ANALYSIS OF THE IMPACT OF AGRICULTURAL POLICY ON MARKETING THE RICE CROP IN IRAQ FOR THE PERIOD (2000 - 2020)

Fatima K. Z   **R. T. Al-Wasiti**

Researcher.   **Prof.**

Dept. Agric. Econ, Coll. Agric. Eng. Sci., University of Baghdad, Iraq

fatma.kadim1208a@coagri.uobaghdad.edu.iq

raja.t@coagri.uobaghdad.edu.iq

ABSTRACT

This research aims to study and analyze the impact of agricultural policy on marketing the rice crop in Iraq for the period 2000-2020 and to identify the actual contribution of agricultural policy and its positive role, regression analysis was used by OLS method to measure the impact of agricultural marketing policy in Iraq for the period 2000-2020, and it is necessary to increase the marketed quantities in a way that helps move the price According to the supply and demand of the marketed quantities, which increases the impact of the marketed quantities on the price while reducing the government support followed as an encouraging policy. The study concluded that the production was not sufficient to cover the local markets, which led the government to work on an encouraging policy by subsidizing rice prices due to the population increase to cover the domestic product from it and to meet the local need of the rice crop.

Keywords: Agricultural policy, Marketing rice, rice price.

*Part of M.Sc. thesis of the 1st author.

تحليل اثر السياسة الزراعية على تسويق محصول الرز في العراق للمدة(2000–2020)

فاطمة كاظم زاير الساعدي   رجاء طعمة الواسطي

باحث   أستاذ

قسم الاقتصاد الزراعي، كلية علوم الهندسة الزراعية، جامعة بغداد

المستخلص

يهدف البحث لدراسة وتحليل أثر السياسة الزراعية على تسويق محصول الرز في العراق للمدة 2000–2020 والتعرف على المساهمة الفعلية للسياسة الزراعية ودورها الإيجابي، تم استخدام تحليل الانحدار بطريقة OLS لقياس أثر السياسة التسويقية الزراعية في العراق للمدة 2000–2020، ويتوجب زيادة الكميات المسوقة بالشكل الذي يساعد على تحرك السعر وفق العرض والطلب للكميات المسوقة مما يزيد من اثر الكميات المسوقة على السعر مع تقليل الدعم الحكومي المتبع كسياسة تشجيعية وتوصلت الدراسة الى ان الإنتاج لم يكفي لتغطية الأسواق المحلية مما ادى الى قيام الحكومة بالعمل على السياسة التشجيعية من خلال دعم أسعار الرز بسبب الزيادة السكانية لتغطية الناتج المحلي منه ولسد الحاجة المحلية من محصول الرز .

الكلمات المفتاحية : السياسة االزراعية , تسويق الرز, سعر الرز

*البحث المستل من رسالة ماجستير للباحث الأول.

INTRODUCTION

The rice crop is one of the important summer crops that are grown in the irrigated areas of Iraq, and this crop needs large amounts of water, and it is an important food crop in Iraq and many countries of the world. Calories from a grain source that an individual needs. Meanwhile, rice is grown in the central and southern regions and occupies a quarter of the total area planted with rice in all of Iraq, and despite the nutritional importance of rice, it is grown in a relatively narrow range compared to wheat and barley due to several problems, the most important of which is the water problem that the crop needs. The importance of the research comes in terms of reaching high levels of rice production in Iraq to achieve self-sufficiency in this important and basic food commodity, as the state bears the responsibility for marketing it as it is one of the most important major crops to meet the needs of consumers. The problem of the research is that Iraq faces a major challenge in the field of providing the rice crop due to the inability of local production to meet the requirements of local consumption and the increase in it resulting from demographic factors such as an increase in the population and other economic factors. As for the goal of the induction, it is to evaluate the expected effects of the state's adoption of some agricultural decisions and policies related to rice, which is to determine the area cultivated from it, and the water share allocated to the cultivation of the crop. The research relied on the method of descriptive and quantitative analysis it is represented in using the simple and multiple regression analysis method in estimating the general trends of the economic variables they study / using the statistical program.

MATERIALS AND METHODS

The research depends on the method of descriptive and quantitative analysis, which is the use of simple and multiple regression analysis to determine the nature of the relationship between the dependent variable and the independent variable of the economic variables under study using the Eviews program. And the economic relations between some of the variables represented in the cultivated area, productivity, total production, national consumption, extraction of surplus or deficit, farm prices, consumer price, total costs, net return and investor profitability for the rice yield in Iraq. The time series in question was relied upon. The data were obtained from (Ministry of Agriculture - Ministry of Planning - Ministry of Commerce), and theses of the department and published and disertaions research in this field.

The concept of agricultural marketing policy: The external and internal marketing policy is an important part of the agricultural policy at the level of agricultural activity, in addition to being part of the economic policy at the macro level. Marketing has a major role in allocating resources, regulating the flow of supply, developing foreign trade, and setting commodity prices (8). Where we find that the policy of countries towards agriculture is to change or improve the economic situation and this can be by transferring the agricultural system from subsistence to a commercial economy The role of states is highlighted here in directing general agricultural policies through many areas, which are represented in controlling agricultural production, monitoring marketing, providing loans and aid, insurance on agricultural crops and structural reform of agriculture (2). The complementary means of the agricultural productive process, such as marketing services, financing facilities, and providing agricultural insurance opportunities, are among the most effective means to achieve the objectives of agricultural policy in directed economic systems. While the price or price device is the main guiding device for achieving the objectives of the agricultural policy in which improving economic welfare and creating a spirit of competition prevail.

We find that every economic or agricultural policy aims to achieve the economic well-being of society and is evaluated in the light of two basic variables: Maximizing the size of the national product and the optimal distribution of national income (4).

State policy towards prices

The importance of price is highlighted in that it is one of three factors that directly affect profit, and these factors are price, sales quantity and cost, because profit is the difference between revenues and costs. by the forces of supply and demand (12). Despite

what is targeted by the price policy in Iraq, it is not without weakness, because when setting prices, the classification of the crop according to quality, type and size is not taken into account, which discourages agricultural producers from sorting and classification operations and in a manner that does not achieve justice among consumers (19, 20). As well as following the agricultural price policy in carrying out many tasks, it may, in turn, adopt a policy (compulsory supply), that is, the state selects certain (strategic) agricultural products such as grains (wheat, barley, rice, etc.) from the main food commodities, so the state monopolizes the purchase of these commodities at predetermined prices. According to the mechanisms of interaction of supply and demand in the market, the market price of the commodity is determined, which is equal to its marginal cost. Thus, the state purchases a part of the production and displays it in the market at prices that may cover the costs incurred in exchange for purchase or sell it at prices lower than the cost and bear the price difference. Some agricultural policies resort to maintaining price stability also by controlling the quantity produced and supplied of the agricultural commodity, especially agricultural activity, as it is affected by natural conditions, which work on fluctuating production from year to year. After that, prices tend to rise in bad seasons and decline in good seasons and in such the situation is that the state stores some agricultural commodities such as grain when there is a surplus in production or imports in the event of a decline (3). As far as the impact of this policy on producers is concerned, the state's purchase of these agricultural commodities, if it is equal to the break-even price, the producers are not affected by this policy. But if the purchase price is higher than the break-even price, this increase will stimulate the expansion of agricultural production activity through income other producers to the agricultural market (10). The price is the guiding and regulating factor for production in the market economy (14). The price policies adopted by the state are in the interest of local producers in the short term (23).

Agricultural marketing concept: The views and objectives of those involved in agricultural marketing activity differ from each other. Those involved are farmers, intermediaries (of various forms) and consumers. Farmers consider agricultural marketing as a means to dispose of their products and convert them into cash income through which production costs can be covered and additional costs can be obtained. As for the intermediaries, they view the prevailing marketing system as that activity that brings them the highest profits for their services. As for consumers, they are the largest segment of society. They look at the efficiency of the prevailing agricultural marketing system through the extent to which they obtain agricultural commodities and products at the lowest prices, and this contradiction in goals is contrary to the views of natural categories of farmers and consumers in particular. The references include multiple definitions of agricultural marketing that differ in their content and focus on what is happening on agricultural products from the point of production (farm) and reaching the final consumer's table. One of the most important definitions of agricultural marketing is the science related to the performance of all commercial activities related to the delivery (flow) of agricultural products and services from the first point of agricultural production until it reaches consumers. The American Marketing Research and Suspense Act (AMA) defined agricultural marketing as the business that is intended to transfer an economic commodity from the producer's farm to the consumer's table (5). Among the definitions that focused on this meaning is the definition, Where he defined agricultural marketing as the science related to the performance of all commercial activities related to the delivery (flow) of agricultural products and services from the first point of agricultural production until it reaches consumers (21). Among the definitions that contain the same content is what he said that marketing in its simple sense means the creation or addition of spatial, temporal and ownership benefits as well as the formal benefit resulting from the processes of packaging and processing and The like (15), Thus agricultural marketing is known as all activities and works related to The process of flowing goods and services from the starting point of production (the farm) until they reach

the hands of consumers, meaning that the final production must be disposed of, so agricultural marketing starts from the beginning of production on the farm (16). As for what was mentioned it is the science that is concerned with studying the activities related to the transfer of ownership of agricultural products and related to any change in their form to increase their economic benefit. Nationality to develop the sectors of the national economy (22). It is a flexible system that aims to facilitate the exchange of agricultural commodities and related services from the places of their production to the places of their consumption with appropriate conditions, prices and qualities acceptable to all parties of the marketing process and the objectives of agricultural marketing (24), The agricultural marketing operations combine three basic categories (farmers, middlemen and consumers) and each category has its own objectives that may differ at times and agree at other times, These objectives work to achieve marketing efficiency, which leads to an increase in the welfare of society (9, 13).

Approaches used in agricultural marketing
There are main approaches in marketing used by agricultural marketing researchers, and among the most important of these are the main approaches that are widely used and give adequate impressions about the problems of agricultural marketing. There are three approaches: The functional, organizational (institutional) and commodity approaches, as well as other approaches, the systems approach, strategies approach and decision-making (1). It includes studies of marketing activities related to marketing agricultural crops and their analysis, including vegetable crops, in many stages and ramifications, due to the expansion of marketing operations that start from the production of the crop and end with the delivery of its products to the consumer. And it is not possible to isolate any marketing system for any agricultural product or group of agricultural producers from each other, rather it cannot be isolated from any of the variables of the macroeconomic system. Therefore, the focus was on explaining three approaches, the first specialized in discussing the functional approach, the second in discussing the organizational approach, and

the third dealt with the commodity approach: First: The functional approach, this approach is one of the main approaches used in marketing studies because it gives a broad structural framework for the study of agricultural marketing (18). This approach has received great attention from most researchers in the field of agricultural marketing because it focuses on a specific marketing service such as collection, transportation or storage....etc. Thus, it allows deepening studies, clarifying the topic of the case and addressing agricultural marketing problems (7). The curriculum can be divided in terms of functions and marketing services into three groups.

1. The exchange functions, which are the functions that add the ownership benefit of the commodity, that is, those related to the two functions (buying and selling), and they are two sides of the same coin. The buyer's problems and concerns (6).
2. The selling function: The selling function is meant to transfer the ownership of goods, crops or services from their owner and producer to the buyer, whether he is a trader, intermediary or final consumer by exchanging agricultural products for the corresponding value (price) and the selling function includes major operations (11).
3. Natural (physical) functions: These are those activities that are related to the physical movement and exchange of goods, services and materials from the place of their production to the place of their appropriate supply.

Marketing costs
It is the difference resulting from the rest of the profits from the absolute marketing differences, that is, the marketing margin includes marketing costs in addition to profits. Marketing costs are divided into fixed costs such as employee salaries and rent of shops, while the second type is called variable marketing costs such as transportation and storage costs (17, 25).

RESULTS AND DISCUSSION
The reality of the marketed quantities of rice in Iraq for the period (2000-2020)
The Grain Company directed its branches and locations in the governorates that cultivate the rice crop to open its doors to receive the rye

crop from farmers and farmers, and after establishing (15) marketing centers in six governorates for the cultivation of the rice crop (and rye means rice in the language of the Middle Euphrates governorates in southern Iraq), as the centers The marketing centers were distributed by (4) centers in Najaf governorate, and (5) centers in Diwaniyah, (2) centers in Dhigar and the same in Maysan, and one marketing center in each of Babil and Muthanna. The grain company prepared all the administrative and technical requirements for the marketing centers in cooperation and coordination with the supporting departments in the governorates above. The quantities of the rye crop received from farmers and marketed farmers reached a maximum of

2019.93 thousand tons in 2014 at a price of 900 thousand dinars perton, and it exceeded what was received in the years before 2014 due to the allocation of sufficient space for rice cultivation, as well as the provision of sufficient water quota and support peasants and farmers marketing the yoghurt crop of all kinds, as the farmers were provided with books on the marketing plan for the purpose of going to the marketing centers as well as the official circulation of the Central Committee for Marketing in the Grain Trading Company, the marketing plan, which included controls, instructions and marketing specifications for the two types of yarrow, amber and jasmine. The minimum was about 10

Table 1. The marketed quantities of the rice crop domestic production and producer prices for the period (2000-2020)

years	Marketed Quantities (thousand tons)	domestic production (thousand tons)	Producer prices (Thousand dinars per ton)
2000	14.20	12.4	250.00
2001	10.00	5	250.00
2002	100.00	193.8	300.00
2003	85.57	81.3	300.00
2004	140.43	250.3	400.00
2005	185.25	308.7	650.00
2006	303.16	363.3	750.00
2007	327.30	392.8	900.00
2008	213.00	248.2	900.00
2009	109.25	173.1	900.00
2010	839.02	155.8	700.00
2011	112.25	235.1	750.00
2012	172.10	361.3	750.00
2013	191.06	451.8	750.00
2014	2019.93	1625.4	900.00
2015	544.53	109.2	900.00
2016	430.57	181.3	900.00
2017	104.69	265.9	900.00
2018	30.41	18.2	900.00
2019	304.10	574.7	900.00
2020	259.88	464.2	900.00
Average	309.36	308.18	692.85

Source: 1- Ministry of Planning - Central Statistical Organization. 2- Ministry of Commerce - Baghdad Chamber of Commerce.

thousand tons in 2001 at a price of 250 thousand dinars perton as a result of the economic and social conditions and the economic sanctions that were imposed on Iraq at the beginning of the period until 2003. Table 1 shown the marketed quantities of the rice crop, the prices of the marketed quantities for the period 2000-2020. From the data of

Table 1 it is clear that the marketing of rice has been on the rise and fluctuated during the study period 2000-2020, as it achieved during the year 2000 an amount of 14 thousand tons and continued to increase until the year 2003 witnessed a decrease to 85 thousand tons compared to previous years , this is due to the change of the basic system and a change in the

structure of the Iraqi economy and the directives of successive governments, which affected all Iraqi institutions and state departments in general and the agricultural economy in particular. The local production of rice decreased during the same year, which reduced the marketed quantities. Marketing operations continued to escalate after that until 2008, which witnessed a decrease in local rice production despite the implementation of the so-called agricultural initiative in 2008, through which specialized virtual funds were established that provide loans to the local investor without interest. As for the nature of the policy followed by the state towards exports and imports of agricultural products, it calls for the need to redistribute the factors of production towards specialization, relying on comparative advantage and strengthening it towards competitive advantage with regard to agricultural exports. Imports After 2003 the agricultural foreign trade policy has led to the establishment of an indirect tax on agricultural producers, which has discouraged their efforts to increase and develop agricultural production. After that, marketing gradually returned to rise until 2014, which decreased

during this year and beyond as a result of the control of subversive groups on most of the areas producing rice cultivation, which reduced agricultural production, which led to a decrease in rice marketing on the one hand and agricultural marketing on the other hand. It is noted that marketing is not limited to what is produced only, that is, marketing is completely identical to production, as in some years the production is higher than marketing and the shortage in marketing is compensated by the increase in import due to the urgent consumer need for rice, and in other years we find that marketing is less From local production, this is due to the fact that not everything produced is marketed directly. The state may take a strategic storage policy and use this storage in periods when production decreases and consumption increases. Therefore, marketing is less than local production, and in some years the actual need for rice by the market may be Less than what is produced, which prompts the government to keep the remaining production after marketing the amount that satisfies the needs of local individuals and to keep the rest as a strategic stock.
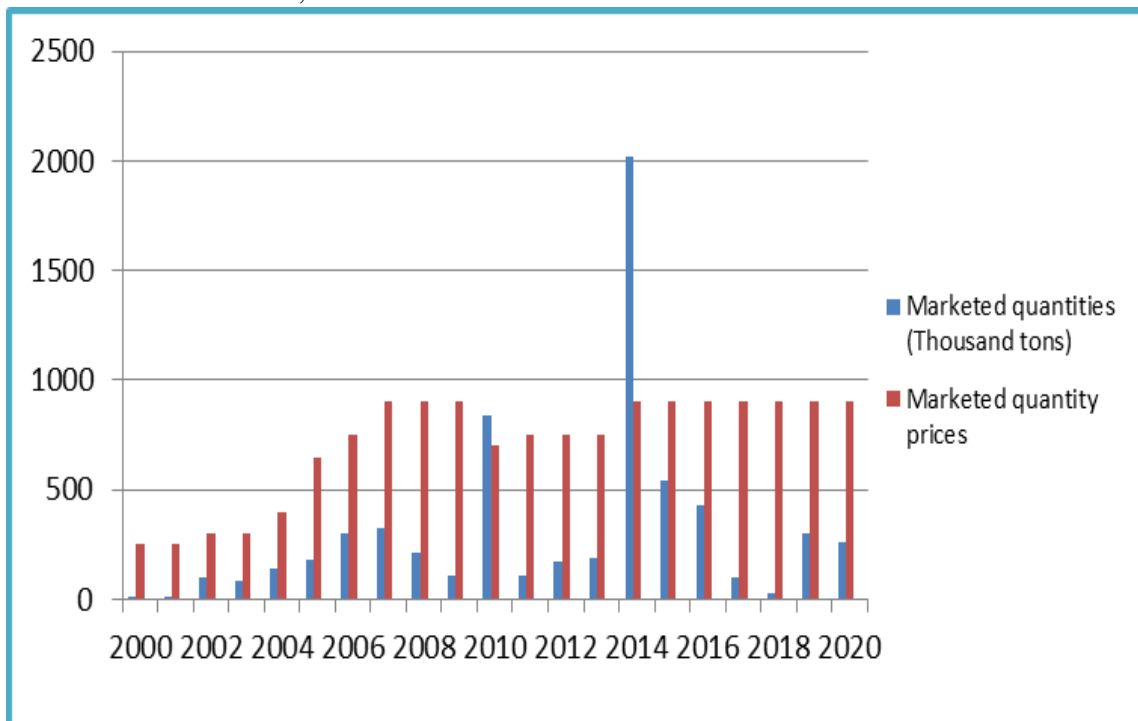

Fig 1. Marketed quantities of the rice crop and the amounts spent on it in Iraq for the period (2000-2020).
Source: From the researchers work based on the data in Table (1).

Economic and statistical analysis of the study variables: Variables can be described in terms of symbols and in terms of the type of

variable (dependent or independent) as in the following Table (2):

Table 2. Study variables

T	Variables	Variable type	Symbol
1	Marketed Quantity	Dependent	QMAR
2	Economic yield	Independent	ECO
3	Per capita consumption	Independent	NGDP
4	The price	Independent	PR
5	Space	Independent	SP

Source: Prepared by the researcher

Whereas:-

The price (**PR**) represents the price of the rice crop in thousand dinars per ton for the period (2000-2020).

Per capita consumption (**NGDP**) for the period (2000-2020).

Economic yield (**ECO**) (production) kg / dunum for the period (2000-2020).

The area (**SP**) represents the area of rice, one thousand / dunum for the period (2000-2020).

It is useful, before conducting an estimate of the study model, that we examine the properties of the time series of all variables in the model during the study period, and ensure their stability and determine the integration rank of each variable separately. Unit it will use the Augmented Dicky fuller (ADF) test.

Time series stability analysis

Most researchers suffer from many statistical problems and obtain inaccurate econometric models due to improper analysis, as well as most of the models conducted by researchers with small observations, the result of which leads to those statistical problems, so that the parameters signals are reflected in the opposite of the logic economic theory, and those researchers obtain a regression model False (The higher the R^2 and the t and F statistics). While autocorrelation occurs, and the researcher obtains statistical significance for some tests, while the model in general is distorted, and this comes, as we have shown, due to the small size of the observations, so in order to avoid false regression and obtain the accuracy of the estimate, the data for 20 years were converted into semi-annual data Using the Eviews 10 program to obtain statistically significant econometric models, according to the following table:

Table 3. Converting study variables data to semi-annual

SP	NGDP	ECO	DPR	QMAR	
8.4	2.87	369.05	125	7.1	2000S1
8.4	2.87	369.05	125	7.1	2000S2
5.65	2.92	216.8	125	5	2001S1
5.65	2.92	216.8	125	5	2001S2
108.25	19.805	447.6	150	50	2002S1
108.25	19.805	447.6	150	50	2002S2
61.25	18.57	331.85	150	42.785	2003S1
61.25	18.57	331.85	150	42.785	2003S2
175.9	19.955	355.75	200	70.215	2004S1
175.9	19.955	355.75	200	70.215	2004S2
214.4	18.105	360.45	325	92.625	2005S1
214.4	18.105	360.45	325	92.625	2005S2
251.3	22.34	361.4	375	151.58	2006S1
251.3	22.34	361.4	375	151.58	2006S2
248.55	18.185	395.1	450	163.65	2007S1
248.55	18.185	395.1	450	163.65	2007S2
169.5	11.135	366.1	450	106.5	2008S1
169.5	11.135	366.1	450	106.5	2008S2
109.85	6.85	393.95	450	54.625	2009S1
109.85	6.85	393.95	450	54.625	2009S2
95.95	5.935	405.95	350	419.51	2010S1

95.95	5.935	405.95	350	419.51	2010S2
131.9	5.23	445.6	375	56.125	2011S1
131.9	5.23	445.6	375	56.125	2011S2
159.4	18.875	566.65	375	86.05	2012S1
159.4	18.875	566.65	375	86.05	2012S2
191.9	28.62	588.6	375	95.53	2013S1
191.9	28.62	588.6	375	95.53	2013S2
858.55	36.695	473.3	450	1009.965	2014S1
858.55	36.695	473.3	450	1009.965	2014S2
48.8	19.965	559.45	450	272.265	2015S1
48.8	19.965	559.45	450	272.265	2015S2
77.1	756.5	587.9	450	215.285	2016S1
77.1	756.5	587.9	450	215.285	2016S2
111.05	9.26	598.6	450	52.345	2017S1
111.05	9.26	598.6	450	52.345	2017S2
10.85	5.93	419.35	450	15.205	2018S1
10.85	5.93	419.35	450	15.205	2018S2
255.35	9.54	562.65	450	152.05	2019S1
255.35	9.54	562.65	450	152.05	2019S2
203.2	31.97	571.1	450	129.94	2020S1
203.2	31.97	571.1	450	129.94	2020S2

During Table (3), the data was converted from annual to semi-annual to get rid of the problems of false regression due to the time period of the short study variables, after the time series consisted of 20 observations, it became after the conversion it consisted of 40 observations, as shown in the above table. The analysis of the stability of the time series of the variables under study for the period 2000-2020 will be shown through the Unit Root test, as well as resorting to the analysis of the macro and partial autocorrelation function to show that the time series do not contain the autocorrelation coefficients based on Correlogram analysis, and the other test The analysis of general trend detection for time series based on the Dickey-Fuller test,

First: The unit root test

The unit root test is found to get rid of the data from the samples that cause measurement problems, i.e. filter the data before the autoregressive test is performed as follows:

Table 4. Stability for the variables under study Results of the Dickey-Fuller stability test

Variables	Computed values	Table Values			Prob
		10%	5%	1%	
ECO	- 3.95	-3.19	-3.52	-4.19	0.018
NGDP	-4.54	-2.60	-2.93	-3.60	0.0007
QMAR	-3.95	-2.60	-2.93	-3.60	0.0040
SP	-4.33	-2.60	-2.93	-3.60	0.0204
D(PR)	-6.58	-2.60	-2.93	-3.60	0.0000

Source: Prepared by researchers based on the results of Eviews10 program.

The unit root was tested and it became clear that all the independent variables (economic yield, per capita consumption, marketed quantity, area), achieved stability at the level, as the calculated T values were smaller than their tabular counterpart, and then we accept the alternative hypothesis and reject the null hypothesis indicating that there is no the unit root of the strings values, at a significant 1%, 5%,10%, with the exception of the economic

yield variable, which achieved stability at the level of 5%,10%,and in the probability of (Prob) less than 5%, but (price) did not achieve stability at the level and in all cases (constant, direction and constant, and without direction and constant) because the calculated t is greater than the tabular, so he conducted the first difference test for him and achieved

stability When the first difference as the calculated T is smaller than its tabular counterpart and thus accepting the null hypothesis that the price time series is free from the unit root and with a probability (Prob) less than 5%, and at a significant 1%, 5%,10%, for all variables under study. As explained below:

1-The stability of the economic yield variable (productivity)

Null Hypothesis: ECO has a unit root
Exogenous: Constant, Linear Trend
Lag Length: 0 (Automatic - based on SIC, maxlag=9)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-3.952332	0.0185
Test critical values:	1% level	-4.198503	
	5% level	-3.523623	
	10% level	-3.192902	

*MacKinnon (1996) one-sided p-values.

Source: Prepared by the researcher based on Eviews-10

2- The stability of the per capita consumption variable

Null Hypothesis: NGDP has a unit root
Exogenous: Constant
Lag Length: 1 (Automatic - based on SIC, maxlag=9)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-4.546644	0.0007
Test critical values:	1% level	-3.605593	
	5% level	-2.936942	
	10% level	-2.606857	

*MacKinnon (1996) one-sided p-values.

Source: Prepared by the researcher based on Eviews-10

3-The stability of the marketed quantity variable

Null Hypothesis: QMAR has a unit root
Exogenous: Constant
Lag Length: 1 (Automatic - based on SIC, maxlag=9)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-3.951641	0.0040
Test critical values:	1% level	-3.605593	
	5% level	-2.936942	
	10% level	-2.606857	

*MacKinnon (1996) one-sided p-values.

Source: Prepared by the researcher based on Eviews-10

4- Area variable

Null Hypothesis: SP has a unit root
Exogenous: Constant
Lag Length: 1 (Automatic - based on SIC, maxlag=9)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-4.335411	0.0014
Test critical values:	1% level	-3.605593	
	5% level	-2.936942	
	10% level	-2.606857	

*MacKinnon (1996) one-sided p-values.
Source: Prepared by the researcher based on Eviews-10

5- Price variable

Null Hypothesis: D(PR) has a unit root
Exogenous: Constant
Lag Length: 0 (Automatic - based on SIC, maxlag=9)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-6.580506	0.0000
Test critical values:	1% level	-3.605593	
	5% level	-2.936942	
	10% level	-2.606857	

*MacKinnon (1996) one-sided p-values.
Source: Prepared by the researcher based on Eviews-10

Second: - Estimating the effect of the independent variables on the dependent variable

After the stability was conducted in the light of (Dickey-Fuller) test and making sure that the data is free from the unit root that affects the regression with a negative effect and may give false results i.e. spurious autoregression with high values of (R-squared, F, t) and then The researcher cannot reach the facts on which the decision is based, and the decision in the final outcome is wrong, so the unit root test was conducted, and then we will test the autoregression for each of the independent variables and their impact on the dependent variable.

Estimation of independent variables on marketed quantities: After conducting a stability test and making sure that the data is free from problems, the effect of the independent variables on the dependent variable was estimated based on the Eviews10 program.

Dependent Variable: QMAR
Method: ARMA Maximum Likelihood (OPG - BHHH)
Date: 07/31/22   Time: 00:01
Sample: 2000S2 2020S2
Included observations: 41
Convergence achieved after 60 iterations
Coefficient covariance computed using outer product of gradients

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	203.7349	468.7890	0.434598	0.6666
SP	1.046374	0.083191	12.57802	0.0000
NGDP	0.116230	0.145177	0.800609	0.4289
ECO	-0.277985	0.439167	-0.632983	0.5310
DPR	-0.000554	0.000313	-1.767953	0.0860
AR(1)	0.613369	0.167066	3.671411	0.0008
SIGMASQ	31273.86	7479.548	4.181250	0.0002

R-squared	0.830845	Mean dependent var	316.5659
Adjusted R-squared	0.800995	S.D. dependent var	435.3222
S.E. of regression	194.1973	Akaike info criterion	13.54139
Sum squared resid	1282228.	Schwarz criterion	13.83395
Log likelihood	-270.5985	Hannan-Quinn criter.	13.64792
F-statistic	27.83327	Durbin-Watson stat	1.793779
Prob(F-statistic)	0.000000		

Source: Prepared by the researcher based on Eviews-10

$$QMAR = 2.55740967825 \\ + 1.15173421798 * \\ SP + 0.231180008838 * NGDP \\ - 1.55135968269 * DPR \\ - 0.0897760485388 * ECO$$

1- Economic Analysis

Through the results of the above equation, it is clear that the marketed quantities and the cultivated area are in accordance with the logic of the economic theory because it is a direct relationship between the cultivated area with one unit. The marketed quantities will increase by (1.151), and this is consistent with the logic of the economic theory, while the relationship between the marketed quantities with individual consumption is a direct relationship, that is, that With an increase in consumption by one unit, the marketed quantities will increase by (0.231), and this is consistent with the logic of economic theory, because the greater the consumption, the greater the production, which increases the marketed quantities. The price by one unit will be less than the marketed quantities by (1,551) and the reason is that the price of the pre-crop of rice was priced by the state to buy it from the product, but the relationship between high quantities and economic yield is also an inverse relationship, that is, by increasing the economic yield, it will reduce the price by an amount (0.089).

2- Statistical analysis

Link: The correlation between the dependent variable and the independent variables can be shown through the (SPSS) program and to identify the type of correlation in terms of being a negative or positive correlation and the extent of the significance of the correlation using the (Pearson Correlation) test. The researcher reached the following results:

The relationship of the independent variables with the marketed quantities

The results of the Table 5 shown the correlation between the independent variables and the dependent variable (marketed quantities) as follows:

Through the above results, it is clear that there is a positive correlation between the marketed quantities and the per capita consumption of (0.93) and a significant level (55%), which is greater than (5%), meaning that it is not significant, as well as the marketed quantities with the area with a strong positive correlation of (0.837) and with a level of significance less than (5%), except for the relationship between economic yields with marketed quantities, as it achieved the strongest correlation with price by achieving value (0.177) and with a level of significance (0.177) greater than (5%). It is also insignificant, and the same is the case in the relationship of marketed quantities with price, which has achieved a strong correlation (0.72) but it insignificant because it is greater than (5%).

Table 5. Correlations

		QMAR	SP	NGDP	ECO	DPR
QMAR	Pearson Correlation	1	.837**	.093	.177	.072
	Sig. (2-tailed)		.000	.557	.263	.655
	N	42	42	42	42	41
SP	Pearson Correlation	.837**	1	-.077-	.149	.323*
	Sig. (2-tailed)	.000		.630	.347	.039
	N	42	42	42	42	41
NGDP	Pearson Correlation	.093	-.077-	1	.323*	-.041-
	Sig. (2-tailed)	.557	.630		.037	.800
	N	42	42	42	42	41
ECO	Pearson Correlation	.177	.149	.323*	1	-.133-
	Sig. (2-tailed)	.263	.347	.037		.409
	N	42	42	42	42	41
DPR	Pearson Correlation	.072	.323*	-.041-	-.133-	1
	Sig. (2-tailed)	.655	.039	.800	.409	
	N	41	41	41	41	41
**. Correlation is significant at the 0.01 level (2-tailed).						
*. Correlation is significant at the 0.05 level (2-tailed).						

Table 6 shows that the variables are not significant according to (prop) because their significance is greater than 5% and according to the following:

Table 6. The variables are insignificant according to (prop).

Prob.	t-Statistic	Std. Error	Coefficient	Variable
0.9745	0.032198	79.42732	2.557410	C
0.0000	10.62249	0.108424	1.151734	SP
0.0528	2.002938	0.115420	0.231180	NGDP
0.0128	-2.620148	0.592089	-1.551360	DPR
0.6204	-0.499550	0.179714	-0.089776	ECO

Source: Outputs of Eviews10 program

Through the results, it was found that the variables price, per capita consumption and cultivated area are significant according to the (prop) test because their value is less than 5% and the calculated T value is greater than the value of its tabular counterpart, which confirms the significance and acceptance of the null hypothesis and rejection of the alternative hypothesis. While the economic yield variable was not significant because the calculated t value is less than its tabular counterpart and the prop value is greater than its tabular counterpart.As it is clear from the same table that the calculated value of F is greater than its tabular counterpart, and this confirms the significance of the estimated model and confirms the value of (R-squared) because the calculated value 27.83 is greater than its equivalent of 2 and even the amount of (prop) is 0.00000 less of 5%, which confirms its significance.

CONCLUSIONS
1. There is a decrease in rice marketing operations resulting from the low production of the rice crop, which is due to the decrease in the cultivated areas due to the lack of Iraq's water share due to neighboring countries and the farmers' reluctance to cultivate it because its prices are no longer remunerative for them, as well as the competition of imported ones
2. Iraq has become one of the importing countries for almost everything, especially the rice crop, despite the availability of environmental conditions and its great potential in cultivating and providing grain crops that previously achieved an appropriate production and marketing ratio for the population
3. The independent variables of the study sample affected the marketed quantities by a large percentage, as between the value of the (R-squared) achieved (76%) and is considered a large impact rate, and this confirms the support policy that the Iraqi government works with as a policy of encouraging agriculture and supplying the market with large quantities until Dependence on imports, which generates huge benefits, decreases on the local market on the one hand, and on the farmer on the other
4. As a result of the great need for rice due to the increase in the population and the failure to cover the local production of rice and the actual need in the market, the demand for rice increased, which facilitated the marketing process and increased its value

RECOMMENDATIONS
1. The government should take into consideration the increase of the population, which has increased dramatically in recent years, and therefore the increase in rice production should correspond to the increase in the population. and overcoming hunger, poverty and malnutrition
2. During the subsequent years, when production increases and covers the actual need, there must be a development in the marketing process, whether this is on the local side or the external side of the country in order to be able to market all the produced quantities and this requires the development of human resources and the use of modern tools in the marketing process
3. The deficit amount of rice can be produced in Iraq under specific environmental conditions despite the drought and water shortage, through modern methods of rice production such as dry farming and the development of other types of seeds adapted to the climate and environmental conditions, and the provision of these large sums that are directed to the import paths Development and investment in the agricultural sector and other sectors, which are considered large sums, undoubtedly exhaust the public treasury, in addition to the high incomes of farmers from cultivating this crop and the increase in the added value in the agricultural sector
4. Because this crop represents the main component of the Iraqi consumer basket, its important economic and nutritional importance, the state must consider seriously and firmly to develop and increase production of this important crop and reduce the quantities imported by imposing high customs

tariffs for imported food commodities that are competitive to local production, which works to raise prices imported

5. The role of agricultural extension in the process of educating farmers and guiding them by leaving the traditional methods that take advantage of longer time and more effort and replacing them with modern methods that take advantage of shorter time and less effort and give high production through their use of improved seeds that give high production and better quality, improved fertilizers, modern irrigation methods and machines And modern machinery, which ultimately leads to an increase in the agricultural production of the country.

REFERENCES

1**.** Abdel-Fattah, M., S., 1979, Marketing, The Modern Egyptian Office, 1st ed, Egypt. pp:641

2. Abu Ali, M., H. 2004, Agricultural Geography (in Economic Geography), 1st ed., Wael Publishing House. pp: 488

3. Al-Anjafi, S., T, 1990, Agricultural Economic Policy, Dar Al-Kutub Publishing, Iraq. pp: 105

4. Al-Anjafi, S., T,and H., I., Obaid, 1989, Agricultural Planning (Development Planning and Agricultural Policy), Dar Al-Kutub for Publishing, Mosul. pp: 201

5. Al-Dabbagh, J., M., 2008, The Economics of Agricultural Marketing, first edition - Baghdad – Iraq. pp: 212

6. Aldiogi, A., S., 1987, Marketing Department, Dar Al-Kutub Institution for Printing and Publishing, University of Mosul - Iraq.pp:152

7. Al-Faraji, A., M., and M., A., Manhal, 2016, Marketing efficiency of some vegetable crops in Baghdad governorate for the 2014 summer agricultural season, Iraqi Journal of Agricultural Sciences, 47 (3): 837-845. https://doi.org/10.36103/ijas.v47i3.575

8. Al-Jubouri, R., K., H. 2011, Agricultural policy and its impact on food security in some Arab countries, PhD thesis (unpublished), University of Mosul, College of Administration and Economics

9. Al-Khatib, F., S., 2000, Principles of Marketing, Basic Concepts, Dar Al-Fikr for Printing, Publishing and Distribution, first edition, Amman, Jordan.pp:325

10. Al-Masoudi, S., R., H, 2018, a geographical evaluation of agricultural products marketing centers in the Karbala governorate, a master's thesis, University of Karbala, College of Education for Human Sciences, Department of Human Geography. pp:121

11. Al-Qaisi, K., M., Hussein, 2003. Marketing the fruits of the date palm in Iraq, Ph.D Dissertation, Department of Agricultural Economics, College of Agriculture, University of Baghdad, Iraq. pp: 324

12. Al-Sumaidi, M., J, and A., B., Abbas, 2012, The Fundamentals of Comprehensive and Integrated Marketing, Dar Al-Mahraj, Jordan. pp: 545

13. Al-Tarawneh, S., Y, 2010, Principles of Agricultural Marketing, Jordanian House of Ward for Publishing and Distribution, Amman, Jordan. pp: 240

14. Al-Badri, B. H., and S., J., Muhammad, 2016, An economic analysis of price policies and foreign trade policy in the agricultural sector in Iraq for the period 2003-2013, Iraqi Journal of Agricultural Sciences, 47(2):563-572. https://doi.org/10.36103/ijas.v47i2.603

15. Bressler, R., G, and R., A., King, 1970, Markets Price and International Trada, Jolin Wiley and Sons, Inc., New York. pp: 426

16. Elfeel, A., M., T, 1970, the rules and methods of agricultural marketing and agricultural cooperative marketing, Alexandria University, New Publications House.pp:231

17. Hussein, A., J, and G., H., Thamer, 2016, Marketing efficiency of some fruit crops in Baghdad governorate for the agricultural season (2014-2015), Iraqi Journal of Agricultural Sciences, 47 (2): 583-599. https://doi.org/10.36103/ijas.v47i2.605

18. Ismail, S., M., and M., A., Al-Qunaibit, 1995, Agricultural Marketing, Dar Al-Marrikh Publishing, Riyadh, Saudi Arabia. pp: 130

19. Karbala Agriculture Directorate, 2016, Planning and Follow-up, Agricultural Marketing Division (unpublished data), for the year

20. Karim, N., M, 2013, Palm cultivation and date production in Diyala governorate, Master's thesis (unpublished), College of Education, University of Diyala. pp: 107

21. Kohl's, R., L, and, J., N., Uhl, 1990, Marketing Of Agricultural Products. Macmilla

Publishing Company, New York. USA. pp: 624

22. Latif, M., A, A. D. Kasar and A. A. Mudhi. 2017, Policy analysis matrix for the essential cereal crops varieties (Ricebuhooth1, and corn synthetic genotype baghdad3) (Study Case) In Iraq for the year 2012, Iraqi Journal of Agricultural Sciences, 48 (3): 797-811. https://doi.org/10.36103/ijas.v48i3.395

23. Mohammed, N. J., and A., A., Mudhi, 2016, Analysis of the impact of politics on wheat production in Iraq using the policy analysis matrix method, Iraqi Journal of Agricultural Sciences, 47(2):552-562. https://doi.org/10.36103/ijas.v47i2.602

24. Radwan, H., M, 2011, The Crisis of the Palestinian Agricultural Sector and Marketing Obstacles in the Gaza Strip, Master's Thesis, The International Academy in Denmark. pp: 299

25. Zaki, M., S. 1956, Agricultural Marketing, Dar Al-Maaref, first edition, Egypt. pp: 341.