



An economic study of the most important Egyptian agricultural exports to the Gulf Cooperation Council countries

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Abstract: Egypt is a promising market for the Gulf Council countries in exporting fresh fruits and vegetables. Hence, Role the countries come to encourage and provide support for agricultural investment in the new lands for the possibility of expanding exports to the Gulf countries. and the estimates of the price elasticity of the models under study show that Egyptian oranges, grapes, and potatoes are elastic commodities, and this means that there are alternatives to these commodities for the Gulf Council countries, whereby increasing the Egyptian export price for them, the Gulf countries have opportunities to import from countries competing with Egypt in Exporting those aforementioned crops, but the price elasticity of onions is inelastic, which means that Egyptian onions are a necessary commodity for the countries of the Gulf Council. It is estimated that the increase in the export price of the GCC countries by 1% leads to an increase in Egyptian exports by about 1.27% of oranges and about 2.06% of grapes, 0.94% of onions, 1.202% of potatoes .which necessitates a search for developing appropriate export policies that would increase the rates of export from them to those countries, especially concerning export problems in terms of quality. The estimation of the gravity model showed that the distance has a clear impact on Egypt's exports to the Gulf Council countries, especially in the potato crops, followed by the grapes. Those who are sensitive to damage as well.

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Key Words: investment support - the Gulf Council countries - gravity model export policies.

Introduction:

Many developing countries rely on establishing strong economic relations with the international community, so export has become a strategic choice for growth and economic development for all countries of the world. The development of Egyptian agricultural exports is one of the most important challenges facing economic policy planners in general and agricultural ones in particular in Egypt. Considering that export is the main driver of the development process and the way to treat the deficit in the trade balance. In light of the global changes that have appeared on the international scene, one of the most important manifestations of which is the increasing intensity of competition between countries to acquire a market share and control international markets. Increasing export capabilities in Egypt does not depend only on increasing local production and rationalizing consumption but on the availability of both the comparative and competitive advantages of Egyptian agricultural exports. Foreign trade is also considered a mainstay in the process of economic development for many countries of the world, and at the regional level, we find its outstanding importance to the Gulf Cooperation Council countries, as it is

based on cooperation in many fields, especially expanding the circle of exports of food commodities and satisfying the growing consumer desires of the population. The intra-trade of The Gulf Cooperation Council countries has some obstacles as a result of the weakness of the Gulf commodity structure, which is characterized by the similarity of food commodities to the GCC countries.

Research problem:

Intra-trade and Egyptian trade exchange for the Gulf Cooperation Council countries are characterized by the weakness of many agricultural commodities, and this is due to the required specifications and quality, the time of shipment and unloading, and the taste of the consumer, which affects the Egyptian trade balance for the Gulf Cooperation Council countries, including an increase in the imbalance of the balance payments, which necessarily requires a study of the Gulf market and the competing markets for Egypt. To find out the most important determining factors of the Egyptian-Gulf exports, including finding solutions that would increase the rates of exports to the GCC countries.

Research Aim:

The research mainly aims to study the possibility of increasing Egyptian agricultural exports of some vegetables and fruits to the Gulf Council countries. This goal is achieved by achieving a set of sub-objectives represented in the following:-

- 1- Study the current status of trade exchange between Egypt and the Gulf Cooperation Council countries.
- 2- Study and analysis of the commodity structure of the most important Egyptian exports to the Gulf Cooperation Council countries.
- 3- Study the competitiveness indicators of the most important Egyptian agricultural commodities for the Gulf Cooperation Council countries.
- 4- Study the gravity model to explore the possibility of increasing export opportunities for the Gulf Cooperation Council countries.
- 5- How to activate the joint Egyptian-Gulf economic work, as many ingredients make Egypt a promising market for the GCC countries, as these markets are characterized by their wide size and the diversity and difference of commodities.

Research method and data sources:-

The research relied on both descriptive and quantitative analysis, in addition to estimating the indicators of competitiveness represented in the market share and penetration rate, as well as studying the gravity model to know the possibility of expanding agricultural exports to the Gulf countries.

The research also relied on the official published and unpublished secondary data published by official authorities such as the Central Agency for Public Mobilization and Statistics, the Food and Agriculture Organization (FAO), and the use of global databases of the World Bank's Internet network, the World Trade Center, www.trademap.org, in addition to, The economic studies and scientific theses related to the research topic.

Results and Discussions:**First: Trade exchange between Egypt and the countries of the Arab Gulf Cooperation Council:**

The export sector is one of the main sectors for financing economic development programs and plans. The promotion of the export sector is critical to the economic development process, as the proceeds of exports contribute to the process of financing development, providing a suitable environment for investment, providing many job opportunities and improving the standard of living for individuals. The agricultural development strategy in Egypt aims to expand and diversify the production and export of various crops, in which Egypt enjoys a competitive advantage.

Table (1) shows the change in the trade balance between Egypt and the Gulf Cooperation Council countries during the period (2008-2019). Where it was found that the average volume of trade between Egypt and the countries of the Arab Gulf Cooperation Council amounted to about 10.61 billion dollars, and the trade balance achieved a deficit during the study period, which increased from 1.13 billion dollars in 2009 to 3.30 billion dollars in 2019, an estimated increase of 2.17 billion dollars, representing about 70.11% of the average study period, which amounts about 3.10 billion dollars. While the average coverage ratio of exports to total imports was about 56.25%, and it was found that it fluctuates between increase and decrease, which means relative instability during the study period.

At the level of the Gulf Cooperation Council countries, it is clear from the same table that the trade balance with the Emirates and Oman achieved a surplus in favor of Egypt during the average study period. It was estimated at 0.30 and 0.02 billion dollars for each of them, respectively, while the trade balance achieved a deficit in Bahrain and Qatar, which amounted to about 0.08 and 0.018 billion dollars each of them, respectively. The value of the deficit in the trade balance of Kuwait and Saudi Arabia increased, estimated at 1.72, and 1.34 billion dollars for each, respectively. It is evident from the ratio of exports coverage to total imports that it increased in both Oman and the UAE, It amounted to about 138%, and 114% and this is due to the increase in the amount of exports at the end of the period from its beginning for Oman and the Emirates, while the percentage of exports coverage of total imports for the State of Bahrain and Kuwait decreased, reaching about 41%, 16% during the average study period.

Second: The most important Egyptian crops for the Gulf Cooperation Council countries:

The Gulf Cooperation Council countries are considered a promising market for Egypt in the export of the most important Egyptian crops, which are potatoes, onions, tomatoes, beans, artichokes, oranges, grapes, pomegranates, strawberries, and tangerines with a value of about 196.02 million dollars, representing about 19.4% of the total value of vegetables exported to the GCC countries, while the amount of fresh potatoes exports amounted about 623.9 tons, representing about 39% of the total amount of vegetables exported to the GCC countries, with a value about 206.2 million dollars, representing about 20.4% of the total value of vegetables. Exported to the Gulf Cooperation Council countries, while the amount of fresh orange exports amounted to about 1413.9 tons, representing about 68.67% of the total amount of exported fruit, with a value of

about 542.05 million dollars, representing about 43.8% of the total value of Egyptian fruit exports.

The amount of fresh grape exports amounted to about 184.8 tons, representing about 8.97% of the total amount of exported fruit, with a value of about 228.2 million dollars, representing about 18.45% of the total value of fruit exports to the Gulf countries. The research focused on the most important crops exported according to their relative importance from the total agricultural exports, where onions, fresh potatoes from vegetables, and oranges, and fresh grapes from fruits were selected.

Third: The current situation of Egyptian exports of potatoes, onions, grapes and fresh oranges:

Data in Table (3) showed the evolution of the quantity, value and average price of Egyptian exports of potatoes, onions, grapes and fresh oranges to the Gulf Cooperation Council countries during the period (2008-2019). The amount of Egyptian potato exports ranged between an upper limit of about 4,809 thousand tons, with a value of about 271.73 million dollars, and an average export price of about 335.72 dollars/ton in 2017, and a minimum of about 215.15 thousand tons, with a value about 145.5 million dollars, with an average export price about 676.47 dollars/ton in 2009 as shown in Table (4).

Studying the statistical estimation of the general temporal trends of the development of the quantity, value and price of Egyptian exports of fresh potatoes during the period (2008-2019), it was shown that the quantity and value of Egyptian potato exports increased by about 44.3 thousand tons annually at a statistically significant rate, and about 8.5 million dollars annually. At a statistically insignificant rate, which indicates its relative stability during the sensory average for each of them, while the export price decreased, reaching about 21.71 dollars per ton annually, at a statistically significant rate. Estimates indicated the significance of the model used in estimating the amount of exports and the export price. The coefficient of determination was about 0.53, 0.17, and 0.52 meaning that 53%, 17%, and 52% of the factors affecting the estimation date back to time.

Table (1): Trade balance between Egypt and the countries of the Arab Gulf Cooperation Council during the period (2008-2019). (Value in billion dollars)**Source:** Compiled and calculated from The World Trade Map website on the Internet. www.trademap.org.

Years	Saudi Arabia			Kuwait			UAE			Bahrain			Qatar			Oman			Arab Gulf Cooperation Council countries		
	Trade	Exports	Imports	Trade	Exports	Imports	Trade	Exports	Imports	Trade	Exports	Imports	Trade	Exports	Imports	Trade	Exports	Imports	Trade	Exports	Imports
2008	4.34	40	-1.86	1.766	10	-1.43	1.396	59	-0.36	0.198	20	-0.13	0.204	264	0.092	0.163	552	0.113	8.067	38	-3.58
2009	3.39	69	-0.63	1.348	17	-0.95	1.015	133	0.143	0.087	93	-0	0.314	705	0.236	0.178	236	0.072	6.332	70	-1.13
2010	3.67	73	-0.57	1.766	16	-1.27	1.343	84	-0.12	0.138	42	-0.06	0.286	385	0.168	0.156	140	0.026	7.359	60	-1.82
2011	4.53	78	-0.57	3.047	9	-2.53	1.672	108	0.062	0.096	66	-0.02	0.384	249	0.164	0.224	111	0.012	9.953	55	-2.89
2012	4.55	67	-0.89	2.919	9	-2.46	1.532	89	-0.09	0.09	76	-0.01	0.348	291	0.17	0.232	72	-0.04	9.671	49	-3.32
2013	5.02	65	-1.06	2.878	11	-2.32	1.875	69	-0.35	0.261	23	-0.17	0.26	534	0.178	0.284	56	-0.08	10.58	47	-3.79
2014	4.72	72	-0.76	4.101	17	-2.94	2.714	58	-0.73	0.195	27	-0.11	0.342	734	0.26	0.29	79	-0.03	12.36	48	-4.31
2015	4.98	69	-0.92	2.246	28	-1.27	2.61	74	-0.39	0.203	39	-0.09	1.042	40	-0.45	0.2	233	0.08	11.28	58	-3.04
2016	4.16	73	-0.66	1.498	34	-0.74	3.595	370	2.065	0.146	68	-0.03	1.83	18	-1.27	0.207	331	0.111	11.44	91	-0.52
2017	5.7	37	-2.6	1.743	25	-1.06	3.708	283	1.772	0.14	69	-0.03	1.665	22	-1.08	0.364	90	-0.02	13.32	63	-3.01
2018	7.11	25	-4.23	2.588	12	-2.03	3.37	144	0.61	0.392	18	-0.27	0.501	1	-0.49	0.413	90	-0.02	14.37	38	-6.43
2019	5.49	44	-2.10	2.02	22	-1.28	3.32	187	1.01	0.220	35	-0.10	1.26	21	-0.82	0.30	129	0.04	12.6	58	-3.30
average	4.81	59.33	-1.34	2.33	17.50	-1.73	2.35	138.17	0.30	0.18	48.00	-0.08	0.70	272.00	-0.18	0.25	176.58	0.02	10.61	56.25	-3.08
Standard deviation	0.95	16.95	1.09	0.77	7.83	0.72	0.94	93.55	0.85	0.08	24.17	0.08	0.56	258.29	0.53	0.08	138.26	0.06	2.35	13.95	1.52
Variation coefficient	19.68	28.56	-81.56	33.07	44.72	-41.40	40.13	67.71	281.89	45.94	50.35	-93.91	79.94	94.96	-288.69	30.82	78.30	272.05	22.15	24.81	-49.52

Table (2): The most important Egyptian crops exported to the Gulf Cooperation Council countries during the average period (2015-2019).

vegetable crops					fruit crops				
Yield	Yield Quantity (tons)	%	Value (million dollars)	%	Yield	Yield Quantity (tons)	%	Value (million dollars)	%
Fresh or chilled onions	667.84	41.75	196.02	19.39	fresh orange	1413.99	68.67	542.05	43.82
Fresh or chilled potatoes	623.96	39	206.16	20.39	fresh grapes	184.8	8.97	228.19	18.45
Fresh or chilled tomatoes	117.78	7.36	51.93	5.14	fresh pomegranate	133.09	6.46	92.03	7.44
regular beans	59.76	3.74	58.53	5.79	fresh strawberry	65.52	3.18	83.6	6.76
Fresh or chilled beans	32.81	2.05	41.56	4.11	frozen strawberry	77.58	3.77	68.85	5.57
artichoke	20.78	1.3	29.01	2.87	mandarin tangerine	94.67	4.6	38.69	3.13
Wholesale	1599.71	100	1011.02	100	Wholesale	2059.18	100	1237.11	100

Source: Compiled and calculated from The World Trade Map website on the Internet www.trademap.org.

Table (3): Evolution of the quantity, value and average export price of Egyptian potatoes, onions, oranges and grapes exported to the Gulf Cooperation Council countries during the period (2008-2019).

Years	potatoes			Onions			grapes			oranges		
	Quantity (thousand tons)	Value (Million dollars)	average price	Quantity (thousand tons)	Value (Million dollars)	average price	Quantity (thousand tons)	Value (Million dollars)	average price	Quantity (thousand tons)	Value (Million dollars)	average price
2008	371.19	163.13	439.49	254.52	101.24	397.76	196.27	161.45	822.60	678.70	408.26	601.53
2009	215.15	145.54	676.47	238.74	173.43	726.44	154.91	225.70	1456.99	881.90	540.09	612.42
2010	299.48	130.68	436.35	521.34	234.45	449.71	274.69	198.98	724.37	895.05	536.91	599.87
2011	637.43	250.56	393.08	505.88	228.17	451.04	623.55	210.34	337.32	1083.78	572.27	528.03
2012	296.31	126.73	427.70	391.23	171.73	438.95	83.36	224.09	2688.34	1399.45	488.49	349.06
2013	428.21	205.23	479.28	378.43	209.86	554.55	89.00	183.14	2057.78	1231.10	531.58	431.79
2014	681.19	324.90	476.96	370.90	173.84	468.71	245.95	242.59	986.34	923.71	506.09	547.89
2015	647.29	237.77	367.33	1227.98	271.68	221.24	124.10	240.76	1940.13	1447.52	506.22	349.71
2016	407.87	144.69	354.73	460.37	213.56	463.90	133.96	215.04	1605.21	1443.21	565.54	391.86
2017	809.39	271.73	335.72	589.79	234.83	398.16	130.45	237.27	1818.93	1602.14	634.50	396.03
2018	724.73	205.68	283.81	463.33	130.51	281.68	351.32	220.67	628.12	1903.77	765.47	402.08
2019	658.33	215.98	328.073	695.76	213.98	307.549	195.98	229.87	1172.93	1603.23	617.98	385.459
average	514.71	201.89	416.58	508.19	196.44	429.97	216.96	215.83	1353.25	1257.80	556.12	466.31
standard deviation	198.90	62.20	102.23	261.24	48.08	131.28	150.60	24.35	695.21	368.84	88.83	103.40
Variation coefficient	38.64	30.81	24.54	51.41	24.48	30.53	69.41	11.28	51.37	29.32	15.97	22.17

Source: Compiled and calculated from The World Trade Map website on the Internet www.trademap.org.

It is also evident from the statistical estimates of Egyptian exports of onions to the Gulf Council countries in Table (3) that they ranged between a maximum of about 1227.98 thousand tons, with a value of about 271.68 million dollars, with an average export price of 221.7 dollars/ton in 2015, and a minimum of about 238.74 thousand tons, with a value of about 173.43 million dollars, with an average export price about 726.44 dollars/ton in 2009, while it was shown from the table (4) a study of the statistical estimation of the general time trends of the development of the quantity, value and average price of Egyptian exports of fresh onions during the period (2008-2019), where both the quantity and value of Egyptian onion exports increased with a statistically insignificant increase, which indicates their relative stability around the arithmetic average during the study period, while the export price of onions

decreased, reaching about 21.08 dollar/ton at a statistically significant rate.

While the statistical estimates of the Egyptian exports of grapes to the Gulf Council countries in Table (3) showed that they ranged between a maximum of about 623.55 thousand tons, with a value of about 210.34 million dollars, with an average export price of 337.32 dollars/ton in 2011, and a minimum about 89 thousand tons, with a value about 183.14 million dollars, with an average export price of about 2057.78 dollars/ton in 2013, while it was shown from the table (4) a study of the statistical estimation of the general time trends of the development of the quantity, value and average price of Egyptian exports of fresh grapes during the period (2008). -2019), where the value and average export price of Egyptian grapes increase by 3.87 million dollars, 24.75 dollars/ton annually for each, while the

quantity of fresh grape exports decreased, reaching about 4.94 thousand tons annually, which is not statistically significant, which indicates that its relative stability around the arithmetic means during the study period.

While it was found from the statistical estimates of Egyptian exports of fresh oranges to the Gulf Council countries in Table (3) that they ranged between a maximum about 1903.77 thousand tons, with a value about 765.47 million dollar, with an average export price of 402.08 dollars / ton in 2018, and a minimum of 402.08dollar / ton about 678.70 thousand tons, with a value of about 408.26 million

dollars, with an average export price about 601.53 dollars / ton in 2008, while it was shown from table (4) studying the statistical estimation of the general time trends of the development of the quantity, value and average price of Egyptian exports of fresh oranges during the period (2008-2019), where the quantity and value of Egyptian exports of fresh grapes increased at a statistically significant rate about 99.11 thousand tons, 19.41 million dollars annually for each, while the quantity of exports of fresh oranges decreased at a statistically significant rate about 24.04/dollar ton annually.

Table (4) Statistical parameters of the development of the quantity, value and average export price of Egyptian potatoes, onions, oranges and grapes exported to the Gulf Cooperation Council countries during the period (2008-2019)

s	Crop	Variables	Coefficient (a)	Coefficient (b)	Value (T)	Coefficient of determination (R ²)	(F) Value
1	fresh potatoes	Exported quantity (thousand tons)	253.98	40.11	**3.34	0.53	*11.22
		Value (millions of dollars)	155.67	7.11	1.43	0.17	2.04
		Export price (dollars/ton)	549.29	-20.42	-3.28	0.52	*10.77
2	fresh onions	Exported quantity (thousand tons)	289.34	33.66	1.56	0.21	2.75
		Value (millions of dollars)	172.64	3.66	0.90	0.10	0.81
		Export price (dollars/ton)	567.03	-21.08	*-2.25	0.34	*5.04
3	grapes	Exported quantity (thousand tons)	249.10	-4.94	-.038	0.01	0.14
		Value (millions of dollars)	190.64	3.87	*2.21	0.33	*4.91
		Export price (dollars/ton)	1192.36	24.75	0.40	0.04	0.34
4	orange	Exported quantity (thousand tons)	668.08	90.73	6.07**	0.79	**36.89
		Value (millions dollars)	442.2	17.53	**3	0.51	*10.24
		Export price (dollars/ton)	608.57	-21.89	*-3.74	0.58	*13.94

Significant at the level of significance 0.05*

Significant at the level of significance 0.01

Source: compiled and calculated from Table No. (3).

Fourth: Measuring indicators of the competitiveness of Egyptian exports: Market share of Egyptian fresh potato exports to the Gulf Cooperation Council countries:

Table (5) shows the market share of the most important countries competing for fresh Egyptian potatoes for the Gulf Cooperation Council countries

during the average period (2014-2019) and from it, it became clear that Egypt ranked sixth after the Netherlands, Lebanon, Germany, the United Kingdom, and France in exporting fresh potatoes to the market Saudi Arabia with an average quantity about 1.17 thousand tons, representing approximately 2.03% of the total Saudi imports of fresh potatoes,

which amount about 57.64 thousand tons, with an average value of about 478.50 million dollars, representing approximately 1.77% of the total value of Saudi imports of fresh potatoes, which amount about 27.09 million dollars. The average export price per ton of fresh potatoes amounted to about 408.63 dollars/ton. Then the most important countries compete with Egypt in exporting fresh potatoes to the Saudi market, as shown in the table. While Egypt ranked second after Lebanon in exporting fresh potatoes to the Kuwait market, with an average quantity of about 25.47 thousand tons, representing approximately 23.51% of Kuwait's total imports of fresh potatoes, amounting to about 108.33 thousand tons, with an average value about 12.80 million dollars, representing approximately 26.76% of the total The value of Kuwait's imports of fresh potatoes amounting about 47.84 million dollars, with an average export price per ton of fresh potatoes amounting about 502.71 dollar /ton. Then the most important countries compete with Egypt in exporting fresh potatoes to the Kuwaiti market as shown in the table. While Egypt ranked second after Pakistan in exporting fresh potatoes to the UAE market, with an average quantity of about 44.10 thousand tons, representing approximately 18.13% of the UAE's total imports of fresh potatoes, which amounted to about 243.29 thousand tons, with an average value about 19.98 million dollars, representing approximately 24.83% of the total value of UAE imports of fresh potatoes amounting about 80.49 million dollars, with an average export price per ton of fresh potatoes amounting about 453.11 dollar/ton. Then the most important countries compete with Egypt in exporting fresh potatoes to the UAE market, as shown in the table.

While Egypt ranked third after Pakistan and Lebanon in exporting fresh potatoes to the Bahrain market with an average quantity of about 3.34 thousand tons, representing approximately 11.95% of Bahrain's total imports of fresh potatoes, amounting to about 27.97 thousand tons, with an average value about 2.72 million dollars, representing approximately 22.15% of the total value of Bahrain's imports of fresh potatoes, which amounted about 12.28 million dollars, the average export price per ton of Egyptian fresh potatoes amounted about 813.55 dollars/ton. Then the most important countries compete with Egypt in exporting fresh potatoes to the Bahrain market, as shown in the table.

Egypt ranked third after the UAE and Pakistan in exporting fresh potatoes to the Oman market, with an average quantity of about 8.73 thousand tons, representing about 12.02% of Oman's total imports of fresh potatoes, which amounted to about 72.61 thousand tons, with an average value of

about 4.03 million dollars, representing about 15.86% of the total value of Oman's imports of fresh potatoes amounted about 25.42 million dollars, with an average export price per ton of Egyptian fresh potatoes amounting about 461.99 dollar/ton. Then the most important countries compete with Egypt in exporting fresh potatoes to the Omani market, as shown in the table.

The market share of Egyptian onion exports to the Gulf Cooperation Council countries:

Table (6) shows that Egypt ranked first in exporting fresh onions to Saudi Arabia's market, with an average quantity of about 231.54 thousand tons, representing approximately 63.96% of Saudi Arabia's total imports of fresh onions, amounting to approximately 362.04 thousand tons, with an average value of about 108.5 million dollars, representing approximately 78.9% of the total value of Saudi Arabia imports of fresh onions, amounting about 137.48 million dollars, with an average export price per ton of fresh Egyptian onions amounting about 468.48 dollar /ton. Then the most important countries compete with Egypt in exporting fresh onions to the Saudi Arabia market, as shown in the table.

While Egypt ranked second in exporting fresh onions to the Kuwait market with an average quantity of about 23.64 thousand tons, representing approximately 23.43% of Kuwait's total imports of fresh onions, amounting to approximately 100.91 thousand tons, with an average value of about 11.62 million dollars, representing approximately 30.82% of the total value of imports Kuwait's supply of fresh onions amounted about 37.70 million dollars, with an average export price per ton of fresh Egyptian onions amounting about 491.42 dollar/ton. Then the most important countries compete with Egypt in exporting fresh onions to the Kuwait market, as shown in the table.

While Egypt ranked third after India and Pakistan in exporting fresh onions to the UAE market, with an average quantity of about 32.89 thousand tons, representing approximately 9.29% of the total UAE imports of fresh onions, amounting to about 354.22 thousand tons, with an average value of about 14.65 million dollars, representing approximately 14.03% Of the total value of UAE imports of fresh onions, amounting about 104.36 million dollars, the average export price per ton of fresh Egyptian onions amounted about 445.30 dollars/ton. Then the most important countries compete with Egypt in exporting fresh onions to the UAE market, as shown in the table.

While Egypt ranked second after India in exporting fresh onions to the Bahrain market, with an average quantity of about 5.04 thousand tons, representing approximately 13.22% of Bahrain's total

imports of fresh onions, amounting to approximately 38.12 thousand tons, with an average value about 2.46 million dollars, representing approximately 16.51% of the total imports. The total value of Bahrain's imports of fresh onions amounting about 14.87 million dollars, with an average export price per ton of fresh Egyptian onions amounting to about 487.25 dollars/ton. Then the most important countries compete with Egypt in exporting fresh onions to the Bahrain market, as shown in the table.

Egypt ranked third after India and the UAE in exporting fresh onions to the Omani market, with an average amount of about 5.57 thousand tons, representing approximately 8.76% of Oman's total imports of fresh onions, amounting to about 63.63 thousand tons, with an average value of about 7.86 million dollars, representing approximately 18.12% of the total amount of fresh onions. The total value of Oman's imports of fresh onions amounting about 43.39 million dollars, with an average export price per ton of fresh Egyptian onions amounting to about 1410.40 dollars/ton. Then the most important countries compete with Egypt in exporting fresh onions to the Omani market, as shown in the table.

Table (5): The market share of the most important countries competing for Egyptian fresh potato exports to the Gulf Cooperation Council countries during the average period(2014-2019).

Saudi Arabia market						Kuwait market						UAE market					
The stat	Amount of market imports (tons)	Market share	Value of imports (thousand dollars)	%	average import price	The stat	Amount of market imports (tons)	Market share	imports (thousand)	%	average import price	The stat	Amount of market imports (tons)	Market share	imports (thousand)	%	average import price
Holland	22722	39.42	13730.50	50.68	604.28	Lebanon	40147	37.06	19332	40.41	481.53	Pakistan	84787	34.85	17963	22.32	211.86
Lebanon	14607.75	25.34	3668.50	13.54	251.13	Egypt	25469	23.51	12803	26.76	502.71	Egypt	44103.75	18.13	19984	24.83	453.11
Germany	4333.50	7.52	1897.50	7.00	437.87	India	10103	9.33	3532	7.38	349.57	Lebanon	41321.5	16.98	12623	15.68	305.47
United kingdom	3646.75	6.33	2644.50	9.76	725.17	Germany	8295	7.66	2965	6.20	357.37	France	11990.5	4.93	5806	7.21	484.17
France	3568.00	6.19	1706.25	6.30	478.21	Pakistan	6212	5.73	1712	3.58	275.52	China	11446.25	4.70	4083	5.07	356.71
Egypt	1171.00	2.03	478.50	1.77	408.63	France	4140	3.82	2154	4.50	520.23	India	7640.75	3.14	2468	3.07	323.04
Bangladesh	885.00	1.54	640.50	2.36	723.73	Iran	4033	3.72	1404	2.93	348.09	Iran	5742.25	2.36	703.8	0.87	122.56
Denmark	943.75	1.64	555.75	2.05	588.87	Holland	2501	2.31	1152	2.41	460.76	Holland	7052.25	2.90	3119	3.87	442.20
Rest of the world	5759.67	9.99	1772.75	6.54	307.79	Rest of the world	7429	6.86	2789	5.83	893.71	Rest of the world	29204.33	12.00	13741	17.07	470.52
total world	57637.42	100	27094.75	100	470.09	total world	108328	100	47842	100	441.64	total world	243288.58	100	80490	100	330.84

Source: Compiled and calculated from The World Trade Map website on the Internet www.trademap.org.

Follow table (5): The market share of the most important countries competing for Egyptian fresh potato exports to the Gulf Cooperation Council countries during the average period(2014-2019).

Bahrain market						Oman market					
The stat	Amount of market imports (tons)	Market share	Value of imports (thousand dollars)	%	average import price	The stat	Amount of market imports (tons)	Market share	Value of imports (thousand dollars)	%	average import price
Pakistan	9198	32.88	2865.3	23.33	311.51	UAE	23503.75	32.37	9075.50	35.70	386.13
Lebanon	6022.50	21.53	1646	13.40	273.31	Pakistan	9927.50	13.67	1751.50	6.89	176.43
Egypt	3344	11.95	2720.5	22.15	813.55	Egypt	8728	12.02	4032.25	15.86	461.99
France	2385.25	8.53	1168.5	9.51	489.89	Lebanon	6707.75	9.24	3469.50	13.65	517.24
China	1626.50	5.81	1134.3	9.24	697.36	India	6561.25	9.04	2419.00	9.52	368.68
India	1237	4.42	659	5.37	532.74	Belgium	5359.75	7.38	1990.25	7.83	371.33
Jordan	843.75	3.02	208.25	1.70	246.81	Germany	3510	4.83	891.25	3.51	253.92
Germany	471.75	1.69	152.25	1.24	322.73	Yemen	2592.50	3.57	267.00	1.05	102.99
Rest of the world	2845.25	10.17	1727.50	14.07	607.15	Rest of the world	5721.25	7.88	1526.75	6.01	266.86
total world	27974	100	12282	100	439.03	total world	72611.8	100	25423	100	350.12

Source: Compiled and calculated from The World Trade Map website on the Internet www.trademap.org.

Table (6): The market share of the most important countries competing for exports of fresh Egyptian onions to the countries of the Gulf Cooperation Council during the average period (2014-2019).

Saudi market						Kuwait market						UAE market					
The stat	Amount of market imports (tons)	Market share	Value of imports (thousand dollars)	%	average import price	The stat	Amount of market imports (tons)	Market share	Value of imports (thousand dollars)	%	average import price	The stat	Amount of market imports (tons)	Market share	Value of imports (thousand dollars)	%	average import price
Egypt	231547.50	63.96	108474.50	78.90	468.48	India	48694	48.26	16144	42.83	331.54	India	214255.5	60.49	59291	56.81	276.73
Yemen	77065.25	21.29	9797.25	7.13	127.13	Iran	14836	14.70	5333	14.15	359.46	Egypt	32892.5	9.29	14647	14.03	445.30
India	39997.75	11.05	12935	9.41	323.39	Egypt	23644	23.43	11619	30.82	491.42	Spain	10075.5	2.84	5799.3	5.56	575.58
Spain	3123.00	0.86	1473.25	1.07	471.74	Spain	1792	1.78	1002	2.66	559.07	Pakistan	53903	15.22	11304	10.83	209.71
Turkey	3457.50	0.95	1199.25	0.87	346.85	Yemen	2466	2.44	547	1.45	221.82	China	8572.5	2.42	3012.8	2.89	351.44
Holland	698.00	0.19	973.25	0.71	1394.34	Lebanon	1586	1.57	576	1.53	363.29	Iran	25122.5	7.09	3340.8	3.20	132.98
miscellaneous area	845.00	0.23	434.50	0.32	514.20	Saudi Arabia	1528	1.51	459.5	1.22	300.67	Australia	2371.25	0.67	1744.5	1.67	735.69
Lebanon	458.75	0.13	509	0.37	1109.54	Pakistan	4081	4.04	1067	2.83	261.50	Holland	1481.75	0.42	708.25	0.68	477.98
Rest of the world	4851.67	1.34	1685	1.23	347.30	Rest of the world	2279	2.26	949.3	2.52	416.57	Rest of the world	5543.17	1.57	4516	4.33	1886.10
total world	362044.42	100	137481	100	379.74	total world	100906	100	37697	100	373.58	total world	354217.67	100	104363	100	294.63

Source: Compiled and calculated from The World Trade Map website on the Internet www.trademap.org.

Follow table (6): The market share of the most important countries competing for exports of fresh Egyptian onions to the countries of the Gulf Cooperation Council during the average period (2014-2019).

Bahrain market						Oman market					
The stat	Amount of market imports (tons)	Market share	Value of imports (thousand dollars)	%	average import price	The stat	Amount of market imports (tons)	Market share	Value of imports (thousand dollars)	%	average import price
India	22809	59.84	7895	53.07	346.14	India	30580.25	48.06	21694.5	50	709.43
Egypt	5039.50	13.22	2456	16.51	487.25	UAE	15715.75	24.70	8153	18.79	518.78
China	1777.50	4.66	640.8	4.31	360.48	Egypt	5573.25	8.76	7860.50	18.12	1410.40
Yemen	786.50	2.06	297.8	2.00	378.58	Pakistan	5029	7.90	2453	5.65	487.77
Spain	754.25	1.98	397	2.67	526.35	Yemen	4816.50	7.57	44.75	0.10	9.29
Holland	387.75	1.02	171.5	1.15	442.30	Spain	65.75	0.10	48.50	0.11	737.64
Pakistan	3783	9.92	1279	8.60	338.16	Iran	1191.50	1.87	1422.75	3.28	1194.08
Lebanon	357.25	0.94	870	5.85	2435.27	Rest of the world	660.58	1.04	1712	3.95	2591.65
Rest of the world	2424.58	6.36	868.50	5.84	358.21	total world	63632.58	100	43389	100	681.87
total world	38119	100	14875	100	390.23						

Source: Compiled and calculated from The World Trade Map website on the Internet www.trademap.org.

Market share of fresh Egyptian grape exports to the Gulf Cooperation Council countries:

Table (7) shows that Egypt ranked fourth after Turkey, India, and South Africa in exporting fresh grapes to the Saudi market with an average quantity of about 6.40 thousand tons, representing approximately 11.57% of Saudi Arabia's total imports of fresh grapes, which amount about 55.35 thousand tons, with an average value about 9.40 million dollars, representing approximately 14.77% of the total value of Saudi imports of fresh grapes, amounting about 63.63 million dollars, with an average export price per ton of fresh Egyptian grapes amounting about 1468.37 dollar/ton. Then the most important countries compete with Egypt in exporting fresh grapes to the Saudia market, as shown in the table.

While Egypt ranked first in exporting fresh grapes to the Kuwaiti market, with an average quantity of about 3.37 thousand tons, representing approximately 26.64% of Kuwait's total imports of fresh grapes, which amounted to about 12.64 thousand tons, with an average value of about 6.04 million dollars, representing approximately 33.80% of the total value of imports Kuwait's fresh grapes amount about 17.88 million dollars, with an average export price per ton of fresh Egyptian grapes amounting approximately 1,795.26 dollar/ton. Then the most important countries compete with Egypt in exporting fresh grapes to the Kuwait market, as shown in the table.

While Egypt ranked fourth after India, South Africa, and Australia in exporting fresh grapes to the UAE market, with an average quantity of about 5.39 thousand tons, representing approximately 9.01% of the UAE's total imports of fresh grapes, which amounted to about 59.78 thousand tons, with an average value about 8.42 million dollars, representing approximately 8.50% of the total value of UAE imports of fresh grapes, amounting about 99 million dollars, with an average export price per ton of fresh Egyptian grapes amounting about 1562.38 dollars/ton. Then the most important countries compete with Egypt in exporting fresh grapes to the UAE market, as shown in the table.

While Egypt ranked second after India in exporting fresh grapes to the Bahrain market with an average quantity of about 0.70 thousand tons, representing approximately 13.89% of Bahrain's total imports of fresh grapes, amounting to about 5.02 thousand tons, with an average value of about 0.94 million dollars, representing approximately 13.55% of the total value of Bahrain's imports of fresh grapes amounted about 6.91 million dollars, with an average export price per ton of fresh Egyptian grapes amounting approximately 1,341.58 dollar/ton. Then

the most important countries compete with Egypt in exporting fresh grapes to the Bahrain market, as shown in the table.

Egypt ranked second after the UAE in exporting fresh grapes to the Oman market, with an average quantity of about 2.51 thousand tons, representing approximately 21.13% of Oman's total imports of fresh grapes, amounting to approximately 11.90 thousand tons, with an average value about 3.86 million dollars, representing approximately 27.57% of the total value of Oman's imports of fresh grapes amounted to about 13.98 million dollars, with an average export price per ton of fresh Egyptian grapes amounting approximately 1,533.66 dollar/ton. Then the most important countries compete with Egypt in exporting fresh grapes to the Oman market, as shown in the table.

Table (7): The market share of the most important countries competing for fresh Egyptian grape exports to the Gulf Cooperation Council countries during the average period(2014-2019).

Saudi Arabia market						Kuwait market						UAE market					
Turkey	11616	20.99	5874.5	9.23	505.72	Egypt	3366.50	26.64	6043.75	33.80	1795.26	India	14763.50	24.70	18182.8	18.37	1231.60
India	8667	15.66	10815	17.00	1247.84	Lebanon	2565	20.30	3418.00	19.12	1332.55	South Africa	10433.25	17.45	19700	19.90	1888.19
South Africa	7180	12.97	10131	15.92	1411.00	India	1607.75	12.72	1782.50	9.97	1108.69	Australia	5910	9.89	14001.8	14.14	2369.16
Egypt	6402.50	11.57	9401.3	14.77	1468.37	Turkey	1459	11.54	1581.50	8.85	1083.96	Egypt	5388.75	9.01	8419.25	8.50	1562.38
Lebanon	6203.50	11.21	2138.3	3.36	344.68	South Africa	1015.50	8.04	1429.00	7.99	1407.19	Italia	4471.75	7.48	7740.25	7.82	1730.92
Chile	4902.25	8.86	8828	13.87	1800.81	Australia	491.25	3.89	1073.25	6	2184.73	Turkey	3642.50	6.09	2611.25	2.64	716.88
Italia	3444.25	6.22	5894.5	9.26	1711.40	Saudi Arabia	721	5.71	417.50	2.34	579.06	United States of America	3050.75	5.10	9152.5	9.24	3000.08
Peru	2135.25	3.86	3860.5	6.07	1807.99	Italia	437.50	3.46	677.50	3.79	1548.57	Chile	2613	4.37	4995.75	5.05	1911.88
Rest of the world	4800	8.67	6691.50	10.52	4525.10	Rest of the world	974.50	8	1455.75	8	7142.05	Rest of the world	9504.25	15.90	14203.50	14.35	8978.68
total world	55351	100	63635	100	1149.66	total world	12638	100	17879	100	1414.68	total world	59778	100	99007	100	1656.25

Source: Compiled and calculated from The World Trade Map website on the Internet www.trademap.org.

Follow table (7): The market share of the most important countries competing for fresh Egyptian grape exports to the Gulf Cooperation Council countries during the average period (2014-2019).

Bahrain market						Oman market					
The stat	Amount of market imports (tons)	Market share	Value of imports (thousand dollars)	%	average import price	The stat	Amount of market imports (tons)	Market share	Value of imports (thousand dollars)	%	average import price
India	945	18.82	1181.50	17.10	1250.26	UAE	5299	44.54	5195.3	37.16	980.42
Egypt	697.50	13.89	935.75	13.55	1341.58	Egypt	2513.75	21.13	3855.3	27.57	1533.66
South Africa	687.25	13.69	1187	17.18	1727.17	Lebanon	1529.75	12.86	1556.8	11.13	1017.65
Turkey	637	12.69	375.50	5.44	589.48	India	887.50	7.46	1095.5	7.84	1234.37
Lebanon	479.50	9.55	251	3.63	523.46	Saudi Arabia	301	2.53	384	2.75	1275.75
Saudi Arabia	339.75	6.77	311.75	4.51	917.59	Jordan	255.50	2.15	125.75	0.90	492.17
United States of America	313.75	6.25	951.25	13.77	3031.87	South Africa	275.75	2.32	408.25	2.92	1480.51
Australia	298	5.94	653.50	9.46	2192.95	Italia	198.25	1.67	347.5	2.49	1752.84
Rest of the world	622.75	12	1060.50	15	5327.69	Rest of the world	638	5.36	1013	7.25	1587.77
total world	5020.5	100	6907.8	100	1375.91	total world	11899	100	13981	100	1175.04

Source: Compiled and calculated from The World Trade Map website on the Internet www.trademap.org.

The market share of Egyptian orange exports to the Gulf Cooperation Council countries:

Table (8) shows that Egypt ranked first in exporting fresh oranges to the Saudi market, with an average quantity of about 251.89 thousand tons, representing approximately 62.74% of Saudi Arabia's total imports of fresh oranges, amounting to about 401.47 thousand tons, with an average value about 95.73 million dollars, representing approximately 49.92% of the total value Saudi imports of fresh oranges, amounting about 191.77 million dollars, with an average export price per ton of fresh Egyptian oranges amounting about 380.07 dollar/ton. Then the most important countries compete with Egypt in exporting fresh oranges to the Saudi market, as shown in the table.

While Egypt ranked second after South Africa in exporting fresh oranges to the Kuwait market, with an average amount of about 53.79 thousand tons, representing approximately 35.64% of Kuwait's total imports of fresh oranges, amounting to approximately 150.92 thousand tons, with an average value about 25.58 million dollars, representing about 28.01% of the total value of Kuwait's imports of fresh oranges amounting about 91.34 million dollars, with an average export price per ton of fresh Egyptian oranges amounting about 475.59 dollar/ton. Then the most important countries compete with Egypt in exporting fresh oranges to the Kuwait market, as shown in the table.

Egypt also ranked second after South Africa in exporting fresh oranges to the UAE market, with an average amount of about 96.36 thousand tons, representing approximately 20.84% of the UAE's total imports of fresh oranges, amounting to approximately 462.36 thousand tons, with an average value about 41.61 million dollars, representing about 13.14% of the total value of UAE imports of fresh oranges, amounting about 316,736 million dollars, with an average export price per ton of fresh Egyptian oranges amounting about 431.80 dollar/ton. Then the most important countries compete with Egypt in exporting fresh oranges to the UAE market, as shown in the table.

While Egypt ranked first in exporting fresh oranges to the Bahrain market, with an average quantity of about 10.87 thousand tons, representing approximately 27.14% of Bahrain's total imports of fresh oranges, amounting to approximately 40.07 thousand tons, with an average value of about 5.22 million dollars, representing approximately 19.81% of total value Bahrain's imports of fresh oranges amounting about 26.36 million dollars, with an average export price per ton of fresh Egyptian oranges amounting about 480.13 dollar/ton. Then the

most important countries compete with Egypt in exporting fresh oranges to the Bahrain market, as shown in the table.

Egypt ranked second after the UAE in exporting fresh oranges to the Oman market with an average amount of about 18.06 thousand tons, representing approximately 28.90% of Oman's total imports of fresh oranges, which amount to about 62.49 thousand tons, with an average value about 7.18 million dollars, representing approximately 20.30% of the total value of Oman's imports of fresh oranges amounting about 35.35 million dollars, with an average export price per ton of fresh Egyptian oranges amounting about 397.37 dollar /ton. Then the most important countries compete with Egypt in exporting fresh oranges to the Omani market, as shown in the table.

It is evident from the above that Egypt is one of the promising markets for the countries of the Gulf Cooperation Council, where the countries of Kuwait, the Emirates, Bahrain, and Oman were the first countries to import Egyptian potatoes, with rates amounting to about 23.51%, 18.13%, 11.95% and 12.02% of the total volume of Egyptian potato exports to the countries of the Gulf Cooperation Council. While Saudi Arabia came at the forefront of the Gulf Cooperation Council countries in importing fresh Egyptian onions, as its imports of Egyptian onions amounted to about 63.9% of the total exports to the countries of the Gulf Cooperation Council, followed by Kuwait, Bahrain, and the UAE, where the market share reached about 23.4%, 13.22%, 9.29% of The total volume of Egyptian onion exports to the countries of the Gulf Cooperation Council, while the State of Kuwait came first to import the Egyptian grape crop, with a market share about 26.64%, and the countries of Oman and Bahrain ranked second in importing Egyptian grapes, with a market share of about 21.13%, 13.9% While Saudi Arabia and the UAE came in fourth place, with a market share about 11.57%, 9.01% of the total volume of Egyptian grape exports to the Gulf Cooperation Council countries. It was also found that Saudi Arabia was the first GCC country to import Egyptian oranges, with a market share of about 62.74%. Kuwait, Oman, Bahrain, and the UAE each came with a market share of about 35.64%, 28.90%, 27.14%, and 20.84%, respectively, from the Gulf Council countries importing For the Egyptian orange for the average period(2014-2019).

Table (8): The market share of the most important countries competing for fresh Egyptian orange exports to the Gulf Cooperation Council countries during the period (2014-2019).

Saudi Arabia market						Kuwait market						UAE market					
The stat	Amount of market imports (tons)	Market share	The stat	Amount of market imports (tons)	Market share	The stat	Amount of market imports (tons)	Market share	The stat	Amount of market imports (tons)	Market share	The stat	Amount of market imports (tons)	Market share	The stat	Amount of market imports (tons)	Market share
Egypt	251886	62.74	95734.00	49.92	380.07	South Africa	47862.25	31.71	36573.50	40.04	764.14	South Africa	173710	37.57	142928.3	45.13	822.80
South Africa	105469.50	26.27	71183.75	37.12	674.92	Egypt	53791.75	35.64	25582.75	28.01	475.59	Egypt	96355	20.84	41605.75	13.14	431.80
Lebanon	15352.50	3.82	3314.00	1.73	215.86	Lebanon	19688.00	13.05	11252.50	12.32	571.54	Pakistan	57234.75	12.38	20708.75	6.54	361.82
Spain	14498.50	3.61	12311.25	6.42	849.14	Turkey	11491.25	7.61	6481.50	7.10	564.04	Turkey	26532	5.74	16483.5	5.20	621.27
Turkey	4347.75	1.08	1689.00	0.88	388.48	Saudi Arabia	3183.50	2.11	2203.50	2.41	692.16	Spain	21127	4.57	22534.5	7.11	1066.62
Morocco	1724.75	0.43	1284.00	0.67	744.46	Pakistan	7722.50	5.12	3596.00	3.94	465.65	Viet Nam	14013.25	3.03	10917.25	3.45	779.07
Australia	2341	0.58	1858.25	0.97	793.78	Spain	1500.50	0.99	1177.00	1.29	784.41	Somalia	12508.25	2.71	7283	2.30	582.26
Rest of the world	5849	1.46	4392.25	2.29	750.94	Vietnam	556.50	0.37	356.00	0.39	639.71	Australia	12266.50	2.65	12874.5	4.06	1049.57
total world	401469	100	191766.50	100	477.66	Rest of the world	5126.25	3	4121.00	5	803.90	Rest of the world	48617.50	10.51	41391.50	13.07	851.37
						total world	150922.5	100	91343.75	100	605.24	total world	462364	100	316727	100	685.02

Source: Compiled and calculated from The World Trade Map website on the Internet www.trademap.org.

Follow table (8): The market share of the most important countries competing for fresh Egyptian orange exports to the Gulf Cooperation Council countries during the period (2014-2019).

Bahrain market						Oman market					
The stat	Amount of market imports (tons)	The stat	Amount of market imports (tons)	The stat	Amount of market imports (tons)	The stat	Amount of market imports (tons)	The stat	Amount of market imports (tons)	The stat	Amount of market imports (tons)
South Africa	10864.25	27.12	10798	40.97	993.90	UAE	29145.25	46.64	17904.3	50.65	614.31
Egypt	10875.25	27.14	5221.5	19.81	480.13	Egypt	18059.25	28.90	7176.25	20.30	397.37
Lebanon	5669.00	14.15	1692.25	6.42	298.51	Pakistan	5168.00	8.27	1967.5	5.57	380.71
Turkey	3194.25	7.97	1523.75	5.78	477.03	South Africa	4916.50	7.87	2869.5	8.12	583.65
Pakistan	2330.50	5.82	1082.25	4.11	464.39	Lebanon	2021.00	3.23	3078.5	8.71	1523.26
Spain	1062.75	2.65	1112	4.22	1046.34	Saudi Arabia	586.75	0.94	267.5	0.76	455.90
Saudi Arabia	1068.50	2.67	270	1.02	252.69	Vietnam	497.67	0.80	311	0.88	624.92
Australia	1016.50	2.54	1128	4.28	1109.69	Turkey	415.25	0.66	202	0.57	486.45
Rest of the world	3984.75	9.95	3529.50	13.39	885.75	Rest of the world	1678.58	2.69	1571.25	4.45	936.06
total world	40066	100	26357.3	100	657.85	total world	62488	100	35347.8	100	565.67

Source: Compiled and calculated from: The World Trade Map website on the Internet www.trademap.org.

The rate of penetration of Egyptian exports of potatoes, onions, grapes, and fresh oranges to the markets of the Gulf Cooperation Council:

The market penetration rate is one of the most widespread criteria for measuring the competitiveness of any country in the export of goods, and it is a measure of the extent to which the exported commodity is accepted or absorbed in foreign markets, and it also shows the extent to which exports of the commodity can increase in foreign markets, and the higher the value of this indicator for a particular market indicates that this market is more acceptable to the commodity. It is also more acceptable to penetrate the market and vice versa.

It is clear from Table (9) that the rate of penetration of Egyptian fresh potato exports to the markets of the Gulf Cooperation Council countries amounted to about 0.187%, 0.168%, 0.121%, 0.120%, 0.020% for Emirates, Kuwait, Oman, Bahrain, and then Saudi Arabia respectively. The high values of

the market penetration rate in each of the Emirates and Kuwait, meaning that Egypt has a competitive advantage in these two markets, and the low values of the market penetration rate for Saudi Arabia, indicate the weak possibility of Egyptian potatoes penetrating this market, which means the low competitive advantage of Egypt in it.

The results in Table (8) showed that the rate of penetration of Egyptian fresh onion exports to the markets of the Gulf Cooperation Council countries was about 0.640%, 0.250%, 0.136%, 0.090%, and 0.090% for each Saudi Arabia, Kuwait, Bahrain, the Emirates, and Oman, respectively, which indicates a high market penetration rate in Saudi Arabia and Kuwait, which means that Egypt has a competitive advantage in these two markets, and a low market penetration rate in the UAE and Oman, which indicates a weak ability for Egyptian onions to penetrate these two markets, which means a low competitive advantage to Egypt in these two markets.

Table (9): The rate of penetration of Egyptian exports of potatoes, onions, grapes, and fresh oranges to the markets of the Gulf Cooperation Council countries during the average period (2014-2019).

The state	potatoes					onions				
	Quantity of imports from Egypt (tons)	Country production (tons)	Total state imports (tons)	Quantity of exports to the country (tons)	*Market penetration rate	Quantity of imports from Egypt (tons)	Country production (tons)	Total state imports (tons)	Quantity of exports to the country (tons)	*Market penetration rate
Saudi Arabia	1171	-	57637.4	153	0.020	231548	-	362044	119	0.640
Kuwait	25468.5	50197	108328	7186.75	0.168	23644.3	-	100906	6163	0.250
UAE	44103.8	-	243289	7618	0.187	32892.5	25815.3	354218	14939.5	0.090
Bahrain	3344	30.75	27974	153.5	0.120	5039.5	-	38119.3	1005.75	0.136
Oman	8728	-	72611.8	704.5	0.121	5573.25	-	63632.6	1713.5	0.090
The state	grapes					orange				
	Quantity of imports from Egypt (tons)	Country production (tons)	Total state imports (tons)	Quantity of exports to the country (tons)	*Market penetration rate	Quantity of imports from Egypt (tons)	Country production (tons)	Total state imports (tons)	Quantity of exports to the country (tons)	*Market penetration rate
Saudi Arabia	6402.5	42774.8	55350.8	4315.25	0.068	251886	-	401469	38086.8	0.693
Kuwait	3366.5	118	12638	204.75	0.268	53792	253.5	150923	40677.8	0.487
UAE	5388.75	32.75	59777.8	7111.5	0.102	96355	-	462364	44437	0.231
Bahrain	697.5	148.5	5020.5	223	0.141	10875.3	-	40065.8	3764.25	0.300
Amman	2513.8	-	11898.5	184	0.215	18059.3	-	62488.3	1512	0.296

*Penetration rate = quantity of a country's exports of a particular crop ÷ Apparent consumption of the country importing the same crop

Apparent consumption = (production + imports) - exports

Source: Compiled and calculated from 1- The World Trade Map website on the Internet www.trademap.org
www.fao.stat.org2- The website of the Food and Agriculture Organization on the Internet

It was found from the previous table that the rate of penetration of Egyptian grape exports to the markets of the Gulf Cooperation Council countries amounted to about 268%, 0.215%, 0.141%, 0.102%, 0.068% for each Kuwait, Oman, Bahrain, UAE and Saudi Arabia, respectively, which indicates an increase. The market penetration rate values were in Kuwait, Oman and Bahrain, which means that Egypt has a competitive advantage in these markets, and the low market penetration rate values in Saudi Arabia and the UAE, which indicates the weak possibility of Egyptian grapes penetrating these two markets, which means a low competitive advantage for Egypt.

It is also clear that the rate of penetration of Egyptian orange exports to the markets of the Gulf Cooperation Council countries amounted to about 693%, 0.487%, 0.300%, 0.296%, 0.231% for Saudi Arabia, Kuwait, Bahrain, Oman, and then the UAE, respectively, which indicates an increase in the rates of Market penetration in Saudi Arabia, Kuwait, Bahrain, Oman and the UAE, which means that Egypt has a competitive advantage in these markets.

It appears from the above that there is an opportunity to develop and increase Egyptian exports of the crops under study to meet the needs of the Gulf Cooperation Council markets, by studying the market well, knowing the desired specifications, and working to meet them to increase Egypt's export quotas to it and thus raise the rate of penetration to it.

**A statistical estimation of the gravity model of crops for the Gulf Cooperation Council countries:
The theoretical framework of the gravity model⁽¹⁾:**

The gravity model is considered the most important model used in the analysis of foreign trade. This model is attributed to the scientist Izard in 1954, and the idea of the model is based on Newton's law of gravity, which is known short as the law of universal gravity, a physical law that states that "there is a force of attraction between any two bodies in the universe, this force is proportional to directly with the product of their masses and inversely proportional to the square of the distance between them. The gravity model (what is known as trade flows between two countries, whether exports or imports). The gravity model was used to study the response of the Gulf Cooperation Council countries to the expansion of Egyptian exports for the period (2017-2019) using the Panel Data method.

Gravity model formula:

$$F_{ij} = G \times M_i \times M_j / D_{ij}$$

Where:

F_{ij} : Expresses trade flows, whether exports or imports, with the dollar from the exporting country to importing country.

Fixed G :

M_i : The gross domestic product of the exporting country.

M_j : The gross domestic product of the importing country.

D_{ij} : The nautical mile distance between the exporting and importing country, and the distance is an indicator of the cost of a trade.

This equation can be transformed into a linear form for economic analysis into an exponential form.

The linear form of the gravity model becomes:

$$\ln Y_{ijt} = \alpha_0 + B_1 \ln X_{1t} + B_2 \ln X_{2t} + B_3 \ln D_{isij} + B_4 \ln X_{3t} + B_5 D_1 + B_6 D_2 + B_7 D_3 + B_8 D_4$$

In the case of knowing the impact of each of the Gulf Cooperation Council countries on Egyptian exports and imports

$$\ln Y_{ijt} = \alpha_0 + B_1 \ln X_{jt} + B_2 \ln X_{jt} + B_3 \ln D_{isij} + B_4 \ln X_{jt} + B_5 D_1 + B_6 D_2 + B_7 D_3 + B_8 D_4 + B_9 d$$

Where:

$\ln Y_{ijt}$: It expresses the trade flows (exports or imports) between Egypt and the GCC countries during the period (2017-2019).

$\ln X_{1t}$: expresses the real GDP of the importing country with million dollars during the period (2017-2019).

$\ln X_{2t}$: expresses the population of the importing country with million people during the period (2017-2019).

$\ln D_{isij}$: expresses the nautical mile distance between Egypt and the Nile Basin countries during the period (2017-2019).

$\ln X_{3t}$: expresses the real per capita GDP of the importing country with the dollar during the period (2017-2019).

D_1 : expresses the sham variables of the language, taking 1 in the case that the two countries have the same language, and taking the value 0 in the reverse case during the period (2017-2019).

Concerning the previous introduction to the gravity model, many attempts have been made in statistical estimates to study the impact of the national indicators for each of the GCC countries on the volume of trade exchange or Egyptian exports. It has reached the most critical independent factors affecting the volume of Egyptian exports in formulating the model under study for the GCC countries. This is to discuss the extent of the response of these countries to the increase in Egyptian export share.

Table (10): Statistical estimates of the gravity model of the Gulf Cooperation Council countries for orange, grape, onion, and potato crops for the period (2017-2019).

the crop	Function	value (F)	The coefficient of determination (R2)
orange	$\text{Ln } y = 8.08 + 1.27\text{ln}x_1 - 1.045\text{ln}x_2 + 0.0437\text{ln}x_3$ (20.6)** (2.45-)** (2.59)**	181.8	0.97
grape	$\text{Ln } y = 2996.8 + 2.063\text{ln}x_1 - 1.0124\text{ln}x_2 + 0.807\text{ln}x_3$ (2.43)** (-2.78)** (1.88)*	19.9	0.81
onion	$\text{Ln } y = 13.5 + 0.94\text{ln}x_1 - 1.46\text{ln}x_2 + 0.0598\text{ln}x_3 - 1.24\text{ln}x_4$ (9.82)** (-1.96)* (1.99)* (-2.14)*	40.2	0.92
potato	$\text{Ln } y = 21.24 + 1.202\text{ln}x_1 - 2.54\text{ln}x_2 + 0.0073\text{ln}x_3 - 0.74\text{ln}x_4$ (18.48)** (-5.91)** (4.18)** (-2.11)**	99.4	0.97

Where: $\text{ln}y$: the dependent variable in the images in represents the amount of Egyptian exports to the Gulf Cooperation Council countries.

$\text{ln}X$: is the independent variable in the image in and represents the export price to Egypt in thousands of dollars.

$\text{ln}X$: The independent variable in the image in represents the geographical distance km between Egypt and the Gulf Cooperation Council countries.

$\text{ln}X$: The independent variable in the image in represents the value of GNP for the GCC countries in thousands of dollars.

$\text{ln}X_4$: is a time variable.

Source: www.wdistances.com

<https://www.gcc-sg.org>

<https://www.gcc-sg.org/ar-sa/Pages/default.aspx>

Table (10) shows the estimation of the gravity model for trade exchange between Egypt and the Gulf Cooperation Council countries for the period 2017-2019. The results showed the statistical estimates of the gravity model for the orange crop that the increase in the export price to the Gulf Cooperation Council countries (x_1) by 1% leads to an increase in Egyptian exports by about 1.27 % during the period 2017/2019, while it was found that increasing the geographical distance between Egypt and the countries of the Gulf Cooperation Council by 1% leads to a decrease in Egyptian exports by 1.045%. It is also clear from the study of the total value of GDP value of GCC on the volume of Egyptian exports shows an increase of 10% of the GDP of the GCC countries Egyptian exports increase by 0.04% in the GCC countries, and the coefficient of determination is estimated at 0.97, meaning that about 97% of the changes that occur in the Egyptian exports to the GCC countries are due to the studied independent variables, while 3% are attributed to other factors that have not taken place on the estimation of the model.

While the results showed the statistical estimates of the gravity model of the grape crop that the increase in the export price for the Gulf Council countries (x_1) by 1% leads to an increase in Egyptian exports by about 2.06% during the period (2017-

2019), and this is consistent with the economic logic, while it was found that the increase in the geographical distance between Egypt and the countries of the Gulf Cooperation Council by 1%, this leads to a decrease in Egyptian exports by 1.012%. The coefficient of determination was estimated at 0.81, meaning that about 81% of the changes affecting Egyptian exports to the GCC countries are due to the studied independent variables, while 19% are attributed to other factors that were not estimated by the model.

The results of the statistical estimates of the gravity model of the onion crop showed that an increase in the export price of the Gulf Council countries (x_1) by 1% leads to an increase in Egyptian exports by about 0.94% during the period 2017/2019, and this is consistent with the economic logic, while it was found that the increase in the geographical distance between Egypt and the countries of the Gulf Council increased by 1%. This leads to a decrease in Egyptian exports by about 1.46%, as was evident from the study of the impact of the total value of the GDP in the Gulf Cooperation Council countries on the volume of Egyptian exports it turns out that an increase of 1% of GCC countries GDP increases the volume of Egyptian exports about 0.0598%. By estimating the volume of Egyptian exports over time, it was found that it decreases annually by 1.24%, and

by estimating the coefficient of determination, it amounted to about 0.81, meaning that about 81% of the changes affecting Egyptian exports to the GCC countries are due to the studied independent variables, while 19% are attributed to other factors that were not estimated by the model, as it was found that the model estimate is significant following the economic logic.

The results of the statistical estimates of the gravity model of potato crop showed that an increase in the export price of the Gulf Council countries (x1) by 1% leads to an increase in Egyptian exports of potatoes by about 1.202% during the period 2017/2019, and this is consistent with the economic logic, while it was found that the increase in the geographical distance between Egypt and the Gulf Cooperation Council countries increased by 1%. This leads to a decrease in Egyptian exports by about 2.54%, as was evident from the study of the impact of the total value of the GDP in the Gulf Cooperation Council countries on the volume of Egyptian exports. By estimating the volume of Egyptian exports over time, it was found that it decreases annually by 0.74%. By estimating the coefficient of determination, it amounted to about 0.97, meaning that about 97% of the changes affecting Egyptian exports to the GCC countries are due to the studied independent variables, while 3% are attributed to other factors that were not estimated by the model, as it was found that the model's estimate is significant in line with the economic logic.

It was found from the estimation of the value of (F) calculated for the various previous models that the mathematical form of the model in the double logarithmic form is suitable for the nature of the statistical data used.

Recommendations:

1-Establishing logistic zones where they collect crops and carry out post-collection operations on

commodities, which encourage agricultural exports to the Gulf Council countries.

2-Interest in contract agriculture to increase export opportunities.

3-Restructuring agricultural cooperatives to be the house of expertise for farms.

4-Supporting agricultural investment, especially in new lands.

5-Supporting small exporters to enter new markets for the Egyptian product.

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