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AN ECONOMIC STUDY ON EGYPTIAN ORANGE EXPORTS AND ITS COMPETITIVENESS IN THE INTERNATIONAL MARKETS

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ABSTRACT: Foreign trade plays a major role in the implementation of the economic development programs, especially in developing countries. The goals and national orientation represented by export development which ensures the continuation of development efforts consequently are increasing employment opportunities, improving living standards of citizens and decrease the deficit in the trade balance, especially in light of rapid global changes. This changes requires the necessity of providing a competitive advantage for export commodities. That competitive advantage result from the interaction between economic growth stability. Moreover, the development of the private sector, education, productivity and efficiency, which affects the degree of integration in the global economy. From this standpoint, the agricultural sector plays an important role in developing the economy by its contribute in developing the exports. According to CAPMAS data the Egyptian orange is considered one of the most important exported fruits in Egypt trade, as its export value about 493.28 million dollars, which represents 11.3% of the value of Egyptian agricultural exports, which equal 4391.915 million dollars, during the average period (2014-2017). Moreover, Egyptian orange prices in the international markets are more competitive than prices offered by other international suppliers, therefore studying the most important foreign markets for Egyptian orange exports to know prevailing conditions in these markets, and determine the competitors and their price levels, which helps Egypt to push and increase oranges exports within these markets and then identifies the most important factors that can be focused on keeping the competitiveness of the Egyptian orange in the international markets.

Key words: Agricultural Egyptian exports, Egyptian orange exports markets.

INTRODUCTION

Despite, Egypt has a comparative advantage (**Fawaz and Soliman, 2016**) in exporting oranges, which are represented a large share of the Egyptian agricultural exports, Egypt's orange exports are faced a great competition from some competitors which specialized in exporting the orange, due to the large ability of competing countries to meet export requirements as well as rapid progress in agriculture and export methods, which threatened to lose the traditional markets of Egyptian exports.

Objectives

This study aims mainly to find a proposal for developing Egypt's orange exports to the most important international markets. To achieve this goal, a set of objectives can be formulated as follow (**Dally, 2013**):

1. Studying the geographical distribution of Egyptian oranges exports to the countries all over world and identify the most important importing markets.
2. Estimating the export competitiveness indicators of the Egyptian orange exports such as market share, relative price and export efficiency.
3. Measuring the factors affecting the Egyptian orange exports to the top import destinations for Egyptian orange.

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MATERIALS AND METHODS

Data analyses were relied on descriptive and quantitative statistical analysis, such as estimating the arithmetic mean, the growth rate and calculate some export competitiveness indicators (**Ahmed, 2016**) such as market share, relative price , export efficiency as follow:

Market Share

It's used for measuring competitiveness and estimating the possibility of improving the competitive conditions of a country's exports within foreign markets, as its rise reflects the country's competitive position in foreign markets with respect to the commodity, so that it can be calculated according to the following equation:

Market share = (Quantity of exports to a specific market of a particular commodity ÷ Total quantities of this market's imports of that commodity) x100 …… (1)

Export Efficiency

It is represented a criterion for comparison between foreign markets and local market, as it is shown whether the export price is higher than selling price in the local market or *vice versa*, which shows the possibility and necessity to opening foreign markets or economic ineffectiveness, as high export efficiency is an incentive for exporters to work on exporting the commodity to the global market to achieve higher profitability than the local market. In addition the higher the efficiency of the export efficiency factor is reflected on the producer of commodity obtaining a better price to achieve a higher profitability when exporting that commodity, so that the export efficiency is calculated according to the following equation:

Export efficiency = (Export prices of the commodity ÷ Farm prices of the commodity) x 100 …. (2)

If the percentage is greater than 100%, this means price of global markets is higher than the local price, so that there is a profitability from exporting of that commodity, but if the percentage is less than 100%, it means that price of global market is lower than the local price, so that there is an export loss.

Relative Price

It shows if the country has a price advantage in exporting crop to the most important markets comparing with competitors whom competing in exporting the same crop. Therefore, the lower of this percentage is, the more price advantage for Egypt in exporting that crop, and it can be estimated from the following equation:

Relative price=Egyptian export price ÷ Average of export prices of the competitors in the market(3)

In addition statistical estimation of determinants of Egyptian orange exports to the main top imports markets the demand functions will be estimated by using three models for measuring the factors affecting the Egyptian orange exports of the top important destination as follow:

The direct model

The demand functions are estimated using the following equation:

$$Q_{it} = f (P_{it} , G_{it}) \quad (4)$$

Whereas:

Q_{it} = Total imports quantities (thousand ton)by country I in year t.

P_{it} = Average of import price (dollars per ton) of Country i in year t.

G_{it} = Average of gross domestic product per capita (thousand dollars) of country i in year t.

The Substitute model

This model is estimated to measure the effect of the relative price of the exporting country to other exporting countries that compete with it, by estimating the functions of the demand through the following equation:

$$(q_1 / q_2)_{it} = f (P_1 / P_2)_{it} \quad (5)$$

Whereas:

q_{1it} = Imported orange quantity from Egypt by country i in year t.

q_{2it} = Imported orange quantity from the other competing country in year t

P_{1it} = Import orange price from Egypt by country i year t.

P_{2it} = Import Orange price from the competing country by country in year t.

Market Share Model

This model differs from the previous substitution model in that the dependent variable represents the ratio between= Imported orange quantity from Egypt and imported orange quantity from the other competing country by the following equation:

$$(q_1 / Q)_{it} = f\{(P_1 / P_0)_{it}, (q_1 / Q)_{it-1} \quad (3)$$

Whereas:

q_{1it} = Imported orange quantity from Egypt by country I in year t.

Q_{it} = Total imports quantities (thousand ton) by country I in year t.

P_{1it} = Egyptian import price of Egyptian orange a year t

P_{0it} = Average of import price (dollars per ton) of country i in year t.

$(q_1 / Q)_{it-1}$ = Market share of Egyptian orange of country i in year (t-1).

The study is relied on secondary data from the Central Agency for Public Mobilization and Statistics (CAPMAS), the Food and Agriculture Organization (FAO), in addition to theses, scientific journals, research and reports closely related to the study field.

RESULTS AND DISCUSSION

Egyptian Orange Exports as a Percentage of Egyptian Agricultural Exports

Table 1 show the value of Egyptian agricultural exports during the period 2000-2017 which ranged between a minimum value about 518.14 million dollars in 2000 and a maximum value about 4993.33 million dollars in 2017, with an annual arithmetic mean about 2730.61 million dollars, with an annual rate 13.41%. In addition, the value of Egyptian orange exports during the period 2000-2017 are ranged between a minimum value about 16.56 million dollars in 2000 and a maximum value about 547.047 million dollars in 2017, with an average about 280.06 million dollars, with an annual growth rate is estimated at 21.45%.

Also data in Table 1 show the relative importance of Egyptian orange exports during the study period 2000-2017 which ranged between a minimum value estimated at 3.2% in 2000 and a maximum value estimated at 13.62% in 2010 with a geometric mean amounted about 7.97%.

Export Process Performance Efficiency of Egyptian Agricultural Exports during the Period 2000-2017

Its represented one of the general indicators for measuring the efficiency of export systems, policies and export organizations within country and its ability to end export procedures and facilities, therefore it is a general indicator for estimating export operations and its relation to the export structure in the country as a whole.

Table 1 illustrates that the export process performance efficiency greater than zero in all years of study (2000-2017), with geometric mean about 1.46%, and ranged between a minimum value (0.55%) in 2000, and a maximum value (2.59%) in 2017, which mean that there is an efficiency in export performance overall and the level of that efficiency improved forward during the study period.

Economic Variables of the Egyptian Orange

Cultivated area

Data in Table 2 show that the cultivated area of oranges in Egypt during the period 2000-2017 ranged between a minimum value about 197.747 thousand faddans in 2003, and a maximum value of 312.709 thousand faddan in 2015, with an annual arithmetic mean of 241.33 thousand faddan, with an annual increase rate of 1.74%. The increase of the cultivated area is attributed to increase the demand of Egyptian orange in local and international markets.

Production quantities.

Data in Table 2 are show that the production quantity of orange in Egypt during the period 2000-2017 ranged between a minimum quantity about 1.61 million ton in 2000, and a maximum is estimated about 3.35 million ton in 2015, with an annual arithmetic mean about 2.357 million ton, with an annual increasing rate amounted 3.54%. The increase in production is attributed to shift cultivation and harvest dates to accommodate with their conditions (**Omar and Tate, 2018**).

Table 1. Efficiency performance of Egyptian agricultural exports during the period 2000-2017

Year	Value of Egyptian agricultural exports (million dollars)	Value of Egyptian orange exports (million dollars)	Relative importance of Egyptian orange exports (1)	Gross domestic product (GDP) (million dollars)	Export of GDP (2) (%)
2000	518.142	16.556	3.20	94230.407	0.55
2001	620.492	50.622	8.16	89374.490	0.69
2002	771.782	26.541	3.44	85210.171	0.91
2003	937.745	39.185	4.18	72898.923	1.29
2004	1314.3	76.875	5.85	77880.677	1.69
2005	1167.538	74.914	6.42	92893.990	1.26
2006	1086.375	65.272	6.01	105931.908	1.03
2007	1563.409	99.143	6.34	130021.793	1.20
2008	2176.839	238.935	10.98	162139.057	1.34
2009	4406.997	494.749	11.23	184906.205	2.38
2010	2918.006	397.519	13.62	211206.672	1.38
2011	5093.656	538.156	10.57	227383.688	2.24
2012	4140.772	456.373	11.02	272143.643	1.52
2013	4867.292	493.063	10.13	266540.008	1.83
2014	4354.06	442.277	10.16	296412.022	1.47
2015	4267.184	481.95	11.29	313195.349	1.36
2016	3953.085	501.846	12.70	266718.534	1.48
2017	4993.33	547.047	10.96	192885.182	2.59
Mean	2730.611	280.057	7.97	174554.040	1.46
Growth rate	13.41	21.45	---	4	---

(1) **Relative importance of Egyptian orange exports** = (Value of Egyptian orange exports/ Value of agricultural Egyptian exports) x100

(2) Export of GDP% = (Value of agricultural Egyptian exports/Gross domestic product) x100

Source: Food and Agriculture Organization (FAO) www.fao.com, World bank data www.worldbank.org

Table 2. Economic variables of Egyptian orange crop during the period 2000-2017

Year	Export quantity (Thousand ton)	Export price (Dollar per ton)	Cultivated area (Thousand faddan)	Production quantity (Thousand ton)	Productivity (Ton per faddan)
2000	86.445	191.521	208.823	1610.520	7.712
2001	257.862	196.314	199.068	1696.290	8.521
2002	126.727	209.434	198.994	1808.579	9.089
2003	166.774	234.959	197.747	1767.710	8.939
2004	258.262	297.663	198.133	1850.025	9.337
2005	214.165	349.796	201.242	1940.420	9.642
2006	282.698	230.890	209.123	2120.050	10.138
2007	271.551	365.099	212.719	2054.626	9.659
2008	454.401	525.824	222.240	2138.425	9.622
2009	821.812	602.022	234.574	2372.257	10.113
2010	636.273	624.762	241.107	2401.015	9.958
2011	1042.291	516.320	262.912	2577.720	9.804
2012	607.740	750.935	282.699	2786.397	9.856
2013	1108.895	444.644	299.046	2855.022	9.547
2014	1128.826	391.803	300.956	3135.931	10.420
2015	663.471	726.407	312.709	3351.307	10.717
2016	748.711	670.280	277.117	2939.084	10.606
2017	742.806	736.460	284.722	3013.758	10.585
Arithmetic mean	534.428	448.063	241.330	2356.619	9.681
Growth rate (%)	12.69	7.77	1.74	3.54	1.77

Source: Food and Agriculture Organization (FAO) www.fao.com .

Productivity

Data in Table 2 show that the productivity of orange crop in Egypt during the period 2000-2017 ranged between a minimum value of 7.712 ton per faddan in 2000, and a maximum value of 10.717 ton per faddan in 2015, with an annual arithmetic mean of 9.681 ton per faddan during the study period, with an annual increasing rate 1.77%.

Quantity of exports

Data in Table 2 show that the Egyptian exports of oranges during the period 2000-2017 ranged between a minimum value of 86.445 thousand ton in 2000, and a maximum value of 128.826 thousand ton in 2014, with an annual arithmetic mean of 534.428 thousand ton, with an annual increase about 12.69%. This increase in Egyptian orange due to the competitive prices compared to the prices offered by other competitors like Spain and Morocco.

Export prices

Data in Table 2 show that the Egyptian export price of oranges during the period 2000-2017 ranged between a minimum value of 191.521 dollars per ton in 2000, and a maximum value about 750.935 dollars per ton in 2012, with an annual arithmetic mean about 448.063

dollars per ton, with an annual increase rate estimated about 7.77%.

Geographical Distribution of Egypt's Orange Exports Allover the World During the Period (2016-2018)

Data in Table 3 show that the most important markets imported orange crop from Egypt were concentrated in the Russian, Saudi arabia and Netherland markets, as the percentage of orange quantities exports are about 45.1% of the total orange quantities exports, also their share value of orange exports about 43.4% of total value of orange exports during the period time (2016-2018). In addition, it is followed by Emirates, China, United Kingdom, Bangladesh, India and Kuwait markets, which are represented about 27.8% of the Egyptian exports quantities of orange crop, also their share value of Egyptian exports of orange crop is amounted about 29.1% related to the total value of Egyptian exports of orange crop during the same period (Figs. 1 and 2). So that the Saudi market, then the Russian market and Netherland market, are considered the most important markets imported orange from Egypt, in terms of their imported value, during the period (2016-2018). Consequently, these markets are studied in terms of market share, price competitiveness, export efficiency, and factor (variables) affected Egypt's exports of orange to these markets.

Export Competitiveness Indicators of Egyptian Orange during the Period (2000-2017)

It's found that the most important imported markets of orange crop from Egypt are Saudi Arabia market, Russian market and the Netherlands market, respectively, in terms of export value at the geographical distribution of Egyptian orange exports to the most important importing countries, during the period (2016-2018). Consequently, data in Table 4 show these markets in terms of market share (equation 1 in material methods), as Egypt occupies the first rank in the Saudi market, whereas Egyptian orange exports are represent about 55.04% of the average of Saudi's total orange imports quantities during the study period (2000-2017), which are about 325.93 thousand ton during the same period. Also it's found that Egypt's orange exports to Russian market was about 20.43% of Russia's total orange imports quantities, which are about 438.78 thousand ton during the study period (2000-2017). Finally Egypt's exports of orange crop to Netherlands market about 4.24% of Netherlands's total orange imports quantities which was about 450.44 thousand ton during the study period (2000-2017).

By estimating the criterion of export efficiency (equation 2) in material methods on total Egyptian orange exports, data in Table 5 show that they ranged between a minimum value about 102.3% in 2000, meaning that the Egyptian export price per ton of orange is exceeded the Egyptian farm price per ton of orange by about 2.3%. However, maximum value was about 461.1% in 2015, which means that the Egyptian export price per ton of orange crop is exceeded the farm price by about 361.1% with an annual average is about 253.8% during the study period (2000-2017), so that from the previous it's found that there is an efficiency and a profitability in exporting Egyptian orange crop to the global markets. Consequently orange export efficiency was estimated for each imported market under study as follows:

Saudi Arabia mrket

Results in Table 5 show that orange export efficiency in Saudi market was ranged between a minimum value amounted about 138.6% in 2000, meaning that Egyptian export price per ton of oranges to Saudi Arabia's market is exceeded the Egyptian farm price per ton of orange by about 38.6%. In addition a maximum value estimated about 454.5% in 2005 and about 432% in 2017, which means that the Egyptian export price per ton of orange to Saudi Arabia's market exceeded the Egyptian farm price by about 354.5% and 332% in 2005 and 2017, respectively and it was exceeded more than 100% in the remain years during period (2000-2017), so that from the previous, it's found that there is an efficiency and a profitability in exporting Egyptian orange crop to Saudi market.

Table 3. Geographical distribution of both quantity and value of Egyptian orange exports to the most important importing countries during the average period (2016-2018)

Country	Export quantity (million ton)	(%)	Export value (million dollar)	(%)
Russia	257.14	17.93	107.29	18.89
Saudi Arabia	261.75	18.25	89.55	15.76
Netherland	128.53	8.96	49.49	8.71
China	79.73	5.56	41.21	7.25
Bangladeshi	61.23	4.27	28.57	5.03
Emirate	86.75	6.05	33.23	5.85
India	57.84	4.03	25.64	4.51
United kingdom	68.56	4.78	21.65	3.81
Kuwait	44.86	3.13	14.9	2.62
Malaysia	34.83	2.43	16.01	2.82
Ukraine	38.28	2.67	15.46	2.72
Amman	27.83	1.94	10.17	1.79
Hong Kong	17.57	1.23	8.47	1.49
Jordan	30.87	2.15	10	1.76
Other countries	96.45	16.63	238.59	16.98
Total	1434.34	100	568.08	100

Source: Calculated from the Central Agency for Public Mobilization and Statistics, the Information and Decision Support Center, the Foreign Trade Database.

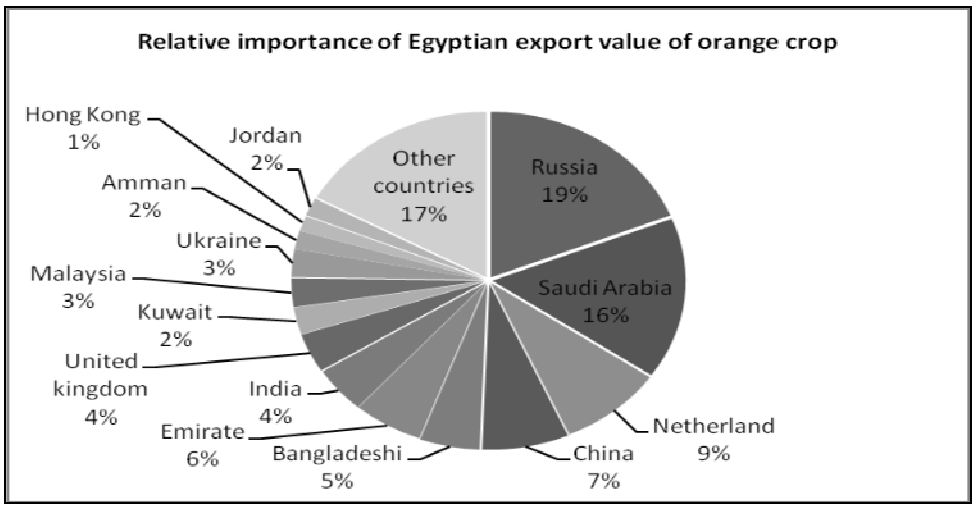

Fig. 1. The relative importance of Egyptian exports value of orange crop during the period (2016-2018)

Source: Collected and calculated from Table 3.

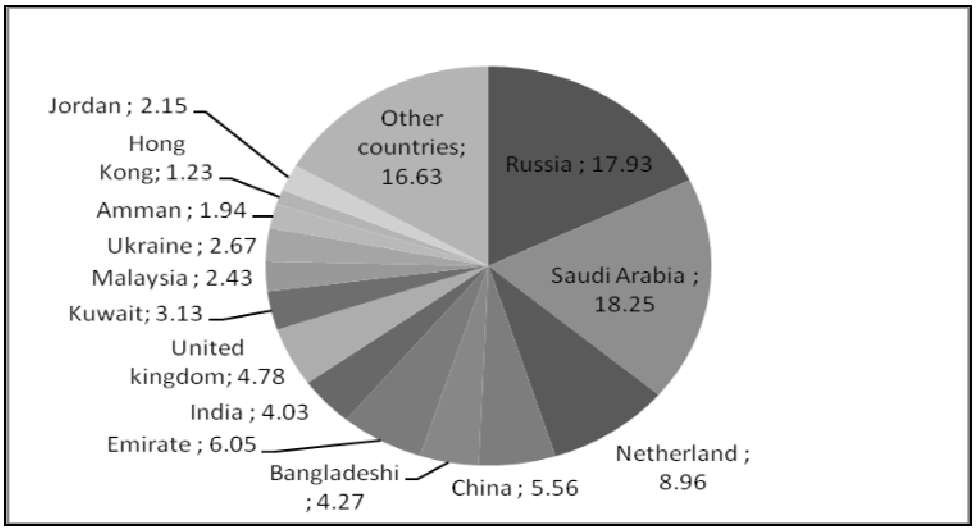

Fig. 2. The relative importance of Egyptian exports quantities of orange crop during the period (2016-2018)

Source: Collected and calculated from Table 3.

Table 4. Market share of Egypt's exports of orange crop to its most important foreign markets during the period (2000-2017)

Year	Russia's import quantity of orange (Thousand ton)	Russia's market share (%)	Saudi's import quantity of orange (Thousand ton)	Saudi's market share (%)	Netherland's import quantity of orange (Thousand ton)	Netherland's market share (%)
2000	249.646	0.183%	224.743	56.008%	329.864	0.126%
2001	273.402	2.818%	189.184	43.978%	384.411	0.242%
2002	361.701	11.352%	232.761	46.863%	324.140	0.273%
2003	403.789	18.834%	320.157	55.948%	375.516	1.674%
2004	398.678	27.595%	283.201	56.126%	320.524	4.355%
2005	391.133	22.674%	318.955	61.911%	364.103	9.934%
2006	509.842	21.370%	323.842	60.789%	438.794	6.641%
2007	490.955	22.395%	310.086	56.038%	543.553	4.827%
2008	501.983	26.909%	294.332	60.515%	485.178	5.187%
2009	443.549	28.979%	303.642	60.091%	476.152	8.118%
2010	498.799	30.053%	332.473	54.632%	537.870	6.579%
2011	568.365	38.526%	360.597	56.839%	461.732	5.443%
2012	489.150	40.335%	389.870	59.869%	475.520	9.704%
2013	504.390	46.351%	374.289	61.414%	490.967	10.952%
2014	468.707	44.851%	402.475	62.350%	468.637	11.836%
2015	463.660	50.213%	400.163	65.052%	503.667	13.330%
2016	451.822	59.576%	418.446	62.118%	542.129	19.963%
2017	428.481	51.339%	387.500	26.895%	585.172	20.437%
Mean	438.781	20.43%	325.929	55.04%	450.441	4.24%

Source: Collected and calculated from Food and agriculture Organization data www.fao.org
Second: Egyptian orange export efficiency

Table 5. Export efficiency of Egyptian orange crop to its most important external market during the period (2000-2017)

Year	Export efficiency of Egyptian orange crop (%)	Egyptian export efficiency in Saudi's market (%)	Egyptian export efficiency in Russian market (%)	Egyptian export efficiency in Dutch market (%)
2000	102.30	138.63	145.25	192.14
2001	118.53	174.3	163.41	304.82
2002	139.82	188.2	183.59	299.82
2003	198.95	231.15	237.41	416.23
2004	249.98	251.94	263.71	475.5
2005	267.35	454.54	360.12	426.45
2006	133.44	185.66	302.63	325.89
2007	167.82	170.1	278.21	282.83
2008	310.16	298.15	367.07	380.64
2009	304.28	323.92	430.01	485.93
2010	304.10	302.42	418.22	358.86
2011	247.64	255.03	405.9	361.62
2012	365.87	214.84	394.41	309.97
2013	242.26	228.39	512.94	387.8
2014	218.18	226.48	505.06	349.37
2015	461.08	244.79	387.57	331.58
2016	351.10	182.32	260.75	272.59
2017	385.76	432.04	271.45	287.01
Mean	253.81	250.16	327.10	347.17

Source: Collected and calculated from Food and agriculture Organization data www.fao.org

The Russian market

Results in Table 5 show the results of estimating export efficiency of Egyptian orange in the Russian market, as Its ranged between a minimum value of about 145.3% in 2000 meaning that Egyptian export price per ton of orange to Russia's market is exceeded the Egyptian farm price per ton of orange by about 45.3%.In addition a maximum value of about 512.9% in 2015 and 505.06% in 2014, which means that the Egyptian export price per ton of orange to Russian market exceeded the Egyptian farm price by about 412.9% and 405.06% in 2015 and 2014 that is due to the bans that Russia imposed on imports of agricultural and food commodities from EU and Turkey in 2014 and 2015, respectively. These Russian imports bans represent a window of opportunity of bilateral trade between Egypt and Russia have increased especially in the wake of the Egyptian revolution (so-called the Arab spring) in 2011 as bilateral trade flows between Egypt and Russia internal a new era of strong performance and Russia emerged as a major trader partner to Egypt (**Abohatab and Nsabimana, 2016**). So that from the previous, it's found that there is a greater efficiency and a profitability in exporting Egyptian orange crop to the Russian market than the Saudi market.

The Netherlands market

Data in Table 5 show the results of estimating export efficiency of Egyptian orange in the Netherlands market as it ranged between a minimum value is amounted about 192.1% in 2000, meaning that Egyptian export price per ton of orange to Dutch market is exceeded the Egyptian farm price per ton of orange by about 92.1%. In addition a maximum value estimated about 485.9% in 2009, which means that the Egyptian export price per ton of orange to Netherlands market exceeded the Egyptian farm price by about 385.9%, an annual mean is estimated to be 347.2% during the study period (2000-2017) so that from the previous, it's found that there is an efficiency and a profitability in exporting Egyptian orange crop to Dutch market by about 20.1%, also there is a greater profitability in exporting Egyptian orange to the last market than the Saudi market by 76.9%.

Third Relative Price

It has been found (**Al-Gendy *et al.*, 2014**) that the most important five countries competing Egypt in exporting orange crop to its most important external markets during the study period (2000-2017) are (Spain - Morocco- Turkey - South Africa - Lebanon). Spain came in first rank, where the average of export price of orange crop during the study period was at 747.035 dollar per ton, followed by Morocco which ranked second in the orange export price, which was at 520.419 dollar per ton, then Turkey came in the third rank, as the export price of the orange crop was about 480.159 dollar per ton, and South Africa came in the fourth rank, whose export price was about 424.923 dollar per ton. In the last place, Lebanon came in the fifth rank whose export price of the orange crop was about 139.91 dollar per ton during the study period (2000-2017). By estimating relative price ratio (equation 3 in the material methods) for each imported market as follow :

Saudi Arabia market

It has been found in Table 6 that the most important countries competed Egypt are South Africa, Turkey and Lebanon, Egypt had a competitive price advantage within the Saudi market with respect to Turkey only, as the price ratio reached about 0.92 during the study period (2000-2017). It is found that Egyptian export price of orange crop is about 7.9% less than Turkish export price of orange crop, which gives Egypt a comparative price advantage against Turkey to increase its exports of orange crop to Saudi Arabia, while Egypt does not have a comparative price advantage in exporting orange to the Saudi market in relation to other competing countries South Africa and Lebanon, Where their price ratio are greater than one, which means that the Egyptian export price of orange exceeds export price of South Africa and Lebanon, where their price ratio were estimated at 1.1, 3.6, respectively, during the study period (2000-2017).

Russian market

It turned out that the most competitors of Egypt's orange in Russian market are South Africa, Turkey and Morocco. Data of Table 6 illustrate that Egypt had a competitive price advantage within the Russian market for Turkey only, which is reached about 0.97 during the study period (2000-2017). Egyptian export price of orange crop is about 3.4% less than Turkish export price of orange crop, which gives Egypt a comparative price advantage against Turkey to increase its exports of oranges to Russia, while Egypt does not have a comparative price advantage in exporting oranges to the Russian market relative to other competing countries, which are South Africa and Morocco, as their price ratio are greater than one, which means that the Egyptian export price of orange crop exceeds South Africa and Morocco by about 48% and 16.4%, respectively, during the study period (2000-2017).

Netherlands market

Data in Table 6 show that the most important countries competed Egypt in the Netherlands market in exporting orange crop are South Africa, Morocco and Spain, it was found that Egypt has a competitive price advantage within the Netherlands market in relation to Spain only, reaching about 0.81 during the study period (2000-2017). In addition, the Egyptian export price of orange crop is estimated about 18.8% less than Spanish export price of orange crop, which gives Egypt a comparative price advantage against Spain to increase its exports of orange crop to the Netherlands, while Egypt

Table 6. Relative price in the most important markets imported Egyptian orange crop during period (2000-2017)

Year	Relative price ratio in Saudi market			Relative price ratio in Russian market			Relative price ratio in Netherlands market		
	South Africa	Turkey	Lebanon	South Africa	Turkey	Morocco	South Africa	Morocco	Spain
2000	0.85	0.81	2.17	1.37	0.91	0.86	1.68	1.16	0.87
2001	1.25	0.94	2.56	1.42	0.96	0.84	2.99	1.59	1.07
2002	1.50	0.99	2.60	1.71	0.99	0.76	2.05	1.25	0.82
2003	0.76	0.87	2.34	1.09	1.01	0.67	1.79	1.18	0.74
2004	0.68	0.89	2.71	0.86	1.02	0.66	1.63	1.27	0.77
2005	1.44	1.72	5.99	1.49	1.02	1.04	2.02	1.23	0.78
2006	1.10	0.97	3.41	1.43	0.98	1.16	2.24	1.29	0.80
2007	1.32	0.92	4.36	1.92	1.01	1.56	1.52	1.26	0.79
2008	1.37	0.79	5.95	1.47	0.89	0.88	1.52	1.13	0.64
2009	1.50	0.92	8.04	1.96	1.00	1.23	2.27	1.62	1.00
2010	1.15	0.88	5.06	1.58	0.97	1.24	1.41	1.11	0.79
2011	0.89	0.68	3.40	1.43	0.95	0.91	1.30	1.08	0.88
2012	0.91	0.67	2.43	1.57	0.94	1.45	1.24	0.93	0.81
2013	0.84	0.57	2.51	2.02	0.97	1.72	1.44	0.92	0.87
2014	0.81	0.71	2.50	2.17	1.17	1.72	1.26	0.87	0.81
2015	0.76	0.65	2.40	1.26	0.95	1.40	1.06	0.83	0.77
2016	0.61	0.74	1.89	1.02	0.77	1.34	1.02	0.80	0.70
2017	1.28	1.86	4.20	0.88	0.88	1.52	0.99	0.93	0.71
Mean	1.06	0.92	3.58	1.48	0.97	1.16	1.64	1.14	0.81

Source: Collected and calculated from Food and agriculture Organization data www.fao.org

does not had a comparative price advantage in exporting orange crop to the Netherlands market relative to other competing countries South Africa and Morocco, as their price ratio are greater than one, which means that the Egyptian export price of orange crop exceeds South Africa and Morocco by 63.5% and 13.7%, respectively, during the study period (2000-2017).

Factors Affect on Quantities of Egyptian Orange Export in the Most Important Markets

First: Saudi market

Table 7 illustrates the estimation of the demand functions of Egyptian oranges exports in Saudi market during the period (2000-2017). The direct model indicated that the most important factors affecting the total quantities of oranges imports in Saudi market are the average of Saudi Arabia's import orange price, and the average of Saudi Arabia's gross domestic product per capita. It turns out that there is a negative insignificant sign of the estimated regression coefficient (average export price to Saudi market (Pit)), while there is a positive significant sign of the estimated regression coefficient (average of gross domestic product per capita) and this is consistent with the economic logic, during the period (2000 - 2017). By estimating the price elasticity coefficient, it show that an increase in the average of Saudi Arabia's import oranges price by 1% leads to a decrease in the total quantities of oranges imports in the Saudi market by 0.29%.

Table 7. Estimation of the demand functions of Egyptian orange exports in Saudi market during the period (2000-2017)

No.	Model	Equation	R2	Fc
1	Direct	$\text{Ln } y_{1t} = 2.48 - 0.29 \ln x_{1t} + 0.662 \ln x_{2t}$ (6.46) (-1.51) (4.84)	0.76	24.15
2	Substitute	$\text{Ln } y_{2t} = 1.51 - 1.81 \ln x_{3t}$ (14.59) (-2.43)	0.26	5.89
3	Market share	$\text{Ln } y_{3t} = -0.26 - 0.83 \ln x_{4t} + 0.02 \ln x_{5t-1}$ (-13.13) (-3.98) (0.56)	0.51	7.92

Whereas:

Y_{1t} = total of orange imports quantity (thousand ton) in Saudi market in year t.

X_{1t} = Average of import orange price (dollars per ton) in Saudi market in year t.

X_{2t} = Average of Saudi's GDP per capita (thousand dollar) in year t.

Y_{2t} = Ratio between the quantity of Egyptian orange imported by Saudi market to the quantity of imported orange from the competing country in year t.

X_{3t} = Ratio between the import price of Egyptian orange to the import price of orange from the competing country (Russia) by Saudi market in year t.

Y_{3t} = Market share of Egyptian orange in Saudi market in year t

X_{4t} = Ratio between the import price of Egyptian orange and the average of orange import price by Saudi market in year t.

$X_{5\ t-1}$= Market share of Egyptian orange in Saudi market in the previous year t-1.

As for results of the substitution model, indicated that there is an inverse significant relationship between the ratio of quantity of Egyptian orange imported by Saudi market to the orange quantities imported from the competing country to Saudi market and the ratio of Saudi market's import price of Egyptian orange to the Saudi market's orange import price from the competing country at a significant level 5%. The price elasticity indicates that a decrease in the ratio between Saudi market's import price of Egyptian orange to the Saudi market's orange import price from the competing country by 1%, which increases the ratio between the quantity of Egyptian orange imported by the Saudi market to the orange quantities imported from the competing country to the Saudi market by 1.8% during the period (2000-2017).

Market share model indicated that there is a statistically significance inverse relationship between the Market share of the Egyptian orange in Saudi market and the ratio of the import price of Egyptian orange to the average of orange import price by the Saudi market at a significant level of 5%. The price elasticity indicates that due to a decrease in the ratio between import price of Egyptian orange to the average of orange import price by the Saudi market by 1%, which increases the Market share of the Egyptian orange in Saudi market, by 0.83% during the period (2000-2017).

Russian market

Table 8 illustrates the estimation of the demand functions of Egyptian orange exports in Russian market during the period (2000-2017). The direct model indicates that the most important factors affecting the total quantities of orange imports in Russian market are the average of Russia's import orange price, and the average of Russia's gross domestic product per capita. It turns out that there is a negative insignificant sign of the estimated regression coefficient (average export price to the Russian market (Pit)), while there is a positive significant sign of the estimated regression coefficient (average of gross domestic product per capita) and this is consistent with the economic logic, during the period (2000 - 2017). By estimating the price elasticity coefficient, it show that an increase in the average of Russia's import orange price by 1% leads to a decrease in the total quantities of orange imports in the Russian market by 0.05%.

Table 8. Estimation of the demand functions of Egyptian orange exports in the Russian market during the period (2000-2017)

No.	Model	Equation	R2	Fc
1	Direct	$\text{Ln } y_{1t} = 2.53 - 0.05 \ln x_{1t} + 0.292 \ln x_{2t}$ (4.43) (-0.20) (1.99)	0.78	26.19
2	Substitute	$\text{Ln } y_{2t} = -1.77 - 1.47 \ln x_{3t}$ (-3.48) (-6.25)	0.71	39.05
3	Market share	$\text{Ln } y_{3t} = -0.176 - 2.21 \ln x_{4t} + 0.72 \ln x_{5t-1}$ (-1.69) (-1.33) (10.00)	0.87	51.79

Whereas:
Y_{1t} = total of orange imports quantity (thousand ton) in the Russian market in year t.
X_{1t} = Average of import orange price (dollar per ton) in the Russian market in year t.
X_{2t} = Average of Russia's GDP per capita (thousand dollar) in year t.
Y_{2t} = Ratio between the quantity of Egyptian orange imported by Russian market to the quantity of imported orange from the competing country in year t.
X_{3t} = Ratio between the import price of Egyptian orange to the import price of orange from the competing country (Turkey) by Russian market in year t.
Y_{3t} = Market share of Egyptian orange in Russian market in year t
X_{4t} = Ratio between the import price of Egyptian orange and the average of orange import price by Russian market in year t.
$X_{5\ t-1}$= Market share of Egyptian orange in Russian market in the previous year t-1.

As for results of the substitution model, indicated that there is an inverse significant relationship between the ratio of quantity of Egyptian orange imported by the Russian market to the oranges quantities imported from the competing country to Russian market and the ratio of Russia market's import price of Egyptian orange to Russia market's orange import price from the competing country at a significant level 5%. The price elasticity indicates that a decrease in the ratio between Russia market's import price of Egyptian orange to Russia market's orange import price from the competing country by 1%, which increases the ratio between the quantity of Egyptian orange imported by Russia market to the orange quantities imported from the competing country to Russia market by 1.47% during the period (2000-2017).

Market share model indicated that there is a statistically insignificance inverse relationship between the Market share of Egyptian orange in Russia market and the ratio between the import price of Egyptian orange to the average of orange import price by Russian market. The price elasticity indicates that due to a decrease in the ratio between import price of Egyptian orange to the average of orange import price by Russian market by 1%, which increases the Market share of Egyptian orange in Russia market, by 2.21% during the period (2000-2017). The model also indicated the existence of a statistically significant positive relationship between both the Egyptian orange quantity imported by Russian market to the total orange quantities imports by Russian market and the market share of the Egyptian oranges in Russian market in the previous year.

Netherlands market

Table 9 illustrates the estimation of the demand functions of Egyptian orange exports in Netherlands market during the period (2000-2017). The direct model indicates that the most important factors affecting the total quantities of oranges imports in Netherlands market are the average of Netherland's import orange price, and the average of Netherland's gross domestic product per capita. It turns out that there is a positive insignificant sign of the estimated regression coefficient (average export price to the Netherlands market (Pit)) as it isn't consistent with the economic logic. As the increase in the orange export prices of competitors is more than the increase in the Egyptian export price. While there is a positive significant sign of the estimated regression coefficient (average of gross domestic product per capita) and this is consistent with the economic logic, during the period (2000 - 2017).

Table 9. Estimation of the demand functions of Egyptian orange exports in Netherlands market during the period (2000-2017)

No.	Model	Equation	R2	Fc
1	Direct	$\ln y_{1t} = 1.42 + 0.17 \ln x_{1t} + 0.46 \ln x_{2t}$ (1.99) (0.36) (1.06)	0.59	10.7
2	Substitute	$\ln y_{2t} = -1.43 - 5.81 \ln x_{3t}$ (-4.26) (-1.85)	0.176	3.43
3	Market share	$\ln y_{3t} = -0.14 - 0.66 \ln x_{4t} + 0.86 \ln x_{5t-1}$ (-0.69) (-0.56) (8.25)	0.85	43.59

Whereas:

Y_{1t} = total of orange imports quantity (thousand ton) in Netherlands market in year t.

X_{1t} = Average of import orange price (dollar per ton) in Netherlands market in year t.

X_{2t} = Average of Netherland's GDP per capita (thousand dollar) in year t.

Y_{2t} = Ratio between the quantity of Egyptian orange imported by Netherlands market to the quantity of imported orange from the competing country (Spain) in year t.

X_{3t} = Ratio between the import price of Egyptian orange to the import price of orange from the competing country by Netherlands market in year t.

Y_{3t} = Market share of the Egyptian orange in Netherlands market in year t

X_{4t} = Ratio between the import price of the Egyptian orange and the average of orange import price by Netherlands market in year t.

$X_{5\ t-1}$= Market share of the Egyptian orange in Netherlands market in the previous year t-1.

As for results of the substitution model, indicated that there is an inverse significant relationship between the ratio of quantity of Egyptian orange imported by Netherlands market to the orange quantities imported from the competing country to Netherlands market and the ratio of Netherlands market's import price of Egyptian orange to Netherlands market's orange import price from the competing country at a significant level 5%.The price elasticity indicates that a decrease in the ratio between Netherlands market's import price of Egyptian orange to the Netherlands market's orange import price from the competing country by 1%, which increases the ratio between the quantity of Egyptian orange imported by Netherlands market to the orange quantities imported from the competing country to the Netherlands market by 5.8% during the period (2000-2017).

Market share model indicated that there is a statistically insignificance inverse relationship between the Market share of Egyptian orange in the Netherlands market and the ratio between the import price of Egyptian orange to the average of orange import price by the Netherlands market. The price elasticity indicates that due to a decrease in the ratio between import price of Egyptian orange to the average of oranges import price by the Netherlands market by 1%, which increases the Market share of the Egyptian orange in the Netherlands market, by 0.66% during the period (2000-2017). The model also indicated the existence of a statistically significant positive relationship between both Egyptian orange quantity imported by Netherlands market to the total orange quantities imports by the Netherlands market and the market share of the Egyptian orange in the Netherlands market in the previous year.

Conclusion and Recommendations

In this study, the orange crop, which is considered one of the most important fruits exports in Egypt. It was chosen, because its exports about 493.28 million dollar, which represents 11.3% of the value of Egyptian agricultural exports, during the average period (2014-2017). Therefore, the study of foreign markets for Egypt's orange exports have a great importance to know the competitors in the most important imports markets and the competitiveness of Egyptian orange in this market help Egypt to push and increase exports of orange to these markets, then identifies the most important factors that can be focused on to achieve the increase in the competitiveness of the orange in the most important imported markets.

The study aims mainly to find a proposal for developing Egypt's exports of the orange crop to the most important international markets. To achieve this goal, a set of objectives that can be summarized as: Studying the geographical distribution of Egyptian orange exports to the countries allover world and identify the most important importing markets, Estimating the export competitiveness indicators of the Egyptian orange exports, such as the market share, the export efficiency factor and the relative price and measuring the factors affecting the Egyptian orange exports to the top import destinations for Egyptian orange.

The most important results has been reached:

1. The most important imported markets of orange crop from Egypt are Saudi Arabia market, Russian market and Netherlands market, respectively, in terms of export value at the geographical distribution of Egyptian orange exports to the most important importing countries, during the period (2016-2018).
2. Egypt occupies the first rank of market share in Saudi market, whereas Egyptian orange exports are represent about 55.04% of the average of Saudi's total orange imports quantities during the study period (2000-2017). Also it's found that Egypt's orange exports in Russian market valued about 20.43% of Russia's total orange imports quantities. Finally Egypt's exports of orange crop in Netherlands market was about 4.24% of Netherlands's total orange imports quantities during the same study period.
3. Export efficiency on total Egyptian orange exports, are ranged between a minimum value of 102.3% in 2000, meaning that the Egyptian export price per ton of orange is exceeded the Egyptian farm price per ton of orange by about 2.3%.However, maximum value was about 461.1% in 2015, which means that the Egyptian export price per ton of orange crop exceeded the farm price by about 361.1% with an annual average about 253.8% during the study period (2000-2017).
4. Market share model indicated that there is a statistically significance inverse relationship between the Market share of the Egyptian orange in Saudi market and the ratio of the import price of Egyptian orange to the average of orange import price by Saudi market at a significant level of 5%. The price elasticity indicates that due to a decrease in the ratio between import price of Egyptian orange to the average of orange import price by the Saudi market by 1%, which increases the Market share of Egyptian orange in Saudi market, by 0.83% during the period (2000-2017).
5. The substitution model, indicated that there is an inverse significant relationship between the ratio of quantity of Egyptian orange imported by Russian market to the orange quantities imported from the competing country to Russian market and the ratio of Russia market's import price of Egyptian orange to Russia market's orange import price from the competing country at a significant level 5%.
6. There is an inverse significant relationship between the ratio of quantity of Egyptian orange imported by Netherlands market to the orange quantities imported from the competing country to Netherlands market and the ratio of Netherlands market's import price of Egyptian oranges to Netherlands market's orange import price from the competing country at a significant level 5%.

Most important recommendations that can be summarized as follows:

1. Encouraging farmers to produce orange crop, increasing its cultivated area, and supporting the exporters with data and information about the required quality and conforming to international specifications.
2. Taking into account the application of health conditions, standard specifications and quality care, as well as the consumers requirements and tastes in international markets, which leads to the strong presence of Egyptian orange exports within those markets because the results have been proven that the price-comparative advantage is not alone enough to achieve the presence and maintenance of Egyptian orange exports in international markets, In addition to the necessity of working to stabilize the amount of Egyptian

orange exports, because its instability may lead to the loss of many of its global markets.

3. Reviewing the export price policies to support Egypt's competitive position and preserving advantage of Egyptian export price enjoyed by orange exports, especially in the presence of great competition from some countries such as Spain, Turkey and South Africa.
4. Improving the performance of the global marketing system for the orange crop by marketing functions such as sorting, grading, packing and transporting internally and externally by increasing the storage capacity in the export ports and specifying the control and inspection institutions to shorten the procedures for exporting oranges.
5. Following a production policy that would be improved production and reduced costs to increase the ability to meet the export of orange requirements to the global markets.
6. Maintaining the main traditional markets of the Egyptian orange crop, through the presence of a strategic planning for oranges production.

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دراسة اقتصادية عن صادرات البرتقال المصري وقدرته التنافسية في الأسواق العالمية

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يعتبر محصول البرتقال من أهم صادرات الفاكهة في مصر حيث تبلغ قيمة صادراته حوالي ٤٩٣,٢٨ مليون دولار، والتي تمثل نحو ١١,٣% من قيمة الصادرات الزراعية المصرية التي بلغت نحو ٤٣٩١,٩١٥ مليون دولار وذلك خلال متوسط الفترة (٢٠١٤ – ٢٠١٧)، لذلك تعتبر دراسة الأسواق الخارجية لصادرات مصر من البرتقال أهمية كبري للتعرف علي الأوضاع السائدة بهذه الأسواق خاصة فيما يتعلق بأوضاع المنافسين والمستويات السعرية الأمر الذي يساعد مصر علي دفع وزيادة صادرات البرتقال إلى هذه الأسواق مما يزيد من حصيلة الدولة من العملات الأجنبية ومن ثم التعرف علي أهم العوامل التي يمكن التركيز عليها لتحقيق الزيادة في القدرة التنافسية لمحصول البرتقال في أهم أسواق الدول المستوردة له. ونظرا لأن صادرات البرتقال المصري تتعرض لمنافسة كبيرة من بعض الدول التي تخصصت في تصدير محصول البرتقال في أسواق التصدير العالمية، ويرجع ذلك للقدرة الكبيرة للدول المنافسة علي الوفاء بمتطلبات التصدير وكذلك التقدم السريع في أساليب الزراعة والتصدير لدي الدول المنافسة، الأمر الذي يهدد بفقد الأسواق التقليدية للصادرات المصرية ونقص المعلومات الخاصة بمواصفات محصول البرتقال التصديرية واحتياج السوق الخاص. واستهدف البحث بصفة اساسية إلي محاولة إيجاد مقترح لتنمية صادرات مصر من محصول البرتقال إلي أهم الأسواق العالمية وتحقيقا لهذا الهدف فسوف يتم دراسة مجموعة من الأهداف التي يمكن صياغاتها في تقدير المتوسط الحسابي ومعدل النمو العام لأهم المتغيرات الاقتصادية لمحصول البرتقال - دراسة التوزيع الجغرافي للصادرات المصرية من البرتقال المصري إلي دول العالم والتعرف علي أهم الأسواق المستوردة لمحصول البرتقال المصري - تقدير مؤشرات القدرة التنافسية التصديرية للبرتقال المصري كالنصيب السوقي ومعامل كفاءة تصدير والنسبة السعرية وقياس العوامل المؤثرة على كمية صادرات البرتقال المصري إلي أهم الأسواق المستوردة له، وتوصلت الدراسة إلي أن مصر تحتل المرتبة الأولى في السوق السعودي، حيث تمثل صادراتها نحو ٥٥,٠٤% من متوسط إجمالي واردات السعودية من البرتقال خلال فترة الدراسة والذي بلغ نحو ٣٢٥,٩٣ ألف طن خلال نفس الفترة، كما تبين أن نصيب البرتقال المصري في السوق الروسي بلغ نحو ٢٠,٤٣% من متوسط إجمالي واردات روسيا من البرتقال والذي قدر بنحو ٤٣٨,٧٨ ألف طن خلال متوسط فترة الدراسة، وأخيرا اتضح أن نصيب البرتقال المصري في السوق الهولندي بلغ نحو ٤,٢٤% من متوسط إجمالي واردات هولندا من البرتقال والذي قدر بنحو ٤٥٠,٤٤ ألف طن خلال متوسط فترة الدراسة (٢٠٠٠-٢٠١٧).

الكلمات الإسترشادية: الصادرات الزراعية المصرية، أسواق صادرات البرتقال المصري.

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