

รายการอ้างอิง

ภาษาไทย

- กัลยา วานิชย์บัญชา . การวิเคราะห์ตัวแปรหลายตัวด้วย SPSS for Windows . พิมพ์ครั้งที่ 1 .
กรุงเทพมหานคร : โรงพิมพ์จุฬาลงกรณ์มหาวิทยาลัย , 2544 .
- บรรจง ปิยธำรง และ ภิเชก หาญพานิช . ระบบการวินิจฉัยโรคเบื้องต้นโดยใช้คอมพิวเตอร์ .
คอมพิวเตอร์ ปีที่ 22 ฉบับที่ 121 (กันยายน-ตุลาคม 2539) : 26-32 .
- วศิน เพิ่มทรัพย์ . เรียนลัด Access 97 . พิมพ์ครั้งที่ 1 . กรุงเทพมหานคร : บริษัท ด้านสุทธาการ
พิมพ์ จำกัด , 2542 .

ภาษาอังกฤษ

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- McDonald, R . Colour physic for industry . Huddersfield : H Charlesworth & Co Ltd , 1987 .

ภาคผนวก

ภาคผนวก ก. ผลการวิเคราะห์การถดถอยโดยใช้ โปรแกรม SPSS สำหรับ สี Yellow HE4R
ระหว่าง เปอร์เซ็นต์ที่เครื่องคอมพิวเตอร์วัดสี กับ เปอร์เซ็นต์จริงที่เคยช้อม

Curve Fit

MODEL: MOD_1.

Dependent variable.. VAR00007 Method.. CUBIC

Listwise Deletion of Missing Data

Multiple R .94559
R Square .89413
Adjusted R Square .89203
Standard Error .22328

Analysis of Variance:

	DF	Sum of Squares	Mean Square
Regression	3	63.577743	21.192581
Residuals	151	7.527812	.049853

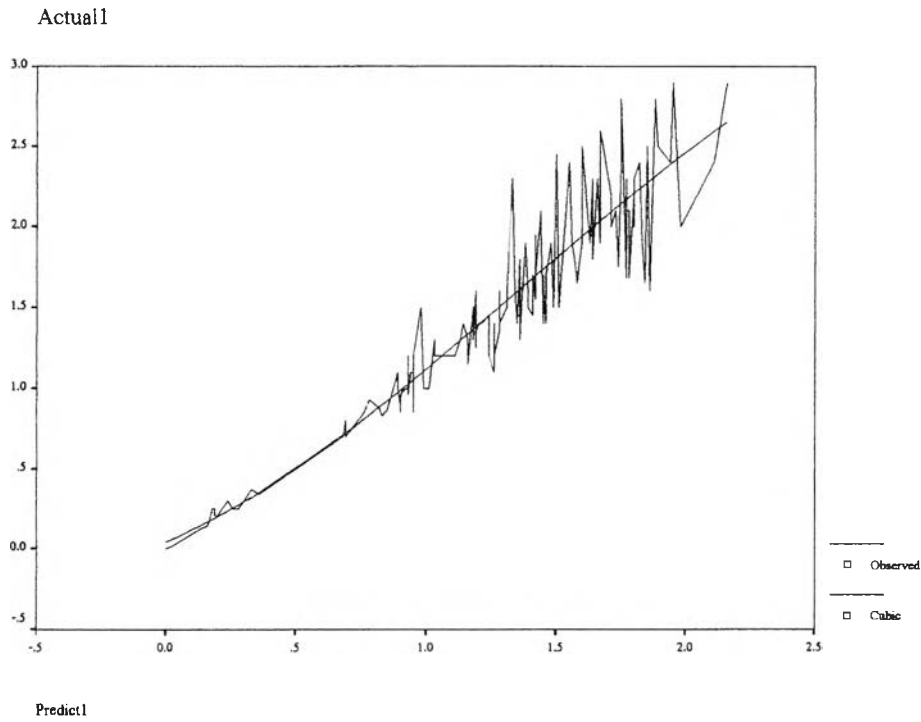
F = 425.10092 Signif F = .0000

----- Variables in the Equation -----

Variable	B	SE B	Beta	T	Sig T
VAR00004	.693314	.351855	.518718	1.970	.0506
VAR00004**2	.511593	.393627	.813293	1.300	.1957
VAR00004**3	-.126272	.123612	-.398143	-1.022	.3086
(Constant)	.041490	.081490		.509	.6114

The following new variables are being created:

Name	Label
FIT_1	Fit for VAR00007 with VAR00004 from CURVEFIT, MOD_1 CUBIC
ERR_1	Error for VAR00007 with VAR00004 from CURVEFIT, MOD_1 CUBIC
LCL_1	95% LCL for VAR00007 with VAR00004 from CURVEFIT, MOD_1 CUBI
UCL_1	95% UCL for VAR00007 with VAR00004 from CURVEFIT, MOD_1 CUBI



Explore

Case Processing Summary

	Cases	
	Valid	
	N	Percent
Error for VAR00007 with VAR00004 from CURVEFIT, MOD_1 CUBIC	155	100.0%

Case Processing Summary

	Cases			
	Missing		Total	
	N	Percent	N	Percent
Error for VAR00007 with VAR00004 from CURVEFIT, MOD_1 CUBIC	0	.0%	155	100.0%

Descriptives

		Statistic	Std. Error	
Error for VAR00007 with VAR00004 from CURVEFIT, MOD_1 CUBIC	Mean	6.761616E-16	1.775858E-02	
	95% Confidence Interval for Mean	Lower Bound	-3.5081857E-02	
		Upper Bound	3.508186E-02	
	5% Trimmed Mean	-5.5698825E-03		
	Median	-1.1493771E-02		
	Variance	4.888E-02		
	Std. Deviation	.2210925		
	Minimum	-.68842		
	Maximum	.72852		
	Range	1.41694		
	Interquartile Range	.1786113		
	Skewness	.403	.195	
	Kurtosis	2.030	.387	

Tests of Normality

	Kolmogorov-Smirnov ^a		
	Statistic	df	Sig.
Error for VAR00007 with VAR00004 from CURVEFIT, MOD_1 CUBIC	.129	155	.000

a. Lilliefors Significance Correction

Error for VAR00007 with VAR00004 from CURVEFIT, MOD_1 CUBIC

Error for VAR00007 with VAR00004 from CURVEFIT, MOD_1 CUBIC Stem-and-Leaf Plot

Frequency Stem & Leaf

9.00 Extremes (<=-.35)

3.00 -3 . 123

3.00 -2 . 679

4.00 -2 . 0134

8.00 -1 . 55578999

11.00 -1 . 00002233334

17.00 -0 . 55556666666778889

32.00 -0 . 00000000111112222222223334444444

22.00 0 . 0000000111111222223444

12.00 0 . 555666788999

7.00 1 . 0222334

5.00 1 . 67788

5.00 2 . 02224

6.00 2 . 555577

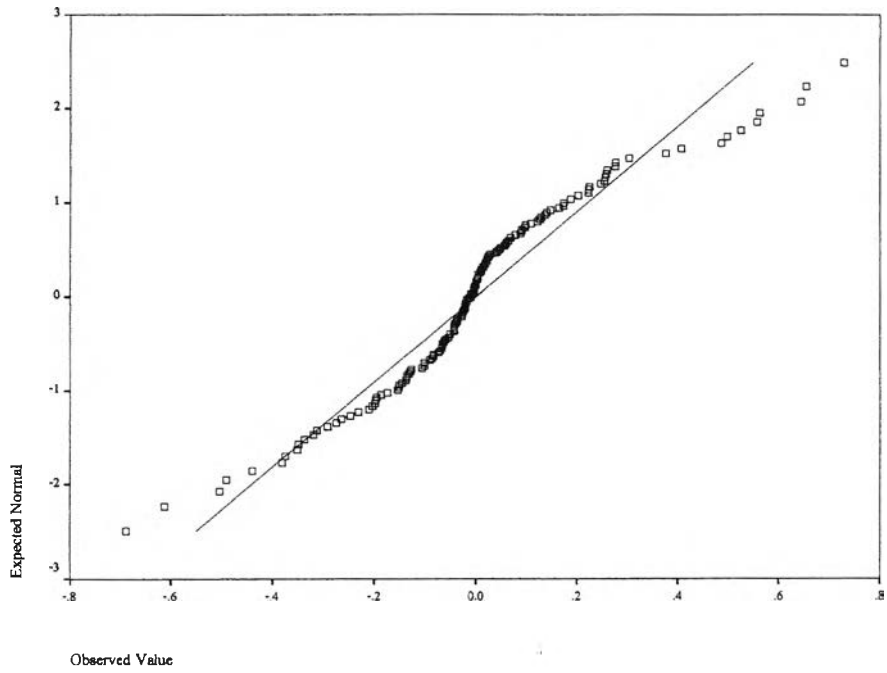
1.00 3 . 0

10.00 Extremes (>=.38)

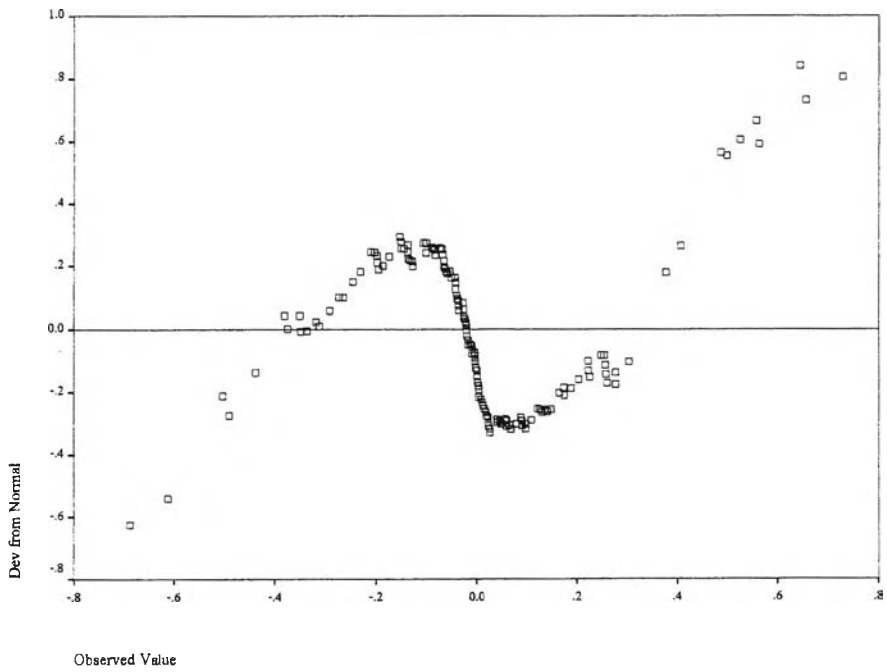
Stem width: .10000

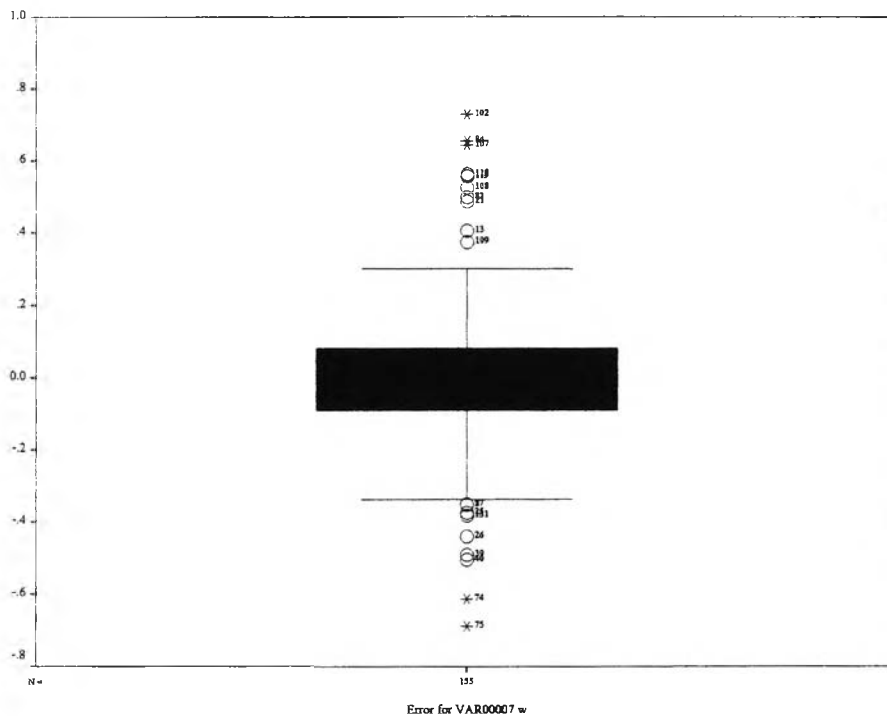
Each leaf: 1 case(s)

Normal Q-Q Plot of Error for VAR00007 with VAR00004 from CURVEFIT, MOD_1



Detrended Normal Q-Q Plot of Error for VAR00007 with VAR00004 from CURVE





ACF

MODEL: MOD_2.

Autocorrelations: ERR_1 Error for VAR00007 with VAR00004 from CU

Auto-Stand.

Lag Corr. Err. -1 -.75 -.5 -.25 0 .25 .5 .75 1 Box-Ljung Prob.

Lag	Corr. Err.	Box-Ljung Prob.
1	.376 .080	22.342 .000
2	.075 .079	23.239 .000
3	.091 .079	24.554 .000
4	.047 .079	24.904 .000
5	.065 .079	25.583 .000
6	.071 .078	26.408 .000
7	.017 .078	26.457 .000
8	.004 .078	26.459 .001
9	.027 .077	26.583 .002
10	.009 .077	26.597 .003
11	-.010 .077	26.614 .005
12	-.058 .077	27.179 .007
13	-.005 .076	27.183 .012
14	.030 .076	27.336 .017
15	-.040 .076	27.621 .024
16	-.054 .076	28.139 .030

Plot Symbols: Autocorrelations * Two Standard Error Limits

Total cases: 155 Computable first lags: 154

Partial Autocorrelations: ERR_1 Error for VAR00007 with VAR00004 from CU

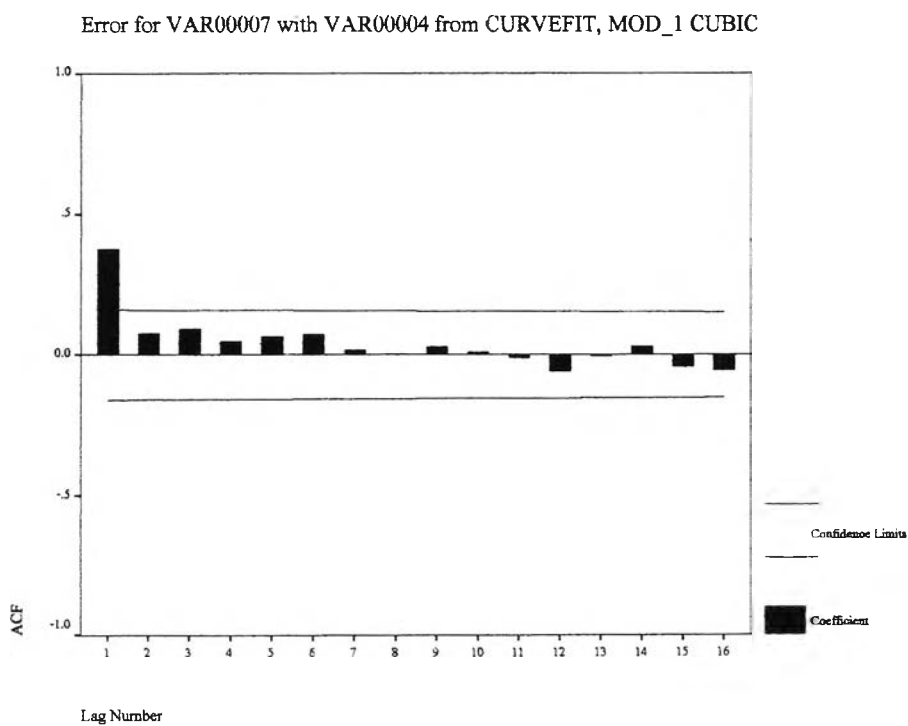
Pr-Aut-Stand.

Lag Corr. Err. -1 -.75 -.5 -.25 0 .25 .5 .75 1

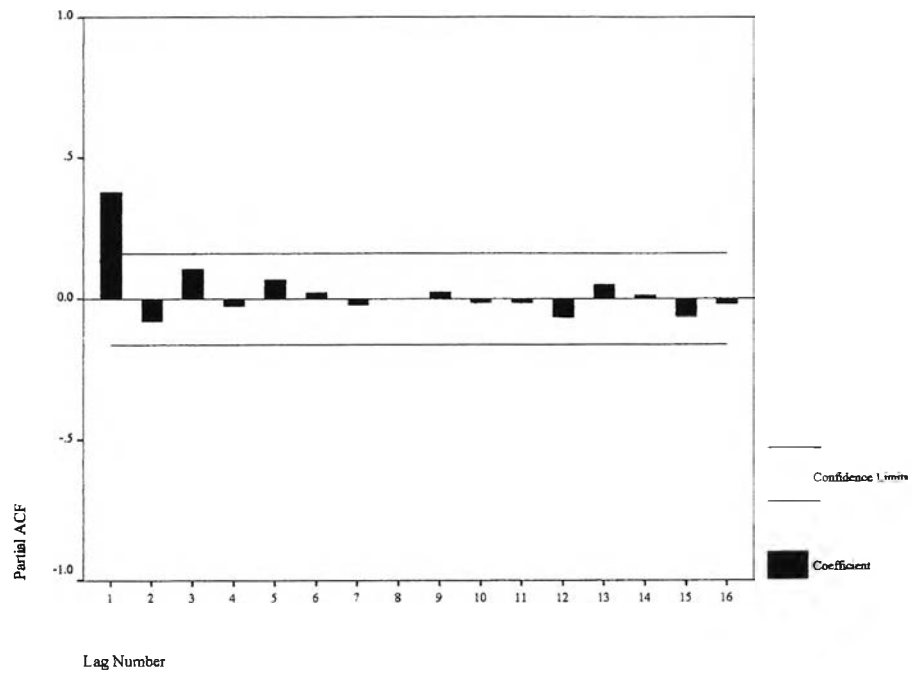
Lag	Corr. Err.	Pr-Aut-Stand.
1	.376	.080
2	-.077	.080
3	.105	.080
4	-.025	.080
5	.068	.080
6	.021	.080
7	-.021	.080
8	.001	.080
9	.022	.080
10	-.013	.080
11	-.013	.080
12	-.064	.080
13	.050	.080
14	.012	.080
15	-.061	.080
16	-.019	.080

Plot Symbols: Autocorrelations * Two Standard Error Limits .

Total cases: 155 Computable first lags: 154



Error for VAR00007 with VAR00004 from CURVEFIT, MOD_1 CUBIC



ภาคผนวก ข. ผลการวิเคราะห์การถดถอยโดยใช้ โปรแกรม SPSS สำหรับ สี Red HE7B
ระหว่าง เปอร์เซ็นต์ที่เครื่องคอมพิวเตอร์วัดสี กับ เปอร์เซ็นต์จริงที่เคยยอม

Curve Fit

MODEL: MOD_1.

Dependent variable.. VAR00008 Method.. CUBIC

Listwise Deletion of Missing Data

Multiple R .95060

R Square .90363

Adjusted R Square .90172

Standard Error .33956

Analysis of Variance:

	DF	Sum of Squares	Mean Square
Regression	3	163.26028	54.420092
Residuals	151	17.41040	.115301

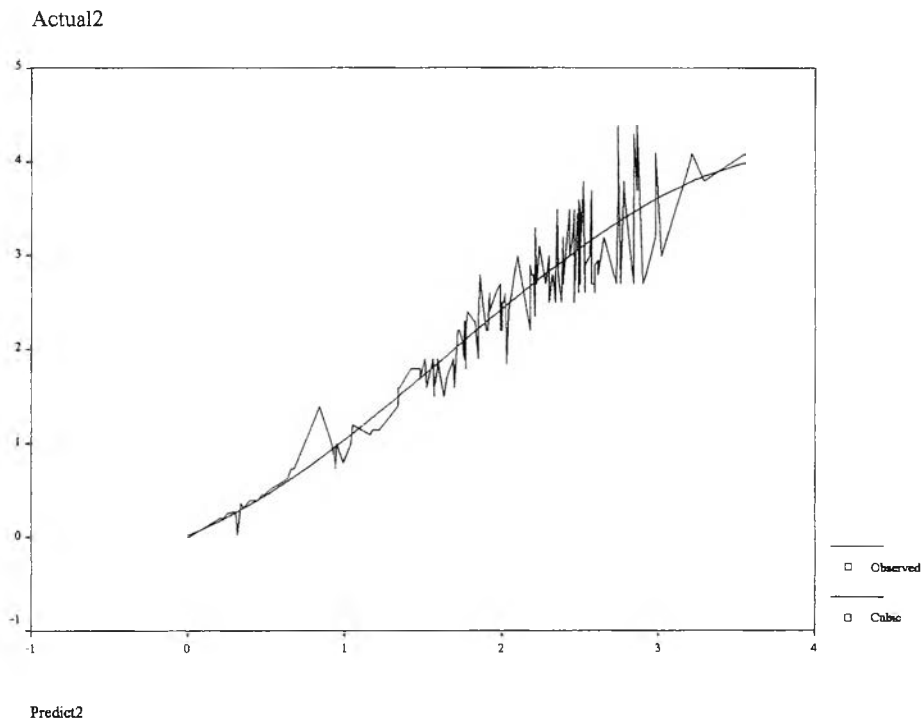
F = 471.98422 Signif F = .0000

----- Variables in the Equation -----

Variable	B	SE B	Beta	T	Sig T
VAR00005	.656329	.339128	.487697	1.935	.0548
VAR00005**2	.457681	.223477	1.154016	2.048	.0423
VAR00005**3	-.092275	.042909	-.724517	-2.151	.0331
(Constant)	.025175	.140891		.179	.8584

The following new variables are being created:

Name	Label
FIT_1	Fit for VAR00008 with VAR00005 from CURVEFIT, MOD_1 CUBIC
ERR_1	Error for VAR00008 with VAR00005 from CURVEFIT, MOD_1 CUBIC
LCL_1	95% LCL for VAR00008 with VAR00005 from CURVEFIT, MOD_1 CUBI
UCL_1	95% UCL for VAR00008 with VAR00005 from CURVEFIT, MOD_1 CUBI



Explore

Case Processing Summary

	Cases	
	Valid	
	N	Percent
Error for VAR00008 with VAR00005 from CURVEFIT, MOD_1 CUBIC	155	100.0%

Case Processing Summary

	Cases			
	Missing		Total	
	N	Percent	N	Percent
Error for VAR00008 with VAR00005 from CURVEFIT, MOD_1 CUBIC	0	.0%	155	100.0%

Descriptives

		Statistic	Std. Error	
Error for VAR00008 with VAR00005 from CURVEFIT, MOD_1 CUBIC	Mean	2.750488E-16	2.700711E-02	
	95% Confidence Interval for Mean	Lower Bound	-5.3352229E-02	
		Upper Bound	5.335223E-02	
	5% Trimmed Mean	-3.9057285E-03		
	Median	1.913700E-02		
	Variance	.113		
	Std. Deviation	.3362358		
	Minimum	-.82713		
	Maximum	1.03857		
	Range	1.86570		
	Interquartile Range	.4032520		
	Skewness	.176	.195	
	Kurtosis	.521	.387	

Tests of Normality

	Kolmogorov-Smirnov ^a		
	Statistic	df	Sig.
Error for VAR00008 with VAR00005 from CURVEFIT, MOD_1 CUBIC	.076	155	.029

a. Lilliefors Significance Correction

Error for VAR00008 with VAR00005 from CURVEFIT, MOD_1 CUBIC

Error for VAR00008 with VAR00005 from CURVEFIT, MOD_1 CUBIC Stem-and-Leaf Plot

Frequency Stem & Leaf

1.00 Extremes (<=-.83)

2.00 -7 . 46

4.00 -6 . 2358

3.00 -5 . 239

10.00 -4 . 0111367799

7.00 -3 . 0223688

14.00 -2 . 12222333446999

13.00 -1 . 0001355567889

14.00 -0 . 00022555668999

33.00 0 . 0000111111222233334455667788888999

18.00 1 . 000011111244566789

12.00 2 . 011222578889

8.00 3 . 00134589

4.00 4 . 1369

6.00 5 . 023568

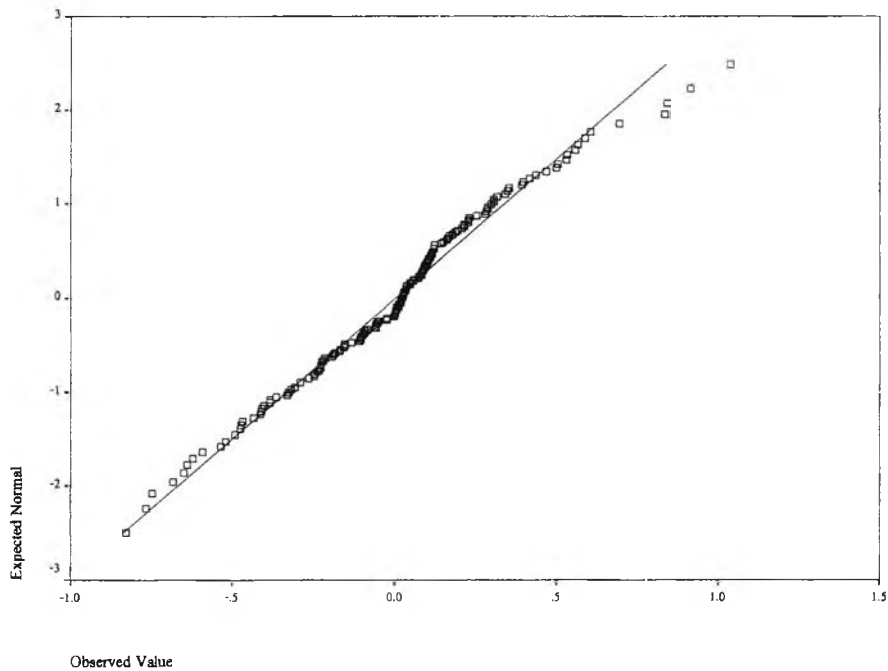
2.00 6 . 09

4.00 Extremes (>=.83)

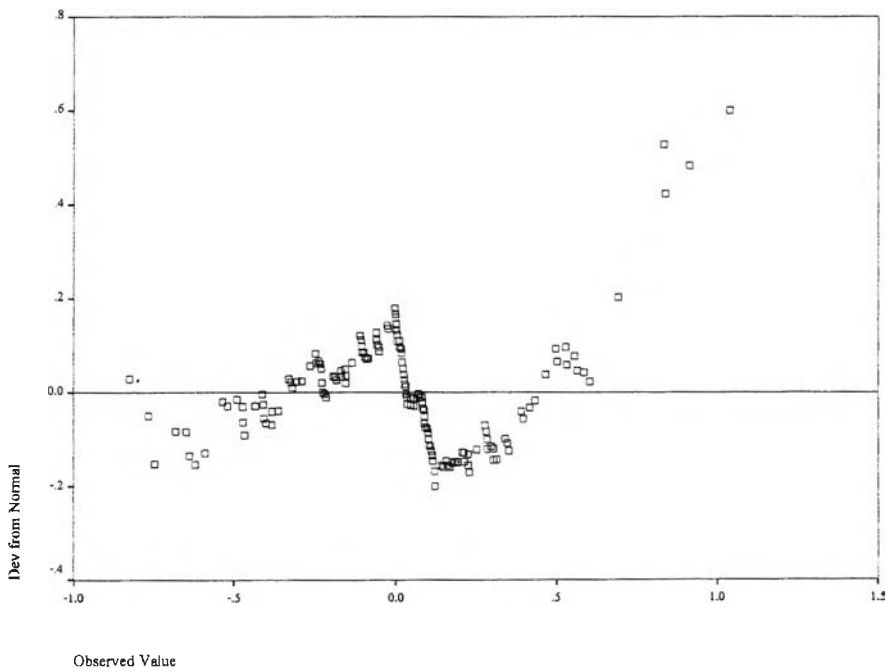
Stem width: .10000

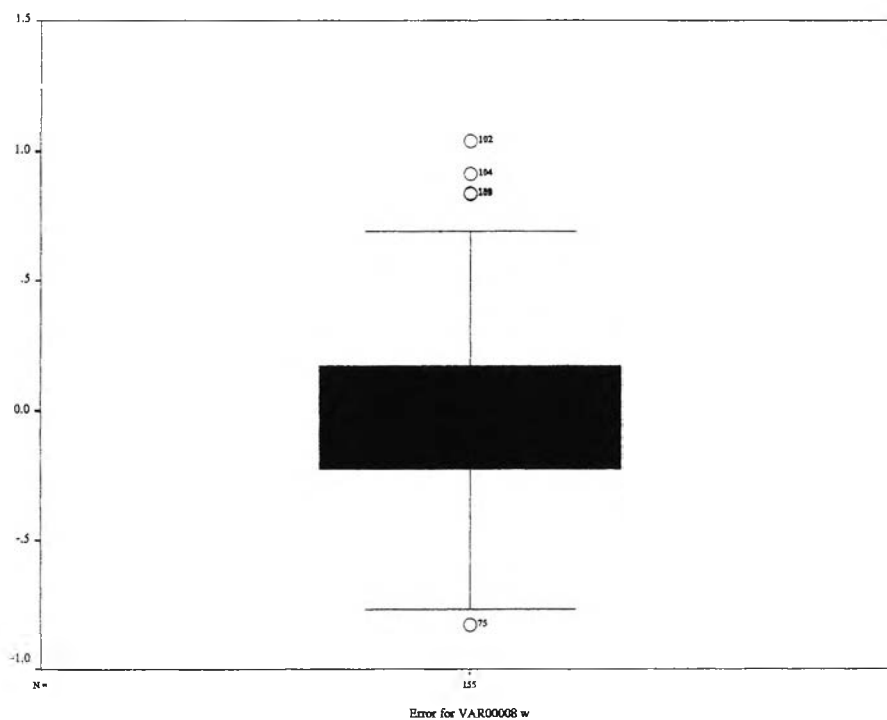
Each leaf: 1 case(s)

Normal Q-Q Plot of Error for VAR00008 with VAR00005 from CURVEFIT, MOD_1



Detrended Normal Q-Q Plot of Error for VAR00008 with VAR00005 from CURVE





ACF

MODEL: MOD_2.

Autocorrelations: ERR_1 Error for VAR00008 with VAR00005 from CU

Auto-Stand.

Lag Corr. Err. -1 -.75 -.5 -.25 0 .25 .5 .75 1 Box-Ljung Prob.

Lag	Corr. Err.	Stand. Error	Box-Ljung Prob.
1	.514	.080	41.703 .000
2	.239	.079	50.811 .000
3	.171	.079	55.507 .000
4	.122	.079	57.917 .000
5	.089	.079	59.201 .000
6	.062	.078	59.825 .000
7	-.034	.078	60.020 .000
8	-.023	.078	60.104 .000
9	.070	.077	60.916 .000
10	.031	.077	61.076 .000
11	.051	.077	61.516 .000
12	-.008	.077	61.527 .000
13	-.016	.076	61.572 .000
14	.022	.076	61.654 .000
15	.066	.076	62.416 .000
16	.071	.076	63.311 .000

Plot Symbols: Autocorrelations * Two Standard Error Limits .

Total cases: 155 Computable first lags: 154

Partial Autocorrelations: ERR_1 Error for VAR00008 with VAR00005 from CU

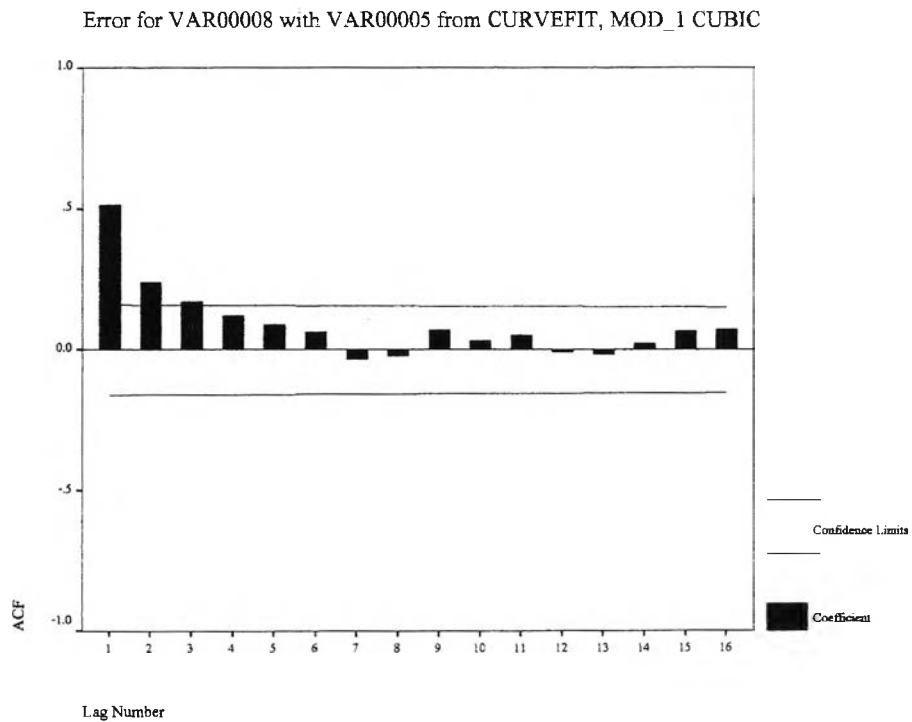
Pr-Aut- Stand.

Lag Corr. Err. -1 -.75 -.5 -.25 0 .25 .5 .75 1

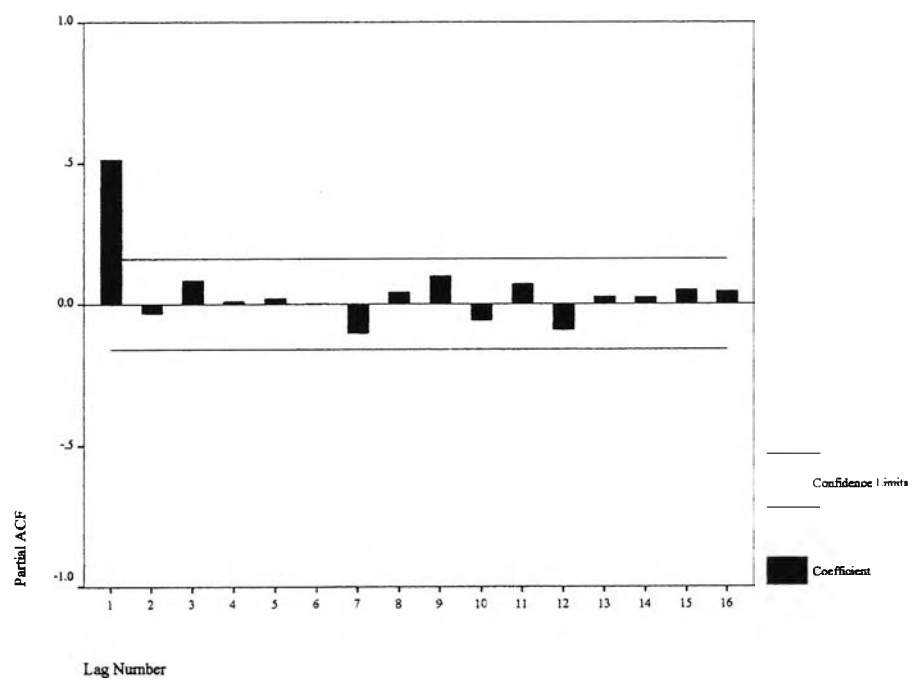
Lag	Corr.	Err.	Significance
1	.514	.080	***
2	-.033	.080	*
3	.084	.080	**
4	.009	.080	*
5	.019	.080	*
6	.001	.080	*
7	-.103	.080	**
8	.042	.080	*
9	.099	.080	**
10	-.057	.080	*
11	.071	.080	*
12	-.092	.080	**
13	.026	.080	*
14	.023	.080	*
15	.049	.080	*
16	.044	.080	*

Plot Symbols: Autocorrelations * Two Standard Error Limits .

Total cases: 155 Computable first lags: 154



Error for VAR00008 with VAR00005 from CURVEFIT, MOD_1 CUBIC



ภาคผนวก ก. ผลการวิเคราะห์การถดถอยโดยใช้ โปรแกรม SPSS สำหรับ สี Blue HERD
ระหว่าง เปอร์เซ็นต์ที่เครื่องคอมพิวเตอร์วัดสี กับ เปอร์เซ็นต์จริงที่เคยยอม

Curve Fit

MODEL: MOD_1.

Dependent variable.. VAR00009 Method.. QUADRATI

Listwise Deletion of Missing Data

Multiple R .94019

R Square .88396

Adjusted R Square .88243

Standard Error .03434

Analysis of Variance:

	DF	Sum of Squares	Mean Square
Regression	2	1.3657953	.68289764
Residuals	152	.1792925	.00117956

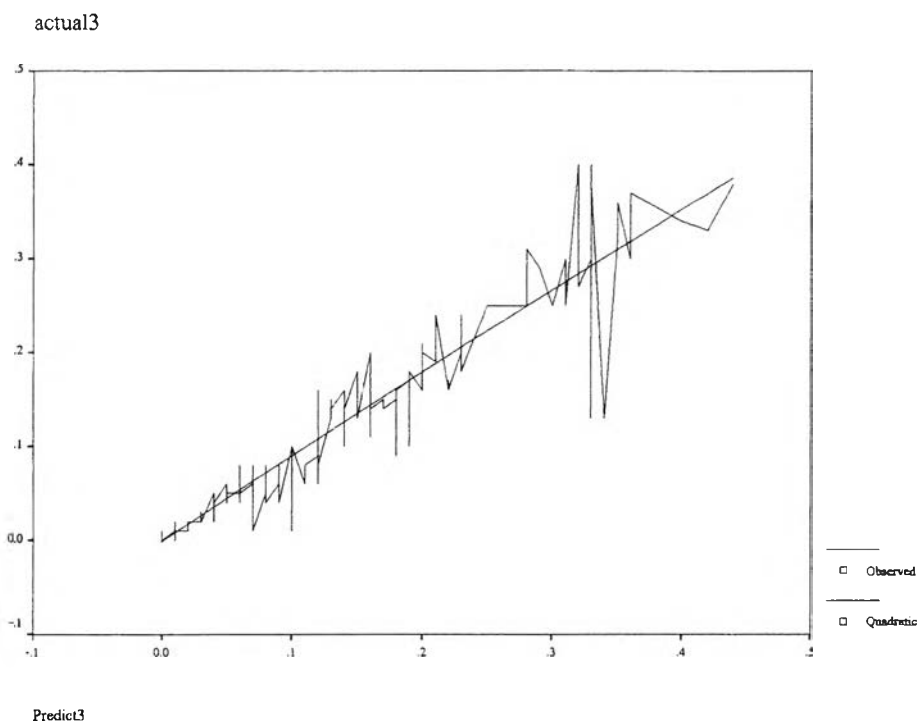
F = 578.94484 Signif F = .0000

----- Variables in the Equation -----

Variable	B	SE B	Beta	T	Sig T
VAR00006	.921368	.080106	.974470	11.502	.0000
VAR00006**2	-.093790	.218661	-.036340	-.429	.6686
(Constant)	-.001106	.005899		-.188	.8515

The following new variables are being created:

Name	Label
FIT_1	Fit for VAR00009 with VAR00006 from CURVEFIT, MOD_1 QUADRATI
ERR_1	Error for VAR00009 with VAR00006 from CURVEFIT, MOD_1 QUADRA
LCL_1	95% LCL for VAR00009 with VAR00006 from CURVEFIT, MOD_1 QUAD
UCL_1	95% UCL for VAR00009 with VAR00006 from CURVEFIT, MOD_1 QUAD



Explore

Case Processing Summary

	Cases	
	Valid	
	N	Percent
Error for VAR00009 with VAR00006 from CURVEFIT, MOD_1 QUADRATIC	155	100.0%

Case Processing Summary

	Cases			
	Missing		Total	
	N	Percent	N	Percent
Error for VAR00009 with VAR00006 from CURVEFIT, MOD_1 QUADRATIC	0	.0%	155	100.0%

Descriptives

		Statistic	Std. Error	
Error for VAR00009 with VAR00006 from CURVEFIT, MOD_1 QUADRATIC	Mean	1.898123E-17	2.740658E-03	
	95% Confidence Interval for Mean	Lower Bound	-5.4141366E-03	
		Upper Bound	5.414137E-03	
	5% Trimmed Mean	1.051543E-03		
	Median	1.901806E-03		
	Variance	1.164E-03		
	Std. Deviation	3.412091E-02		
	Minimum	-.17132		
	Maximum	.11587		
	Range	.28719		
	Interquartile Range	2.779123E-02		
	Skewness	-1.113	.195	
	Kurtosis	7.695	.387	

Tests of Normality

	Kolmogorov-Smirnov ^a		
	Statistic	df	Sig.
Error for VAR00009 with VAR00006 from CURVEFIT, MOD_1 QUADRATIC	.121	155	.000

a. Lilliefors Significance Correction

Error for VAR00009 with VAR00006 from CURVEFIT, MOD_1 QUADRATIC

Error for VAR00009 with VAR00006 from CURVEFIT, MOD_1 QUADRATIC Stem-and-Leaf Plot

Frequency Stem & Leaf

6.00 Extremes (= <-.071)

1.00 -5 . 2

2.00 -4 . 18

7.00 -3 . 2377799

10.00 -2 . 1112555678

21.00 -1 . 001222233345556888999

22.00 -0 . 011222233344445666778

35.00 0 . 0111111111111111222344455667799999

22.00 1 . 011111111123344556677

9.00 2 . 012345666

9.00 3 . 012345666

2.00 4 . 15

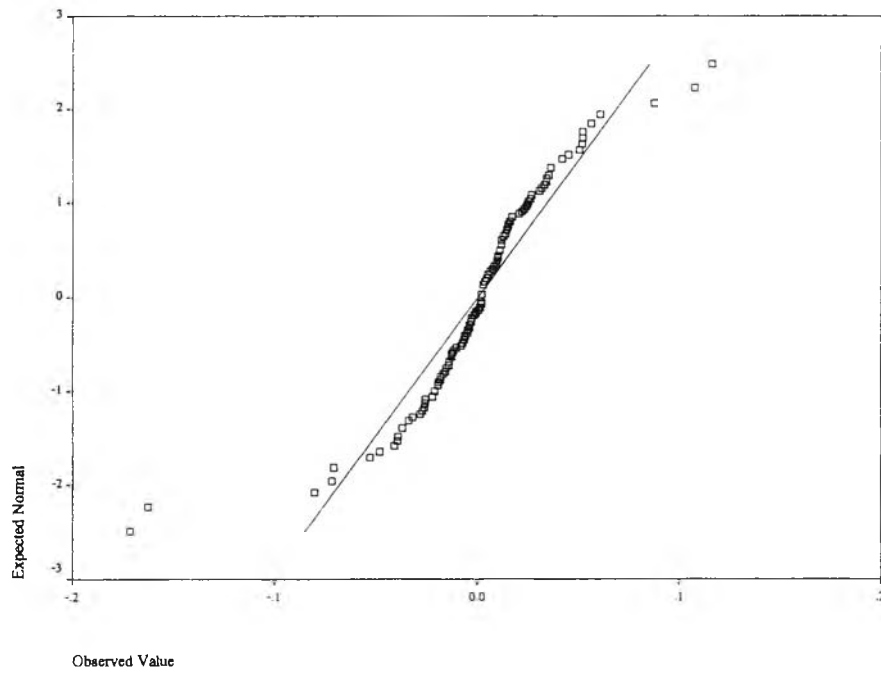
4.00 5 . 0111

5.00 Extremes (>=.056)

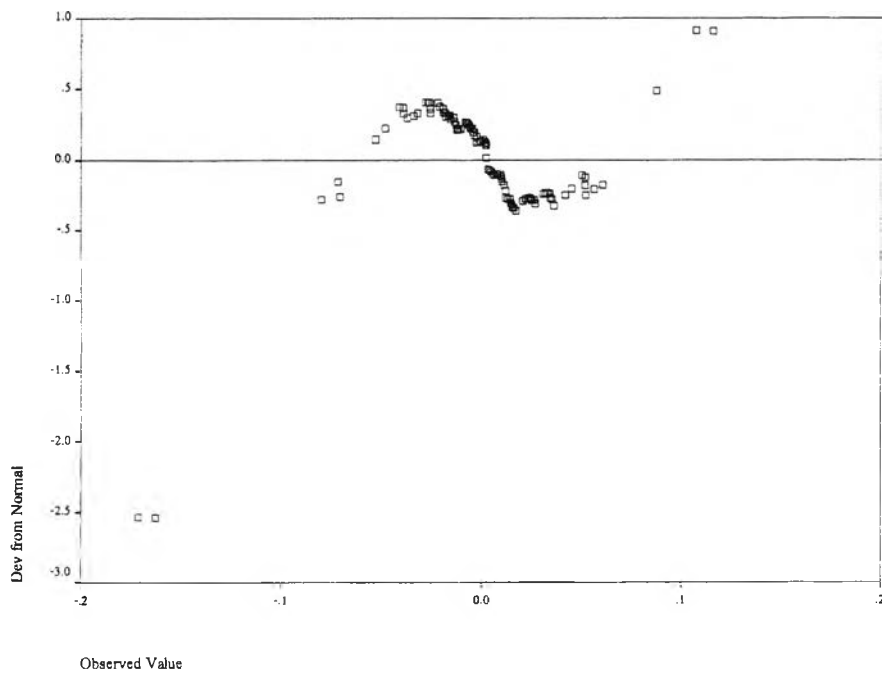
Stem width: .01000

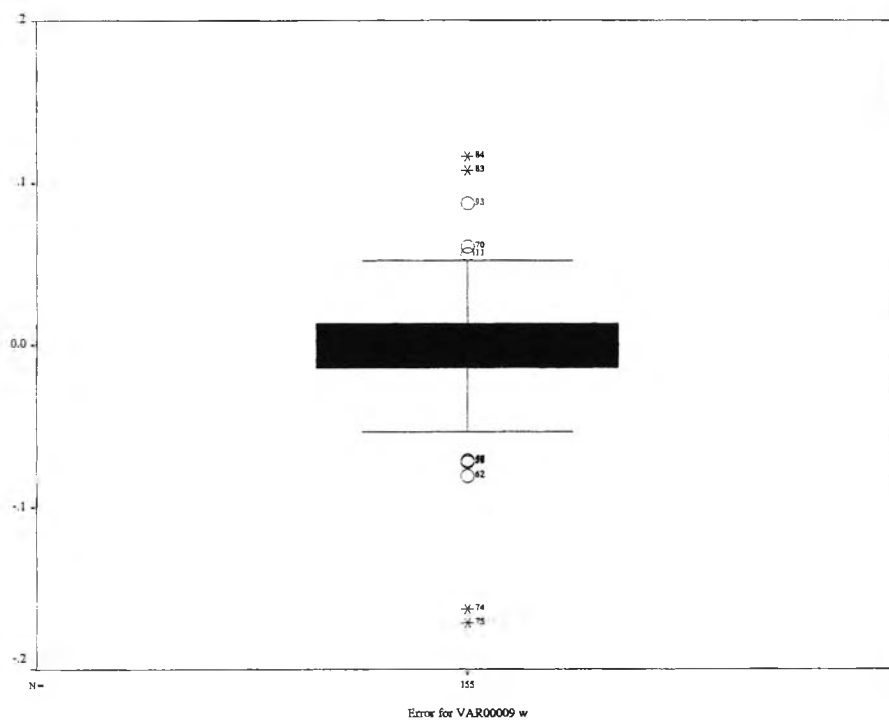
Each leaf: 1 case(s)

Normal Q-Q Plot of Error for VAR00009 with VAR00006 from CURVEFIT, MOD_1



Detrended Normal Q-Q Plot of Error for VAR00009 with VAR00006 from CURVE





ACF

MODEL: MOD_2.

Autocorrelations: ERR_1 Error for VAR00009 with VAR00006 from CU

Auto- Stand.

Lag Corr. Err. -1 -.75 -.5 -.25 0 .25 .5 .75 1 Box-Ljung Prob.

Lag	Corr.	Err.	Box-Ljung Prob.
1	.371	.080	21.702 .000
2	.038	.079	21.931 .000
3	.043	.079	22.226 .000
4	.037	.079	22.450 .000
5	.007	.079	22.459 .000
6	.014	.078	22.489 .001
7	-.020	.078	22.556 .002
8	-.112	.078	24.630 .002
9	-.127	.077	27.331 .001
10	-.090	.077	28.704 .001
11	-.085	.077	29.933 .002
12	-.026	.077	30.046 .003
13	.011	.076	30.067 .005
14	.009	.076	30.080 .007
15	.139	.076	33.448 .004
16	.184	.076	39.384 .001

Plot Symbols: Autocorrelations * Two Standard Error Limits .

Total cases: 155 Computable first lags: 154

Partial Autocorrelations: ERR_1 Error for VAR00009 with VAR00006 from CU

Pr-Aut- Stand.

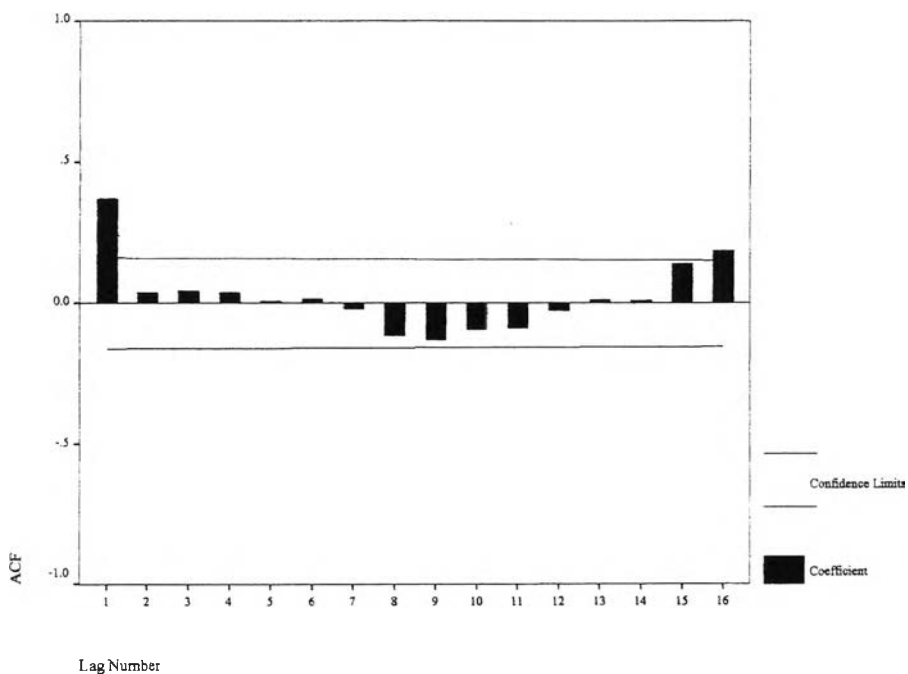
Lag Corr. Err. -1 -.75 -.5 -.25 0 .25 .5 .75 1

Lag	Corr. Err.	Stand.
1	.371	.080
2	-.115	.080
3	.082	.080
4	-.007	.080
5	-.003	.080
6	.016	.080
7	-.040	.080
8	-.104	.080
9	-.056	.080
10	-.035	.080
11	-.048	.080
12	.034	.080
13	.011	.080
14	.010	.080
15	.167	.080
16	.076	.080

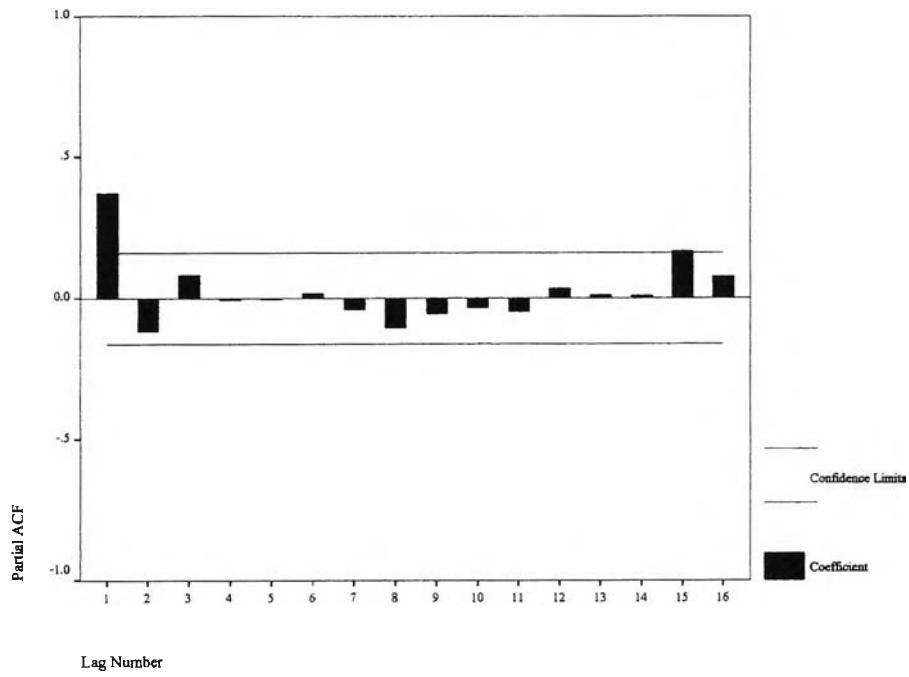
Plot Symbols: Autocorrelations * Two Standard Error Limits .

Total cases: 155 Computable first lags: 154

Error for VAR00009 with VAR00006 from CURVEFIT, MOD_1 QUADRATIC



Error for VAR00009 with VAR00006 from CURVEFIT, MOD_1 QUADRATIC





ประวัติผู้เขียน

นาย สุภชัย พงษ์เลิศอรุณ เกิดเมื่อวันที่ 31 ธันวาคม 2514 สถานที่เกิด อำเภอเมือง จังหวัด นครปฐม จบการศึกษาระดับมัธยมศึกษา จากโรงเรียนสาธิตมหาวิทยาลัยศิลปากร จังหวัดนครปฐม และศึกษาในระดับปริญญาตรี สาขา วิศวกรรมอุตสาหกรรม ที่ มหาวิทยาลัยขอนแก่น ปัจจุบันทำงาน อยู่ บริษัท ยูไนเต็ดเท็กซ์ไทล์ มิลล์ จำกัด 18/8 หมู่ 4 ซอยวัดอ้อมใหญ่ ถนนเพชรเกษม ตำบล อ้อมใหญ่ อำเภอสามพราน จังหวัดนครปฐม