

**جامعة السودان للعلوم
والتكنولوجيا
كلية الدراسات العليا**

**تقدير دالة إنتاج السكر في السودان في
الفترة 1992-2008م**

: دراسة حالة شركة السكر السودانية

**Estimation of Sugar production
Function in Sudan: A case Study
of Sudan Sugar Company
(1992-2008)**

**بحث تكميلي لنيل درجة الماجستير في
الاقتصاد القياسي**

إعداد الطالب
إشراف الدكتورة

هاشم عبدالله ادم ضوالبيت
هويدا ادم الميع أحمد

مارس 2010م

البيانات الاقتصادية (1) الفصل الأول

Date: 01/22/10 Time: 14:19 Sample: 1992 2008 Included observations: 17				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-43.67798	8.834403	-4.944078	0.0003
LOG(L)	1.048020	0.339303	3.088748	0.0086
LOG(K)	0.087210	0.021652	4.027807	0.0014
LOG(M)	4.007580	0.647332	6.190915	0.0000
R-squared	0.930083	Mean dependent var	12.46969	
Adjusted R-squared	0.913949	S.D. dependent var	0.285424	
S.E. of regression	0.083728	Akaike info criterion	-1.920170	
Sum squared resid	0.091134	Schwarz criterion	-1.724120	
Log likelihood	20.32145	F-statistic	57.64522	
Durbin-Watson stat	1.920209	Prob(F-statistic)	0.000000	

Augmented Dickey-Fuller Test Equation (2) Date: 02/07/10 Time: 15:03

ADF Test Statistic	-3.867754	1% Critical Value*	-4.0681	
		5% Critical Value	-3.1222	
		10% Critical Value	-2.7042	
*MacKinnon critical values for rejection of hypothesis of a unit root.				
Augmented Dickey-Fuller Test Equation				
Dependent Variable: D(PRO,3)				
Method: Least Squares				
Date: 02/07/10 Time: 15:03				
Sample(adjusted): 1996 2008				
Included observations: 13 after adjusting endpoints				
Variable	Coefficient t	Std. Error	t-Statistic	Prob.
D(PRO(-1),2)	-1.770390	0.457731	-3.867754	0.0031
D(PRO(-1),3)	0.390509	0.304569	1.282169	0.2287
C	2110.581	6281.192	0.336016	0.7438
R-squared	0.687662	Mean dependent var	1565.610	
Adjusted R-squared	0.625194	S.D. dependent var	36226.43	
S.E. of regression	22178.32	Akaike info criterion	23.05079	
Sum squared resid	4.92E+09	Schwarz criterion	23.18117	
Log likelihood	-146.8302	F-statistic	11.00829	
Durbin-Watson stat	1.866605	Prob(F-statistic)	0.002973	

Augmented Dickey-Fuller Test Equation (3) 1995 2008

ADF Test Statistic	-3.101290	1% Critical Value*	-4.0113	
		5% Critical Value	-3.1003	
		10% Critical Value	-2.6927	
*MacKinnon critical values for rejection of hypothesis of a unit root.				
Augmented Dickey-Fuller Test Equation				
Dependent Variable: D(L,2)				
Method: Least Squares				
Date: 02/09/10 Time: 15:19				
Sample(adjusted): 1995 2008				
Included observations: 14 after adjusting endpoints				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(L(-1))	-1.505297	0.485378	-3.101290	0.0101
D(L(-1),2)	0.165528	0.301919	0.548253	0.5945
C	-198.8576	288.4381	-0.689429	0.5048
R-squared	0.658029	Mean dependent var	-	82.42857
Adjusted R-squared	0.595853	S.D. dependent var	1689.087	
S.E. of regression	1073.797	Akaike info criterion	16.98320	
Sum squared resid	12683429	Schwarz criterion	17.12014	
Log likelihood	-115.8824	F-statistic	10.58324	
Durbin-Watson stat	2.083713	Prob(F-statistic)	0.002735	

0000000 000 000 0000 00000000 0000 0000000 (4) 000 0000

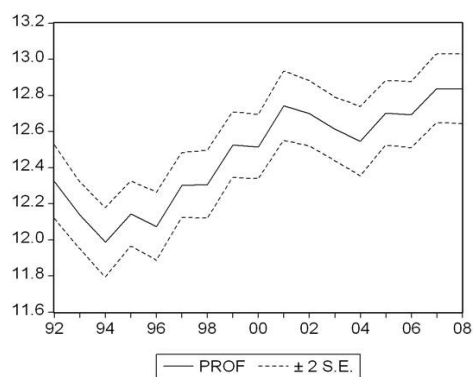
PP Test Statistic	-5.779942	1% Critical Value*	-3.9635	
		5% Critical Value	-3.0818	
		10% Critical Value	-2.6829	
*MacKinnon critical values for rejection of hypothesis of a unit root.				
Lag truncation for Bartlett kernel:	(Newsy-West suggests: 2)			
2				
Residual variance with no correction	60722374			
Residual variance with correction	58592963			
Phillips-Peron Test Equation				
Dependent Variable: D(K,2)				
Method: Least Squares				
Date: 02/09/10 Time: 16:01				
Sample(adjusted): 1994 2008				
Included observations: 15 after adjusting endpoints				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(K(-1))	-1.529867	0.266392	-5.742918	0.0001
C	2807.732	2252.031	1.246755	0.2345
R-squared	0.717275	Mean dependent var	-827.5573	
Adjusted R-squared	0.695527	S.D. dependent var	15169.60	
S.E. of regression	8370.441	Akaike info criterion	21.02637	
Sum squared resid	9.11E+08	Schwarz criterion	21.12077	
Log likelihood	-155.6977	F-statistic	32.98111	
Durbin-Watson stat	2.012654	Prob(F-statistic)	0.000068	

Augmented Dickey-Fuller Test Equation (5) $\Delta D(M,2)$

ADF Test Statistic	-6.093394	1% Critical Value*	-4.0113	
		5% Critical Value	-3.1003	
		10% Critical Value	-2.6927	
*MacKinnon critical values for rejection of hypothesis of a unit root.				
Augmented Dickey-Fuller Test Equation				
Dependent Variable: D(M,2)				
Method: Least Squares				
Date: 02/09/10 Time: 16:08				
Sample(adjusted): 1995 2008				
Included observations: 14 after adjusting endpoints				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
	t			
D(M(-1))	-1.401080	0.229934	-6.093394	0.0001
D(M(-1),2)	-0.006658	0.151684	-0.043893	0.9658
C	1210.764	360.5505	3.358099	0.0064
R-squared	0.847163	Mean dependent var	425.7143	
Adjusted R-squared	0.819374	S.D. dependent var	3031.797	
S.E. of regression	1288.517	Akaike info criterion	17.34778	
Sum squared resid	18263041	Schwarz criterion	17.48472	
Log likelihood	-118.4345	F-statistic	30.48597	
Durbin-Watson stat	2.203766	Prob(F-statistic)	0.000033	

White Heteroskedasticity Test (6)

White Heteroskedasticity Test:				
F-statistic	1.422711	Probability	0.296288	
Obs*R-squared	7.828789	Probability	0.250917	
Test Equation: Dependent Variable: RESID^2 Method: Least Squares Date: 02/09/10 Time: 16:13 Sample: 1992 2008 Included observations: 17				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
		t		
C	-25.51452	73.75582	-0.345932	0.7366
LOG(L)	-7.736194	3.653547	-2.117448	0.0603
(LOG(L))^2	0.399132	0.189202	2.109552	0.0611
LOG(K)	-0.004685	0.007910	-0.592303	0.5668
(LOG(K))^2	0.000222	0.000518	0.429229	0.6769
LOG(M)	11.16130	12.58459	0.886902	0.3960
(LOG(M))^2	-0.494121	0.557240	-0.886730	0.3960
R-squared	0.460517	Mean dependent var	0.005361	
Adjusted R-squared	0.136827	S.D. dependent var	0.004265	
S.E. of regression	0.003962	Akaike info criterion	-	
			7.931046	
Sum squared resid	0.000157	Schwarz criterion	-	
			7.587958	
Log likelihood	74.41389	F-statistic	1.422711	
Durbin-Watson stat	2.371183	Prob(F-statistic)	0.296288	



Forecast: PROF	
Actual: LOG(PRO)	
Forecast sample: 1992 2008	
Included observations: 17	
Root Mean Squared Error	0.073218
Mean Absolute Error	0.064617
Mean Abs. Percent Error	0.519114
Theil Inequality Coefficient	0.002935
Bias Proportion	0.000000
Variance Proportion	0.018118
Covariance Proportion	0.981882