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ANALYSIS OF THE RELATIONSHIP BETWEEN THE COMPETITIVE CAPABILITIES OF COMMODITY EXPORTS AND THE RENTIER ECONOMY FOR THE PERIOD (2004-2021) IN THE IRAQI ECONOMY

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Abstract
The issue of competitiveness occupies broad interest in international economies, especially with the developments represented by globalization and global economic integration, as well as policies of openness and market liberalization. The concept of competitiveness goes beyond the state's ability to produce goods and services that compete worldwide to the challenges that enable the state to produce goods and services and offer them in local and international markets. Thus, competitiveness is linked to export capabilities, the global trade climate, and the state's ability to access global markets.

Introduction

The respiratory capabilities of any country are linked to the extent of production capabilities and the nature of goods and services that can be exported, and in the Iraqi economy, in which the oil sector dominates the most significant proportion of its exports, and this growing proportion of oil exports affects the competitive capabilities of commodity exports significantly, meaning that the competitive capabilities of commodity exports in the Iraqi economy are dependent on Its development and increasing proportions in the oil sector and its export rates.

Hence, the topic of research came: the rentier economy and its impact on the competitiveness of commodity exports for the period (2004-2021) in the Iraqi economy.

Research Importance

The importance of the research lies in measuring the rentier economy based on the competitive ability of commodity exports and measuring some important and leading indicators of competitive capabilities while clarifying the potentials available for commodity production and the relative importance of those products and their relationship with oil exports.

Research problem

The research problem is determined by answering the following questions:

- Do oil exports (representing the rentier economy) affect the trends and indicators of the competitiveness of commodity exports in the Iraqi economy?

Research hypothesis

There is an impact of the rentier economy on the competitive capabilities of commodity exports in the Iraqi economy, which is reflected through the impact of the ratios of oil exports to gross product on the ratios of commodity exports to gross domestic product, as well as on some indicators of competitiveness.

Research objective

The research aims to study the relationship between the competitive capabilities of commodity exports in the Iraqi economy and oil exports and the importance of oil in the gross domestic product because the oil sector and its growing role reflect the rentier pattern of the Iraqi economy.

Chapter One

The theoretical framework of the concepts of rentier economics and competitiveness

First: the rentier economy

Adam Smith defines rent as the price paid for land use. It is, by nature, a monopoly price resulting from the right of ownership and imposed by the monopoly power derived from that right. Its amount depends on the farmer's willingness to pay for land use. Adam Smith distinguishes between the original rent and the returns from improving the land, which is the interest on Capital employed by peasants for improvement, not landowners. Adam Smith excludes these returns from the concept of rent to distinguish between the peasant who owns Capital on the one hand and the landowner who is the sole owner of rent on the other hand (Abdel-Wahab, Al-Kayyali, 1993, p.401). Until the middle of the twentieth century, with the emergence of the British economist Alfred Marshall, who showed that rent was much broader than the owner's income, he defined it as: "a certain economic surplus when the supply of factors of production. Marx combines two definitions that depend on his definition of rent in the reality of capitalist production. As rent is considered: "Every property rent is surplus value. The part, especially the surplus value, is extracted from productive labor. Workers, meaning that part of the value of the commodity appears as surplus value, independent of the ownership of natural rights to produce this part of the commodity (Anis et. al, p.410).

Therefore, according to classical economic thought, rent is linked to the land's fertility. According to David Ricardo, it is linked to the land, which is the surplus value (rent) that is not the result of work; that is, it is due to the location of the land, according to Adam Smith, and is due to the location and capitalist monopoly of the land, which generates rent for its owner without His contribution to the productive cycle according to Karl Marx.

The economist Samuelson defines rent as "the amount paid for the exploitation of the factors of production in fixed supply, and it is not limited to land alone but includes all elements in fixed supply" (Samuelson & House, 2006, p.274).

Second: Characteristics of the rentier economy

We can review the characteristics of the rentier economy as follows:

1- Reliance on a single resource: Reliance on an income source is one of the essential features that unite whether the economy is rentier or not, on the one hand. On the other hand, if this dependence is external, it contributes to deepening the concept of the rentier economy.

2- Dominance of the public sector: The dominance of the public sector stems from the role granted by local laws and the type of rentier resource on which the economy depends, as the rents generated from the extraction of natural resources, especially oil, for example, and by the laws that grant public ownership of it, the revenues generated from its export go to it. It then distributes it through the general budget through consumption and investment expenditures (Karl, 2008, p.106).

3- Weak local production structures: Rentier economies are characterized by a low contribution of commodity sectors to the formation of the gross domestic product, except the oil sector, which is characterized by the dominance of other sectors, and the importance of this rentier sector is evident. Accordingly, the rentier economy is nothing but a rentier distributive economy and not a productive economy (EU, 2006, p.2).

4- The unilateralism of exports: The export concentration index also shows the extent of the economy's rentiers, as this index indicates the nature, type, size, and structure of total exports, which shows that they are unilateral. The higher percentage of this index indicates weak diversification in the volume of exports. Exports and the economy's dependence on a particular commodity in terms of the volume of its exports mean that rentiers characterize the economy (Abdel-Rahman, 2007, p.6).

5- An increase in the volume of imports: The increase in the volume of public spending resulting from the increase in the volume of public revenues due to exporting the rentier resource contributes to the increase in purchasing power in light of the inflexibility of the production system in the rentier economy, which leads to imports increasing to meet the total demand (Al-shim, 2012, p.10).

Third: The concept of competitiveness

Defining the concept of competitiveness is a critical issue because it determines the features of the phenomenon, its scope, how to measure and interpret it, the obstacles to its development, and its significance for economic policy. However, this definition is not an easy matter due to the complexity of the concept of competitiveness, like other economic concepts that have multiple facets, especially globalization and development, and also because of The lack of a solid theoretical framework and a coherent model that allows it to be interpreted and defined precisely scientifically. Therefore, it is difficult to define a unified concept of competitiveness, and it is even more difficult to adapt this concept to the characteristics of a specific country or region (Mounir, 2006, p.22).

The Institute of Management and International Development has defined it as "the nation's ability to create added value through which national wealth can be increased by managing assets and operations effectively and effectively at the global and local levels" (world competitive, 2002, p.35). Countries can also achieve their competitiveness by adopting policies aimed at entering foreign markets, encouraging exports, or seeking to attract foreign

investment. Directly, in addition to relying on achieving competitiveness in the local market through the resulting high rates of protection and the tendency to focus on traditional activities or go global. (Al-Jarf, 2002, p.16)

Fourth: Competitiveness requirements

In order to achieve competitiveness in an economy, some factors and policies must be taken into account, including:

1- Export support policies: Governments use alternative policies to tax policy to strengthen their economic influence internationally. One of these policies is export support, which aims to improve the economy's trade balance by granting support to exporters. The goal of this support can be to help a leading industry or revitalize a region suffering from an Economic recession in which many export industries are concentrated to enable local products to enter export markets.

2- Allocation policy: that is, the allocation policy for imports and selective allocation for exports by specifying environmental preservation requirements, industrial quality standards, and government laws that are biased towards national products (Daoud & Soufan, 2002, p.82).

A. Adherence to existing international specifications (ISO) and technological development to increase productivity and reduce costs.

B. Upgrading labor and increasing its productivity through training and motivation.

C. Studying local and foreign markets, searching for export opportunities, and administrative and organizational development, as the strengths that are the sources of the organization's competitiveness are:

- Competitive capabilities include the speed of goods or new openness to markets or via the Internet and a high level of organization and response to market conditions.
- Skill, experience, specialization or ability, the importance of competition, including technical skills and expertise, capabilities in developing innovative products, expertise in obtaining new products, commercial skills, unique talents, and investment encouragement.
- Physical assets or assets.

Chapter Two

Features of the Iraqi economy

First: Analysis of the reality of the oil sector in Iraq and its percentage of the gross domestic product

The changes occurring in the gross domestic product are greatly affected by changes in oil revenues, as the latter is affected by external factors, such as the oil price, and internal factors, which are the amount of production and export capacity. It is paramount to study the impact of the oil factor, represented by the price of a barrel of oil and the volume of revenues that enter. The formation of the gross domestic product is one of the most important economic indicators through which the extent of economic diversification can be measured, as it expresses the level of the country’s economic performance and the extent of its growth and development through the growth and development of the gross domestic product. Its

components and sectoral structure can be analyzed through it. Deficiencies can be found in the economic structure and its treatment.

Table (1) shows the contribution of the oil sector to the GDP during the research period, as the data indicate a difference in the levels of the GDP and the oil sector, as the period between (2004 and 2021) witnessed an apparent decline, as the contribution of this sector in 2004 was by (73.2%), then began to gradually decline until the contribution of this sector in 2007 reached a low level, constituting about (53.7%). This decrease is attributed to the circumstances resulting from the war launched by the United States of America against Iraq, which ended in early April 2003, and its consequences. Wars cause great devastation and devastation if oil production and export stop for a certain period. Then, acts of sabotage occur from time to time in pipelines transporting oil, oil wells, and other things that negatively affect the production of this sector (Mounir, 2020, p.198).

The period between (2010-2013) witnessed a gradual decline in the oil sector's contribution to the GDP. The year 2010 witnessed the sector's contribution decrease to (56.9%) of the GDP, and in 2013, it reached about (49.5%); this decline is due to There was an improvement in the security conditions despite the rise in crude oil prices, which contributed to an increase in the contribution of other sectors to the formation of the gross domestic product.

Table (1) :- The relative importance of the oil sector in relation to the gross domestic product at current prices in Iraq

Percentage of the oil sector's contribution % to (GDP)	Oil sector (Million dinars)	(GDP) (Million dinars)	Year
73.2	38,968,282	53,235,358	2004
63.8	46,914,436	73,533,598	2005
50.7	48,463,093	95,587,954	2006
53.7	59,851,772	111,455,813	2007
56.1	88,201,539	157,026,062	2008
58.3	76,164,395	130,642,187	2009
56.9	90,198,740	158,521,511	2010
54.4	114,952,613	211,309,950	2011
52.4	133,229,877	254,255,490	2012
49.5	135,425,827	273,587,529	2013
51.7	137,739,339	266,420,384	2014
55.1	114,539,781	207,876,191	2015
62.5	122,835,219	196,536,350	2016
64.0	141,866,054	221,665,709	2017
62.7	168,612,134	268,918,874	2018
59.1	155,384,036	262,917,150	2019
61.4	122,047,436	198,774,325	2020
56.5	168,806,138	301,439,533	2021
58	109,122,262	191,316,887	Average
50	38,968,282	53,235,358	Minimum
73	168,806,138	301,439,533	The highest rate
-1.61	9.60	11.45	Compound growth rate

Source: Prepared by the researcher based on the Central Bank of Iraq, Statistical Bulletin, General Directorate of Research and Statistics, for the years (2004-2021).

Then, it began to increase during the period (2014-2017), indicating the decline in the GDP due to the entry of terrorist organizations into Iraq, which led to the cessation of some oil rights during that period, and the oil sector constituted a contribution percentage of the GDP for the year 2014 (55.1%). The GDP with crude oil decreased in 2015 compared to 2014. The government followed a policy of austerity, and the percentage of the oil sector's contribution to the GDP in 2016 was 62.5%, after which it increased significantly in 2017, and the situation improved. The GDP of the oil sector increased. For the previous years, its contribution amounted to about (64%) for the year 2017.

Despite the turmoil that occurred at the end of the year 2019 with a decline in prices of Crude oil, where the percentage reached (8.5%) (Al-Amir, 2012, p.229), this may contribute primarily to an increase in oil production, in addition to that recovery in non-oil economic activities, especially the agricultural and industrial sectors and others.

Second: Commodity composition of Iraqi exports for the period (2004-2021)

The economy of any country depends on exports. This essential channel opens the way to economic development and aims to increase GDP growth by expanding the market. Since the commodity composition of developing countries is concentrated in a single commodity containing most or a limited number of primary goods, it is not the same as developed countries exporting manufactured goods to gain trade exchange rate gains. The foreign trade statistics table shows that Iraq's exports are divided into three parts according to their economic purpose (crude oil exports, petroleum product exports, and other commodity exports), where crude oil exports represent a large percentage of total exports, while crude oil exports constitute a large percentage of total Exports. Exports of bulk goods are a small share of total exports, which means that the Iraqi economy has been affected by the concentration of goods, and the trade balance and foreign exchange have been severely affected due to changes in demand and fluctuations in trade.

Table (2) shows the commodity composition of ethnic exports, as it is noted in column (2) that the value of exported crude oil amounted to (24,090,651.8) million dinars, with a contribution to total exports amounting to (80,042%) in the year (2004), then it began to increase until it reached (76,791,472.1 million dinars in the year (2008), with a contribution to exports of (97,017%). This shows that the Iraqi economy depends to a large extent on crude oil after the year (2003), then the value of crude oil decreased in the year (2009) to (50,900,333.2). After that, global oil prices began to increase, and the value of exported crude oil increased, reaching (112,715,637.7) million dinars in the year (2012), with a contribution rate to total exports of (99.61%). After that, exported crude oil prices began to decline until Their value reached (55,159,657.1) million dinars in the year (2016) as a result of the decline in oil prices below (36) dollars per barrel. Then, oil prices improved in global markets, and the values of exported crude oil increased and reached (107,965,190.3) million dinars in the year (2018).) with a contribution rate to total exports amounting to (98.4%), then the values of crude oil began to

decline and reached (95,270,298) million dinars in the year (2021) due to the Corona shock, which led to a decline in global oil prices with a contribution rate of (89.61%).

Table (2) :- Commodity composition of total Iraqi exports for the period (2004-2021) (million dinars)

Relative importance	Merchandise exports	Relative importance	Exports of petroleum products	Relative importance	Crude Oil	Exports	year
5.31	1590223	14.27	4275145.1	80.42	24090651.8	29956020	2004
0.46	184295.9	1.59	636972.8	97.94	39142676.3	39963945	2005
0.55	266323.6	2.01	981260	97.44	47532806.4	48780390	2006
0.42	213670.9	3.79	1939939	95.79	49004429.1	51158039	2007
0.33	258343.8	2.50	1978742.8	97.17	76791472.1	79028558	2008
0.34	172973.2	0.78	400258.6	98.89	50900333.2	51473565	2009
0.38	244592.6	0.16	102354.9	99.46	63533765.5	63880713	2010
0.27	259550.2	0.02	23309.5	99.71	96248458.3	96531318	2011
0.31	352284.3	0.07	83866.2	99.61	112715638.0	113151788	2012
0.38	417087.6	0.21	227302.9	99.41	107870099.0	108514489	2013
0.25	254234.4	0.21	212971.2	99.55	103247329.0	103714534	2014
0.40	268855.9	0.31	208285.1	99.29	66715334.8	67192475	2015
0.21	115857	0.14	76954.8	99.65	55159657.1	55352469	2016
0.49	369487.1	0.28	213170.8	99.22	74597624.8	75180282	2017
1.20	1320882	0.40	439933.3	98.40	107965190.0	109726005	2018
3.93	4128624	1.58	1655263	94.50	99299340.4	105083227	2019
1.20	722759.4	4.50	2710347.6	94.30	56796837.1	60229946	2020
4.98	604892.4	8.72	1060038	89.61	95270298.0	106320120	2021
1.19	652496.5	2.31	957006.4	135.25	73715663.3	70615209.4	Average
4.98	604892.4	8.72	1060038	783.73	95270298	12156002.0	Minimum
5.31	4128624	14.27	4275145.1	783.73	112715638	113151788.2	The highest rate
-0.40	-5.86	-3.03	-8.35	15.29	8.97	-5.48	Compound growth rate

Source: "Prepared by the researcher based on the Central Bank of Iraq, Statistical Bulletin, General Directorate of Research and Statistics, various preparations (2004-2021)"

Column (3) shows the petroleum products that it includes (oils, natural gasoline, naphtha, asphalt, etc.); their value amounted to (4,275,145.1) million dinars in the year (2004), with a contribution rate of (14.27%), then it decreased to (636,972.8) million dinars. With a contribution rate of (1.56%) in the year (2005), the values of petroleum products began to increase as a result of the improvement in global oil prices until they reached (1,978,742.8) million dinars in (2008) with a contribution rate to total exports of (2.50%), then It began to decline until it reached (23,309.5) million dinars in the year (2011), with a contribution rate

of (0.02%) as a result of poor storage and aging of the equipment used in production. It is noted that during the period (2012-2014), the prices of petroleum products were linked to international oil prices as the values of petroleum products improved. As a result of the increase in crude oil prices, in the year (2016), the value of petroleum products decreased to (76,954.8) million dinars with relative importance (0.14%), then the value of petroleum products increased until it reached (10,600,380) million dinars in the year (2021) with relative importance. It reached (9.9%).

Column (4) shows other commodity exports, which include (food commodities and agricultural commodities), which decreased significantly, especially dates, which are considered one of the most critical national wealth as a result of the decline in palm numbers due to wars, as the value of commodity exports amounted to (1,590,223.1) million dinars in the year (2004) with a contribution rate to total exports amounting to (5.31%), then it decreased to (184,295.9) million dinars in the year (2005) with a contribution rate of (0.46%). After that, these percentages began to fluctuate towards a decrease and increase until they reached their lowest percentage (0.21%). In the year (2016) due to the cessation of agriculture in the governorates under the control of the terrorist ISIS, the values of commodity exports began to increase until they reached (4,128,624.4) million dinars. For the year (2019) with relative importance (3093%), the shock of the Corona pandemic in the year (2021) reduced merchandise exports to (604892.4) million dinars and with relative importance (of 0.57%). As for the average contribution percentage of crude oil exports to total exports came in first place. At a rate of (92.54%) during the period (2004-2021), which is a large percentage, which revealed the weakness of other commodity exports, while exports of petroleum products ranked second in the average percentage of contribution to exports, reaching (3.19%), while the last place came from the sector's contribution. Commodities in total exports, whose average relative importance reached (1.84%).

Chapter Three

Analysis of some indicators of competitiveness in Iraq for the period (2004-2021)

There are several indicators to measure the competitiveness of exports. These indicators help provide the necessary information about the competitive situation of exports and allow comparisons over time. Therefore, these indicators will be reviewed and then used to measure the competitiveness of Iraqi exports during the 2004-2021 period.

First: Net export indicators

This indicator indicates that an economy has a clear comparative advantage through the net exports of that economy. It expresses the net international trade of an economy over the total international trade of the same economy. If the index's value is positive, the industry enjoys a clear comparative advantage in international markets. Conversely, if the index's value is negative, the industry does not enjoy a clear comparative advantage (Greenway & Milner, p.296). It is also expressed according to the sector to which it belongs or the unit of currency used in the country. It is used to measure the strength of each country in terms of its economy, as the country's trade balance is called positive when the country exports large quantities of resources whose quantity exceeds what is imported from abroad. This creates a trade surplus,

but if the country imports quantities of the exported resources, the trade balance will be negative. (Anani et. al, 2022, p.137)

Table (3) shows the index of total net merchandise exports during 2004-2021, as the average index of net merchandise exports reached about (-1.00), meaning that total merchandise imports exceed their exports, given that net trade is negative in value. The ratio is deteriorating, which reflects the need for total merchandise exports. A clear comparative advantage in global markets in this activity.

Net exports index = total merchandise exports - total merchandise imports

Table (3) Index of net merchandise exports in Iraq for the period 2004-2021

Net export index	Net export index	Total merchandise imports	Total merchandise exports	years
-1.00	-29089700	30679923	1590223	2004
-1.00	-33002316	33186611	184295	2005
-1.00	-31066881	31333204	266323	2006
-1.00	-22687232	22900902	213670	2007
-1.00	-33419995	33678338	258343	2008
-1.00	-46482493	46655466	172973	2009
-1.00	-51177013	51421605	244592	2010
-1.00	-55901182	56160732	259550	2011
-1.00	-57522467	57874751	352284	2012
-1.00	-64281785	64698872	417087	2013
-1.00	-69897091	70151325	254234	2014
-1.00	-6164681	6433536	268855	2015
-1.00	-49891305	50007162	115857	2016
-1.00	-52543601	52913088	369487	2017
-1.00	-60803988	62124870	1320882	2018
-1.00	-70014399	74143023	4128624	2019
-1.00	-61000358	61723117	722759	2020
-1.00	-14977566	15582458	604892	2021
-1.00	Average			

Source:" Prepared by the researcher based on data from the Ministry of Planning, Central Bureau of Statistics, statistical collections for the years (2004-2021)".

Second: The apparent comparative advantage index (Balassa index):

This indicator focuses on the ratio of exports to imports of an industry (total merchandise exports to total merchandise imports). If the ratio exceeds (100%), this indicates that this industry has a clear comparative advantage in international markets, as its exports exceed its imports in that industry. Industry, and vice versa (Balassa, p.35). This indicator shows whether the commodity has a comparative advantage or not. If the value of the index is more significant than (1), it indicates that the commodity has a competitive advantage and vice versa.

Generally, highly competitive countries are characterized by many goods with an advantage. Competitiveness, while the relationship between the export concentration index and commodity comparative advantage is inverse. Countries that have a concentration in exports have a decrease in commodity products with an apparent comparative advantage (Hassan, 2017, p.29)

Table (4) shows the Balassa index for the Iraqi economy's commodity sector for 2004-2021. Weak relative advantages were recorded in commodity exports during the years 2004 and 2015 and from 2018-2021, and this is due to the fluctuations in crude oil prices on the international market, which negatively impacted the value of merchandise exports. The index recorded its lowest value in 2016, amounting to about (0.23), and its highest value in 2019, amounting to about (5.57). The average Balassa index for total merchandise exports reached about (1.62), meaning that Total merchandise exports exceed total merchandise imports, reflecting this comparative advantage indicator and that this industry is highly competitive in the international market.

Comparative advantage index = total merchandise exports / total merchandise imports

Table (4) :-Balassa index of merchandise exports in Iraq for the period 2004-2021

Comparative advantage index	Total merchandise imports	Total merchandise exports	Year
5.18	30679923	1590223	2004
0.56	33186611	184295	2005
0.85	31333204	266323	2006
0.93	22900902	213670	2007
0.77	33678338	258343	2008
0.37	46655466	172973	2009
0.48	51421605	244592	2010
0.46	56160732	259550	2011
0.61	57874751	352284	2012
0.64	64698872	417087	2013
0.36	70151325	254234	2014
4.18	6433536	268855	2015
0.23	50007162	115857	2016
0.70	52913088	369487	2017
2.13	62124870	1320882	2018
5.57	74143023	4128624	2019
1.17	61723117	722759	2020
3.88	15582458	604892	2021
1.62	Average		
0.23	Minimum		
5.57	The highest rate		
-1.69	Compound growth rate		

Source:" Prepared by the researcher based on data from the Ministry of Planning, Central Bureau of Statistics, statistical collections for the years (2004-2021)".

Third: Intra-sector trade (IIT) index:

The IIT index measures how much an economy's exports integrate with economic clusters and blocs. It also indicates the degree of specialization in a particular industry and its ability to penetrate new markets due to this specialization. In comparison, this specialization is

measured by the degree of intra-industry trade (i.e., export and import of goods within the same commodity groups). With the total trade in the same industry, if the index value is (0) for one commodity or a group of commodities, this means weak specialization and the inability to compete in the local and international markets. However, if the sector is vital in exports and imports within the same industry, the value approaches The indicator is about (1 or 100%) (Khader, 2005, p.8).

Table (5) shows the (IIT) index in the Iraqi economy for merchandise exports for the period 2004-2021, as the average reached about (35.60%), which is less than the correct one. This indicates that a need for more competitiveness for this activity on both levels characterizes the total merchandise exports of the Iraqi economy. Local and international. The IIT index recorded the lowest value during the period 2004-2021, amounting to (4.95%), and the highest value, amounting to about (50.42%), and recorded a negative compound growth rate during the period of about (8.37%).

IIT Merchandise Trade Index = Merchandise Trade Volume/Total Trade Volume*100

Table (5): - IIT index of merchandise exports in Iraq for the period 2004-2021

% Index (IIT)	Total trade volume	Merchandise trade volume	Total merchandise imports	Total merchandise exports	years
50.42	64006989	32270146	30679923	1590223	2004
39.21	85109655	33370906	33186611	184295	2005
36.87	85695098	31599527	31333204	266323	2006
27.99	82580792	23114572	22900902	213670	2007
26.66	127278327	33936681	33678338	258343	2008
45.55	102799710	46828439	46655466	172973	2009
43.38	119113371	51666197	51421605	244592	2010
35.97	156847860	56420282	56160732	259550	2011
31.12	187132039	58227035	57874751	352284	2012
35.31	184425403	65115959	64698872	417087	2013
38.32	183722888	70405559	70151325	254234	2014
4.95	135481931	6702391	6433536	268855	2015
46.63	107497851	50123019	50007162	115857	2016
40.21	132513783	53282575	52913088	369487	2017
35.85	176953437	63445752	62124870	1320882	2018
41.08	190521142	78271647	74143023	4128624	2019
49.82	125352458	62445876	61723117	722759	2020
11.40	141998164	16187350	15582458	604892	2021
35.60	The average				
4.95	Minimum				
50.42	The highest rate				
-8.37	Compound growth rate				

Source: "Prepared by the researcher based on data from the Ministry of Planning, Central Bureau of Statistics, statistical collections for the years (2004-2021)".

Chapter Four

Standard results of the model

The relationship that measures the effect of the ratio of merchandise exports to total exports as a dependent variable and the ratio of oil exports to total exports as an independent variable, which can be described analogically with the following functional relationship:

$$PEG = \beta_O + \beta_1 PEO$$

1- Results of time series stability analysis of model variables:-

Table (6) :- Results of the expanded Dickey-Fuller test analysis of the studied variables

Variables		Level test				Test with the first difference			
variable	code	With interruption		Without interruption		With interruption		Without interruption	
		t-statis	P-value	t-statis	P-value	t-statis	P-value	t-statis	P-value
merchandise exports %	PEG	-0.0172	0.662	0.4561	0.9783	-7.1096	0.0000	-6.7589	0.0001
% oil exports	PEO	0.3219	0.7669	-5.73667	0.0003	-10.3874	0.000	-10.9235	0.000

Source: Eviews-10 results

We note from Table (6) of the expanded Dickey-Fuller tests to determine the stability of time series for the variables of the third model that we found that the dependent variable (PEG) was not stable at the first level without a categorical value, as the value of the t-statistic was = -0.0172, which is not significant. It was not stable at the level with Categorical (fixed term) presence, as the t-statistic value = 0.4561, which is also insignificant. The independent variable (PEO) stabilized at the level (level), without categorical, as the value of the t-statistic = -5.73667, which is significant at a level less than 1% and stabilized at the level. Also, it is without a categorical value, as the value of t-statistic = -10.3874, which is significant at less than 1%. This difference in the degree of stability enables us to adopt Ardell models to analyze the relationship of the models described.

2- Cointegration test:-

Through the Johansen cointegration test shown in Table (7), it is clear that there is a vector of integration between the dependent variable PEG and the independent variable PEO through the trace test, for which the standard values (15.49471) and a probability value (0.0128) appeared, as well as the most significant advantage test. (Maximum Eigenvalue), which showed standard values (14.2646) and a probability value of (0.0119), i.e., significance at the 5% level.

Table (7): Co-integration test between the dependent variables IIT and the independent variable PO.

Date: 01/06/24 Time: 12:44
Sample (adjusted): 2006 2021
Included observations: 16 after adjustments
Trend assumption: Linear deterministic trend
Series: PEG PEO
Lags interval (in first differences): 1 to 1

Unrestricted Cointegration Rank Test (Trace)

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.676998	19.26796	15.49471	0.0128
At most 1	0.071469	1.186423	3.841466	0.2761

Trace test indicates 1 cointegrating eqn(s) at the 0.05 level

Unrestricted Cointegration Rank Test (Maximum Eigenvalue)

Hypothesized No. of CE(s)	Eigenvalue	Max-Eigen Statistic	0.05 Critical Value	Prob.**
None *	0.676998	18.08154	14.26460	0.0119
At most 1	0.071469	1.186423	3.841466	0.2761

Max-eigenvalue test indicates 1 cointegrating eqn(s) at the 0.05 level

Source: Eviews-10 results

3- Short-term estimates according to the Ardel model: -

The results of the short-term ARDL estimates are shown in Table (8), which included four delay periods (according to the choice of the Eveiws-program) for each of the variables studied in the model. Most of the model's parameters were significant and primarily negative, and the coefficient of determination appeared very high ($R^2 = 0.99116$) .

A high value also appeared for the (F) test, as it was ($F = 706.1243$), and its probability value was meager (0.0000), indicating its significance at a level of less than 1%. Here, we turn to the error correction model (VECM) to determine the period of slowdown required by the adjustment process from short-term imbalances to co-integration between the two variables in the long term.

Table (8):- Results of the ARDL model analysis of the short-term estimates between the dependent variable PEG and the independent variable PEO.

Dependent Variable: PEG
Method: ARDL
Date: 12/30/23 Time: 22:27
Sample (adjusted): 2008 2021
Included observations: 14 after adjustments
Maximum dependent lags: 4 (Automatic selection)
Model selection method: Akaike info criterion (AIC)
Dynamic regressors (4 lags, automatic): PEO
Fixed regressors: C
Number of models evalulated: 20
Selected Model: ARDL(4, 3)

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
PEG(-1)	-1.019105	0.288503	-3.532385	0.0167
PEG(-2)	-0.629136	0.107450	-5.855151	0.0021
PEG(-3)	-0.813111	0.610314	-1.332284	0.2403
PEG(-4)	-0.413858	0.123412	-3.353469	0.0203
PEO	-0.899300	0.022559	-39.86390	0.0000
PEO(-1)	-0.161636	0.247312	-0.653574	0.5422
PEO(-2)	0.262173	0.157396	1.665693	0.1567
PEO(-3)	-0.206848	0.076422	-2.706656	0.0424
C	101.2585	16.66862	6.074799	0.0017

R-squared	0.999116	Mean dependent var	1.047857
Adjusted R-squared	0.997701	S.D. dependent var	1.492088
S.E. of regression	0.071546	Akaike info criterion	-2.180844
Sum squared resid	0.025595	Schwarz criterion	-1.770021
Log likelihood	24.26591	Hannan-Quinn criter.	-2.218873
F-statistic	706.1243	Durbin-Watson stat	3.274779
Prob(F-statistic)	0.000000		

Source: Eviews-10 results

4 - Error Correction Model (VECM):-

Through Table (9) of the error correction model according to the ARDL methodology, we find that the duration of the model parameters was significant and positive between the current value and the previous values, with three lag periods for the dependent variable and negative and significant with the current value of the independent variable. To slow down, the lag period was reduced to three years. The error correction factor that appeared $(C_{-1} = -3.87521)$, and since it has a negative value and is significant, indicates that the slowdown period takes (3.875) years to correct the imbalance paths in the short term to integration in the long term. The coefficient of determination has also improved significantly and increased to $(R^2 = 0.999099)$ to indicate that the error correction model gives us high explanatory power for the relationship of the dependent variable with the independent variable within the long term with the four-time lags specified in the model.

Table (9) Error correction model for imbalance adjustments between the dependent variable PEG and the independent variable PEO.

ARDL Error Correction Regression
Dependent Variable: D(PEG)
Selected Model: ARDL(4, 3)
Case 2: Restricted Constant and No Trend
Date: 12/30/23 Time: 22:29
Sample: 2004 2021
Included observations: 14

ECM Regression
Case 2: Restricted Constant and No Trend

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(PEG(-1))	1.856105	0.192141	9.660111	0.0002
D(PEG(-2))	1.226969	0.170450	7.198411	0.0008
D(PEG(-3))	0.413858	0.071149	5.816747	0.0021
D(PEO)	-0.899300	0.016196	-55.52742	0.0000
D(PEO(-1))	-0.055326	0.056995	-0.970703	0.3763
D(PEO(-2))	0.206848	0.048528	4.262414	0.0080
CointEq(-1)*	-3.875210	0.348523	-11.11896	0.0001

R-squared	0.999099	Mean dependent var	0.325714
Adjusted R-squared	0.998326	S.D. dependent var	1.477923
S.E. of regression	0.060468	Akaike info criterion	-2.466558
Sum squared resid	0.025595	Schwarz criterion	-2.147029
Log likelihood	24.26591	Hannan-Quinn criter.	-2.496136
Durbin-Watson stat	3.274779		

* p-value incompatible with t-Bounds distribution.

5- Long term estimates:-

Table (10) shows the parameters of the long-term estimates, which agree with the error correction model with three lag periods for the dependent variable and two lag periods for the independent variable, which show the same trends of significance for the coefficients during the lag periods.

Table (10): - The result of the analysis of the ARDL model for the long-term estimates between the dependent variable PEG and the independent variable PEO.

ARDL Long Run Form and Bounds Test
Dependent Variable: D(PEG)
Selected Model: ARDL(4, 3)
Case 2: Restricted Constant and No Trend
Date: 12/30/23 Time: 22:31
Sample: 2004 2021
Included observations: 14

Conditional Error Correction Regression

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	101.2585	16.66862	6.074799	0.0017
PEG(-1)*	-3.875210	0.914667	-4.236745	0.0082
PEO(-1)	-1.005610	0.164760	-6.103487	0.0017
D(PEG(-1))	1.856105	0.644441	2.880181	0.0346
D(PEG(-2))	1.226969	0.715381	1.715127	0.1470
D(PEG(-3))	0.413858	0.123412	3.353469	0.0203
D(PEO)	-0.899300	0.022559	-39.86390	0.0000
D(PEO(-1))	-0.055326	0.086274	-0.641276	0.5496
D(PEO(-2))	0.206848	0.076422	2.706656	0.0424

* p-value incompatible with t-Bounds distribution.

Source: Eviews-10 results

6- Long-run regression equation:-

Through Table (11), estimating the (ARDL) model in the long run, we obtain the following estimate of the significant relationship between the ratio of merchandise exports to total exports ($PEG =$) as a dependent variable and the ratio of oil exports to total exports ($PEO =$) as an independent variable, as follows:

$$PEG = 26.12982 - 0.25948PEO$$

Table (11):- Long-run regression equation

Levels Equation
Case 2: Restricted Constant and No Trend

Variable	Coefficient	Std. Error	t-Statistic	Prob.
PEO	-0.259498	0.023179	-11.19558	0.0001
C	26.12982	2.303150	11.34525	0.0001

EC = PEG - (-0.2595*PEO + 26.1298)

Source: Eviews-10 results

The results showed that there is an inverse and significant relationship between oil exports to total exports (PEO) as an independent variable with the index of merchandise exports to total exports (PEG) as a dependent variable because the probability value (p.v.) reached (0.0001), which is less than (5%), and this is consistent with What the new traditional theory of trade believes is that non-oil commodity exports to total exports work to stimulate economic growth, using the optimal distribution of economic resources, which in turn works to improve production efficiency. Economic growth that works to increase oil exports can also expand the production or industrial base if the danger of the national economy's continued dependence on the fluctuating, depleting, and non-renewable rentier resource of oil is realized. It is an acquired right from which all future generations will benefit and must be preserved and transformed into Added value for all generations.

7- F-Bounds Test:-

Table (12) shows us that the value of the ($F = 29.43603$) test is greater than the lower and upper limits for all significance levels, meaning that the long-term estimates and regression equation can be highly reliable.

Table (12): Bounds testing using the F statistic

F-Bounds Test		Null Hypothesis: No levels relationship		
Test Statistic	Value	Signif.	I(0)	I(1)
			Asymptotic: n=1000	
F-statistic	29.43603	10%	3.02	3.51
k	1	5%	3.62	4.16
		2.5%	4.18	4.79
		1%	4.94	5.58
Actual Sample Size	14		Finite Sample: n=35	
		10%	3.223	3.757
		5%	3.957	4.53
		1%	5.763	6.48
			Finite Sample: n=30	
		10%	3.303	3.797
		5%	4.09	4.663
		1%	6.027	6.76

Source: Eviews-10 results

8- Testing the residuals using the Lagrange Multiplier Test (LM test):

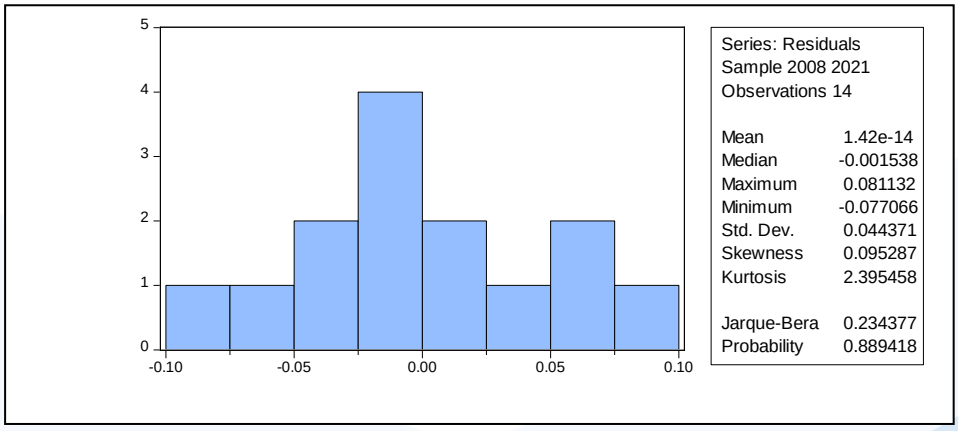
From Table (13), we notice that the (F) test for the long term is not significant, and its probability value appeared (0.4789), which means that the hypothesis of long-term autocorrelation is not met. The probability value of Chi-Square, which appeared equal to (0.3439), is not significant, and thus, it cannot be confirmed that there is a serial autocorrelation problem between the residuals of the estimated model.

Table (13) Results of the autocorrelation test for the residuals (LM)

Breusch-Godfrey Serial Correlation LM Test:			
F-statistic	0.723305	Prob. F(1,13)	0.4105
Obs*R-squared	0.896008	Prob. Chi-Square(1)	0.3439

Source: Eviews-10 results

Figure (1) Histogram of the distribution of residuals according to the LM test



9- Autoregressive Conditional Heteroscedasticity (ARCH) test

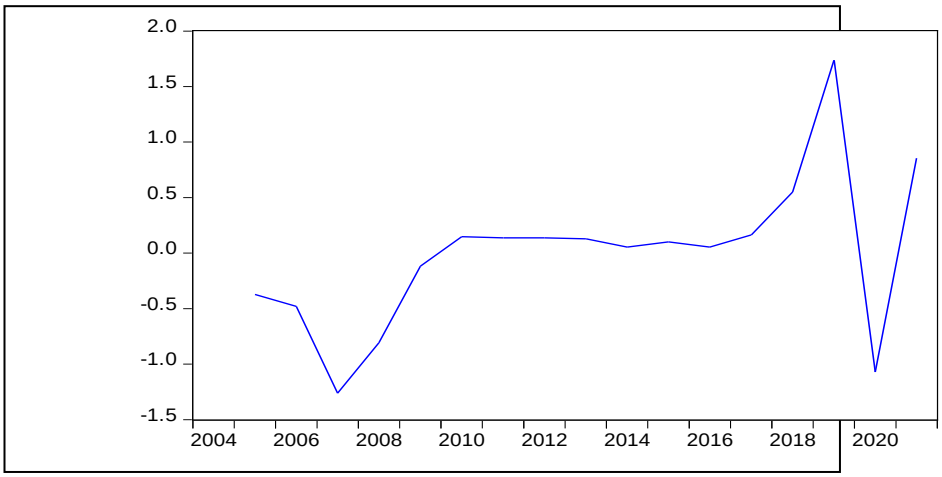
Table (14) shows that the value of the test f = 0.661808 and its probability value is (0.4295), which is not significant. Likewise, the probability value of Chi-Square was (0.3954), which is insignificant. Therefore, the hypothesis of the heteroscedasticity problem in the model estimated for the long term can be rejected.

Table (14) Results of the conditional variance invariance (ARCH) test for the estimated ARDL model

Heteroskedasticity Test: ARCH

F-statistic	0.661808	Prob. F(1,14)	0.4295
Obs*R-squared	0.722212	Prob. Chi-Square(1)	0.3954

Figure (2) of the functional trend of the co-integration equation between the two variables in the long run



10- Testing the suitability of specifying the model in terms of the Ramsey function (RESET)

To determine the extent to which the estimated model matches the functional form, we adopt the (Ramsey) test because it can determine the significance of both the (T) test as a criterion for testing the estimated parameters of the long-term model, as well as the significance of the (F) test as a criterion for testing the model as a whole. Table (15) shows that both of their standard values appeared significant.

The value of (T-statistic = 3.294857) appeared, which is significant at the 5% level, and the value of (F-statistic = 10.85608) appeared, which is significant at the same level of 5%. These values confirm the presence of a high fit of the model with the functional shape, as in Figure No. (2).

Table (15) :- Ramsey test results

Ramsey RESET Test
Equation: UNTITLED
Specification: PEG PEG(-1) PEG(-2) PEG(-3) PEG(-4) PEO PEO(-1) PEO(-2) PEO(-3) C
Omitted Variables: Squares of fitted values

	Value	df	Probability
t-statistic	3.294857	4	0.0301
F-statistic	10.85608	(1, 4)	0.0301

F-test summary:

	Sum of Sq.	df	Mean Squares
Test SSR	0.018703	1	0.018703
Restricted SSR	0.025595	5	0.005119
Unrestricted SSR	0.006891	4	0.001723

Conclusions

1. The results showed that there is an inverse and significant relationship between oil exports to total exports (PEO) as an independent variable with the index of merchandise exports to total exports (PEG) as a dependent variable because the probability value (p.v.) reached (0.0001), which is less than (5%), and this It is consistent with what the new traditional theory of trade believes is that non-oil commodity exports to total exports work to stimulate economic growth, using the optimal distribution of economic resources, which in turn works to improve production efficiency.
2. The results showed a non-significant relationship between the relative importance of petroleum product exports (PO) as an independent variable and the Merchandise Trade Index (IIT) as a dependent variable because the probability value (p.v.) reached (0.7218), which is greater than (5%). The reason for this is the reality of the economy. The Iraqi statement said that reliance on the oil sector did not lead to the expansion of other economic activities, especially commodity trade.
3. The results showed that the relationship between the ratio of net merchandise exports to the GDP and the independent variable th,e ratio of net oil exports to the GDP, is not significant because the probability value (p.v.) reached (0.4392), which greater than (5%). The reason for this is that the development experience in Iraq Economic diversification away from the oil sector is a complicated process due to several obstacles related to the Dutch disease, the social and political environment, business activities, lack of infrastructure, and limited technical and organizational capabilities, in addition to the weak contribution of merchandise exports to the GDP compared to net oil exports to the GDP.

Recommendations

1- Enhancing the production capacity of non-oil products, developing them, and increasing reliance on them in order to raise their share in global markets to create a strong base based on diversifying commodity exports, as well as supporting non-oil production industries and providing incentives to those industries by reducing taxes and customs exemptions when importing intermediate materials from foreign markets.

2- Stimulate the industrial sector and invest in it to create a solid base to attract investments and capital, thus increasing the effectiveness of industrial sectors' productivity to develop products.

3- Directing economic policies towards promoting innovative energies, infrastructure, and technology and working to improve human capital capabilities to achieve positive results in enhancing competitiveness in the non-oil economic sectors (agriculture and industry) to diversify the Iraqi economy's exports.

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