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RESEARCH ARTICLE

The Impact of Structural Imbalances of Iraqi Agricultural and Industrial Sectors on Strengthening Iraq-Turkey-Iran International Relations: An Economic Analysis

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ABSTRACT

The Iraqi economy faces structural Imbalances, manifested in weak economic diversification and heavy reliance on the oil sector. This reliance exposes the Iraqi economy to fluctuations in global oil prices. It hinders the development of other sectors, especially the agricultural and industrial sectors, which have great potential for development and contribute to strengthening regional economic relations. Hence, this study aims to identify the impact of structural imbalances in the Iraqi agricultural and industrial sectors on international relations between Iraq, Turkey, and Iran, using time series data for the period (2003–2023) based on the Autoregressive Distributed Lag (ARDL) model. The research results showed a strong correlation between structural imbalances and the strength of dependence on the economies of Iran and Turkey due to the rentier component of Iraq's crude oil exports. The error correction coefficient CointEq (-1) is (-1.14) which is negative and significant, confirming the existence of joint integration and long-term equilibrium between structural imbalances in Iraq and Turkey's trade balance dur-

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ing the research period. The error correction coefficient CointEq (-1) is (-0.32) which is negative and significant, confirming the existence of joint integration and long-term equilibrium between structural imbalances in Iraq and Iran's trade balance during the research period. Based on these findings, the study recommends paying attention to investment sources and encouraging the work environment by attracting local and foreign capital and working to employ it in various investment channels in infrastructure projects.

Keywords: Structural Imbalances; Declared International Relations; ARDL Model; Iraqi Economy

1. Introduction

The Iraqi economy has been characterized by its entry into many stages and transitional periods, sharp economic and political in most cases, and calm and unstable in the least of its periods. Between the dilemma of military involvement for long periods that left a legacy of accumulations and financial obligations towards the countries of the region, and between the inheritance of the leading generations of dependence on the oil resource for food and living and the latter's isolation from price changes that followed in an unstable manner, a very complex situation prevailed through which a picture was drawn that was embodied in taking the form of radical changes that constitute the features of the Iraqi economy and strengthen the rooting of what the nature of economic relations with neighboring countries imposes, and even controls its dependence on them. Analyzing the developments in the structure of the Iraqi economy requires us to return to the starting point, which is the backwardness of the structures of the economic sectors, the weakness of economic diversification, and the continuity of isolation from the main production, which exacerbated the growth of demand abroad to fill the gap of the shortcomings of local production.

The Iraqi agricultural sector faces several structural imbalances, represented by the use of traditional farming methods, lack of investment in infrastructure, water scarcity, and the negative effects of climate change, These imbalances lead to a decrease in agricultural productivity and the inability to meet the growing local demand for food, which prompts Iraq to import large quantities of farm products from neighboring countries, especially Turkey and Iran, which negatively affects the trade balance and jeopardizes food security. Similarly, the Iraqi industrial sector faces structural imbalances, represented by weak manufacturing industries, lack of investment in research and development, and fierce competition from imported products. These imbalances hinder the growth of Iraqi industry and its ability to contribute to diversifying sources of local income and enhancing Iraqi exports. The importance of studying these imbalances is compounded in light of the increasing global challenges, such as the global food crisis, climate change, and successive economic crises. Addressing these imbalances is important and necessary to achieve food security, enhance sustainable economic growth, improve the standard of living of citizens in rural areas, and reduce the gap between these areas and urban areas.

Research problem: With the increase in economic and trade relations between Iraq and neighboring countries, and in light of the continuity of the oil economy's rentiers and the stagnation of the main production sectors and their low contribution to the gross domestic product, the feature of economic dependency emerges in an inconsistent trade relationship that hurts strengthening the future character of any negative outcomes with countries with a trade relationship in an environment that embraces a monetary mass represented by individuals' possession of purchasing power reflected in demand for imported luxury and durable goods, which exacerbates the increase in the trade deficit with the research sample countries and enhances the factors of erosion in that relationship, making it international connections that do not serve the Iraqi economy.

Research hypothesis: The mechanism for strengthening economic relations with both Türkiye and Iran is heading towards strength in the long term, assuming the following:

(1) The structural sector crisis increases the chances of a decline in the contribution of the gross domestic product, which pushes towards strengthening

exposed relations with both countries.

(2) Filling the shortage in agricultural or industrial production contributes to increasing the demand for intermediate materials, which comes from increasing imports from Iran and Turkey, which is reflected in increasing the trade balance deficit with both countries.

(3) Increasing public spending, both investment and consumption, as a result of weak local production, push towards increasing demand, which is reflected in increasing imports to both countries of various types, which exacerbates the increase in the trade deficit.

(4) The increase in the money supply increases purchasing power, and this purchasing power pushes toward more demand for imports, which exacerbates the increase in the trade deficit.

Research objective: Every action reacts, and from this standpoint, the importance and role of identifying structural imbalance gaps to address the shortcomings of low productivity to reduce financial leakages directed towards imports on the one hand and redirect them towards productive investment spending programs on the other hand, to avoid deepening inefficient international relations. Thus, the purpose of this research is to examine the structural disparities in Iraq's industrial and agricultural sectors and how they affect the development of economic ties with Turkey and Iran.

2. Literature Review

The study by Aidan [1] showed that Iraq suffers from major issues related to significant imbalances in this economy. In addition to several problems, the most important of which are unemployment, poverty, and corruption, these factors have weakened the structural imbalances, compounded by the lack of serious management in addressing them.

Ali and Luaibi [2] studied the nature of the trade relationship between Iraq and Iran after 2003. Their research showed that Iranian goods constitute a relatively large proportion of Iraq's total imports, making Iraq a market for these goods. In contrast, Iraqi exports to Iran are relatively small, leading to an unbalanced trade relationship that tends toward economic dependency.

Salman's study aimed to shed light on the large volume of imports from Turkey to Iraq compared to the limited exports, which mainly consist of raw materials, especially oil, and to identify the reasons that contribute to the trade balance deficit and the most important methods and solutions that can address this deficit during the study period. This study showed that the Iraqi trade balance suffers from a deficit in favor of Turkey and that the Iraqi economy faces some obstacles that hinder reform efforts [3].

The current study differs from previous studies in using the Autoregressive Distributed Lag (ARDL) model to measure the structural imbalances in the Iraqi agricultural and industrial sectors and their impact on strengthening international relations with Turkey and Iran.

3. Theoretical Framework of Structural Imbalances

3.1. Concept of Structural Imbalances

In economic analysis, opposing forces are always expressed as variables of supply and demand, investment, savings, and other factors. A structural imbalance is a situation that shows a shift away from the point of balance between these forces. Since the difference indicates the level of sectorial imbalance in the national economy, a structural imbalance is defined as one that can be ascertained by computing the difference between the relative importance of each sector to GDP and the relative importance of each industry's labor force to the labor force on the equals of the national economy [4]. In contrast to the proportionality of economic theory, structural imbalances can also be defined as a disruption in the proportions of the economic structures that comprise the economic system. In other words, structural imbalances refer to an imbalance between the elements and components of the economic structure, whose fundamental characteristics change to the extent that they affect the stability of the economy and, consequently, its loss of overall balance. The degree of structural imbalance is largely determined by the divisions of the economic structure and its fundamental components [5].

3.2. The Factors behind the Structural Malfunction in the Economy

3.2.1. Economic Factors

These stem from several issues facing the economy of developing nations, including disparities in economic growth and population growth rates, as well as inconsistencies among the various sectors. Poor economic performance and widespread unemployment have resulted from issues with the public and private sectors' infrastructure reconstruction, lack of aging, proper and integrated planning, the spread of the corruption phenomenon that exacerbates structural imbalances in the economy, and the decline in productivity of certain economic sectors, such as the agricultural and industrial sectors, due to low investment and a lack of use of modern technology methods [6].

3.2.2. Political Factors

Due to the economic dependency that many developing nations experience, as well as the fact that they have followed suit by linking their economies to those of developed nations and enforcing a particular pattern of international relations based on the fact that developing nations specialize in producing and exporting raw materials to developed nations, structural imbalances in various sectors and activities, as well as imbalances in the structure of the trade balance and the structure of exports, have emerged. The dependence that developing nations experience has caused them to become enmeshed in a vicious cycle of external debt, spending their profits to pay off their debts and buy consumer goods to satisfy domestic demand. Additionally, the control over the export prices and production methods of developed nations strengthened their reliance on one another and solidified several structural imbalances within the economy [7].

3.2.3. Social Factors

Among the issues that have contributed to the formation of social causes of structural imbalances are social factors, such as the influence of traditions and conventions on consumer spending and savings advice. In addition to religious and tribal affiliations, savings are occasionally allocated to non-investment components [4].

4. The Emergence of the Structural Gap of the Imbalance Phenomenon

4.1. The Emergence of Structural Imbalance

Structural imbalance represents proportional relationships between the elements of the economic structure and its components. It is also considered a change in the most important main features of the economic structure that affect economic growth, in addition to being an imbalance in the general balance and its relationships or changing its basic characteristics to an extent that affects the stability of the economy and thus its loss of the state of general equilibrium. Therefore, the imbalance largely affects the divisions of the economic structure and its main components. This imbalance may be internal or external when it accompanies the national economy [8]. When several factors are available, the most important of which are the decline in general economic performance rates, weak saving capacity, unbalanced growth between sectors, and high inflation rates, with the adoption of incorrect trade, financial, and monetary policies, a deficit in the state's general budget, poor economic performance of public projects, imbalances in the labor market, and an increase in the unemployment rate [9].

4.2. Indicators of Structural Imbalance in Iraq

4.2.1. High Volume of Rentier Participation in Financing

The rentier state is characterized by basic qualities and characteristics not found in other countries, including those related to the size of external rent and the size of participation in generating it. If this description is relatively recent, it was launched to describe rentier countries with oil abundance, as the rentier characteristic has been attached to Iraq's productivity since the discovery of oil in it, The third result confirms that the failure to continue the flow of domestic production of goods and services to meet the total demand for them leads to a

shortage in supply, as the production apparatus is not flexible in the economies of developing countries, This leads to a decrease in savings and thus an imbalance in the production structure [10]. In general, the rentier state is characterized by several features, and that [11]:

- The Iraqi economy has become almost entirely dependent on oil revenues, and without them, economic activity in the country stops or is paralyzed.
- The oil sector does not use intensive labor because the oil extraction industry is a technology-intensive industry.
- The added value of the rentier sectors constitutes a very large percentage of the added value of the productive sectors, given that rentier economies depend on the primitive exploitation of natural resources, and the increase in wealth without an increase in productivity rates has led to the weakening of the manufacturing industry and thus distortion in the structure of the gross domestic product in terms of the weak contribution rate of the productive sectors in favor of the rentier sectors [12]. In connection with the above, this characteristic generated by the high added value of the rentier sector is integrated into the Iraqi economy. By shedding light on the balance of payments, it is noted that the trade balance depends on the oil product highlighted by the export front, while local and international reports are devoid of a similar structure for other than this product in Iraqi exports, and this can be followed by referring to **Table 1**.

Table 1. Relative importance of economic activities in contributing to (GDP) for the period (2004–2023) [13].

Years	Commodity Activities	Distribution Activities	Service Activities	Oil Production	Non-Oil Production
2004	63.12	24.17	12.71	47.07	16.05
2005	62.82	24.13	13.59	41.6	21.22
2006	59.64	22.41	17.95	39.8	19.84
2007	58.56	22.65	18.79	42.2	16.36
2008	58.7	22.93	18.37	44.08	14.62
2009	58.73	22.87	18.76	42.8	15.93
2010	58.12	22.93	18.94	41.05	17.07
2011	59.35	22.16	18.49	41.8	17.55
2012	59.99	22.6	17.41	42.05	17.94
2013	60.37	22.04	17.59	41.1	19.27
2014	61.69	22.21	16.1	42.8	18.89
2015	66.8	16.7	16.4	55.1	11.7
2016	71.4	13.6	15	62.5	8.9
2017	68.46	15.65	15.89	64.35	4.11
2018	66.35	17.09	16.56	62.97	3.38
2019	70.6	25.4	18	62.29	8.31
2020	69.1	16.3	14.5	59	10.1
2021	65.6	19.6	14.8	56.5	9.1
2022	67.6	16.5	15.9	60	7.6
2023	67.6	16.5	16	60.1	7.5

4.2.2. A Neglected Agricultural Sector

The area of arable land in Iraq is about (11.1) million hectares, equivalent to (44.4) million acres, constituting (26.1%) of the total area of Iraqi lands, which is a good percentage compared to other countries in the world, but the percentage of exploited arable land does not exceed (31%) [14]. A report by the Food and Agriculture Organization of the United Nations indicated that there were large uncultivated areas in the central and southern regions of Iraq, where an area of about 300,000 hectares of previously reclaimed land was abandoned due to the high salinity of the land, in addition to the river waters containing a high percentage of salts. Iraqi

agricultural production has declined significantly since 2003, especially in recent years, due to drought, and the lack of financial resources from upstream countries, especially the Turkish side, which reduced Iraq's financial share dramatically, especially after the announcement of the (KAP) project, which successive Turkish governments began to build more than (22) A dam was built on the sources of the Tigris and Euphrates rivers, which led to a decrease in the cultivated areas in Iraq by half, amounting to two million and five hundred thousand dunums, which represents 50% of the cultivated area in 2020) [15]. The water problem is one of the most important obstacles that contributed to the disruption of agricultural production, which negatively affected the aspect of achieving food security [16]. In addition, these water resources are characterized by the unsuitability of their geographical distribution and the difficulty of exploiting them optimally, under the influence of factors, the most important of which are the rise in population pressure, the exacerbation of water pollution, the increase in development needs, the rise in temperature rates, and the lack of rainfall in multiple seasons. The external factor of the upstream countries such as Turkey and Iran also had an impact on the decline of these water resources in recent years, due to their construction of giant reservoirs and dams, in addition to Iran closing the tributaries that flow into the Shatt al-Arab and other Iraqi lands, and Syria expanding its use of the Euphrates River, as well as Iraq's almost absolute dependence on securing water resources on the Tigris and Euphrates rivers. The Euphrates in itself is an indicator of weakness that it will suffer from in the present and future due to the Turkish water projects and its storage capacity with its superior capabilities, which demonstrates Iraq's storage capacity many times over [17].

4.2.3. The Increase in Government Spending Rates

The country's economic performance, due to the natural abundance of the oil product, led to the adoption of an export policy in particular, with results represented in the increase in government spending, especially the increase in the prices of consumer goods and services such as housing, transportation services, and health, relative to the prices of investment goods. Thus, local products are replaced by imports and exports decline in the traded goods sector, and then the increase in government spending is not directed to investment, which works to hinder the expansion of production capacity, whether for export or to compensate for imports [18], which threatens the potential for growth, employment, and productivity in the rest of the sectors in the future [19]. The process of increasing government spending may also cause the problem of increasing the debt index to cover the area of increasing spending when the single-sided financing sources are inadequate, which increases the continuity of unconscious spending successively, as increasing government spending through borrowing will increase the ability to spend will increase and aggregate demand will increase and cash income will rise. At higher levels of cash income, the demand for cash balances prepared for lending will increase, which will cause interest rates to rise, as public debt crowds out private investment, and thus this will affect economic performance and activity in the long term, due to the continued rise in long-term interest rates on the one hand [20], which is a problem that extends to future generations, as the real cost of government spending, especially that spending financed by debt, can be partially transferred to those generations. The Iraqi economic environment is integrated with a clear imbalance that is translated into a mechanism for the current expenditure index to rise above productive investment expenditures, as shown in **Table 2**.

4.2.4. Fiscal Deficit

Fiscal surpluses are achieved by increasing taxes, reducing public spending, or increasing the gross domestic product, leading to more tax revenues [21]. However, what is happening in Iraq is total reliance on oil revenues, which causes an imbalance in the surplus. This type of imbalance represents the lack of balance between government revenues in the country and the expenditures made by the state, which is reflected in the form of a continuous deficit, which can be called a structural deficit [22], as well as the operating deficit, which is more comprehensive [23]. There is also a continuous deficit resulting from quasi-financial operations such as granting interest rate support or exchange rate guarantees to public financial institutions such as central banks, and local

Table 2. Investment and current expenditures and the percentage of contribution to public expenditures in Iraq for (2004–2023) [13].

Years	Investment Expenditures	Current Expenditures	General Expenditures	Investment Expenditures to General Expenditures %	Expenditures to General Expenditures %
2004	3051162	29066329	32117491	9.5	90.5
2005	3903526	22471649	26375175	14.8	85.2
2006	6209069	32597610	38806679	16	84
2007	9211371	29819861	39031232	23.6	76.4
2008	20315954	39087421	59403375	34.2	65.8
2009	9648658	45941063	55589721	17.36	82.64
2010	15553341	54580860	70134201	22.18	77.82
2011	17832113	60925554	78757667	22.64	77.36
2012	29350952	75788623	105139575	27.92	72.08
2013	40380750	78746806	119127556	33.9	66.1
2014	35450453	76741673	112192126	31.6	68.4
2015	18584676	51832839	70417515	26.39	73.61
2016	18408200	55162800	73571000	25.02	74.98
2017	16466500	59025700	75492200	21.81	78.19
2018	13820300	67052900	80873200	17.09	82.91
2019	24422590	87300933	111723523	21.85	78.15
2020	3208905	72873538	76082443	4.21	95.78
2021	13322973	89526686	102849659	12.95	87.04
2022	12018491	104941091	116959582	10.27	89.72
2023	24192859	118242777	142435636	16.98	83.01

government systems [24]. By following **Table 3**, we notice that the emergence of these imbalances in a clear manner is translated into an imbalance in the proportional relationships of the elements that make up the structure of expenditures and the structure of revenues.

5. Indicators of Trade Relations in Iraq

The existence of indicators of structural imbalances in the Iraqi economy results in basic facts. The first of these facts is the poor contribution of the economic sectors to the formation of the gross domestic product, in addition to the poor direction and use of financial resources that are relied upon in the process of economic development, which are internal indicators that pushed towards a second real birth represented by the shortcomings of foreign trade relations with the countries of the world, especially neighboring countries with available geographical distance.

5.1. Iraqi Trade Balance Index

The trade balance represents the difference between the value of exports and the value of imports and is one of the most important components of the balance of payments structure through its impact on the general economy [25]. The most important thing that can be noted is the gap between exports and imports, as the value of imports exceeded the value of exports, which led to a deficit in the trade balance throughout the study period due to the limited production capacity and the inability of the agricultural and industrial sectors to satisfy local demand for various goods and services and the deficit of supply towards demand, which forced the government to rely on the international market [26]. Behind this lies an economic vision indicating that the Iraqi economy is linked to a dependent relationship with the oil market.

5.2. Economic Exposure Index

The relative importance of a country's foreign trade, with its two components, imports and exports, to the gross domestic product and the economic relationship with the outside world can be known through the economic exposure index, as it reflects the nature of the relationship between these variables, as the high degree of this index shows the depth of the economy's dependence on foreign markets to sell its products or obtain its

Table 3. Deficit and surplus in the Iraqi general budget for the period (20004–2023) [13].

Years	Public Revenues	Public Expenditures	Surplus or Deficit
2004	32982739	32117491	865248
2005	40502820	26375175	14127645
2006	49063361	38806679	10256682
2007	54599451	39031232	15568219
2008	80252182	59403375	20848807
2009	55209353	55589721	−380368
2010	70178223	70134201	44022
2011	108807392	78757667	30049725
2012	119817224	105139575	14677649
2013	113840076	119127556	−5287480
2014	105364301	112192126	−6827825
2015	72546345	70417515	2128830
2016	53143446	73571000	−20427554
2017	77335955	75492200	1843755
2018	106569834	80873200	25696634
2019	107566995	111723523	−4156528
2020	63199689	76082443	−12882754
2021	109081464	102849659	6231805
2022	161697437	116959582	44737855
2023	135681266	142435636	−6754370

need for goods and services, and the degree of economic exposure is calculated through the following formula [27]:

$$T = (M + X)/Y * 100$$

T represents the degree of economic exposure, M: is the value of imports, X is: the value of exports, and Y: is the value of the gross domestic product.

Structural and qualitative changes have been observed, especially in the structure of Iraq's imports in terms of the quantities and types of goods entering the market for the first time, and due to the scarcity of goods and the increase in demand in a way that is not commensurate with the supply of goods [15]. The most important changes in the Iraqi trade balance are as follows in **Table 4**.

5.3. Commodity Export Index

Commodity exports are distributed over some visible goods produced by a country and prepared for export as a surplus of its local needs, and there is an external demand for them. These goods are of great importance in developed countries due to the flexible production system, while developing countries, including Iraq, depend on one type of commodity exports, which makes the economy vulnerable to external shocks [28]. The phenomenon of lack of diversity in general commodity exports was characterized during the period under study, as exports of mineral fuels and crude oil (the dominance of the extractive sector on the export side) accounted for the largest proportion of commodity exports [29], and thus the unilateral nature of the Iraqi economy coincided with its reliance on a single commodity prepared for export.

5.4. Commodity Import Index

In a case where the situation was decided by the fact that the Iraqi economy depends on the rentier nature with the low productivity of the rest of the economic sectors and their contribution, the need grew strongly to increase foreign imports to meet the increasing desires, which led to an increase in the import index, especially the food and consumer categories, which constituted the majority of the import structure [30], which forced the Iraqi government to increase reliance on external debt programs to provide that liquidity, due to the lack of hard currency reserves to cover imports, of which the consumer nature constitutes a large percentage, as the decrease in the value of international reserves and their percentage of total imports will weaken the Iraqi

Table 4. Trade balance and the degree of exposure of the Iraqi economy for the period (2004–2023) [13] million dollars.

Years	Export Value	Import Value	Trade Balance	GDP	Degree of Economic Exposure
2004	17810	21302	−3492	36638.24	106.75
2005	23697	20002	3695	49954.89	87.47
2006	30529	18708	11821	64805.39	75.97
2007	39590	18289	21301	87968.28	65.79
2008	63726	30171	33555	130528.7	71.93
2009	39782	32673	7109	111300.4	65.09
2010	51764	37328	14436	134800.6	66.09
2011	79681	40633	39048	185749.7	64.77
2012	94209	50155	44054	218032.2	66.21
2013	89769	49977	39792	234637.7	59.55
2014	83981	45200	38781	228490.9	56.53
2015	51328	40809	10519	171136	53.83
2016	40759	29138	11621	172478.7	40.52
2017	57559.1	32950.8	13954.5	187534.4	48.26
2018	86359.9	38875.7	47484.2	227511.7	55.05
2019	86359.9	38875.7	47484.2	233636.1	53.60
2020	81585.2	49417.6	32167.6	182454.8	71.80
2021	72822.1	34625.8	38196.3	207691.6	51.73
2022	118044.8	46914.8	71130	264182.2	62.44
2023	99149	65826	33323	253881.8	64.98

government's ability to finance its imports without resorting to debt [31].

Intra-trade between neighboring countries is one of the most important components of economic growth and prosperity of its industrial, commercial, and other sectors. Most of the world's economies face enormous challenges, including dealing wisely with the implementation of the open trade policy. Actual experiences and economic theory have proven that open markets and liberalization of trade exchange by removing customs and non-customs barriers restricting trade constitute a method that has proven successful in creating wealth and achieving economic growth. As for countries that follow trade restrictions, on the contrary, they are forced to protect their country's interests from strong competition, especially rentier countries that suffer from a state of weak infrastructure. However, the final result is the country's situation. In a worse state than it was in terms of lost profits and slower growth, which means a scarcity of resources to meet pressing social needs [32].

As a result of the set of difficult circumstances that Iraq went through, it was natural for the trade policy, as part of the economic policy, to be weak or absent due to the crises that prompted the regime at that time. The open-door policy had a profound impact on the commercial sector and the rest of the productive sectors, as the uncontrolled import policy contributed to freezing productive activities (agricultural, industrial) in the country and made it a market for disposing of goods by neighboring regional countries [33].

First: Iraqi-Iranian Exchange

The nature of Iraqi-Iranian relations is represented by ties whose strength extends from the close geographical location, not to mention the common factors between the two countries, whether religious, cultural, or ethnic, which enabled the two countries to deepen their cooperation and strengthen their ties. The trade relations that are shown by the movement of trade exchange in its two parts, imports and exports, came to clarify the great development that occurred in the volume of these exchanges, especially after 2003 between Iraq and Iran. To know the extent of growth and development of this trade relationship and its importance to the economies of the two countries, the growth rates of imports and exports of goods between the two countries can be observed during the period (2004–2023), and the degree of relative importance compared to imports and exports from countries of the world [2].

By observing the relative importance of Iraqi imports from Iran to the total Iraqi imports during the

study period and by following **Table 5**, we find that it has gone through unstable levels compared to the countries of the world. It is clear from this that the importance of Iraqi imports from Iran is dependent on the type of goods demanded by the Iraqi market. This is what the relative importance showed in 2007 as a result of the shift in demand for capital goods. As for Iranian commodity imports from Iraq, meaning that Iraqi goods prepared for export are not at the level that constitutes a noteworthy competitive importance, which is usually dominated by the nature of raw materials and consumer goods on the one hand, as well as the extent of the weakness of the Iranian market's dependence on Iraqi goods [34].

During this period, Washington's pressures had serious negative effects on these relations, and to reduce economic relations between Iran and Iraq, the US government prevented transactions in dollars and sought to gradually restrict Baghdad from importing gas and electricity from Iran. Naturally, in the context of the sanctions imposed on Iran, it cannot use its limited foreign exchange resources to invest in Iraqi infrastructure and industry [35].

Second: Iraqi-Turkish exchange

Trade relations between Iraq and Turkey represent an effective axis in the scenario of relations between the two countries, given that the two countries are linked by economic and trade relations whose roots go back to the twenties of the last century. These relations have gone through many connections, positions, and circumstances according to the events and developments experienced by the Iraqi and Turkish lands that were reflected in the course of relations between the two countries [36], and to know the extent of growth and development of this trade relationship and its importance to the economies of the two countries, the growth rates of imports and exports of goods between the two countries can be observed during the period (2004–2023), and the degree of relative importance compared to imports and exports from countries of the world [37].

By tracking the values of Iraqi imports from Turkey, it becomes clear that food and beverage goods dominate a large part of the values of Iraqi imports, due to the continuous increase in Iraqi demand, especially for flour, which is classified as wheat grains, to fill the deficit in local markets, not to mention various types of food commodities and various consumer goods [38].

The Turkish Statistical Authority indicated that Iraq is the fourth largest importing country from Turkey, after Germany, Italy, and the United States of America, according to data for March (2024). By following **Table 5**, we see, in general, that the Iraqi exports to Turkey are characterized by a large gap between them and Iraqi imports during the period under study. The Turkish government has also sought to overcome the repercussions of tension, especially the water file, political and military interventions in the northern region, and everything that leads to strengthening its relations with neighboring countries, especially Iraq.

6. Data and Methods

The time series data of the variables were transformed from annual data to quarterly data in their original format to enable the application of econometric methods, which would yield more accurate and neutral results if the time series were longer. The ARDL model was used to measure the impact of structural imbalances in the Iraqi agricultural and industrial sectors. This model helps to determine how economic factors interact with each other [39]. **Table 6** shows Data coding.

The numbers were converted to percentages to get rid of negative numbers. A percentage less than one indicates a negative imbalance, while a percentage greater than one indicates a positive imbalance. Quarterly data were generated so that modern econometric methods could be applied, including the ARDL methodology, which requires relatively many observations.

7. Results and Discussion

7.1. Unit Root Test

Table 7 shows the outcomes of the unit root test using the ADF test and the PP test for a time series of variables.

The results in **Table 7** show that most variables become stationary in the first difference of the data according to the ADF test and the PP test, and in all equations of the stationarity tests and at different levels of significance.

Table 5. Trade exchange (exports and imports between Iraq, Turkey, and Iran for the period (2004–2022) [13] million dollars.

Years	Iraqi Exports to Turkey	Iraqi Imports from Turkey	Iraqi-Turkish Trade balance	Iraqi Exports to Iran	Iraqi Imports from Iran	Iraqi-Iranian Trade Balance
2004	145.575	1820	−1674.425	25	369	−344
2005	66.434	2750	−2683.566	134	1233.7	−1099.7
2006	121.744	2589	−2467.256	35	1718.4	−1683.4
2007	118.702	2844	−2725.298	29	1841.9	−1812.9
2008	133.056	3916	−3782.944	67	4118.8	−4051.8
2009	120.558	5123	−5002.442	36	4559.9	−4523.9
2010	153.475	6036	−5882.525	46	4538.6	−4492.6
2011	86.753	8310	−8223.247	124	4735	−4611
2012	149.327	10822	−10672.673	83	5678.4	−5595.4
2013	145.684	11948	−11802.316	68	5257	−5189
2014	268.544	10887	−10618.456	60	6182	−6122
2015	296.505	8549	−8252.495	50	6206	−6156
2016	836.297	7636	−6799.703	55	5959	−5904
2017	1527.57	9054	−7526.43	54	8757.6	−8703.6
2018	1420.43	8346	−6925.57	22.5	4065.9	−4043.4
2019	2.51755	8.997	−6.47945	10.27	2593.7	−2583.43
2020	8.1035	433.7	−425.5965	15.5	1278.3	−1262.8
2021	14420	10.003	14409.997	3.3	718.8	−715.5
2022	255000	234849	20151	16	3829	−3813

Table 6. Research variable codes.

Variable Name	Symbol	Measurement Method	Significance
Distribution Activities	X1	Ratio of distribution activities to GDP	Independent Variables
Service Activities	X2	Ratio of service activities to GDP	
Oil Production	X3	Ratio of oil production to GDP	
Non-Oil Production	X4	Ratio of non-oil production to GDP	
Broad Money Supply	X5	Ratio of broad money supply to GDP	
Inflation Rate %	X6	Inflation rate%	
General Budget Surplus or Deficit	X7	Ratio of revenues to public expenditures	
Iraq Trade Balance	X8	Ratio of exports to imports	
Iraq-Turkey Trade Balance	Y1	Ratio of Iraqi exports to Turkey to Turkish imports	dependent Variables
Iraq-Iran Trade Balance	Y2	Ratio of Iraqi exports to Iran to Iranian imports	

Table 7. Tests of stationary research variables according to the ADF and PP test.

	Phillips-Perron (PP) Test						Dockley-Fuller (ADF) Test					
	With Constant		With Constant & Trend		With Constant & Trend		With Constant		With Constant & Trend		With Constant & Trend	
	t-Statistic		t-Statistic		t-Statistic		t-Statistic		t-Statistic		t-Statistic	
d(Y1)	−5.59	***	−5.55	***	−5.62	***	−6.65	***	−7.43	***	−6.52	***
d(Y2)	−5.39	***	−5.33	***	−5.39	***	−3.81	***	−3.58	**	−3.88	***
d(X1)	−5.81	***	−5.77	***	−5.83	***	−3.56	***	−3.53	**	−3.53	***
d(X2)	−4.74	***	−4.86	***	−4.75	***	−3.27	**	−3.48	**	−3.28	***
d(X3)	−3.28	**	−3.15	no	−3.26	***	−3.26	**	−3.14	No	−3.23	***
d(X4)	−3.90	***	−3.75	**	−3.89	***	−3.90	***	−3.76	**	−3.87	***
d(X5)	−4.17	***	−4.28	***	−4.03	***	−4.07	***	−4.16	***	−3.92	***
d(X6)	−4.04	***	−4.05	**	−4.05	***	−2.47	No	−4.67	***	−2.21	**
d(X7)	−4.16	***	−4.21	***	−4.22	***	−3.18	**	−3.13	No	−3.16	***
d(X8)	−3.01	**	−3.27	*	−3.07	***	−2.82	*	−3.07	No	−2.86	***

Notes: (*) Significant at the 10%; (**) Significant at the 5%; (***) Significant at the 1%. And (no) Not Significant.

7.2. Estimating the Impact of Structural Imbalances on the Trade Balance with Turkey

7.2.1. Cointegration Test by Bounds Test

The results in **Table 8** show that the calculated F value of 5.78 is greater than the critical tabular F at all levels of significance, which means that there is a joint integration between structural imbalances in Iraq and the trade balance with Turkey during the period 2004–2023.

Table 8. Results of the boundary test for the Turkish trade balance equation.

ARDL Bounds Test		
Null Hypothesis: No long-run relationships exist		
Test Statistic	**Value**	**K**
F-statistic	5.788725	8
Critical Value Bounds		
Significance	**I0 Bound**	**I1 Bound**
10%	1.95	3.06
5%	2.22	3.39
2.5%	2.48	3.7
1%	2.79	4.1

7.2.2. The Initial Estimation of the Impact of Structural Imbalances on the Trade Balance with Turkey

Table 9 displays the results of the initial estimate of the ARDL model for the correlation between Iraq trade balance and Turkey.

Table 9 shows that the coefficient of determination (R-squared) reacted 97%, and the adjusted coefficient of determination is 95%, which states that the model has a very good explanatory power.

7.2.3. Optimal Lag Length Test

The results of the best lag test of the ARDL model for the impact of structural imbalances on the trade balance with Turkey are shown in **Figure 1**.

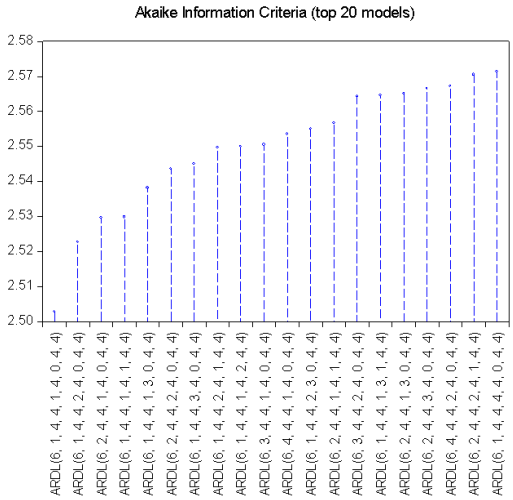

Figure 1. Testing the Optimal Lag Period.

The optimal lag chosen by the ARDL model is of order (6, 1, 4, 4, 1, 4, 0, 4, 4) as shown in **Figure 1**. The model criteria are used to determine the optimal lag, and the lag that gives the lowest result for these criteria is chosen.

Table 9. The Initial Estimate of the ARDL Model.

Dependent Variable: Y1
Method: ARDL
Maximum dependent lags: 6 (Automatic selection)
Model selection method: Akaike info criterion (AIC)
Dynamic regressors (4 lags, automatic): X1 X2 X3 X4 X5 X6 X7 X8
Fixed regressors: C
Selected Model: ARDL(6, 1, 4, 4, 1, 4, 0, 4, 4)

Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob**
Y1(−1)	0.618986	0.123531	5.010790	0.0000
Y1(−2)	−0.250201	0.125557	−1.992723	0.0537
Y1(−3)	0.008920	0.111675	0.079873	0.9368
Y1(−4)	−0.365930	0.110587	−3.308981	0.0021
Y1(−5)	0.201687	0.126596	1.593151	0.1196
Y1(−6)	−0.355331	0.092081	−3.858914	0.0004

Table 9. *Cont.*

Variable	Coefficient	Std. Error	t-Statistic	Prob
X1	1.038112	0.157933	6.573117	0.0000
X1(−1)	−0.542027	0.181519	−2.986064	0.0050
X2	−1.578934	0.416316	−3.792635	0.0005
X2(−1)	0.262121	0.511811	0.512143	0.6116
X2(−2)	0.113329	0.421912	0.268609	0.7897
X2(−3)	−0.153256	0.417290	−0.367266	0.7155
X2(−4)	−0.661121	0.298876	−2.212027	0.0332
X3	−1.056350	0.192047	−5.500469	0.0000
X3(−1)	0.610800	0.312679	1.953441	0.0584
X3(−2)	0.093686	0.317698	0.294892	0.7697
X3(−3)	0.103615	0.314921	0.329020	0.7440
X3(−4)	−0.525570	0.205666	−2.555449	0.0148
X4	−1.800059	0.340865	−5.280862	0.0000
X4(−1)	0.814359	0.354438	2.297603	0.0273
X5	49.98543	12.75784	3.918015	0.0004
X5(−1)	−9.149391	18.27782	−0.500573	0.6196
X5(−2)	−2.567725	16.33782	−0.157164	0.8760
X5(−3)	0.224629	16.32409	0.013761	0.9891
X5(−4)	−17.09193	11.06643	−1.544484	0.1310
X6	−0.140309	0.034202	−4.102395	0.0002
X7	0.267260	2.091234	0.127800	0.8990
X7(−1)	0.908662	2.813340	0.322983	0.7485
X7(−2)	0.228869	2.462584	0.092938	0.9265
X7(−3)	−0.114434	2.457637	−0.046563	0.9631
X7(−4)	7.792875	2.352559	3.312509	0.0021
X8	5.766700	1.818258	3.171551	0.0030
X8(−1)	−0.776632	2.929142	−0.265140	0.7924
X8(−2)	0.648347	2.874178	0.225576	0.8228
X8(−3)	0.020379	2.854780	0.007139	0.9943
X8(−4)	−4.550259	2.053520	−2.215834	0.0329
C	55.49380	13.07896	4.242982	0.0001
R-squared	0.976295	Mean dependent var		0.911779
Adjusted R-squared	0.953231	S.D. dependent var		3.354452
S.E. of regression	0.725437	Akaike info criterion		2.502767
Sum squared resid	19.47156	Schwarz criterion		3.654799
Log likelihood	−55.60237	Hannan-Quinn criter		2.962327
F-statistic	42.32977	Durbin-Watson stat		2.058822
Prob(F-statistic)	0.000000			

7.2.4. Estimation of the Long-Run Equation and the Error Correction Coefficient for the Trade Balance with Turkey

The long-term estimators of the estimated model parameters as well as the error correction vector parameter should now be derived after making sure that the variables have a cointegration relationship, as **Table 10** illustrates.

The **Table 10** shows that:

- The result from the error correction term, CointEq (−1), which equals (−1.14), is negative and significant, confirming the existence of a long-term cointegration and equilibrium relationship between the structural imbalances in Iraq and the trade balance with Turkey during the research period.
- The result of the variable X1 shows that a 1% increase in the share of distribution activities in GDP leads to a 0.43% increase in the trade deficit with Turkey. This effect is significant at the 5% level. The justification for this is that most distribution activities depend on importing goods and trans-

portation services, especially the transportation of goods imported from Turkey.

Table 10. Estimation of the long-term equation for the trade balance with Turkey.

ARDL Cointegrating And Long Run Form
Dependent Variable: Y1
Selected Model: ARDL(6, 1, 4, 4, 1, 4, 0, 4, 4)
Cointegrating Form

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(Y1(−1))	0.760854	0.118708	6.409445	0.0000
D(Y1(−2))	0.510654	0.096090	5.314337	0.0000
D(Y1(−3))	0.519574	0.101316	5.128234	0.0000
D(Y1(−4))	0.153644	0.101830	1.508830	0.1398
D(Y1(−5))	0.355331	0.092081	3.858914	0.0004
D(X1)	1.038112	0.157933	6.573117	0.0000
D(X2)	−1.578934	0.416316	−3.792635	0.0005
D(X2(−1))	−0.113329	0.421912	−0.268609	0.7897
D(X2(−2))	0.153256	0.417290	0.367266	0.7155
D(X2(−3))	0.661121	0.298876	2.212027	0.0332
D(X3)	−1.056350	0.192047	−5.500469	0.0000
D(X3(−1))	−0.093686	0.317698	−0.294892	0.7697
D(X3(−2))	−0.103615	0.314921	−0.329020	0.7440
D(X3(−3))	0.525570	0.205666	2.555449	0.0148
D(X4)	−1.800059	0.340865	−5.280862	0.0000
D(X5)	49.985429	12.757845	3.918015	0.0004
D(X5(−1))	2.567725	16.337818	0.157164	0.8760
D(X5(−2))	−0.224629	16.324086	−0.013761	0.9891
D(X5(−3))	17.091927	11.066430	1.544484	0.1310
D(X6)	−0.140309	0.034202	−4.102395	0.0002
D(X7)	0.267260	2.091234	0.127800	0.8990
D(X7(−1))	−0.228869	2.462584	−0.092938	0.9265
D(X7(−2))	0.114434	2.457637	0.046563	0.9631
D(X7(−3))	−7.792875	2.352559	−3.312509	0.0021
D(X8)	5.766700	1.818258	3.171551	0.0030
D(X8(−1))	−0.648347	2.874178	−0.225576	0.8228
D(X8(−2))	−0.020379	2.854780	−0.007139	0.9943
D(X8(−3))	4.550259	2.053520	2.215834	0.0329
CointEq(−1)	−1.141869	0.157568	−7.246828	0.0000

Cointeq = Y1 − (0.4345*X1 − 1.7672*X2 − 0.6777*X3 − 0.8632*X4 + 18.7421*X5 −0.1229*X6 + 7.9547*X7 + 0.9708*X8 + 48.5991)

Long Run Coefficients

Variable	Coefficient	Std. Error	t-Statistic	Prob.
X1	0.434450	0.093598	4.641673	0.0000
X2	−1.767157	0.217838	−8.112245	0.0000
X3	−0.677678	0.091189	−7.431556	0.0000
X4	−0.863234	0.157241	−5.489894	0.0000
X5	18.742100	1.324350	14.151929	0.0000
X6	−0.122876	0.026023	−4.721845	0.0000
X7	7.954709	1.832941	4.339861	0.0001
X8	0.970807	0.494259	1.964168	0.0571
C	48.599111	9.022007	5.386729	0.0000

- The result of the variable X2 shows that a 1% increase in the share of service activities in GDP leads to a 1.76% decrease in the trade deficit with Turkey. This effect is significant at the 5% level. The justification for this is that most service activities (such as education, health, etc.) rely on domestic service providers in Iraq, which may help reduce the trade deficit with Turkey.
- The result of the variable X3 shows that a 1% increase in the share of oil production in GDP leads to a 0.86% decrease in the trade deficit with Turkey. This effect is significant at the 5% level. The justification for this is that most oil production contributes to increasing oil exports to Turkey, which reduces the trade deficit with Turkey. The local agricultural industry may benefit from this effect since it might encourage customers to look for less expensive local substitutes, increasing demand for regional agricultural goods.
- The result of the variable X4 shows that a 1% increase in the share of non-oil production in GDP (increasing the contribution of the agricultural or industrial sectors) leads to a 0.67% decrease in the trade deficit with Turkey. This effect is significant at the 5% level. The justification for this is that increased agricultural or industrial production helps reduce imports from Turkey, thus reducing the trade deficit with Turkey. This suggests that increasing agriculture can lower Turkish imports, particularly those related to food and agriculture. Consequently, encouraging domestic farming can be a useful strategy to improve the trade balance and lessen reliance on imports
- The result of the variable X5 shows that a 1% increase in the money supply to GDP ratio leads to an 18.74% increase in the trade deficit with Turkey. This effect is significant at the 5% level. The justification for this is that an increase in the money supply means higher purchasing power for individuals, and this increased purchasing power is reflected in the demand for luxury and durable goods, particularly imported goods from Turkey, exacerbating the trade deficit with Turkey. This suggests that to satisfy the rising demand and lessen reliance on Turkish imports, local agricultural products must be supported.
- The result of the variable X6 shows that a 1% increase in inflation rates leads to a 0.12% decrease in the trade deficit with Turkey. This effect is significant at the 5% level. The justification for this is that higher price levels contribute to a depreciation of the local currency, making imports more expensive, particularly from Turkey, which reduces demand for imports and, in turn, reduces the trade deficit with Turkey. The local agricultural industry may benefit from this effect since it might encourage customers to look for less expensive local substitutes, increasing demand for regional agricultural goods.
- The result of the variable X7 shows that a 1% increase in the budget surplus leads to a 7.95% increase in the trade deficit with Turkey. This effect is significant at the 5% level. The justification for this is that a budget surplus leads to increased government spending, which is reflected in higher public expenditure, both in investment and consumption. Due to weak local production, this increased spending translates into higher imports of various goods, especially from Turkey, exacerbating the trade deficit with Turkey. This implies that the detrimental effects of the fiscal surplus on the trade balance might be lessened if a portion of government spending were allocated to the development of the agricultural sector.
- The result of the variable X8 shows that a 1% increase in the trade surplus leads to a 0.97% increase in the trade deficit with Turkey. This effect is significant at the 5% level. The justification for this is that a trade surplus with the world means an increase in exports at the expense of imports from other countries. However, due to weak local production, a large portion of export revenues is directed toward covering the demand for imports, particularly from Turkey, which exacerbates the trade deficit with Turkey. Therefore, to boost local production and profit from commercial revenues for the development of agricultural infras-

tructure in Iraq, investment in the agricultural sector should be increased.

The analysis's findings show that the trade balance between Iraq and Turkey is influenced by a variety of economic factors, including local production activities, inflation, government spending, and monetary expansion. One of the most important strategic tools available to Iraq for reducing its trade deficit and achieving long-term economic stability is the agricultural sector. Increasing domestic agricultural output has a number of other beneficial economic and social effects in addition to reducing imports from Turkey. These include improving food security, creating jobs in rural areas, and promoting balanced economic growth in the country.

7.2.5. Verifying the Model's Goodness-of-fit

After estimating the ARDL model, we can verify the model's goodness-of-fit and ensure that it is free from econometric issues through the following diagnostic tests, as shown in **Table 11**.

Table 11. ARDL model integrity tests for the trade balance equation with Turkey.

Breusch-Godfrey Serial Correlation LM Test			
F-statistic	0.228067	Prob. F (2,35)	0.7972
Obs*R-squared	0.951991	Prob. Chi-Square (2)	0.6213
Heteroskedasticity Test: ARCH			
F-statistic	0.001183	Prob. F (1,71)	0.9727
Obs*R-squared	0.001216	Prob. Chi-Square (1)	0.9722

The **Table 11** shows that the model is free from the problem of autocorrelation LM Test and the problem of instability of the homogeneity of error variance ARCH because the levels of significance in both tests are greater than 5%.

7.2.6. Testing the Stability of the Residuals of the Trade Balance Equation with Turkey

Figure 2 shows the residuals recurrence test and it is clear that the residuals are stable and within the specified confidence intervals, while the second figure shows the instability of the residuals recurrence square test during the Corona-19 pandemic period and the years after it, then it returned to stability after 2022.

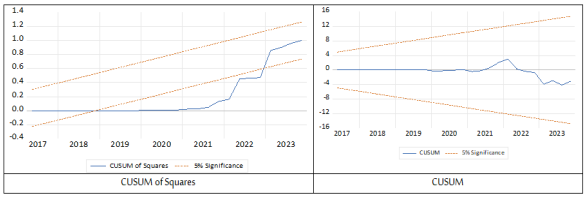

Figure 2. Stability of the residuals of the trade balance equation with Turkey.

7.3. Estimating the Impact of Structural Imbalances on the Trade Balance with Iran

7.3.1. Cointegration Test by Bounds Test

The results in **Table 12** show that the calculated F value of 22.39 is greater than the critical tabular F at all levels of significance, which means that there is a joint integration between structural imbalances in Iraq and the trade balance with Iran during the period 2004–2023.

Table 12. Results of the boundary test for the Iranian trade balance equation.

ARDL Bounds Test		
Included observations: 76 Null Hypothesis: No long-run relationships exist		
Test Statistic	**Value**	**k**
F-statistic	22.39086	8
Critical Value Bounds		
Significance	**I0 Bound**	**I1 Bound**
10%	1.95	3.06
5%	2.22	3.39
2.5%	2.48	3.7
1%	2.79	4.1

7.3.2. The Initial Estimation of the Impact of Structural Imbalances on the Trade Balance with Iran

Table 13 displays the results of the initial estimate of the ARDL model for the correlation between Iraq's

trade balance and Iran.

Table 13 shows that the coefficient of determination (R-squared) reacted 99%, and the adjusted coefficient of determination is 99%, which states that the model has a very good explanatory power.

Table 13. The Initial Estimate of the ARDL Model.

Dependent Variable: Y2
Method: ARDL
Model selection method: Akaike info criterion (AIC)
Dynamic regressors (4 lags, automatic): X1 X2 X3 X4 X5 X6 X7 X8
Fixed regressors: C
Number of models evaluated: 1562500
Selected Model: ARDL (1, 1, 1, 4, 4, 4, 4, 1, 1)

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
Y2(−1)	0.671590	0.070737	9.494187	0.0000
X1	0.001254	0.000189	6.624603	0.0000
X1(−1)	−0.001205	0.000223	−5.411061	0.0000
X2	−0.004182	0.000554	−7.545410	0.0000
X2(−1)	0.003708	0.000610	6.081812	0.0000
X3	0.002258	0.000266	8.477283	0.0000
X3(−1)	−0.001211	0.000451	−2.687033	0.0100
X3(−2)	5.10E−05	0.000419	0.121687	0.9037
X3(−3)	8.09E−05	0.000419	0.193339	0.8475
X3(−4)	0.000864	0.000356	2.431401	0.0190
X4	0.006757	0.000441	15.32969	0.0000
X4(−1)	−0.003730	0.000693	−5.384418	0.0000
X4(−2)	−3.30E−05	0.000492	−0.067173	0.9467
X4(−3)	−0.000117	0.000490	−0.239018	0.8122
X4(−4)	0.000629	0.000374	1.681136	0.0995
X5	0.005945	0.016207	0.366799	0.7155
X5(−1)	−0.040755	0.018409	−2.213841	0.0318
X5(−2)	0.000257	0.012798	0.020080	0.9841
X5(−3)	0.002424	0.012773	0.189736	0.8504
X5(−4)	0.038096	0.008623	4.417946	0.0001
X6	−0.001203	0.000122	−9.883817	0.0000
X6(−1)	0.000896	0.000178	5.040994	0.0000
X6(−2)	−2.09E−05	0.000125	−0.167390	0.8678
X6(−3)	−6.12E−05	0.000124	−0.492455	0.6247
X6(−4)	0.000280	9.24E−05	3.034837	0.0040
X7	0.075400	0.002825	26.68701	0.0000
X7(−1)	−0.046637	0.005416	−8.611086	0.0000
X8	−0.027281	0.002097	−13.00840	0.0000
X8(−1)	0.011223	0.002528	4.440168	0.0001
C	−0.141978	0.027906	−5.087668	0.0000
R-squared	0.998729	Mean dependent var		0.015794
Adjusted R-squared	0.997927	S.D. dependent var		0.023093
S.E. of regression	0.001051	Akaike info criterion		−10.59005
Sum squared resid	5.08E−05	Schwarz criterion		−9.670021
Log likelihood	432.4218	Hannan-Quinn criter.		−10.22236
F-statistic	1246.077	Durbin-Watson stat		1.692396
Prob(F-statistic)	0.000000			

7.3.3. Optimal Lag Length Test

The results of the best lag test of the ARDL model for the impact of structural imbalances on the trade balance with Turkey are shown in **Figure 3**.

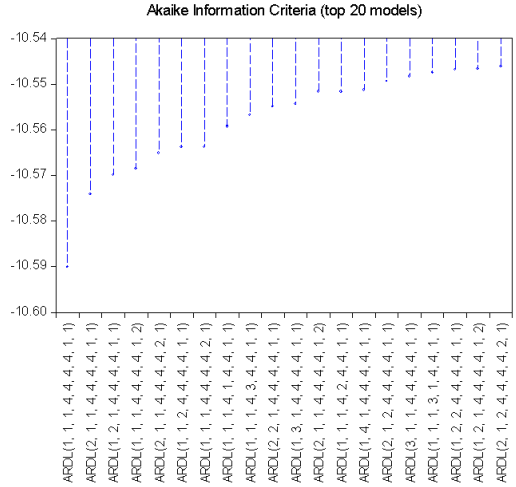

Figure 3. Testing the Optimal Lag Period.

The optimal lag chosen by the ARDL model is of order (1, 1, 1, 4, 4, 4, 4, 1, 1) as shown in **Figure 3**. The model criteria are used to determine the optimal lag, and the lag that gives the lowest result for these criteria is chosen.

7.3.4. Estimation of the Long-Term Equation and the Error Correction Coefficient for the Trade Balance with Iran

The long-term estimators of the estimated model parameters as well as the error correction vector parameter should now be derived after making sure that the variables have a cointegration relationship, as **Table 14** illustrates.

Table 14 shows that:

- The error correction term, CointEq(-1), which is (0.32) is negative and significant, confirming the existence of a long-term cointegration and equilibrium between the structural imbalances in Iraq and the trade balance with Iran during the research period. The closer this value is to zero, the longer it indicates the period required to return to equilibrium in the long run.
- The result of the variable X1 shows that a 1% increase in the share of distribution activities in GDP leads to a 0.0001% increase in the trade deficit with Iran. This effect is significant at the 5% level. The justification for this is that most distribution activities rely on importing goods and transportation, particularly the transportation of goods imported from Iran.
- The result of the variable X2 shows that a 1% increase in the share of service activities in GDP leads to a 0.001% decrease in the trade deficit with Iran. This effect is significant at the 10% level. The justification for this is that most service activities (such as education, health, etc.) depend on domestic service providers within Iraq, which may help reduce the trade deficit with Iran.
- The result of the variable X3 shows that a 1% increase in the share of oil production in GDP leads to a 0.006% increase in the trade deficit with Iran. This effect is significant at the 5% level. The justification for this is that most oil production contributes to increasing oil revenues, which leads to higher demand for imports from Iran, thus increasing the trade deficit with Iran. Therefore, allocating a portion of oil earnings to agricultural investments may help increase self-sufficiency and lessen reliance on Iranian agricultural imports.
- The result of the variable X4 shows that a 1% increase in the share of non-oil production in GDP (increasing the contribution of the agricultural or industrial sectors) leads to a 0.010% increase in the trade deficit with Iran. This effect is significant at the 5% level. The justification for this is that increased agricultural or industrial production contributes to higher demand for intermediate goods, which come from increased imports from Iran, thus increasing the trade deficit with Iran. Iraq can improve its own production capacities in these areas to address the issue. For example, it can produce fertilizers domestically and support agricultural research to create high-quality local seeds, which will lessen the need for imports from Iran.
- The result of the variable X5 shows that a 1% increase in the money supply to GDP ratio leads to a 0.018% increase in the trade deficit with Iran. This effect is significant at the 5% level. The justification for this is that an increase in the money

supply means higher purchasing power for individuals, and this purchasing power is reflected in the demand for luxury and durable goods, particularly those imported from Iran, exacerbating the trade deficit with Iran. Restricting the import of certain agricultural products or offering farmers government assistance to increase their output and satisfy local demand are two examples of policies that can be implemented to lessen this effect.

Table 14. Estimation of the long-term equation for the trade balance with Iran.

ARDL Cointegrating And Long Run Form
Dependent Variable: Y2
Selected Model: ARDL (1, 1, 1, 4, 4, 4, 4, 1, 1)

Cointegrating Form				
Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.**
D(X1)	0.001254	0.000189	6.624603	0.0000
D(X2)	−0.004182	0.000554	−7.545410	0.0000
D(X3)	0.002258	0.000266	8.477283	0.0000
D(X3(−1))	−0.000051	0.000419	−0.121687	0.9037
D(X3(−2))	−0.000081	0.000419	−0.193339	0.8475
D(X3(−3))	−0.000864	0.000356	−2.431401	0.0190
D(X4)	0.006757	0.000441	15.329685	0.0000
D(X4(−1))	0.000033	0.000492	0.067173	0.9467
D(X4(−2))	0.000117	0.000490	0.239018	0.8122
D(X4(−3))	−0.000629	0.000374	−1.681136	0.0995
D(X5)	0.005945	0.016207	0.366799	0.7155
D(X5(−1))	−0.000257	0.012798	−0.020080	0.9841
D(X5(−2))	−0.002424	0.012773	−0.189736	0.8504
D(X5(−3))	−0.038096	0.008623	−4.417946	0.0001
D(X6)	−0.001203	0.000122	−9.883817	0.0000
D(X6(−1))	0.000021	0.000125	0.167390	0.8678
D(X6(−2))	0.000061	0.000124	0.492455	0.6247
D(X6(−3))	−0.000280	0.000092	−3.034837	0.0040
D(X7)	0.075400	0.002825	26.687007	0.0000
D(X8)	−0.027281	0.002097	−13.008399	0.0000
CointEq(−1)	−0.328410	0.070737	−4.642688	0.0000

Cointeq = Y2 − (0.0001*X1 − 0.0014*X2 + 0.0062*X3 + 0.0107*X4 + 0.0182*X5 − 0.0003*X6 + 0.0876*X7 − 0.0489*X8 − 0.4323)

Long Run Coefficients				
Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.**
X1	0.000148	0.000387	0.383644	0.7030
X2	−0.001443	0.000773	−1.866953	0.0683
X3	0.006223	0.000669	9.304652	0.0000
X4	0.010678	0.001141	9.358293	0.0000
X5	0.018166	0.011184	1.624259	0.1112
X6	−0.000333	0.000086	−3.883549	0.0003
X7	0.087584	0.005202	16.835755	0.0000
X8	−0.048898	0.004027	−12.141507	0.0000
C	−0.432320	0.059588	−7.255204	0.0000

- The result of the variable X6 shows that a 1% increase in inflation rates leads to a 0.0003% decrease in the trade deficit with Iran. Although this effect is minimal, it is still significant at the 5% level. The justification for this is that higher price levels contribute to the depreciation of the local currency, making imports more expensive, particularly imports from Iran, which reduces demand for imports and thus reduces the trade deficit with Iran.
- The result of the variable X7 shows that a 1% increase in the budget surplus leads to a 0.087% increase in the trade deficit with Iran. This effect is significant at the 5% level. The justification for this is that a budget surplus leads to increased government spending, which is reflected in higher public expenditure, both in investment and consumption. Due to weak domestic production, this increased spending leads to higher imports from Iran, thus exacerbating the trade deficit with Iran.
- The result of the variable X8 shows that a 1% increase in the trade surplus leads to a 0.048% decrease in the trade deficit with Iran. This effect is significant at the 5% level. The justification for this is that a trade surplus with the world means increased exports at the expense of imports from other countries. As a result, the trade surplus with Iraq is larger than the trade deficit with Iran because the revenue from oil exports in recent years has increased due to the rise in crude oil prices. Therefore, expanding Iraqi agricultural exports may be a useful strategy for enhancing the trade balance. It is possible to improve the trade balance and lower the deficit with Iran by increasing the export of agricultural goods like dates, vegetables, and animal products rather than solely depending on oil exports.

The findings indicate that several economic variables, such as inflation, monetary expansion, productive activities, and budget surplus, have an impact on the trade deficit with Iran. Nonetheless, through increasing domestic production, decreasing the need to import agricultural goods, and promoting agricultural exports, the agricultural sector is one of the powerful instruments that can help close the trade deficit. To achieve a more balanced trade balance and sustainable economic growth free from Iranian imports, it may be imperative to implement policies that encourage the growth of Iraq's agricultural sector.

7.3.5. Verifying the Model's Goodness-of-Fit

After estimating the ARDL model, we can verify the model's goodness-of-fit and ensure that it is free from econometric issues through the following diagnostic tests, as shown in **Table 15**.

The **Table 15** shows that the model is free from the problem of autocorrelation LM Test and the problem of instability of the homogeneity of error variance ARCH, because the levels of significance in both tests are greater than 5%.

7.3.6. Testing the Stability of the Residuals of the Trade Balance Equation with Iran

Figure 4 shows the residual recurrence test and it is clear that the residuals are stable and within the specified confidence intervals, and the second figure shows the stability of the residual recurrence square test for the trade balance equation with Iran during the research period.

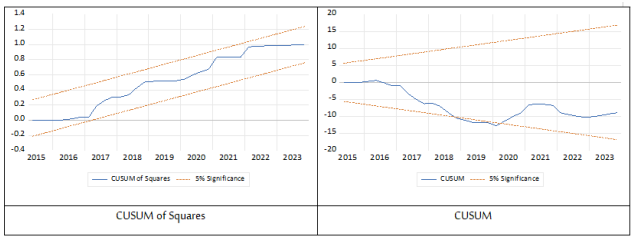

Figure 4. Stability of the residuals of the trade balance equation with Iran.

8. Conclusions and Recommendations

8.1. Conclusions

1. A strong link emerged between structural imbalances and the strength of dependence on the economies of Iran and Turkey due to the rentier component of Iraq's exports of crude oil.

Table 15. ARDL model integrity tests for balancing trade balance with Iran.

Breusch-Godfrey Serial Correlation LM Test			
F-statistic	0.880999	Prob. F (2,44)	0.4216
Obs*R-squared	2.926267	Prob. Chi-Square (2)	0.2315
Heteroskedasticity Test: ARCH			
F-statistic	0.256526	Prob. F (1,73)	0.6140
Obs*R-squared	0.262631	Prob. Chi-Square (1)	0.6083

2. It is clear from the error correction parameter CointEq (−1) which is (−1.14) and is negative and significant, which confirms the existence of joint integration and long-term balance between the structural imbalances in Iraq and the trade balance of Turkey during the research period. The error correction parameter CointEq (−1) which is (0.32) is negative and significant, which confirms the existence of joint integration and long-term balance between the structural imbalances in Iraq and the trade balance in Iran during the research period.

3. The study found that increasing the ratio of oil production to GDP by 1% leads to a decrease in the trade balance deficit with Turkey by -0.86, and this effect is significant at the 5% level, and the justification for this is that most of the oil production contributes to increasing oil exports to Turkey, which is reflected in reducing the trade balance deficit with Turkey. The results showed that increasing the ratio of oil production to GDP by 1% leads to an increase in the trade balance deficit with Iran by 0.006, and this effect is significant at the 5% level, and the justification for this is that most of the oil production contributes to increasing oil revenues, which increases the demand for imports from Iran, which is reflected in increasing the trade balance deficit with Iran.

4. The study found that increasing the ratio of money supply to GDP by 1% leads to an increase in the trade deficit with Turkey by 18.74%, and this effect is significant at the 5% level. The justification for this is that most of the increase in money supply means that individuals have purchasing power, and this purchasing power is reflected in the demand for imported luxury and durable goods, especially goods imported from Turkey, which exacerbates the increase in the trade deficit with Turkey. The study found that increasing the ratio of money supply to GDP by 1% leads to an increase in the trade deficit with Turkey by 0.018, and this effect is significant at the 5% level. The justification for this is that most of the increase in money supply means that individuals have purchasing power, and this purchasing power is reflected in the demand for imported luxury and durable goods, especially goods imported from Iran, which exacerbates the increase in the trade deficit with Iran.

5. The study concluded that increasing the budget surplus by 1% leads to an increase in the trade deficit with Turkey by 7.95, and this effect is significant at the 5% level. The justification for this is that the existence of a surplus in the budget leads to an increase in government expenditures, which is reflected in an increase in public spending in its investment and consumption aspects. As a result of weak local production, demand is reflected in an increase in imports of various types, especially goods imported from Turkey, which exacerbates the increase in the trade deficit with Türkiye. On the other hand, I found that increasing the budget surplus by 1% leads to an increase in the trade deficit with Iran by 0.087, and this effect is significant at the 5% level. The justification for this is that the existence of a budget surplus leads to an increase in government expenditures, which is reflected in an increase in public spending in its investment and consumption aspects. As a result of weak local production, demand is reflected in an increase in Iranian imports of various types, which exacerbates the increase in the trade deficit with Iran.

6. The results of the analysis showed that increasing the trade balance surplus by 1% leads to an increase in the trade balance deficit with Turkey by 0.97, and this effect is significant at the 5% level. The justification for this is that having a surplus in the Iraqi trade balance with the world means increasing exports abroad at the expense of imports with the rest of the world.

Given the weakness of local production, a large part of export revenues are directed towards covering the demand for imports of various types, especially goods imported from Turkey, which exacerbates the increase in the trade deficit with Turkey. The results showed that increasing the trade balance surplus by 1% leads to a decrease in the trade balance deficit with Iran by -0.048, and this effect is significant at the 5% level. The justification for this is that having a surplus in the Iraqi trade balance with the world means increasing exports abroad at the expense of imports with the rest of the world, meaning that the Iraqi trade balance surplus is greater than the trade deficit with Iran due to the size of the oil revenues that Iraq has obtained in recent years, which have increased as a result of the rise in crude oil prices.

8.2. Recommendations

1. Paying attention to investment sources and encouraging the work environment by attracting local and foreign capital and working to employ it in various investment channels in infrastructure projects.

2. Moving away from the rentier constraint and shifting towards a local production base by working to stimulate growth in the agricultural sector and sustain the relative opportunities that the country has from the broad base of agricultural resources, and ensuring increased yield rates, with the necessity of reconstructing and modernizing stalled and idle industrial projects, and making the best use of existing production capacities, and creating new production capacities.

3. Directing oil production revenues and surpluses towards local employment and reducing the external orientation of imports by raising taxes on consumer and entertainment goods while ensuring their reduction for efficient production goods and capital formation.

4. Imposing restrictions on the mechanism of monetary mass movements to ensure that it does not increase. This procedure takes two parts. The first part is represented by strict financial legal considerations issued by the Financial Supervision Department, especially on institutions and businessmen who own a large share of the money supply, which requires determining the amounts of hard currencies in circulation among these groups. The second part is to encourage savings in local banks in exchange for encouraging interest that helps absorb active liquidity from the economy to prevent an increase in the money supply and thus reduce purchasing power except towards essential goods and thus limit purchasing power that is reflected in the demand for imported luxury and durable goods, especially goods imported from Turkey, which reduces the increase in the trade deficit with Turkey and Iran.

5. In order to avoid a budget surplus that leads to an increase in government expenditures, which is reflected in an increase in public spending in its investment and consumer aspects accompanying the weakness of local production, it is necessary to implement a mechanism that prevents the financial surplus from leaking into waste through a set of procedures, the first of which is for the state to resort to increasing its tax resources. Taking into account that the increase in indirect taxes, especially those related to unnecessary goods and services, should be to avoid burdens, especially on those with a limited income. The second measure is related to the state resorting to reducing its public spending to manage the increasing resources for financing, especially unnecessary spending such as huge job appointments that burdened the country's budget and avoiding waste and extravagance in non-productive programs such as consumer imports, with the implementation of a third measure, which is borrowing from the public, i.e. financing the increase in government spending by issuing government bonds, provided that this is scheduled in the short term to avoid achieving an increase in income that exceeds the increase achieved by government spending financed by borrowing from banks.

6. Rescheduling economic relations with neighboring countries by excluding countries with high costs in the aspects of export and import and opening new markets for Iraqi exports by resorting to activating the agreements concluded with different countries.

Author Contributions

Methodology, M.K.O.; formal analysis, H.S.H.; data curation, F.G.F.; writing—original draft preparation, M.K.A.; writing—review and editing, F.H.S. All authors have read and agreed to the published version of the

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Conflicts of Interest

The authors declare no conflict of interest.

References

[1] Hassan, A.L.A.H., 2024. STRUCTURAL IMBALANCES IN THE IRAQI ECONOMY AFTER 2003: CAUSES, EFFECTS AND TREATMENT METHODS. International Journal Of Management And Economics Fundamental, 4(12), 91–117.

[2] Ali, M.H., Luaibi, Q.M., 2017. Trade Relations Between Iraq and Iran After 2003: Challenges and Developmental. Journal of Administration and Economics. 42(110), 19–36 (in Arabic).

[3] Salman, B.H., 2023. Reforming the Iraqi-Turkish Trade Balance and Its Impact on Changing the Reality of Iraqi-Turkish Relations in Favor of Iraq. Iraq Journal For Economic Sciences. 79, 58–75. (in Arabic)

[4] Alayseri, N.H.A., Kadhim, R.N., Majeed, H.S., 2024. Economic reform, structural imbalances and their impact on unemployment in the emerging economy. Journal of Governance & Regulation. 13(1), 18–27. DOI: https://doi.org/10.22495/jgrv13i1art2

[5] Shkarupa, O., Karintseva, O., Kharchenko, M., 2022. Economic restructuring of Ukraine national economy on the base of EU experience. In: Bhandari, M.P., (eds.). Reducing inequalities towards sustainable development goals, 1st ed. River Publishers: New York, NY, USA. pp. 161–184. DOI: https://doi.org/10.1201/9781003339250-8

[6] Zandi, G., Rehan, R., Hye, Q.M.A., et al., 2022. Do corruption, inflation and unemployment influence the income inequality of developing Asian countries? International Journal of Applied Economics Finance and Accounting. 14(2), 118–128. DOI: https://doi.org/10.33094/ijaefa.v14i2.688

[7] Cross, K., Evans, J., MacLeavy, J., Manley, D., 2022. Analysing the socio-economic impacts of COVID-19: A new regional geography or pandemic enhanced inequalities? Regional Studies, Regional Science. 9(1), 461–485. DOI: https://doi.org/10.1080/21681376.2022.2084447

[8] Al-Zamili, M.A., 2024. The imbalance between the elements and components of the economic structure. Available from: https://www.iraqicp.com/index.php/sections/platform/66522-2024-01-07-20-45-40 (cited 5 December 2024) (in Arabic).

[9] Al-Rubaie, A.R., 2022. The Dilemma of the Rentier State and the Dominance of a Single Resource. Dar Rawafed: Al Madinah, Saudi. pp. 1–256 (in Arabic).

[10] Al-Masoudi, H.A.H., 2021. The Role of Foreign Trade in Addressing Structural Imbalances in Iraq (Master Thesis). Karbala, Iraq: University of Karbala. pp. 1–160.

[11] Al-Adhadh, K., 2013. The structure of the Iraqi economy and the rentier issue, obstacles to achieving sustainable development. Proceedings of the First Scientific Economic Forum: Beirut, Lebanon.

[12] Al-Moussawi, W.A., 2016. Economic stability, sovereign funds, rent, general budget, market. Dar Al-Ayyam for Publishing and Distribution: Amman, Jordan. pp. 1–348 (in Arabic).

[13] Ministry of Planning, Central Statistical Organization, Directorate of National Accounts, Annual Bulletins (2004–2023) Available from: https://www.cosit.gov.iq/ar/national-accounts (cited 13 March 2024).

[14] Hussein, I. A., 2017. Sustainable Agricultural Development in Iraq. Solutions and Treatments Obstacles. Journal of Economic and Administrative Sciences. 23(95), 345–366. DOI: https://doi.org/10.33095/jeas.v23i95.392 (in Arabic).

[15] Al-Zubaidi, A.A., 2022. The Agricultural Reality in Iraq, Challenges and Solutions, Al-Bayan Center for Studies and Planning:, Baghdad, Iraq. (in Arabic).

[16] Hammad, S.A., 2024. Estimating the Impact of The Sectoral Distribution of Credit Granted by Commercial Banks on The Gross Domestic Product and The

Added Value of Agriculture in Iraq. Anbar Journal of Agricultural Sciences. 22(2), 1336–1355. DOI: https://doi.org/10.32649/ajas.2024.150489.1287

[17] Ahmed, S.S., 2021. Turkish Water Policy towards Iraq. Al-Mansour Journal. 35(1), 1–12.

[18] Srayyih, F.H., Alshammari, A.A.I., Muttar, A.K., et al., 2024. Investment Decisions Impact on the Life Cycle of Joint Stock Companies: Insights from the Iraq Stock Exchange. Proceedings of The 2024 International Conference on Decision Aid Sciences and Applications (DASA); 11–12 December 2024; Manama, Bahrain. pp. 1–10.

[19] Calderón, C., Fuentes, R., 2013. Government Debt and Economic Growth. IDB Working Paper Series, No. IDB-WP-424. Available from: https://www.econstor.eu/bitstream/10419/115418/1/IDB-WP-424.pdf (cited 13 November 2024).

[20] Greine, A., Fincke, B., 2009. Public Debt, Sustainability and Economic Growth - Theory and Empirics. Springer International Publishing: Gewerbestrasse, Switzerland. pp. 1–271.

[21] Al-Rawi, A.O., 2018. State Financing and its Economic and Social Effects: An Analytical Study of Public Debt. Dar Al-Kutub and Documents: Baghdad, Iraq. pp. 1–250. (in Arabic).

[22] Saleh, K.B., 2012. Predicting structural imbalances in the Arab economic structure in light of globalization 1985–2030. St. Clements: St. Clements University.

[23] Srayyih, F,H., Al-Rawi, U.M., 2021. The effect of financial sustainability on market value— A study in a sample of firms listed in Iraq's securities market. Review of International Geographical Education Online (RIGEO). 11(5), 4679–4690.

[24] Abd, N.A., Assaf, N.D., Ahmed, B.M., 2019. Measuring and analyzing the factors affecting Iraq's foreign trade with Iran within the framework of the gravity model for the period (2001–2016). Journal of Anbar University for Economic and Administrative Sciences. 11(24), 400–429. (in Arabic)

[25] Farhan, M.F., 2016. Reflection of the balance of payments on inflation in Iraq for the period 2000-2014. The scientific journal of Cihan University - Sulaimani. 1(3), 457–467. (in Arabic)

[26] Al-yasari, M.K.J.K., 2023. The Effect of the degree of economic exposure as an indicator of commercial dependence on the rate of economic growth in the Iraqi economy using the vector autoregressive model (VAR). Iraqi Journal of Economic Sciences. 79, 38–57. (in Arabic)

[27] Zia, A.S., 2020. Analysis of structural imbalances in the productive sectors in Iraq for the period 2004-2018. International Journal of Economic Studies. 3(12), 71–88. (in Arabic)

[28] Ali Al-Anezi, W.H., et al., 2024. The Relationship between the Wheat Market and the Financial Market in Malaysia Using a Dynamic Conditional Correlation Model (DCC-GARCH). Research on World Agricultural Economy. 6(1), 367–380. DOI: https://doi.org/10.36956/rwae.v6i1.1480

[29] Maala, H.K., 2014. The Foreign Trade Gap and the Degree of Exposure of the Iraqi Economy for the Period 1985–2008. Journal of Administration and Economics. 37(100), 1–16. (in Arabic)

[30] Hussein, H.Sh., 2020. Analysis of the Impact of Public Debt on Some Indicators of Economic and Financial Stability in Iraq for the Period 2004–2020 (thesis level). Fallujah, Iraq: University of Fallujah. pp. 1–211.

[31] Al-Saffar, F. H., 2023. Measure and Examine the Impact of Trade Openness on Economic Growth in Iraq. Ibn Khaldun Journal of Studies and Research. 3(6), 401–420. (in Arabic)

[32] Ali, M. H., 2020. Trade policy and growth requirements in the Iraqi economy. Dar Al-Kutub and Al-Watha'iq: Baghdad, Iraq. pp. 1–250.

[33] Ministry of Planning, Central Statistical Organization, 2020. Annual report on Iraqi exports and imports. Available from: https://www.cosit.gov.iq/documents/trade/foreign (cited 10 November 2024).

[34] Najat, A., 2021. Prospects for economic relations between Iran and Iraq. Available from: https://www.bayancenter.org/wp-content/uploads/2022/01/9ygv2.pdf (cited 20 November 2024).

[35] Al-Kubaisi, A.O., Al-Dulaimi, A.A., 2021. Iraqi-Turkish trade relations after 2003, reality and ambition. Journal of Administrative and Economic Sciences, Kirkuk University. 11(2), 282–306.

[36] Asaf, N.D., Ali, S.S., 2021. Iraqi-Turkish trade exchange for the period (2004–2021) and its future prospects in light of alternative scenes. The peer-reviewed North European Academic Journal for Educational and Human Studies and Research. pp. 3–36. (in Arabic)

[37] Abbas, A.N., 2024. Iraqi-Turkish relations, a reading of challenges and opportunities. Available from: https://www.hcrsiraq.net/ (cited 13 November 2024). (in Arabic)

[38] Ahmed, A.K., 2016. The course of Iraqi-Turkish relations after 2003. Journal of International Studies. 64-65, 73-99. (in Arabic)

[39] Hammad, S.A., Outhman, N.Y., Hamad, M.F., et al., 2024. The Impact of Domestic Public Debt on Agricultural Government Investment and Economic Growth: Evidence from Iraqi Between 2004 and 2022. Research on World Agricultural Economy. 5(3), 37–50. DOI: https://doi.org/10.36956/rwae.v5i3.1124