

( )

%

% , % ,  
( )

:

( )

( )

:

:

% ,

( )

/ ,

/ ,

/ ,

-

( )

/ ,

% ,

( )

,

:

:

:

-

( )

% ,

:

-

( )

-

/

,

,

-

( )

- ( ) -

( - )

	F	R <sup>2</sup>	
1.74	26.4	0.77	$\hat{Y}_i = 284.4 + 8.03x - 0.37x^2$ (5.8)** (-4.7)**
0.013	17.7	0.69	$\hat{Y}_i = 46.95 + 0.829x - 0.048x^2$ (5.8)** (-5.95)**
90.1	46.1	0.86	$\hat{Y}_i = 13298.3 + 656.2x - 33.3x^2$ (9.03)** (-8.02)**
22.26	79.4	0.84	$\hat{Y}_i = 21.16 + 22.26x$ (8.91)**
0.797	8.1	0.59	$\hat{Y}_i = 16.7 + 1.4x - 0.163x^2 + 0.01x^3$ (3.54)* (-2.9)* (2.6)*
446.1	87.8	0.85	$\hat{Y}_i = 447.6 + 446.1x$ (9.37)**

\*

\*\*

( )

( )

% , /

( )

( )

( )

446.1

( )

% , % ,

:

( )

( )

/

/ ,

/

-

( )

( )

% ,

( )

( )

% ,

( )

( )

% ,

% ,

( - )

	F	R <sup>2</sup>	
20.31	73.1	0.83	$\hat{Y}_i = 27.9 + (8.55)^{**} x$
50.29	71.4	0.82	$\hat{Y}_i = 84.798 + 50.29 x (8.45)^{**}$
0.06	3.86	0.39	$\hat{Y}_i = 2.21 + 0.111 x - 0.006 x^2 (2.75)^* (-2.78)^*$
54.36	94.3	0.86	$\hat{Y}_i = 1055.8 + 54.36 x (9.71)^{**}$

\*

\*\*

( )

:

- ( ) -

.% , :  
 % , ( )  
 %  
 % , % ,  
 % , % ,  
 % , % ,  
 % , % ,  
 % , %

	%	%	%	%	
11.96	95.6	88.04	84.1		1997
19.97	94.1	80.03	80.7		1998
25.55	100.0	74.45	75.2		1999
25.53	97.6	74.47	80.0		2000
28.23	100.0	71.77	84.9		2001
28.86	100.0	71.14	77.3		2002
26.99	95.8	73.01	76.6		2003
26.84	99.1	73.16	75.2		2004
30.02	100.0	69.98	75.5		2005
31.95	98.8	68.05	73.1		2006
38.83	99.0	61.17	73.3		2007
32.05	91.3	67.95	79.0		2008
37.08	86.2	62.92	73.6		2009
49.71	93.9	50.29	73.1		2010
48.10	94.4	51.90	73.7		2011
50.07	93.4	49.93	72.8		2012
33.75	96.2	66.25	76.8		

( ) :

:

% ,  
 /  
 :  
 ( )  
 % ,  
 / ,  
 % ,  
 .% ,  
 : ( / )  
 ( )  
 / ,  
 % ,  
 :  
 /  
 % ,  
 % ,  
 ( )

- ( ) -

% ,

% ,

/

% ,

/

( )

% ,

:

-

:

-

325	318.4		
20.34	49.49	/	
2.56	4.12	/	
3994.7	8483.8	/	
7	12		
2099.3	4710.1	/	
1895.4	3773.6	/	
0.903	0.801		
0.129	0.067		
570.7	707	/	
1.9	1.8		
2090	90.41		
9.73	5.47	/	
1.22	0.46	/	
906.9	417.4	( )	
270.77	314.47	.( / )	

( )

:

:

:

-

, .

:

.

-

:

( )

.

-

:

( )

:

%

%

)

% ,

(

)

(

( )

%

)

- ( ) -

" "

(

( )

-

:

-

-

:

-

-

:

-

( )

( )

%

( )

%

( )

%

:

-

% ,

" " " "

% , % ,

" "



( )

( )

( )

% ,

%		/				
72.05	438.8	26.1	1570	1131.2	60.1	1997
72.96	432.6	26.1	1600	1167.4	61.3	1998
74.05	435.4	26.8	1678	1242.6	62.6	1999
77.41	406.7	28.2	1800	1393.3	63.9	2000
77.85	400.1	27.7	1806	1405.9	65.2	2001
68.60	628.0	30.1	2000	1372.0	66.5	2002
61.20	814.7	30.9	2100	1285.3	67.9	2003
62.25	830.6	31.7	2200	1369.4	69.3	2004
61.60	934.0	34.4	2432	1498.0	70.7	2005
61.71	977.6	35.4	2553	1575.4	72.2	2006
67.61	842.1	35.3	2600	1757.9	73.6	2007
58.81	1108	35.8	9026	1582.0	75.2	2008
58.62	1137	35.7	4827	1611.0	76.9	2009
75.75	637.5	33.4	2629	1991.5	78.7	2010
69.02	852.0	34.5	2750	1898.0	79.6	2011
69.14	895.0	35.6	2900	2005.0	81.4	2012
68.04	735.6	31.7	2253.5	1517.9	70.3	

	F	R <sup>2</sup>	
54.36	94.3	0.86	$\hat{Y}_i = 1055.8 + 54.36 x$ (9.71)
95.1	334.1	0.96	$\hat{Y}_i = 1445.1 + 95.1 x$ (18.3)
40.75	14.5	0.64	$\hat{Y}_i = 166.4 + 115.04 x - 4.37 x^2$ (3.26) (-2.2)*
0.74	65.4	0.89	$\hat{Y}_i = 23.01 + 1.59 x - 0.05 x^2$ (5.7) (-3.2)*

\*

. ( ) :

( )

( )

. ( )

% ,

)

(

( )

( )

% ,

% ,

%

/

. % ,

- ( ) -

:

:

-

:

$$Y_i = \alpha + \beta_1 X_{1i} + \beta_2 X_{2i} + \dots + \beta_n X_{ni} + EX_i$$

(Y)

(X's)

%

(X<sub>1i</sub>)

(X<sub>2i</sub>)

/

(X<sub>3i</sub>)

/

(X<sub>4i</sub>)

/

(X<sub>6i</sub>)

(X<sub>i</sub>)

%

:

:

:

$$\ln \hat{Y}_i = -2.164 + 3.234 \ln X_1 - 2.163 \ln X_2 + 3.123 \ln X_4$$

(8.6)

(-15.5)

(18.1)

R<sup>2</sup> = 0.99

F = 789.4

:  $\hat{Y}_i$  :

**Horizontal Integration Strategy**

i

: X<sub>1i</sub>

: X<sub>2i</sub>

: X<sub>4i</sub>

/

/

:

%

-

% %

**Vertical Integration Strategy**

**Forward Vertical**

-

:

**Integration**

:

-

**Backward Vertical**

-

**Integration**

/ ,

-

-

:

-

-

-

( )

. / ,

:

-

:

-

-

-

/ ,

( )

:

-

-

( )

-

. / ,

:

-

:

.( )

%

- ( ) -

:

%

%

:

:

( )

:

%

%

% , % , % ,

% , % , % , % , % ,

% , % , % , % , % , %

% , % , %

2654 2594

2714

:

:

%

%

% ,

% , % , % , % ,

% , % , % , % , % ,

% , % ,

% , % , % , % ,





:

% ,

.% ,

.

,

,

,

/

,

% ,

.

.

% ,

%

.

-

, ,

/

, ,

, ,

,

:

.

,

-

% ,

.

( )

( )

( )

( )

( )

( )

( )

( )

( )

## SUMMARY

### **An Economic Study of Production, Consumption and Sugar Industry in Egypt**

Hany Said Abd- Elrhman El- Shatla, Amr Abdel Hamied Refaat

The problem of this research has been identified as the growing gap of sugar despite the increase achieved in the production of sugar and the increase in the number of plants of sugar beet in recent years. Therefore, the main objective of this research is to study and analyze some economic variables associated with the production, consumption and sugar industry in Egypt.

The results of this research show that the area of sugar cane and sugar beet crops during the period (1997- 2012), has increased by 1.74, 22.3 thousand feddan respectively, while production has increased by 90.1, 446.1 thousand tons respectively. This means an increase in the total amount of sugar output of both crops by 1517.9 thousand tons. Economic indicators for sugar cane and sugar beet showed an increase in the profitability per Egyptian pound invested in the season by about 12.7%, as well as the measure of the ratio of total revenue to the costs by about 5.6%. Efficiency indicators per unit of water show that sugar beet is higher than sugar cane by about 117.3%.

The result shows that the total sugar production is increasing annually at significant statistically rate of 54.4 thousand tons. National consumption of sugar has increased by 95.1 thousand tons; sugar is growing annually by 40.8 thousand tons, and average per capita consumption increased by 0.74 kg/year. Results show that the most important factors affecting sugar gap in Egypt are per capita consumption of sugar, the number of Population, and total amount of sugar.

Due to necessity of sugar and lack of production, too much consumption, the researchers have tried to propose different scenarios to maintain self- sufficiency in sugar at least in short run, upon calculations it seems possible in short run, while in long- run the only possible way to achieve self- sufficiency is to expand cultivated area of sugar beet and improve the Efficiency of both agriculture and Industry.

Keywords; Consumption of sugar cane and sugar beet, Sugar Production, Efficiency Indicators, Sugar Gap.

	/			/		
1143.0	17.89	63.90	13725.5	47.16	291.0	1997
1951.2	18.80	103.78	14352.8	49.24	291.5	1998
2559.7	19.94	128.40	15253.6	49.65	307.2	1999
2890.4	21.31	135.62	15705.8	49.25	318.9	2000
2857.7	20.04	142.64	15571.5	49.91	312.0	2001
3168.3	20.60	153.80	16030.3	49.53	323.6	2002
2691.5	20.50	131.32	16245.5	49.65	327.2	2003
2860.5	20.29	140.98	16334.8	49.92	327.2	2004
3429.5	20.50	167.33	16317.3	50.77	321.4	2005
3904.0	20.95	186.40	16656.3	50.96	326.9	2006
5458.2	22.00	249.2	17014.2	50.7	335.1	2007
5132.6	19.92	257.67	16470.2	50.90	323.6	2008
5333.5	20.16	264.60	15482.2	48.88	316.7	2009
7840.3	20.33	385.69	15708.9	49.04	320.3	2010
7486.1	20.69	422.8	15765.2	48.43	325.5	2011
9126.1	21.54	432.4	15550.5	47.74	325.7	2012
4239.5	20.34	210.4	15761.5	49.49	318.4	

( / )	( )	( )	( / )	( )	( )	
2.21	135.3	61.1	4.07	995.9	244.8	1997
2.39	233.1	97.7	3.97	934.3	235.3	1998
2.47	317.5	128.4	4.00	925.1	231.0	1999
2.69	355.7	132.3	4.07	1037.6	255.2	2000
2.78	396.9	142.6	3.81	1009.5	265.0	2001
2.58	396.1	153.8	3.90	976.5	250.3	2002
2.76	346.9	125.8	3.74	938.4	250.6	2003
2.63	367.5	139.7	4.07	1001.9	245.9	2004
2.69	449.7	167.3	4.32	10148.3	242.5	2005
2.73	503.3	184.2	4.48	1072.1	239.1	2006
2.77	682.6	246.8	4.38	1075.3	245.6	2007
2.16	507.2	2395.3	4.20	1075.3	255.8	2008
2.62	597.2	228.0	4.35	1013.5	233.1	2009
2.73	990.0	362.0	4.28	1001.5	234.0	2010
2.29	913.0	399.0	4.10	985.00	240.0	2011
2.49	1004.0	404.0	4.22	1001.0	237.0	2012
2.56	512.3	200.5	4.12	1006.0	244.1	