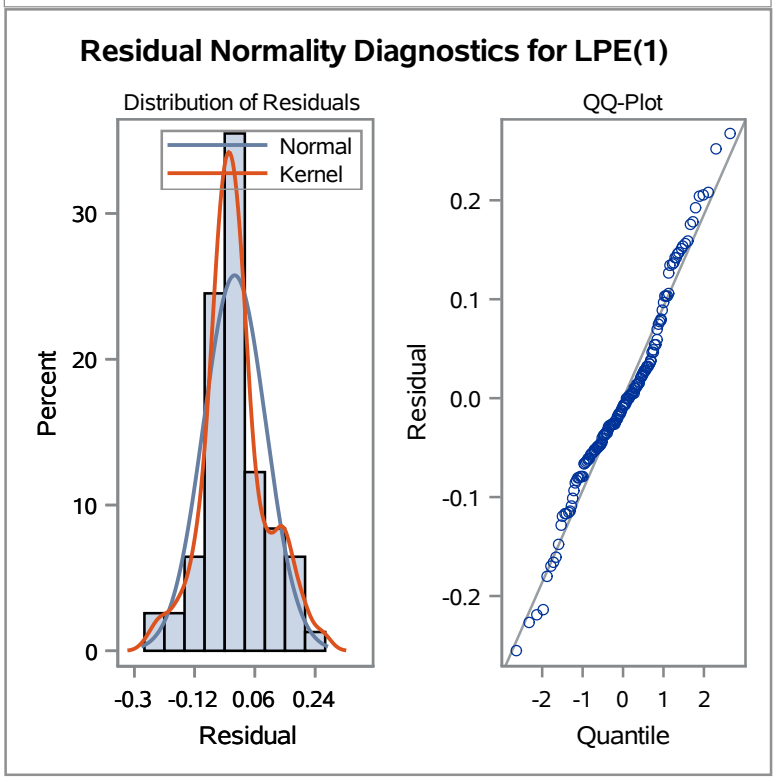
Correlations of Parameter Estimates			
Parameter	**MU**	**MA1,1**	**AR1,1**
MU	1.000	-0.058	-0.050
MA1,1	-0.058	1.000	0.925
AR1,1	-0.050	0.925	1.000

Autocorrelation Check of Residuals									
To Lag	**Chi-Square**	**DF**	**Pr > ChiSq**	**Autocorrelations**					
6	2.73	4	0.6037	0.041	-0.058	0.020	-0.102	-0.016	0.031
12	15.04	10	0.1305	0.170	0.011	0.101	0.098	-0.114	-0.109
18	27.65	16	0.0348	-0.028	-0.074	-0.152	-0.048	0.194	-0.051
24	40.62	22	0.0092	-0.000	0.057	-0.223	-0.068	0.070	-0.094
30	50.37	28	0.0059	-0.064	0.081	0.161	0.046	0.084	0.074

The ARIMA Procedure

Grain commodity=Barley





Model for variable LPE	
Estimated Mean	0.004867
Period(s) of Differencing	1

The ARIMA Procedure

Grain commodity=Barley

Autoregressive Factors	
Factor 1:	1 - 0.7178 B**(1)

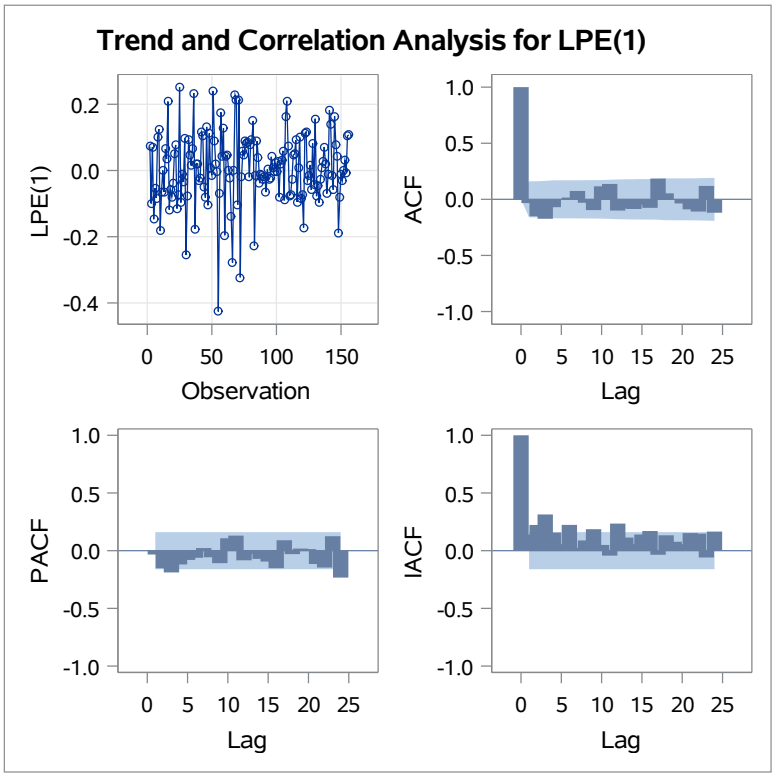
Moving Average Factors	
Factor 1:	1 - 0.86227 B**(1)

The ARIMA Procedure

Grain commodity=Corn

Name of Variable = LPE	
Period(s) of Differencing	1
Mean of Working Series	0.00609
Standard Deviation	0.10834
Number of Observations	155
Observation(s) eliminated by differencing	1

Autocorrelation Check for White Noise									
To Lag	Chi-Square	DF	Pr > ChiSq	Autocorrelations					
6	9.45	6	0.1500	-0.033	-0.151	-0.173	-0.070	-0.004	0.016
12	19.17	12	0.0846	0.074	-0.031	-0.096	0.116	0.137	-0.100
18	29.50	18	0.0426	-0.080	-0.086	-0.048	-0.076	0.185	0.053
24	38.64	24	0.0297	-0.005	-0.037	-0.089	-0.109	0.119	-0.120



Conditional Least Squares Estimation					
Parameter	Estimate	Standard Error	t Value	Approx Pr > |t|	Lag
MU	0.0059932	0.0026136	2.29	0.0232	0
MA1,1	0.92743	0.05327	17.41	<.0001	1
AR1,1	0.74525	0.09324	7.99	<.0001	1

The ARIMA Procedure

Grain commodity=Corn

Constant Estimate	0.001527
Variance Estimate	0.01115
Std Error Estimate	0.105594
AIC	-254.086
SBC	-244.955
Number of Residuals	155

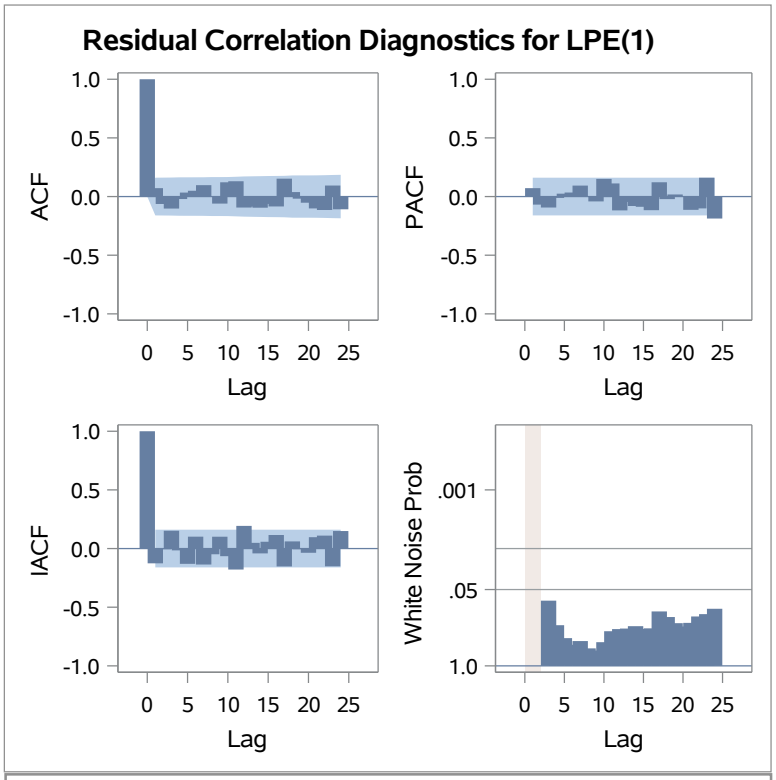
*** AIC and SBC do not include log determinant.**

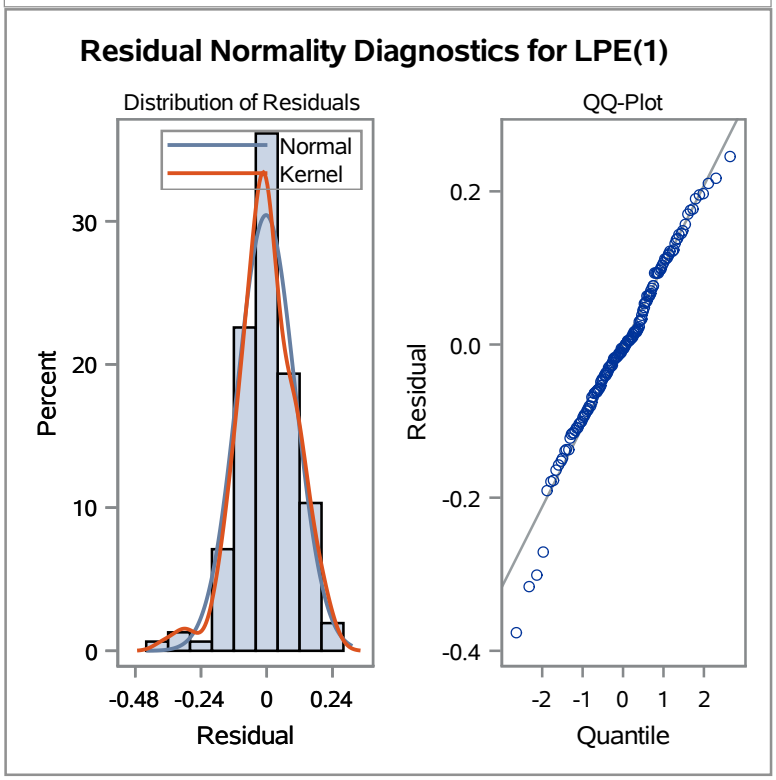
Correlations of Parameter Estimates			
Parameter	**MU**	**MA1,1**	**AR1,1**
MU	1.000	-0.204	-0.141
MA1,1	-0.204	1.000	0.811
AR1,1	-0.141	0.811	1.000

Autocorrelation Check of Residuals									
To Lag	**Chi-Square**	**DF**	**Pr > ChiSq**	**Autocorrelations**					
6	3.75	4	0.4403	0.072	-0.062	-0.101	-0.021	0.034	0.049
12	12.76	10	0.2376	0.097	-0.000	-0.060	0.121	0.130	-0.094
18	21.84	16	0.1484	-0.085	-0.095	-0.062	-0.084	0.153	0.038
24	30.47	22	0.1076	-0.018	-0.052	-0.101	-0.115	0.093	-0.109
30	37.38	28	0.1106	0.038	-0.045	0.130	0.116	0.040	-0.028

The ARIMA Procedure

Grain commodity=Corn





Model for variable LPE	
Estimated Mean	0.005993
Period(s) of Differencing	1

The ARIMA Procedure

Grain commodity=Corn

Autoregressive Factors	
Factor 1:	1 - 0.74525 B**(1)

Moving Average Factors	
Factor 1:	1 - 0.92743 B**(1)

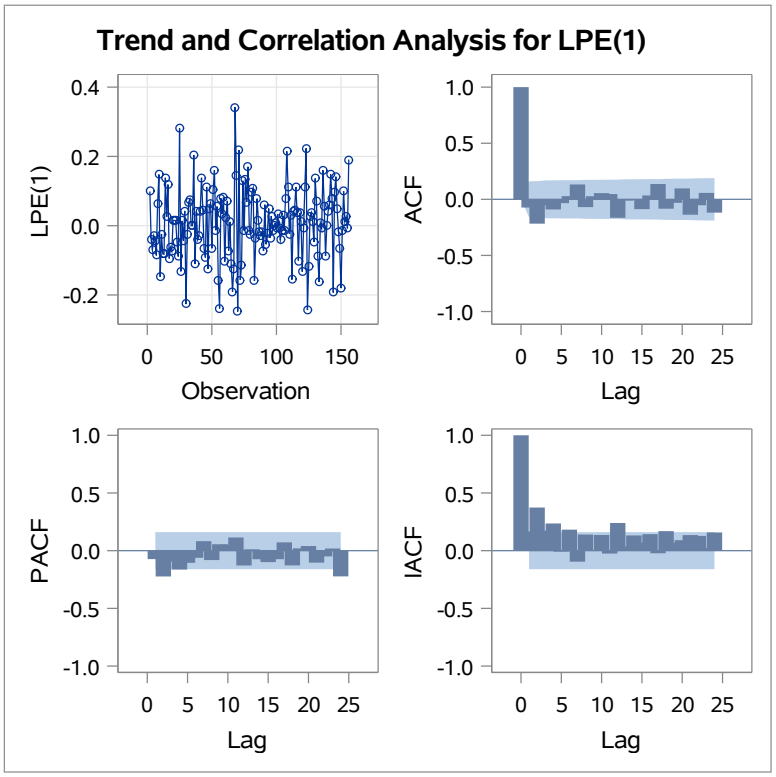
ANALYSIS OF USDA HISTORICAL GRAIN PRICE DATA
ARIMA(1, 1, 1)

The ARIMA Procedure

Grain commodity=Oats

Name of Variable = LPE	
Period(s) of Differencing	1
Mean of Working Series	0.006202
Standard Deviation	0.103235
Number of Observations	155
Observation(s) eliminated by differencing	1

Autocorrelation Check for White Noise									
To Lag	Chi-Square	DF	Pr > ChiSq	Autocorrelations					
6	10.41	6	0.1085	-0.073	-0.217	-0.053	-0.090	-0.034	0.028
12	19.70	12	0.0730	0.133	-0.069	0.027	0.055	0.047	-0.164
18	25.76	18	0.1053	-0.011	-0.002	-0.087	0.034	0.136	-0.083
24	34.78	24	0.0717	-0.031	0.097	-0.137	-0.053	0.057	-0.119



Conditional Least Squares Estimation					
Parameter	Estimate	Standard Error	t Value	Approx Pr > |t|	Lag
MU	0.0057173	0.0031252	1.83	0.0693	0
MA1,1	0.86994	0.08137	10.69	<.0001	1
AR1,1	0.65338	0.12392	5.27	<.0001	1

The ARIMA Procedure

Grain commodity=Oats

Constant Estimate	0.001982
Variance Estimate	0.010064
Std Error Estimate	0.100318
AIC	-269.974
SBC	-260.844
Number of Residuals	155

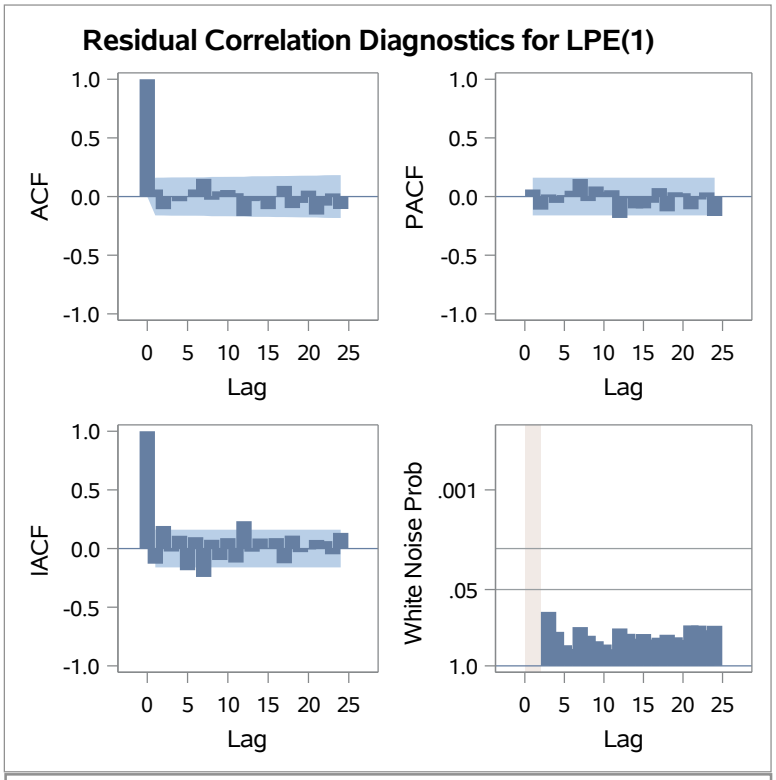
*** AIC and SBC do not include log determinant.**

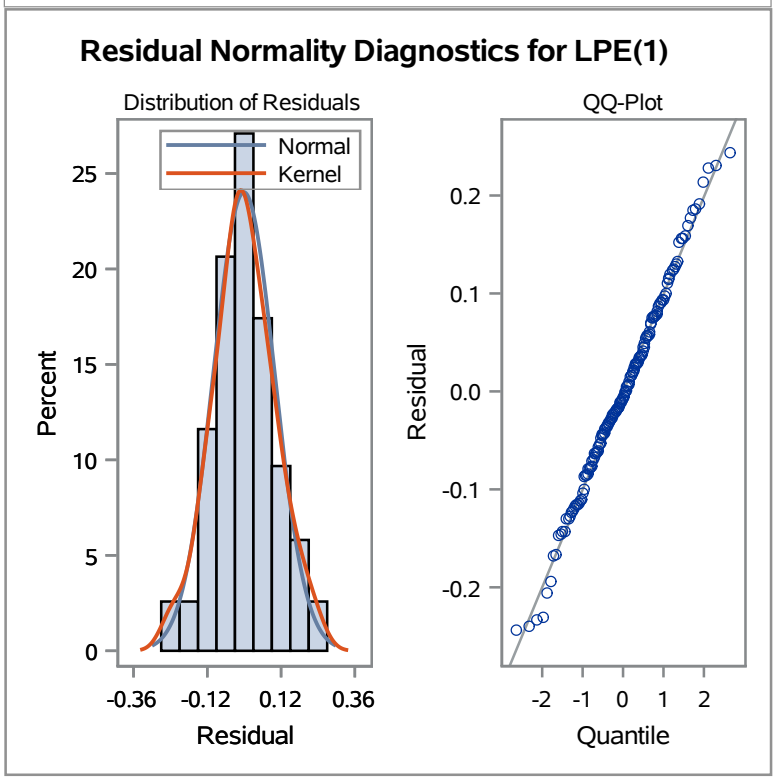
Correlations of Parameter Estimates			
Parameter	**MU**	**MA1,1**	**AR1,1**
MU	1.000	-0.101	-0.071
MA1,1	-0.101	1.000	0.865
AR1,1	-0.071	0.865	1.000

Autocorrelation Check of Residuals									
To Lag	**Chi-Square**	**DF**	**Pr > ChiSq**	**Autocorrelations**					
6	3.27	4	0.5145	0.060	-0.107	0.004	-0.040	0.003	0.060
12	12.88	10	0.2306	0.151	-0.027	0.044	0.056	0.029	-0.167
18	18.51	16	0.2951	-0.039	-0.034	-0.107	0.002	0.091	-0.098
24	27.09	22	0.2077	-0.054	0.051	-0.154	-0.077	0.027	-0.106
30	31.87	28	0.2798	0.022	0.096	0.107	0.030	0.028	0.047

The ARIMA Procedure

Grain commodity=Oats





Model for variable LPE	
Estimated Mean	0.005717
Period(s) of Differencing	1

The ARIMA Procedure

Grain commodity=Oats

Autoregressive Factors	
Factor 1:	1 - 0.65338 B**(1)

Moving Average Factors	
Factor 1:	1 - 0.86994 B**(1)

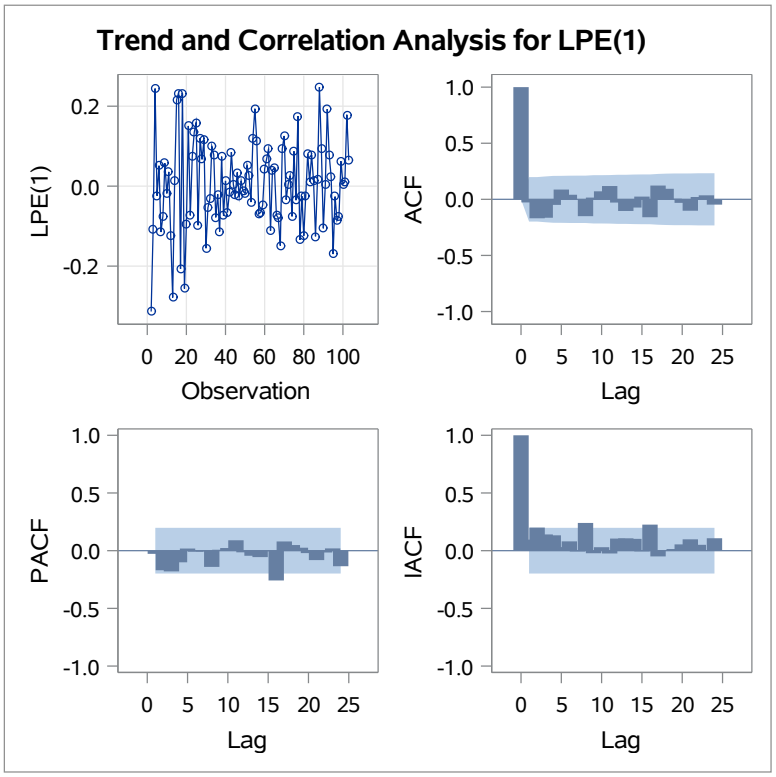
ANALYSIS OF USDA HISTORICAL GRAIN PRICE DATA
ARIMA(1, 1, 1)

The ARIMA Procedure

Grain commodity=Sorghum

Name of Variable = LPE	
Period(s) of Differencing	1
Mean of Working Series	0.006089
Standard Deviation	0.110903
Number of Observations	102
Observation(s) eliminated by differencing	1

Autocorrelation Check for White Noise									
To Lag	Chi-Square	DF	Pr > ChiSq	Autocorrelations					
6	7.27	6	0.2970	-0.028	-0.169	-0.164	-0.050	0.087	0.041
12	12.16	12	0.4327	-0.003	-0.150	0.015	0.071	0.119	-0.029
18	20.30	18	0.3160	-0.104	-0.073	0.024	-0.160	0.123	0.094
24	22.32	24	0.5603	0.006	-0.031	-0.102	0.021	0.036	-0.047



Conditional Least Squares Estimation					
Parameter	Estimate	Standard Error	t Value	Approx Pr > |t|	Lag
MU	0.0064733	0.0042974	1.51	0.1352	0
MA1,1	0.91902	0.08307	11.06	<.0001	1
AR1,1	0.76679	0.13066	5.87	<.0001	1

The ARIMA Procedure

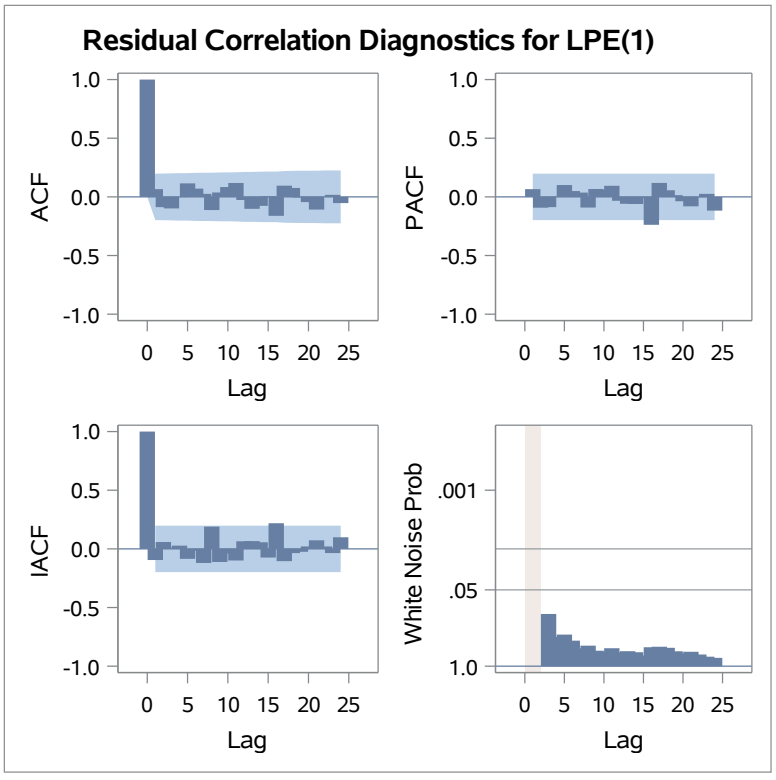
Grain commodity=Sorghum

Constant Estimate	0.00151
Variance Estimate	0.012015
Std Error Estimate	0.109614
AIC	-158.582
SBC	-150.707
Number of Residuals	102

*** AIC and SBC do not include log determinant.**

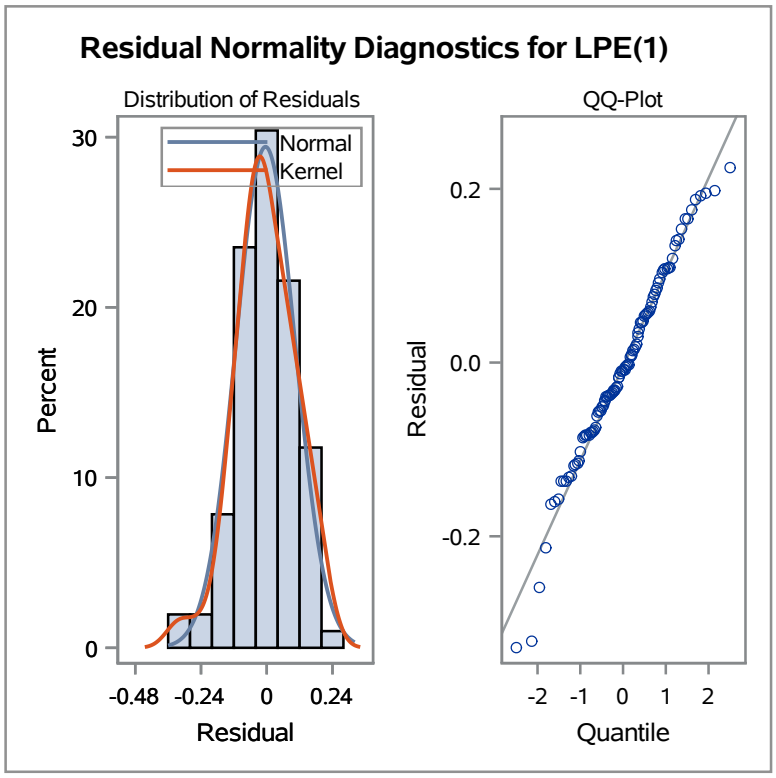
Correlations of Parameter Estimates			
Parameter	**MU**	**MA1,1**	**AR1,1**
MU	1.000	-0.328	-0.244
MA1,1	-0.328	1.000	0.864
AR1,1	-0.244	0.864	1.000

Autocorrelation Check of Residuals									
To Lag	**Chi-Square**	**DF**	**Pr > ChiSq**	**Autocorrelations**					
6	4.30	4	0.3671	0.067	-0.086	-0.097	-0.001	0.116	0.071
12	8.44	10	0.5855	0.026	-0.112	0.037	0.083	0.118	-0.028
18	15.52	16	0.4869	-0.103	-0.078	0.006	-0.161	0.096	0.075
24	17.76	22	0.7198	-0.007	-0.045	-0.109	0.001	0.017	-0.053



The ARIMA Procedure

Grain commodity=Sorghum



Model for variable LPE	
Estimated Mean	0.006473
Period(s) of Differencing	1

Autoregressive Factors	
Factor 1:	1 - 0.76679 B**(1)

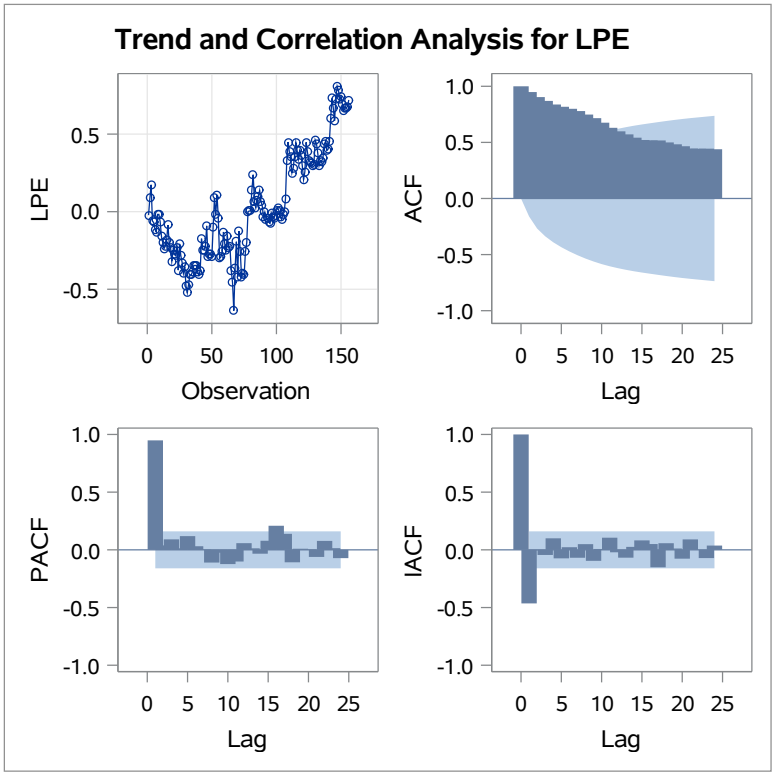
Moving Average Factors	
Factor 1:	1 - 0.91902 B**(1)

The ARIMA Procedure

Grain commodity=Barley

Name of Variable = LPE	
Mean of Working Series	0.029345
Standard Deviation	0.341347
Number of Observations	156

Autocorrelation Check for White Noise									
To Lag	Chi-Square	DF	Pr > ChiSq	Autocorrelations					
6	723.41	6	<.0001	0.949	0.904	0.870	0.838	0.817	0.799
12	1208.81	12	<.0001	0.779	0.748	0.716	0.676	0.630	0.599
18	1502.72	18	<.0001	0.571	0.542	0.521	0.517	0.517	0.500
24	1728.70	24	<.0001	0.483	0.466	0.445	0.443	0.444	0.439



Conditional Least Squares Estimation					
Parameter	Estimate	Standard Error	t Value	Approx Pr > |t|	Lag
MU	0.02934	0.02742	1.07	0.2862	0

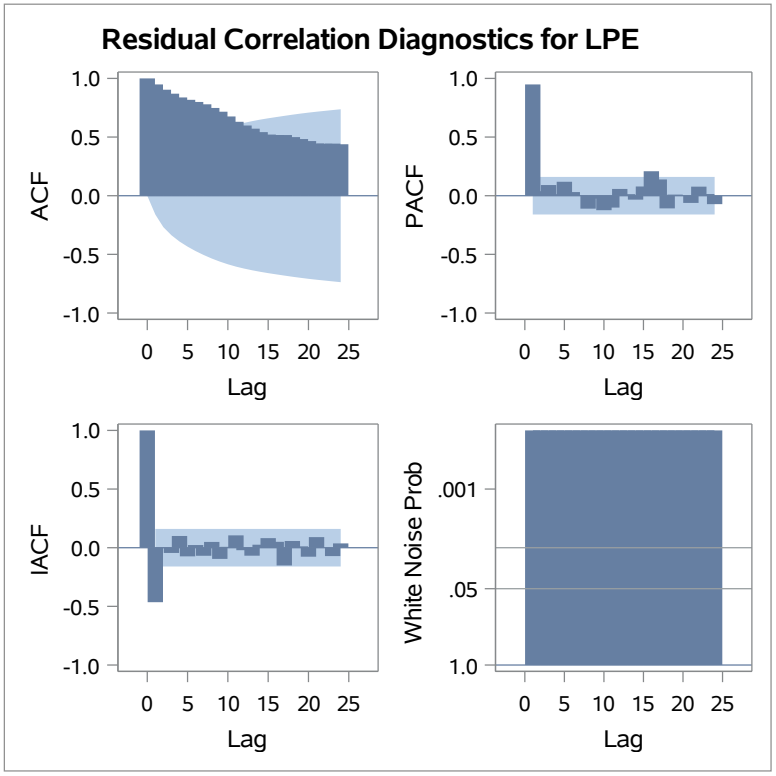
The ARIMA Procedure

Grain commodity=Barley

Constant Estimate	0.029345
Variance Estimate	0.117269
Std Error Estimate	0.342446
AIC	109.3537
SBC	112.4035
Number of Residuals	156

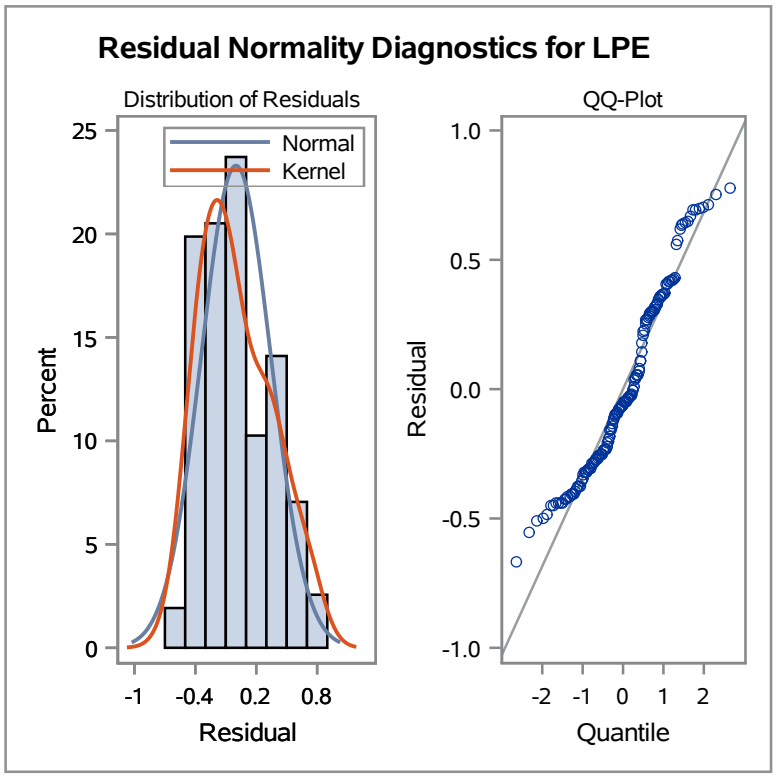
*** AIC and SBC do not include log determinant.**

Autocorrelation Check of Residuals									
To Lag	**Chi-Square**	**DF**	**Pr > ChiSq**	**Autocorrelations**					
6	723.41	6	<.0001	0.949	0.904	0.870	0.838	0.817	0.799
12	1208.81	12	<.0001	0.779	0.748	0.716	0.676	0.630	0.599
18	1502.72	18	<.0001	0.571	0.542	0.521	0.517	0.517	0.500
24	1728.70	24	<.0001	0.483	0.466	0.445	0.443	0.444	0.439
30	1939.71	30	<.0001	0.439	0.442	0.438	0.429	0.419	0.403



The ARIMA Procedure

Grain commodity=Barley



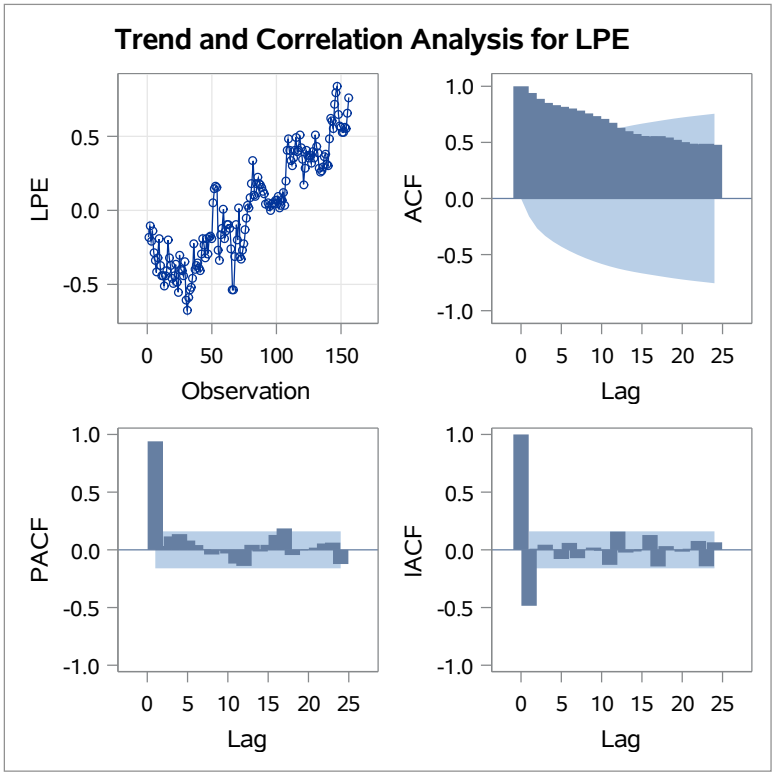
Model for variable LPE	
Estimated Mean	0.029345

The ARIMA Procedure

Grain commodity=Corn

Name of Variable = LPE	
Mean of Working Series	0.017855
Standard Deviation	0.360393
Number of Observations	156

Autocorrelation Check for White Noise									
To Lag	Chi-Square	DF	Pr > ChiSq	Autocorrelations					
6	710.49	6	<.0001	0.940	0.888	0.852	0.832	0.817	0.802
12	1228.29	12	<.0001	0.783	0.758	0.734	0.709	0.675	0.630
18	1562.69	18	<.0001	0.600	0.575	0.557	0.550	0.556	0.543
24	1830.71	24	<.0001	0.523	0.502	0.488	0.483	0.487	0.478



Conditional Least Squares Estimation					
Parameter	Estimate	Standard Error	t Value	Approx Pr > |t|	Lag
MU	0.01786	0.02895	0.62	0.5383	0

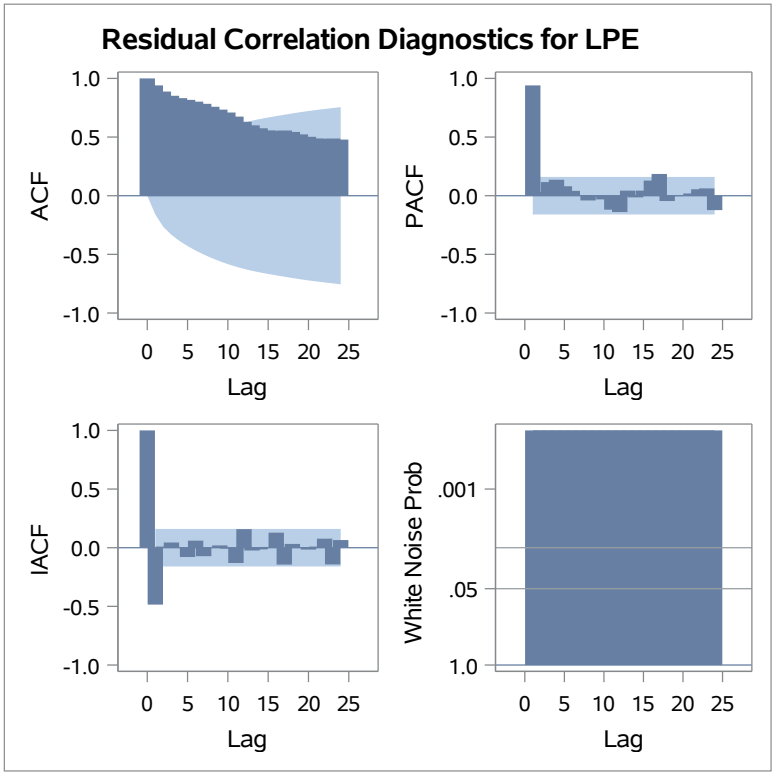
The ARIMA Procedure

Grain commodity=Corn

Constant Estimate	0.017855
Variance Estimate	0.130721
Std Error Estimate	0.361553
AIC	126.2938
SBC	129.3436
Number of Residuals	156

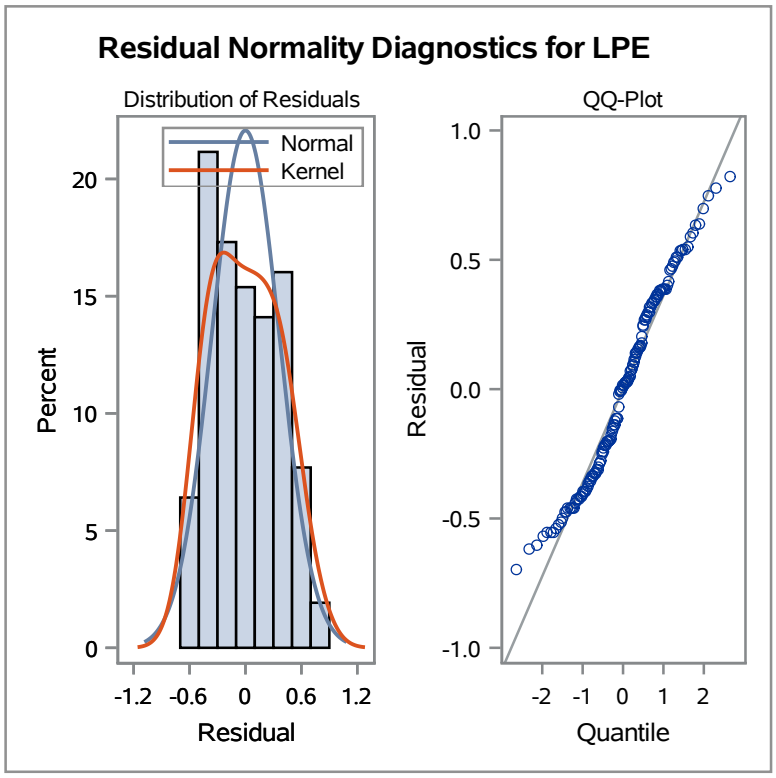
*** AIC and SBC do not include log determinant.**

Autocorrelation Check of Residuals									
To Lag	**Chi-Square**	**DF**	**Pr > ChiSq**	**Autocorrelations**					
6	710.49	6	<.0001	0.940	0.888	0.852	0.832	0.817	0.802
12	1228.29	12	<.0001	0.783	0.758	0.734	0.709	0.675	0.630
18	1562.69	18	<.0001	0.600	0.575	0.557	0.550	0.556	0.543
24	1830.71	24	<.0001	0.523	0.502	0.488	0.483	0.487	0.478
30	2072.09	30	<.0001	0.479	0.473	0.470	0.461	0.442	0.421



The ARIMA Procedure

Grain commodity=Corn



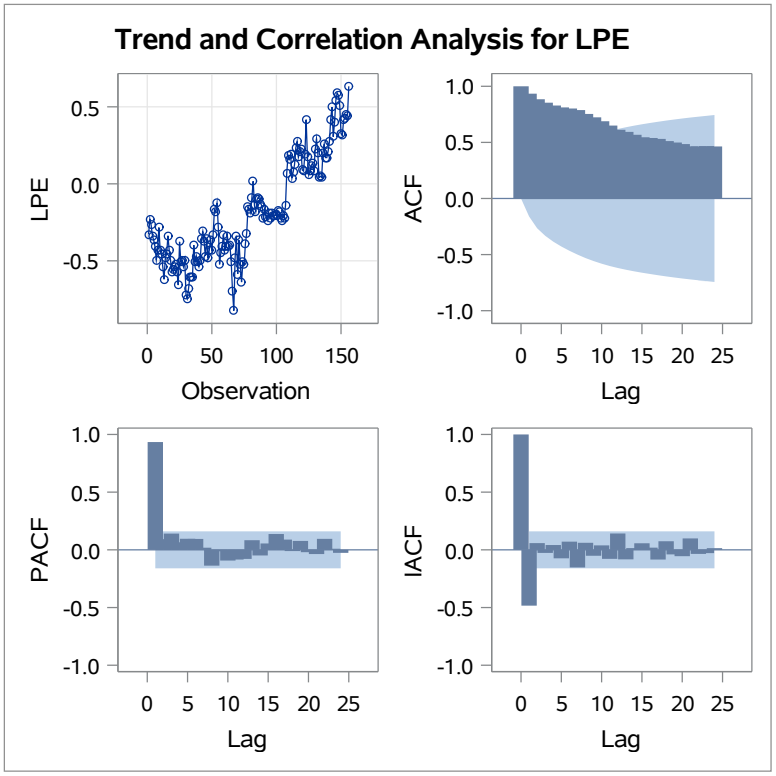
Model for variable LPE	
Estimated Mean	0.017855

The ARIMA Procedure

Grain commodity=Oats

Name of Variable = LPE	
Mean of Working Series	-0.17862
Standard Deviation	0.337359
Number of Observations	156

Autocorrelation Check for White Noise									
To Lag	Chi-Square	DF	Pr > ChiSq	Autocorrelations					
6	705.87	6	<.0001	0.934	0.884	0.854	0.829	0.812	0.802
12	1206.76	12	<.0001	0.788	0.753	0.723	0.688	0.650	0.612
18	1523.36	18	<.0001	0.594	0.568	0.546	0.539	0.531	0.512
24	1770.11	24	<.0001	0.499	0.485	0.464	0.463	0.467	0.464



Conditional Least Squares Estimation					
Parameter	Estimate	Standard Error	t Value	Approx Pr > |t|	Lag
MU	-0.17862	0.02710	-6.59	<.0001	0

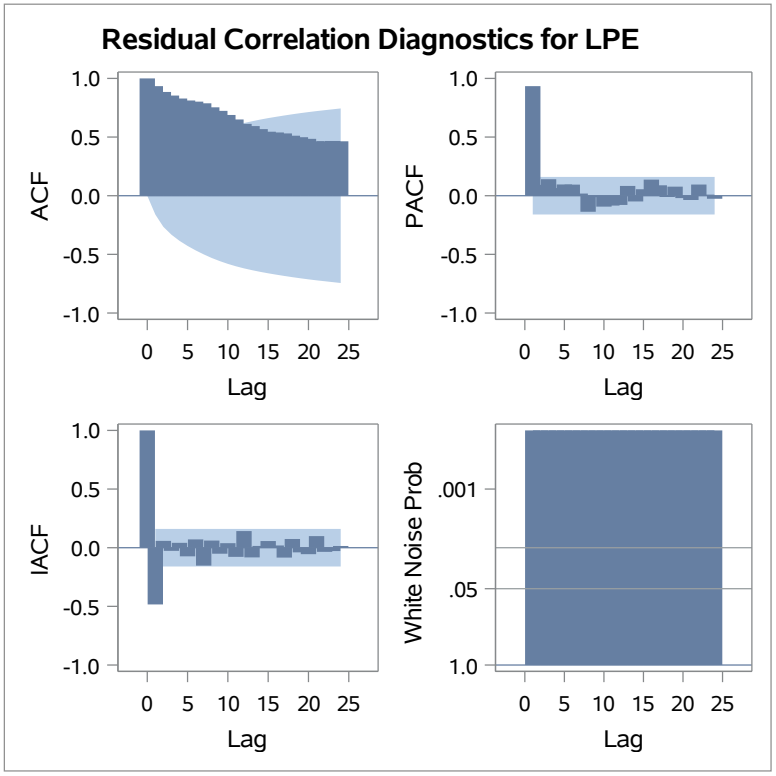
The ARIMA Procedure

Grain commodity=Oats

Constant Estimate	-0.17862
Variance Estimate	0.114545
Std Error Estimate	0.338445
AIC	105.6869
SBC	108.7368
Number of Residuals	156

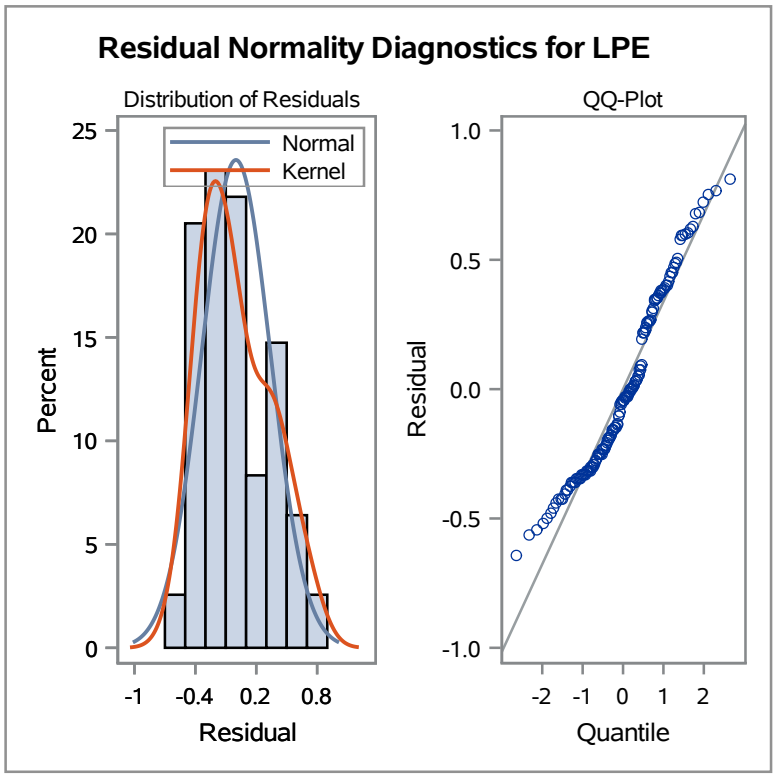
*** AIC and SBC do not include log determinant.**

Autocorrelation Check of Residuals									
To Lag	**Chi-Square**	**DF**	**Pr > ChiSq**	**Autocorrelations**					
6	705.87	6	<.0001	0.934	0.884	0.854	0.829	0.812	0.802
12	1206.76	12	<.0001	0.788	0.753	0.723	0.688	0.650	0.612
18	1523.36	18	<.0001	0.594	0.568	0.546	0.539	0.531	0.512
24	1770.11	24	<.0001	0.499	0.485	0.464	0.463	0.467	0.464
30	1998.60	30	<.0001	0.467	0.463	0.454	0.443	0.430	0.415



The ARIMA Procedure

Grain commodity=Oats



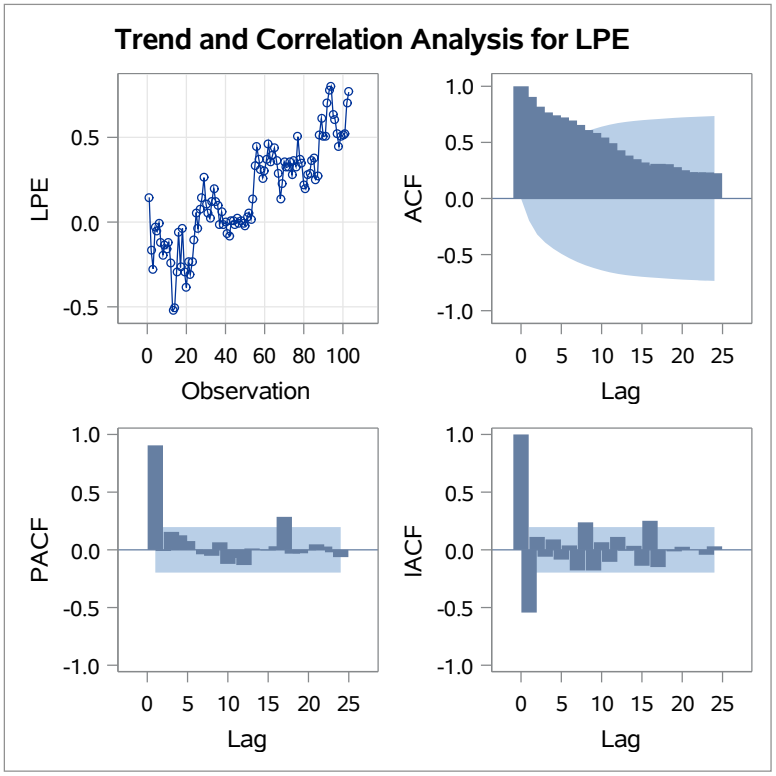
Model for variable LPE	
Estimated Mean	-0.17862

The ARIMA Procedure

Grain commodity=Sorghum

Name of Variable = LPE	
Mean of Working Series	0.16719
Standard Deviation	0.288231
Number of Observations	103

Autocorrelation Check for White Noise									
To Lag	Chi-Square	DF	Pr > ChiSq	Autocorrelations					
6	393.62	6	<.0001	0.905	0.818	0.767	0.741	0.722	0.695
12	608.38	12	<.0001	0.656	0.610	0.584	0.543	0.493	0.430
18	688.22	18	<.0001	0.383	0.350	0.321	0.295	0.309	0.306
24	735.17	24	<.0001	0.279	0.252	0.234	0.232	0.232	0.225



Conditional Least Squares Estimation					
Parameter	Estimate	Standard Error	t Value	Approx Pr > |t|	Lag
MU	0.16719	0.02854	5.86	<.0001	0

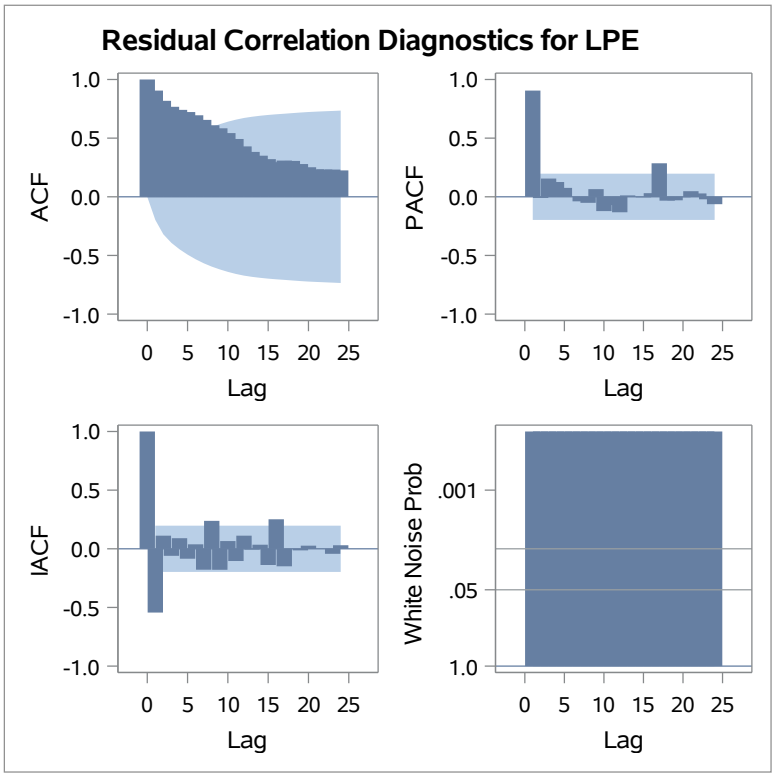
The ARIMA Procedure

Grain commodity=Sorghum

Constant Estimate	0.16719
Variance Estimate	0.083891
Std Error Estimate	0.28964
AIC	38.03862
SBC	40.67335
Number of Residuals	103

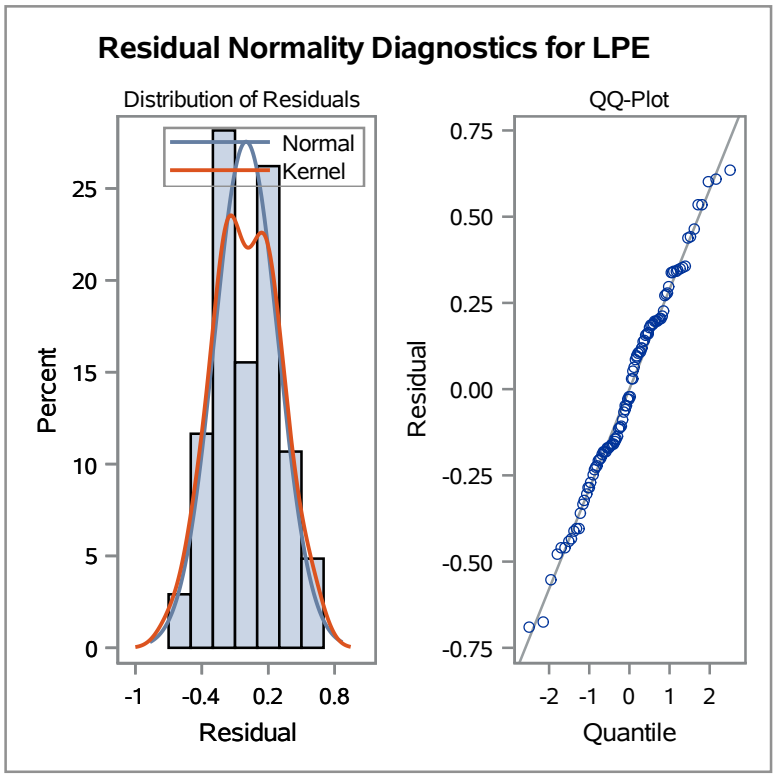
*** AIC and SBC do not include log determinant.**

Autocorrelation Check of Residuals									
To Lag	**Chi-Square**	**DF**	**Pr > ChiSq**	**Autocorrelations**					
6	393.62	6	<.0001	0.905	0.818	0.767	0.741	0.722	0.695
12	608.38	12	<.0001	0.656	0.610	0.584	0.543	0.493	0.430
18	688.22	18	<.0001	0.383	0.350	0.321	0.295	0.309	0.306
24	735.17	24	<.0001	0.279	0.252	0.234	0.232	0.232	0.225



The ARIMA Procedure

Grain commodity=Sorghum



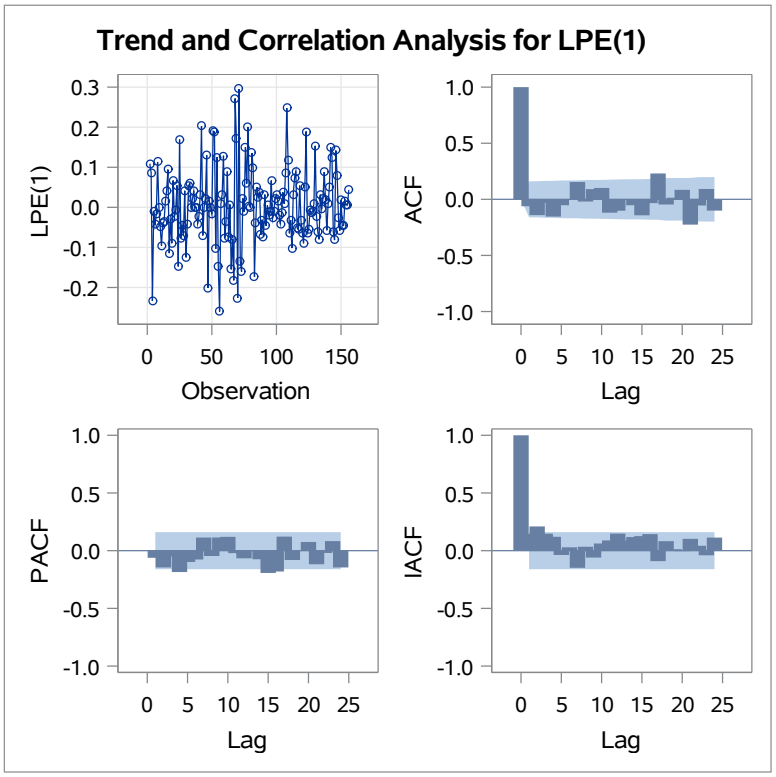
Model for variable LPE	
Estimated Mean	0.16719

The ARIMA Procedure

Grain commodity=Barley

Name of Variable = LPE	
Period(s) of Differencing	1
Mean of Working Series	0.00479
Standard Deviation	0.094606
Number of Observations	155
Observation(s) eliminated by differencing	1

Autocorrelation Check for White Noise									
To Lag	Chi-Square	DF	Pr > ChiSq	Autocorrelations					
6	8.15	6	0.2270	-0.062	-0.141	-0.030	-0.154	-0.052	-0.002
12	19.42	12	0.0788	0.155	-0.020	0.091	0.101	-0.119	-0.102
18	33.35	18	0.0151	-0.004	-0.053	-0.142	-0.034	0.230	-0.046
24	47.90	24	0.0026	0.014	0.084	-0.225	-0.055	0.092	-0.100



Conditional Least Squares Estimation					
Parameter	Estimate	Standard Error	t Value	Approx Pr > |t|	Lag
MU	0.0047899	0.0076236	0.63	0.5307	0

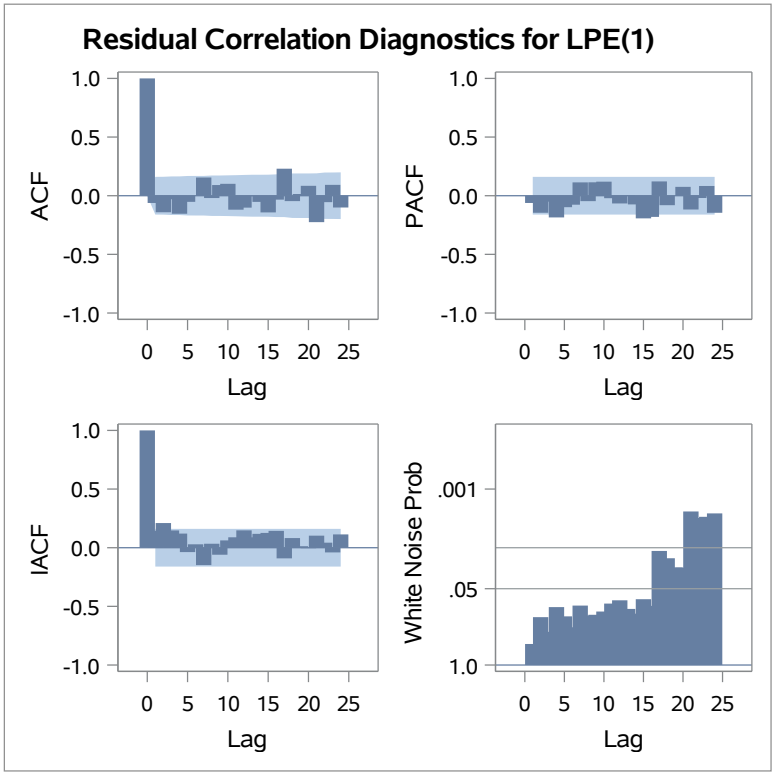
The ARIMA Procedure

Grain commodity=Barley

Constant Estimate	0.00479
Variance Estimate	0.009008
Std Error Estimate	0.094913
AIC	-289.12
SBC	-286.076
Number of Residuals	155

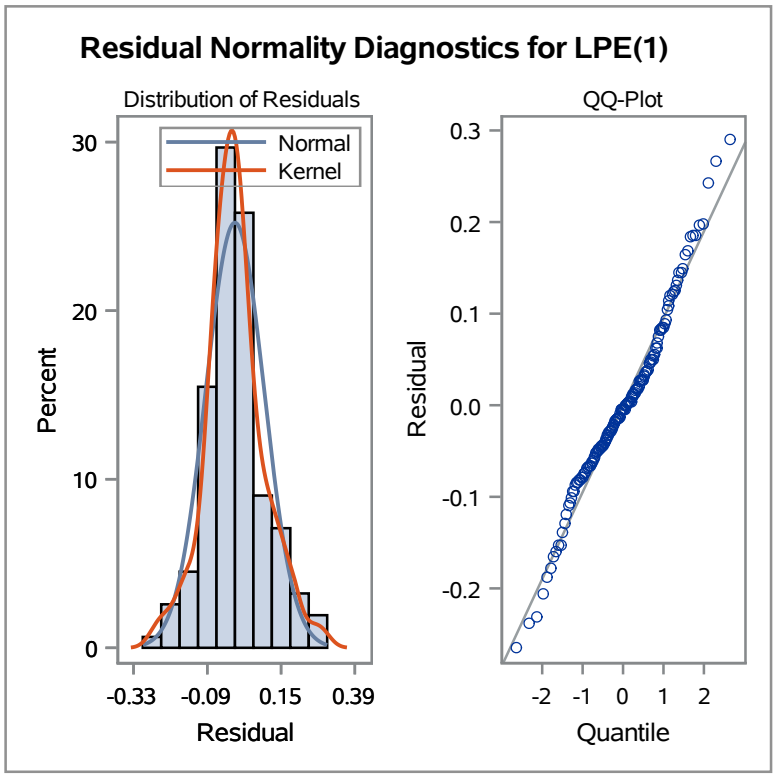
*** AIC and SBC do not include log determinant.**

Autocorrelation Check of Residuals									
To Lag	**Chi-Square**	**DF**	**Pr > ChiSq**	**Autocorrelations**					
6	8.15	6	0.2270	-0.062	-0.141	-0.030	-0.154	-0.052	-0.002
12	19.42	12	0.0788	0.155	-0.020	0.091	0.101	-0.119	-0.102
18	33.35	18	0.0151	-0.004	-0.053	-0.142	-0.034	0.230	-0.046
24	47.90	24	0.0026	0.014	0.084	-0.225	-0.055	0.092	-0.100
30	55.24	30	0.0033	-0.079	0.069	0.148	0.015	0.057	0.048



The ARIMA Procedure

Grain commodity=Barley



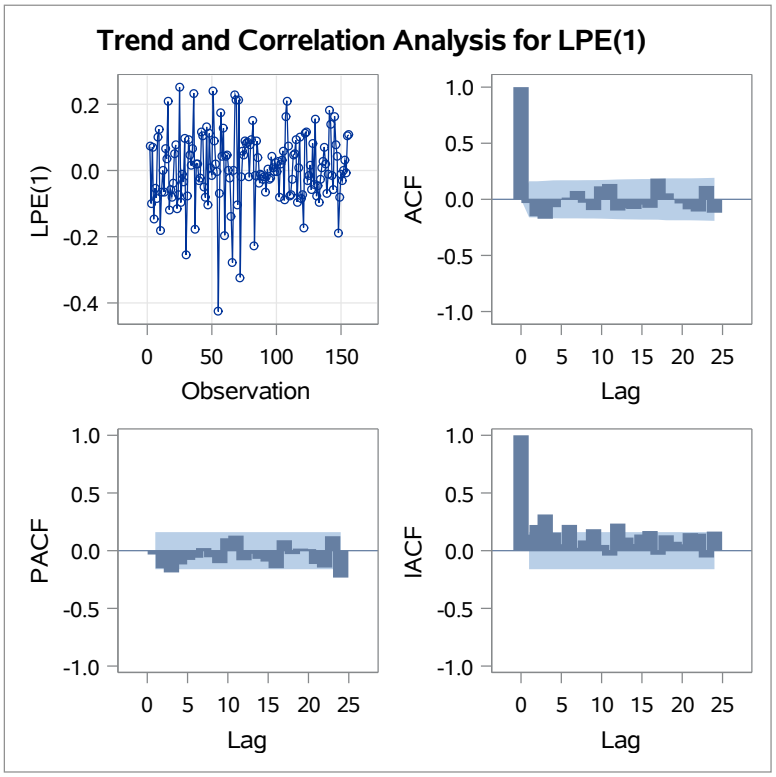
Model for variable LPE	
Estimated Mean	0.00479
Period(s) of Differencing	1

The ARIMA Procedure

Grain commodity=Corn

Name of Variable = LPE	
Period(s) of Differencing	1
Mean of Working Series	0.00609
Standard Deviation	0.10834
Number of Observations	155
Observation(s) eliminated by differencing	1

Autocorrelation Check for White Noise									
To Lag	Chi-Square	DF	Pr > ChiSq	Autocorrelations					
6	9.45	6	0.1500	-0.033	-0.151	-0.173	-0.070	-0.004	0.016
12	19.17	12	0.0846	0.074	-0.031	-0.096	0.116	0.137	-0.100
18	29.50	18	0.0426	-0.080	-0.086	-0.048	-0.076	0.185	0.053
24	38.64	24	0.0297	-0.005	-0.037	-0.089	-0.109	0.119	-0.120



Conditional Least Squares Estimation					
Parameter	Estimate	Standard Error	t Value	Approx Pr > |t|	Lag
MU	0.0060896	0.0087303	0.70	0.4865	0

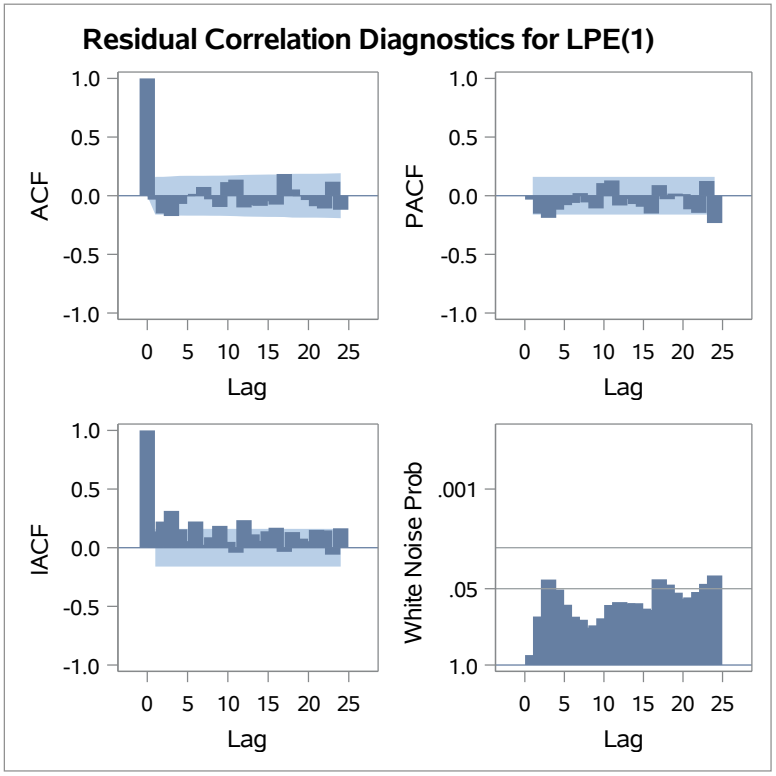
The ARIMA Procedure

Grain commodity=Corn

Constant Estimate	0.00609
Variance Estimate	0.011814
Std Error Estimate	0.108691
AIC	-247.098
SBC	-244.055
Number of Residuals	155

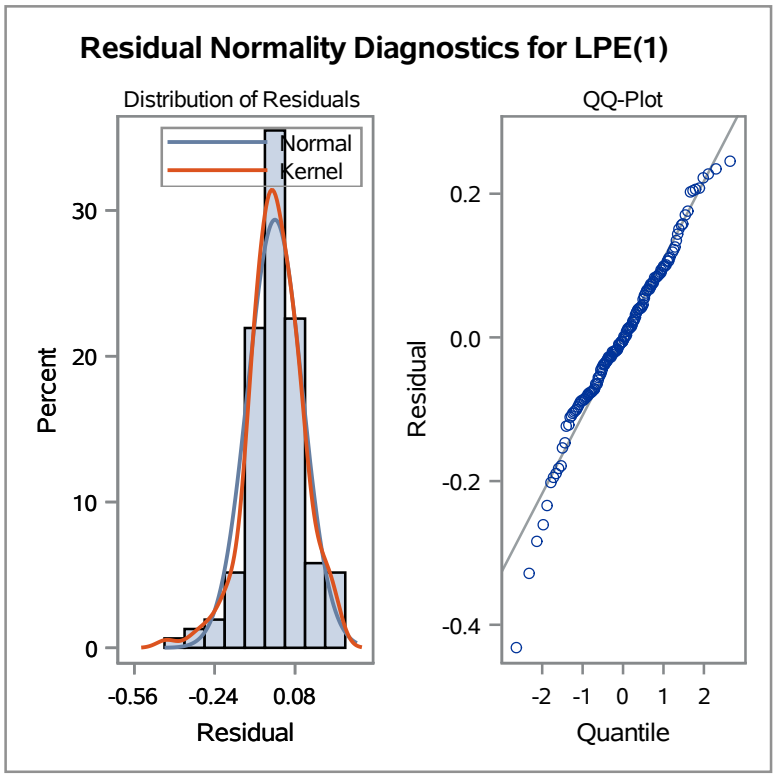
*** AIC and SBC do not include log determinant.**

Autocorrelation Check of Residuals									
To Lag	**Chi-Square**	**DF**	**Pr > ChiSq**	**Autocorrelations**					
6	9.45	6	0.1500	-0.033	-0.151	-0.173	-0.070	-0.004	0.016
12	19.17	12	0.0846	0.074	-0.031	-0.096	0.116	0.137	-0.100
18	29.50	18	0.0426	-0.080	-0.086	-0.048	-0.076	0.185	0.053
24	38.64	24	0.0297	-0.005	-0.037	-0.089	-0.109	0.119	-0.120
30	45.42	30	0.0352	0.038	-0.068	0.124	0.103	0.021	-0.055



The ARIMA Procedure

Grain commodity=Corn



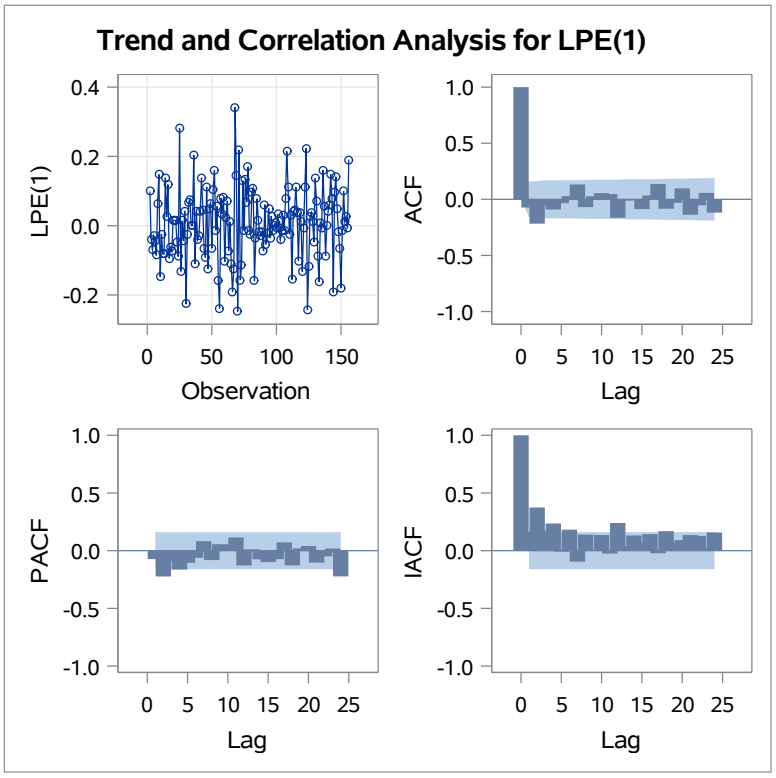
Model for variable LPE	
Estimated Mean	0.00609
Period(s) of Differencing	1

The ARIMA Procedure

Grain commodity=Oats

Name of Variable = LPE	
Period(s) of Differencing	1
Mean of Working Series	0.006202
Standard Deviation	0.103235
Number of Observations	155
Observation(s) eliminated by differencing	1

Autocorrelation Check for White Noise									
To Lag	Chi-Square	DF	Pr > ChiSq	Autocorrelations					
6	10.41	6	0.1085	-0.073	-0.217	-0.053	-0.090	-0.034	0.028
12	19.70	12	0.0730	0.133	-0.069	0.027	0.055	0.047	-0.164
18	25.76	18	0.1053	-0.011	-0.002	-0.087	0.034	0.136	-0.083
24	34.78	24	0.0717	-0.031	0.097	-0.137	-0.053	0.057	-0.119



Conditional Least Squares Estimation					
Parameter	Estimate	Standard Error	t Value	Approx Pr > |t|	Lag
MU	0.0062024	0.0083189	0.75	0.4571	0

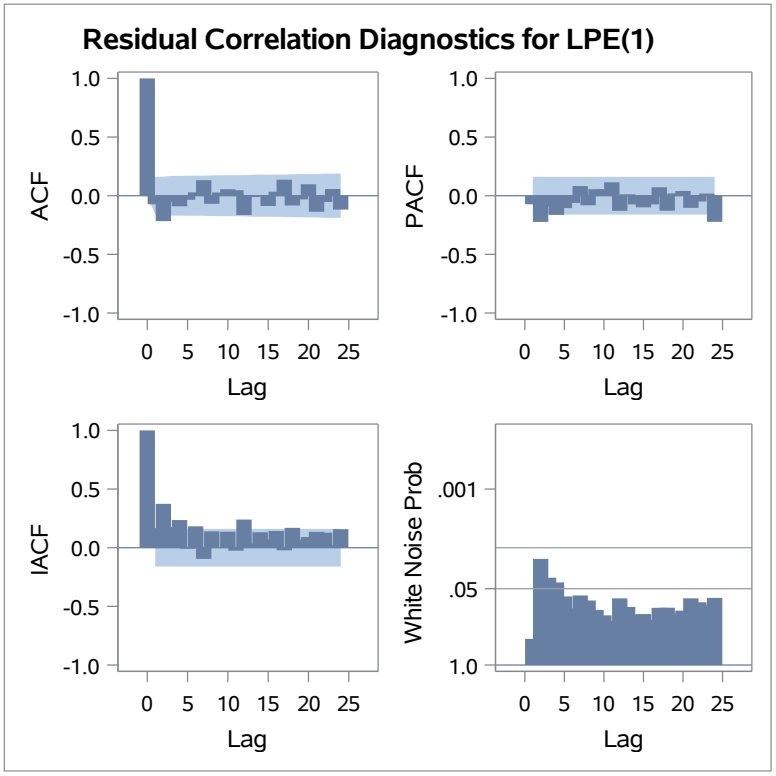
The ARIMA Procedure

Grain commodity=Oats

Constant Estimate	0.006202
Variance Estimate	0.010727
Std Error Estimate	0.10357
AIC	-262.061
SBC	-259.017
Number of Residuals	155

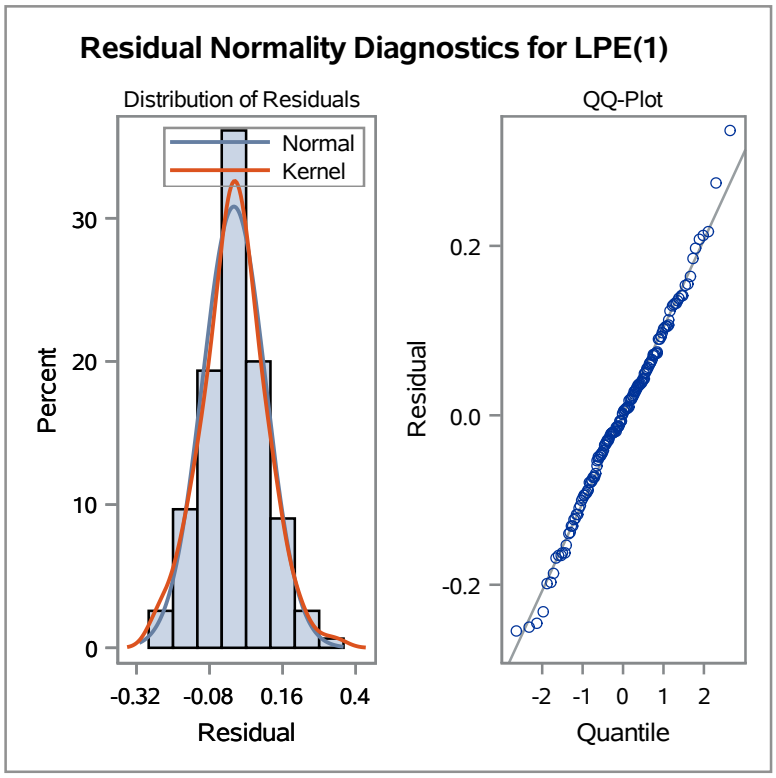
*** AIC and SBC do not include log determinant.**

Autocorrelation Check of Residuals									
To Lag	**Chi-Square**	**DF**	**Pr > ChiSq**	**Autocorrelations**					
6	10.41	6	0.1085	-0.073	-0.217	-0.053	-0.090	-0.034	0.028
12	19.70	12	0.0730	0.133	-0.069	0.027	0.055	0.047	-0.164
18	25.76	18	0.1053	-0.011	-0.002	-0.087	0.034	0.136	-0.083
24	34.78	24	0.0717	-0.031	0.097	-0.137	-0.053	0.057	-0.119
30	37.80	30	0.1549	0.013	0.084	0.091	-0.003	-0.003	0.023



The ARIMA Procedure

Grain commodity=Oats



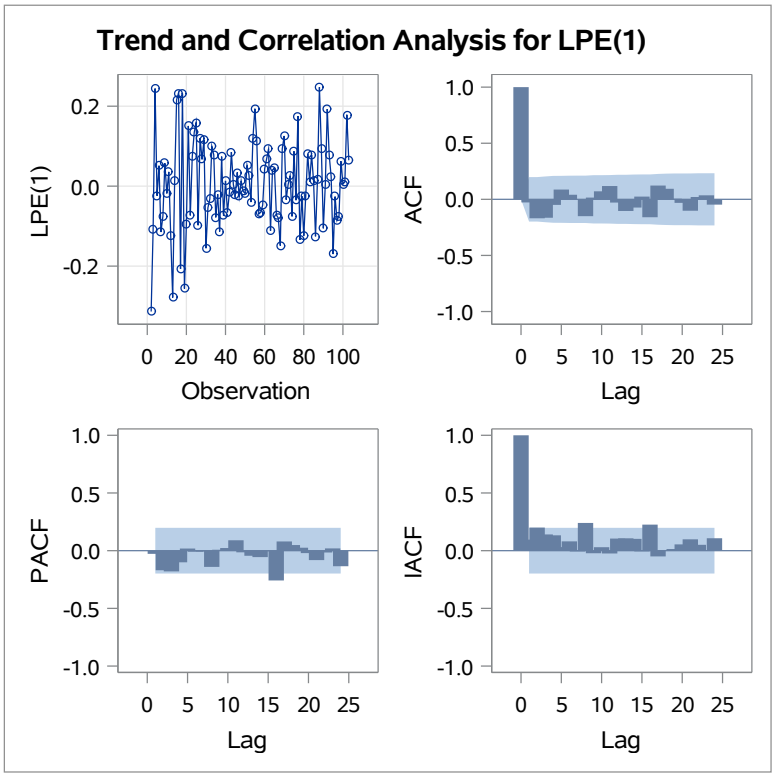
Model for variable LPE	
Estimated Mean	0.006202
Period(s) of Differencing	1

The ARIMA Procedure

Grain commodity=Sorghum

Name of Variable = LPE	
Period(s) of Differencing	1
Mean of Working Series	0.006089
Standard Deviation	0.110903
Number of Observations	102
Observation(s) eliminated by differencing	1

Autocorrelation Check for White Noise									
To Lag	Chi-Square	DF	Pr > ChiSq	Autocorrelations					
6	7.27	6	0.2970	-0.028	-0.169	-0.164	-0.050	0.087	0.041
12	12.16	12	0.4327	-0.003	-0.150	0.015	0.071	0.119	-0.029
18	20.30	18	0.3160	-0.104	-0.073	0.024	-0.160	0.123	0.094
24	22.32	24	0.5603	0.006	-0.031	-0.102	0.021	0.036	-0.047



Conditional Least Squares Estimation					
Parameter	Estimate	Standard Error	t Value	Approx Pr > |t|	Lag
MU	0.0060885	0.01104	0.55	0.5823	0

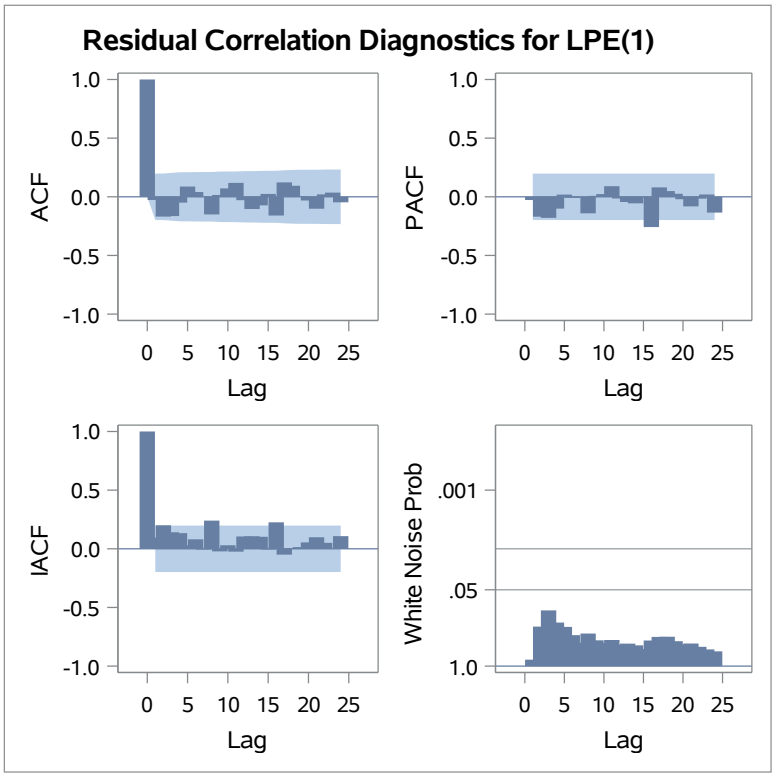
The ARIMA Procedure

Grain commodity=Sorghum

Constant Estimate	0.006089
Variance Estimate	0.012421
Std Error Estimate	0.11145
AIC	-157.153
SBC	-154.528
Number of Residuals	102

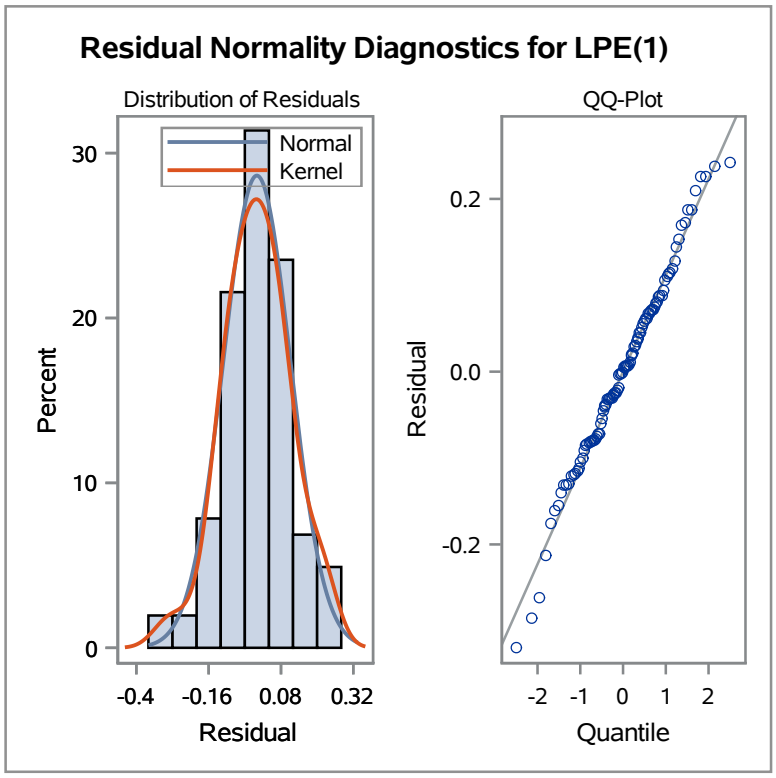
*** AIC and SBC do not include log determinant.**

Autocorrelation Check of Residuals									
To Lag	**Chi-Square**	**DF**	**Pr > ChiSq**	**Autocorrelations**					
6	7.27	6	0.2970	-0.028	-0.169	-0.164	-0.050	0.087	0.041
12	12.16	12	0.4327	-0.003	-0.150	0.015	0.071	0.119	-0.029
18	20.30	18	0.3160	-0.104	-0.073	0.024	-0.160	0.123	0.094
24	22.32	24	0.5603	0.006	-0.031	-0.102	0.021	0.036	-0.047



The ARIMA Procedure

Grain commodity=Sorghum



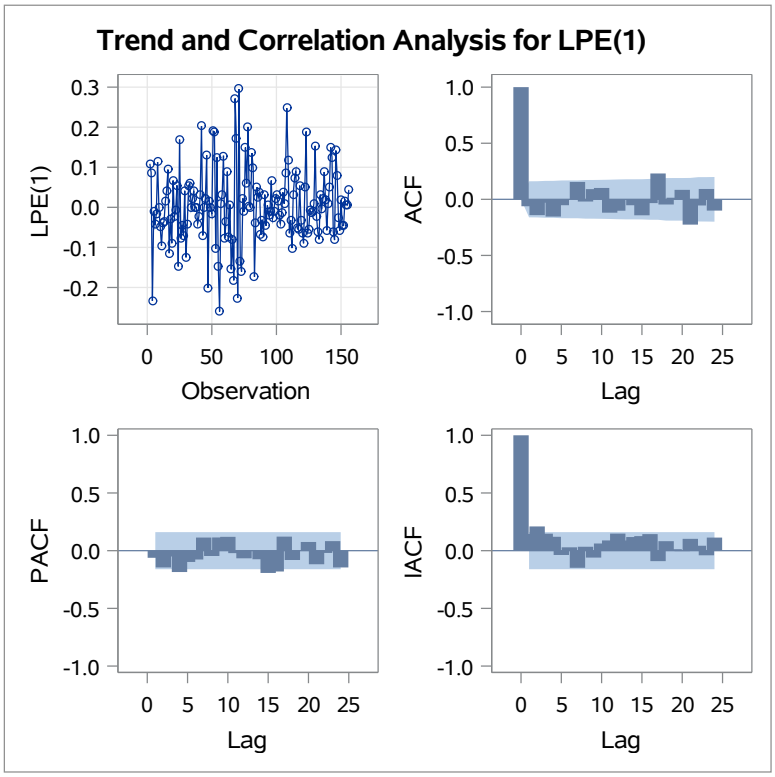
Model for variable LPE	
Estimated Mean	0.006089
Period(s) of Differencing	1

The ARIMA Procedure

Grain commodity=Barley

Name of Variable = LPE	
Period(s) of Differencing	1
Mean of Working Series	0.00479
Standard Deviation	0.094606
Number of Observations	155
Observation(s) eliminated by differencing	1

Autocorrelation Check for White Noise									
To Lag	Chi-Square	DF	Pr > ChiSq	Autocorrelations					
6	8.15	6	0.2270	-0.062	-0.141	-0.030	-0.154	-0.052	-0.002
12	19.42	12	0.0788	0.155	-0.020	0.091	0.101	-0.119	-0.102
18	33.35	18	0.0151	-0.004	-0.053	-0.142	-0.034	0.230	-0.046
24	47.90	24	0.0026	0.014	0.084	-0.225	-0.055	0.092	-0.100



Conditional Least Squares Estimation					
Parameter	Estimate	Standard Error	t Value	Approx Pr > |t|	Lag
MU	0.0048667	0.0037499	1.30	0.1963	0
MA1,1	0.86227	0.10804	7.98	<.0001	1
AR1,1	0.71780	0.14869	4.83	<.0001	1

The ARIMA Procedure

Grain commodity=Barley

Constant Estimate	0.001373
Variance Estimate	0.00875
Std Error Estimate	0.093544
AIC	-291.648
SBC	-282.518
Number of Residuals	155

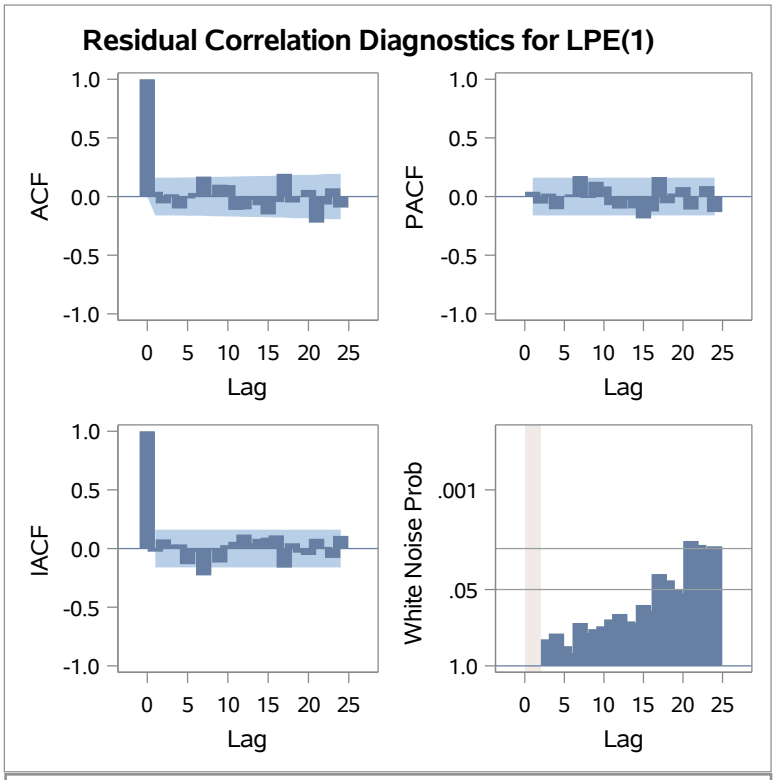
*** AIC and SBC do not include log determinant.**

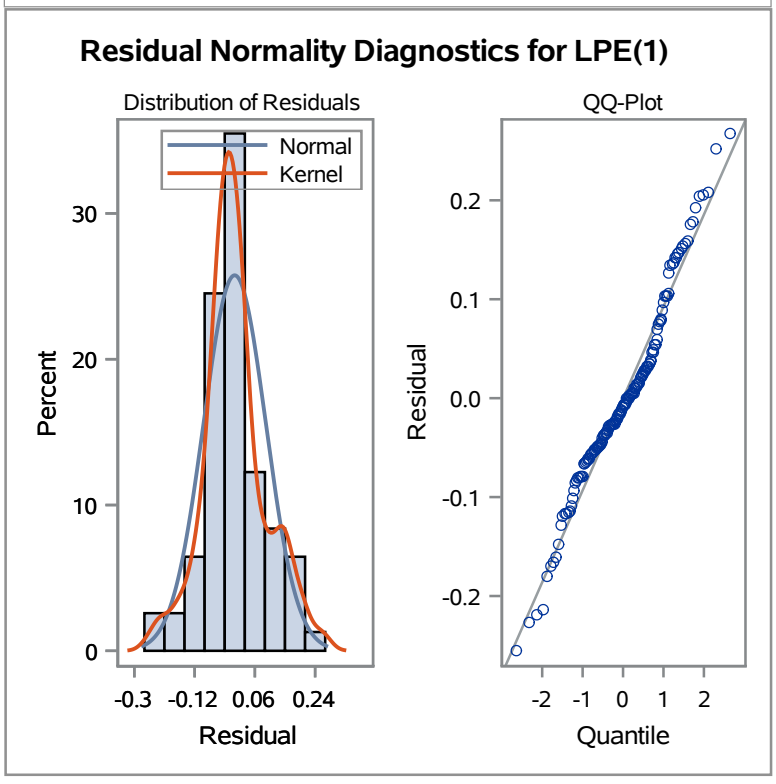
Correlations of Parameter Estimates			
Parameter	**MU**	**MA1,1**	**AR1,1**
MU	1.000	-0.058	-0.050
MA1,1	-0.058	1.000	0.925
AR1,1	-0.050	0.925	1.000

Autocorrelation Check of Residuals									
To Lag	**Chi-Square**	**DF**	**Pr > ChiSq**	**Autocorrelations**					
6	2.73	4	0.6037	0.041	-0.058	0.020	-0.102	-0.016	0.031
12	15.04	10	0.1305	0.170	0.011	0.101	0.098	-0.114	-0.109
18	27.65	16	0.0348	-0.028	-0.074	-0.152	-0.048	0.194	-0.051
24	40.62	22	0.0092	-0.000	0.057	-0.223	-0.068	0.070	-0.094
30	50.37	28	0.0059	-0.064	0.081	0.161	0.046	0.084	0.074

The ARIMA Procedure

Grain commodity=Barley





Model for variable LPE	
Estimated Mean	0.004867
Period(s) of Differencing	1

The ARIMA Procedure

Grain commodity=Barley

Autoregressive Factors	
Factor 1:	1 - 0.7178 B**(1)

Moving Average Factors	
Factor 1:	1 - 0.86227 B**(1)

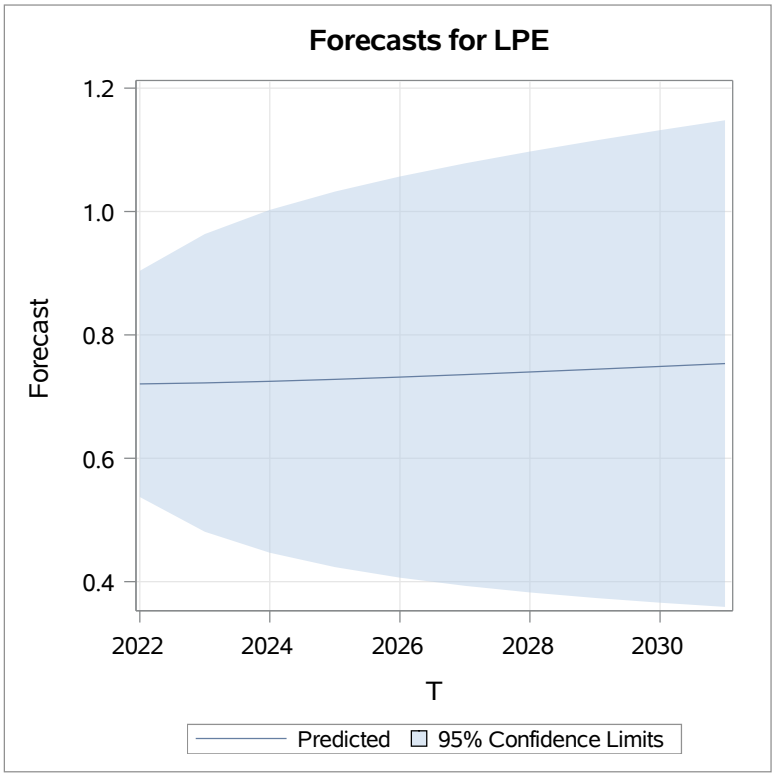
Outlier Detection Summary	
Maximum number searched	4
Number found	4
Significance used	0.05

Outlier Details				
Obs	**Type**	**Estimate**	**Chi-Square**	**Approx Prob>ChiSq**
70	Additive	-0.25795	22.85	<.0001
67	Additive	-0.23441	19.51	<.0001
108	Shift	0.25472	15.04	0.0001
56	Shift	-0.24659	14.10	0.0002

Forecasts for variable LPE				
Obs	**Forecast**	**Std Error**	**95% Confidence Limits**	
157	0.7205	0.0935	0.5372	0.9039
158	0.7222	0.1231	0.4809	0.9635
159	0.7247	0.1418	0.4468	1.0026
160	0.7279	0.1553	0.4236	1.0323
161	0.7316	0.1659	0.4064	1.0568
162	0.7356	0.1747	0.3932	1.0781
163	0.7399	0.1823	0.3825	1.0973
164	0.7443	0.1892	0.3735	1.1151
165	0.7489	0.1954	0.3658	1.1319
166	0.7535	0.2013	0.3590	1.1479

The ARIMA Procedure

Grain commodity=Barley

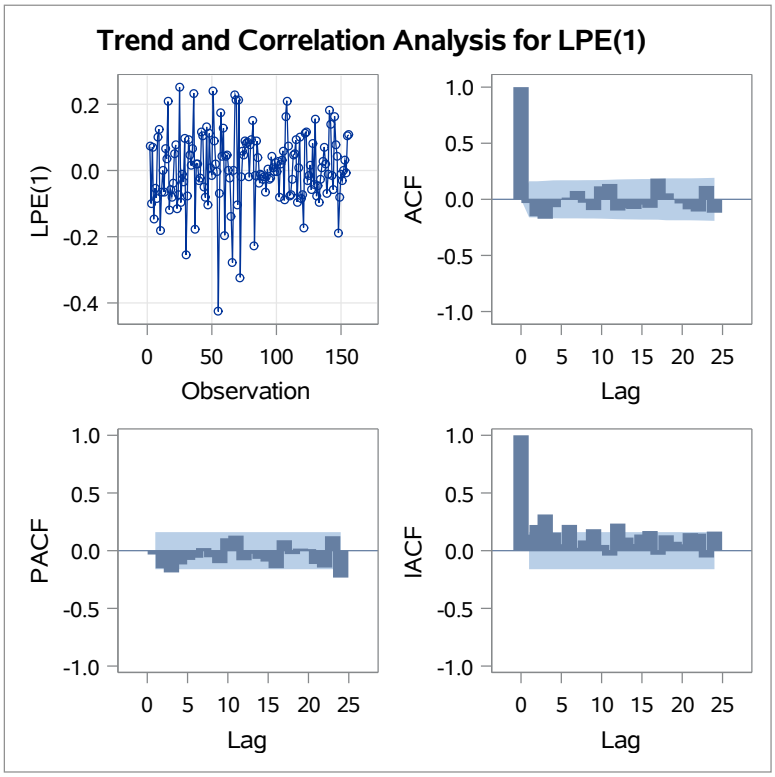


The ARIMA Procedure

Grain commodity=Corn

Name of Variable = LPE	
Period(s) of Differencing	1
Mean of Working Series	0.00609
Standard Deviation	0.10834
Number of Observations	155
Observation(s) eliminated by differencing	1

Autocorrelation Check for White Noise									
To Lag	**Chi-Square**	**DF**	**Pr > ChiSq**	**Autocorrelations**					
6	9.45	6	0.1500	-0.033	-0.151	-0.173	-0.070	-0.004	0.016
12	19.17	12	0.0846	0.074	-0.031	-0.096	0.116	0.137	-0.100
18	29.50	18	0.0426	-0.080	-0.086	-0.048	-0.076	0.185	0.053
24	38.64	24	0.0297	-0.005	-0.037	-0.089	-0.109	0.119	-0.120



Conditional Least Squares Estimation					
Parameter	**Estimate**	**Standard Error**	**t Value**	**Approx Pr > |t|**	**Lag**
MU	0.0059932	0.0026136	2.29	0.0232	0
MA1,1	0.92743	0.05327	17.41	<.0001	1
AR1,1	0.74525	0.09324	7.99	<.0001	1

The ARIMA Procedure

Grain commodity=Corn

Constant Estimate	0.001527
Variance Estimate	0.01115
Std Error Estimate	0.105594
AIC	-254.086
SBC	-244.955
Number of Residuals	155

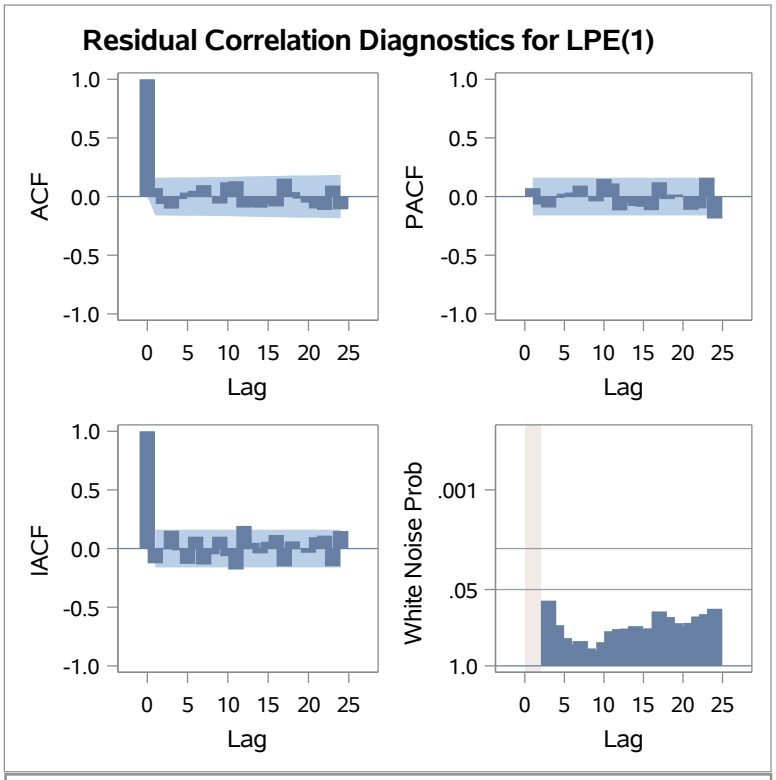
*** AIC and SBC do not include log determinant.**

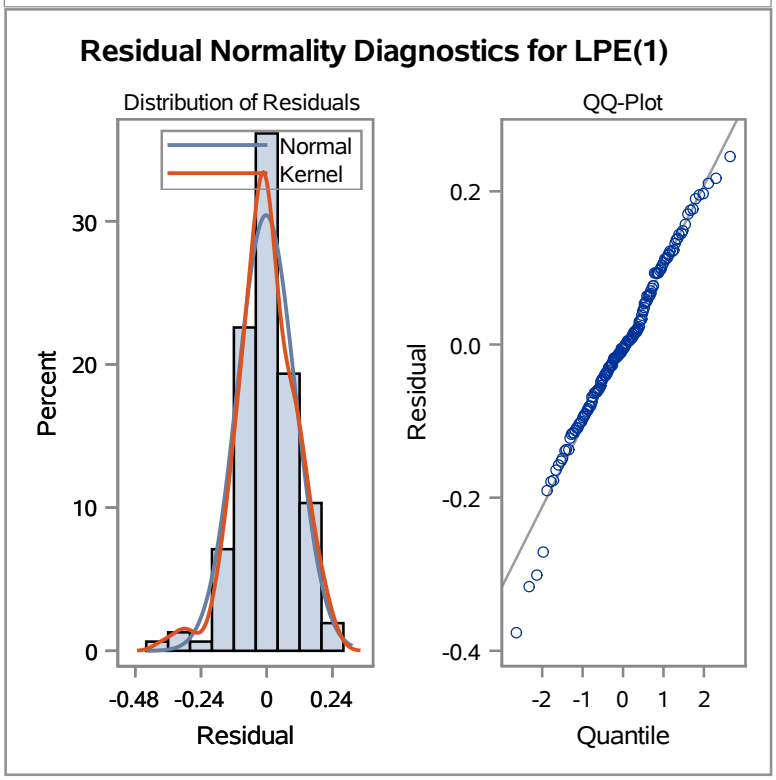
Correlations of Parameter Estimates			
Parameter	**MU**	**MA1,1**	**AR1,1**
MU	1.000	-0.204	-0.141
MA1,1	-0.204	1.000	0.811
AR1,1	-0.141	0.811	1.000

Autocorrelation Check of Residuals									
To Lag	**Chi-Square**	**DF**	**Pr > ChiSq**	**Autocorrelations**					
6	3.75	4	0.4403	0.072	-0.062	-0.101	-0.021	0.034	0.049
12	12.76	10	0.2376	0.097	-0.000	-0.060	0.121	0.130	-0.094
18	21.84	16	0.1484	-0.085	-0.095	-0.062	-0.084	0.153	0.038
24	30.47	22	0.1076	-0.018	-0.052	-0.101	-0.115	0.093	-0.109
30	37.38	28	0.1106	0.038	-0.045	0.130	0.116	0.040	-0.028

The ARIMA Procedure

Grain commodity=Corn





Model for variable LPE	
Estimated Mean	0.005993
Period(s) of Differencing	1

The ARIMA Procedure

Grain commodity=Corn

Autoregressive Factors	
Factor 1:	1 - 0.74525 B**(1)

Moving Average Factors	
Factor 1:	1 - 0.92743 B**(1)

Outlier Detection Summary	
Maximum number searched	4
Number found	4
Significance used	0.05

Outlier Details

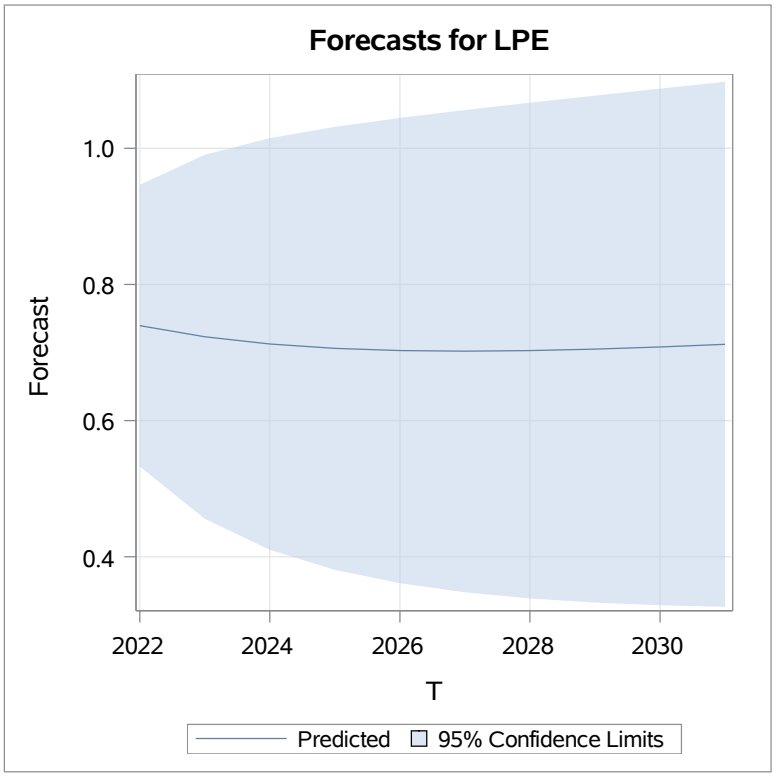
Obs	Type	Estimate	Chi-Square	Approx Prob>ChiSq
55	Shift	-0.31444	13.37	0.0003
71	Additive	0.26427	12.74	0.0004
51	Shift	0.26416	9.44	0.0021
36	Additive	0.20197	7.82	0.0052

Forecasts for variable LPE

Obs	Forecast	Std Error	95% Confidence Limits	
157	0.7395	0.1056	0.5325	0.9464
158	0.7232	0.1364	0.4558	0.9905
159	0.7125	0.1543	0.4102	1.0149
160	0.7061	0.1660	0.3808	1.0315
161	0.7029	0.1744	0.3611	1.0447
162	0.7020	0.1807	0.3478	1.0562
163	0.7029	0.1858	0.3388	1.0670
164	0.7050	0.1900	0.3327	1.0774
165	0.7082	0.1936	0.3288	1.0876
166	0.7121	0.1968	0.3263	1.0978

The ARIMA Procedure

Grain commodity=Corn

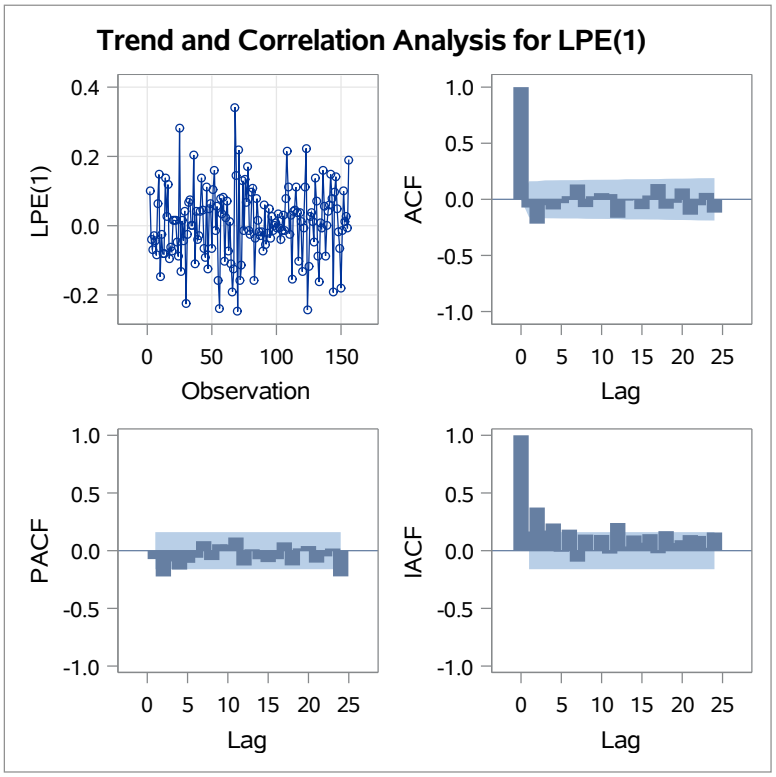


The ARIMA Procedure

Grain commodity=Oats

Name of Variable = LPE	
Period(s) of Differencing	1
Mean of Working Series	0.006202
Standard Deviation	0.103235
Number of Observations	155
Observation(s) eliminated by differencing	1

Autocorrelation Check for White Noise									
To Lag	Chi-Square	DF	Pr > ChiSq	Autocorrelations					
6	10.41	6	0.1085	-0.073	-0.217	-0.053	-0.090	-0.034	0.028
12	19.70	12	0.0730	0.133	-0.069	0.027	0.055	0.047	-0.164
18	25.76	18	0.1053	-0.011	-0.002	-0.087	0.034	0.136	-0.083
24	34.78	24	0.0717	-0.031	0.097	-0.137	-0.053	0.057	-0.119



Conditional Least Squares Estimation					
Parameter	Estimate	Standard Error	t Value	Approx Pr > |t|	Lag
MU	0.0057173	0.0031252	1.83	0.0693	0
MA1,1	0.86994	0.08137	10.69	<.0001	1
AR1,1	0.65338	0.12392	5.27	<.0001	1

The ARIMA Procedure

Grain commodity=Oats

Constant Estimate	0.001982
Variance Estimate	0.010064
Std Error Estimate	0.100318
AIC	-269.974
SBC	-260.844
Number of Residuals	155

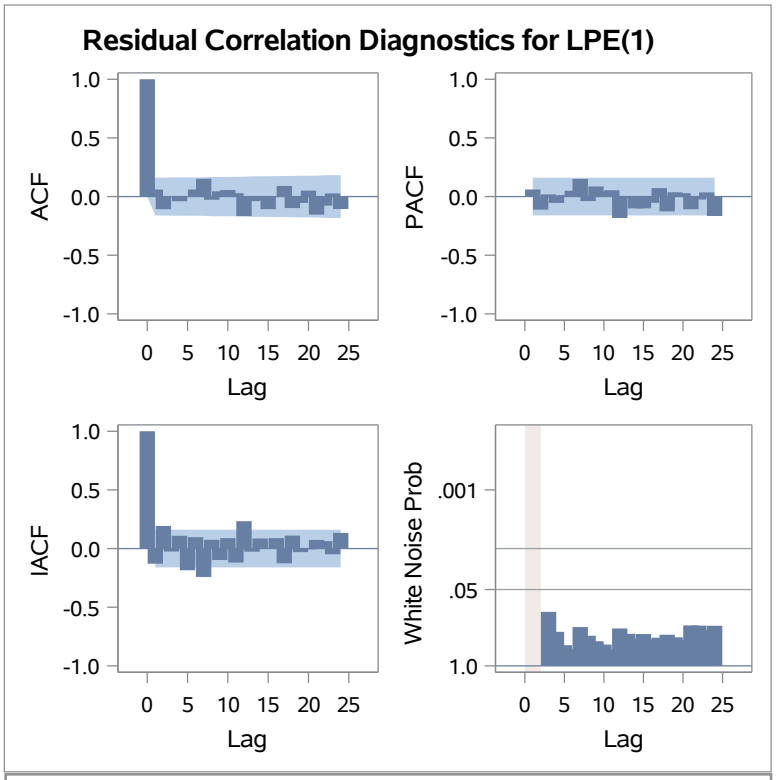
*** AIC and SBC do not include log determinant.**

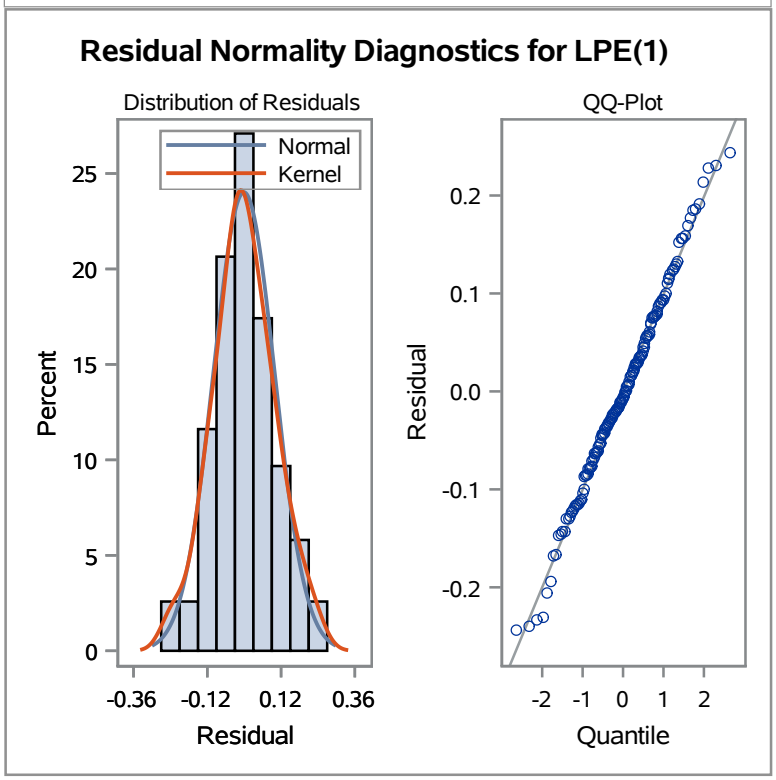
Correlations of Parameter Estimates			
Parameter	**MU**	**MA1,1**	**AR1,1**
MU	1.000	-0.101	-0.071
MA1,1	-0.101	1.000	0.865
AR1,1	-0.071	0.865	1.000

Autocorrelation Check of Residuals									
To Lag	**Chi-Square**	**DF**	**Pr > ChiSq**	**Autocorrelations**					
6	3.27	4	0.5145	0.060	-0.107	0.004	-0.040	0.003	0.060
12	12.88	10	0.2306	0.151	-0.027	0.044	0.056	0.029	-0.167
18	18.51	16	0.2951	-0.039	-0.034	-0.107	0.002	0.091	-0.098
24	27.09	22	0.2077	-0.054	0.051	-0.154	-0.077	0.027	-0.106
30	31.87	28	0.2798	0.022	0.096	0.107	0.030	0.028	0.047

The ARIMA Procedure

Grain commodity=Oats





Model for variable LPE	
Estimated Mean	0.005717
Period(s) of Differencing	1

The ARIMA Procedure

Grain commodity=Oats

Autoregressive Factors	
Factor 1:	1 - 0.65338 B**(1)

Moving Average Factors	
Factor 1:	1 - 0.86994 B**(1)

Outlier Detection Summary	
Maximum number searched	4
Number found	4
Significance used	0.05

Outlier Details

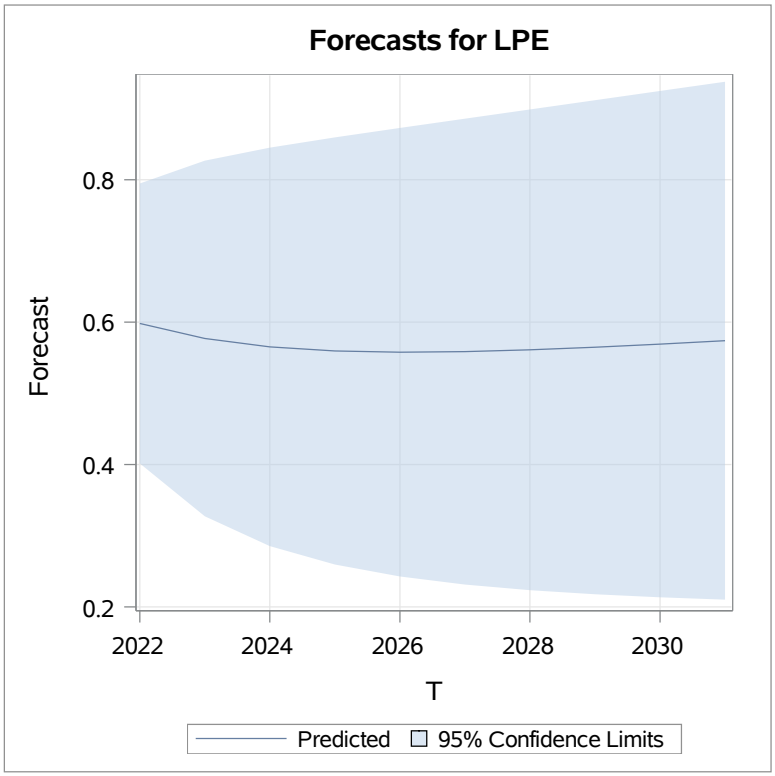
Obs	Type	Estimate	Chi-Square	Approx Prob>ChiSq
67	Additive	-0.24639	11.18	0.0008
123	Additive	0.23658	10.42	0.0012
70	Additive	-0.23012	11.07	0.0009
25	Additive	0.20254	9.04	0.0026

Forecasts for variable LPE

Obs	Forecast	Std Error	95% Confidence Limits	
157	0.5981	0.1003	0.4015	0.7948
158	0.5771	0.1274	0.3273	0.8268
159	0.5653	0.1428	0.2854	0.8451
160	0.5595	0.1531	0.2595	0.8595
161	0.5578	0.1607	0.2427	0.8728
162	0.5586	0.1669	0.2314	0.8858
163	0.5611	0.1723	0.2235	0.8988
164	0.5647	0.1770	0.2178	0.9117
165	0.5691	0.1814	0.2135	0.9247
166	0.5739	0.1856	0.2102	0.9377

The ARIMA Procedure

Grain commodity=Oats

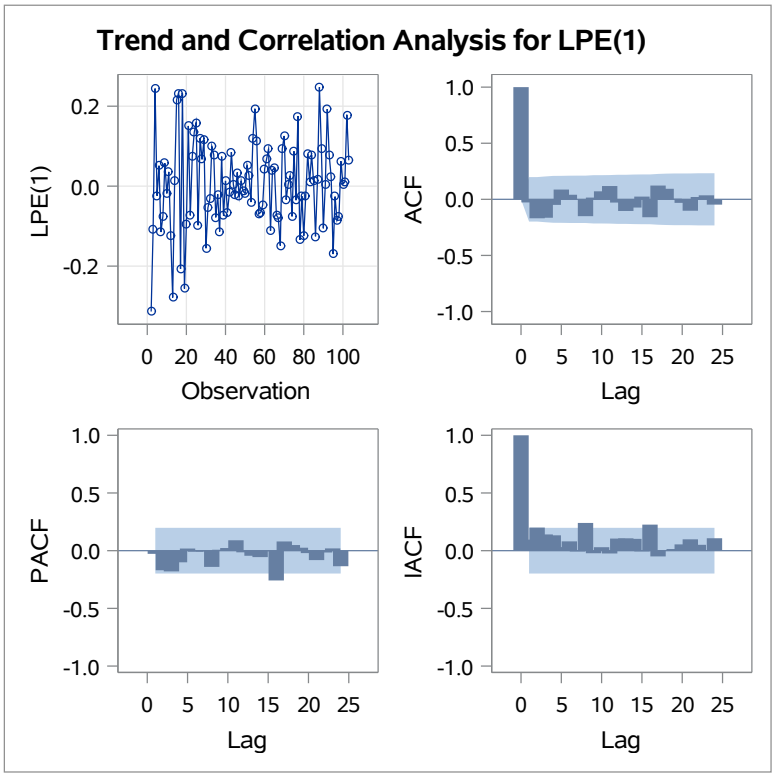


The ARIMA Procedure

Grain commodity=Sorghum

Name of Variable = LPE	
Period(s) of Differencing	1
Mean of Working Series	0.006089
Standard Deviation	0.110903
Number of Observations	102
Observation(s) eliminated by differencing	1

Autocorrelation Check for White Noise									
To Lag	Chi-Square	DF	Pr > ChiSq	Autocorrelations					
6	7.27	6	0.2970	-0.028	-0.169	-0.164	-0.050	0.087	0.041
12	12.16	12	0.4327	-0.003	-0.150	0.015	0.071	0.119	-0.029
18	20.30	18	0.3160	-0.104	-0.073	0.024	-0.160	0.123	0.094
24	22.32	24	0.5603	0.006	-0.031	-0.102	0.021	0.036	-0.047



Conditional Least Squares Estimation					
Parameter	Estimate	Standard Error	t Value	Approx Pr > |t|	Lag
MU	0.0064733	0.0042974	1.51	0.1352	0
MA1,1	0.91902	0.08307	11.06	<.0001	1
AR1,1	0.76679	0.13066	5.87	<.0001	1

The ARIMA Procedure

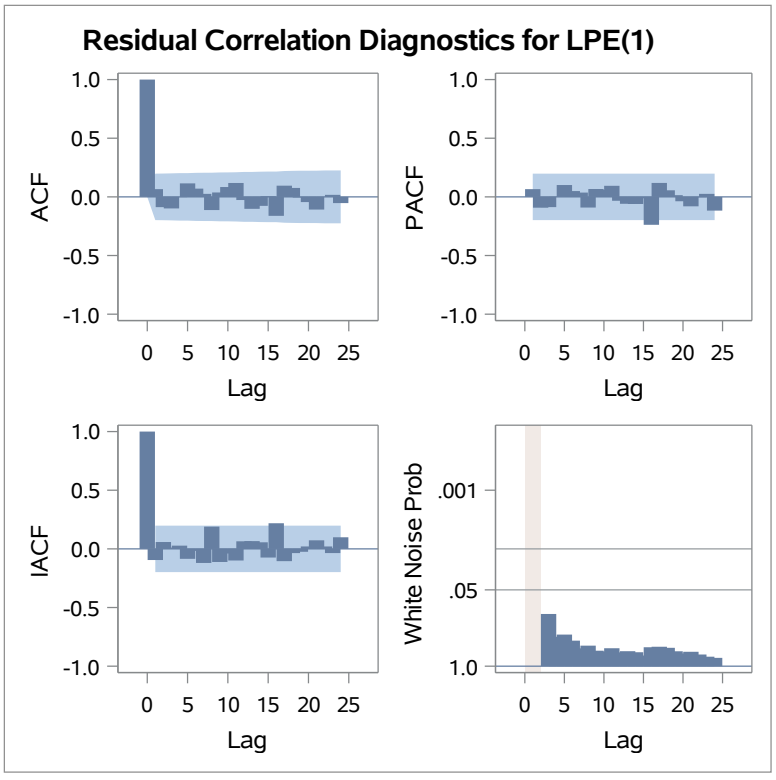
Grain commodity=Sorghum

Constant Estimate	0.00151
Variance Estimate	0.012015
Std Error Estimate	0.109614
AIC	-158.582
SBC	-150.707
Number of Residuals	102

*** AIC and SBC do not include log determinant.**

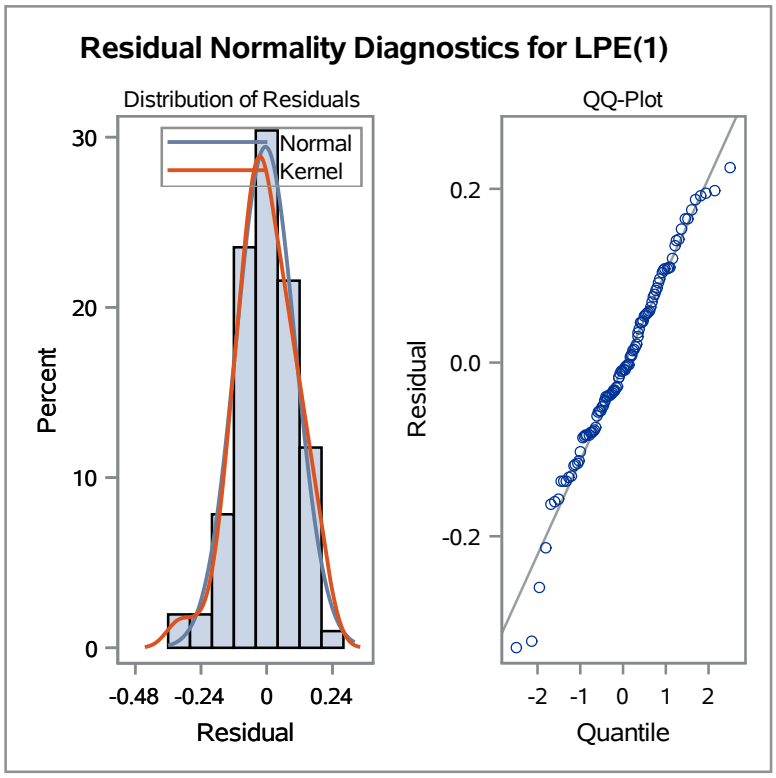
Correlations of Parameter Estimates			
Parameter	**MU**	**MA1,1**	**AR1,1**
MU	1.000	-0.328	-0.244
MA1,1	-0.328	1.000	0.864
AR1,1	-0.244	0.864	1.000

Autocorrelation Check of Residuals									
To Lag	**Chi-Square**	**DF**	**Pr > ChiSq**	**Autocorrelations**					
6	4.30	4	0.3671	0.067	-0.086	-0.097	-0.001	0.116	0.071
12	8.44	10	0.5855	0.026	-0.112	0.037	0.083	0.118	-0.028
18	15.52	16	0.4869	-0.103	-0.078	0.006	-0.161	0.096	0.075
24	17.76	22	0.7198	-0.007	-0.045	-0.109	0.001	0.017	-0.053



The ARIMA Procedure

Grain commodity=Sorghum



Model for variable LPE	
Estimated Mean	0.006473
Period(s) of Differencing	1

Autoregressive Factors	
Factor 1:	1 - 0.76679 B**(1)

Moving Average Factors	
Factor 1:	1 - 0.91902 B**(1)

Outlier Detection Summary	
Maximum number searched	3
Number found	3
Significance used	0.05

Outlier Details

Obs	Type	Estimate	Chi-Square	Approx Prob>ChiSq
1	Additive	0.32804	8.35	0.0039
18	Additive	0.23980	9.03	0.0027
16	Additive	0.21623	10.47	0.0012

The ARIMA Procedure

Grain commodity=Sorghum

Forecasts for variable LPE				
Obs	Forecast	Std Error	95% Confidence Limits	
104	0.7459	0.1096	0.5310	0.9607
105	0.7310	0.1437	0.4494	1.0127
106	0.7212	0.1645	0.3987	1.0437
107	0.7151	0.1789	0.3644	1.0658
108	0.7120	0.1896	0.3403	1.0837
109	0.7111	0.1980	0.3230	1.0992
110	0.7119	0.2049	0.3104	1.1135
111	0.7141	0.2107	0.3011	1.1271
112	0.7172	0.2158	0.2943	1.1402
113	0.7212	0.2204	0.2892	1.1531