CURRENT SITUATION AND OUTLOOK OF FOREIGN AGRICULTURAL TRADE BETWEEN EGYPT AND MAIN INTERNATIONAL BLOCKS

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Abstract

Research mainly aimed to identify the current situation of foreign agricultural trade between Egypt and member countries of the EU, Arab Countries, the COMESA, QIZ and the GATT, based on data for the period 1994-2017. The research relied on quantitative and descriptive statistical. The research also applied the Standard Econometric Model of Foreign Trade to foreign agricultural trade variables. Agricultural trade exports with member countries of the EU has been increasing by LE33.2 million/year. Agricultural imports are increasing annually by about $ 29.23 million.

In regards to evolution of foreign agricultural trade between Egypt and COMESA, findings revealed that exports value has been increasing by LE9.59 million/year, while imports value has been increasing by LE12.16 million/year. Turning to evolution of foreign agricultural trade between Egypt and GATT, findings revealed that exports value has been increasing by LE61.49 million/year, while imports value has been increasing by LE124.37 million/year.

Results of applying the econometric model for trade balance revealed that, in the demand side, per capita share of agricultural exports value has a statistically significant positive relationship with per capita share of agricultural production value and exchange rate, while has statistically insignificant negative relationship with per capita share of agricultural imports value and the value of trade between Egypt and member countries of the COMESA and the QIZ. It was also found that such variables are responsible for 94% of the change in per capita share of agricultural exports value.

In the supply side, results revealed that per capita share of agricultural imports value has a statistically significant positive relationship with per capita share of total consumption value in US$ and per capita share of agricultural exports, while has statistically insignificant negative relationship with per capita share of agricultural investment value in Egyptian Pound, exchange rate in Egyptian Pound and the value of trade between Egypt and member countries of the COMESA. It was also found that such variables are responsible for 82% of the change in per capita share of agricultural imports value.

As for the equilibrium equation, results revealed that per capita share of the value of deficit in agricultural trade balance has a positive relationship with per capita share in total consumption value in US$, per capita share of agricultural investment in US$, and the value of agricultural trade with member countries of the QIZ as a transition variable. However, such effect did not prove statistically significant. On the other hand, it was found that per capita share of the value of deficit in agricultural trade balance has a positive relationship with exchange rate (LE/US$) and the value of foreign agricultural trade with member countries of the COMESA. However, such effect did not prove statistically significant. Analysis results revealed that the variables under study are responsible for 50% of the change in Egypt's balance of agricultural trade.

Keywords: Foreign Agricultural Trade- countries of the EU -COMESA- QIZ.

Introduction

Foreign trade sector is of great importance in the economic activity of any country as it reflects its real economic situation. As one of the main pillars for the economic structure and national income, the importance of this sector has increased in today's world that is witnessing significant changes that put it before a new era. Average value of foreign trade for the period (2015-2017) amounted to US$88.17 billion accounting for 34% of the Gross National Income estimated at 209.053, where advancement in the means of communication and revolution in modern technology had the greatest impact on the increasing growth and importance of international trade. On the other hand, evolutions in foreign trade sector reflect the production structure of the national economy, level of employment, prices, income and the impacts of economic policies. It worth mentioning that, if the relationship between foreign trade sector and other sectors of the national economy stems from the nature of the role and functions it plays in serving other economic sectors, the importance of this relationship stems from linking economic growth closely with the ability to import and the amount of hard currency earned from exports

considering that exports value is addition to the economy, where average agricultural exports value amounted to US$4.085 billion, representing 17.6% of the total value of Egyptian exports estimated at US$23.17 billion for the period (2015-2017), while average agricultural imports value amounted to US$10.865 billion representing 16.7% of the total imports value estimated at US$ 65 billion for the same period (Central Agency for Public Mobilization and Statistics, 2015-17).

The Concept of Foreign Trade

Foreign trade is one of vital sectors for any society (economy), whether developed or developing, where it connects countries and communities with each other, in addition to broadening the marketing ability by opening new marketing windows for the countries' products and boosting countries' welfare by broadening the base of choices in the fields of consumption, investment and allocation of production resources. Moreover, it is an essential indicator of the country's production and competitive ability in international markets given the fact that such indicator is related to the production potential available for a given country, its exports and imports ability and income levels,

and the impacts of such variables on the country's balance of hard currency and the associated impact on the balance of trade.

Research Problem

Although Egypt has entered into trade exchanges, particularly agricultural, with several international economic blocs, especially with member countries of the European Union, Arab States, COMESA, QIZ and the GATT, the volume of exchange over the period 1994-2017 is still below that targeted. To address this problem, it is necessary to explore the means and mechanisms that help in strengthening trade exchange between Egypt and economic blocks since implementing such agreements alone is not sufficient to increase and develop intra-regional trade with these blocs; rather, it requires additional means for developing such trade.

Research Objective

The research mainly aims to identify the current situation and evolution of foreign agricultural trade between Egypt and member countries of the European Union, Arab States, COMESA, QIZ and the GATT over the period (1994-2017), in addition to identifying the main influencing domestic and external variables in a trial to reach the sound ways of developing such sector. Therefore, the research aims to achieve the following:

1. Identify the current state of foreign agricultural trade between Egypt and the international economic blocs under study.

2. Studying the main domestic and external economic variables influencing agricultural trade between Egypt and the international economic blocs under study.

3. Reaching recommendations and suggestions that contribute to promoting and enhancing agricultural trade between Egypt and the international economic blocs under study.

Materials and Methods

To achieve its objectives, the research relied on quantitative and descriptive statistical methods such as regression analysis, in addition to using simple mathematics, like percentages, in describing the achieved results. The research also applied the Standard Econometric Model of Foreign Trade to foreign agricultural trade variables.

Estimating the Standard Econometric Model for Foreign Agricultural Trade Variables

The Standard Econometric Model of Egypt's Agricultural Trade Balance reflects the nature of relationships between agricultural exports and imports on the one side, and factors influencing each of them on the other side. Such economic relations of the model can be defined for three countries as described as below (Diab, 2010).

1. **Demand Function:** expresses average per capita share of agricultural exports' value over the study period. It represents foreign demand for Egyptian agricultural commodities. It is also the positive side of agricultural trade balance. Such relationship expresses average per capita share of agricultural exports' value in year (t) as a function of average per capita share of agricultural production value in year (t), exchange rate per US$ in year (t), average per capita share of agricultural imports' value in year (t), in addition to a number of dummy variables that reflect the impact of trade with member countries of the European Union, Arab States, COMESA, QIZ and the GATT.

2. **Supply Function:** expresses average per capita share of agricultural imports' value over the study period. It represents internal demand for Egyptian agricultural commodities. It is therefore the negative side of agricultural trade balance. Such relationship expresses average per capita share of agricultural imports' value in year (t) as a function of exchange rate per US$ in year (t), average per capita share of total consumption value in year (t-1), average per capita share of agricultural investments' value in year (t), in addition to a number of dummy variables that reflect the impact of trade with member countries of the European Union, Arab States, COMESA, QIZ and the GATT.

3. **Equilibrium Function:** expresses the relationship between average per capita share of deficit in the balance of agricultural trade. It is the outcome of demand and supply functions. Equilibrium can be expressed by the agricultural trade balance function assuming that: average per capita share of deficit in the balance of agricultural trade in year (t) is a function of exchange rate per US$ in year (t), average per capita share of consumption value in year (t-1), average per capita share of agricultural investments' value in year (t-1), in addition to a number of dummy variables that reflect the impact of trade with member countries of the European Union, Arab States, COMESA, QIZ and the GATT.

Model Equations:

$$Y_{1t} = f(X1t, X2t, Y2t, Z1, Z2, Z3, Z4, Z5) \quad .... (1)$$

$$Y_{2t} = f(X2t, X3t-1, X4t-1, Y1t, Z1, Z2, Z3, Z4) \quad .... (2)$$

$$Y_{3t} = f(X2t, X3t-1, X4t-1, Z1, Z2, Z3, Z4, Z5) \quad .... (3)$$

Type of Variables in the Model

a. **Endogenous Variables: these are determined inside the model:**

Y_{1t} = Average per capita share of agricultural exports' value in year (t), Y_{2t} = Average per capita share of agricultural imports' value in year (t),

Y_{3t} = Average per capita share of deficit in the balance of agricultural trade in year (t)

b. **Exogenous Variables: these are determined outside the model. They can either be predetermined, or take the form of lagged variables:**

X_{1t} = average per capita share of agricultural production value in year (t),

X_{2t} = exchange rate per US$ in year (t),

X_{3t-1} = average per capita share of agricultural total consumption value in year (t),

X_{4t-1} = average per capita share of agricultural investments' value in year (t),

Z_3 = European Union; takes the value 0 for the period 1994/2002 and 1 for the next period

Z_4 = COMESA; takes the value 0 for the period 1994/1997 and 1 for the next period

Z_5 = QIZ; takes the value 0 for the period 1994/2002 and 1 for the next period

Arab States (Z_1) are placed with COMESA (Z_4) as they coincide with Egypt in terms of trade period, while the GATT (Z_2) are placed with the EU (Z_3).

Sources of Data

The research mainly relied on data published by several institutions, the most important of which is the Economic Affairs Sector of the Ministry of Agriculture and Land Reclamation, in addition to the website of the Central Agency for Public Mobilization and Statistics, website of United Nations. Moreover, the research used some data and statistics published by other institutions on the internet.

Results and Discussion

Evolution of Foreign Trade with Main Economic Blocks

Information Regarding the Economic Blocks under Study

Member Countries of the European Union :

1. The European Union EU) consists of 28 member states. In 1957, six core states founded the EU. Nowadays, the EU consists of twenty republican states, six monarchies and one governed by a Grand Duke. Croatia is the last country to join the Union on July 1, 2013 (https://ar.wikipedia.org/wikipedia.org,2019)

COMESA (The Common Market for Eastern and Southern Africa)

The Common Market for Eastern and Southern Africa (COMESA) is a free trade area with twenty-one member states stretching from Tunisia to Eswatini. It was formed in 1994, replacing a Preferential Trade Area which had existed since 1981. Nine of the member states formed a free trade area in 2000 (Djibouti, Egypt, Kenya, Madagascar, Malawi, Mauritius, Sudan, Zambia and Zimbabwe), with Rwanda and Burundi joining the FTA in 2004, the Comoros and Libya in 2006, Seychelles in 2009 and Tunisia and Somalia in 2018. COMESA is one of the pillars of the African Economic Community (https://ar.wikipedia.org/wikipdia.org,2019)

GATT

GATT refers to The General Agreement on Tariffs and Trade. It is a legal agreement between many countries with the overall purpose to promote international trade by reducing or eliminating trade barriers such as tariffs or quotas. According to its preamble, its purpose was the "substantial reduction of tariffs and other trade barriers and the elimination of preferences, on a reciprocal and mutually advantageous basis."

The main principals and purposes of GATT are:

- Liberalization of international trade.
- Eliminating barriers to trade between countries.
- Resolving international trade disputes through negotiations.
- Creating favorable international climate and preparing for the establishment of the World Trade Organization.
- Comprised paragraphs of international legal tone, the most important of which is the reciprocity in respect to the transport of goods by binding countries through which the goods pass to devote great care to the goods as if they were their own goods.

All member States have committed themselves to the principle of non-discrimination between goods and to solving problems through the GATT Charter, which binds States that have ratified it (https://specialties.bayt.com/ar/specialties/q/118711/,2019)

Egyptian QIZ

In December 14, 2004, the Egyptian government signed the Qualifying Industrial Zones (QIZ) Protocol with the US and Israel, which entered into force in 2005 as a precautionary measure against the expected negative impacts of ending the preferential treatment of Egyptian products in the US market following the activation of Egypt's commitments in accordance with the WTO agreements (GATT). Egypt was encouraged by the success of the Jordanian QIZ experience on the one hand, and on the other hand, this agreement is a step in the way of reaching a free trade agreement with the United States. According to the QIZ protocol, Egyptian products are allowed to enter the US markets without customs or specific quotas, provided that the Israeli component in these products does not exceed 11.7%. The aim of this protocol is to open the door for Egyptian exports to the US market, which can absorb 40% of the world consumption without adhering to the quotas' system, which are expected to reach US$ four billion over the next five years, especially in the light of implementing the GATT as of January 1, 2005.

The following is a review of the main features of Egypt's foreign agricultural trade with major global economic blocs over the study period (1994-2017)

(www.sis.gov.eg/section/4501/441?lang=ar,2019).

1. **Evolution of Foreign Agricultural Trade between Egypt and Member Countries of the EU**

Average value of Egyptian agricultural exports to member countries of the European Union reached US$ 413.87 million over the study period. The estimated regression equation No. 1 in Table 1 indicates that exports value has been increasing by US$ 33.2 million per annum, an increase that proved statistically significant at 0.01 level. Results also indicate that time variable is responsible for 88% of such increase.

On the other hand, average value of Egyptian agricultural imports from member countries of the European Union reached US$ 478.78 million over the study period. Results of the estimated regression equation No. 2 in Table 1 indicate that imports value has been increasing by US$ 29.23 million per annum, an increase that proved statistically significant at 0.01 level. Results also indicate that time variable is responsible for 76% of such increase.

2. **Evolution of Foreign Agricultural Trade between Egypt and Member Countries of the COMESA**

Average value of Egyptian agricultural exports to member countries of the COMESA reached US$ 94.59 million over the study period. Results of the estimated regression equation indicate that exports value has been increasing by US$ 9.59 million per annum, an increase that proved statistically significant. Results also indicate that time variable is responsible for 60% of such increase, as clear from equation 3 in Table 1.

As for the average value of Egyptian agricultural imports from member countries of the COMESA, it reached

US$ 198.68 million over the study period. Results of the estimated regression equation No. 4 in Table 1 indicate that imports value has been increasing by US$ 12.16 million per annum, an increase that proved statistically significant. Results also indicate that time variable is responsible for 72% of such increase in the value of agricultural exports.

3. Evolution of Foreign Agricultural Trade between Egypt and Member Countries of the GATT

Average value of Egyptian agricultural exports to member countries of the GATT reached US$ 805.9 million over the study period. Results of the estimated regression equation indicate that exports value has been increasing by 61.49 million US$ per annum, an increase that proved statistically significant. Results also indicate that time variable is responsible for 92% of such increase, as clear from equation 5 in Table 1.

As for the average value of Egyptian agricultural imports from member countries of the GATT, it reached 2365.4 million US$ over the study period. Results of the estimated regression equation No. 6 in Table 1 indicate that imports value has been increasing by 124.37 million US$ per annum, an increase that proved statistically significant. Results also indicate that time variable is responsible for 71% of such increase in the value of agricultural exports.

Table 1: Estimated Regression Equations for Evolutions in the Value of Agricultural Trade between Egypt and Major Economic Blocks over the Period 1995-2017

Equation No.	Dependent Variable $\hat{Y}_t$	Estimated Equation	Annual Average	R^2	F
(1)	Egyptian Agricultural Exports to Member Countries of the EU	$\hat{Y}_t = -1.38 + 33.2\ X_t$	413.87	0.88	163.52*
(2)	Egyptian Agricultural Imports from Member Countries of the EU	$\hat{Y}_t = -34.6 + 29.23\ X_t$	478.78	0.76	88.38*
(3)	Egyptian Agricultural Exports to Member Countries of the COMESA	$\hat{Y}_t = -25.2 + 9.59\ X_t$	94.54	0.92	128.15*
(4)	Egyptian Agricultural Imports from Member Countries of the COMESA	$\hat{Y}_t = -27.18 + 12.16\ X_t$	198.68	0.72	72.72*
(5)	Egyptian Agricultural Exports to Member Countries of the GATT	$\hat{Y}_t = 37.18 + 61.49\ X_t$	805.9	0.92	128.15*
(6)	Egyptian Agricultural Imports from Member Countries of the GATT	$\hat{Y}_t = 29.39 + 124.37\ X_t$	2365.4	0.71	67.3*

$\hat{Y}_t$ = Estimated value of the dependebt variable in million US$ in year t

X_t = Time variable in year t, where t = 1, 2, 3 23

* Significant at 0.01 level

Source: results of applying regression analysis to data extracted from the electronic database of Central Agency for Public Mobilization and Statistics for the period 1994-2017.

Estimation of the Econometric Model

This part focuses on estimating the Econometric Model for Egypt's Balance of Trade using data presented in Table 2. The model comprises a demand function, a supply function and an equilibrium function. Results indicate the following:

1. **Demand Equation:** demand equation in the context of this research expresses average per capita share of agricultural exports value. It is clear from equation Y_1 in Table 2 that average per capita share of agricultural exports value has a statistically significant positive relationship with average per capita share of agricultural production value and exchange rate, while has a statistically insignificant negative relationship with average per capita share of agricultural imports value and the value of trade between Egypt and each of the COMESA and the QIZ. Results also indicate that such variables are responsible for 94% of the changes in average per capita share of agricultural exports value.

2. **Supply Equation:** supply equation in the context of this research expresses average per capita share of agricultural imports value. It is clear from equation Y_2 in Table 2 that average per capita share of agricultural imports value has a statistically significant positive relationship with average per capita share of total consumption value in US$ and average per capita share of agricultural exports, while has a statistically insignificant negative relationship with per capita share of agricultural investment and exchange rate, both in Egyptian Pound, and the value of trade between Egypt and the COMESA. Results also indicate that such variables are responsible for 82% of the changes in average per capita share of agricultural imports value.

3. **Equilibrium Equation:** supply equation in the context of this research expresses average per capita share of the value of deficit in the Balance of Agricultural Trade. It is clear from equation Y_3 in Table 2 that Agricultural Trade Balance has a statistically significant positive relationship with per capita share of total consumption value in US$, per capita share of agricultural investment in Egyptian Pound, and the value of agricultural trade between Egypt and member countries of the QIZ as a transition variable (insignificant). It was also found that Egypt' Agricultural Trade Balance has a statistically insignificant relationship with exchange rate (LE/US$) and the value of agricultural trade with countries of the COMESA as a transition variable. Results also indicate that such variables are responsible for 50% of the changes in Egypt' Agricultural Trade Balance.

It is therefore clear that it is highly important to increase the value of agricultural production in order to raise per capita share of the value of agricultural exports, an objective that cannot be reached without improving the quality of agricultural products and increasing productivity, in addition to exerting efforts to reduce the value of agricultural imports, either by reducing the volume of imports or seeking markets inside the economic blocks from which Egypt can import for prices cheaper than the current import markets.

In regards to per capita share of agricultural imports value, it can be reduced by reducing the value of total consumption, which can be achieved either by reducing

losses in consumed commodities, or rationalizing consumption to levels that match those recommended by the World Health Organization. It can also be reduced by increasing Egypt's agricultural exports value and agricultural investment value, in addition to increasing the value of agricultural trade exchange with the COMESA countries, where such variables have an inverse relationship with per capita share of agricultural imports value.

Moreover, in order to reduce per capita share of deficit in agricultural trade balance, efforts should be exerted to reduce total consumption value, where it has a positive relationship with per capita share of deficit in agricultural

trade balance, in addition to reducing the volume of agricultural trade with member countries of the QIZ and increasing it with member countries of the COMESA.

Based on the achieved results, the research recommends devoting efforts towards reducing agricultural consumption and increasing the volume of trade with member countries of the COMESA, in addition to boosting the value of agricultural production by improving productivity, which can be achieved by adopting modern agricultural technologies in farming, including high yielding, climate tolerant and drought tolerant varieties, which eventually helps in increasing the value of agricultural investments in Egypt.

Table 2: Equations of the Econometric Foreign Trade Model for Egypt's Agricultural Trade with Main Economic Blocks over the Period 1994-2017.

Equation	Variable	Coefficient	T	$\overline{R}^2$	Durbin Watson
Demand Y1	a	-72.062	5.3655	0.9731	1.2971
	X1	0.2405	4.8163		
	X2	5.5383	4.8265		
	Y2	-0.1758	1.7581		
	Z4	-3.659	1.1234		
	Z5	-7.7538	1.4981		
Supply Y2	a	22.934	1.3825	0.8211	2.3721
	X2	-0.8199	0.5452		
	X3	0.2184	3.5806		
	X4	0.1219	0.18621		
	Y1	1.2099	2.4632		
	Z4	-8.6933	0.8106		
EquilibriumY3	a	19.625	1.0880	0.5008	2.3680
	X2	-0.900	0.6077		
	X3	0.0218	3.5806		
	X4	0.1219	0.1219		
	Z4	-11.55	11.5502		
	Z5	8.519	8.519		

Source: Results of Applying the Econometric Analysis Model to Data on Foreign Egyptian Agricultural Trade with Main Economic Blocks over the Period, 1994-2017)
(unstats.un.org/unsd/snaama/basic//http,2019).

Summary

Foreign trade sector is of great importance in the economic activity of any country as it reflects its real economic situation. As one of the main pillars for the economic structure and national income, the importance of this sector has increased in today's world that is witnessing significant changes that put it before a new era. It is worth mentioning that average value of foreign trade for the period 2015-2017 amounted to US$88.17 billion accounting for 34% of the Gross National Income, while average agricultural exports value amounted to US$4.085 billion, representing 17.6% of the total value of Egyptian exports estimated at US$23.17 billion for the period (2015-2017), and average agricultural imports value amounted to US$10.865 billion representing 16.7% of the total imports value estimated at US$ 65 billion for the same period. And despite entering into trade exchange agreements with a number of the international economic blocks, especially the EU, Arab Countries, the COMESA, QIZ and the GATT, Egypt's volume of trade exchange over the period 1994-2017 is still below the hoped for target. Therefore, the current research mainly aimed to identify the current situation of foreign agricultural trade between Egypt and member countries of the EU, Arab Countries, the COMESA, QIZ and

the GATT, based on data for the period 1994-2017. To achieve its objectives, the research relied on quantitative and descriptive statistical methods such as regression analysis, in addition to using simple mathematics, like percentages, in describing the achieved results. The research also applied the Standard Econometric Model of Foreign Trade to foreign agricultural trade variables. Finding revealed that Gross National Product has been increasing by LE 8464 million/year and time variable is responsible for 72% of such increase. In addition, agricultural trade with member countries of the EU has been increasing by LE33.2 million/year and time variable is responsible for 76% of such increase. In regards to evolution of foreign agricultural trade between Egypt and member countries of the COMESA, findings revealed that exports value has been increasing by LE9.59 million/year, and that time variable is responsible for 60% of such increase, while imports value has been increasing by LE12.16 million/year, and that time variable is responsible for 72% of such increase. Turning to evolution of foreign agricultural trade between Egypt and member countries of the GATT, findings revealed that exports value has been increasing by LE61.49 million/year, and that time variable is responsible for 92% of such increase, while imports value has been increasing by LE124.37 million/year,

and that time variable is responsible for 71% of such increase.

Results of applying the econometric model for trade balance revealed that, in the demand side, per capita share of agricultural exports value has a statistically significant positive relationship with per capita share of agricultural production value and exchange rate, while has statistically insignificant negative relationship with per capita share of agricultural imports value and the value of trade between Egypt and member countries of the COMESA and the QIZ. It was also found that such variables are responsible for 94% of the change in per capita share of agricultural exports value.

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As for the equilibrium equation, results revealed that per capita share of the value of deficit in agricultural trade balance has a positive relationship with per capita share in total consumption value in US$, per capita share of agricultural investment in US$, and the value of agricultural trade with member countries of the QIZ as a transition variable. However, such effect did not prove statistically significant. On the other hand, it was found that per capita share of the value of deficit in agricultural trade balance has a positive relationship with exchange rate (LE/US$) and the value of foreign agricultural trade with member countries of the COMESA. However, such effect did not prove statistically significant. Analysis results revealed that the variables under study are responsible for 50% of the change in Egypt's balance of agricultural trade.

Based on the achieved results, the research offered a set of recommendation, including devoting efforts towards reducing agricultural consumption and increasing the volume of trade with member countries of the COMESA, in addition to boosting the value of agricultural production by improving productivity, which can be achieved by adopting modern agricultural technologies in farming, including high yielding, climate tolerant and drought tolerant varieties, which eventually helps in increasing the value of agricultural investments in Egypt.

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