

ملحق رقم (1)

متغيرات نموذج صادرات الصمغ العربي

obs	COT	EXT	PT	PXT	QT	XT	QT(-1)
1980	16.00000	0.005000	1.070000	1350.000	21.8000	42606822	
1981	20.00000	0.009000	1.590000	1450.000	29.4000	49073248	21.8000
1982	23.60000	0.013000	1.520000	1450.000	38.5000	43175158	29.4000
1983	33.60000	0.013000	1.960000	1450.000	27.3000	57690063	38.5000
1984	50.40000	0.025000	2.750000	1450.000	38.4000	45389076	27.3000
1985	62.40000	0.025000	2.510000	1600.000	14.1000	36784204	38.4000
1986	112.0000	0.025000	7.050000	1900.000	20.4000	48727158	14.1000
1987	338.4000	0.045000	26.72000	4950.000	29.1000	78791426	20.4000
1988	445.2000	0.045000	18.13000	4950.000	26.0000	55713290	29.1000
1989	458.4000	0.045000	12.01000	2800.000	28.9000	46786994	26.0000
1990	489.6000	0.045000	13.20000	2300.000	25.7000	54594740	28.9000
1991	498.8000	0.045000	7.810000	2300.000	12.1000	50818664	25.7000
1992	1656.000	0.150000	24.65000	2930.000	7.30000	23496654	12.1000
1993	9794.400	0.132800	175.9700	4000.000	11.4000	40039583	7.30000
1994	19766.80	0.216000	336.1100	4200.000	33.5000	78089121	11.4000
1995	29717.10	0.400000	1129.130	4000.000	48.8000	49933967	33.5000
1996	29995.35	1.246400	426.7800	3500.000	31.7000	24671381	48.8000
1997	30941.60	1.578500	1179.030	2200.000	17.8000	26143375	31.7000
1998	32054.40	1.994500	2618.820	1200.000	17.1000	20348079	17.8000
1999	34057.80	2.516000	2885.560	1200.000	27.8000	19151825	17.1000
2000	36729.00	2.571400	6121.500	1250.000	8.00000	25001537	27.8000
2001	39177.60	2.587000	13628.57	1250.000	15.7000	21309952	8.00000
2002	44520.00	2.633400	9165.850	1250.000	15.9000	28009612	15.7000
2003	44520.00	2.608200	1528.380	1250.000	15.8000	29303892	15.9000
2004	52900.00	2.582600	1234.480	2780.000	15.9000	30135315	15.8000
2005	37016.00	2.435800	6067.000	2896.000	14.1000	40645939	15.9000
2006	38425.00	2.171500	6315.200	2950.000	13.6000	40193750	14.1000
2007	39834.00	2.015900	6563.500	3004.000	12.9000	38892788	13.6000
2008	41243.00	2.091300	6811.700	3057.000	12.0000	37509390	12.9000
2009	42652.00	2.235900	7059.900	3111.000	11.5000	36065823	12.0000
2010	44061.00	2.237300	7308.000	3164.000	10.9000	34538224	11.5000

المصدر : شركة الصمغ العربي وتقارير بنك السودان والجهاز المركزي للإحصاء قسم التجارة الداخلية

تقاس كمية الانتاج بالاطنان المترية وقيمة الصادرات بالدولارات الامريكية وتكاليف الانتاج بالجنيهات السودانية والسعر العالمي بالدولارات الامريكية وسعر التركيز بالجنيهات السودانية .

ملحق رقم (2)

نتائج اختبار السكون لقيمة صادرات الصمغ

ADF Test Statistic	-2.996646	1% Critical Value*	-3.6752
		5% Critical Value	-2.9665
		10% Critical Value	-2.6220

*MacKinnon critical values for rejection of hypothesis of a unit root.

Augmented Dickey-Fuller Test Equation

Dependent Variable: D(XT)

Method: Least Squares

Date: 07/18/12 Time: 09:22

Sample(adjusted): 1982 2010

Included observations: 29 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
XT(-1)	-0.564491	0.188374	-2.996646	0.0059
D(XT(-1))	0.176398	0.192303	0.917293	0.3674
C	22439118	8056923.	2.785073	0.0099
R-squared	0.265226	Mean dependent var	-501207.7	
Adjusted R-squared	0.208705	S.D. dependent var	15056274	
S.E. of regression	13393271	Akaike info criterion	35.75610	
Sum squared resid	4.66E+15	Schwarz criterion	35.89754	
Log likelihood	-515.4635	F-statistic	4.692520	
Durbin-Watson stat	1.828883	Prob(F-statistic)	0.018197	

ملحق رقم (3)

نتائج اختبار السكون لكمية الانتاج

ADF Test Statistic	-2.652473	1% Critical Value*	-3.6752
		5% Critical Value	-2.9665
		10% Critical Value	-2.6220

*MacKinnon critical values for rejection of hypothesis of a unit root.

Augmented Dickey-Fuller Test Equation

Dependent Variable: D(QT)

Method: Least Squares

Date: 07/18/12 Time: 20:08

Sample(adjusted): 1982 2010

Included observations: 29 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
QT(-1)	-0.376845	0.142073	-2.652473	0.0134
D(QT(-1))	0.283288	0.183853	1.540837	0.1354
C	6.913815	2.997480	2.306543	0.0293
R-squared	0.218600	Mean dependent var	-0.637931	
Adjusted R-squared	0.158492	S.D. dependent var	5.684780	
S.E. of regression	5.214862	Akaike info criterion	6.238600	
Sum squared resid	707.0644	Schwarz criterion	6.380044	
Log likelihood	-87.45969	F-statistic	3.636798	
Durbin-Watson stat	1.959044	Prob(F-statistic)	0.040491	

ADF Test Statistic	-5.925541	1% Critical Value*	-3.6852
		5% Critical Value	-2.9705
		10% Critical Value	-2.6242

*MacKinnon critical values for rejection of hypothesis of a unit root.

Augmented Dickey-Fuller Test Equation

Dependent Variable: D(QT,2)

Method: Least Squares

Date: 07/18/12 Time: 20:09

Sample(adjusted): 1983 2010

Included observations: 28 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(QT(-1))	-1.353802	0.228469	-5.925541	0.0000
D(QT(-1),2)	0.386574	0.165869	2.330590	0.0281
C	-1.100065	0.980322	-1.122147	0.2725
R-squared	0.613259	Mean dependent var	-0.346429	
Adjusted R-squared	0.582320	S.D. dependent var	7.966340	
S.E. of regression	5.148500	Akaike info criterion	6.216245	
Sum squared resid	662.6762	Schwarz criterion	6.358981	
Log likelihood	-84.02743	F-statistic	19.82140	
Durbin-Watson stat	2.238515	Prob(F-statistic)	0.000007	

ملحق رقم (4)

نتائج اختبار السكون لسعر التركيز

ADF Test Statistic	-2.285145	1% Critical Value*	-3.6752
		5% Critical Value	-2.9665
		10% Critical Value	-2.6220

*MacKinnon critical values for rejection of hypothesis of a unit root.

Augmented Dickey-Fuller Test Equation

Dependent Variable: D(PT)

Method: Least Squares

Date: 07/18/12 Time: 09:30

Sample(adjusted): 1982 2010

Included observations: 29 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
PT(-1)	-0.300531	0.131515	-2.285145	0.0307
D(PT(-1))	0.320784	0.190774	1.681481	0.1046
C	934.1800	534.1352	1.748958	0.0921
R-squared	0.187677	Mean dependent var		251.9452
Adjusted R-squared	0.125191	S.D. dependent var		2470.271
S.E. of regression	2310.474	Akaike info criterion		18.42599
Sum squared resid	1.39E+08	Schwarz criterion		18.56744
Log likelihood	-264.1769	F-statistic		3.003492
Durbin-Watson stat	1.652643	Prob(F-statistic)		0.067061

ADF Test Statistic	-6.855277	1% Critical Value*	-3.6852
		5% Critical Value	-2.9705
		10% Critical Value	-2.6242

*MacKinnon critical values for rejection of hypothesis of a unit root.

Augmented Dickey-Fuller Test Equation

Dependent Variable: D(PT,2)

Method: Least Squares

Date: 07/18/12 Time: 09:31

Sample(adjusted): 1983 2010

Included observations: 28 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(PT(-1))	-1.377687	0.200967	-6.855277	0.0000
D(PT(-1),2)	0.633139	0.154725	4.092041	0.0004
C	350.5535	380.8302	0.920498	0.3661
R-squared	0.653825	Mean dependent var		8.863214
Adjusted R-squared	0.626131	S.D. dependent var		3267.442
S.E. of regression	1997.872	Akaike info criterion		18.13851
Sum squared resid	99787354	Schwarz criterion		18.28125
Log likelihood	-250.9391	F-statistic		23.60887
Durbin-Watson stat	1.937097	Prob(F-statistic)		0.000002

ملحق رقم (5)

نتائج اختبار السكون للسعر العالمي

ADF Test Statistic	-3.140765	1% Critical Value*	-3.6752
		5% Critical Value	-2.9665
		10% Critical Value	-2.6220

*MacKinnon critical values for rejection of hypothesis of a unit root.

Augmented Dickey-Fuller Test Equation

Dependent Variable: D(PXT)

Method: Least Squares

Date: 07/18/12 Time: 09:33

Sample(adjusted): 1982 2010

Included observations: 29 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
PXT(-1)	-0.410222	0.130612	-3.140765	0.0042
D(PXT(-1))	0.434663	0.173863	2.500031	0.0191
C	1060.075	351.8209	3.013110	0.0057
R-squared	0.316074	Mean dependent var		59.10345
Adjusted R-squared	0.263464	S.D. dependent var		868.4802
S.E. of regression	745.3441	Akaike info criterion		16.16327
Sum squared resid	14443984	Schwarz criterion		16.30471
Log likelihood	-231.3674	F-statistic		6.007903
Durbin-Watson stat	1.896147	Prob(F-statistic)		0.007163

ملحق رقم (6)

نتائج اختبار السكون لسعر الصرف

ADF Test Statistic	-1.077016	1% Critical Value*	-3.6752
		5% Critical Value	-2.9665
		10% Critical Value	-2.6220

*MacKinnon critical values for rejection of hypothesis of a unit root.

Augmented Dickey-Fuller Test Equation

Dependent Variable: D(EXT)

Method: Least Squares

Date: 07/18/12 Time: 09:40

Sample(adjusted): 1982 2010

Included observations: 29 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
EXT(-1)	-0.032415	0.030097	-1.077016	0.2914
D(EXT(-1))	0.591109	0.158240	3.735528	0.0009
C	0.067695	0.048049	1.408886	0.1707
R-squared	0.356683	Mean dependent var		0.076838
Adjusted R-squared	0.307197	S.D. dependent var		0.215648
S.E. of regression	0.179494	Akaike info criterion		-0.499653
Sum squared resid	0.837670	Schwarz criterion		-0.358209
Log likelihood	10.24498	F-statistic		7.207774
Durbin-Watson stat	2.175931	Prob(F-statistic)		0.003232

ADF Test Statistic	-2.092501	1% Critical Value*	-3.6852
		5% Critical Value	-2.9705
		10% Critical Value	-2.6242

*MacKinnon critical values for rejection of hypothesis of a unit root.

Augmented Dickey-Fuller Test Equation

Dependent Variable: D(EXT,2)

Method: Least Squares

Date: 07/18/12 Time: 09:41

Sample(adjusted): 1983 2010

Included observations: 28 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(EXT(-1))	-0.384555	0.183778	-2.092501	0.0467
D(EXT(-1),2)	-0.105711	0.200280	-0.527818	0.6023
C	0.031022	0.037895	0.818642	0.4207
R-squared	0.223095	Mean dependent var		-9.29E-05
Adjusted R-squared	0.160942	S.D. dependent var		0.202998
S.E. of regression	0.185947	Akaike info criterion		-0.425755
Sum squared resid	0.864405	Schwarz criterion		-0.283019
Log likelihood	8.960576	F-statistic		3.589475
Durbin-Watson stat	1.997550	Prob(F-statistic)		0.042619

تابع ملحق رقم (6)

ADF Test Statistic	-4.762658	1% Critical Value*	-3.6959
		5% Critical Value	-2.9750
		10% Critical Value	-2.6265

*MacKinnon critical values for rejection of hypothesis of a unit root.

Augmented Dickey-Fuller Test Equation

Dependent Variable: D(EXT,3)

Method: Least Squares

Date: 07/18/12 Time: 09:41

Sample(adjusted): 1984 2010

Included observations: 27 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(EXT(-1),2)	-1.546362	0.324685	-4.762658	0.0001
D(EXT(-1),3)	0.192751	0.202360	0.952514	0.3503
C	0.002403	0.038887	0.061794	0.9512
R-squared	0.657078	Mean dependent var		-0.005156
Adjusted R-squared	0.628501	S.D. dependent var		0.331326
S.E. of regression	0.201946	Akaike info criterion		-0.257198
Sum squared resid	0.978768	Schwarz criterion		-0.113216
Log likelihood	6.472175	F-statistic		22.99341
Durbin-Watson stat	1.955865	Prob(F-statistic)		0.000003

ملحق رقم (7)

نتائج اختبار السكون لتكلفة الانتاج

ADF Test Statistic	-0.595052	1% Critical Value*	-3.6752
		5% Critical Value	-2.9665
		10% Critical Value	-2.6220

*MacKinnon critical values for rejection of hypothesis of a unit root.

Augmented Dickey-Fuller Test Equation

Dependent Variable: D(COT)

Method: Least Squares

Date: 07/18/12 Time: 09:44

Sample(adjusted): 1982 2010

Included observations: 29 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
COT(-1)	-0.027772	0.046672	-0.595052	0.5570
D(COT(-1))	0.031370	0.196290	0.159815	0.8743
C	2054.346	1311.228	1.566734	0.1293
R-squared	0.013665	Mean dependent var		1518.655
Adjusted R-squared	-0.062207	S.D. dependent var		4549.580
S.E. of regression	4688.953	Akaike info criterion		19.84150
Sum squared resid	5.72E+08	Schwarz criterion		19.98295
Log likelihood	-284.7018	F-statistic		0.180102
Durbin-Watson stat	2.019756	Prob(F-statistic)		0.836218

ADF Test Statistic	-2.949596	1% Critical Value*	-3.6852
		5% Critical Value	-2.9705
		10% Critical Value	-2.6242

*MacKinnon critical values for rejection of hypothesis of a unit root.

Augmented Dickey-Fuller Test Equation

Dependent Variable: D(COT,2)

Method: Least Squares

Date: 07/18/12 Time: 09:45

Sample(adjusted): 1983 2010

Included observations: 28 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(COT(-1))	-0.811947	0.275274	-2.949596	0.0068
D(COT(-1),2)	-0.179497	0.195959	-0.915992	0.3684
C	1295.447	983.6960	1.316918	0.1998
R-squared	0.511762	Mean dependent var		50.19286
Adjusted R-squared	0.472703	S.D. dependent var		6508.245
S.E. of regression	4725.978	Akaike info criterion		19.86049
Sum squared resid	5.58E+08	Schwarz criterion		20.00323
Log likelihood	-275.0469	F-statistic		13.10225
Durbin-Watson stat	1.948121	Prob(F-statistic)		0.000128

تابع ملحق (7)

ADF Test Statistic	-5.026182	1% Critical Value*	-3.6959
		5% Critical Value	-2.9750
		10% Critical Value	-2.6265

*MacKinnon critical values for rejection of hypothesis of a unit root.

Augmented Dickey-Fuller Test Equation

Dependent Variable: D(COT,3)

Method: Least Squares

Date: 07/18/12 Time: 09:47

Sample(adjusted): 1984 2010

Included observations: 27 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(COT(-1),2)	-1.808233	0.359763	-5.026182	0.0000
D(COT(-1),3)	0.141068	0.202083	0.698070	0.4918
C	93.88277	1067.137	0.087976	0.9306
R-squared	0.796475	Mean dependent var	-0.237037	
Adjusted R-squared	0.779514	S.D. dependent var	11807.15	
S.E. of regression	5544.154	Akaike info criterion	20.18332	
Sum squared resid	7.38E+08	Schwarz criterion	20.32730	
Log likelihood	-269.4748	F-statistic	46.96073	
Durbin-Watson stat	2.055229	Prob(F-statistic)	0.000000	

ملحق رقم (8)

نتائج التكامل المشترك لدالة قيمة صادرات الصمغ العربي

Date: 07/18/12 Time: 20:13

Sample: 1980 2010

Included observations: 29

Test

assumption:

Linear

deterministic

trend in the

data

Series: XT QT PXT PT

Lags interval: 1 to 1

Eigenvalue	Likelihood Ratio	5 Percent Critical Value	1 Percent Critical Value	Hypothesized No. of CE(s)
0.689295	66.24746	47.21	54.46	None **
0.509852	32.34903	29.68	35.65	At most 1 *
0.238677	11.67067	15.41	20.04	At most 2
0.121675	3.762426	3.76	6.65	At most 3 *

*(**) denotes rejection of the hypothesis at 5%(1%) significance level
L.R. test indicates 2 cointegrating equation(s) at 5% significance level

Unnormalized Cointegrating Coefficients:

XT	QT	PXT	PT
-4.83E-09	0.043109	0.000256	6.63E-05
-2.67E-08	0.029575	0.000296	-1.68E-05
6.57E-09	-0.022335	4.78E-05	-1.02E-05
5.54E-09	0.002835	-2.80E-05	-4.18E-05

Normalized Cointegrating Coefficients: 1 Cointegrating Equation(s)

XT	QT	PXT	PT	C
1.000000	-8923837. (5629110)	-52932.48 (31335.1)	-13721.77 (10138.2)	3.03E+08

Log likelihood -1084.033

Normalized
Cointegrating
Coefficients: 2
Cointegrating
Equation(s)

XT	QT	PXT	PT	C
1.000000	0.000000	-5161.889 (1737.11)	2664.255 (543.437)	-34381300
0.000000	1.000000	0.005353 (0.00069)	0.001836 (0.00022)	-37.82435
Log likelihood		-1073.694		

Normalized
Cointegrating
Coefficients: 3
Cointegrating
Equation(s)

XT	QT	PXT	PT	C
1.000000	0.000000	0.000000	3006.135 (732.412)	-48173734
0.000000	1.000000	0.000000	0.001482 (0.00056)	-23.52088
0.000000	0.000000	1.000000	0.066232 (0.10166)	-2671.974
Log likelihood		-1069.740		

ملحق رقم (9)

نتائج اختبار التكامل المشترك لدالة كمية الانتاج

Date: 07/18/12 Time: 20:18

Sample: 1980 2010

Included observations: 28

Test

assumption:

Linear

deterministic

trend in the

data

Series: QT COT PT(-1)

Lags interval: 1 to 1

Eigenvalue	Likelihood Ratio	5 Percent Critical Value	1 Percent Critical Value	Hypothesized No. of CE(s)
0.483930	32.91860	29.68	35.65	None *
0.384710	14.39626	15.41	20.04	At most 1
0.028088	0.797723	3.76	6.65	At most 2

*(**) denotes rejection of the hypothesis at 5%(1%) significance level
L.R. test indicates 1 cointegrating equation(s) at 5% significance level

Unnormalized Cointegrating Coefficients:

QT	COT	PT(-1)
0.013758	-8.97E-06	8.36E-05
0.031611	1.08E-05	-3.45E-05
0.003473	9.90E-06	7.36E-06

Normalized Cointegrating Coefficients: 1 Cointegrating Equation(s)

QT	COT	PT(-1)	C
1.000000	-0.000652 (0.00048)	0.006078 (0.00322)	-19.67102

Log likelihood -608.4156

Normalized
Cointegrating
Coefficients: 2
Cointegrating
Equation(s)

QT	COT	PT(-1)	C
1.000000	0.000000	0.001378 (0.00051)	-22.69155
0.000000	1.000000	-7.206325 (1.19411)	-4631.400
Log likelihood	-601.6163		

ملحق رقم (10)

نتائج اختبار التكامل المشترك لدالة سعر التركيز

Date: 07/18/12 Time: 20:19

Sample: 1980 2010

Included observations: 28

Test

assumption:

Linear

deterministic

trend in the

data

Series: PT QT(-1)

Lags interval: 1 to 1

Eigenvalue	Likelihood Ratio	5 Percent Critical Value	1 Percent Critical Value	Hypothesized No. of CE(s)
0.362862	16.68635	15.41	20.04	None *
0.135127	4.064818	3.76	6.65	At most 1 *

*(**) denotes rejection of the hypothesis at 5%(1%) significance level
L.R. test indicates 2 cointegrating equation(s) at 5% significance level

Unnormalized Cointegrating Coefficients:

PT	QT(-1)
5.03E-05	0.028596
4.05E-05	-0.012886

Normalized Cointegrating Coefficients: 1 Cointegrating Equation(s)

PT	QT(-1)	C
1.000000	568.4694 (178.873)	-14028.17
Log likelihood	-340.0259	

ملحق رقم (11)

نتائج تقدير نموذج صادرات الصمغ الخطي

System: SYS01

Estimation Method: Two-Stage Least Squares

Date: 07/18/12 Time: 17:12

Sample: 1980 2010

Included observations: 31

Total system (unbalanced) observations 91

	Coefficient	Std. Error	t-Statistic	Prob.
C(1)	5817301.	11760458	0.494649	0.6222
C(2)	933944.6	328133.3	2.846235	0.0056
C(3)	8210.071	1868.492	4.393955	0.0000
C(4)	939.2531	745.8120	1.259370	0.2116
C(5)	-5810589.	2644419.	-2.197303	0.0309
C(6)	24.44682	1.792483	13.63852	0.0000
C(7)	-0.000208	8.94E-05	-2.328165	0.0224
C(8)	-0.000185	0.000486	-0.380470	0.7046
C(9)	1892.346	1549.349	1.221381	0.2255
C(10)	-50.99166	65.70695	-0.776047	0.4400
C(11)	0.739490	0.138654	5.333349	0.0000

Determinant residual covariance 1.25E+22

Equation: $XT = C(1) + C(2)*QT + C(3)*PXT + C(4)*PT + C(5)*EXT$

Observations: 31

R-squared	0.678302	Mean dependent var	40439711
Adjusted R-squared	0.628810	S.D. dependent var	14946665
S.E. of regression	9106311.	Sum squared resid	2.16E+15
Durbin-Watson stat	1.717895		

Equation: $QT = C(6) + C(7)*COT + C(8)*PT(-1)$

Observations: 30

R-squared	0.347250	Mean dependent var	19.47667
Adjusted R-squared	0.298899	S.D. dependent var	7.659057
S.E. of regression	6.413067	Sum squared resid	1110.440
Durbin-Watson stat	0.861515		

Equation: $PT = C(9) + C(10)*QT(-1) + C(11)*PT(-1)$

Observations: 30

R-squared	0.604097	Mean dependent var	2689.179
Adjusted R-squared	0.574771	S.D. dependent var	3628.093
S.E. of regression	2365.864	Sum squared resid	1.51E+08
Durbin-Watson stat	1.521552		

ملحق رقم (12)

نتائج تقدير دالة قيمة صادرات الصمغ العربي الخطية

Dependent Variable: XT
Method: Least Squares
Date: 07/18/12 Time: 17:00
Sample: 1980 2010
Included observations: 31

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	5817301.	11760458	0.494649	0.6250
QT	933944.6	328133.3	2.846235	0.0085
PXT	8210.071	1868.492	4.393955	0.0002
PT	939.2531	745.8120	1.259370	0.2191
EXT	-5810589.	2644419.	-2.197303	0.0371
R-squared	0.678302	Mean dependent var	40439711	
Adjusted R-squared	0.628810	S.D. dependent var	14946665	
S.E. of regression	9106311.	Akaike info criterion	35.03352	
Sum squared resid	2.16E+15	Schwarz criterion	35.26481	
Log likelihood	-538.0196	F-statistic	13.70528	
Durbin-Watson stat	1.717895	Prob(F-statistic)	0.000004	

ملحق رقم (13)

نتائج مشكلة اختلاف التباين لدالة قيمة صادرات الصمغ الخطية

ARCH Test:

F-statistic	0.699064	Probability	0.410177
Obs*R-squared	0.730752	Probability	0.392639

Test Equation:

Dependent Variable: RESID^2

Method: Least Squares

Date: 07/18/12 Time: 20:23

Sample(adjusted): 1981 2010

Included observations: 30 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	5.96E+13	2.27E+13	2.629031	0.0137
RESID^2(-1)	0.156909	0.187667	0.836100	0.4102
R-squared	0.024358	Mean dependent var	7.09E+13	
Adjusted R-squared	-0.010486	S.D. dependent var	9.94E+13	
S.E. of regression	9.99E+13	Akaike info criterion	67.37346	
Sum squared resid	2.80E+29	Schwarz criterion	67.46687	
Log likelihood	-1008.602	F-statistic	0.699064	
Durbin-Watson stat	2.079917	Prob(F-statistic)	0.410177	

ملحق رقم (14)

مصفوفة الارتباطات لدالة قيمة صادرات الصمغ العربي

	QT	PXT	PT	EXT
QT	1.000000	-0.377136	-0.479951	-0.530736
PXT	-0.377136	1.000000	-0.159743	-0.222817
PT	-0.479951	-0.159743	1.000000	0.780282
EXT	-0.530736	-0.222817	0.780282	1.000000

ملحق رقم (15)

نتائج تقدير دالة كمية الانتاج الخطية

Dependent Variable: QT

Method: Least Squares

Date: 07/18/12 Time: 20:43

Sample(adjusted): 1981 2010

Included observations: 30 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	24.44682	1.792483	13.63852	0.0000
COT	-0.000208	8.94E-05	-2.328165	0.0276
PT(-1)	-0.000185	0.000486	-0.380470	0.7066
R-squared	0.347250	Mean dependent var	19.47667	
Adjusted R-squared	0.298899	S.D. dependent var	7.659057	
S.E. of regression	6.413067	Akaike info criterion	6.649192	
Sum squared resid	1110.440	Schwarz criterion	6.789311	
Log likelihood	-96.73788	F-statistic	7.181743	
Durbin-Watson stat	0.861515	Prob(F-statistic)	0.003156	

ملحق رقم (16)

نتائج اختبار مشكلة اختلاف التباين لدالة كمية الانتاج الخطية

ARCH Test:

F-statistic	11.20648	Probability	0.002411
Obs*R-squared	8.506096	Probability	0.003540

Test Equation:

Dependent Variable: RESID^2

Method: Least Squares

Date: 07/18/12 Time: 20:44

Sample(adjusted): 1982 2010

Included observations: 29 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	16.82635	11.90230	1.413705	0.1689
RESID^2(-1)	0.543063	0.162224	3.347609	0.0024
R-squared	0.293314	Mean dependent var	37.44356	
Adjusted R-squared	0.267140	S.D. dependent var	64.06920	
S.E. of regression	54.84788	Akaike info criterion	10.91348	
Sum squared resid	81223.81	Schwarz criterion	11.00777	
Log likelihood	-156.2454	F-statistic	11.20648	
Durbin-Watson stat	1.542782	Prob(F-statistic)	0.002411	

ملحق رقم (17)

مصفوفة الارتباطات لدالة كمية الانتاج الخطية

	COT	PT(-1)
COT	1.000000	0.723413
PT(-1)	0.723413	1.000000

ملحق رقم (18)

نتائج تقدير دالة سعر التركيز الخطية

Dependent Variable: PT

Method: Least Squares

Date: 07/18/12 Time: 20:48

Sample(adjusted): 1981 2010

Included observations: 30 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1892.346	1549.349	1.221381	0.2325
QT(-1)	-50.99166	65.70695	-0.776047	0.4445
PT(-1)	0.739490	0.138654	5.333349	0.0000
R-squared	0.604097	Mean dependent var	2689.179	
Adjusted R-squared	0.574771	S.D. dependent var	3628.093	
S.E. of regression	2365.864	Akaike info criterion	18.47031	
Sum squared resid	1.51E+08	Schwarz criterion	18.61043	
Log likelihood	-274.0547	F-statistic	20.59930	
Durbin-Watson stat	1.521552	Prob(F-statistic)	0.000004	

ملحق رقم (19)

نتائج اختبار مشكلة اختلاف التباين لدالة سعر التركيز الخطية

ARCH Test:

F-statistic	0.106911	Probability	0.746210
Obs*R-squared	0.114378	Probability	0.735214

Test Equation:

Dependent Variable: RESID^2

Method: Least Squares

Date: 07/18/12 Time: 20:49

Sample(adjusted): 1982 2010

Included observations: 29 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	4864359.	2836671.	1.714813	0.0978
RESID^2(-1)	0.062802	0.192070	0.326973	0.7462
R-squared	0.003944	Mean dependent var	5190315.	
Adjusted R-squared	-0.032947	S.D. dependent var	14071629	
S.E. of regression	14301559	Akaike info criterion	35.85611	
Sum squared resid	5.52E+15	Schwarz criterion	35.95040	
Log likelihood	-517.9136	F-statistic	0.106911	
Durbin-Watson stat	2.058347	Prob(F-statistic)	0.746210	

ملحق رقم (20)

مصفوفة الارتباطات لدالة سعر التركيز

	PT(-1)	QT(-1)
PT(-1)	1.000000	-0.451849
QT(-1)	-0.451849	1.000000

ملحق رقم (21)

نتائج تقدير نموذج صادرات الصمغ اللوغريثمي الكامل

تم حذف سعر التركيز في السنة السابقة من الدالة الثانية وكمية الانتاج في السنة السابقة من دالة سعر التركيز وبإضافة معامل التصحيح لدالة قيمة صادرات الصمغ ودالة كمية الانتاج .

System: SYS02

Estimation Method: Iterative Two-Stage Least Squares

Date: 07/18/12 Time: 17:12

Sample: 1981 2010

Included observations: 31

Total system (balanced) observations 90

Convergence achieved after 16 iterations

	Coefficient	Std. Error	t-Statistic	Prob.
C(1)	11.73428	1.129630	10.38772	0.0000
C(2)	0.467844	0.172928	2.705426	0.0084
C(3)	0.409944	0.122926	3.334881	0.0013
C(4)	0.154620	0.050038	3.090061	0.0028
C(5)	-0.298639	0.082162	-3.634748	0.0005
C(10)	0.389909	0.226855	1.718760	0.0896
C(6)	3.640181	0.244227	14.90492	0.0000
C(7)	-0.088571	0.027436	-3.228289	0.0018
C(11)	0.429259	0.174639	2.457981	0.0162
C(8)	0.559183	0.268412	2.083304	0.0405
C(9)	0.948651	0.044015	21.55282	0.0000

Determinant residual covariance 0.000671

Equation:

$\text{LOG}(\text{XT}) = \text{C}(1) + \text{C}(2) * \text{LOG}(\text{QT}) + \text{C}(3) * \text{LOG}(\text{PXT}) + \text{C}(4) * \text{LOG}(\text{PT}) + \text{C}(5) * \text{LOG}(\text{EXT}) + [\text{AR}(1) = \text{C}(10)]$

Observations: 30

R-squared	0.802189	Mean dependent var	17.44673
Adjusted R-squared	0.760978	S.D. dependent var	0.373435
S.E. of regression	0.182572	Sum squared resid	0.799979
Durbin-Watson stat	2.024636		

Equation: $\text{LOG}(\text{QT}) = \text{C}(6) + \text{C}(7) * \text{LOG}(\text{COT}) + [\text{AR}(1) = \text{C}(11)]$

Observations: 30

R-squared	0.567431	Mean dependent var	2.907273
Adjusted R-squared	0.535389	S.D. dependent var	0.343954
S.E. of regression	0.234447	Sum squared resid	1.484070
Durbin-Watson stat	1.682123		

Equation: $\text{LOG}(\text{PT}) = \text{C}(8) + \text{C}(9) * \text{LOG}(\text{PT}(-1))$

Observations: 30

R-squared	0.943150	Mean dependent var	5.452735
Adjusted R-squared	0.941120	S.D. dependent var	3.231346
S.E. of regression	0.784095	Sum squared resid	17.21454
Durbin-Watson stat	1.776719		

ملحق رقم (22)

نتائج تقدير دالة قيمة صادرات الصمغ اللوغريثمية

بإضافة معامل التصحيح

Dependent Variable: LOG(XT)

Method: Least Squares

Date: 07/19/12 Time: 06:44

Sample(adjusted): 1981 2010

Included observations: 30 after adjusting endpoints

Convergence achieved after 16 iterations

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	11.73428	1.129630	10.38772	0.0000
LOG(QT)	0.467844	0.172928	2.705426	0.0124
LOG(PXT)	0.409944	0.122926	3.334881	0.0028
LOG(PT)	0.154620	0.050038	3.090061	0.0050
LOG(EXT)	-0.298639	0.082162	-3.634748	0.0013
AR(1)	0.389909	0.226855	1.718761	0.0985
R-squared	0.802189	Mean dependent var	17.44673	
Adjusted R-squared	0.760978	S.D. dependent var	0.373435	
S.E. of regression	0.182572	Akaike info criterion	-0.386490	
Sum squared resid	0.799979	Schwarz criterion	-0.106251	
Log likelihood	11.79735	F-statistic	19.46554	
Durbin-Watson stat	2.024636	Prob(F-statistic)	0.000000	
Inverted AR Roots	.39			

ملحق رقم (23)

نتائج اختبار مشكلة اختلاف التباين لدالة صادرات الصمغ اللوغريثمية

بعد اضافة معامل التصحيح

White Heteroskedasticity Test:

F-statistic	1.503260	Probability	0.215187
Obs*R-squared	10.92417	Probability	0.206033

Test Equation:

Dependent Variable: RESID^2

Method: Least Squares

Date: 07/19/12 Time: 06:45

Sample: 1981 2010

Included observations: 30

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	5.779319	2.764910	2.090238	0.0489
LOG(QT)	-0.467849	0.460349	-1.016293	0.3211
(LOG(QT))^2	0.073420	0.074545	0.984902	0.3359
LOG(PXT)	-1.245917	0.671177	-1.856318	0.0775
(LOG(PXT))^2	0.077962	0.043789	1.780404	0.0895
LOG(PT)	0.003072	0.040288	0.076261	0.9399
(LOG(PT))^2	-0.001219	0.002925	-0.416865	0.6810
LOG(EXT)	-0.012524	0.020971	-0.597215	0.5567
(LOG(EXT))^2	-0.008458	0.005510	-1.534886	0.1397
R-squared	0.364139	Mean dependent var	0.026666	
Adjusted R-squared	0.121906	S.D. dependent var	0.036858	
S.E. of regression	0.034539	Akaike info criterion	-3.650146	
Sum squared resid	0.025051	Schwarz criterion	-3.229787	
Log likelihood	63.75219	F-statistic	1.503260	
Durbin-Watson stat	2.092604	Prob(F-statistic)	0.215187	

ملحق رقم (24)

نتائج تقدير دالة كمية الانتاج اللوغريتمية

بعد حذف سعر التركيز واطافة معامل التصحيح

Dependent Variable: LOG(QT)

Method: Least Squares

Date: 07/18/12 Time: 17:09

Sample(adjusted): 1981 2010

Included observations: 30 after adjusting endpoints

Convergence achieved after 5 iterations

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	3.640181	0.244227	14.90492	0.0000
LOG(COT)	-0.088571	0.027436	-3.228290	0.0033
AR(1)	0.429259	0.174639	2.457981	0.0207
R-squared	0.567431	Mean dependent var	2.907273	
Adjusted R-squared	0.535389	S.D. dependent var	0.343954	
S.E. of regression	0.234447	Akaike info criterion	0.031468	
Sum squared resid	1.484070	Schwarz criterion	0.171588	
Log likelihood	2.527978	F-statistic	17.70890	
Durbin-Watson stat	1.682123	Prob(F-statistic)	0.000012	
Inverted AR Roots	.43			

ملحق رقم (25)

نتائج اختبار مشكلة اختلاف التباين لدالة كمية الانتاج اللوغرتمية

بعد حذف سعر التركيز في السنة السابقة واطافة معامل التصحيح

White Heteroskedasticity Test:

F-statistic	1.066129	Probability	0.358393
Obs*R-squared	2.195770	Probability	0.333576

Test Equation:

Dependent Variable: RESID^2

Method: Least Squares

Date: 07/19/12 Time: 07:10

Sample: 1981 2010

Included observations: 30

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.126393	0.186543	0.677552	0.5038
LOG(COT)	-0.008878	0.058197	-0.152552	0.8799
(LOG(COT))^2	-4.56E-05	0.003941	-0.011571	0.9909
R-squared	0.073192	Mean dependent var		0.049469
Adjusted R-squared	0.004540	S.D. dependent var		0.100824
S.E. of regression	0.100595	Akaike info criterion		-1.660786
Sum squared resid	0.273223	Schwarz criterion		-1.520667
Log likelihood	27.91179	F-statistic		1.066129
Durbin-Watson stat	2.504332	Prob(F-statistic)		0.358393

ملحق رقم (26)

نتائج تقدير دالة سعر التركيز اللوغريتمية

Dependent Variable: LOG(PT)

Method: Least Squares

Date: 07/19/12 Time: 07:04

Sample(adjusted): 1981 2010

Included observations: 30 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.559183	0.268412	2.083304	0.0465
LOG(PT(-1))	0.948651	0.044015	21.55282	0.0000
R-squared	0.943150	Mean dependent var	5.452735	
Adjusted R-squared	0.941120	S.D. dependent var	3.231346	
S.E. of regression	0.784095	Akaike info criterion	2.415768	
Sum squared resid	17.21454	Schwarz criterion	2.509181	
Log likelihood	-34.23651	F-statistic	464.5241	
Durbin-Watson stat	1.776719	Prob(F-statistic)	0.000000	

ملحق رقم (27)

نتائج اختبار مشكلة اختلاف التباين لدالة سعر التركيز اللوغرتمية

White Heteroskedasticity Test:

F-statistic	0.896622	Probability	0.419747
Obs*R-squared	1.868400	Probability	0.392900

Test Equation:

Dependent Variable: RESID^2

Method: Least Squares

Date: 07/19/12 Time: 07:07

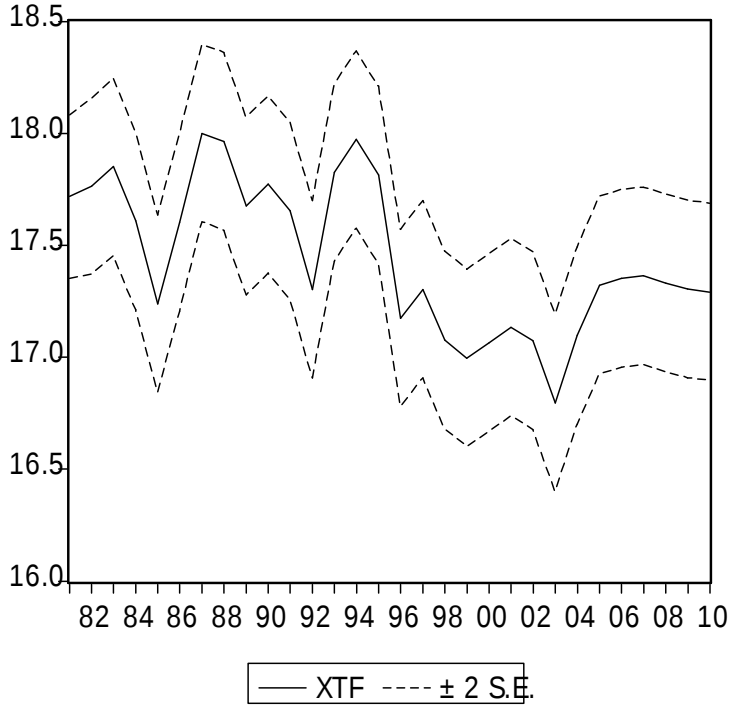
Sample: 1981 2010

Included observations: 30

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.105914	0.395199	0.268000	0.7907
LOG(PT(-1))	0.286695	0.217662	1.317155	0.1989
(LOG(PT(-1)))^2	-0.027186	0.021972	-1.237311	0.2266
R-squared	0.062280	Mean dependent var	0.573818	
Adjusted R-squared	-0.007181	S.D. dependent var	0.809503	
S.E. of regression	0.812404	Akaike info criterion	2.517001	
Sum squared resid	17.82000	Schwarz criterion	2.657121	
Log likelihood	-34.75502	F-statistic	0.896622	
Durbin-Watson stat	2.397973	Prob(F-statistic)	0.419747	

شكل رقم (1)

نتائج اختبار القدرة التنبؤية لثيل لدالة قيمة صادرات الصمغ

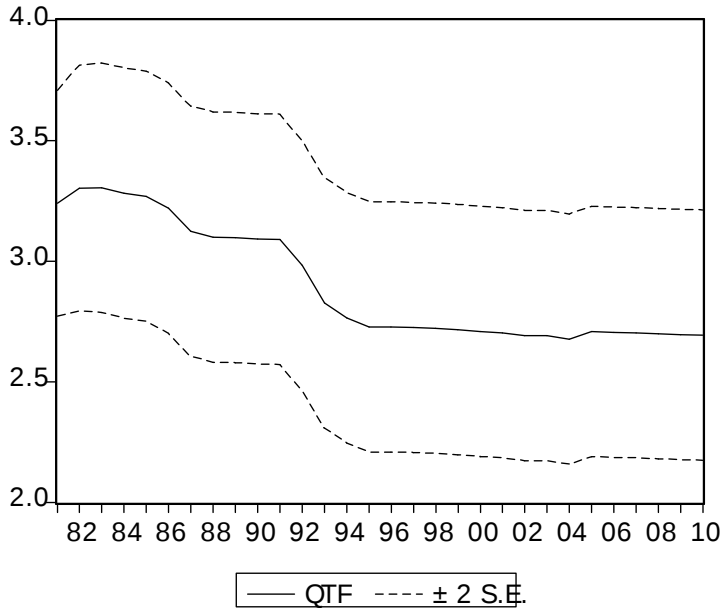


Forecast: XTF
Actual: LOG(XT)
Forecast sample: 1980 2010
Adjusted sample: 1981 2010
Included observations: 30

Root Mean Squared Error 0.176448
Mean Absolute Error 0.146465
Mean Abs. Percent Error 0.844662
Theil Inequality Coefficient 0.05056
Bias Proportion 0.000065
Variance Proportion 0.048300
Covariance Proportion 0.951635

شكل رقم (2)

نتائج اختبار القدرة التنبؤية لثيل لدالة كمية الانتاج

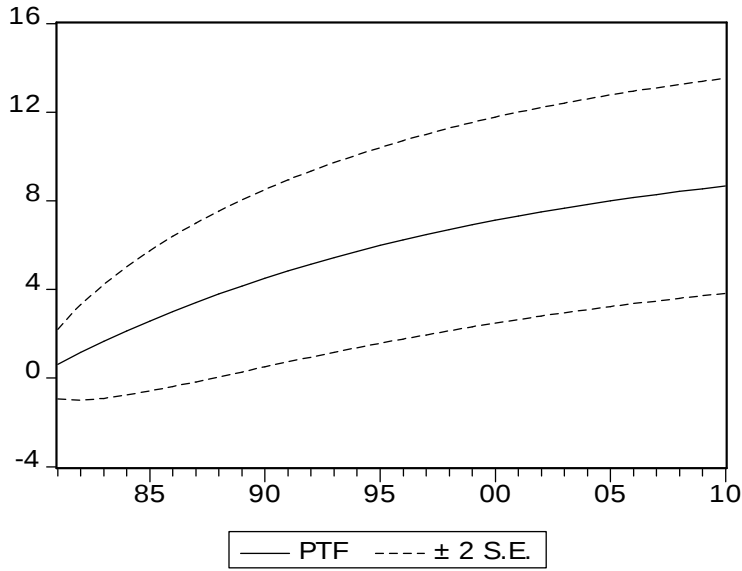


Forecast: QTF
Actual: LOG(QT)
Forecast sample: 1980 2010
Adjusted sample: 1981 2010
Included observations: 30

Root Mean Squared Error 0.251260
Mean Absolute Error 0.213989
Mean Abs. Percent Error 0.351378
Theil Inequality Coefficient 0.48053
Bias Proportion 0.000922
Variance Proportion 0.166628
Covariance Proportion 0.882450

شكل رقم (3)

نتائج اختبار القدرة التنبؤية لثيل لدالة شعر التركيز



Forecast: PTF
Actual: LOG(PT)
Forecast sample: 1980 2010
Adjusted sample: 1981 2010
Included observations: 30

Root Mean Squared Error 1.177020
Mean Absolute Error 0.956844
Mean Abs. Percent Error 1.22891
Theil Inequality Coefficient 0.95021
Bias Proportion 0.014836
Variance Proportion 0.473593
Covariance Proportion 0.511571