ملاحق بيانات الدراسة

ملحق رقم (1): بيانات الدراسة

قسط التأمين INS	إنتاجية القطاع الزراعي AGRP	المشاهدات OBS
49138	17986261	**2002**
120057	21411031	**2003**
411978	23369447	**2004**
366789	28454698	**2005**
1017443	31276590	**2006**
10843404	42742974	**2007**
10312703	49032424	**2008**
7035111	44970895.7	**2009**
4976702	54464952.6	**2010**
24067434	58221327.35	**2011**
16712522	76262263.65	**2012**
29544284	92990282.49	**2013**
36475453	143774855.7	**2014**
127142649	161598981.3	**2015**
52268170	211263700	**2016**

المصدر: بنك السودان المركزي، إدارة التأمين الزراعي.

ملاحق استقرار متغيرات الدراسة باستخدام اختبار ADF

ملحق رقم (2): استقرار متغير قسط التأمين عند المستوى

Null Hypothesis: AGRP has a unit root
Exogenous: Constant
Lag Length: 1 (Automatic - based on SIC, maxlag=3)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		4.044902	1.0000
Test critical values:	1% level	-4.057910	
	5% level	-3.119910	
	10% level	-2.701103	

*MacKinnon (1996) one-sided p-values.
Warning: Probabilities and critical values calculated for 20 observations
and may not be accurate for a sample size of 13

Dependent Variable: D(AGRP)
Method: Least Squares
Date: 10/18/18 Time: 20:05
Sample (adjusted): 2004 2016
Included observations: 13 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
AGRP(-1)	0.444539	0.109901	4.044902	0.0023
D(AGRP(-1))	-0.664008	0.357208	-1.858883	0.0927
C	-6393777.	5558379.	-1.150295	0.2768

R-squared	0.670186	Mean dependent var	14604051
Adjusted R-squared	0.604223	S.D. dependent var	17140297
S.E. of regression	10783097	Akaike info criterion	35.42403
Sum squared resid	1.16E+15	Schwarz criterion	35.55440
Log likelihood	-227.2562	Hannan-Quinn criter.	35.39723
F-statistic	10.16006	Durbin-Watson stat	1.925946
Prob(F-statistic)	0.003903		

ملحق رقم (3): استقرار متغير إنتاجية القطاع الزراعي عند المستوى

Null Hypothesis: INS has a unit root
Exogenous: Constant
Lag Length: 3 (Automatic - based on SIC, maxlag=3)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		3.950217	1.0000
Test critical values:	1% level	-4.200056	
	5% level	-3.175352	
	10% level	-2.728985	

*MacKinnon (1996) one-sided p-values.
Warning: Probabilities and critical values calculated for 20 observations
and may not be accurate for a sample size of 11

Dependent Variable: D(INS)
Method: Least Squares
Date: 10/18/18 Time: 20:07
Sample (adjusted): 2006 2016
Included observations: 11 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
INS(-1)	3.564104	0.902255	3.950217	0.0075
D(INS(-1))	-4.956370	1.089395	-4.549652	0.0039
D(INS(-2))	-3.802774	1.328963	-2.861461	0.0287
D(INS(-3))	-3.589150	1.057632	-3.393573	0.0146
C	-2982079.	8176215.	-0.364726	0.7278

R-squared	0.872564	Mean dependent var	4718307.
Adjusted R-squared	0.787606	S.D. dependent var	37848806
S.E. of regression	17443077	Akaike info criterion	36.48974
Sum squared resid	1.83E+15	Schwarz criterion	36.67060
Log likelihood	-195.6936	Hannan-Quinn criter.	36.37573
F-statistic	10.27059	Durbin-Watson stat	1.000029
Prob(F-statistic)	0.007487		

ملاحق نتيجة التقدير باستخدام المربعات الصغرى العادية

ملحق رقم (4): نتائج التقدير

Dependent Variable: LOG(AGRP)
Method: Least Squares
Date: 10/18/18 Time: 19:55
Sample (adjusted): 2002 2016
Included observations: 15 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	17.42223	0.158172	110.1475	0.0000
INS	1.74E-08	4.11E-09	4.231993	0.0010

R-squared	0.579421	Mean dependent var	17.79450
Adjusted R-squared	0.547069	S.D. dependent var	0.756502
S.E. of regression	0.509127	Akaike info criterion	1.611328
Sum squared resid	3.369738	Schwarz criterion	1.705735
Log likelihood	-10.08496	Hannan-Quinn criter.	1.610323
F-statistic	17.90977	Durbin-Watson stat	1.511953
Prob(F-statistic)	0.000979		

ملحق رقم (5): اختبار مشكلة اختلاف التباين باستخدام اختبار WHITE

Heteroskedasticity Test: White

F-statistic	3.040811	Prob. F(2,12)	0.0854
Obs*R-squared	5.045141	Prob. Chi-Square(2)	0.0803
Scaled explained SS	1.957486	Prob. Chi-Square(2)	0.3758

Test Equation:
Dependent Variable: RESID^2
Method: Least Squares
Date: 10/18/18 Time: 20:10
Sample: 2002 2016
Included observations: 15

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.108057	0.078455	1.377304	0.1936
INS^2	-3.03E-17	4.25E-17	-0.713992	0.4889
INS	7.54E-09	5.29E-09	1.425341	0.1795

R-squared	0.336343	Mean dependent var	0.224649
Adjusted R-squared	0.225733	S.D. dependent var	0.236353
S.E. of regression	0.207973	Akaike info criterion	-0.125959
Sum squared resid	0.519034	Schwarz criterion	0.015651
Log likelihood	3.944690	Hannan-Quinn criter.	-0.127467
F-statistic	3.040811	Durbin-Watson stat	0.912661
Prob(F-statistic)	0.085440		

ملحق رقم (6): اختبار مشكلة الارتباط الذاتي باستخدام اختبار LM

Breusch-Godfrey Serial Correlation LM Test:

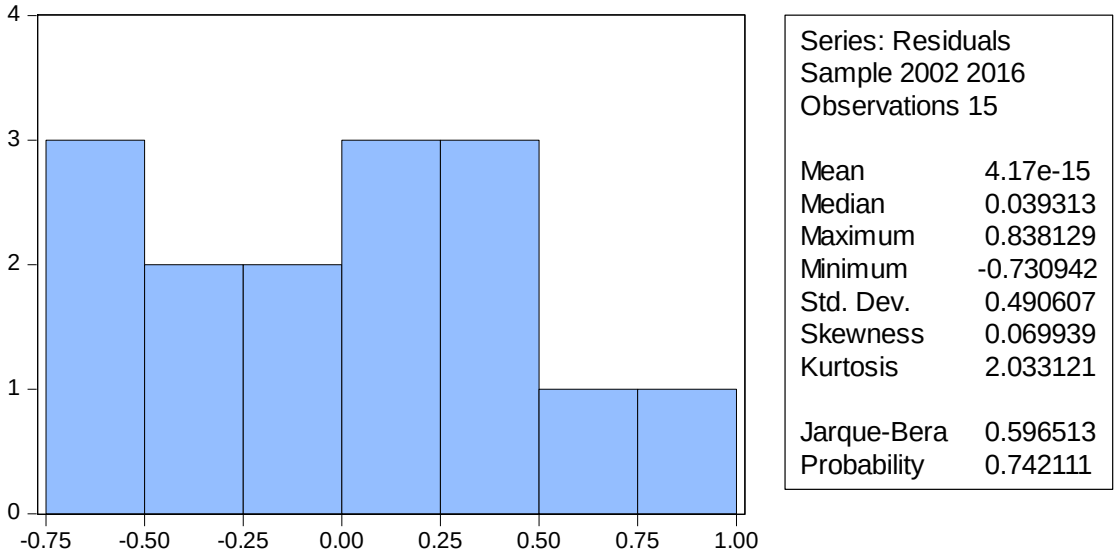
F-statistic	0.086514	Prob. F(1,12)	0.7737
Obs*R-squared	0.107369	Prob. Chi-Square(1)	0.7432

Test Equation:
Dependent Variable: RESID
Method: Least Squares
Date: 10/18/18 Time: 20:11
Sample: 2002 2016
Included observations: 15
Presample missing value lagged residuals set to zero.

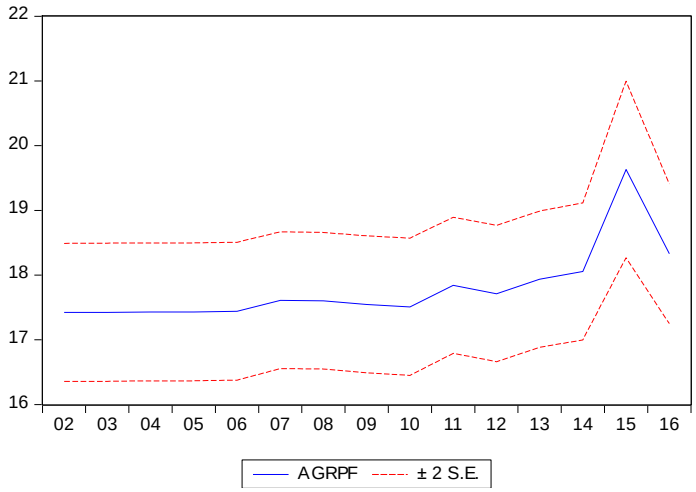
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.023051	0.181799	0.126794	0.9012
INS	-7.81E-10	5.02E-09	-0.155641	0.8789
RESID(-1)	0.113067	0.384409	0.294133	0.7737

R-squared	0.007158	Mean dependent var	4.17E-15
Adjusted R-squared	-0.158316	S.D. dependent var	0.490607
S.E. of regression	0.528017	Akaike info criterion	1.737478
Sum squared resid	3.345618	Schwarz criterion	1.879088
Log likelihood	-10.03109	Hannan-Quinn criter.	1.735970
F-statistic	0.043257	Durbin-Watson stat	1.612598
Prob(F-statistic)	0.957814		

ملحق رقم (7): اختبار التوزيع الطبيعي باستخدام اختبار JB



ملحق رقم (8): اختبار مقدرة النموذج على التنبؤ باستخدام اختبار Theil



Forecast: AGRPF	
Actual: LOG(AGRP)	
Forecast sample: 2002 2017	
Adjusted sample: 2002 2016	
Included observations: 15	
Root Mean Squared Error	0.473972
Mean Absolute Error	0.392337
Mean Abs. Percent Error	2.187358
Theil Inequality Coefficient	0.013309
Bias Proportion	0.000000
Variance Proportion	0.135591
Covariance Proportion	0.864409

اختبار الارتباط الخطي بين أقساط التأمين والإنتاجية

ملحق رقم (9): اختبار الارتباط بين أقساط التأمين وانتاجية القطاع الزراعي

Correlations

		INS	AGRP
INS	Pearson Correlation	1	.789**
	Sig. (2-tailed)		.000
	N	15	15
AGRP	Pearson Correlation	.789**	1
	Sig. (2-tailed)	.000	
	N	15	15

**. Correlation is significant at the 0.01 level (2-tailed).

تم بحمد الله وتوفيقه