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The Implementation Impact of the World Trade Agreement on the Most Important Agricultural Crops

Prof. Nagwa Mousad Al Agroudy; Prof. Nayera Yahya Solieman

Professors of Agricultural Economics, The National Research Centre

ABSTRACT

The research aims to study the economic impacts on the profitability and cost of acre production for the wheat maize, rice, barley, cotton and clover crops as important grains, oils and fibers crops. Clover is considered as the main crop for feeding the animal wealth before and after the full implementation of the free trade agreement. The study has used the measuring figures as a suitable means for measuring these impacts through calculating the averages of the two periods (2002-2005) and (2006-2009). The study has found the cultivation price rising in the comparison period that its level in the main period. This has led to the increase of acre profitability by rates estimated about 165.68%, 125.57%, 71.3%, 669.37%, 25.24% and 212.52% for the wheat ,maize, rice, barley, cotton and clover crops successively. The study has found that the acre yield increase for the wheat and cotton crops in the comparison period than its level in the main period led to the acre profitability increase by about 3.51% and 69.63% successively. Meanwhile the acre yield decrease in the comparison period than its level in the main period led to acre profitability decrease by almost 15.83%, 2.57%, 83.26% and 47.29% for the maize, rice, barley and clover crops successively. The findings have also indicated the rising of production cost in the comparison period than its level in the main period by about 32%, 30.62%, 29.5%, 42.03%, 72.1%, 8.32% for the wheat, maize, rice, barley, cotton and clover crops successively. The study indicates all cost terms have increasingly affected acre production cost for all investigated crops except the manure cost value which led to the reduction of acre production cost for the rice crop. The animal's wages and pesticides value led to the reduction of clover acre production cost. Therefore, the subsidy cancellation of production requirements and the private sector intervention in its trade as an activating step of the free trade agreement led to the increase of acre production cost and at the same time led to the increase of cultivation prices which subsequently affected the acre profitability of the investigated crops.

KEY WORDS: The measuring figures - The profitability of acre production-The cost of acre production.

INTRODUCTION

Egypt started to be committed to implement the terms of the General Agreement on Tariffs and Trade (GATT); which was later administered by the World Trade Organization (WTO) effective January 1995 conditioned that implementation is carried out through a ten-year period. This is similar to the developing countries which fully implemented the agreements' terms in 2005. Agriculture agreement is one of the important agreements included in Uruguay session which has a great impact on the developing countries either positive or negative according to the circumstances of each country due to the nature and production process circumstances in each country separately. Egypt is one of the states which have been slowly marching towards the technological development. This development requires transformation from the oriented-economic system to the free economic system.

Thesis statement:

The Egyptian agricultural sector with its production and producers is considered as one of the most important economic sectors affected by the results of implementing that agreement. The domestic product of the economic sector represents about 13.6% of the GDP and the human workforce in the field of agriculture forms about 28.9% of the manpower in the national economy. The agricultural exports represent about 14.8% of the total Egyptian exports, while the agricultural imports represent about 8.4% of the total Egyptian imports. Egypt has cancelled the subsidy for the production requirements and relied on the market mechanism in transforming to the free economic system.

*Corresponding Author: Nagwa Mosaad El-Agroudy, National Research Centre Agricultural Economics, Department, El-Bhouth St. Dokki, Giza, Cairo, Egypt. E-mail: nagwa_agroudy@hotmail.com Mob: +20105270782

Aim of the study:

The study aims to show the sequent impacts on the implementation of the world trade agreement on the studied most important agricultural crops through studying the quantitative, relative and absolute impact of the agreement on both: the acre profitability and the acre cost.

RESEARCH METHOD AND DATA COLLECTION

The study has relied on the secondary published data issued by the ministry of agriculture and land reclamation. The study has made use of the other relevant studies as well.

The study has applied the measuring figures method which is considered as one of the most important statistical techniques that help measure the relationships between independent variables on the one hand another dependent variable on the other hand in order to achieve the objective of the study. The method is also useful in isolating the effect of these independent factors on the dependent factor. The study duration is divided into the main period (2002-2005) which represents the previous period to the conclusion of the world trade agreement whose variables are coded as (O): comparison period (2006-2009) which represents the period following the agreement implementation whose variables are coded as (I). Therefore, the early mentioned measuring figures method is used as follows:

First: quantitative measurement of the relationship between acre profitability and expected changes to occur in the effective factors:

The most important variables responsible for the determination of acre profitability of a particular crop can be restricted as follows:

1. Acre vield (q).

Cultivation price (p).
 Acre production cost ©.

Acre profitability (II) of a certain crop can be expressed by the following equation:

$$\Pi = qp$$
-

Therefore, the simple measuring figure of acre profitability (I II) of a particular crop takes the following form: (1)

 $I \Pi = \underline{\Pi}_1 = \underline{q}_1 \underline{p}_1 \underline{-c}_1 \quad X \quad 100$ Π_0 $q_0 p_0 - c_0$

To show the impact of different component factors of acre profitability on the resulted variables, the former measuring figure is divided into the following components:

(2)

1. Simple measuring figure of acre profitability resulted from the acre yield change (I IIq):

 $\underline{q_1 p_0 - c_0} X 100$ $I \Pi q =$ $q_0 p_0 - c_0$

2. Simple measuring figure of acre profitability resulted from cultivation price change (I IIp):

I Пр = $\underline{q_1p_1-c_0} X 100$ (3)

$$q_1 p_0 - c_0$$

3. Simple measure figure of acre profitability resulted from the change of acre production cost (I IIc): (4)

 $\underline{q}_1 \underline{p}_1 \underline{-c}_1 X 100$ $q_1 p_1 - c_0$

Where the multiple outcomes of the measuring figures represented by numbers (2), (3) and (4) give the measuring figure of acre profitability represented in equation no. (1). As most of the study outcomes are of two types; one is primary and the other is secondary and because of the significance of the secondary outcomes, they are taken into considerations when conducting the calculation processes. For the purpose of easiness these secondary outcomes are transformed into their primary equivalents by using the following equation:

$$q^{\tilde{}} = q_1 + \underline{p}_2 \underline{q}_2$$
$$p_1$$

 $I \Pi_{C} =$

Where p1, q1 represent the cultivation price and acre yield of a primary crop, while p2, q2 stand for the cultivation price and acre yield of the secondary crop.

Second: quantitative measurement of the relationship between acre production and the expected changes in its component terms: The responsible terms for acre production cost of a certain crop (C) could be classified as follows:

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- 1. Rental (R)
- 2. Labor wages (L).
- 3. Machines wages (M).
- 4. Chemical fertilizers value (F1).
- 5. Other expenditure value (O).
- 6. Seeds value (S).
- 7. Farmyard manure value (F2).
- 8. Animals' wages (A).
- 9. Pesticide value (T).

1.

2.

The terms of acre production cost are arranged within the measuring figure according to their relative significance to the cost of acre production for all investigated crops during the main period. Therefore, the acre production cost is mathematically expressed as follows:

$$C = R + L + M + F_1 + O + S + F_2 + A + T$$

Therefore, the measuring figure of the acre production cost (IC) of the investigated crops could be expressed as follows:

$$IC = \frac{R_{I} + L_{I} + M_{I} + F_{1I} + O_{I} + S_{I} + F_{2I} + A_{I} + T_{I}}{R_{O} + L_{O} + M_{O} + F_{1O} + O_{O} + S_{O} + F_{2O} + A_{O} + T_{O}}$$
(5)

To show the effect of different components of acre production cost on the resulted changes, the former measuring figure is divided into the following components:

The measuring figure of acre production cost according to the rental value change (IR).

$$IR = \underline{R_{I}} + \underline{L_{O}} + \underline{M_{O}} + \underline{F_{1O}} + \underline{O_{O}} + \underline{S_{O}} + \underline{F_{2O}} + \underline{A_{O}} + \underline{T_{O}} \quad x \ 100 \tag{6}$$

 $R_0+L_0+M_0+F_{10}+O_0+S_0+F_{20}+A_0+T_0$ The measuring figure of acre production cost according to the labors value change (IL).

$$IL = \frac{R_{l} + L_{l} + M_{0} + F_{10} + O_{0} + S_{0} + F_{20} + A_{0} + T_{0}}{R_{10} + R_{10} + R_{10} + C_{0} + S_{0} + F_{20} + A_{0} + T_{0}} \times 100$$
(7)

 $R_{I}+L_{O}+M_{O}+F_{1O}+O_{O}+S_{O}+F_{2O}+A_{O}+T_{O}$

3. The measuring figure of acre production cost according to the machines value change (IM).

$$IM = \frac{R_{1} + L_{1} + M_{1} + F_{10} + O_{0} + S_{0} + F_{20} + A_{0} + T_{0}}{R_{1} + L_{1} + M_{0} + F_{10} + O_{0} + S_{0} + F_{20} + A_{0} + T_{0}}$$
()

4. The measuring figure of acre production cost according to the chemical fertilizers value change (F1).

$$I F_{1} = \underline{R}_{1} + \underline{L}_{1} + \underline{M}_{1} + \underline{F}_{11} + \underline{O}_{0} + \underline{S}_{0} + \underline{F}_{20} + \underline{A}_{0} + \underline{T}_{0} \quad x \ 100 \tag{9}$$

- $R_{I}+L_{I}+M_{I}+F_{10}+O_{0}+S_{0}+F_{20}+A_{0}+T_{0}$
- 5. The measuring figure of acre production cost according to the other expenditures value change (IO).

$$IO = \underline{R_{l} + L_{l} + M_{l} + F_{1l} + O_{l} + S_{0} + F_{20} + A_{0} + T_{0}}_{R_{l} + L_{l} + M_{l} + F_{1l} + O_{0} + S_{0} + F_{20} + A_{0} + T_{0}}$$
(10)

6. The measuring figure of acre production cost according to seeds value change (IS).

$$IS = \frac{R_{I} + L_{I} + M_{I} + F_{1I} + O_{I} + S_{I} + F_{2O} + A_{O} + T_{O}}{X 100}$$
(11)

- $R_{I}\!\!+ L_{I}\!\!+ M_{I}\!\!+ F_{1I}\!\!+ O_{1}\!\!+ S_{O}\!\!+ F_{2O}\!\!+ A_{O}\!\!+ T_{O}$
- 7. The measuring figure of acre production cost according to the farmyard manure value change (IF2).

$$IF_{2} = \underline{R_{l} + L_{l} + M_{l} + F_{1l} + O_{l} + S_{l} + F_{2l} + A_{0} + T_{0}}_{R_{l} + L_{l} + M_{l} + F_{1l} + O_{l} + S_{l} + F_{20} + A_{0} + T_{0}}$$
(12)

8. The measuring figure of acre production cost according to the animals' wages value change (IA). IA = $\underline{R_l + L_l + M_l + F_{1l} + O_l + S_l + F_{2l} + A_l + T_O} \times 100$ (13)

 $R_{I} + L_{I} + M_{I} + F_{1I} + O_{I} + S_{I} + F_{2I} + A_{O} + T_{O}$

9. The measuring figure of acre production cost according to the pesticides value change (IT). $IT = \frac{R_{I} + L_{I} + M_{I} + F_{1I} + O_{I} + S_{I} + F_{2I} + A_{I} + T_{I}}{X 100}$ (14)

$$_{I}+L_{I}+M_{I}+F_{1I}+O_{I}+S_{I}+F_{2I}+A_{I}+T_{O}$$

R

Where the multiple outcomes of the measuring figures represented in the 6-14 equations resulted in the measuring figure of the acre production cost which equation no. (5) represents.

RESULTS AND DISCUSSION

First: the quantitative, relative and absolute impact of implementing the world trade agreement on the acre profitability:

1. Wheat crop:

Table no.1 shows that by using the current prices, the acre profitability measuring figure of the wheat crop reached about 187%. This refers to the acre profitability increase in the second comparison period after the implementation of world trade agreement compared to its level during the main period by about 87%. That is, the absolute increase estimated by L.E. 1414 due to the rising cultivation prices in the second period than in the main period by almost 165.7%. That is, the absolute increase estimated L.E. 2787.7. Meanwhile the acre yield increase led to the acre profitability increase in the second comparison period compared to the main period about 3.5%. That is, the absolute increase estimated by L.E. 57. Meanwhile, the Ardab production cost increase during the comparison period led to the reduction of acre profitability by 32%. That is, absolute reduction estimated about L.E. 1430.2.

2. Maize crop:

Table no. 1 shows the measuring figure of acre profitability of maize reached about 131.7%. it refers to the acre profitability increase during the comparison period than its level in the main period by about 34.7%. That is, the absolute increase valued L.E. 515. The increase is related to the cultivation prices increase during the comparison period than its level during the main period estimated about 125.6%. That is, the absolute increase valued about L.E. 1715.7. Meanwhile the acre yield reduction of maize during the comparison period than its level during the main period led to acre profitability reduction by almost 15.83%. That is, absolute reduction estimated almost L.E. 257. Meanwhile the rising of ardab production cost during the comparison period than its level during the main period led to acre profitability reduction by about 30.62%. That is, absolute reduction valued about L.E. 943.61.

4. Rice crop:

Table no. 1 shows the measuring figure of acre profitability of rice crop estimated about 117.68%. The increase refers to acre profitability during the comparison period than its level during the main period by about 17.68%. That is, the absolute increase valued almost L.E. 367.25. The increase is attributed to the rising of cultivation prices during the comparison period than its level during the main period by about 71.3%. That is, the absolute increase valued about L.E. 1443. Meanwhile acre yield reduction of rice drop during the comparison period than its level during the main period by about 2.57%. That is, the absolute reduction valued about L.E. 53.26. Meanwhile, the rising of ton production cost of rice during the comparison period than its level during the main period led to acre profitability reduction by almost 29.5%. That is, the absolute reduction valued about L.E. 1022.5.

Statement	crop	wheat	maize	rice	barely	cotton	clover	total
First: acre profitability (L.E.)	1- ₀ ∏	1625.25	1623.25	2077	1312.67	2354.33	3184	12176.5
	2-П	3039.33	2138.33	2444.25	980	1395.25	4809	14806.16
	$3-(q_1p_0-c_0)$	1682.27	1366.27	2023.74	219.71	3993.64	1678.41	9043.60
	4- $(q_1 p_1 - c_0)$	4469.53	3081.94	3466.73	1690.39	5001.65	5245.36	18199.08
Second: measuring figures of acre profitability due to the change	1-All factors (2/1) %	187	131.73	117.68	74.66	59.26	151.04	121.60
	2-acre yield (3/1) %	103.51	84.17	97.43	16.74	169.63	52.71	74.27
	3-cultivation price(4/3) %	265.68	225.57	171.30	769.37	125.24	312.52	201.24
	4-acre cost (2/4) %	68	69.38	70.5	57.97	27.90	91.68	81.36
Third: absolute change of acre profitability (L.E.) due to the change.	1-All factors (2-1)	1414.08	515.08	367.25	332.67-	959.08-	1625	2629.5
	2-acre yield (3-1)	57.02	256.98-	53.26-	1092.96-	1639.31	1505.59-	3132.9-
	3-cultivation price (4-3)	2787.26	1715.68	1442.99	1470.68	1008.01	3566.95	9155.48
	4-acre cost (2-4)	1430.2-	943.61-	1022.48-	710.39-	3606.4-	436.36-	3392.92

Table no. (1): The measuring figures of acre profitability and the occurred changes for the most important investigated crops and the average of the two periods (2002-2005) and (2006-2009) using the current prices.

Source: collected and calculated from reference no. 4.

4. Barley crop:

Table no. 1 indicates that by using the current prices that the measuring figures of acre profitability of barley estimated about 74.7%. It refers to the acre profitability reduction during the comparison period than its level during the main period by about 25.34%. That is, the absolute reduction valued about L.E. 332.7. The reduction is attributed to that of acre yield of barley during the comparison period than its level in

the main period by about 83.26%. That is, the absolute reduction valued almost L.E. 1093. The measuring figure of acre profitability due to the rising cultivation prices estimated about 769.4%. That is, the absolute increase valued about L.E.1470.7. Meanwhile the rising of ardab production cost during the comparison period than its level in the main period led to acre profitability reduction by about 42% That is, the absolute reduction valued about L.E. 710.4.

5. Cotton crop:

Table no. 1 shows the measuring figure of acre profitability of cotton crop estimated about 59.3%. It refers to the acre profitability reduction during the comparison period than its level in the main period by about 40.74%. That is, the absolute reduction valued almost L.E. 959.1. This reduction is attributed to the increase of cotton crop kintar production cost than its level in the main period by almost 72.1%. That is, the absolute reduction valued about L.E. 3606.4. Meanwhile the rising of acre yield in the comparison period than its level during the main period led to acre profitability increase by almost 69.6%. That is, the absolute increase valued about L.E. 1639.3. Meanwhile the measuring figure of acre profitability of the cotton crop estimated about 125.24% in the comparison period compared to the main period by an absolute increase estimated about L.E. 1008 due to the increase of cotton cultivation prices. 6. Clover crop:

Table no. 1 shows the measuring figure of acre profitability of clover crop estimated 151.04%. This indicates the acre profitability increase in the comparison period than its level during the main period by about 51%. That is, the absolute increase valued L.E. 1625. The increase is attributed to the rising of cultivation prices in the comparison period than its level in the main period by about 212.52%. That is, the absolute increase valued L.E. 3566.95. Meanwhile the reduction of clover acre profitability led to acre profitability reduction by almost 47.29%. That is, the absolute reduction valued L.E. 1505.59. Meanwhile the rising of ton production cost in the comparison period led to the reduction of acre profitability by about 8.32%. That is, the absolute reduction valued about L.E. 436.36 in the comparison period than its level in the main period. Therefore, it is evident that the acre profitability could be increased through affecting its component factors. For instance, acre yield increase leads to acre profitability increase as in the cases of cotton and wheat crops. Meanwhile acre yield reduction of other crops led the reduction of their acre profitability. As to cultivation prices, their increase led to acre profitability increase for all investigated crops in the current prices. Finally, the rising of acre production cost caused acre profitability reduction for all investigated crops.

Second: quantitative, relative and absolute measurement of impact of implementing the world trade agreement on the acre production terms:

Using equations no. (5-14) in studying the development of each of the component terms' effect of the acre production cost of the investigated crops during the second period (2006-2009) as compared to the main period (2002-2005), the following results tabled in table no. 2 are concluded and show: - The impact of rental value of the acre production cost.

The rental value led to the increase of acre production cost in the current prices with different proportions ranged between a minimum rate estimated about 18.18% valued almost L.E. 199.87 for the clover crop; and a maximum rate estimated 32.79% valued about L.E. 751.08 for the cotton crop. This is attributed to the relative stability of agricultural rentals due to the amendment of the landlord-tenant relationship law which the state adopted to put the possession statue in the agricultural sector on the right tack.

- Labor-wages impact on acre production cost:

The increase of labor wages led to the increase of acre production cost by different rates ranged between a minimum rate estimated about 0.84% valued almost L.E. 10.83 for the clover crop and a maximum rate estimated about 10.92% valued about L.E. 259.67 for the maize crop. This is attributed to the lack of skilled agricultural labors as compared to their demand.

- Machine-wages impact on acre production cost:

The increase of machine-wages led to the increase of acre production cost by different rates ranged between a minimum rate estimated about 2% valued about L.E. 66.08 for the cotton crop and a maximum rate estimated 5.78% valued almost L.E. 103.17 for the barley crop. This is attributed to the increase of machines supply in accordance with the agriculture mechanism policy. - Chemical fertilizer value impact on acre production cost:

The chemical fertilizer value led to the increase of acre production cost by different rates ranged between a minimum rate estimated almost 3.72% valued about L.E 50.5 for the clover crop and a maximum rate estimated about 8.02% valued about L.E. 216.9 for the maize crop. This is attributed to the liberalization of chemical fertilizer trade, subsidy cancellation of production requirements, private sector incomes from its trade and farmers extravagancy in using it.

- Other expenditures impact on acre production cost:

The increase of other expenditure led to the increase of acre production cost of the investigated crops by different rates ranged between a minimum rate estimated 1.3% valued almost L.E. 42.8 for the rice crop and a maximum rate estimated about 4% valued about L.E. 56.33 for the clover crop.

- Seeds value impact on acre production cost:

The seeds value led to the increase of acre production cost of the investigated crops by different rates ranged between a minimum rate estimated about 0.77% valued about L.E 25.75 for the rice crop and a maximum rate estimated about 1.89% valued about L.E. 50.33 for the wheat crop. This is attributed to subsidy cancellation and private sector incomes resulted from seeds trade.

-Farmyard manure value impact on acre production cost:

There is different increase of acre production cost of the investigated crops due to the manure increased value except for the rice crop which ranged between a minimum rate estimated about 0.17% valued almost L.E. 5 for the wheat crop and a maximum rate estimated almost 3.24% valued about L.E. 48 for the clover crop.

-Animal's wages impact on acre production cost:

The animals' wages led to the acre production cost slight increase in the investigated crops except for the clover and cotton crops. The increase ranged between a minimum rate estimated about 0.08% and a maximum rate estimated almost 0.18% valued almost L.E. 2.42% and L.E. 3.83 for the maize and barley crops successively. This is attributed to the replacement of agriculture mechanism instead of the animal work in the Egyptian agriculture.

Table no. (2): measuring figures for acre production cost and the resulted changes in the investigated crops of the two periods' average (2002-2005) and (2006-2009) in the current prices:

crops of the two periods at engle (2002 2000) and (2000 2000) in the editent proces.								
Statement		wheat	maize	rice	barely	cotton	clover	total
Acre production cost in L.E. according to different terms	The first term	19354.75	1954.00	2295.67	1274.33	2290.66	1095.50	10845.91
	The second term	2365.33	2378.33	2884.50	1624.16	3041.74	1294.67	13588.73
	The third term	2568.60	2638.00	3030.17	1783.58	3305.49	1305.50	14631.34
	The fourth term	2690.33	2706.00	3144.59	1886.75	3371.57	1356.50	15155.74
	The fifth term	2857.25	2922.92	3279.17	1998.00	3516.57	1407.00	15980.91
	The sixth term	2914.58	3022.17	3322.00	2054.17	3573.24	1463.33	16349.49
	The seventh term	2964.91	3058.59	3347.75	2092.92	3615.16	1480.00	16559.33
	The eighth term	2969.91	3801.01	3337.42	2118.34	3638.58	1528.00	16693.26
	The ninth term	2972.58	3103.43	3342.42	2122.17	3638.58	1520.08	16699.26
	The tenth term	3016.00	3116.67	3361.00	2159.75	3642.50	1520.00	16815.93
measuring	All terms (10/1) %	155.80	159.50	146.41	169.48	159.00	138.75	155.04
figures for acre production cost resulted from a change	Rental (2/1) %	122.19	121.72	125.65	127.45	132.79	118.18	125.29
	labors wages (3/2) %	108.60	110.92	105.05	109.82	108.67	100.84	107.67
	machines wages (4/3) %	104.74	102.58	103.78	105.78	102.00	103.91	103.58
	chemical fertilizers (5/4) %	106.20	108.02	104.28	105.90	104.30	103.72	105.44
	other expenditures (6/5) %	102.00	103.40	101.31	102.81	101.61	104.00	102.31
	Seeds (7/6) %	101.89	101.21	100.77	101.73	101.17	101.14	101.28
	Manure (8/7) %	100.17	101.39	99.69	101.21	100.65	103.24	100.81
	animals' wages(9/8) %	100.10	100.08	100.15	100.18	100.00	99.48	100.04
	Pesticides (10/9) %	101.46	100.43	100.55	101.77	100.11	99.99	100.70
Absolute change in acre production cost in L.E. resulted from a change.	All terms (10-1)	1080.25	1162.68	1065.33	885.17	1351.84	4 24.50	5970.02
	Rental (2-1)	429.58	424.33	588.33	349.83	751.08	199.87	2742.82
	labors wages (3-2)	203.27	259.67	145.67	159.42	263.75	10.83	3785.43
	machines wages (4-3)	121.73	68.00	114.42	103.17	66.08	51.00	524.4
	chemical fertilizers (5-4)	166.92	216.92	134.58	111.25	145.00	50.50	825.17
	other expenditures (6-5)	57.33	99.25	42.83	56.17	56.67	56.33	368.58
	Seeds (7-6)	50.33	36.42	25.75	38.75	41.92	16.67	209.84
	Manure (8-7)	5.00	42.42	(10.33)	25.42	23.42	48.00	133.93
	animals' wages (9-8)	2.67	2.42	5.00	3.83	-	(7.92)	6.00
	Pesticides (10-9)	43.42	13.25	18.58	37.58	3.92	(0.08)	116.67

Source: collected and calculated from reference no. (4).

Where I = :	
The first term	$= R_0 + L_0 + M_0 + F_{10} + O_0 + S_0 + F_{20} + A_0 + T_0$
The second term	$= R_1 + L_0 + M_0 + F_{10} + O_0 + S_0 + F_{20} + A_0 + T_0$
The third term	$= R_1 + L_1 + M_0 + F_{10} + O_0 + S_0 + F_{20} + A_0 + T_0$
The fourth term	$= R_1 + L_1 + M_1 + F_{10} + O_0 + S_0 + F_{20} + A_0 + T_0$
The fifth term	$= R_1 + L_1 + M_1 + F_{11} + O_0 + S_0 + F_{20} + A_0 + T_0$
The sixth term	$= R_1 + L_1 + M_1 + F_{11} + O_1 + S_0 + F_{20} + A_0 + T_0$
The seventh term	$= R_1 + L_1 + M_1 + F_{11} + O_1 + S_1 + F_{20} + A_0 + T_0$
The eighth term	$= R_1 + L_1 + M_1 + F_{11} + O_1 + S_1 + F_{21} + A_0 + T_0$
The ninth term	$= R_1 + L_1 + M_1 + F_{11} + O_1 + S_1 + F_{21} + A_1 + T_0$
The tenth terms	$= R_1 + L_1 + M_1 + F_{11} + O_1 + S_1 + F_{21} + A_1 + T_1$

- Pesticides value impact on acre production cost:

The increase of pesticides value led to the increase of acre production cost of the investigated crops except for the clover crop. The increase ranged between a minimum rate estimated 0.11% valued about L.E. 3.92 and a maximum rate estimated almost 1.77% valued about L.E. 37.58 from the wheat and barley crops successively. The increase is attributed to pesticides trade liberalization, subsidy cancellation of the production requirements and private sectors incomes resulted from its trade.

The most important results and recommendations:

The full implementation of world trade agreement has some positive and negative impacts. These impacts can be restricted in the increase of acre profitability in the comparison period for the wheat, maize, rice and clover crops. However, the negative impacts are represented in the acre profitability reduction in the comparison period for the cotton and barley crops. It is found as well that all terms of production cost increased in the comparison period for all crops.

In light of the study findings, below are the most important recommendations:

- The state should adopt the activation of the Egyptian farmer's role to encourage him for the cultivation work in order to ensure that he will not migrate internally or abroad looking for higher wage to provide higher living standard for his family. The activation success means the possibility of achieving market balance for the Egyptian agricultural work through providing financial and intellectual support for the farmer. This could be done through displaying the production developments in the form of seminars or courses carried out by the agricultural guide. It highlights the important role of the agricultural guide that the state should also support his role through wages rising; providing external scientific tasks which contribute to foreign-experience transfer through the Egyptian capabilities and the non-independence on foreign experts' employment. This will contribute to save the high wages obtained by the foreign experts within Egypt as compared to the Egyptian wages.

- The state should adopt the funding-rental law in order to dominate the rising prices of agricultural machines cost whose negative impact is evident on production cost and hence the reduction of cultivation profits of different crops.

- The state should adopt the farmers-support policy by various methods through providing low interest softloans or supporting production requirements like seeds, pesticides and fertilizers that should be available for farmers at the agricultural credit banks or agricultural associations so as to diminish the private sector monopoly. It resulted in the last period from the rising of production requirements prices which led to the reduction of cultivation profits of various agricultural goods particularly the important strategic goods. It led as well to the farmers tend to cultivate the most profitable goods in order to cope with the high living standards. It has a negative impact on the Egyptian agriculture deterioration and the reliance on imports to provide the people needs. It led also to the Egyptian exports deterioration of the most important crops on which Egypt has relied to meet its needs of hard currency.

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