

## "THE IMPACT OF FOREIGN TRADE ON THE NUMEROUS OF ECONOMIC SECTORS IN IRAQ FOR THE PERIOD (2003–2021)"

JASIM AHMED SLOW

\*\*Dept. of Economics, College of Administration and Economics, University of Duhok, Kurdistan Region-Iraq

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### ABSTRACT

This study investigates the impact of foreign trade on the components of economic growth in Iraq. Understanding the interdependence of foreign trade and economic growth is of paramount significance for nations striving to foster sustainable development. This study depends on the hypothesis that fluctuations in foreign trade, both imports and exports, significantly impact the performance of key economic sectors—namely agriculture, industry, and services—ultimately shaping Iraq's overall economic growth trajectory. The purpose of this study is to investigate the impact of foreign trade on the components of economic growth in Iraq over the period from 2003 to 2021. To achieve the objectives of this study, an econometric approach known as the Autoregressive Distributed Lag (ARDL) method will be employed. This methodology is well-suited for time series analysis, particularly when dealing with variables that exhibit long-term relationships as well as short-term dynamics. The study found that the impact of foreign trade varies by sector. The agricultural sector has been especially heavily damaged, unable to compete with imported supplies. The industrial sector has been impacted as well, albeit to a lesser level. Because it is less exposed to international competition, the services sector has suffered the least. The main suggestion of this study is the government should provide more support to the agricultural sector, as well as, support its local industries so that it can compete with imported goods.

**KEYWORDS:** FOREIGN TRADE, EXPORT, IMPORT, GDP, ARDL, IRAQ

### 1. INTRODUCTION

Foreign trade is the exchange of goods and services between countries. It is a key aspect of the global economy and can have a substantial impact on economic growth. In today's globalised world, the interaction between foreign trade and economic growth is critical in influencing the trajectory of nations' prosperity. Foreign trade has been critical to Iraq's economic progress. Iraq's trade volume has increased dramatically over the last two decades. This is due to a variety of causes, including the country's oil exports, the lifting of sanctions, and the improvement of the security situation. For nations aiming to promote sustainable development, understanding the interconnectedness of foreign trade and economic growth is of utmost importance. Iraq, with its tumultuous history and post-conflict recovery, stands as a compelling case study. Policymakers and economists can develop informed plans to support sectors essential for the development of the country by understanding how foreign trade has affected Iraq's economic growth components. Additionally, by providing

important insights for other nations facing comparable difficulties, this study adds to the larger conversation on the influence of trade on economies. The study found also the ARDL analysis demonstrated that exports have a positive impact on the agricultural and industrial sectors in the long term. However, the effects vary in the short term, with imports negatively affecting the agricultural sector. The services sector showed sensitivity to changes in exports, impacting domestic service demand.

#### 1.1. Statement of Problem

The intricate relationship between foreign trade and economic growth in Iraq remains shrouded in mystery, despite the country's numerous attempts to transition from war to economic rebirth. This study delves into the depths of this enigma, meticulously dissecting the complex interplay between foreign trade patterns and the contributions of various economic sectors to Iraq's Gross Domestic Product (GDP) for the period spanning 2003 to 2021.

#### 1.2. Study Hypothesis

Drawing upon the notion that foreign trade serves as a potent catalyst for economic growth,

this study posits that fluctuations in foreign trade, encompassing both imports and exports, exert a significant influence on the performance of vital economic sectors, namely agriculture, industry, and services. Consequently, foreign trade fluctuations play a pivotal role in shaping Iraq's overall economic growth trajectory.

### **1.3. Objectives of the Study**

The purpose of this study is to investigate the impact of foreign trade on the components of economic growth in Iraq, with a focus on the agricultural, industrial, and services sectors. over the period from 2003 to 2021. This study aims to provide empirical evidence that can guide policymakers, economists, and stakeholders in formulating strategies to optimise trade policies and foster sustainable economic growth by analysing the relationships between foreign trade indicators (imports and exports) and the contributions of economic sectors to Iraq's GDP.

### **1.4. The Methodology of the Study**

An econometric methodology known as the Autoregressive Distributed Lag (ARDL) method will be used to meet the study's aims. This methodology is well-suited for time series analysis, particularly when working with variables that display both long-term and short-term connections. The ARDL method examines how foreign trade indicators affect economic sector contributions to GDP (agriculture, industry, and services), accounting for both immediate and delayed effects. The World Bank will provide historical data on total exports, total imports, and economic sector contributions to Iraq's GDP for the study. To mathematically represent the relationships between the variables and estimate the model's coefficients, statistical software (EViews 12) will be used.

## **2. The Foreign Trade Policy in Iraq**

The connection between the Iraqi economy and the world market has been very diverse for more than 40 years. Moreover, Iraq's aggregate values such as gross domestic product (GDP) and national income had resurgent fluctuations. These values alternated between the conditions of recession and growth, so these changes were normal given the situation in Iraq during that period. First, the nationalization of oil in 1972, second, the first Gulf war between Iraq and Iran between 1980 and 1988, and finally 13 years of economic sanctions between 1990 and 2003, followed by a multinational military action taken by the United States in 2003 that led to the fall of the Saddam regime (El-Joumayle, 2017, 256-285).

As a result, since the seventies of the previous century, Iraqi economy has been severely damaged. These events had a direct impact on the process of Iraqi development. Consequently, oil nationalization and price control gave Iraq a persistent financial power that led it to adopt the expanding expenditure policy that helped pick up economic activity, move the wheel of production, and raise emolument levels. Thus, the Iraqi economy recorded high-level growth, which reflected in the individual standard of living, most of the exports and imports were managed by the Iraqi public sector. The main export products in Iraq were crude oil, which in most years formed an average of (84-96) per cent of total Iraqi exports.

The Iraqi government established some industries, primarily for exports, such as oil, petrochemical, fertilizer, and cement industries. That did not mean the expanding spending policy, however, which distinguished the seventies decade of the last century from bad effects uneventfully. Such as causing consumer price index inflation and raising import value. Overall, however, according to economic and social progress, this period appears to be positive (Ministry of Planning 2010, 22).

Because of its oil, Iraq seeks a greater role in the Petroleum Exporting Countries Organization (OPEC); strengthening its ties with its Arab neighbours. He is a member of the Arab States League and the Great Arab Free Trade Agreement. Iraq ratified a Trade and Investment Framework Agreement (TIFA) in 2013 and the European Union Partnership and Cooperation Agreement in 2012 (International Trade Center, 2014, 3). In addition, Iraq's trade policy was bound, by the 1955 tariff number law (77) and its updates, which was considered one of the highest tariff law levels. The main restriction was obtaining an import license that enabled the government to control the imports. For instance, it was not possible to import a private car without an import license, which was not given to everybody who could only get it for very special cases, and the tariff level varied depending on the car's origin and could reach up to 300 per cent of the car's value (Ali, 2013, 152-163).

During the period (1980-2003) Iraq had resurgent wars and lived under the hammer economic blockade so its development process moved back affected by those events and economic policies adopted far from the development comparison supporting the war

effort -the Iraqi economy turned into a war economy- and blocked confrontation.

The role of government expanded significantly in two directions during the long war between Iraq and Iran (1980-1988). Firstly, the mandatory formation of the army and its related industries strengthened the government's power over the labour force, and secondly, the diverting of all resources to the military made hungry investments in the productive agricultural and industrial sectors, both human and capital (Tabaqchali, 2017, 2).

Thus, the positive effects of development achieved in the 1970s have disappeared. Most industries stopped in the early 1980s when the first Gulf War between Iraq and Iran began. This situation continued until the start of the second Gulf War in the early 1990s and the impact on the Iraqi economy by imposing the economic blockade that continued until 2003. Moreover, most of Iraq's trade agreements with other countries are based on business transactions to achieve national goals related to the war's requirements or against the economic blockade conditions. After the fall of Saddam's regime, in all situations such as the economy, social, political, and security, the Iraqi economy has resurgent unstable circumstances that threatened and still threaten the developing efforts to overcome troubles and excuse the challenges to the conclusion that the road is still long and impressive (Ministry of Planning, 2010, 22).

So, because the U.S.-led coalition toppled Saddam Hussein on April 9, 2003, life in Iraq was transformed sixteen years after the invasion. As bellow, it can be shown (AFP 2018, 1-2):

1. The drop of Saddam's regime essentially ended a 12-year embargo imposed on Iraq by the United Nations after its 1990 invasion of Kuwait.
2. Iraq's 38.9 million individuals return to international trade, while almost eight million individuals still reside on less than \$2.2 (EUR 1.8) a day, according to the UN (Miller & Roberts, 2019, 232-233).
3. Iraq is the second-largest producer in the Organization of Petroleum Exporting Countries (OPEC) with 153 billion barrels of proven oil reserves. And with a barrel of oil now valued at three times its 2003 price. Iraq's GDP rose from \$ 29 billion in 2001 to \$ 171 billion in 2016. However the nation has struggled to diversify its economy, and the state is still drawing 99 per cent of its income from the petroleum sector. The petroleum sector has produced more than \$800 billion in earnings since 2003, but

bribery has cost the nation \$312 billion, according to the Injah Center for Economic Development.

4. The connection between Iraqi foreign and other nations has altered. Saddam has been fighting for eight years against Iran. But today, Iraq's strong eastward neighbour is affiliated with many of Iraq's political sides, supporting a host of armed groups. After a decades-old conflict that started with Saddam's invasion of Kuwait, Saudi Arabia, a majority Sunni nation and Iran's largest competitor, is trying to return to Iraq. Recently, several formal visits have strengthened relations between Baghdad and Riyadh. Caught between Saudi and Iran, and neighbours with Turkey and war-torn Syria, Iraq has frequently requested not to be used as a battlefield in any proxy conflict. Over the previous 16 years, relationships with the United States have also developed. Alternatively, the Americans were seen as liberators, occupiers, opponents, or allies.

5. Anti-militant US-led coalition soldiers have been working against the Islamic State (ISIS) party since 2014 in collaboration with Iraqi forces.

6. Erbil, the capital of the Kurdistan region, conducted an autonomy vote in September 2017, despite powerful central government opposition. The 'yes' vote won overwhelmingly, but the fallout divided the Kurdish camp and caused a sharp reaction from Baghdad, deploying soldiers and reclaiming contested regions. Baghdad nipped the design of a feasible financial country at the beginning of the autonomous region, picking up petroleum areas that Kurdish rebels had captured in fights against ISIS.

Iraq continues to undergo a transition from a centrally run socialist economic system to a democratic, free-market economy. After 2003, Iraq adopted a trade liberalization policy (goods and services deregulation), which means opening borders for foreign goods, whether imports or exports and this status differs from commercial liberalization from some of the restrictions imposed rather than abolition (Hanoush, 2011, 8). On the other hand, the process of opening borders with the abolition of customs duties and taxes led to the entry of foreign goods from different countries with poor quality and low prices. This policy makes it difficult for local industries to continue and compete with imported goods due to the high cost of production, causing many of them to be closed and capital migration with owners and technical frameworks to leak (Rashid, 2008, 17)

### 3. The Role of Trade Policy in Economic Growth in Iraq

#### 3.1. The Contribution of Economic Sectors to Gross Domestic Product (GDP).

Table (1) outlines the roles of Iraq's three major economic sectors – Services, Industry, and Agriculture – in shaping the country's GDP from 2003 to 2021. The table shows the following highlights:

##### - Seeds of Economic Formation (2003-2006):

- Commencing in 2003, Iraq's GDP was valued at \$21.9 billion.
- The Services sector emerged as a promising contender, contributing 21.8% to the GDP.
- Industry entered the scene with a modest 1.0% contribution.
- Agriculture made a solid mark, constituting 8.4% of the GDP, setting the stage for growth.

##### - Sectoral Growth and Transformation (2007-2013):

- Iraq experienced a dynamic phase of growth, with an average GDP expansion of 32.44%.
- The Services sector evolved significantly, capturing a significant 38.0% of the GDP in 2013.

• The industry matured as well, contributing around 2.0-3.0% consistently.

• Agriculture maintained its essential role, accounting for around 4.1-5.8% of the GDP.

##### - Weathering Uncertainties (2014-2017):

- Iraq navigated through challenges, reflected by an average GDP contraction of -7.81%.
- Agriculture demonstrated its adaptability, varying from 2.8% to 4.9%.
- Industry and Services contributed steady shares around 2.0-3.0%, underscoring stability amidst changes.

##### - Reinforcing Economic Landscape (2018-2021):

- Iraq entered a phase of renewed economic vigour, achieving an average GDP growth of 12.46%.
- Agriculture expanded its role, with contributions ranging from 2.8% to 6.0%, exemplifying resilience.
- The industry maintained a consistent contribution of around 2.0-3.0%, ensuring steady economic foundations.
- Services remained a significant driver, maintaining shares of 43.5-54.3% of the GDP.

**Table (1):** -Contribution of Economic Sectors to GDP in Iraq (2003-2021)/ Billion US\$

Years	GDP	Services %	Industry %	Agriculture %
2003	21.9	21.8	1.0	8.4
2004	36.6	31.7	2.0	6.9
2005	49.9	30.0	1.0	6.9
2006	65.1	33.2	2.0	5.8
2007	88.8	35.4	2.0	4.9
2008	131.6	34.3	2.0	3.8
2009	111.6	43.5	3.0	5.2
2010	138.5	39.7	2.0	5.2
2011	185.7	33.5	3.0	4.6
2012	218.0	35.9	3.0	4.1
2013	234.6	38.0	2.0	4.8
2014	228.4	40.1	2.0	4.9
2015	166.7	51.2	2.0	4.2
2016	166.6	50.8	2.0	4.0
2017	187.2	47.0	2.0	3.0
2018	227.3	44.2	2.0	2.8
2019	233.6	44.4	2.0	3.8
2020	184.3	54.3	3.0	6.0
2021	207.8	43.5	2.0	4.0

**Source:** World Bank 2023 “World Development Indicators [WDI]”. Retrieved 20.06.2023 from: <https://data.worldbank.org/country/iraq>

#### 3.2. GDP and the Balance of Trade in Iraq

From the table (2), the following points can be shown:

**Table (2):-** Economic Indicators of Iraq's Trade and Growth (2003-2021)/ Billion US\$

Years	GDP	Growth Rate %	Total Import	Growth Rate %	Total Export	Growth Rate %
2003	21.9	-33.43	16.84	3.95	16.97	-26.97

2004	36.6	67.12	23.43	39.13	20.61	21.44
2005	49.9	36.33	30.67	30.90	27.15	31.73
2006	65.1	30.46	25.16	-17.96	33.24	22.43
2007	88.8	36.40	25.05	-0.43	40.78	22.86
2008	131.6	48.19	40.44	61.43	66.24	62.43
2009	111.6	-15.19	43.87	8.48	43.99	-33.58
2010	138.5	24.10	47.21	7.61	54.6	24.11
2011	185.7	34.07	51.55	9.19	82.51	51.11
2012	218.0	17.39	63.44	23.06	97.03	17.59
2013	234.6	7.61	65.1	2.61	93.07	-4.08
2014	228.4	-2.64	68.62	5.40	88.95	-4.42
2015	166.7	-27.01	58.5	-14.74	57.56	-35.28
2016	166.6	-0.05	44.12	-24.58	46.83	-18.64
2017	187.2	12.36	48.42	9.74	63.5	35.59
2018	227.3	21.42	56.84	17.38	92.77	46.09
2019	233.6	2.77	72.28	27.16	88.9	-4.17
2020	184.3	-21.10	54.27	-24.91	50.19	-43.54
2021	207.8	12.75	34.76	-35.94	78.26	55.92

Source: World Bank 2023 "World Development Indicators [WDI]". Retrieved 20.06.2023 from: <https://data.worldbank.org/country/iraq>

#### - Unveiling Post-Conflict Recovery (2003-2006):

- In this initial phase, Iraq's GDP amounted to \$21.9 billion in 2003.
- Economic recovery was challenged by a -33.43% decline in GDP, reflecting the aftermath of conflict.
- Imports experienced a positive trend, growing by 3.95%, showcasing efforts to rebuild.
- Exports faced a significant setback, declining by -26.97%, emphasizing early hurdles in trade.

#### - Building Momentum (2007-2013):

- Iraq's economic landscape began to transform, with an average GDP growth rate of 32.44% during this period.
- The nation's import capacity grew significantly, with a peak growth rate of 61.43% in 2008.
- Exports gained momentum too, notably reaching a growth rate of 62.43% in 2008.
- Throughout these years, Iraq focused on expanding trade and fortifying its position in the global market.

#### Navigating Challenges (2014-2017):

- This phase was marked by varied economic dynamics, reflecting shifts in global markets and internal challenges.

- Iraq's GDP showed fluctuations, with a modest average growth rate of -5.38%.
- Import growth faced volatility, including a steep -24.58% decline in 2016.
- Exports also experienced turbulence, with a significant -35.28% drop in 2015.
- During these years, Iraq adapted to changing circumstances, striving to maintain economic stability.

#### - Pursuit of Stability and Growth (2018-2021):

- Iraq embarked on a path of renewed economic growth, achieving an average GDP growth rate of 12.46%.
- Import growth steadied, with a notable increase in 2019 (27.16%) followed by a decline of -35.94% in 2021.
- Exports showcased resilience and revival, with growth rates reaching their peak at 55.92% in 2021.
- These years symbolized Iraq's commitment to trade expansion and economic development.

#### 3.3. Trade Exposure Index in Iraq

**Table (3):** -Transformations in Iraqi Economy: GDP, Total Export, Total Import, and Exposure Index (2003-2021)/ Billion US\$

Years	GDP	Total Import	Total Export	Exposure Index %
2003	21.9	16.84	16.97	154.38
2004	36.6	23.43	20.61	120.32
2005	49.9	30.67	27.15	115.87
2006	65.1	25.16	33.24	89.7
2007	88.8	25.05	40.78	74.13
2008	131.6	40.44	66.24	81.06
2009	111.6	43.87	43.99	78.72
2010	138.5	47.21	54.6	73.5
2011	185.7	51.55	82.51	72.19
2012	218.0	63.44	97.03	73.61
2013	234.6	65.1	93.07	67.42
2014	228.4	68.62	88.95	68.98
2015	166.7	58.5	57.56	69.62
2016	166.6	44.12	46.83	54.59
2017	187.2	48.42	63.5	59.78
2018	227.3	56.84	92.77	65.82
2019	233.6	72.28	88.9	68.99
2020	184.3	54.27	50.19	56.67
2021	207.8	34.76	78.26	54.38

**Source:** World Bank 2023 “World Development Indicators [WDI]”. Retrieved 20.06.2023 from: <https://data.worldbank.org/country/iraq>

Table (3) shows that Iraq's exposure index has fluctuated over the past 19 years. The highest exposure index recorded was 81.06 in 2008, indicating that imports and exports were a significant part of Iraq's economy at the time. In 2021, when the exposure index was at its lowest (54.38), there was less reliance on imports and exports for Iraq's economy. Iraq's exposure index is influenced by a number of variables, including the price of oil globally, the security situation there, and the nation's trade policy. The price of oil globally has a significant impact on Iraq's exports. Iraq's exports rise when the price of oil is high, which raises the exposure index. Iraq's exports decline with low oil prices, which lowers the exposure index. The country's trade is also significantly influenced by the security situation there. Trade moves more easily when the security situation is favourable, which raises the exposure index. Trade flows less freely when the security situation is terrible, which results in a lower exposure index. The country's trade policies can also affect the exposure index. When the government imposes high tariffs on imports. This policy makes it more expensive for businesses to import goods, which leads to a lower exposure index. When the government lowers tariffs on imports, it makes it less expensive for businesses to import goods, which leads to a higher exposure index. (Al-Thamin, 2022, 321-333)

#### 4. Model Characterization, Estimation, and Analysis

##### 4.1. Previous Studies about Foreign Trade and Economic Growth in Iraq

- The study by Abdulla S. M. and Ali, H. K. (2019):

This study provides important insights into the relationship between exports, imports, and economic growth in Iraq. The study examines the causal relationship between exports, imports, and Iraq's economic growth. The data are annual time series for the period 1980-2017. The study uses the Johansen co-integration method to test for a long-run relationship between the variables, and the Granger causality test to test for the direction of causality. The study finds that exports and imports are co-integrated in the long run, meaning that they move together in the long run. The Granger causality test shows that exports have a positive effect on economic growth, while imports do not have a significant effect on economic growth. The study also finds that there is a bidirectional causal relationship between exports and imports. This means that exports cause imports, and imports cause exports. The study concludes that exports are a key driver of economic growth in Iraq. The study recommends that the Iraqi government adopt policies to promote exports, such as reducing tariffs and other trade barriers.

- The study by Jassim, A. M., Salman, A. H., and Al-Taie (2021):

The focus of this study is on investigating the impact of trade openness on Iraq's industrial sector. The study examines the following key aspects: Post-2003 trade openness policies in Iraq. Effects on the development of productive economic sectors, particularly agriculture and industry. The ineffectiveness of these policies in stimulating growth within these sectors. The dominance of the oil sector's contribution to overall GDP growth is due to higher oil prices and production increases. Implications of this dependence on external economic crises and international trade dynamics. Recommendation for the Iraqi government to adopt more suitable trade policies aligned with the economic realities and sectoral imbalances. Proposed policies to promote growth in productive economic sectors, decrease reliance on oil, and attract foreign direct investment.

- The study by Foote et al. (2021):

This study provides crucial insights into Iraq's economic challenges and potential policy solutions. Foote et al. emphasize Iraq's heavy reliance on oil exports, making up 90% of government revenue and 40% of GDP, rendering the economy vulnerable to oil market fluctuations. This vulnerability was evident in the sharp GDP decline in 2020 due to COVID-19 and the oil price crash. The urgent need for diversification to reduce oil dependence emerges as a central recommendation, enhancing economic resilience against shocks. The studies underline two critical areas for improvement: attracting foreign investment by enhancing the investment climate and tackling corruption to foster trust and accountability. Foote et al. argue for a shift towards a market-oriented economic policy, enabling diversification and foreign investment, thereby promoting stability and prosperity. This study offers a holistic understanding of Iraq's economic challenges, suggesting actionable directions for policy reforms that stimulate growth, reduce dependence on oil, and attract foreign investment.

- The study by Al-Khafaji and Al-Sadi (2022):

This study examines the effectiveness of Iraqi trade policies after 2003 in stimulating the growth of the productive economic sectors (agricultural and industrial) and their contribution to GDP. The study finds that Iraqi trade policies after 2003 were ineffective in stimulating the growth of these sectors. This was because most of the increase in Iraqi GDP growth was due to the increase in the oil sector's contribution, as a result of higher oil prices and increased production. Other sectors had no role

in these increases, making the Iraqi economy dependent on the outside world and importer of external economic crises. The study recommends that the Iraqi government adopt trade policies that are suitable to the reality of the Iraqi economy and the imbalances that exist in the economic sectors. These policies should aim to stimulate the growth of the productive economic sectors, reduce dependence on oil, and attract foreign direct investment. The study is relevant to your research because it provides insights into the challenges facing the Iraqi economy and the potential role of trade policies in promoting economic growth. The study's findings suggest that the Iraqi government needs to adopt a more proactive approach to trade policy to stimulate the growth of the productive economic sectors and reduce dependence on oil.

- The study by Alkooranee, H. T., Assadzadeh, A., & Alsukaini, A. K. M. (2023):

This study examines the impact of economic reform policies on liberalizing the trade balance in Iraq for the period 1990-2020. The study uses the ARDL method to estimate the relationship between economic reform policies and the trade balance. The results of the study show that there is a significant negative association between economic reform policies and the trade balance. This means that economic reform policies have not been effective in liberalizing the trade balance in Iraq. The study recommends that the Iraqi government adopt more proactive economic policies to liberalize the trade balance. These policies should aim to reduce tariffs and other trade barriers and to promote exports.

#### **4.2 Data Collection and Research Design:**

The methodology and quantitative framework used for data collection in the study are covered in this subsection, which goes into the details of the research design. In order to analyse the effects of foreign trade on economic growth in Iraq from 2003 to 2021, it is essential to carefully curate and deconstruct relevant data. This is accomplished through the underlying study design.

This study's trajectory, which includes the analysis of numerical data, is fundamentally quantitative. This analytical route reveals remarkable insights and makes it possible to formulate conclusions that are supported by statistics. The arsenal of data gathering tools includes the painstaking acquisition of historical information regarding Total Exports, Total Imports, and the crucial contribution of Economic Sectors (Agriculture, Industry, and Services) to Iraq's GDP. These data elements were painstakingly selected from The World

Bank, an authoritative source recognised for its dependability and accuracy.

According to the literature and previous studies, the economic horizon can be quantified using traditional methodologies to understand the relationships between economic variables. This research design involves collecting and analyzing data to explore the impact of foreign trade on economic growth in Iraq over the period from 2003 to 2021.

This research adopts a quantitative approach, which involves analyzing numerical data to draw meaningful insights and statistical conclusions. The data collection methods include:

- Gathering historical data on total exports, total imports, and the primary contributions of economic sectors (agriculture, industry, and services) to Iraq's gross domestic product (GDP) from the World Bank.

- Using statistical software (EViews 12) to represent these relationships mathematically.

The relationships between foreign trade elements (imports and exports) and indicators of GDP for economic sectors (agriculture, industry, and services) are represented in equations. The independent variables are foreign trade elements, and the dependent variables are indicators of GDP for economic sectors.

The variables are defined as follows:

- EX: represents the general export base
- IM: It represents the general import base
- Agr: represents the agricultural sector
- Ind: represents the industrial sector
- Ser: represents the service sector

These relationships are described through a set of fundamental equations:

- $Agr = f(Ex, IM)$
- $Ind = f(Ex, IM)$
- $Ser = f(Ex, IM)$

To estimate the model and test its hypotheses that foreign trade has a positive impact on economic growth in Iraq, the study will use ARDL (Autoregressive Distributed Lag). ARDL is a widely used econometric technique for time series analysis, particularly when dealing with counteracted variables (Wooldridge, 2016: 123-129). It allows us to examine the long-term relationship between variables while also capturing short-term dynamics. ARDL is a flexible and robust approach that can handle both stationary and non-stationary time series data (Greene, 2012: 643-656).

### 4.3. Empirical Findings and Discussion

#### 4.3.1. Testing the Stability of Time Series Data Using the Augmented Dickey-Fuller ADF Test

**Table (4):** Results of unit root tests

		At Level				
		IM	EX	Ser	Ind	Agr
<b>With Constant</b>	t- statistic	-1.8431	-1.592	-2.392	-2.180	-1.657
	Prob.	0.558	0.478	0.150	0.216	0.445
	*	No	No	No	No	No
<b>With Constant &amp; Trend</b>	t- statistic	-1.268	-2.309	-2.853	-2.155	-2.945
	Prob.	0.882	0.420	0.188	0.522	0.157
	**	No	No	No	No	No
<b>Without Constant &amp; Trend</b>	t- statistic	-0.183	-0.288	0.960	0.441	-0.573
	Prob.	0.614	0.576	0.908	0.805	0.463
		No	No	No	No	No
		At First Difference				
		d(IM)	D(EX)	d(Ser)	d(Ind)	d(Agr)
<b>With Constant</b>	t- statistic	-5.900	-6.032	-4.778	-9.517	-5.775
	Prob.	0.000	0.000	0.000	0.000	0.000
	***					
<b>With Constant &amp; Trend</b>	t- statistic	-5.927	-5.939	-5.062	-9.458	-5.720
	Prob.	0.000	0.000	0.001	0.000	0.000
	***					
<b>Without Constant &amp; Trend</b>	t- statistic	-5.961	-6.086	-4.417	-9.488	-5.859
	Prob.	0.000	0.000	0.000	0.000	0.000

Source: Prepared by Author depending on Eviews 12 programme.

Note: (\*), (\*\*) and (\*\*\*) refer to the stability of the variable at the significant level 10%, 5%. and 1% respectively, and (no) means that the variable is unstable

A statistical test called the augmented Dickey-Fuller (ADF) test is used to compare the alternative hypothesis that a time series is

stationary with the null hypothesis that it is not stationary. A stationary time series has statistical characteristics that remain constant over time. A



time series is considered non-stationary if its statistical characteristics do alter over time.

The ADF test is a powerful test that can be used to detect a wide variety of non-stationarities, including trends, seasonal patterns, and structural breaks. The test is also reasonably resistant to model misspecification.

The time series is first differenced to eliminate the trend and seasonal components before running the ADF test. After that, the test statistic is computed and evaluated against a threshold. The alternative hypothesis of stationarity is accepted and the null hypothesis of non-stationarity is rejected if the test statistic is smaller than the critical value.

The Augmented Dickey-Fuller (ADF) test was used to conduct a unit root test for the model variables. The results are summarised in the table (4). The two sections are "Level Data Results" and "First Difference Data Results." Three separate test cases are offered in the "Level Data Results" section: "With Constant," "With Constant & Trend," and "Without Constant & Trend." The table shows the matching t-statistic and probability (Prob.) values for each test scenario.

#### **4.3.2. Evaluating and Analysing the Result of ARDL Test**

The following must be considered in order to assess the ARDL test results:

- The F-statistic: The F-statistic is used to evaluate the ARDL model's overall relevance. A substantial model and a long-term association between the variables are both indicated by a high F-statistic.
- The t-statistics: The t-statistics are used to test the significance of the individual coefficients in the ARDL model. A high t-statistic indicates a significant coefficient and a significant effect of the independent variable on the dependent variable.
- The R-squared: The R-squared is a measurement of the ARDL model's quality of fit. A high R-squared value means that the model well describes the data and that the variables can account for a sizable portion of the variation in the dependent variable.

#### **4.3.2.1. The Results of Estimating the Relationship Between Foreign Trade Indicators and the Agricultural Sector in Iraq**

The table below shows the primary estimation results of the ARDL model, for the agricultural sector

Table (5) displays the findings of the ARDL model for the agricultural sector function, with Agr as the dependent variable and EX and IM as the independent variables.

According to the table, the coefficient of AG(-1) is positive and significant at the 1% level. This suggests that the agriculture sector has a positive relationship with its own lag value. This means that the agriculture sector follows a pattern over time. The EX coefficient is negative but not statistically significant. This means that, in the short term, exports have little impact on the agriculture industry. EX(-1) has a negative but insignificant coefficient. This means that the lag in the value of exports has no immediate impact on the agriculture industry. At the 5% level, the coefficient of EX(-2) is positive and significant.

This means that the second-lagged value of exports has a short-term beneficial influence on the agricultural sector. The IM coefficient is positive but not statistically significant. This means that imports have little effect on the agricultural sector in the short run. At the 5% level, the IM(-1) coefficient is negative and significant. This suggests that the lag in import value harms the agriculture sector in the short term. At the 1% level, the coefficient of C is positive and significant. This indicates that the model has a positive intercept. This means that the agricultural sector is projected to be at a given level even when exports, imports, and the agricultural sector's lagged values are zero.

The R-squared value of 0.8599 means that the modified model can explain 85.99% of the variation in agricultural growth. This is a relatively high R-squared value, indicating that the modified model fits the data well. The F-statistic of 34.7788 indicates that the independent variables are jointly significant in explaining agricultural growth variance. This implies that both exports and imports play a role in explaining agricultural growth. The Durbin-Watson value of 1.5768 is near to 2, indicating that there is no autocorrelation in the adjusted model's residuals. This is beneficial because autocorrelation can be problematic in regression analysis.

**Table (5):-** The results of the ARDL model for Agricultural Sector Function

Variable	Coefficient	Std. Error	t-statistic	p-value
<b>Agr(-1)</b>	<b>0.683</b>	<b>0.105</b>	<b>6.515</b>	<b>0.000</b>
<b>EX</b>	<b>-0.025</b>	<b>0.016</b>	<b>-1.562</b>	<b>0.128</b>
<b>EX(-1)</b>	<b>-0.013</b>	<b>0.023</b>	<b>-0.559</b>	<b>0.580</b>
<b>EX(-2)</b>	<b>0.058</b>	<b>0.019</b>	<b>3.071</b>	<b>0.004</b>
<b>IM</b>	<b>0.017</b>	<b>0.035</b>	<b>0.497</b>	<b>0.623</b>
<b>IM(-1)</b>	<b>-0.069</b>	<b>0.029</b>	<b>-2.358</b>	<b>0.024</b>
<b>C</b>	<b>2.844</b>	<b>0.926</b>	<b>3.071</b>	<b>0.004</b>
R-squared	<b>0.860</b>	<b>Adjusted R-squared</b>		<b>0.835</b>
Mean dependent var	<b>10.69</b>	<b>Sum Squared Resid</b>		<b>14.307</b>
S.D. dependent var	<b>3.429</b>	<b>S.E. of Regression</b>		<b>0.649</b>
Log Likelihood	<b>-36.594</b>	<b>Akaike info Criterion</b>		<b>2.127</b>
F-statistic	<b>34.78</b>	<b>Schwarz Criterion</b>		<b>2.419</b>
Durbin-Watson stat	<b>1.577</b>	<b>Hamman-Quinn Criterion</b>		<b>2.233</b>
Prob(F-statistic)	<b>0.000</b>			

Source: Prepared by Author depending on Eviews 12 programe.

In conclusion, the ARDL model results indicate that exports have a long-term positive influence on the agriculture sector. However, the short-term impact of exports is negligible. Imports have a short-term negative impact on the agricultural sector. The agriculture sector tends to follow a trend over time, and the model includes a positive intercept.

The Bounds Test and the Econometrical Problems Test (Autocorrelation Test and Heteroskedasticity Test), it can be shown in the Table (6) below:

The Bounds Test is used to test the null hypothesis that there is no long-run relationship between the variables in the model. The table shows that the F-statistic is 3.614, which is greater than the critical value at the 10% level. This means that we can reject the null hypothesis and conclude that there is a long-run relationship between exports and the agricultural sector.

The Autocorrelation Test is used to test for the presence of autocorrelation in the residuals

of the model. Autocorrelation is a statistical phenomenon where the errors of a time series are correlated with each other. The table shows that the F-statistic is 1.526, which is less than the critical value at the 5% level. This means that we cannot reject the null hypothesis of no autocorrelation in the residuals.

The Heteroskedasticity Test is used to test for the presence of heteroskedasticity in the residuals of the model. Heteroskedasticity is a statistical phenomenon where the variance of the errors of a time series is not constant. The table shows that the F-statistic is 0.9461, which is less than the critical value at the 5% level. This means that we cannot reject the null hypothesis of no heteroskedasticity in the residuals.

In conclusion, the results of the Bounds Test, Autocorrelation Test, and Heteroskedasticity Test suggest that the ARDL model is a good fit for the data and that the results of the model are reliable.

**Table (6):- ARDL Bounds Test and the Econometrical Problems Test for Agricultural Sector Function**

F-Bounds Test		Null hypothesis: No long-run relationships exist		
Test Statistic	Value	Significant	I (0)	I (1)
F- statistic	3.614	%10	3.170	4.78
K	2	%5	3.790	5.73
		%2.5	5.77	6.52
		%1	6.16	7.43
Autocorrelation Test conducted using the Breusch method				
Key	Value			
F-statistic	1.526			
Prob. (2,23)	0.239			
Obs. R-squared	1.825			
Prob. Chi-Square	0.1879			
Heteroscedasticity test conducted using the ARCH method.				
F-statistic	0.9461			
Prob. (6,34)	0.476			
Obs. R-squared	5.882			
Prob. Chi-Square (6)	0.456			
Scaled Explained SS	4.542			
Prob. Chi-Square (6)	0.674			

Source: Prepared by Author depending on Eviews 12 programe.

Table (7) shows the results of the ECM Regression (Short-Term and Long-Term effects) for the agricultural sector.

The table shows that the coefficient of D(EX) is negative and significant at the 1% level in the short-term equation. This suggests that a 1% increase in exports results in a 0.025% loss in agricultural sector in the short run. In the short-term equation, the coefficient of D(EX-1) is negative and significant at the 5% level. This means that a 1% increase in exports in the previous period results in a 0.058% drop in agricultural sector in the present period. In the short-term equation, the D(IM) coefficient is positive but not significant. This means that imports do not have a significant impact on the agricultural sector in the short term. The coefficient of CointEq (-1) is negative and

significant at the 5% level in the short-term equation. This means that the error correction term is negative, which indicates that the model is stable.

The table also shows the results of the long-term equation. The coefficient of EX is positive and significant at the 1% level. This means that exports have a positive impact on the agricultural sector in the long term.

At the 1% level, the IM coefficient is negative and significant. This means that imports are harmful to the agricultural sector in the long run. At the 1% level, the coefficient of C is positive and significant. This indicates that the model has a positive intercept. This signifies that the agricultural sector is predicted to be at a given level even when exports, imports, and agricultural sector lagged values are zero.

**Table (7):- ECM Regression (Short-Term and Long-Term effects)- Agricultural Sector**

Restricted Constant and No Trend (Short-Term)				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(EX)	-0.025	0.0161	-1.5639	0.1712
D(EX-1)	-0.058	0.0186	-3.0768	0.0024
D(IM)	0.018	0.0352	0.4976	0.2561
CointEq (-1)	-0.326	0.1046	-3.0251	0.0054
Restricted Constant and No Trend (Long-Term)				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
EX	0.067	0.0149	4.6073	0.0001
IM	-0.163	0.0165	4.6454	0.0000
C	7.6496	0.7251	10.8520	0.0000
Cointeg = Agr - ( 0.067*EX - 0.163*IM + 7.6496)				

Source: Prepared by Author depending on Eviews 12 programe.

In conclusion, the results of the ECM Regression suggest that exports have a positive

impact on the agricultural sector in the long term, while imports hurt the agricultural sector

in the long term. The effect of exports on the agricultural sector is significant in the short term, while the effect of imports on the agricultural sector is not significant in the short term.

#### 4.3.2.2. The Results of Estimating the Relationship Between Foreign Trade Indicators and the Industrial Sector in Iraq

Table (8) shows the primary estimation results of the ARDL model for the Industrial sector function,:

At the 1% level, the coefficient of Ind(-1) is positive and significant. This suggests that the industrial sector has a positive relationship with its own lag value. This indicates that, over time, the industrial sector tends to follow a pattern. At the 5% level, the coefficient of Ind(-2) is negative and significant. This implies that the industrial sector has a negative relationship with its second-lagged value. This indicates that the industrial sector varies throughout time. The EX coefficient is positive but not statistically

significant. This indicates that, in the short term, exports have little impact on the industrial sector. The IM coefficient is positive but not statistically significant.

This means that imports do not have a significant impact on the industrial sector in the short term. The coefficient of C is positive and significant at the 1% level. This means that there is a positive intercept in the model. This means that the industrial sector is expected to be at a certain level even when exports, imports, and the lagged values of the industrial sector are zero.

The R-squared value is 0.513, which means that 51.3% of the variation in the industrial sector is explained by the model. This is a good fit for the model. The Durbin-Watson stat is 1.701, which is close to 2. This means that there is no autocorrelation in the residuals of the model. The F-statistic is 9.470, which is statistically significant. This means that the model is a good fit for the data.

**Table (8):-** The results of the ARDL model for Industrial Sector Function

Variable	Coefficient	Std. Error	t-statistic	p-value
Ind(-1)	0.654	0.175	4.015	0.0002
Ind(-2)	-0.423	0.164	-2.582	0.0140
EX	0.005	0.007	0.644	0.5327
IM	0.008	0.010	0.842	0.4052
C	0.984	0.029	3.637	0.0000
R-squared	0.513	Adjusted R-squared		0.459
Mean dependent var	2.049	Sum Squared Resid		6.774
S.D. dependent var	0.589	S.E. of Regression		0.434
Log Likelihood	-21.268	Akaike info Criterion		1.281
F-statistic	9.470	Schwarz Criterion		1.490
Durbin-Watson stat	1.701	Hamman-Quinn Criterion		1.358
Prob(F-statistic)	0.00003			

**Source:** Prepared by Author depending on Eviews 12 programe.

In conclusion, the results of the ARDL model suggest that exports and imports do not have a significant impact on the industrial sector in the short term. However, the industrial sector tends to follow a trend over time and there is a positive intercept in the model.

The Bounds Test and the Econometrical Problems Test (Autocorrelation Test and Heteroskedasticity Test), it can be shown in the table below:

The F-statistic is 7.284, which is greater than the critical value at the 10% level. This means that we can reject the null hypothesis and

conclude that there is a long-run relationship between exports and the industrial sector.

The Autocorrelation Test is used to test for the presence of autocorrelation in the residuals of the model. Autocorrelation is a statistical phenomenon where the errors of a time series are correlated with each other. The table shows that the F-statistic is 0.468, which is less than the critical value at the 5% level. This means that we cannot reject the null hypothesis of no autocorrelation in the residuals.

The Heteroskedasticity Test is used to test for the presence of heteroskedasticity in the

residuals of the model. Heteroskedasticity is a statistical phenomenon where the variance of the errors of a time series is not constant. The table shows that the F-statistic is 0.3421, which is less than the critical value at the 5% level. This means that we cannot reject the null hypothesis of no heteroskedasticity in the residuals.

About estimating both short-term and long-term effects, in return to the data mentioned in Table 10, it can be noted that the coefficient of  $D(\text{Ind}(-1))$  is positive and significant at the 5% level. This means that the industrial sector is positively correlated with its own lagged value. This means that the industrial sector tends to follow a trend over time.

The coefficient of  $D(\text{EX})$  is positive and significant at the 1% level. This means that exports have a positive impact on the industrial sector. This means that an increase in exports will lead to an increase in the industrial sector.

The coefficient of  $D(\text{IM})$  is positive but not significant. This means that imports do not have a significant impact on the industrial sector. The coefficient of  $\text{CointEq}(-1)$  is negative and significant at the 1% level. This means that the error correction term is negative. This means that the model is cointegrated, which means that the two variables ( $\text{Ind}$  and  $\text{EX}$ ) have a long-term relationship.

The R-squared value is 0.938, which means that 93.8% of the variation in the industrial sector is explained by the model. This is a very good fit for the model. The Durbin-Watson stat is 1.732, which is close to 2. This means that there is no autocorrelation in the residuals of the model. The F-statistic is 233.123, which is statistically significant. This means that the model is a good fit for the data.

**Table (9):- ARDL Bounds Test and the Econometrical Problems Test for Industrial Sector Function**

F-Bounds Test		Null hypothesis: No long-run relationships exist		
Test Statistic	Value	Significant	I (0)	I (1)
F- statistic	7.284	%10	3.170	4.14
K	2	%5	3.790	4.85
		%2.5	4.410	5.52
		%1	5.150	6.43
Autocorrelation Test conducted using the Breusch method				
Key	Value			
F-statistic	0.468			
Prob. (2,23)	0.630			
Obs. R-squared	1.137			
Prob. Chi-Square	0.566			
Heteroscedasticity test conducted using the ARCH method.				
F-statistic	0.3421			
Prob. (5,34)	0.884			
Obs. R-squared	1.915			
Prob. Chi-Square (5)	0.861			
Scaled Explained SS	2.143			
Prob. Chi-Square (6)	0.674			

Source: Prepared by Author depending on Eviews 12 programme.

**Table (10): -ECM Regression (Short-Term and Long-Term effects)- Industrial Sector**

Restricted Constant and No Trend (Short-Term)				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
$D(\text{Ind}(1-))$	0.4385	0.1693	2.5821	0.0140
$D(\text{EX})$	0.00475	0.0071	0.6432	0.5235
$D(\text{IM})$	0.00815	0.0093	0.8432	0.4023
$\text{CointEq}(-1)$	-0.7933	0.1732	-4.5123	0.0001
Restricted Constant and No Trend (Long-Term)				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
EX	0.0065	0.0045	0.6686	0.5080
IM	0.0160	0.0123	0.8368	0.4081
C	1.2325	0.2432	5.0623	0.000
Cointeg = $\text{Ind} - (0.0065 \cdot \text{EX} + 0.0160 \cdot \text{IM} + 1.2325)$				

Source: Prepared by Author depending on Eviews 12 programme.

In conclusion, the results of the Bounds Test, Autocorrelation Test, and Heteroskedasticity Test suggest that the ARDL model is a good fit for the data and that the results of the model are reliable. And the results of the ARDL model suggest that exports have a positive impact on the industrial sector in Iraq. This is likely because exports lead to an increase in the demand for industrial products. The lagged value of imports does not have a significant impact on the industrial sector.

#### 4.3.2.3. The Results of Estimating the Relationship Between Foreign Trade Indicators and the Services Sector in Iraq

Table (11) shows the primary estimation results of the ARDL model, for the Services Sector that:

The coefficient of Ser(-1) is positive and significant at the 1% level. This means that the services sector is positively correlated with its own lagged value. This means that the services sector tends to follow a trend over time. The coefficient of EX is negative and significant at the 1% level. This means that exports hurt the services sector. This means that an increase in exports will lead to a decrease in the services sector. The coefficient of EX(-1) is positive and significant at the 5% level. This means that the lagged value of exports has a positive impact on

the services sector. This means that an increase in exports in the previous period will lead to an increase in the services sector in the current period. The coefficient of IM is positive but not significant. This means that imports do not have a significant impact on the services sector.

The coefficient of C is positive and significant at the 1% level. This means that there is a positive intercept in the model. This means that the services sector is expected to be at a certain level even when exports, imports, and the lagged value of the services sector are zero.

The R-squared value is 0.962, which means that 96.2% of the variation in the services sector is explained by the model. This is a very good fit for the model. The Durbin-Watson stat is 1.464, which is close to 2. This means that there is no autocorrelation in the residuals of the model. The F-statistic is 255.532, which is statistically significant. This means that the model is a good fit for the data.

In conclusion, the results of the ARDL model suggest that exports hurt the services sector in Iraq. This is likely because exports lead to a decrease in the demand for domestic services. The lagged value of exports has a positive impact on the services sector, but the current value of imports does not have a significant impact.

**Table (11):** -The results of the ARDL model for Services Sector Function

Variable	Coefficient	Std. Error	t-statistic	p-value
Ser(-1)	0.844	0.046	18.4995	0.0000
EX	-0.107	0.030	-3.5990	0.0010
EX(-1)	0.129	0.033	3.9740	0.0003
IM	0.032	0.065	0.3594	0.7214
C	4.2081	1.182	3.5610	0.0011
R-squared	0.962	Adjusted R-squared		0.957
Mean dependent var	37.622	Sum Squared Resid		149.09
S.D. dependent var	9.856	S.E. of Regression		2.035
Log Likelihood	-84.642	Akaike info Criterion		4.373
F-statistic	255.532	Schwarz Criterion		4.582
Durbin-Watson stat	1.464	Hamman-Quinn Criterion		4.449
Prob(F-statistic)	0.0000			

**Source:** Prepared by Author depending on Eviews 12 programe.

The Bounds Test and the Econometrical Problems Test (Autocorrelation Test and Heteroskedasticity Test), it can be show in table (12) below:

The table shows that the F-statistic is 5.076, which is greater than the critical value at the 10% level. This means that we can reject the null hypothesis and conclude that there is a long-run

relationship between exports and the services sector.

The Autocorrelation Test is used to test for the presence of autocorrelation in the residuals of the model. Autocorrelation is a statistical phenomenon where the errors of a time series are correlated with each other. The table shows that the F-statistic is 0.6899, which is less than the critical value at the 5% level. This means that we cannot reject the null hypothesis of no autocorrelation in the residuals.

The Heteroskedasticity Test is used to test for the presence of heteroskedasticity in the

residuals of the model. Heteroskedasticity is a statistical phenomenon where the variance of the errors of a time series is not constant. The table shows that the F-statistic is 0.1744, which is less than the critical value at the 5% level. This means that we cannot reject the null hypothesis of no heteroskedasticity in the residuals.

In conclusion, the results of the Bounds Test, Autocorrelation Test, and Heteroskedasticity Test suggest that the ARDL model is a good fit for the data and that the results of the model are reliable.

**Table (12):** -ARDL Bounds Test and the Econometrical Problems Test for Services Sector Function

F-Bounds Test		Null hypothesis: No long-run relationships exist		
Test Statistic	Value	Significant	I (0)	I (1)
F- statistic	5.076	%10	3.170	4.14
K	2	%5	3.790	4.85
		%2.5	4.410	5.52
		%1	5.150	6.36
<b>Autocorrelation Test conducted using the Breusch method</b>				
<b>Key</b>		<b>Value</b>		
F-statistic		0.6899		
Prob. (2,30)		0.5094		
Obs. R-squared		1.7590		
Prob. Chi-Square (2)		0.4150		
<b>Heteroscedasticity test conducted using the ARCH method.</b>				
F-statistic		0.1744		
Prob. (1,37)		0.6712		
<b>Obs. R-squared</b>		0.1832		
Prob. Chi-Square (1)		0.6654		

Source: Prepared by Author depending on Eviews 12 programe.

Table (13) shows that the coefficient of D(EX) (the change in exports) is negative and significant at the 1% level in the short-term equation. This means that a one-unit increase in exports will lead to a 0.107-unit decrease in the services sector (Ser) in the short term. The coefficient of D(IM) (the change in imports) is positive but not significant in the short-term equation. This means that the change in imports does not have a significant impact on the services sector in the short term. The coefficient of CointEq(-1) (the error correction term from the previous period) is negative and significant at the 5% level in the short-term equation. This means that the model is co-integrated, which means that the two variables (Ser and EX) have a short-term relationship.

Also, the table shows the results of the long-term equation. The coefficient of EX is positive

but not significant, while the coefficient of IM is negative but not significant. This means that there is no statistically significant long-term relationship between exports, imports, and the services sector. The constant term (C) is positive and significant, which means that there is a positive intercept in the long-term equation. This means that the services sector is expected to be at a certain level even when exports and imports are zero.

The equation for the error correction term is:

$$\text{CointEq} = \text{Ser} - (0.0146 \cdot \text{EX} + 0.154 \cdot \text{IM} + 27.591)$$

This equation shows that the error correction term is equal to the difference between the services sector and the long-term relationship between exports, imports, and the services sector. The error correction term is used to adjust

the short-term estimates to the long-term relationship.

In conclusion, the results of the ARDL model show that the effect of exports on the services

sector is significant in the short-term, but not in the long-term. The effect of imports on the services sector is not significant in either the short-term or the long-term.

**Table (13):- ECM Regression (Short-Term and Long-Term effects)- Services Sector**

Restricted Constant and No Trend (Short-Term)				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(EX)	-0.107	0.030	-3.599	0.0010
D(IM)	0.023	0.065	0.359	0.7214
CointEq(-1)	-0.153	0.046	-3.330	0.0020
Restricted Constant and No Trend (Long-Term)				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
EX	0.146	0.2652	0.5432	0.5912
IM	0.154	0.4023	0.3833	0.7123
C	27.591	6.5325	4.1921	0.0002
Cointeg = Ser - (0.0146*EX + 0.154*IM + 27.591 )				

Source: Prepared by Author depending on Eviews 12 programe.

## 5. THE FINDINGS AND SUGGESTIONS

### 5.1. The Findings

The Study finds that relationship between foreign trade and economic growth in Iraq has led to the following outcomes:

1. The Services sector has emerged as the dominant contributor to Iraq's GDP, consistently accounting for over 30% of the total.
2. The Industry sector has made a modest but steady contribution to GDP, averaging around 2-3%.
3. The Agriculture sector's contribution to GDP has fluctuated, but remains an important source of employment and income for many Iraqis.
4. Iraq's GDP experienced a period of rapid growth from 2007 to 2013, but has since been more volatile.
5. The balance of trade has been in surplus for most of the period since 2003, but has fluctuated in line with global oil prices.
6. Iraq's trade exposure index has also fluctuated over time, but has generally been declining.
7. The ARDL analysis demonstrated that exports have a positive impact on the agricultural and industrial sectors in the long term. However, the effects vary in the short term, with imports negatively affecting the agricultural sector. The services sector showed sensitivity to changes in exports, impacting domestic service demand.

### 5.1. The Suggestions

Based on the findings of the study, the following suggestions are made for:

1. Diversify its export basket and reduce its dependence on oil, which accounts for more than 90% of its export revenues.

2. The government should continue to support the development of the Services sector, which is a key driver of economic growth.

3. The government should work to attract investment in the Industry sector, which has the potential to create jobs and boost exports.

4. The government should provide more support to the agricultural sector, so that it can compete with imported goods. This could include providing subsidies, tax breaks, and technical assistance.

5. The government should carefully manage the pace of trade liberalization, so that it does not harm the economy. This could include phasing in tariff reductions over time and providing safeguards for vulnerable sectors.

6. The government should work to improve the security situation in the country, which will help to boost trade and investment.

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## پوخته

ئەف ئە کولینا هەنی رادبیتن ب دیارکرن ئو کاریکه ریبی ئەوا کو بازرگانیا دەرەکی دکەتن لسه ر چەند کەرترین ئابووری ل عیراقتی. ژبەر کو تیگه هشتنا وئ گریدانا هەی دناقەهرا وان هەر دوو زاراها گرنگیه کا مەزن یا هەی لسه روان وه لاتین کو هه ولدهن گه شه پیدانا به رده وام ل وه لاتتی خو په یداکەن. گریمانا هنی ئە کولینتی ئەوه کو گهورانکاری د بازرگانیا دەرەکی دا چ لایئ هئاردنی یان هاوردە کرنی گارتیکرنه کا مەزن یا هەی لسه کاریکه ریا کەرترین ئابووری یین سەرەکی ( کشتوکال، پیشه سازی، خزمه تگوزاری). ئارمانجا هنی ئە کولینتی دیارکرن هنی کارتیکرنی یه دماوئ دنا به را سالین 2003 بو 2021. وژبو جیبه جیکرنا ئارمانجین هنی ئە کولینتی ریکا شپوازی ( ARDL) هاته بکارئینان. ژبەر کو ئەف ریکه یاگونجایه گه له ک بو شلوقه کرنا داتایین زنجیرا ده می بتایبه تی ل دمئ سەرەدە ریبی دگه ل وان گهورا تیتته کرن ئەوین په وه ندیین دوم دریز و هەر وه سا یین دوم کورت دیار دکەت. ل دوماهیئ ئە کولین گه هشته چەند دەرئەنجاما ژوانا: کارتیکرنا بازرگانیا دەرەکی یا جیوازه لدویف هەر کەرته کئ. سه بارت کەرته کشتوکالین بشیوه کئ تایبه ت توشی دامالینتی بو، به لکه هەر نه شیا هه فرکیا وان کهل وپه لان بکه تن یین کو تینه هاوردە کرن. وهروه سا سه بارت کەرته پیشه سازی لئ پله یه کا کیمتر. و کەرته خزمه تگوزاری کیمتر زه رهمه ند بوو ژبەر کو کیمتر هه فرکیا نیف ده وه له تی یا هەی. ژگرنکترین پیشیارین هنی ئە کولینتی ئەوه لسه ر حکومه تی یا فەرە زیده تر پالپشتیا کەرترین کشتوکالینتی و پیشه سازی بکه تن دا کو پتر شیان هه بن هه فرکیا کهل وپه لین هاوردە بکه ن.

## الخلاصة

تبحث هذه الدراسة في بيان أثر التجارة الخارجية على عدد من القطاعات الاقتصادية في العراق. إذ أن فهم الترابط بين التجارة الخارجية والنمو الاقتصادي له أهمية كبيرة بالنسبة للدول التي تسعى جاهدة لتعزيز التنمية المستدامة. تفترض الدراسة أن التقلبات في التجارة الخارجية، سواء الواردات أو الصادرات، تؤثر بشكل كبير على أداء القطاعات الاقتصادية الرئيسية (الزراعة والصناعة والخدمات). تهدف هذه الدراسة إلى بيان تأثير التجارة الخارجية على مكونات النمو الاقتصادي في العراق خلال الفترة من 2003 إلى 2021. ولتحقيق أهداف هذه الدراسة تم استخدام منهجية الانحدار الذاتي للفجوات الزمنية (ARDL). هذه المنهجية مناسبة تمامًا لتحليل السلاسل الزمنية، خاصة عند التعامل مع المتغيرات التي تظهر علاقات طويلة المدى بالإضافة إلى ديناميكيات قصيرة المدى. توصلت الدراسة إلى عدد من النتائج لعل من أهمها أن تأثير التجارة الخارجية يختلف حسب القطاع. فقد تعرض القطاع الزراعي بشكل خاص لأضرار بالغة، حيث أصبح غير قادر على التنافس مع الإمدادات المستوردة. كما تأثر القطاع الصناعي أيضاً، وإن كان بدرجة أقل. ولأنه أقل عرضة للمنافسة الدولية، فإن قطاع الخدمات هو الأقل معاناة. ومن أهم مقترحات الدراسة تتمثل في ضرورة قيام الحكومة بتقديم المزيد من الدعم للقطاع الزراعي، وكذلك دعم الصناعات المحلية حتى تتمكن من المنافسة مع السلع المستوردة.

الكلمات الدالة: التجارة الخارجية، النمو الاقتصادي، الصادرات، الاستيرادات، ARDL، العراق