Measuring Competitiveness among Grain Crops Exporters in Iraq's Imports Market

Amna Aqeel Majeed

College of Agricultural Engineering Sciences-
University of Baghdad

  aamna.aqeel2208m@coagri.uobaghdad.edu.iq

Dr. Awf A. Alsaad

College of Agricultural Engineering Sciences-
University of Baghdad

  aalsaad@coagri.uobaghdad.eduiq

Abstract:

The study aimed to calculate competitiveness in the Iraqi imports market among main exporters of wheat and rice during (2000-2021). Therefore, some competitiveness indicators were measured, such as revealed comparative advantage, price competitiveness, and market share, in order to determine the market share and competitiveness of the countries exporting the two crops and the extent of their impact on prices. Firstly, the results indicated that Thailand, India, and Pakistan have a revealed comparative advantage in exporting rice to the world, with the exception of the United States of America. Russia has a comparative advantage in exporting wheat to the world better than United States, Canada, and Australia. Secondly, the price competitiveness results for rice showed that both Thailand and Pakistan have price competition in exporting rice with the rest of their competing countries inside Iraq. The price competitiveness for wheat showed that the United States, Canada and Australia have price competitiveness, except for Russia. Finally, the results of the market share of rice and wheat exporters inside Iraq showed that Thailand has the highest market share in exporting rice to Iraq and that the United States has a greater market share in exporting wheat to Iraq.

Key words: Competitiveness, Imports Market, Market Power, Price Competitiveness, Revealed Comparative Advantage

Introduction:

Both wheat and rice are main grain crops of great importance to many countries of the world, as they are used as raw materials in the food industries, being an important food for a third of the world's population. They are also used as materials to improve nutritional value and in the manufacture of feed and animal feed. In Iraq, these two crops are grown in areas that are not small, as they occupy an economic importance (cash crops), and a source of food in the daily consumption pattern of individuals. Despite the importance of the rice crop, it is grown in small areas compared to the wheat crop, as it is affected by the availability of irrigation water and production varies based on the scarcity of water. The average cultivated area reached (2566) thousand dunums during the period (2000-2021). This area is relatively small to produce what meets the local needs for this crop (Al-Karaawi, 2017,47). The same is true for the wheat crop, as there was fluctuation in the cultivated area across Iraq due to increased pollution and salinity of the water, the lack of development programs that encourage farmers to increase the cultivated area, and the absence of management related to land reclamation and getting rid of soil salinity. On the other hand, there are many obstacles that divert spending from investment allocations to the agricultural sector and other sectors, such as the country's economic situation and external debt, as this negatively affects allocations to the agricultural sector, and thus its impact will be negative on economic growth indicators (Hassan and Ahmed, 2023,220). Such obstacles negatively affect the quantity produced from the two crops, as the production of two crops for the year 2021 was about (422) thousand tons and (4234) thousand tons respectively, compared to the imported quantities of two crops for the year 2021 (2571446.4 thousand tons), and (3805853.6) thousand tons for rice and wheat respectively. Although local self-sufficiency was achieved in wheat production in the last three years (2019-2021-2021), the amount of imports reflected a weakness

in local production, and this explains the country's tendency to import wheat and rice crops to meet local needs.

Research methodology

1: Research problem: Given that wheat and rice are important grain crops, details will be addressed in terms of the different varieties and destinations which Iraq's exports from, and the extent of control of a particular exporter over the Iraqi market. Therefore, a product differentiation method was followed to identify the nature of the demand for the two crops in terms of the varieties and origins in the market. In this approach, measures and indicators are calculated for each variety and each export destination.

2: Importance of the research: It is important to know the market behavior of exporters within the import market because a diversification of import sources for similar goods may be suggested if a high price is set by the exporter while there are other alternatives in the market. The aggregate method is usually used in studying and analyzing trade flows, but the reality requires that the study be using the method of distinguishing products for the purpose of obtaining accurate and expressive indicators of the commercial reality. Therefore, this study will clarify the nature of competition between wheat and rice exporters in the Iraqi market and the extent of each crop control in the market for this commodity, and thus alternatives or maintaining these imports will be proposed.

3: Research objectives: Measuring the competitiveness of wheat and rice exporters to the Iraqi import market, which implicitly means identifying the main exporters of both crops as well as the desired varieties through what will be demonstrated by the outputs of competitiveness indicators.

4: Research hypothesis: There will be a competition between one or two (exporters) countries regarding each crop inside the Iraqi Imports market.

5: Research methodology: Wheat and rice exported quantities from all the main countries exporting to the Iraqi market will be studied. The descriptive analytical method was considered, as well as the quantitative analysis method, to calculate some competitiveness indicators using Excel and Eviews12, in order to determine the situation of the exporting countries through their market share, competitiveness, and their influence in determining the market price and quantity.

6: Data sources: Data required for the research were taken from various secondary sources such as database of the Food and Agriculture Organization (FAO), and the published bulletins of the Center of Statistical Data in the Iraqi Ministry of Planning and developmental Co-Operation, and published statistics from Ministry of Trade in Iraq, and other sources like published dissertations and journal articles.

7: Time constraint of the research: The research covers the time period (2000-2021).

Previous studies:

1- Dawoud, 2010 studied the competitiveness of the most important Egyptian agricultural exports in European markets. The study aimed to identify the status of Egyptian agricultural exports in the most important European markets and the most important factors determining external demand for the most important Egyptian exported crops in its most important European markets. It also aimed to estimate indicators of the competitiveness of exported crops, which included indicators of instability, price competitiveness, revealed comparative advantage, penetration rate, and market share. The researcher concluded that Egypt has a revealed comparative advantage in exporting onions, potatoes, rice, and oranges, and has a competitive price advantage in exporting rice, potatoes, and onions. In addition to the decline in the market share of Egypt's exports for all exported crops and the weak values of the market penetration

index for the crops under study due to the intense competition facing Egypt in the most important European markets, as well as the instability of the exported quantity of all crops.

2- Study of (Owaidah, Jumaa, Moselhi, Hala, 2017) on the performance of Egyptian potato exports. The study identified the performance of Egyptian potato exports to European Union countries and the extent of achieving economic stability, increasing energy and export efficiency, and improving the competitive position of Egyptian exports, by measuring some competitiveness indicators such as revealed comparative advantage, market share, and instability coefficient. The study concluded that with regard to Egypt's competitive advantage, there is a potential opportunity to increase Egypt's exports in the future. Regarding the market share index, the most important markets importing from Egypt were Greece, Italy and Germany. As for the market penetration index for Egyptian exports, it was clear that Greece recorded the highest average value of the penetration factor for Egyptian exports. The research also showed that the area planted with potatoes was characterized by instability, as demonstrated by the instability coefficient for the quantity and value of exports to European Union countries.

3- Study of (Abdous, 2018) on the competitiveness of Algerian dates and the determinants of demand for their exports in global markets, with a focus on the French market. The study aimed to identify the competitive situation of Algerian dates in the global market compared to the most important date-exporting countries by using some competitiveness indicators to measure the competitiveness of dates. The researcher concluded that the quantity of date exports from Algeria to the French market is mainly determined by the Algerian export price of dates, the quantity of Tunisian and French exports abroad, and the per capita share in France from within.

4- In the study of (Amr, Jaber, Muhammad, 2019), they studied the competitiveness of Egyptian coriander exports in the most important international markets. The research aimed to study the development of Egypt's cultivated area, production, and productivity of coriander, as well as the development of the price, value, and quantity of agricultural exports of coriander, as well as the development of the geographic distribution of coriander to the most important international markets, as well as measuring the competitiveness of coriander exports by calculating standard indicators such as revealed comparative advantage, price competitiveness, and market share, and penetration rate and geographical concentration. The study concluded that Egypt has a competitive price for coriander due to its low export prices. The comparative advantage of Egypt's exports of coriander was greater than the correct one, which means that Egypt has a comparative advantage in exporting coriander. On the other hand, there was a decrease in the geographical concentration index.

5- (Hassan, Sameh and Jalal 2021) studied the econometric analysis of Egypt's exports of frozen strawberries. The study aimed to identify competitive indicators for the important import markets, which are represented by the Saudi market, the German market, and the Japanese market, using several indicators of competitiveness, such as the export ability index, price competitiveness, and market share. The results showed that the average export strength was (11.11%), and the average market share for Egypt in the Saudi market was about (47.87%), for the German market was about (6.20%), and in the Japanese market was about (8.78%). As for price competitiveness, Egypt had an average price competitiveness in the Saudi market of about (0.82) and in the German market of about (0.68), while in the Japanese market the indicator was (0.78).

6- Study of (Qasimi, Kawahala, 2022) on the role of export strategy in supporting the competitiveness of Algerian agricultural products. The aim of the study was to shed light on the reality of exporting agricultural products in Algeria and its place in the diversity of exports outside the oil sector as an important contributor to Algeria's presence in the international business environment through a marketing vision aimed at diversifying types of Algerian agricultural products in various global markets, which supports the competitiveness of these products through increasing their production, increasing their market share, and the entry of many companies that activate the marketing field for these products in order to search for new markets and export to them. The study concluded that it is necessary to keep pace with Algeria's qualitative shift in promoting its agricultural exports and diversifying its sources of income, through spreading electronic culture, encouraging the use of the Internet to complete international commercial transactions, introducing the concept of digital ports and customs, and modernizing the banking system and the electronic payment system. These matters increase the competitiveness of exported agricultural products and give them an advantage competitiveness that enables it to confront its competitors in global markets.

7- (Suleiman, Hafez, Ahmed 2022) studied the competitiveness of Egypt's mango exports in the most important import markets. The aim of the study was to estimate the competitive indicators of the Egyptian mango crop in import markets by estimating the market share index, the instability coefficient, the price competitive position, the revealed comparative advantage, the efficiency of export operations, and the export strength index. The results were that Egypt has a competitive price advantage in the import markets for the mango crop, and the market share was high compared to its competing countries in the most important import markets, as well as a high value of the revealed comparative advantage index, which reflects the intensity of competition between Egypt and the rest of the markets exporting the same crop. In addition to the efficient performance of export operations which ranked third in terms of export strength. This demonstrates Egypt's enjoyment of exporting large quantities of the crop relative to its production.

8- Study of (Abdel Hadi, 2023) on indicators of the competitiveness of Egyptian orange and grape exports in the most important global markets. The study aimed to identify the status of orange exports as an important export crop, the grape crop as a promising export crop, the most important importing markets for the two crops, and Egypt's ranking at the global level. In addition, the researcher studied some competitiveness indicators in their foreign markets, the elasticity of substitution model, and competitiveness indicators for Egyptian exports for the two crops. Furthermore, the possibility of Increasing the value and quantity of orange and grape exports was covered, as well as opening new markets and increasing export revenues which contributing to achieving the comprehensive development of Egypt. The researcher found that there was a doubling in the amount of orange production from the beginning to the end of the study period, compared to grapes, while it was noted that there was a decrease in the ratio of exports to its production. Egypt ranked first in exporting oranges and accounted for half of the Saudi market's imports and a third of the Russian market's imports, while there is a decrease in the market share of Egyptian grapes compared to Spanish-exported grapes.

Second: The Theoretical Framework:

1- **Rice production in Iraq (2000-2021):** Rice is an important strategic crop for Iraq, as it is the second most used grain, for example, the amber variety, which has a distinctive flavor and fragrance, and the jasmine variety, which produces about 97% of rice production in Iraq. (Alhendi, Ali and Mohammed, 2023,2106) One person consumes about 90 pounds of long-grain milled rice annually due to the Iraqi individual's diet, as rice is a basic crop and a vital food component. (Jarjees and Darwesh, 2023,967)

The Iraqi market comes in the first orders in the Arab world in importing rice, and it is one of the most important markets for importing rice due to the low area for rice cultivation, whose production is insufficient to meet the local demand. Also, the increase in the available for consumption of the rice crop is accompanied by an increase in the size of the population, and the increase in consumed quantities. Thus, yield is less than the increase in population size. Furthermore, we do not expect an increase in the volume of production due to several influencing factors such as desertification, drought, the economic shocks or climatic crises, the deterioration of the tenure system, ownership of means of production, and the lack of means to help farmers learn about new agricultural techniques and use imported varieties instead of local varieties. (A. M., 2007,11) Also, Iraq's entry into wars has exhausted the development process, depleted its resources such as irrigation water and arable land, excessive and irrational use of resources, and reliance on traditional methods of production. (AlBadri and AlAttabi, 2022,90) Add to that, global warming causes changes in agricultural areas, as it changes the distribution of rainfall, leading to the spread of desertification. (Shukr and Hameed, 2021,641) Iraq is suffering from a decline in water resources due to the dispute over water division with neighboring countries. This crisis has turned into a problem that has an impact on economic and social growth. (Al-Badri, Mohammad and Khalid, 2023,1) Therefore, the areas in central and southern Iraq have become areas outside agricultural operations (Al-Wasiti, 2023,41), and because the agricultural sector consumes water available for irrigation between (90%-80%), water provision must come from the agricultural sector, and this matter requires efficiency in water use (Ali, Baker and Aldouri, 2022,354). From the other hand, poor use of fertilizers led to the contamination of crop soil due to the deposition of heavy metals that lead to plant toxicity because the plant is able to absorb these toxic metals, which harms the food chain by affecting the safety and quality of food. (Chyad, Saeed and Alhendi, 2022,4638).

2- **Wheat production in Iraq (2000-2021):** Wheat is considered an important crop for many farmers as a food crop and a cash crop that provides income for rural families. The crop is collected in the field, stored and covered until it is marketed. (Ali and Jabara, 2021,1269) Researchers have been interested in marketing grains, especially wheat, as marketing is important to complete the production process. (Jassam, Ali and Ghaylan 2022,942). The decrease in wheat crop production was resulted from several factors, including the decline in the cultivated area because of the unfair distribution of irrigation water among farmers, the lack of support for local production, and the deterioration of the economic situation. Also, not using modern fertilizers, such as nano-potassium fertilizers, which work to increase absorption and increase the process of photosynthesis, which contributes significantly to increasing the production of wheat grains. (Mohammed et al, 2021,647) As fertilizers are one of the necessary inputs in the agricultural production process because they compensate for the decrease in important mineral substances in the soil resulting from incorrect use of the soil, the less fertilizer is used by farmers, the more it will have a negative environmental impact. (Ali, Alsaad and Abd, 2020,282) Also, the lack of national programs working to enhance wheat seeds, which is necessary to supply farms produce high production and thus contribute to increasing their profits. (Ali, Duaila and Mohammed, 2023,174) In addition, the decrease in storage, high supply

prices, limited resources, and the low average yield per dunum for the wheat crop (T. F., K. J. and Bilal, 2023,176), all that forced Iraq toward foreign markets to cover its necessary food needs and agricultural crops especially grains. (Doaa and Dr. Raad 2020,76).

3- Imports of Rice and Wheat in the Iraqi Market.

3-1 Imports of Rice in the Iraqi market (2000 - 2021): Due to the lack of optimal use of agricultural resources in the agricultural sector, this led to a deficit in agricultural production and thus the deterioration of the agricultural sector. This reason, along with the other reasons mentioned previously, is one of the things that pushed Iraq towards importing rice because of its nutritional importance and the high consumer need for it as it is a basic food on the table. It is obvious from Table (1) below that Iraq continues to import this crop, as the value of imported rice in 2000 was about (217,704) thousand dollars. While in 2021, it was about (1,729,535) thousand dollars.

Table (1) shows Iraq's total imports of rice and Iraq's imports of Indian, Thai, American, and Pakistani rice for the period studied (2000-2021)

Iraq's imports of American rice (thousand dollars)	Iraq's imports of Pakistani rice (thousand dollars)	Iraq's imports of Thai rice (thousand dollars)	Iraq's imports of Indian rice (thousand dollars)	Iraq's total imports of rice (thousand dollars)	Years
16508	6014	118650		217704	2000
	19028	89696		150874	2001
	20478	90426	2412	114532	2002
19902	3150	183646		220822	2003
	3210	305562	24	311214	2004
203840	4802	272418	442	517118	2005
289918	25408	370036	4652	824999	2006
203488	47582	213212	23928	601602	2007
53786	30790	515658	15948	724965	2008
130490	24064	244856	16822	954473	2009
209000	82500	454802	39244	988635	2010
35255	8608	618774	250812	1149795	2011
30972729060	12718	864200	434112	30974517866	2012
57658	12172	696202	570644	1824361	2013
185467	23407	80802	541281	1637319	2014
106298	6266	79080	800192	21118986	2015
85384	5310	6688	820528	3434528	2016
38624	3024	77660	974627	6866687	2017
177372	704	22542	832928	4326370	2018
143420	11419	68692	945604	18042598	2019
543377800	2029	19996	1179894	544906385	2020
91504	25413	226918	1043930	1729535	2021
1658850251	17186.1818	255478	447264.421	1435690062	**Average**
0.14	-0.03	-0.07	0.47	0.26	**Annual Growth Rate**

Source: The average and annual growth rate were calculated by researchers based on data from: The Food and Agriculture Organization and Ministry of Planning (2012)

Figure (1): The Value of Iraq's rice imports, the table is the work of researchers.
U: United States of America, T: Thailand, B: Pakistan, I: India
P: The value of Rice imports to Iraq

3-2 Imports of Wheat in the Iraqi market (2000 - 2021): Table (2) below shows the increase in the imports of the wheat crop in Iraq due to the increase in domestic demand for this crop, which local production could not meet the demand, as well as due to the unfair and inequitable distribution of irrigation water among farmers and the government's forced to import because of its failure to support local production. Despite achieving local sufficiency for the year 2021, there was a decrease of 32% compared to the production for the year 2020 due to the decline in the cultivated area.

Table (2) shows Iraq's total wheat imports and Iraq's imports of Australian, American, Russian, and Canadian wheat as part of Iraq's total wheat imports for the period (2000-2021)

Iraq's imports of Australian wheat (thousand dollars)	Iraq's imports of American wheat (thousand dollars)	Iraq's imports of Russian wheat (thousand dollars)	Iraq's imports of Canadian wheat (thousand dollars)	Iraq's total imports of wheat (thousand dollars)	Years
0			45228	59775	2000
341428				408070	2001
286849	12794	6201		357046	2002
0	50764	9782		73807	2003
288030	211416			488212	2004
200633	288247			663964	2005
77776	413770		102376	599089	2006
	779784		198901	751445	2007
94268	73	45888	110862	1391816	2008
194449	114648	80389	376355	565351335	2009
62242	529836	53147	153564	703701	2010
383262	56783	199972	54520	1569609	2011
158432		25832	302713	419040091	2012
563335	15487	28956	86079	1199854	2013
240231	48659	27	158176	89843972	2014
14097		524	51384	1420788	2015
12063	58036	16	21071	628017	2016
50331	221472	28478010	109501	38024265	2017
186981	107846	500	63775	24148833	2018
	36	1042	12771	13136337	2019
	109	1111		1692626	2020
		5021		1766020	2021
175244.8	171162.4	1808526	123151.7	52878121.45	Average
-0.09	-0.21	-0.14	-0.06	0.19	Annual Growth Rate

Source: The average annual growth rate was calculated by researchers based on data from the Food and Agriculture Organization and the Ministry of Planning
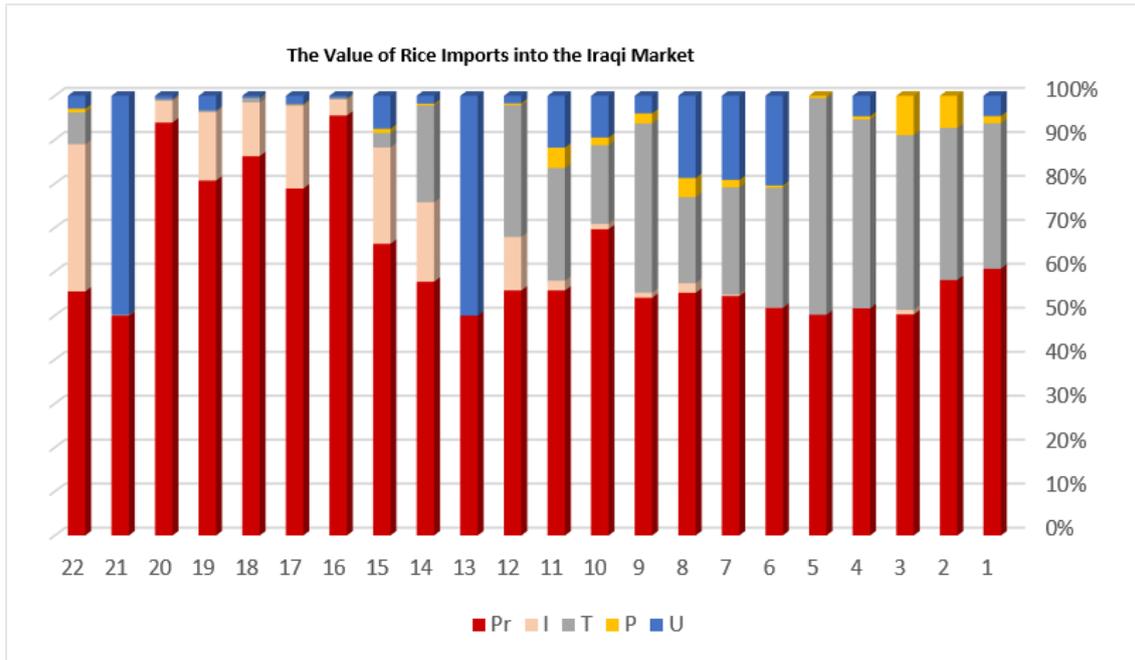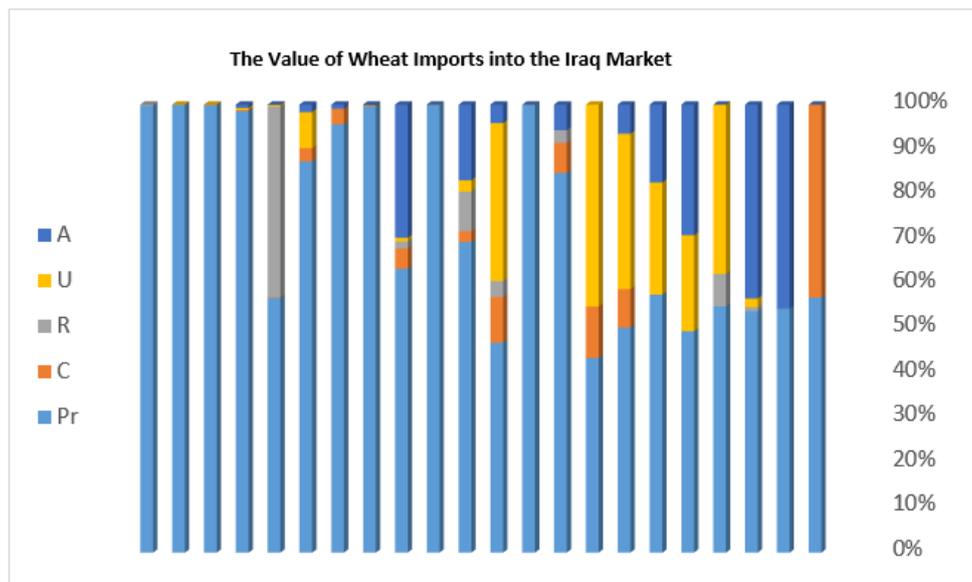

Figure (2): The Value of Iraq's Wheat imports, the table is the work of researchers.

C: Canada, U: USA, R: Russia, A: Australia

p: The value of wheat imports to Iraq

4- Indicators (Measures) of Competitiveness:

4-1 Revealed comparative advantage (RCA): This indicator shows the potential opportunities for expanding trade, as it gives an approximate picture of future exports of the commodity studied (Mohammadi, 2020,437). This is done by comparing the country's share of global exports of the commodity with the share of total exports or agricultural exports of that country inl total exports or global agricultural exports. Therefore, the comparative advantage index is one of the indicators of competitiveness, as it shows the advantage and potential competitive opportunities for the exported commodity (Abdel Hadi, 2023,336). It is calculated through the following formula:

$$RCA_j = (\frac{X_{ai}}{X_{aj}})/(\frac{X_{wi}}{X_{wj}})$$

where:

The revealed comparative advantage of the country's exports of the product to the global market within a year= RCA

X_{ai} =The value of the country's exports of the product during the year i

X_{aj} =The value of agricultural exports of the exporting country during the year j

X_{wi} =The world's exports of the product during the year i

X_{wj} =The value of agricultural exports to the world during the year j

If the value of the indicator exceeds one, this indicates the existence of a revealed comparative advantage and competitive ability for the country's exports of this commodity in foreign markets, but if it is less than the one, this means the absence or lag in the revealed comparative advantage of the commodity.

Adjusted comparative advantage can also be calculated using the following equation:

$$RCA = \frac{(RCA-1)}{(RCA+1)^2}$$

This equation is used by many economists and administrators in order to measure the competitiveness of the sectors and institutions in which they operate, given that competitiveness takes place between organizations and not between countries.

The first equation was used according to data availability.

4-2 Price Competitiveness (CM) within Iraq: The relative price is one of the basic and important indicators affecting the competitive position of the country in the global market, and it is also one of the determinants affecting the competitive position of the commodity in the global market. The export price is an important indicator of the possibility of attracting new markets to import the commodity in question. (Robert, Lipsey, Molinari, Irving, Kravis, 1991,144). The price competitiveness index is calculated using the following formula:

$$CM_{ai} = \frac{AP_{ai}}{AP_{ji}} * 100$$

where:

Cm_{ai} =Price ratio between competing countries

AP_{ai} =Average export price of the country exporting the product

AP_{ji} =Average export price of the competing country for the same product

Or it may be calculated using the following equation:

(Price competitiveness CM = average export price of the country exporting the commodity / average export price of competing countries for the same commodity).

The greater the value of this indicator is than one, the more it indicates the presence of a strong competitive position for the country's exports of the commodity. That is, the lower the country's export price compared to its theoretical competing country, the more this indicates the existence of a price competitive advantage for the exported commodity and a better competitive ability. If the value of the index falls below one, this indicates that the countries exporting the commodity enjoy an equal competitive advantage for the same commodity exported by the competing country.

4-3 Market Share (MS): It is one of the most important and simplest indicators of competitiveness and is used to estimate the possibility of developing the competitiveness of the exporting country in foreign markets (Jehoshua, 2010,18). It is calculated using the following formula:

$$MS_{ai} = \frac{X_{ai}}{Y_{ci}} * 100$$

where:

MS_{ai} = The market share of the country (a) of the commodity (i)

X_{ai} = Quantity of the country's exports of the commodity (i)

Y_{ai} = of product c The country's total imports

The higher the value of this indicator, the more it indicates an increase in the market share of the exporting country in the foreign market and an increase in its ability to compete compared to other countries.

Third: The Practical Side:

1- Competiveness among Rice exporters:

Table (3) below shows that the average value of Thailand's rice exports to the world was approximately (3,778,512) thousand dollars during the study period (2000-2021). The lowest value of Thailand's comparative advantage in 2021 was approximately (5.70), and the highest comparative advantage for Thailand was in the year 2000 at approximately (13.29). We notice from the table a decline in Thai rice exports due to strong competition from other rice-exporting countries, such as India, Pakistan, and Vietnam, which offer low prices for their exports. Despite the decline in Thailand's exports, it is still competitive as the world's largest rice exporter in terms of value.

Table (3) Thailand's comparative advantage over rice to the world during the period (2000-2021)

RCA	The value of Thailand's rice exports (thousand dollars)	dollars) The total value of Thailand's agricultural exports (thousand dollars)	The total value of the world's exports of rice (thousand dollars)	The total value of the world's exports of agricultural commodities (thousand dollars)	Years
13.29	1568774	7326971	6499333	403325855.5	2000
11.81	1518584	7462474	7010319	406910788.3	2001
12.52	1577350	8188369	6691079	434787600.2	2002
12.12	1735730	10317570	7163509	516232429.3	2003
13.87	2516452	12075148	8954453	596159773	2004
11.69	2158838	12327108	9612774	641670611.1	2005
10.48	2387035	15220389	10593461	708198461	2006
11.60	3351142	18042533	13748856	859004767.5	2007
12.64	5830621	23912153	20236398	1049041312	2008
11.59	4944177	20681852	19305825	935807633.5	2009
10.14	5051224	26352190	20143433	1065445743	2010
8.92	6171790	37358355	23985454	1295510003	2011
7.15	4177958	32312031	23680443	1310381749	2012
7.28	4054333	31613148	24060335	1365267219	2013
9.13	5389771	31746896.15	26426917	1421705216	2014
8.43	4508114	29385808.28	23191842	1274933023	2015
9.43	4370658	28717858.82	20817394	1289922637	2016
8.80	5126358	33243559.89	24737198	1411715596	2017
9.09	5604847	34211647.76	26253422	1456977628	2018
7.41	4169382	33811516.85	24086735	1447955521	2019
6.60	3687528	32532027.27	25657260	1493473059	2020
5.70	3226602	38299391.36	25945932	1754666540	2021
	3778512.182	23869954.43	18127380.55	1051776962	Average

Source: the RCA indicator calculated by researchers based on data from the food and organization of the united nations.

Table (4) below shows Pakistan's relative advantage in the rice crop to the world, as the average value of Pakistan's rice exports was about (1,443,567.41) thousand dollars during the study period (2000-2021), with a minimum relative advantage in 2011 reaching (19.24), and an upper limit of comparative advantage in 2006 reaching (40.94).

Table (4) Pakistan's comparative advantage in terms of rice to the world during the period (2000-2021)

RCA	Value of Pakistan's rice exports (thousand dollars)	Total value of agricultural exports to Pakistan (thousand dollars)	Total value of world exports of rice (thousand dollars)	Total value of world exports of agricultural commodities (thousand dollars)	Years
27.79	466072	1040654.84	6499333	403325855.5	2000
26.48	456266	1000040	7010319	406910788.3	2001
29.18	435129	968705	6691079	434787600.2	2002
33.95	561513	1191777	7163509	516232429.3	2003
35.86	626433	1162775	8954453	596159773	2004
33.66	821011	1627885	9612774	641670611.1	2005
40.94	1144567	1868595	10593461	708198461	2006
29.59	906430	1913887	13748856	859004767.5	2007
28.59	1374020	2491338	20236398	1049041312	2008
27.85	1612938	2806810	19305825	935807633.5	2009
29.89	1881761	3329452	20143433	1065445743	2010
19.24	1766611	4958723	23985454	1295510003	2011
20.98	1688658	4453755	23680443	1310381749	2012
21.93	1921377	4970728	24060335	1365267219	2013
25.06	2199634	4720652.61	26426917	1421705216	2014
24.81	1927191	4268543.55	23191842	1274933023	2015
29.34	1703036	3595612.64	20817394	1289922637	2016
26.37	1743506	3772622.46	24737198	1411715596	2017
24.26	2001814	4578267.79	26253422	1456977628	2018
30.52	2270311	4470871.56	24086735	1447955521	2019
30.7	2101269	3983857.43	25657260	1493473059	2020
31.28	2148936	4645773.81	25945932	1754666540	2021
	1443567.41	3082787.58	18127380.6	1051776962	Average

Source: the RCA indicator calculated by researchers based on data from the food and organization of the united nations.

Table (5) below shows the comparative advantage of the United States of America in terms of rice to the world, as the average price of US exports to the world was about (1659,111.545) thousand dollars, with a minimum relative advantage of (0.65) in 2018 and a maximum of (1.34) in 2005 during the study period (2000- 2021). Although the United States does not have a comparative advantage, it is one of the countries that has increased the production of long-grain and hybrid rice due to the increase in cultivated area, government support, and the increasing demand for it due to its many uses, which has achieved great progress and improvement in the rice industry. Therefore, it is one of the important exporters in the world.

Table (5) The comparative advantage of the US in terms of rice to the world during the period (2000-2021)

RCA	Total value of US agricultural exports (thousand dollars)	Price of US rice exports (thousand dollars)	Total value of world exports of rice (thousand dollars)	Total value of world exports of agricultural commodities (thousand dollars)	Years
0.93	55782252.19	835996	6499333	403325855.45	2000
0.74	55918378	717457	7010319	406910788.28	2001
0.92	54797739	775301	6691079	434787600.21	2002
1.21	61501112	1031102	7163509	516232429.33	2003
1.24	62898219	1168563	8954453	596159773.03	2004
1.34	64168367	1290697	9612774	641670611.05	2005
1.22	70252865	1283373	10593461	708198461.00	2006
0.96	91297376	1396031	13748856	859004767.50	2007
0.97	118306578	2213917	20236398	1049041311.84	2008
1.07	99478320	2186208	19305825	935807633.54	2009
1.06	117643941	2354057	20143433	1065445742.68	2010
0.81	138853071	2087302	23985454	1295510003.03	2011
0.81	141558843	2075294	23680443	1310381749.00	2012
0.86	144072103	2176323	24060335	1365267219.10	2013
0.70	153002726.7	1992285	26426917	1421705216.35	2014
0.81	135914216.2	1993147	23191842	1274933023.15	2015
0.82	137774106.5	1821500	20817394	1289922637.10	2016
0.69	141245444.1	1718139	24737198	1411715595.88	2017
0.65	143283780	1690926	26253422	1456977628.29	2018
0.81	139662310.3	1877045	24086735	1447955520.78	2019
0.74	147922753	1888783	25657260	1493473058.79	2020
0.75	173702619.6	1927008	25945932	1754666540.34	2021
	111319869.1	1659111.545	18127380.55	1051776962.08	Average

Source: the RCA indicator calculated by researchers based on data from the food and organization of the united nations.

Table (6) below shows the apparent comparative advantage of India, as the average rice exports from India to the world was about (4,309,464) thousand dollars, with a minimum apparent comparative advantage of (6.73) in 2010, and a maximum relative advantage of (15.65) in 2021 during the period studied (2000- 2021). India is one of the largest exporters of rice in the world, with quantities reaching 22.5 million tons. This explains why it has a comparative advantage in exporting rice.

Table (6) India's comparative advantage over rice to the world during the period (2000-2021)

RCA	total value of the world's rice exports (thousand dollars)	The total value of the world's exports of agricultural commodities (thousand dollars)	The total value of India's agricultural exports (thousand dollars)	The price of Indian rice exports to the world (thousand dollars)	Years
8.91	6499333	403325855.45	4562985.38	655458	2000
8.39	7010319	406910788.28	4890690	706828	2001
15.25	6691079	434787600.21	5165596	1212481	2002
10.65	7163509	516232429.33	6056389	895283	2003
14.98	8954453	596159773.03	6571021	1478077	2004
11.41	9612774	641670611.05	8253782	1411156	2005
10.03	10593461	708198461.00	10357195	1553528	2006
11.40	13748856	859004767.50	15615013	2848085	2007
8.40	20236398	1049041311.84	15927025	2582327	2008
7.85	19305825	935807633.54	14366973	2326388	2009
6.73	20143433	1065445742.68	18028923	2295183	2010
8.05	23985454	1295510003.03	27387919	4081406	2011
9.72	23680443	1310381749.00	34906651	6129244	2012
12.42	24060335	1365267219.10	37502142	8205309	2013
11.76	26426917	1421705216.35	36178819.15	7905650	2014
12.24	23191842	1274933023.15	28656628.89	6380082	2015
12.43	20817394	1289922637.10	26489541.32	5315535	2016
13.27	24737198	1411715595.88	30423533.39	7075759	2017
13.26	26253422	1456977628.29	30740939.19	7346174	2018
13.95	24086735	1447955520.78	29299376.03	6800670	2019
14.48	25657260	1493473058.79	32083780.43	7980028	2020
15.65	25945932	1754666540.34	41584835.51	9623557	2021
	18127380.55	1051776962	21138625.38	4309464	Average

Source: the RCA indicator calculated by researchers based on data from the food and organization of the united nations.

1-2 Price competitiveness of the Rice crop (CM): Table (7) below shows the price competitiveness among the countries exporting rice to the Iraq (Thailand, Pakistan, the United States of America, and India). It is clear from the table that Thailand has price competitiveness, as the average price competitiveness reached about (0.69, 0.86, 0.45) with both the United States and Pakistan. and India, respectively. As for India, it does not have price competitiveness with the rest of its competing countries. The results showed that the average price competitiveness with the rest of its competing countries is about (1.42, 1.84, 1.47) with the United States, Thailand, and Pakistan, respectively. As for the United States of America, it does not have price competitiveness with Pakistan, India, and Thailand, and the average competitiveness was about (64.35, 42.64, 67.02), respectively, for its competing countries. The table also shows that Pakistan is characterized by price competitiveness, with the average competitiveness being about (0.81, 0.55) with its competing countries, the United States of America and India, but it does not have price competitiveness with Thailand, where the average price competitiveness was about (1.23):

Table (7) shows the price competitiveness among countries competing for rice in the world during the period studied (2000-2021)

CM= I/B	CM= B/I	CM= I/T	CM= T/I	CM= B/T	CM= T/B	CM= I/U	CM= U/I	CM= B/U	CM= U/B	CM= T/U	CM= U/T	Years
0.00	0.00	0.00	0.00	1.03	0.98	0.00	0.00	0.86	1.17	0.84	1.20	2000
0.00	0.00	0.00	0.00	1.11	0.90	0.00	0.00	0.00	0.00	0.00	0.00	2001
1.07	0.94	1.11	0.90	1.03	0.97	0.00	0.00	0.00	0.00	0.00	0.00	2002
0.00	0.00	0.00	0.00	0.73	1.37	0.00	0.00	1.17	0.86	1.60	0.63	2003
2.08	0.48	3.63	0.28	1.74	0.57	0.00	0.00	0.00	0.00	0.00	0.00	2004
1.68	0.60	2.42	0.41	1.44	0.69	2.09	0.48	1.25	0.80	0.86	1.16	2005
0.98	1.02	0.95	1.05	0.97	1.03	0.80	1.24	0.82	1.21	0.85	1.18	2006
1.87	0.53	1.92	0.52	1.03	0.97	1.60	0.63	0.85	1.17	0.83	1.20	2007
2.69	0.37	2.76	0.36	1.03	0.97	2.87	0.35	1.07	0.94	1.04	0.96	2008
1.46	0.69	1.92	0.52	1.32	0.76	1.63	0.61	1.12	0.90	0.85	1.18	2009
2.15	0.47	2.24	0.45	1.04	0.96	2.00	0.50	0.93	1.07	0.89	1.12	2010
1.72	0.58	1.97	0.51	1.14	0.87	2.26	0.44	1.31	0.76	1.15	0.87	2011
1.66	0.60	1.48	0.68	0.89	1.12	0.00	599.74	0.00	996.34	0.00	885.70	2012
1.84	0.54	2.33	0.43	1.26	0.79	1.60	0.63	0.87	1.15	0.69	1.46	2013
1.66	0.60	2.70	0.37	1.62	0.62	1.72	0.58	1.04	0.97	0.64	1.57	2014
1.43	0.70	2.13	0.47	1.49	0.67	1.49	0.67	1.04	0.96	0.70	1.43	2015
2.77	0.36	3.05	0.33	1.10	0.91	2.59	0.39	0.94	1.07	0.85	1.18	2016
1.93	0.52	2.27	0.44	1.18	0.85	1.53	0.65	0.80	1.25	0.68	1.48	2017
1.40	0.71	2.53	0.40	1.81	0.55	1.76	0.57	1.25	0.80	0.69	1.44	2018
1.25	0.80	2.06	0.49	1.65	0.61	1.98	0.50	1.59	0.63	0.96	1.04	2019
1.22	0.82	1.73	0.58	1.41	0.71	0.00	329.24	0.00	402.57	0.00	568.66	2020
1.45	0.69	1.38	0.72	0.95	1.05	1.33	0.75	0.91	1.09	0.96	1.04	2021
1.47	0.55	1.84	0.45	1.23	0.86	1.24	42.64	0.81	64.35	0.69	67.02	Average

Source: Price competitiveness CM = average export price of the country exporting the commodity / average export price of competing countries for the same commodity.
U: United States of America, T: Thailand, B: Pakistan, I: India
Price competitiveness was calculated by the researchers based on data from the food and organization of the united nations.

1-3 Market share of Rice (MS): Table (8) below shows that Thailand's market share of Iraq's total rice imports was fluctuating. The average market share of Thailand was about (34.67), with a minimum in 2019 of about (0) and a maximum in 2004 of about (98.18). Thailand has a high market share compared to other competing countries such as Pakistan. The market share of Pakistan, where the average market share of Pakistan of the rice crop out of Iraq's total imports of rice crop was (3.06), with a minimum in 2012 of (0) and a maximum in the year 2002 of about (17.88). Pakistan's market share of Iraq's total rice imports was decreasing. As for India's market share, it has been increasing, as the average market share for India reached about (10.35) of Iraq's total rice imports, with a minimum of (0) for the years 2000, 2001, and 2012 due to the lack of imports of Indian rice for these years, and a maximum of (60.36) in 2021. The market share of the United States of America out of Iraq's total rice imports averaged (18.10), with a minimum of (0) in the years 2001, 2002, and 2004 due to the lack of imports, and a minimum of (99.99) in 2020.

Table (8) shows the market share of competing countries in Iraq's total rice imports for the period (2000-2021)

MS(B)	MS(U)	MS(I)	MS(T)	Years
2.76	7.58	0.00	54.50	2000
12.61	0.00	0.00	59.45	2001
17.88	0.00	2.11	78.95	2002
1.43	9.01	0.00	83.16	2003
1.03	0.00	0.01	98.18	2004
0.93	39.42	0.09	52.68	2005
3.08	35.14	0.56	44.85	2006
7.91	33.82	3.98	35.44	2007
4.25	7.42	2.20	71.13	2008
2.52	13.67	1.76	25.65	2009
8.34	21.14	3.97	46.00	2010
0.75	3.07	21.81	53.82	2011
0.00	99.99	0.00	0.00	2012
0.67	3.16	31.28	38.16	2013
1.43	11.33	33.06	4.94	2014
0.03	0.50	3.79	0.37	2015
0.15	2.49	23.89	0.19	2016
0.04	0.56	14.19	1.13	2017
0.02	4.10	19.25	0.52	2018
0.06	0.79	5.24	0.38	2019
0.00	99.72	0.22	0.00	2020
1.47	5.29	60.36	13.12	2021
3.06	18.10	10.35	34.67	Average

Source: Market share = value of the country's exports of the crop / total value of the country's imports of that commodity *100
The market share was calculated by the researchers based on data from the food and organization of the united nations.
U: United States of America, T: Thailand, B: Pakistan, I: India

2- Competiveness among Wheat Exporters:

2-1 Revealed Comparative Advantage (RCA) during (2000-2021): It can be said that the revealed comparative advantage is the relative importance of a country's exports of a particular crop over the relative importance of the world's exports of the same crop.

From Table (9) below, we note that Australia does not have a revealed comparative advantage in exporting wheat due to the high costs of supply chains and production compared to competing countries in exporting wheat to the world, as the average value of Australia's wheat exports to the world was about (52242.41) thousands dollar, with a minimum of revealed comparative advantage of (0.023) in 2021 and a maximum of this indicator of (0.88) in 2004:

Table (9) shows the relative advantage of Australian wheat exports to the world during the period (2000-2021)

RCA	The value of Australia's wheat exports (thousand dollars)	The total value of Australia's agricultural exports (thousand dollars)	The total value of the world's wheat exports (thousand dollars)	The total value of the world's agricultural exports (thousand dollars)	Years
0.6	44519	15109389	1965213	403325855.5	2000
0.66	49127	15464822.16	1937882	406910788.3	2001
0.66	49672	15685618	2079065	434787600.2	2002
0.71	47181	14809684	2315590	516232429.3	2003
0.88	76791	20390145	2526982	596159773	2004
0.83	69863	19699374	2732770	641670611.1	2005
0.87	69947	20742836	2727334	708198461	2006
0.82	81210	20561105	4115128	859004767.5	2007
0.9	128191	23417501	6345811	1049041312	2008
0.51	54747	21531731	4577175	935807633.5	2009
0.51	56930	25963211	4576383	1065445743	2010
0.31	50551	32046997	6495948	1295510003	2011
0.3	54162	36486273	6368044	1310381749	2012
0.23	42452	36849055	6685257	1365267219	2013
0.24	40668	37091646.5	6467138	1421705216	2014
0.19	34381	34499852.3	6382459	1274933023	2015
0.23	34483	32838485.8	5883079	1289922637	2016
0.25	41810	38148579.5	6150769	1411715596	2017
0.2	31155	35088021.5	6451469	1456977628	2018
0.15	22666	33839036.1	6404436	1447955521	2019
0.27	35353	30731343.1	6356619	1493473059	2020
0.023	33474	42936050	7104085	1754666540	2021
	52242.41	27451398	4847665.273	1051776962	Average

Source: the RCA indicator calculated by researchers based on data from the food and organization of the united nations.

Table (10) below shows that the United States of America does not have a comparative advantage in exporting wheat to the world, but it ranks fourth in terms of wheat production after competing countries such as China, India, and Russia. It also ranks first in terms of the volume of crops exported to the world, as 50% of the total US wheat production is exported to the world (FAO). The average US wheat exports was about (161181.18) thousands dollar with a minimum comparative advantage of (0.34) in 2021 and an upper limit for comparative advantage reached (0.64) in 2002:

Table (10) shows the relative advantage of US wheat exports to the world during the period (2000-2021)

RCA	Total value of world exports of wheat (thousand dollars)	Total value of world exports of agricultural commodities (thousand dollars)	US wheat exports (thousand dollars)	Total US agricultural exports (thousand dollars)	Years
0.54	1965213	403325855.5	148497	55782252.2	2000
0.51	1937882	406910788.3	136199	55918378	2001
0.64	2079065	434787600.2	167842	54797739	2002
0.38	2315590	516232429.3	103313	61501112	2003
0.32	2526982	596159773	86706	62898219	2004
0.26	2732770	641670611.1	69335	64168367	2005
0.29	2727334	708198461	78329	70252865	2006
0.36	4115128	859004767.5	169403	91297376	2007
0.26	6345811	1049041312	187835	118306578	2008
0.35	4577175	935807633.5	170219	99478320	2009
0.33	4576383	1065445743	167557	117643941	2010
0.31	6495948	1295510003	214530	138853071	2011
0.29	6368044	1310381749	198423	141558843	2012
0.25	6685257	1365267219	180522	144072103	2013
0.24	6467138	1421705216	164851	153002726.7	2014
0.27	6382459	1274933023	185169	135914216.2	2015
0.32	5883079	1289922637	200892	137774106.5	2016
0.28	6150769	1411715596	169889	141245444.1	2017
0.28	6451469	1456977628	177941	143283780	2018
0.31	6404436	1447955521	191950	139662310.3	2019
0.29	6356619	1493473059	185353	147922753	2020
0.03	7104085	1754666540	191231	173702619.6	2021
	4847665.273	1051776962	161181.1818	111319869.1	Average

Source: the RCA indicator calculated by researchers based on data from the food and organization of the united nations.

Table (11) below shows Russia's relative advantage in rice production to the world, as the average value rice exports from Russia to the world was about (129688.6818) thousand dollars, with a minimum relative advantage of (0.34) in 2021 and an upper limit of comparative advantage of (6.62) in 2001. We note that Russia had a comparative advantage during the study period (2000-2021), as Russia enjoyed a record harvest of (90) million tons, equivalent to a quarter of the global wheat trade. Thus, Russia moved to fourth place among the largest global wheat producers:

Table (11) shows the relative advantage of Russia's wheat exports to the world during the period (2000-2021)

RCA	The total value of the world's exports of wheat (thousand dollars)	The total value of the world's exports of agricultural commodities (thousand dollars)	The value of Russia's wheat exports (thousand dollars)	Total agricultural exports to Russia (thousand dollars)	Years
6.49	1965213	403325855.5	32857	1038491.16	2000
6.62	1937882	406910788.3	33939	1077244	2001
2.11	2079065	434787600.2	18122	1793445	2002
5.23	2315590	516232429.3	53461	2280826	2003
5.26	2526982	596159773	47397	2125061	2004
3.66	2732770	641670611.1	52409	3362323	2005
3.06	2727334	708198461	50091	4248604	2006
2.88	4115128	859004767.5	105506	7657498	2007
4.70	6345811	1049041312	221714	7806149	2008
3.74	4577175	935807633.5	136591	7467203	2009
2.38	4576383	1065445743	58930	5766941	2010
5.80	6495948	1295510003	265056	9119514	2011
1.72	6368044	1310381749	117318	14023850	2012
1.81	6685257	1365267219	116363	13152795	2013
1.69	6467138	1421705216	123048	15999551.02	2014
2.57	6382459	1274933023	170548	13255723	2015
2.66	5883079	1289922637	168718	13892385.1	2016
2.35	6150769	1411715596	174977	17089723.29	2017
2.05	6451469	1456977628	185206	20395122.78	2018
2.48	6404436	1447955521	218513	19953545.31	2019
2.10	6356619	1493473059	208318	23360186.92	2020
0.34	7104085	1754666540	294069	26508718.84	2021
	4847665.273	1051776962	129688.6818	10517040.93	Average

Source: the RCA indicator calculated by researchers based on data from the food and organization of the united nations.

Table (12) below shows the relative advantage of Canada's wheat exports to the world. Canada's average wheat exports to the world was (126,276.2273) thousand dollars, with a minimum comparative advantage of (0.08) in 2021 and a maximum of (1.08) in 2004. Although Canada does not have a comparative advantage in wheat exports, it ranks first among countries. The United States of America ranked fourth in the world as the largest exporter of wheat:

Table (12) shows the relative advantage of Canada's wheat exports to the world during the period (2000-2021)

RCA	Canada's total exports of agricultural commodities (thousand dollars)	Value of Canada's wheat exports (thousand dollars)	Total value of world exports of wheat (thousand dollars)	Total value of world exports of agricultural commodities (thousand dollars)	Years
0.80	15331130.49	59829	1965213	403325855.5	2000
0.78	16902342	63051	1937882	406910788.3	2001
1.06	16124209	81751	2079065	434787600.2	2002
1.07	17209756	82791	2315590	516232429.3	2003
1.08	20100170	92392	2526982	596159773	2004
0.99	21301500	89774	2732770	641670611.1	2005
1.05	24176358	97422	2727334	708198461	2006
0.80	28950969	111490	4115128	859004767.5	2007
0.73	36344158	160903	6345811	1049041312	2008
0.80	30641646	119742	4577175	935807633.5	2009
0.84	34078324	122725	4576383	1065445743	2010
0.66	40303212	133198	6495948	1295510003	2011
0.55	42953970	115294	6368044	1310381749	2012
0.60	43709625	127932	6685257	1365267219	2013
0.79	46951956.39	167757	6467138	1421705216	2014
0.99	43841959.34	216992	6382459	1274933023	2015
0.81	42644936.54	156809	5883079	1289922637	2016
0.94	44854025.64	184430	6150769	1411715596	2017
0.81	46226578.54	164945	6451140	1456977628	2018
0.69	45313740.82	138023	6404436	1447955521	2019
0.66	50795422.97	143386	6356619	1493473059	2020
0.08	58996572.61	147441	7104085	1754666540	2021
	34897843.74	126276.2273	4847665.273	1051776962	Average

Source: the RCA indicator calculated by researchers based on data from the food and organization of the united nations.

2-2 Price competitiveness of the wheat crop (CM): Price competitiveness is expressed as the ratio of the average prices of a country's exports for a particular crop to the average prices of other country's exports competing for the same crop.

Table (13) below shows the price competitiveness of countries exporting wheat to the Iraq. The average competitive price for Australia in relation to its competing countries was about (0.53 and 0.57) with the United States of America and Canada respectively. We note that Australia has a competitive advantage despite being a small producer compared to competing countries in wheat production, as Australia's production represents about 3% of global production, but Iraq is one of the importers of Australian wheat. The average competitiveness of Australia with Russia was (66.19), meaning there is no price competitiveness. The average price competitiveness of the United States of America was about (0.57 and 0.58) with its competing countries, Australia and Canada, which shows that the United States has a competitive advantage. As for Russia, the average competitiveness was about (59.91). As for Canada, it has a comparative advantage, as its average price ratio reached about (0.53 and 0.55) with the United States of America and Australia, and about (57.20) with Russia. The average price competitiveness of Russia was about (42.18, 71.51, and 43.80) with Australia, Canada, and the United States of America during the period of study (2000-2021):

Table (13) shows the price competitiveness of wheat-exporting countries during the period (2000-2021)

CM= U/R	CM= R/U	CM= U/C	CM= C/U	CM= R/C	CM= C/R	CM= U/A	CM= A/U	CM= R/A	CM= A/R	CM= C/A	CM= A/C	Years
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2000
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.34	0.00	0.00	2001
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.71	1.35	0.00	0.00	2002
1.64	0.61	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2003
0.00	0.00	0.00	0.00	0.00	0.00	1.03	0.97	0.00	0.00	0.00	0.00	2004
0.00	0.00	0.00	0.00	0.00	0.00	0.99	1.01	0.00	0.00	0.00	0.00	2005
0.00	0.00	1.05	0.95	0.00	0.00	1.07	0.94	0.00	0.00	1.01	0.99	2006
0.00	0.00	1.13	0.88	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2007
1.25	0.80	0.90	1.11	0.72	1.38	1.42	0.70	1.14	0.79	1.58	0.63	2008
0.72	1.39	0.94	1.06	1.31	0.76	1.15	0.87	1.61	1.76	1.23	0.81	2009
2.06	0.49	1.09	0.92	0.53	1.90	0.99	1.01	0.48	0.26	0.91	1.10	2010
0.36	2.77	1.02	0.98	2.82	0.35	0.94	1.06	2.61	9.66	0.92	1.08	2011
7.00	0.14	0.84	1.19	0.12	8.30	0.96	1.04	0.14	1.01	1.14	0.88	2012
0.00	0.00	0.00	0.00	0.85	1.18	0.00	0.00	0.86	1436	1.01	0.99	2013
1296	0.00	1.04	0.96	0.00	1241	0.99	1.01	0.00	0.65	0.95	1.05	2014
0.68	1.46	1.22	0.82	1.79	0.56	1.14	0.87	1.68	1.03	0.94	1.07	2015
0.00	0.00	0.00	0.00	1.27	0.79	0.00	0.00	1.16	0.00	0.92	1.09	2016
0.00	953	1.64	0.61	1561	0.00	0.98	1.02	930	1.15	0.60	1.68	2017
1.25	0.80	0.99	1.01	0.80	1.25	0.94	1.06	0.75	0.97	0.94	1.06	2018
0.83	1.21	0.93	1.07	1.13	0.88	0.00	0.00	0.00	0.00	0.00	0.00	2019
2.41	0.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2020
3.66	0.27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2021
59.91	43.80	0.58	0.53	71.51	57.20	0.57	0.53	42.81	66.19	0.55	0.57	Average

Source: Food and Agricultural Organization of the United Nations (FAO), price competitiveness was calculated by the researchers.
C: Canada, U: USA, R: Russia, A: Australia

2-3 Market share of wheat (MS): It is the percentage of a country's exports of a particular crop to the total market imports of that crop from various countries of the world.

Table (14) below shows the market share of wheat-exporting countries in the Iraqi market, which was fluctuating for all countries. The average market share of Australia was about (16.24) of Iraq's total wheat imports, with a minimum of (0) in the years 2000, 2003, 2007, 2019, 2020, and 2021 due to the lack of imports of Australian wheat to Iraq, and a maximum of (83.67) in 2001. The average market share of the United States of America was about (19.20) of the total wheat imports in the Iraqi market, with a minimum market share of (0) for the years 2000, 2001, 2012, 2015, and 2021 due to the lack of imports of the American wheat crop to the Iraqi market, and an upper limit of the market share of (103.77) in 2007. As for Russia, its average market share was about (5.29) of Iraq's total wheat imports, with a minimum of (0) for the years 2000, 2001, 2004, 2005, 2006, 2007, 2014, 2016, and 2018, due to Iraq not importing Russian wheat in these years, and a maximum of (74.89) for the year 2017. The average market share of Canada was about (7.62), with a minimum of (0) for the period from 2001-2005, in addition to 2020 and 2021 also due to the lack of imports of Canadian wheat in these years, and a maximum of (75.66) for the year 2001 during the research period:

Table (14) shows the market share of competing countries in Iraq's total wheat imports for the period (2000-2021)

MS (A)	MS (U)	MS (R)	MS (C)	Years
0.00	0.00	0.00	75.66	2000
83.67	0.00	0.00	0.00	2001
80.34	3.58	1.74	0.00	2002
0.00	68.78	13.25	0.00	2003
59.00	43.30	0.00	0.00	2004
30.22	43.41	0.00	0.00	2005
12.98	69.07	0.00	17.09	2006
0.00	103.77	0.00	26.47	2007
6.77	0.01	3.30	7.97	2008
0.03	0.02	0.01	0.07	2009
8.84	75.29	7.55	21.82	2010
24.42	3.62	12.74	3.47	2011
0.04	0.00	0.01	0.07	2012
46.95	1.29	2.41	7.17	2013
0.27	0.05	0.00	0.18	2014
0.99	0.00	0.04	3.62	2015
1.92	9.24	0.00	3.36	2016
0.13	0.58	74.89	0.29	2017
0.77	0.45	0.00	0.26	2018
0.00	0.00	0.01	0.10	2019
0.00	0.01	0.07	0.00	2020
0.00	0.00	0.28	0.00	2021
16.24	19.20	5.29	7.62	Average

Source: The market share was calculated by the researchers based on data from the food and organization of the united nations.

Third: Conclusions and Recommendations

1- Conclusions:

1-1 Thailand, India, and Pakistan have a revealed comparative advantage in exporting rice to the world, with the exception of the United States of America, but it is considered one of the countries that worked to increase its production of long-grained and hybrid rice due to the increase in cultivated area, government support, and improvement in the rice industry. This is why it is one of the largest exporters of rice in the world.

1-2 Russia has a comparative advantage in exporting wheat to the world and does not have the comparative advantage of the United States, Canada, and Australia, despite the fact that these countries are distinguished by being among the major wheat exporting countries.

1-3 Regarding price competitiveness for rice exporters in Iraq, Thailand had price competition with its competing countries inside Iraq, while the United States of America and India did not have price competition, and thus the consumer would prefer one cough over another according to factors other than price. Pakistan had price competitiveness with the United States and India, except for Thailand.

1-4 As for wheat exporters in Iraq, Australia had price competition with the United States and Canada, except for Russia. Canada had price competition with both the United States and Australia, and the United States had a competitive advantage with Canada and Australia, but Russia did not have Price competitiveness with competing countries that export wheat.

1-5 Price competitiveness of Russia in the Iraqi market was weak due to intense competition and high prices of Russian wheat exports, which reduces the purchase of Russian wheat in the Iraqi market compared to other competing countries.

1-6 The results of the market share of rice exporters to Iraq out of Iraq's total rice imports showed that Thailand has a high market share compared to its competing countries, followed by the United States, India, and Pakistan according to the average market share of (34.67, 18.10, 10.35, and 3.06) respectively.

1-7 The market share of wheat exporters inside Iraq out of Iraq's total wheat imports shows that the United States has a high market share, followed by Australia, Canada, and Russia,

according to the average market share, which reached (19.20, 16.24, 7.62, and 5.29) respectively.

2- Recommendations:

2-1 Supporting the local production of both grain crops to limit Imports.

2-2 Looking for other exporters who offer same varieties or closer with lower prices.

2-3 Considering any possible solutions to the issue of irrigation water scarcity.

2-4 Taking advantage of the competitive relationship between competing countries (the United States, Canada, and Australia) in exporting wheat to the Iraqi market in order to develop an appropriate policy for importing wheat from these countries.

2-5 Paying attention to national programs that contribute to the multiplication of seeds for both crops, which is an important step to increase production and profits for farms.

2-6 Protecting rice fields from pollution, specifically the polluted irrigation water.

2-7 Working to increase the efficiency of irrigation water use in order to increase agricultural productivity for both crops, and thus reducing dependence on imports.

REFERENCES:

1- A. M. Dr. Abdul Karim Jabbar Shangara. (2007). The agricultural sector in Iraq after international sanctions. What to do? Iraqi Journal of Economic Sciences, 5(13).

2- Abdel Hadi, W. (2023). Indicators of competitiveness of Egyptian orange and grape exports in the most important global markets. Egyptian Journal of Agricultural Economics, 33(1), 355-380.

3- ABDOUS, A. (2018). The competitiveness of Algerian dates and the determinants of demand for their exports in global markets: with a focus on the French market. el-Bahith Review, 18(1), 93-108

4- AlBadri, B. H., & AlAttabi, H. A. (2022). MEASURING AND ANALYSING THE CAUSAL RELATIONSHIP BETWEEN AGRICULTURAL TERMS OF TRADE AND SOME AGRICULTURAL VARIABLES IN IRAQ FOR THE PERIOD 1990-2019. Muthanna Journal of Administrative and Economic Sciences, 12(2).

5- Al-Badri, B. H., Mohammad, M. K., & Khalid, J. O. (2023, August). The Water Footprint and Virtual Water and Their Effect on Food Security in Iraq. In IOP Conference Series: Earth and Environmental Science (Vol. 1222, No. 1). IOP Publishing.

6- Alhendi, A. S., Ali, A. M., & Mohammed, A. K. (2023). Microbial Quality of Paddy fields at Alfurat Alawsat Area, Iraq and the Effect of Milling Process on the Rice Contamination Level. Baghdad Science Journal.

7- Ali, E. H., Alsaad, A. A., & Abd, S. S. (2020). An economic analysis of factors affecting farmer's decision on using chemical fertilizers. Int. J. Agricult. Stat. Sci. Vol, 16(1), 281-288.

8- Ali, E. H., Baker, Y. T., & Al-Douri, B. F. (2022). EFFECT OF SUPPLEMENTARY IRRIGATION SYSTEM ON WHEAT PRODUCTION EFFICIENCY USING A STOCHASTIC FRONTIER ANALYSIS. Iraqi Journal of Agricultural Sciences, 53(2).

9- Ali, E. H., Duaila, D. A., & Mohammed, M. K. (2023). A STUDY OF ECONOMIC, SOCIAL, AND INSTITUTIONAL FACTORS AFFECTING THE ADOPTION OF THE HIGH-RANK WHEAT SEEDS. Iraqi Journal of Agricultural Sciences, 54(1).

10- Ali, S. H., & Jabara, O. K. (2021). An economic study of post-harvest losses for wheat farmers in iraq baghdad governorate–case study. Iraqi Journal of Agricultural Sciences, 52(5), 1267-1275.

11- Al-Karaawi, Hassan Ajeel Khunaizi. (2017). An economic analysis of the factors affecting the imports of rice in Iraq (1990-2015). Master's thesis (published). University of Baghdad, College of Agriculture, Department of Agricultural Economics.

12- Al-Saadi, Muhammad Abd al-Rasoul Latif. (2016). Determine investment priorities in agricultural scientific research results in Iraq using a policy analysis matrix for some major grain crops. Doctoral dissertation (published). University of Baghdad, College of Agriculture, Department of Agricultural Economics.

13- Al-Wasiti, R. T. (2023). ANALYSIS OF THE IMPACT OF AGRICULTURAL POLICY ON MARKETING THE RICE CROP IN IRAQ FOR THE PERIOD (2000-2020). Iraqi Journal of Agricultural Sciences, 54(4).

14- Amr Hussein Muhammad Selim, Jaber Ahmed Bassiouni, & Muhammad Ibrahim Al-Shahawi. (2019). The competitiveness of Egyptian coriander exports in the most important international markets. Journal of Kirkuk University for Agricultural Sciences, 2018

15- Chyad, A. A., Saeed, A. M., & Alhendi, A. S. (2022). Determination of Heavy Metals in Irrigation Water, Soil, Paddy, and Produced Rice of Some Paddy Fields of Iraq. Iraqi Journal of Science .

16- Daoud, S. (2010). The competitiveness of the most important Egyptian agricultural exports in European markets. Journal of Agricultural Economics and Social Sciences,1(7).

17-Doaa Jassim Hameed, & A. Dr.. Raad Aidan Obaid. (2020). Measuring the food gap for the wheat crop and the possibility of achieving self-sufficiency in Iraq for the period from (1990-2018). Journal of Administration and Economics, (125).

18-Hassan Shehab, S. M., Sameh Muhammad, & Jalal Ahmed. (2021). Standard analysis of Egypt's exports of frozen strawberries. Alexandria Journal for Scientific Exchange, 42(4).

19-Hassan, T. K., & Ahmed, A. F. (2023). Determinants of Investment Allocations in the Agricultural Sector in Iraq: A Comparison Between the Method of least Squares Approach and the errror Correction Model. Journal of Accounting and Financial Studies (JAFS), 18(64).

20-Jarjees, F. Z., & Darwesh, D. A. (2023). Heavy Metals Concentration in Commercial Rice Available at Erbil City Markets, Iraq and Soaking Effects. Baghdad Science Journal, 20(3 (Suppl.)) .

21-Jassam, Q. T., Ali, E. H., & Ghaylan, M. S. (2022). Estimating Factors Affecting Wheat Marketing Efficiency Using Tobit Model. Iraqi Journal of Agricultural Sciences, 53(4).

22-Jehoshua Eliashberg, Market-Share Analysis (2010): Evaluating Competitive Marketing Effectiveness, International Series In Quantitative Marketing, university Of Pennsylvania Philadelphia, Pennsylvania, U.S.A.

23-Lipsey, R. E., Molinari, L., & Kravis, I. B. (1991). Measures of prices and price competitiveness in international trade in manufactured goods. In International economic transactions: Issues in measurement and empirical research . University of Chicago Press.

24-Mohammadi, Rashid. (2020). Determinants of the competitiveness of the Algerian date product in the most important international markets. Journal of economic and administrative research. 14(2).

25-Mohammed, A. A., Razzaq Merza, N. A., Taha, A. H., Farhood, A. N., Obaid, A. H., & Baqer, T. M. (2021). ROLE OF SPRAYING POTASSIUM FERTILIZER TYPES IN IMPROVING OF FLAG LEAF CONTRIBUTION IN GRAIN YIELD OF WHEAT. Biochemical & Cellular Archives, 21(1).

26-Owaidah, R. A., Rowaida Osama, Jumaa, Muhammad Zaki, Moselhi, Muhammad Amin, Hala Al-Sayyed. (2017). An analytical study on the performance of Egyptian potato exports. Zagazig Journal of Agricultural Research, 44(4).

27-Qasimi Asala, & Kawahala Bushra. (2020). The role of the export strategy in supporting the competitiveness of Algerian agricultural products for the period (2000-2020).

28-Shukr, A. S., & Hameed, B. H. (2021). AN ECONOMIC ANALYSIS OF THE RELATIONSHIP BETWEEN ECONOMIC GROWTH AND THE ENVIRONMENT: IN IRAQ FOR THE PERIOD 2000-2017. Iraqi Journal of Agricultural Sciences, 52(3).

29-Suleiman Mustafa, A., Ayat, Hafez Ismail, Talaat, & Ahmed Abdel Hafeez. (2022). The competitiveness of Egyptian mango exports in the most important import markets. Assiut Journal of Agricultural Sciences, 53(1).

30-TF, A. R., & Bilal, N. J. (2023). IMPACT OF IMPROVED SEEDS AND SOME MODERN TECHNOLOGIES ON INCREASING THE SUPPLY OF WHEAT CROP IN IRAQ FOR THE AGRICULTURAL SEASON 2019-2020. Iraqi Journal of Agricultural Sciences, 54(1) .