# REPUBLIC OF TURKEY
# ISTANBUL GELISIM UNIVERSITY
# INSTITUTE OF GRADUATE STUDIES

Department of Economics and Finance

# THE ROLE OF THE FOREIGN TRADE SECTOR IN SUPPORTING IRAQ'S TRADE BALANCE FROM 2008 TO 2019

Master Thesis

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Supervisor

Asst. Prof. Dr. Onur ÖZDEMİR

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I hereby declare that in the preparation of this thesis, the ethical and scientific rules have been followed, the works of other persons have been referenced in accordance with the scientific rules if used, there isn't falsification in the used data, any part of thesis has not been submitted to this university or other universities as another thesis.

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# SUMMARY

The aim of this research is to highlight the relationship between the foreign trade sector and the trade balance in Iraq, to discuss the march of the foreign trade sector in the Iraqi economy, and to know the extent to which Iraq's objectives are achieved by following various policies in the foreign trade sector. This study found that the Iraqi gross domestic products rate (gross domestic product) continually changes significantly in all years of study, and the volume of imports also continually change significantly in the rise and decline approximately in all years of the study. The volume of exports also continually changes significantly approximately in all years of study, while the ratio of exports and imports to gross domestic product continually change in decline and rise; the variable test found that there was a diverse relation with a single variable, the export variable linking foreign trade and the trade balance, and a moral influence of all variables. This indicates that the role of the foreign trade sector had an influence or role in supporting Iraq's trade balance. Through the results of the previous study, the researcher recommended a set of recommendations, including diversifying sources of income and not relying on raw materials revenues such as oil. Develop and encourage non-oil exports and thus compete in world markets. Building economic integration based on export promotion, increasing trade between nations, and increasing the rate of economic cooperation. To implement research and international conferences that concerns the foreign trade sector, and seeks to have duty free.

**Keywords:** foreign trade, trade balance, gross domestic product.

# ÖZET

Bu araştırmanın amacı, Irak'taki dış ticaret sektörü ile ticaret dengesi arasındaki ilişkiyi vurgulamak, dış ticaret sektörünün Irak ekonomisindeki yürüyüşünü tartışmak ve dış ticaret sektöründe çeşitli politikalar izleyerek Irak'ın hedeflerine ne ölçüde ulaşıldığını bilmektir. Bu çalışma, Irak ekonomik büyüme oranının (gayri safi yurtiçi hasıla) tüm çalışma yıllarında önemli ölçüde dalgalandığını ve ithalat hacminin de çalışmanın çoğu yılındaki artış ve düşüşte önemli ölçüde dalgalandığını ortaya koymuştur. İhracat hacmi de çalışmanın çoğunda önemli ölçüde dalgalandı, ihracat ve ithalatın gayrisafi yurt içi hasılaya oranı düşüş ve yükselişte dalgalanırken; değişken testi, tek bir değişkenle, dış ticareti ve ticaret dengesini birbirine bağlayan ihracat değişkeniyle ve tüm değişkenlerin ahlaki bir etkisiyle farklı bir ilişki olduğunu buldu. Bu, dış ticaret sektörünün rolünün Irak'ın ticaret dengesini desteklemede etkili veya rol olduğunu göstermektedir. Önceki çalışmanın sonuçlarıyla, araştırmacı, gelir kaynaklarını çeşitlendirmek ve petrol gibi hammadde gelirlerine güvenmemek de dahil olmak üzere bir dizi öneri önerdi. Petrol dışı ihracatı geliştirmek ve teşvik etmek ve böylece dünya pazarlarında rekabet etmek. İhracatın teşvikine dayalı ekonomik entegrasyon inşa etmek, ülkeler arasındaki ticareti artırmak ve ekonomik iş birliği oranını artırmak. Dış ticaret sektörünü ilgilendiren ve gümrüksüz olmak isteyen araştırmaları ve uluslararası konferansları hayata geçirmek.

**Anahtar Kelimeler:** dış ticaret, ticaret dengesi, gayri safi yurtiçi hasıla

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# ABBREDIVATIONS

| | | |
|---|---|---|
| **GDP** | **:** | Gross domestic product |
| **IMP** | **:** | Volume of imports |
| **EXP** | **:** | Volume of exports |
| **OIL** | **:** | Oil rents |
| **RIE** | **:** | Ratio of imports and exports to gross domestic product |
| **INF** | **:** | Inflation rate, for gross domestic product |
| $\alpha_0$ | **:** | Value of the constant |
| $\beta$ | **:** | Marginal slope |
| *Ut* | **:** | Error term |

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To whom I owe gratitude and grace

To those who taught me that life is a giving before receiving

To who gave me the honor to his belonging ... Dear Father

To my dear mother To my dear aunt .... gratitude and appreciation

To my dear brothers whom stood by me and helped me to overcome the

difficulties of life

To those who encouraged me and gave me their right in my time and

shared my concerns

To my dear friends

To my professors in my studies

To everyone who literally taught me

I dedicate this work


Researcher

AHMED SABAH ALI AL-ISAWI

# CHAPTER ONE
# INTRODUCTION

## 1.1 Introduction

The foreign trade sector is one of the most important sectors of the national economy. In period s of its contribution to the trade balance, gross domestic product (gross domestic product) and gross national product (GNP). In which it helps in the creation of direct or indirect employment and labor service opportunities, as well as creating value added. The importance of external trade also comes from foreign trade's interlocking relations with other sectors, in addition to that, its role in improving the balance of trade, balance of payments and the provision of foreign exchange, which is supposed to deal with this sector in the same importance from all aspects.

The foreign trade sector plays an important role in most international economies. By providing the economy with the products and services it needs, that are not available domestically, through import activity. It also eliminates the surplus of various products and services through the export activity.

Economic processes, whether national or international, are an essential engine of foreign trade activity. This characteristic of foreign trade is attributable to man and his desire, in order to meet his needs through daily life, as trade is a set of relationships between resident and non-resident economic agents in various nations of the world. Foreign trade acts as driving force for economic development, and an instrument that reflects the current realities of the economy and the production structure in the developing nations; in addition to, the extent of their independence or dependence on developed nations. It can also be presented as the main artery that links different nations, allowing them to maintain a balance in their trade balance. However, what we can see in this area is that, using different strategies and policies, it is impossible or difficult to achieve a balance between exports and imports.

Over the past five decades, the foreign trade sector has contributed in increasing the degree of interdependence among the nations of the world, which greatly magnifies the volume of merchandise and cash flows between nations. This trade changes affected many different nations all around the world in different economic sides. Perhaps the most important feature of foreign trade is the empowerment of all nations that seek relief from foreign trade through luxury and economic efficiency. Since trade helps in

exchanging products and services that push the financial resources of the exporting nation and funds the development and growth of the economy. Importing nations meet the needs of their economies by importing, in which it covers the deficits that occurred at the level of economy (production, industrial or service). Foreign trade and the expansion of exchanges has led to the development of trade at the global level. These developments led to the development of trade in the nations, including Iraq. Which has undertaken economic reforms that have contained trade, both financial and banking, with a view to the development of the national economy and the promotion the process of exchange trade.

## 1.2 Methodological framework for research

### 1.2.1 Research theme and relevance

Among the most important and notable manifestations of economic systems of the last decade of the twentieth century to date –foreign trade has been and continues to be the focus of attention for scholars and economists around the world, especially in the current conditions in the nations of the world. On the other hand, the importance of research topic, is that it addresses the role of the foreign trade sector in supporting Iraq's trade balance comprehensively   as well as in trying to examine and analyze the effects of economic reforms that contained the foreign trade sector in Iraq on the trade balance.

### 1.2.2 Reasons for choosing the research

1 - The significant important of the topic, especially with the economic transformations that Iraq has experienced in general, and the foreign trade sector and the trade balance in particular

2- In order to study and clarify topics related to foreign   trade as well as the Iraqi trade balance.

3- Foreign trade is considered an important topic in the current century, attracting the attention of all specialists in the external trade sector and the trade balance analysis.

### 1.2.3 Research objectives

The research aims to achieve a range of objectives as following:

1- Provide an appropriate conceptual framework to clarify the concept of foreign trade liberalization, as well as the concept of trade balance.

2- Highlighting the relationship between the foreign trade sector and trade balance in Iraq.

3 - Discussing the march of the foreign trade sector in the Iraqi economy

4- To determine to what extent the objectives of various foreign trade policies pursued by Iraq have been achieved.

5 - Trying to capture the issue of foreign trade and the trade balance in Iraq.

### 1.2.4 Research Problem

According to the above, the following main issue can be posed:

The research problem is mainly to study the influence of the foreign trade sector on the trade balance of the commercial sector in Iraq, how it affected the macroeconomic indicators, and how it affected the level of gross domestic products, and the balance of payments ... and the most important problems raised in the following question:

"What is the influence of the external trade sector on the trade balance in Iraq?"

**Sub-questions:**

Under the main problem there are many sub-questions, the most important are as following:

1-What are the most important theories and policies that govern foreign trade in the world?

2- What is the status of the trade balance according to the stages of foreign trade in Iraq before and after the global transformations?

3-What are the foreign trade policies in Iraq and their influence on the Iraqi trade balance?

4- What is the influence of the foreign trade sector on some macroeconomic indicators in Iraq?

5-What is the effect of the foreign trade sector on the growth of the gross national product (GNP) and the domestic product?

3

6- What is the influence of the foreign trade sector on the balance of payments (deficit – surplus)?

7-What is the influence of the foreign trade sector on the trade balance (deficit and surplus)?

### 1.2.5 Assumptions

As To answer the sub-questions, the following assumptions can be formulated:

1-The foreign trade sector helps in revitalizing the private sector as it is the main engine of the economy, which leads to stimulating trade movement, creating job opportunities and new products, and then developing exports.

2-The Iraqi trade balance has seen as continuous fluctuation until the present time, especially in exports excluding fuels.

3-The ongoing conflicts and wars in Iraq have mainly affected the Iraqi economy, especially in the foreign trade sector.

4-In recent years, the Iraqi economy in the foreign trade sector has seen satisfactory results that enable it to integrate into the global economy easily.

5-There is an incorporeal effect of the foreign trade sector on the balance of payments.

6-There is an incorporeal effect of the foreign trade sector on the trade balance.

7-There is an incorporeal effect of the foreign trade sector on the gross national product (GNP) and the gross domestic product (gross domestic product).

8- There is an incorporeal effect of the foreign trade sector on the gross domestic products rates in Iraq.

### 1.2.6 Research Methodology

For the purpose of consistency and logical coherence between the research elements of description, analysis and elicitation, more than one approach is needed:

**1-Descriptive approach:** It will address the basic concepts associated with external trade and the stages of trade policy in Iraq.

**2-Analytical Approach**: It will deal with the analysis of tables and trade statistics, and then projecting them on the economic reality and linking them to general economic objectives.

### 1.2.7 Research Limits

Research framework has been limited by the following parameters:

**1-Time:** The period from 2008 to 2019 has been set to analyze the status of the trade balance.

**2- Place:** the study focuses on the case of Iraq.

**3-Objective:** The current study is limited to studying the role of the foreign trade sector in supporting the Iraqi trade balance.

# CHAPTER TWO

# LITERATURE REVIEW

## 2.1  Foreign Trade

### 2.1.1  The development of foreign trade

The interest in foreign trade dates back to the emergence of the commercial school in the seventeenth century in the continent of Europe; where it was interested in the study of trade as one of the most important sources of private wealth in nations, and the interest at this stage has increased to enhance the number of exports compared to the number of imports. In order to contribute to increasing the flow of money to nations, this stage also coincided with the interest in reducing imports, providing market protection, and reducing wage costs; that to support external competition (Brodzicki, T., & Uminski, S. 2018).

The power of the economic crisis had a significant influence on international trade at the turn of the twenty-first century. The shifts are evident in the growing significance of international commerce to national economies and local organizations within those economies, as well as the deepening of links between trade and other global challenges. The key trends in the global trade system throughout the economic crisis are a sobering note. Increased competition and temptations to use strategic trade policy have risen as interdependence has grown and united states of America trade dominance has waned (Gilpin, R. 2018).

International commerce has always been and will continue to be a link between peoples. Trade has existed since antiquity, and a nation's historical development is the result of ensuring its material, moral, and intellectual needs are met. Because no nation has all of the necessary material and human resources to provide a comfortable standard of living, the practice of exchanging surplus assets for scarce items has grown in importance. Furthermore, foreign trade has evolved into a national economic development strategy over time. It is seen as crucial in period s of its contribution to the building of social and international ties. International trade provides the major pillars of support at the global level, creating policies that intensify the globalization process. It is becoming increasingly clear that a nation, no matter how wealthy in demographics or natural resources, cannot thrive or prosper in a closed economy (Terzea, E. R. 2016).

Nations also participate in trade with each other frequently, they often construct and create a stronger and more effective trade relationship and assist to achieve greater global peace and stability international trade will aid in the specialization of particular people, or in this instance nations, in specific products or services. Specialization enables businesses to make things at a cheaper cost and of higher quality than typical. When some nations have a competitive edge, they may specialize in something they are excellent at and trade other products they don't possess or don't have the means to create, resulting in a win-win situation for both nations (KORDOŠ, M. 2019).

Foreign trade is a group of activities that depend on the trading of products between a particular nation and other nations (Sultan, S., & Remigio, A. M. 2021), and it is defined as the exchange of services, capital, and products; Through international or domestic borders, foreign trade constitutes an important part of the economy of most nations of the world and directly affects their gross domestic product (GDP) (Chand, S. 2015).

Even if the two phrases are used outside the limits of the state, a distinction must be established in this context between two of the most commonly used period s in the world of economics and business at the international level: "foreign trade" and "international trade." However, the distinction between foreign trade and international trade refers to trade that occurs between two economic entities outside of national borders or between a nation and another nation; however, the period international trade gives the impression that the person referring to this activity is at a high level, allowing them to think globally about all economic relationships that exist between different economic entities (Ruggie, J. G. 2018).

Foreign trade, on the other hand, refers to the exchange of products and services between nations. It is the economic activity that refers to a nation's commerce in capital products and services with the rest of the globe. Exchanging products and services between two or more nations, one exporter and the other importer, regardless of whether they have a free trade agreement or not. International commerce, on the other hand, involves economic blocs or regions, and trade agreements, such as free trade agreements, are used to facilitate the interchange of products and services (Brito, S., Magud, M. N. E., & Sosa, M. S. 2018).

In light of the foregoing, we might argue that commerce is a nation's life artery. The word "foreign trade" refers to the exchange of products and services between two

or more nations. An person or a nation's government can engage in this form of trading. In other words, it is the cross-border exchange of products, services, and capital that allows consumers and nations to access new markets and products. When a product is sold on the international market as an export and when it is acquired on the international market as an import. Exports and imports influence the nation's gross domestic product and are measured in the nation's current account in the balance of payments. It should be mentioned that international commerce is divided into three categories: import, export, and re-export (Popa-Paliu, L., & Ana-Gabriela, B. 2011).

### 2.1.2 Importance of foreign trade and the reasons for foreign trade

#### 2.1.2.1 The importance of foreign trade

Foreign trade plays an important role in the economy of each nation. And lead to an increase in the income of the owners compared to the factors of production and export excess of the product, and stimulate gross domestic products. International trade expands the nation's production market. Exports may increase national products and may become an engine of growth. Expansion of a nation's foreign trade may lead to revitalizing a stagnant economy and may lead it to the path of gross domestic products and prosperity (Helpman, E. 2014).

The difference in labor costs between the two nations, according to Ricardo, is the source of comparative advantage. Ricardo's theory has been expanded by modern economists, who have identified a variety of other sources of comparative advantage, including differences in wealth distribution, tastes and preferences, technological gaps, and product cycles.

The theory of Ricardo is static. The contemporary theory of comparative advantage, known as Heckscher-Ohlin theory, is the same way. The Heckscher-Ohlin hypothesis sought to establish a nation's comparative advantage and trade benefits based on its fortunes and technologies. However, things change with time, technical advancement takes time, and tastes change as well. As a result, a nation's comparative advantage shifts over time. Furthermore, as the nation's population grows, so does the size of its labor force (Morales Meoqui, J. 2017). In the same way, the state's capital stock grows with time. Natural resources can also be depleted, or new resources can be discovered or developed through new discoveries or applications. All of these changes result in quicker gross domestic products and a shift in comparative advantage patterns over time. Technical progress also contributes to quicker real income per capita growth,

making it a significant source of growth for nations and one of the causes of comparative advantages (Spillan, J. E., & Lopez, M. C. 2021).

When the exportable products outcome of a nation rises faster than the importable products outcome at roughly constant prices the nation's trade expands more than proportionally. Gross domestic products has the unintended consequence of causing trade to increase at the same rate.

Conversely, if a nation's consumption of its importable product rises proportionately higher than its consumption of its exportable item, the effect of consumption tends to lead to a bigger proportionate growth of trade at constant prices. The net result of these production and consumption effects deperiod ines what happens to trade volume during the growth process. This projection is suitable for a tiny nation that has minimal influence over global marketable products pricing (Akhmetshina, E. R., & Mustafin, A. N. 2015).

In less developed nations, a gross domestic product is more important for development. If a nation's trade volume grows at constant prices as a result of economic expansion, the nation's period s of trade (the ratio of the export price index to the import rates) tend to decline. On the other hand, if growth decreases the nation's volume of trade at constant prices, the nation's period s of trade will increase. The influence of trade periods on growth is referred to as the effect of trade periods on growth. The net outcome of the trade period s effect and the wealth effect defines the influence of economic expansion on a nation's wellbeing (Acemoglu, D. 2012).

The wealth influence is the increase in per capita production as a result of economic expansion. In and of itself, the positive wealth influence tends to raise the nation's wellbeing. Otherwise, the nation's well-being tends to deteriorate or stagnate. If wealth has a beneficial influence and the nation's period s of trade have improved as a consequence of growth and commerce, the nation's welfare will undoubtedly increase. There is a loss of wellbeing if both are unfavorable. Depending on the proportional intensity of these two competing factors, the nation's welfare may deteriorate, improve, or remain stable if the influence of wealth and the effect of trade period s shift in opposite ways (Schumacher, R. 2013).

Foreign trade's contributions to gross domestic products are unlikely to operate as a growth engine. However, there are other ways in which it might help to a nation's economic development (Li, N., Sun, L., Luo, X., Kang, R., & Jia, M. 2019).

- **Full use of resources:**

The full use of the nation's idle and non-working resources can be achieved through trade. In the absence of trade, a developing nation functions at its most basic level (ineffective point). International trade allows it to operate at the second (effective) point, resulting in the production of more consumer and capital products. The Hala Mint's extravagant concept boils down to this. According to this viewpoint, foreign trade provides a market for potential agricultural surpluses and raw materials. This has already happened in a number of emerging nations, particularly in Southeast Asia and West Africa.

- **Division of work and specialization:**

There is minimal opportunity for specialization and division of labor when a commodity is produced for a small domestic market. If it is developed for the larger and infinite export market, there is far more potential for specialization.

- **Transfer of knowledge:**

International trade is frequently used to spread new ideas, technologies, and management and organizational skills. Knowledge is the only element of production that does not depreciate in value.

- **Capital Flow:**

It also boosts international trade and makes it easier for financial resources to migrate from rich to poor nations. Foreign capital is frequently accompanied by skilled international employees to operate production units in the case of foreign direct investment, where foreign companies or multinational corporations retain administrative control over their investments.

- **Stimulating domestic demand:**

Imports of new manufactured products encouraged domestic demand in India, Brazil, and other big emerging nations in the early stages when effective local manufacturing of these commodities was not economically viable. Connection to the rest of the world was a key factor in spurring home production of import-substitute commodities during the early stages of industrialization and later phases of gross domestic products.

- **Encouraging competition:**

Foreign trade is frequently used by foreign domestic manufacturers as an anti-monopoly weapon in order to increase efficiency in order to bring foreign competition and ensure long-period survival.

### 2.1.2.2 Reasons for establishing foreign trade

Variations in technology, differences in accessible resources, differences in demand, the availability of economies of scale, and the existence of government regulations are the five basic causes for the occurrence of international commerce (Brodzicki, T., & Uminski, S. 2018).

- **Technological difference:**

When nations' technological capacity for producing products and services differ, commerce between them is possible. Technology refers to the methods for converting inputs (labor, capital, and land) into outcomes (products and services). A technical difference was one of the pillars of the Ricardian paradigm of comparative advantage for generating foreign commerce.

- **The difference in resources:**

When the availability of resources varies between nations, international trade between them may occur. Natural resources (minerals, agricultural land, and so on) and the growth of a nation's capital stock are all examples of resource richness (machines, infrastructure, communication systems). The capital-intensive nation will export the capital-intensive item, whereas the labor-intensive nation would export the labor-intensive commodity, according to Heckscher Ohlin's theory, and the resource imbalance is one of commerce's foundations.

- **Differences in demand:**

Trade can take place across nations if their demand or tastes differ. People from different nations may have different likes or wants for particular items. Even when faced with the same price, Chinese consumers are more likely to desire rice than Americans, Dutch customers are more likely to prefer wooden shoes, and Japanese customers are more likely to want sushi than Americans.

**-      Existence of economies of scale in production:**

To create trade between two nations, economies of scale in manufacturing are sufficient. Economies of scale refer to a manufacturing process in which the cost of production decreases as the volume of production grows. This industrial benefit is also known as increasing returns to scale.

**-      Existence of government policies:**

The prices charged for products and services are affected by tax and government subsidy schemes. These modifications may be sufficient to provide benefits in the manufacture of specific items. In certain situations, commerce may occur solely as a result of differences in government policy between nations.

There are few international trade models that cover all five motivations for overseas trade at the same time. The reason behind this is that such a paradigm is too difficult to implement. Economists nowadays simplify by using a model that usually just has one rationale. This does not imply that economists believe that a single cause or model can account for all of the outcomes. Instead, governments must make sense of global economic activity by examining what a variety of different models have to say about the same occurrence (Jung, J. 2021).

### 2.1.3  Foreign trade theories

### 2.1.3.1  Adam Smith's theory of absolute advantage:

Adam Smith is regarded as the father of modern economics and one of the first and most well-known proponents of free international trade. His international trade theory, on the other hand, is not generally recognized or appreciated. Most texts on economics in general, and international commerce in particular, now begin with a brief chapter on Adam Smith and the notion of absolute advantage, which he is said to have created. These texts then quickly abandon the theory of absolute advantage in favor of David Ricardo's theory of comparative advantage, which demonstrates that unrestricted international trade and free international competition benefit nations more than the economic-trade policies that existed in many parts of Europe during the eighteenth century (Kurz, H. D. 2015).

Smith's theory of international trade is based on his ideas about labor division. The division of work, he believes, is what leads to "the greatest improvement in the productive labor forces." More production can be generated with the same quantity of

work as a result of more advanced division of labor. He illustrates this concept with his famous example of the pins factory, which demonstrates that division of labor results in more work being done by the same number of workers. Then he came up with three reasons for this change (Schumacher, R. 2020).

First, each worker's skill level increased; second, time was saved by not having to switch from one sort of work to another; and finally, a great number of machines were produced that facilitated and shortened labor and allowed one guy to accomplish a lot of work. As a result of the division of labor, productivity improves both quantitatively and qualitatively. This entails raising outcome, promoting technological advancement, and enhancing worker skills and productivity. As a consequence, a gross domestic product is encouraged and national wealth is increased. This may be put as follows: the higher the level of specialization, the higher the rate of growth. The power of international trade, or the size of the market, is the only constraint on the division of labor. As a result, if the market is enlarged, the division of labor may be increased, resulting in increased gross domestic products and riches. Foreign commerce must be addressed in this regard (Draper, T. 2017).

Smith connects international commerce with his thoughts about the division of labor in this passage. Because the international market is larger than the home market alone, it will be able to expand the division of labor if commerce is created with another nation. As a result of the improved division of labor, international commerce benefits the nation by increasing the exchangeable value of the nation's yearly land and labor production. This implies that the state's real wealth and population increase (Schumacher, R. 2017).

### 2.1.3.2 David Ricardo's comparative advantage theory

The classical economist David Ricardo (1772-1823) is best known for his wage and profit theory, labor theory of value, comparative advantage theory, and rent theory. David Ricardo and several other economists discovered the law of declining marginal returns at the same time and in different ways (Kurz, H. D. 2010)

The removal of economic protection, according to Ricardo's thesis, will cause resources to shift away from high-cost items and toward low-cost products, resulting in increased productivity. His free- International trade argument is based on his comparative advantage theory, which is part of the widely recognized basis for laissez-faire. Protection is considered as interfering with the free market's operation. Rather to

the generally believed costs of production in period s of money, Ricardo's theory of comparative advantage analyses real costs of production in domestic and international markets. Arguments in favor of free international trade principles can be found in David Ricardo's theory of comparative advantage, which was published in 1821 in his book Principles of Political Economy and Taxation. Ricardo used two consistent two-state models, assuming that Portugal would be a more efficient cloth producer than England, but that the nation would also be more efficient in wine production. According to him, the division of labor, in which each nation produces and specialized in the items in which it has a stronger comparative advantage, would benefit Portugal and England. Despite the fact that England was less efficient in both commodities than Portugal, embracing free international trade meant that Portugal would concentrate on wine production and England on textile manufacture (Mathews, J. A. 2016).

The idea of comparative advantage, on the other hand, is founded on a number of assumptions: the existence of perfect completeness; all elements of production are completely functioning; labor and capital are entirely mobile inside the nation and do not cross borders; a nation's international commerce is always in balance, and market prices influence the true costs of the items produced; The theory of comparative advantage and free international trade are built on the same assumption. These assumptions are implausible and unrelated to the realities of emerging nations (Schabas, M., & Wennerlind, C. 2011).

The assumption of full employment, for example, is incorrect. Another misconception is that prices have an influence on costs. This is not the case. Many product markets, as we all know, are dominated by monopolies, and enterprises also get government assistance, which influences their production and price decisions. Some manufacturing processes have large negative externalities (e. g. environmental degradation). Finally, the idea that international commerce would stay stable is incorrect (Schumacher, R. 2013).

### 2.1.3.3 David Hume's spontaneous equilibrium theory

In 1752, David Hume contain his renowned Essays on Political Economy in his Political Discourses. They positioned him as one of history's great thinkers and a leading force on political economics concerns. Political debates sparked widespread attention in both the United Kingdom and continental Europe, and had a significant

influence on economic thought at the time and far into the nineteenth century (Dimand, R. W. 2013).

Although Scottish philosopher David Hume is most recognized for his work on philosophy, history, and politics, he also contributed significantly to economic ideas. His empirical counter-argument to British mercantilism was a cornerstone of classical economics. His articles in Political Discourses on money and international commerce strongly influenced his friend and colleague Adam Smith (Maimone, C. L. 2015).

To maximize the quantity of gold in the mother nation, British merchants felt that restricting imports and increasing exports would lead to economic development. The American colonies aided this approach by giving raw materials to Britain for the manufacture of completed products, which were then re-exported to colonial customers in America.

The agreement, needless to say, did not last long. But, even before the American Revolution disrupted commerce, David Hume demonstrated why net exports against Britain's monopolized gold coinage could not increase income. Hume's thesis was basically the monetary quantity theory of money: changes in the money supply directly affect prices in a society (Paganelli, M. P., & Schumacher, R. 2018).

The increase in domestic prices caused by the influx of gold, according to Hume, would stifle exports while encouraging imports, so automatically restricting the amount by which exports exceed imports. The unique price flow method is the name for this adjustment technique. And the question is why, despite the fact that Hume's proposal would have strengthened Adam Smith's attack on mercantilism* and the case for free trade, Smith has overlooked it. Although few economists take Hume's views literally, they continue to provide the foundation for much debate on balance of payments difficulties (Hume, D. 2018).

### 2.1.4 Foreign trade policies

Maintaining economic and political liberalization relies heavily on international trade policy. Rent-rise seeking's in a nation can have long-period consequences for its gross domestic products. The influence of changing beliefs about protectionism and the relatively stable organizations created to deal with domestic producer concerns has been overlooked by structural and micro-political economic analyses of international trade policy (Gilpin, R. 2011). Over time, the political consensus on international trade policy and protectionism has shifted. Protectionism played an essential role in the politics of

political parties during the Great Depression. In the a period of the global financial and economic crisis of 2008-2010, economic protectionist political attitudes that accompanied the recession began to take hold in 2010 (Baccini, L., & Kim, S. Y. 2012).

Companies' desire to govern their own supply chains across nations has led to a need for domestic agreements that go beyond preferential tariffs. New International trade agreements now contain coordination of standards and norms on investment, intellectual property, and services. Differences between trading institutions are also crucial for future development. Even while many businesses are indirectly involved in trade-related operations, only a small percentage of enterprises export or import, and these institutions tend to be bigger and more productive than others. These businesses also contribute to technical progress and information transmission via supplier chains (Breinlich, H., & Criscuolo, C. 2011).

In view of the pressures that are now altering international business, new approaches to trade cooperation are required. It suggests that the multilateral trading system will have to adjust to changes in commerce and the environment. The establishment of global supply Chains, as well as the overall movement of international trade power away from the West and towards Asia, particularly China, are key to international trade developments in the larger social and economic environment. China's long-period stability is dependent on rapid gross domestic products, which can only be achieved when this nation is a global partner capable of playing key roles.

The force of the economic crisis had a significant influence on international trade at the start of the twenty-first century, and changes in the increasing importance of international trade to national economies and local groups within those economies can be seen in the strengthening links between international trade and other international issues. During the economic crisis, there were significant trends in the global international trade system. The United States' growing reliance and waning commercial supremacy have resulted in increased competitiveness and stronger incentives to use strategic international trade strategy (Gilpin, R. 2018).

Factor specificity refers to the ease with which factors (land, labor, and capital) can shift from one sector of the economy to another in period s of the theoretical relevance of factor specificity in international trade policy theory. The two most widely accepted theories for international trade policy's demand side are based on fundamentally different assumptions about factor specificity. The Heckscher-Olin

model (Rogowski, R. 2021) is used in Rogowski's book (Trade and Alliances: How Trade Affects Domestic Political Alliances). Similarly, commerce, and more especially, the balance of international trade between two nations with distinct specialties and natural resources, is analyzed (Kleinberg, R. L., Paltsev, S., Ebinger, C. K. E., & Boersma, T. 2018). The assumption is that factor specificity is quite low. Low factor specificity indicates that factor returns are similar across all economies in the region. Producers should export commodities that are heavily utilized for their plentiful factors and import things that are heavily used for their scarce factors, resulting in abundant factor owners preferring free international trade and scarce factor owners preferring protectionism (op. cit).

The state can be seen as pursuing government aims while also serving the social welfare function, or as engaging in the economy under the state's self-interest model, in which politicians give economists favorable international trade policies in return for political support. Pluralism theory, on the other hand, considers the state to be a neutral composite of societal needs. The balance of power on any specific topic therefore period defines the offer of trade policy. Although the supply side of international trade policy is conceptually undeveloped, it is an important component of the equation. The supply of international trade protection is expected to be influenced by a range of factors, including politicians' motivations to nurture personal votes, electoral district size, party segmentation, federalism, presidential vs parliamentary systems, and so on (Jones, K. A. 2015).

The data presented supports the claim that politicians' conduct on political and security problems is influenced by their constituents' commercial interests, as shown by their region's export trend and import sensitivity. These effects are persistent in both roll-call voting and sponsorship activities, and are mediated by party and constituency heterogeneity. Export sensitivity appears to be slightly more relevant than import sensitivity. Both have intrinsically substantial influences on sponsorship, but export orientation is a statistically significant predictor of a Senate "yes" or "no" vote (Kleinberg, K. B., & Fordham, B. O. 2013).

### 2.1.5 Foreign Trade Policies in Iraq

Iraq has the world's fourth-largest oil reserves. Despite recent improvements in security, Iraq's political situation remains very unpredictable, and economic policy-making is hampered by a lack of central government control. The government's key

goals are to keep increasing the oil industry while also improving project implementation to update essential amenities like power, water, and housing. The principal sectors in this category were petroleum refining and the manufacturing of chemicals and fertilizers. Manufacturing activity in Iraq was strongly tied to the oil industry. Security issues have impeded efforts to establish new organizations since 2003. Except for the building industry, which has benefitted from Iraq's many conflicts and the need for reconstruction (Iraq, Report 2014). Changes in oil outcome are projected to have a big influence on exports. Security concerns, international trade embargoes, and export infrastructure pressed by greater oil production capacity have all interrupted outcome in recent years. Iraq is significantly on imports for consumer products and capital inputs, with the United States, India, Italy, South Korea, Taiwan, China, and the Netherlands among its top export partners (Okon, E. N., Ojakorotu, V., & Agi, S. P. 2019).

Iraq is one of the emerging nations having an international trade sector structure that is unbalanced with the rest of the globe. The reason for this is the market transparency strategy implemented after 2003, as well as the processes for eliminating customs protection, rather than the domination of products and international exchange over a single commodity in its raw form ready for export. More than 98 percent of its overall exports and 92 percent of its entire earnings come from oil (Almagtome, A., Shaker, A., Al-Fatlawi, Q., & Bekheet, H. 2019). It makes the highest contribution to gross domestic products, but underdevelopment has depleted its major industries. As a result, the Iraqi economy suffers from the degradation of its other sectors' development rates, despite the fact that it possesses untapped potential and natural resources. As a result, the Iraqi economy lost its natural resource competitive advantage, resulting in an imbalance in the commodities balance of its non-oil sectors, as well as a lack of worldwide demand for such exports owing to the production system's underdevelopment. the structure of its commercial sector, as well as a persistent international trade imbalance in its other areas (the non-oil sector). As a result, in order to meet the goals of economic development plans (Al-Wattar, Y. M. A., & Al-Shafeay, K. M. 2019).

The export diversification index for Iraq reached 0.91 in 2017. It indicates a high level of concentration in Iraq's exports, the absence of diversity, and its departure from the global pattern. Iraq depends entirely on crude oil exports, which represent about 99% of its total exports. Besides exporting crude oil, Iraq also exports some other

products such as dates and products of animal origin such as tanned leather, silk, sweets, and tin. Iraq's imports amounted to 29.1$ billion in 2017. Iran ranked first with (30.1%) of the Iraqi import market, followed by Italy (11.4%), China (11.1%), South Korea (9.6%), and Turkey (11.4%), (5.7%). Iraq imported from Iran mainly agricultural products of fresh fruits and vegetables and cement, while importing turbines and pumps from Italy especially for agriculture in addition to various types of valves. Iraq also imported ceramics, building stones, and clothing from China. The coverage rate in the international trade sector was (206.4), which is an indication that the ratio of exports to imports has more than doubled. The ratio of the total international trade to the total foreign trade of the ESCWA region was relatively product, reaching (5.4) (External Trade Bulletin No. 27).

## 2.2 Trade balance

### 2.2.1 Trade balance concept

Although the trade balance indicates the net amount of trade at a given point in time, in the presence of adjustment costs, it may also reflect the influences of previous actions as well as future expectations. Making a comparison between a nation, a family, and/or a publicly listed institution is a straightforward method to illustrate the notion of the international trade balance. There are persistent fears in all three cases, which are focused not only on the present but also on the future (Canto, V. A. 2018).

A family's costs are usually period ined by their lifetime income or net worth. Early in its life cycle, family members may be able to boost their future earning capability through education. The family will invest in human capital if the net present value of the increase in future income exceeds the expense of schooling. The net worth of a household grows in proportion to its current income. During the early years, a family's costs surpass its income because expenses are a function of the net present value of future income. Excess consumption is financed by borrowing (i.e., capital inflows fund human capital investment) the investment and borrowing used to fund past consumption will be reimbursed in the future, as human capital and profit strength grow. Earned income drops as a family approaches or approaches retirement later in life. The family will spend more than it earns throughout these years. During those years, the family's net worth will be depleted (Ibid).

Similarly, if a corporation sees large future potential, it may seek outside funding to help it meet its objectives faster and maximize shareholder value. To fund its expansion, the 'expanding business' borrows money or sells additional shares. If the

corporation, on the other hand, finds itself with a large amount of cash and few viable investment options, returning the money to its investors may be the best course of action. One may argue that the institution is no longer a growth stock but rather a valuable investment at this point. A lower price-earnings (P/E) ratio (the ratio of a traded stock's price to its yearly earnings) indicates a lesser growth potential (Iossifov, M. P. K., & Fei, X. 2019).

The parallels between family and nation or corporation are obvious and plain. The balance of international trade, which is financed by capital inflows, will cover the gap between expenditure and outcome. Similarly, a developing nation may benefit from borrowing. The investment is profitable if the growth exceeds the cost, and the net wealth-income ratio (i.e., price-earnings ratio) will rise as the balance of trade worsens. As a result, as the nation ages after its peak, it will sell assets to sustain its quality of living. Asset sales will be used to cover the excess depreciation above 'earned revenue.' The trade imbalance will be accompanied by a lower price-to-earnings ratio at this time (Were, M. 2015).

As a result, the international trade balance is calculated as the entire value of a nation's exports minus the value of its imports. Its worth is quantified in period s of money. If a nation's imports exceed its exports, it is considered to have a international trade imbalance or deficit. Imports are the products and services that citizens of a nation purchase from foreign enterprises. Even though the money helps the importing nation, products created by private state businesses overseas and brought back into the nation for sale are considered imports. Exports are products and services that state-owned businesses sell to citizens in other nations. Both importing and exporting commodities have advantages, but a persistent trade imbalance, also known as a international trade deficit, is typically considered a negative for a nation's economy (Marfatia, H. 2016).

In light of the foregoing, we may conclude that the trade balance is utilized by economists and analysts to period ine the strength of a nation's economy in relation to other nations. A nation with a significant trade deficit borrows money primarily to buy products and services, whereas a nation with a large trade surplus loans money to nations with deficits (Blavasciunaite, D., Garsviene, L., & Matuzeviciute, K. 2020).

### 2.2.2 The importance of the trade balance

The net exports (exports minus imports) of a nation define its international trade balance, which is influenced by all variables influencing international commerce. Production, productivity, trade policy, currency rates, foreign exchange reserves,

inflation, and demand are all elements to consider. As a result, the international trade balance is the most significant economic indicator of a nation's international trade activity and a criterion for assessing economic progress. The international trade balance is positive when the total value of exports exceeds the entire value of imports, resulting in a trade surplus (Marfatia, H., Zhao, W. L., & Ji, Q. 2020).

Trade balance data indicates whether there is a commerce deficit or surplus, and is a crucial aspect of solving the worldwide puzzle of international trade. Why is the trade balance important? The international trade balance statistics reveals a nation's imports and exports of products, as well as how it competes in the global market (Drucker, P. F. 2013). Figures for the trade balance might show a trade deficit, which means a nation imported more than it exported, or a trade surplus, which means a nation exported more than it imported in a given time. Tangible products and intangible services may be contained in imports and exports. Luxembourg, a favored financial destination, has one of the largest per capita service exports in the world due to its international banking system. Similarly, thanks to international oil commerce, Middle Eastern nations have stronger tangible exports (Popkova, E. G., & Sukhodolov, Y. A. 2017).

High export figures may be just as detrimental for internal trade as a negative trade balance is for the economy's long-period sustainability. China, which for many years sold its products to every place on the planet, experienced many waves of internal inflation as money flooded in from all over the globe. Internal consumption and demand can be temporarily impeded when the money supply grows faster than the relative increase in wages, resulting in a recession (Ahmed, S., & Zlate, A. 2014). However, when all variables are considered, nations wish to attract far more foreign export purchases than certain nations, because a negative trade balance cannot be sustained indefinitely. Furthermore, negative trade raises the risk of rising domestic debt or inflation from the central bank in order to keep local currency levels stable (Bansal, S., Bruno, P., Denecker, O., M., & Niederkorn, M. 2018).

Data on the international trade balance is released once a month and can be revised as the numbers become clearer over time. Since accounting for all exports flowing from a nation and all imports flowing in requires a great deal of record-keeping and manpower, these reports of trade surplus or trade deficit may be reviewed for years after their first release (Braml, M. 2020). Trade balance figures are best utilized in conjunction with the balance of payments when it comes to international trading. While

the importer cannot demonstrate a product trade balance, he may and does frequently show a positive payment balance. This is because importers are compelled to borrow money from other nations to keep up with their present consumption, and they frequently borrow more money than they need in a single time. The challenge of documenting and data gathering is the most crucial aspect that might influence the international trade balance (Arif, I., Khan, L., Farooq, F., & Suleman, T. 2020). Money laundering, tax evasion, and smuggling are commonly the goals of manipulating international trade balance records and statistics, especially in developing and third-world nations. However, trade balance data is vital for industrialized nations since it provides reliable information and represents political and economic stability, Because the statistics reveal items of imports, foreign aid, domestic spending abroad, and domestic investments abroad (Akbas, Y. E., & Sancar, C. 2021), it represents the level of foreign investment in those nations:

-The cost of manufacturing in an exporting nation versus an importing economy (land, labor, capital, taxes, incentives, and so on.(

-The price of raw materials, inperiod ediate products, and other inputs, as well as their availability.

-Changes in exchange rates, global, bilateral, and unilateral trade tariffs and limitations.

-Non-tariff obstacles like environmental, health, and safety regulations.

-Able to pay for products with sufficient foreign currency.

- Domestic prices of manufactured products, influenced by supply response How to compute the trade balance by understanding how nations engage in the global marketplace.

### 2.2.3 Components of the trade balance

An increase in the percentage of exports is considered to improve the nation's production which will lead to more employment and growth in the economy. The export-led growth hypothesis was used to find out the causal relationship between exports and gross domestic products. First, the growth of exports and foreign trade play important roles in promoting growth in the economy given the fact that they provide positive benefits to external factors. For example, companies engaged in export trade can appreciate advantages in the areas of productivity, diversification of assets, more prominent use of assets, improper use of the economy of scale and scale, expansion and development of technology through competition with international traders. Secondly,

the expansion of export also leads to participation in the international exchange market and thus allows the import of capital into the nation which transfers income and potential production to the nation in the long run. Second, greater exports lead to increased participation in the foreign exchange market, allowing for the import of capital into the nation, which transfers income and potential production over time. Third, international competition has an influence on the economy's size and growth, as well as productivity (Namibia. National Planning Commission, & Nambinga, V. 2015).

The difference between the amount of imports and exports period ines a nation's trade balance (Anca, H. D., & Adrian, N. 2010).

- **Savings account:**

The current account contains a nation's trade balance, net income, and direct payments implications. When a nation's residents' activities create enough revenue and savings to pay all of their purchases, the nation is considered prosperous.

- **Current account deficit: -**

It occurs when citizens of a nation spend more on imports than they save. To fund the national deficit, other nations lend money or invest in deficit state institutions. Because its institutions profit from exports to the deficit nation, the lending nation is frequently prepared to cover the shortfall. In the near period, both nations benefit from the current account deficit. However, if the current account deficit persists for a long time, gross domestic product will be slowed.

International lenders may begin to question if they will receive a sufficient return on their investment. If demand falls, the borrowing nation's currency's value may decline as well. As import prices rise as a result of the currency depreciation, inflation occurs. Greater interest rates are also a result of the government having to pay higher yields on its bonds (Akbaş, Y. E., & Lebe, F. 2016).

- **Current account (the trade balance):**

The trade balance is a calculation that compares the nation's imports and exports. This is the most important section of the current account, and it is also the most important part of the balance of payments. The majority of nations are attempting to avoid trade deficits, which is beneficial to developing market nations. It allows them to expand more quickly than they could if they kept a surplus (Adamu, P., & Audu, J. G. 2018).

- **Financial account:**

Changes in domestic ownership of foreign assets and foreign ownership of domestic assets are tracked in the financial account. If foreign ownership grows faster than local ownership, the financial account will be in deficit. This suggests that the state is selling its assets faster than it is acquiring foreign assets, such as gold, commodities, and corporate shares (McCombie, J., & Thirlwall, A. P. 2016).

- **Capital Account:**

The capital account tracks financial transactions that have no bearing on a nation's revenue, outcome, or savings. It keeps track of international drilling rights, trademarks, and copyright transfers, for example. Many capital account transactions are uncommon, such as cross-border insurance payments. The capital account is the balance of payments' smallest component (Leamer, E. E., & Stern, R. M. 2017).

### 2.2.4 The effect of the trade balance on gross domestic products

Integration of nations into the global economy is frequently regarded as a key component in boosting wealth and prosperity. International trade benefits the global economy while also having the potential to boost a nation's economic progress. Foreign trade promotes efficient resource allocation, enables the state to achieve economies of scale, facilitates knowledge distribution, promotes technological progress, and increases competition in domestic and international markets, resulting in improved manufacturing processes and the development of new products (Butkus, M., & Seputiene, J. 2018).

The influences of the trade balance on gross domestic products have received a lot of attention, as it has become a key measure of a nation's competitiveness and in evaluating the nation's economy and ties with the rest of the world. The influence of the trade balance on gross domestic product is usually favorable in studies, while the trade deficit is mostly negative in others (Gabberty, J. W., & Vambery, R. G. 2014). In economic research and economic theory, evaluating the influence of the trade balance on a wide scale identifies the recognized channels via which international trade may affect gross domestic products, and it is critical not only to contain export and import separately but also to disclose the trade balance. It is not uncommon for a nation with strong export volumes for multiple years to have higher import flows, resulting in a consistent stream of cash flows each year as a consequence of total trade imbalances. When deperiod ining the economic significance of a nation's international trade validity

or deperiod ining its future trade policy, it's critical to consider the influence of the trade balance on gross domestic products (Bakari, S., & Sofien, T. 2019).

A trade surplus promotes job creation and economic progress, but it can also result in increased prices and interest rates. Because it allows a government to control the bulk of its currency through commerce, a nation's trade balance can influence the value of its currency in international markets (Arto, I., Rueda-Cantuche, J. M., Amores, A. F., & Markandya, A. 2015).

The balance of payments is calculated by adding the results of the trade balance and the capital account balance. It is the accounting balance that results from computing the nation's overall inflows and outflows, whether in period s of trade, investment, loans, capital returns, or immigrant remittances. When the pace of GDP is limited by the availability of external resources, the balance of payments is said to be limiting. This issue is thought to be deperiod ined by the organization of production in the surrounding nations, as well as the system's inclination to duplicate these traits (Razmi, A. 2016).

The current account has two primary components: the foreign trade account, which displays the export and import of products, and the invisible trade account, which indicates the export and import of services. The current account deficit is less than the amount paid for products produced and sold abroad to be consumed locally, which Indicates that a nation has negative savings (Duman, Y. K. 2017). Macroeconomic goals contain both gross domestic products and the balance of payments. A gross domestic product is defined as an increase in real gross domestic products that leads to greater living standards. A sustained or restricted current account deficit/surplus is referred to as balance of payments stability. The current account balance of payments, which contains commodities and services, investment, and net transfers, is calculated. A high current account deficit might be a major macroeconomic issue (Thirlwall, A. P. 2012).

The funding of investments with international resources if local savings are insufficient explains the influence of the current account deficit on the growth rate. It may be stated in the following manner: If the economy's savings are insufficient, the investments are financed by borrowing from other people's savings. In this context, the source of growth is an investment, and the source of investment is the savings ratio, as both development economics and growth models highlight.

If domestic savings are inadequate, the imbalance can be made up by drawing on foreign sector deposits and the current account deficit. The current account reflects the link between an economy's financial markets and its products and service marketplaces. The current account deficit should, by definition, be funded by the capital account in the balance of payments. To put it another way, a current account deficit is only feasible if the required finance is given in the capital account of the balance of payments (Sauer, I. 2011).

Consumer spending will increase as the economy grows at a faster rate. As a result, there will be an increase in import expenditure, resulting in a current account deficit. Furthermore, as economic development accelerates, the economy will reach full capacity, putting increasing pressure on pricing and inflation. Inflation will make UK exports less competitive and imports comparatively cheaper if it rises. The current account deficit will be exacerbated as a result of this. In some cases, increased gross domestic products may not result in a current account deficit. First, if gross domestic products is stable and near to the long-period trend, inflationary pressures will be kept at bay, and domestic supply will be able to keep up with domestic demand. In this situation, customers are less likely to switch to imported products from other nations (Yurdakul, F., & Ucar, B. 2015).

The characteristics of economic development. Depends Gross domestic products can be consistent with a current account surplus if it is driven by capital investment and export demand. Nations like Germany and China, for example, have economies that rely heavily on exports. It can grow export demand quicker than local consumption by improving international competitiveness (Shukarov, M. 2020).

### 2.2.5 Trade Balance and Gross domestic products Indicators in Iraq

When too many imports come into a nation concerning its exports which are products shipped from that nation to a foreign nation, this can distort the nation's trade balance and devalue its currency. Devaluation of a nation's currency can have a significant influence on the daily lives of a nation's citizens because the value of a currency is one of the biggest deperiod inants of a nation's economic performance and GDP. Maintaining a proper balance of imports and exports is crucial to any nation. The import and export activity of a nation can affect the nation's gross domestic product, exchange rate, inflation level, and interest rates (Saleem, H., Farooq, F., & Aurmaghan, M. 2021).

In 2019, Iraq ranked 48th in the world in period s of gross domestic products, 40th in total exports, 52nd in total imports, 100th in period s of per capita gross domestic products, and the 92nd most complex economy according to the Economic Complexity Index (Report of the Observatory of Economic Complexity, 2019).

Due to increasing oil sales, Iraq has been running trade surpluses since 2005. (99 percent of total exports). Machinery and transportation equipment are the most common imports. Mineral fuels and manmade materials The United States (which accounts for 2five percent of total exports and 6% of imports) and China are the two most important trading partners (12 percent of exports and 14 percent of imports). Syria, India, and South Korea are among the other nations (Ibid). Imports in Iraq decreased to 40,927.30 million US dollars in 2020, from 49,417.60 million US dollars in 2019 (Central Bank of Iraq, Iraq Imports).
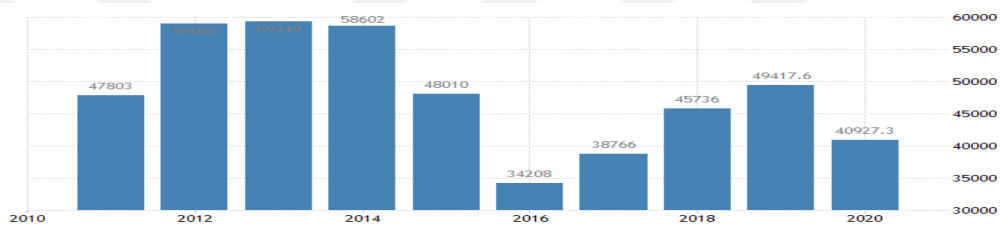


**Figure 1** Iraq's imports from 2010 to 2020

Source: Central Bank of Iraq

Imports into Iraq are expected to reach $35840.98 million by the end of 2021, according to global macroeconomic models and long-period analysts' expectations, Iraq's imports are expected to reach $35840.98 million in 2022 and $34481.09 million in 2023, According to econometric models (Ibid).
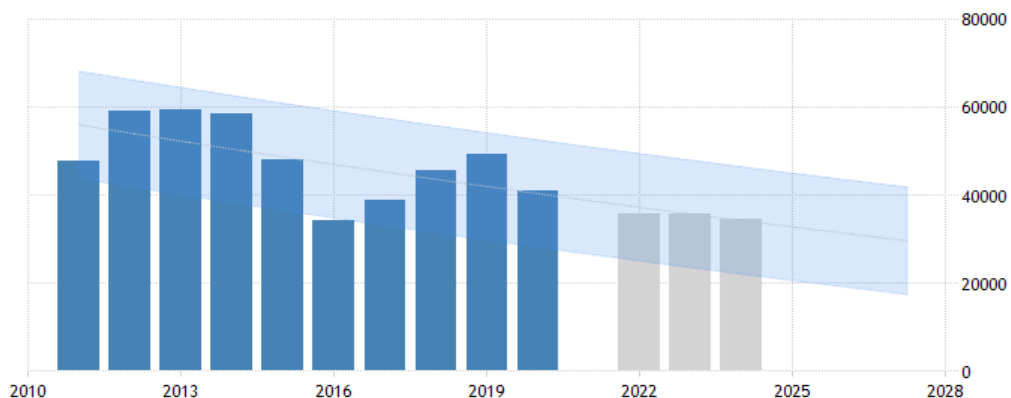


**Figure 2** Iraq's imports in 2021 and Iraq's import forecast from 2021 to 2023 according to standard economy models

Source: Central Bank of Iraq

Exports in Iraq decreased to 46810.50 million US dollars in 2020, from 81585.20 million US dollars in 2019 (Central Bank of Iraq, Iraq Exports).
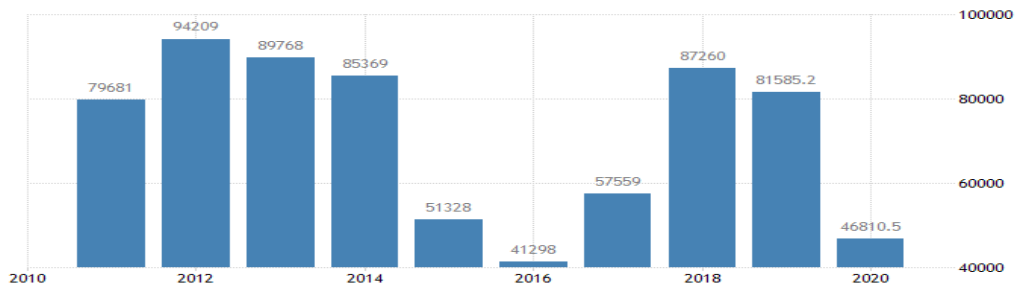


**Figure 3** Iraq's exports from 2010 to 2020

And exports in Iraq are expected to reach 66100.36 million US dollars by the end of 2021, according to global macroeconomic models and long-period analysts' expectations, Iraq's exports are expected to reach 66100.36 million US dollars in 2022 and 63622.64 million US dollars in 2023, according to econometric models (Ibid).
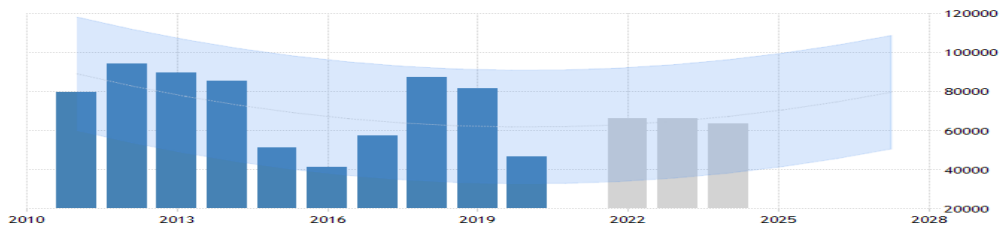


**Figure 4** Iraq's exports in 2021 and Iraq's export forecast from 2021 to 2023 according to standard economy models

Iraq recorded a trade surplus of 5,883.20 million dollar in 2020 (Central Bank of Iraq, Iraq Balance of Trade).
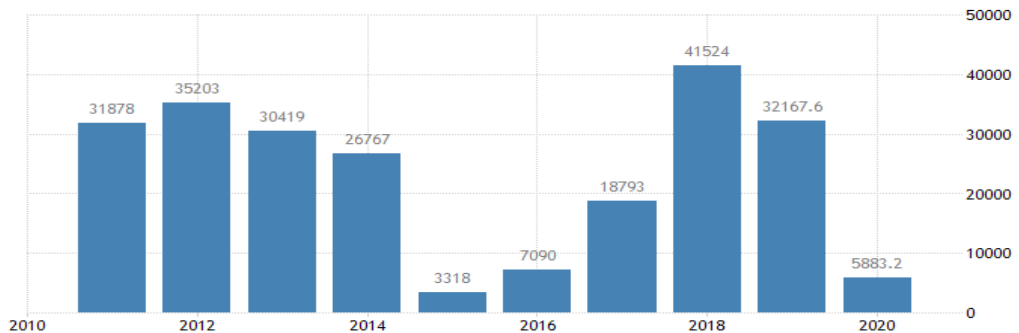


**Figure 5** Iraq's trade surplus in 2020

Iraq's trade balance is expected to reach29141.55 million dollar by the end of 2021, according to global macroeconomic models and analyst expectations. In the long-period , the Iraqi trade balance is expected to reach 30,259.00 million dollar in 2022 and 29142.00 million dollar in 2023, according to econometric models (Ibid).
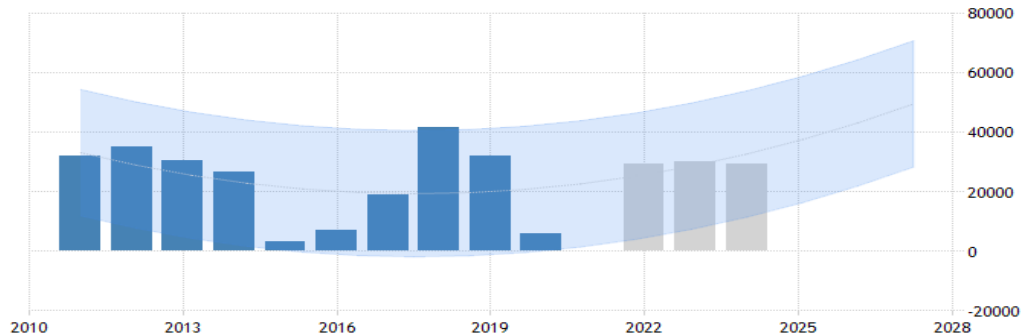


**Figure 6** Iraq's trade balance in 2021 and Iraq's trade balance forecast from 2021 to 2023 in accordance with benchmark economic models

Source: Central Bank of Iraq

Gross domestic products in Iraq moves in tandem with exports and imports. The causal relationship of exports affects gross domestic products and imports have a positive effect on gross domestic products. On the contrary, imports arising from exports show that any increase in the number of exports will increase the volume of imports. Moreover, imports into Iraq do not cause exports (Abdulla, S. M. K., & Ali, H. K. 2019). Despite the fact that the trade balance parity in recent years, Iraq still needs to improve its trade rules, as the involvement of foreign investors encounters difficulties in the Iraqi economy, where the common goal of recovery and redevelopment of Iraq should not be deviated. This goal is underestimated by international traders

## 2.3 Review of previous studies

1- Farag (2021). Foreign trade and its link to gross domestic products were investigated. Over the research period of 1990 to 2017, this study intends to evaluate the short- and long-run causal link between international trade and gross domestic products in Libya. To achieve the study's goal, the Johansen co-integration test, the error correction model (VECM), and the Wald test were used. The gross domestic products rate, exports, and imports are the variables used in this study, and the data is gathered from a variety of sources including the Libyan Central Bank and the Libyan Ministry of Planning. The findings of this study show that international commerce and gross domestic products in Libya have a long-period link. In this line, exports and

imports have a short-run causality that leads to economic development (Farag, F. S., Ab-Rahim, R., & Mohd-Kamal, K. A. 2021)

2- The influence of foreign trade on the gross domestic product was explored by Parajuli (2021). The study's goals are to look at the foreign trade growth trend and the link between Nepal's exports, imports, and gross domestic products. The ARDL model was used to investigate the link between Nepal's international trade and gross domestic products. The research was conducted using data from 1994/95 through 2018/19. The empirical data suggests that gross domestic products and international trade have a long-period stable relationship. The findings revealed that export has a positive influence on gross domestic products, implying that the more items and exports a nation can create for the international market, the greater its gross domestic products will be (Parajuli, R. 2021).

3- Blavasciunaite and colleagues (2020). The purpose of this research was to look into the influence of the trade balance on gross domestic products as well as to assess it during periods of trade deficit. The study's methodology was based on the European Union (EU) 28 nations panel data from 1998 to 2018, with the OLS method of multivariate regression analysis with fixed effects and two strategies: (i) including all trade balance periods, and (ii) adding a deficit dummy variable to see if there was a different and significant effect on gross domestic products during deficit periods. When all trade balance periods are considered, the results show that the trade balance has a negative and lagging influence on gross domestic products, with no significant differences in influence during the deficit periods. The worsening of the trade balance affects average gross domestic products, and from the perspective of a linear connection, it makes little difference whether the trade deficit or surplus is the starting point. The findings also revealed the likelihood of a non-linear effect, implying that when the trade balance deteriorates in the face of a high trade deficit, the negative influence on gross domestic products is larger (Blavasciunaite, D., Garsviene, L., & Matuzeviciute, K. 2020)

4- The nonlinear link between trade balance and income was examined by Rehman et al. (2020). From 1990 to 2019, this study attempts to investigate the nonlinear link between domestic and foreign income and trade deficits for a sample of 13 high-deficit Asian nations. Three distinct sorts of models are proposed in this study. The first model was a benchmark model, which containd simply the domestic and foreign income effects, but the other two models incorporated the function of financial

development and carbon emissions. The calculated findings revealed a U shape connection for domestic income and an inverted U shape curve for global revenue. The findings suggested that it would be an excellent way for certain nations to increase their domestic income. Financial development and carbon emissions have been discovered to play a major role in reducing the trade imbalance. The findings also continued that there is a nonlinear link between trade balance and domestic and foreign income (Ur Rehman, H., Chaudhry, I. S., Arshed, N., & Sardar, M. S. 2020).

5- Akbulaev & Mirzayeva (2020) investigated and debated the influence of international tourist income on the foreign trade balance. The purpose of this research is to deperiod ine the influence of international tourism in enhancing the structure of Azerbaijan's foreign trade operations. Based on a statistical review of the nation's data from 1995 to 2018, it was discovered that there is a link between products exports and international tourist earnings. With a 1% rise in international tourist income, exports of products from other industries increase by 0.57 percent on average, and the foreign trade balance improves by 0.59 percent on average. The importance of tourism on the balance of payments has been demonstrated in this study( Akbulaev, N., & Mirzayeva, G. 2020).

6- Tung's thesis looked on the influence of remittance inflows on the trade balance in 2018. The study looks at the influence of remittance inflows on trade balances in 17 nations in the Asia-Pacific area from 1980 to 2015, which is currently the largest recipient group as compared to others, although there is no study at the domestic level. The estimated findings of the OLS, 2-SLS, and PGMM regressions all strongly suggested that remittance inflows had a negative influence on the trade balance of the nations in the sample. The findings revealed that yearly gross domestic products per capita growth had a negative influence on the trade balance, implying that growing income levels may lead to higher import prices and an imbalance in nations' international commerce. In the Asia-Pacific area, however, the influence of the exchange rate on the trade balance was positive (Tung, L. T. 2018).

7- Mohsen and colleagues (2017) investigated and examined trade liberalization, exports, and imports. The goal of this study was to look at the influence of trade liberalization on Syria's exports and imports from 1980 to 2010. This research uses the ADF unit root test, the Johansen cointegration test, Granger causality tests, and IRFs. According to the findings, the granger causality test reveals bidirectional short-run causation links between trade openness and exports, as well as a unidirectional short-

run causality relationship between trade openness and imports. The findings also revealed that in the long run, a unidirectional long-run causation link exists between exports and trade openness, but no such relationship exists between trade openness and imports. Trade openness, on the other hand, has a higher influence on imports than on exports. The findings also suggest that trade liberalization benefits Syria's exports and imports (Mohsen, A. S., Chua, S. Y., & Sab, C. N. C. 2017).

8- Lynn (2014) investigated the link between international commerce and gross domestic products. The link between international trade and gross domestic products in Myanmar from 1990 to 2014 is examined in this study. It contains annual data on Myanmar's GDP, exports, and imports from 1980 to 2014. Exploratory data analysis and descriptive analysis are the two key methodological techniques used in this study. The Augmented Dickey-Fuller (ADF) unit root test and Granger causality test are employed in the first method, which is based on the Vector Autoregressive (VAR) model, which has seldom been explored for the Myanmar example. The second method is using descriptive statistics to analyze Myanmar's international trade trends. The findings suggest that international commerce has no substantial influence on Myanmar's gross domestic products. Myanmar's economic expansion, on the other hand, had a negative influence on import growth. It was discovered that exports were influenced by GDP growth. For the years 1990 to 2014, a growth-driven export strategy was used. Furthermore, there was just one causal link between export and import increases. The findings show that international trade had no substantial influence on Myanmar's economic development between 1990 and 2014 (Lynn, K. K. 2014).

9- The influence of trade openness on gross domestic products was the subject of Pigka-(2013) Balanika's thesis. Using a sample of 71 developing nations from 1990 to 2005, this study investigates the link between trade openness and economic development. Both fixed and two-way fixed effects assumptions suggest that trade liberalization has a positive and substantial influence on economic development when using an enhanced Solow growth model in a panel data study. However, the Sub-Saharan Africa area appears to be unique; high natural trade barriers, reliance on primary commodities for export, and weak overland infrastructure to distant big markets can all explain why more trade openness does not lead to gross domestic products (Pigka-Balanika, V. 2013).

10- Does international commerce create gross domestic products, according to Singh (2010)? This research looked examined the literature on the link between

international commerce and gross domestic products, as well as the function of the GATT/WTO in promoting free trade. The majority of studies found that the benefits of trade and acknowledge the significant contributions of GATT/WTO in promoting free trade; nevertheless, the evidence is not always clear. The macroeconomic data favors the positive and substantial benefits of trade on production and growth, but the microeconomic evidence favors the exogenous effects of productivity on trade rather than the effects of trade on productivity. The study's findings suggest that the strength of the case for trade benefits must be weighed against many methodological and quantitative difficulties that surround the trade–growth relationship. The estimates and statistical data on the link between trade and growth have evolved a long with the econometric approach that is key to the empirical evidence (Singh,     T. 2010).

11- Saddam Metkal Nayef, (2000-2019).This study addressed the basics of both macroeconomic variables and foreign trade in addition to demonstrating their relationship in Iraq for the period (2004-2019), by analyzing the reality of the variables of the study economically and analogy, and used the descriptive approach in analyzing the data of selected macroeconomic variables as well as analysis of the structure of Iraqi exports and imports and their most important indicators for the same period. Iraq's exports have been adopted as a dependent variable and the selected macroeconomic variables represented by gross domestic product and the exchange rate of the Iraqi dinar facing the US dollar, and the consumer price index (CPI) as independent changes. In the case of the expanded dickie Fuller (FDA) test, the degree of integration of study variables was found to be a mixture of type (0) I and type (1)I, thus estimating the self-regression model of ARDL distributed deceleration periods, and the boundary test for common integration showed that there was no common integration relationship, which meant that there was no long-period balance between independent variables and the dependent variable. This was confirmed by Granger's causal test of the lack of a causal relationship in two directions between any of the dependent and the independent changes.

The commodity structure of Iraq's exports depends (99%) on its oil exports, making the Iraqi economy hostage to fluctuations in world oil prices. In which any decrease in the prices will paralyze and incapacitate Iraqi economy, and most Iraqi imports are machinery and transport equipment, by about 38%. The single commodity structure of exports versus the multiplicity of commodity structures of imports has

made the Iraqi economy severely affected by the global financial crisis and has a negative influence on all economic indicators and variables. The government policies used since 2017 that contains rationalizing government spending, supporting agriculture, achieving self-sufficiency of wheat crops and preventing their imports, it had a very important positive influence on Iraq's highest trade surplus in 2018. Iraq reached the highest value of the export importance index in 2012 which was 116%, and the highest value of export index 72% in the same year (Nayef. 2019).

12- Heba Saad Rashid Study, (1980-2013). The most important conclusions were that the Iraqi economy is considered a rentier economy, which is one-sided and depends in its foreign trade on its oil exports, and that most of its revenues from it, as well as the weakness of other economic sectors such as the industrial, commercial and agricultural sectors. The dependence of these economic sectors in the productive process on foreign imports of products and services for their productive cycle, requires examining the components of foreign trade in both exports and imports and their relationship to some indicators of Iraqi gross domestic products.

Such studies are no longer so much an intellectual luxury as they are a great necessity for analysing internal and external economic conditions and their direct and indirect influence on gross domestic products and the well-being of society.

While the large oil revenues in the previous periods of the Iraqi economy covered the significant deficiencies in the sectors of the national economy and did not concern many economists. The research on the subject of Iraqi foreign trade was due to previous economic conditions since the 1990s, and the current decline in oil and its effect on the gross domestic products in Iraq.

Conditions have justified the study of these economic variables in order to assess gross domestic products and support the growth of other non-oil sectors.

Modern econometric models play an important role in analysing and measuring relations between different economic variables, where economic theories point to the strong relationship between foreign trade and gross domestic products through mutual influence between them, as analyzed in this study in Iraq (Rashid. 2013).

13- Abdul Hamid Hamsha, (2013). This study aimed to answer the following problem:

"How does the liberalization of foreign trade contribute to the promotion of exports outside hydrocarbons in Iraq?" concluded a set of results, the most important of which is: Iraq should provide mechanisms to attract foreign direct investment in order to attract a large number of foreign investors to take advantage of the experiences and technologies to increase production for the export process, in addition to Iraq's quest to join the largest domestic economic blocks to increase benefits and gains from trade exchange and thereby stimulate the export action.

This study was adopted in the role of foreign trade liberalization in promoting exports outside hydrocarbons in Iraq, adding to that conceptual framework of the balance of payments (Hamsha. 2013).

14- Abdul Ghaffar Ghattas, (2006)." What is the influence of foreign trade liberalization on gross domestic products "?

It was concluded that the researcher tried to clarify the aspects related to the topic of liberalization of the foreign trade sector and highlight the effects of the process of trade liberalization in the national economy. Also, to clarify the relationship between the process of liberalization of the foreign trade sector and gross domestic products, and the most important characteristic of the study is the focus on trade liberalization in general and its influence on the national economy only.

This study was based on clarifying the influence of foreign trade liberalization on gross domestic products, and added to that theoretical framework for foreign trade (Ghattas. 2006).

# CHAPTER THREE

# ANALYSIS OF FOREIGN TRADE SECTOR INDICATORS IN SUPPORTING THE TRADE BALANCE IN IRAQ

## 3.1 Introduction

The problem of gross domestic products is increasingly being taken care of by economists and thinkers of different disciplines, given the great importance of the foreign trade sector, which contributes to raising the productive capacities of the domestic economy, and also helps in increasing the well-being of the nation by expanding the base of choices and allocating productive resources in general.

This sector is considered the reflective mirror of all economic activities, as it represents the outcome of various economic activities because it affects and is affected by them, as the various economic sectors rely on imports of consumer, inperiod ediate and production products.

The industrial revolution has contributed to strengthening the role of foreign trade, as well as the development of means of communication and means of transportation and the emergence of the role of international companies, as it is considered an essential indicator to know the current reality of economic and production structures

The role of trade appears as it seeks to achieve a surplus of exports in order to obtain new gains in the form of foreign capital, which plays a major role in domestic investments and infrastructure construction, leading to an increase in national income and achievement of economic development.

The main objective of this chapter is to identify the influence of the role of the foreign trade sector indicators and their role in supporting the trade balance in Iraq, and the foreign trade sector is of great importance in the overall economic activity, as its importance is evident through what exports provides from foreign currency, and what contributes to financing imports to meet the requirements of the sustainable growth process.

An attempt will be made to achieve this goal, depending on the qualitative methodology through statistical qualitative data, derived from earlier sources, are the following:

    1- Some annual reports of the Central Bank of Iraq.

    2 - Some of the annual reports of the Iraqi Ministry of Planning

    3 - Some annual reports of the Iraqi Ministry of Finance.

4-Some yearly statistics articles or other references issued by the statistical institution, and economic growth rates will be implemented in analyzing data in the frame of the used variables during the period 2008 - 2019, and analyzing them in a descriptive way, to make the identification of the size of the indicators of the foreign trade sector in Iraq (Gross domestic product (gross domestic product) ,volume of imports, volume of exports, oil rents, imports and exports ratio to gross domestic products, and the inflation rate to GDP) .

Gross domestic products has considered the new obsession as an indicator repressing the advancement of the nation and the social life of the people as well, as it depends on the introduction of tangible developments in the basics of the life. It was the aim for all nations to be an essential destination to raise the low standards of living, trying to making the gross domestic products high to a level that nation is good with.

In this section, we are going to look at knowing the variables data of the indicators of the foreign trade sector and economic growth rates limited to the study period, and knowing the influence of the foreign trade sector on the trade balance, the balance of payments, and gross domestic products.

## 3.2 Indicators of the foreign trade sector

Because it contains the flow of products and services to and from the nation, as well as the links it creates at the macroeconomic level, because it does not obstruct the flow of products and services within the markets, foreign trade is one of the most important areas of interaction between the local economy and the economies of the rest of the world. Foreign trade is also regarded as one of the most important sectors in any nation, whether developed or developing, because it connects nations, increases competitiveness by opening new markets for the nation's products, and improves the nation's and societies' well-being by expanding the range of product options. As a result, foreign trade is regarded as one of the most important sectors in any nation, trade is an essential indicator of nations' productive and competitive ability in the international market and the nation's ability to export and import, and all of this is reflected on its foreign currency balance and what effects it has on the trade balance.

### 3.2.1 Gross domestic product (GDP)

It is the main indicator which express and deperiod ine the economic performance of the country, and it is an important to say if the nation's well-being and the life standards of people in the country within it.

The country central banks use the gross domestic products indicator make a decision whether that nation will apply loose monetary methods prevent recession of economy and, or it will turn to tight monetary economic policy make a prevention of the inflation. In other words, this indicator represents the best method to identify and measure the economic performance.

### 3.2.2 Imports volume

It represents the values of products sold from non-residents to residents of the nation, and the values of services provided by non-residents to residents of the nation on the basis of value (Cost, insurance, and freight (CIF) ), which consists of the cost of products and services, insurance fees and the cost of shipping up to the customs borders of the importing nation, noting that those products and services  for both exports and imports do not contain the value of military equipment transferred between governments .

Exports volume:

They represent the values of products sold from residents of the nation to non-residents, and the values of services performed by resident producers to non-residents, on the basis of the prevailing value of products and services in the market at the time of dealing. This value contains the cost of exported products and services and the cost of transporting them to the borders of the exporting nation, as well as export duties And sometimes it contains the cost of unloading the products on the back of the means of transport, and this basis is known as the value (FOB (free on board).

### 3.2.3 Oil rents

Oil is the most important wealth in Iraq, which, if handled optimally and properly, will be the basis for Iraq's future development.

It is worth noting that the most valuable products in this sector are fuel oil and vehicles fuel (gasoline), oil is also the raw material for many chemical products, including pharmaceuticals, solvents, fertilizers and pesticides.

Oil is essential for many industries, important for the maintenance of industrial civilization in its current form, and therefore of great importance to the nation.

### 3.2.4 The ratio of imports and exports to GDP

This ratio indicates the degree of openness to the foreign exchange sector and also expresses the importance that foreign trade occupies in the national economic activity, by highlighting the extent to which foreign exchanges contribute to the gross domestic production, where the high degree of openness to foreign trade translates the great role played by foreign exchanges in the national economic activity, and vice versa.

### 3.2.5 Inflation rate

The inflation rate is an economic period which expresses the amount of change in the goods and services' prices in the limited period in the economy of the country. In other words if the average rate in prices of the goods and services in the limited still rise we call it the inflation but, if the average rate in prices of the goods and services in the limited still going low we call it deflation. The results of the inflation will be the decrease of the buying ability of the individuals and the opposite is right.

## 3.3 Data collection sources and variables

### 3.3.1 The variables used in the study

When measuring the foreign trade sector, a group of indicators expressing foreign trade, as an example the volume of imports, the volume of exports, the ratio of imports and exports to gross domestic products, oil rents, the inflation rate of gross domestic products (GDP), the researcher deperiod ined the variables, based on the earlier studies as follows:

- The standard of the foreign trade sector containd some indicators of independent variables like:

    1- The volume of imports

    2- The volume of exports.

    3- Oil rent.

    4- The ratio of imports and exports to GDP.

    5- The inflation rate of the gross domestic product.

But, the trade balance standard was considered as the indicator of the dependent variable in the GDP variable .

Where:

GDP equal represents the gross domestic product.

IMP equal volume of imports.

EXP equal volume of exports.

OIL equal oil rents.

RIE equal Ratio of imports and exports to GDP.

INF equal inflation rate, for GDP.

### 3.3.2 Sources of data

The data in this thesis was collected from this following online resources:

1- Some of the used annual reports collected from the Central Bank of Iraq.

2- Many of the used annual reports collected from Ministry of Planning in Iraq.

3- Many of the used annual reports collected from Ministry of finance in Iraq.

4- many of the used annual statistics references collected from the Central Statistical institutions, and other institutions.

**Table 1**. **Data of the variables under study during the period 2008 - 2019.**

| DATE | Gross domestic product GDP | Volume of imports Imp | Volume of exports Exp | Ratio of imports and exports RIE | Oil Rents Oil | inflation rate, for Inf |
|------|------|------|------|------|------|------|
| (measuring unit) | (% of GDP) | (% of GDP) | (% of GDP) | (% of GDP) | (% ofGDP) | (% of GDP) |
| 2008 | 1.16353E+11 | 40441240775 | 7.90286E+13 | 98.017761 | 52.3647 | 30.1754087 |
| 2009 | 1.25926E+11 | 43868500000 | 5.14736E+13 | 92.881248 | 36.269637 | -19.521201 |
| 2010 | 1.30182E+11 | 47207400000 | 6.38807E+13 | 86.911514 | 42.350911 | 16.5867408 |
| 2011 | 1.38517E+11 | 51552600000 | 9.65313E+13 | 85.141228 | 50.834757 | 24.6894374 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 2012 | 1.4897E+11 | 63438829972 | 1.13E+14 | 86.311005 | 48.432381 | 2.66976938 |
| 2013 | 1.69731E+11 | 84500000000 | 1.08555E+14 | 76.364708 | 45.400539 | 0.01495212 |
| 2014 | 1.8263E+11 | 86700000000 | 1.13102E+14 | 74.340546 | 45.405697 | -0.6906074 |
| 2015 | 1.83909E+11 | 73515935851 | 7.32248E+13 | 71.946228 | 34.790479 | -26.1 |
| 2016 | 1.88466E+11 | 69813350661 | 6.63571E+13 | 55.298183 | 30.465042 | -13.410373 |
| 2017 | 2.17136E+11 | 69661023105 | 8.77001E+13 | 57.69659 | 37.120757 | 14.6359437 |
| 2018 | 2.11719E+11 | 80606458261 | 1.16555E+14 | 0 | 45.394931 | 15.360638 |
| 2019 | 2.10526E+11 | 91988381640 | 1.02596E+14 | 0 | 0 | -0.0008749 |

SOURCE: the ministry of planning and finance and the central bank of Iraq

We can notice from the Table (1) that is no data at the last two years of the time series of the variable oil rents and that's because of circumstances or conditions that Iraq suffer from during this period.

Also, the other variable (Ratio of imports and exports RIE), data is not available for the last year of the time series.

The data that was used to measure the foreign trade sector, the researcher select the period from 2008 to 2019 as a time series to measure the foreign trade indicator, and for this  this time series is not sufficient for the goals of constructing the standard model, and it was essential for us in this thesis to divide this  period from 12 years (observation ) to 48 observations, and the we divided the data of the time series into quarters through the E-VIEWS statistical program, and we relied on a standard methodology to analyze the results, in the standard chapter.

 To achieve the purpose of this study we divided the data in the time series into quarterly, because the more observations, making the results more accurate and making it correct, and where the time gaps are more comfortable.

### 3.4 Analysis and discussion of indicators of the foreign trade sector

**Table 2. The development of growth rates for the foreign trade sector indicators in Iraq.**

Source: prepared by the researcher

| DATE | Gross Domestic Product GDP | Growth rate, % | Imports IMP | Growth rate, % | Exports EXP | Growth rate, % | Ratio of exports and imports RIE | Growth rate, % | GDP inflation INF | Growth rate, % | Oil rents Oil | Growth rate, % |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2008 | 1.16E+11 | | 4.04E+10 | | 7.9E+13 | | 98.01776 | | 30.17541 | | 52.3647 | |
| 2009 | 1.26E+11 | 8.23 | 4.39E+10 | 8.47 | 5.15E+13 | -34.87 | 92.88125 | -5.24 | -19.5212 | -164.69 | 36.26964 | -30.74 |
| 2010 | 1.3E+11 | 3.38 | 4.72E+10 | 7.61 | 6.39E+13 | 24.10 | 86.91151 | -6.43 | 16.58674 | -184.97 | 42.35091 | 16.77 |
| 2011 | 1.39E+11 | 6.40 | 5.16E+10 | 9.20 | 9.65E+13 | 51.11 | 85.14123 | -2.04 | 24.68944 | 48.85 | 50.83476 | 20.03 |
| 2012 | 1.49E+11 | 7.55 | 6.34E+10 | 23.06 | 1.13E+14 | 17.06 | 86.31101 | 1.37 | 2.669769 | -89.19 | 48.43238 | -4.73 |
| 2013 | 1.7E+11 | 13.94 | 8.45E+10 | 33.20 | 1.09E+14 | -3.93 | 76.36471 | -11.52 | 0.014952 | -99.44 | 45.40054 | -6.26 |
| 2014 | 1.83E+11 | 7.60 | 8.67E+10 | 2.60 | 1.13E+14 | 4.19 | 74.34055 | -2.65 | -0.69061 | -4718.79 | 45.4057 | 0.01 |
| 2015 | 1.84E+11 | 0.70 | 7.35E+10 | -15.21 | 7.32E+13 | -35.26 | 71.94623 | -3.22 | -26.1 | 3679.28 | 34.79048 | -23.38 |
| 2016 | 1.88E+11 | 2.48 | 6.98E+10 | -5.04 | 6.64E+13 | -9.38 | 55.29818 | -23.14 | -13.4104 | -48.62 | 30.46504 | -12.43 |
| 2017 | 2.17E+11 | 15.21 | 6.97E+10 | -0.22 | 8.77E+13 | 32.16 | 57.69659 | 4.34 | 14.63594 | -209.14 | 37.12076 | 21.85 |
| 2018 | 2.12E+11 | -2.49 | 8.06E+10 | 15.71 | 1.17E+14 | 32.90 | 0 | -100.00 | 15.36064 | 4.95 | 45.39493 | 22.29 |
| 2019 | 2.11E+11 | -0.56 | 9. 2E+10 | 14.12 | 1.03E+14 | -11.98 | 0 | 0.00 | -0.00087 | -100.01 | 0 | -100.00 |
| Average | | 5.67 | | 8.50 | | 6.01 | | -13.50 | | -171.07 | | -8.78 |

Table (2) shows the development of foreign trade sector indicators and trade balance in the period (2008-2019), as bellows:

**-** The GDP, seen as in the all period of the study and in every ascension and descent big fluctuation, as seen  by the rates of growth, we observed from the results in the table 2 that the growth rate was positive but continually change  between ascent and descent, between a rate of 15.21% as a highest in 2017 and between 0.70% as a lowest in 2015, and we noticed that the growth rate in 2018 and 2019 was negative, and (2.49, 0.56), in a respective way, bringing the annual growth rate to an average of negative 5.67% during the study period, which may be due to the general economic performance being affected by the fluctuation in global commodity prices, especially oil prices, which directly affect the added value and export earnings. The income generated in the service, production and other sectors is quickly affected by local and external conditions. The following figure shows the development of the growth rate of the GDP
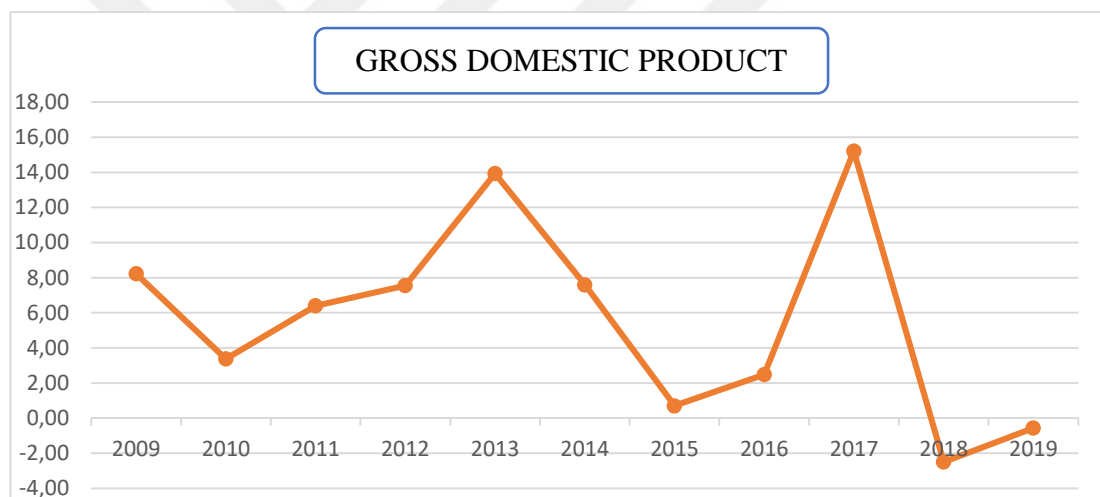


indicator.

**Figure 7.**Evolution of the trend of the growth rate of the GDP index for the period (2009-2019)

The above figure shows  that during the period from 2009 to 2019, the GDP indicators were in constant fluctuation, ascension and descent, as the growth rate in 2009 amounted to 8.23% and then decreased in the following year to 3.38% and in the following three years it started to ascent to 13.94% in 2013, and then declined in the following two years until it reached 0.70% in 2015, and it started to rise until it reached its peak of 15.21% in 2017, and then fell in the last two years until it reached negative 0.56,2.49  in 2018 and 2019, respectively.

- The volume of imports approximately in the all period of the study as seen by the growth rates, there was also a considerable deal of variation in the ascension and descent, and we can observe that the growth rate seems positive for approximately all of the study years, but it continually change between ascension and descent, ranging from 33.20 percent in 2013 to 2.60 percent in 2014, and it was negative in 2015, 2016, and 2017, (0.22, 5.04, 15.21), throughout the search period the average yearly growth rate is about 8.50 percent. The following figure shows the evolution of the growth rate of the imports index.



**Figure 8.** Evolution of the growth rate trend of the imports index for the period (2009-2019).

It is clear from the above figure that during the period from 2009 to 2019, the growth rate indicators of imports volume were in continuous fluctuation approximately in the all years of the study, ascension and descent, as the growth rate in 2009 amounted to 8.47% and then fell in the following year to a slight decrease and Then it began to rise in the following three years until it reached its peak of ascent to 33.20% in 2013, and then declined in the next two years until it reached negative 15.21% in 2015, and then started to rise until it reached 15.71% in 2018, and then decreased in the last year until it reached 14.12% in 2019..

- Approximately in the all years of research, the volume of exports continually changes greatly in the ascension and descent, as seen by the growth rates. The growth rate seems positive approximately in the all years of study, but continually change between ascension and descent, ranging from 51.11 percent as a highest rate in 2011 to 4.19 percent as a lowest rate in 2014, and the growth rate seems negative approximately in the all years of study, but continually change between ascension and descent as well,

ranging from 35.26 percent as a highest rate in 2015 to 3.93 percent as a lowest rate in 2013, bringing the average annual growth rate to 6.0 percent.

The following figure shows the development of the growth rate of the exports index.
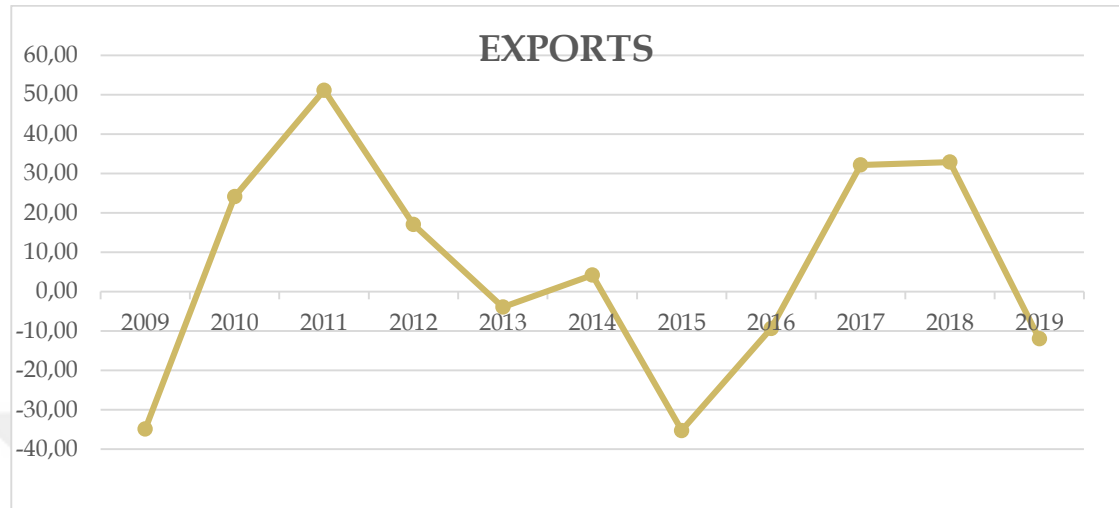


**Figure 9.**Evolution of the growth rate trend of the exports index for the period (2009-2019).

The above figure shows that during the period from 2009 to 2019, the growth rate indicators of the exports volume were in constant flux, rising and falling in the years of study, where the growth rate was negative in 2009, reaching 34.87%, and then began to rise in the following two years until It reached its peak in rising to 51.11% in 2011, and then declined in the subsequent years until it reached its peak of negative decline to 35.26% in 2015, and then started to rise until it reached 32.90% in 2018. Then it decreased in the last year until it reached negative 11.98% in 2019.

**-** Whereas the ratio of exports and imports to gross domestic products, it seen fluctuations in descent and ascent, as indicated by the rates of growth, as we can observe from the Table (2) that the data for the two years at the end of the time period in our study were not available because of the lack of sufficient data for those years, Because of the conditions in.

The nation at that time, where the growth rate was positive in 2012, 2017, (1.37, 4.34), respectively. The growth rate was negative in approximately all years of the study, but it continually change between low and high, as a highest rate in 2018 and 2.04% as a lowest rate in 2011, lowering the average annual growth rate to a negative level 13.50% in the frame of the study period, and this indicates the low and weak level foreign trade in Iraq, and therefore the internal and external turmoil in the nation affect

the national economic activity. The following figure shows the evolution of the growth rate of the ratio of imports and exports to gross domestic products.
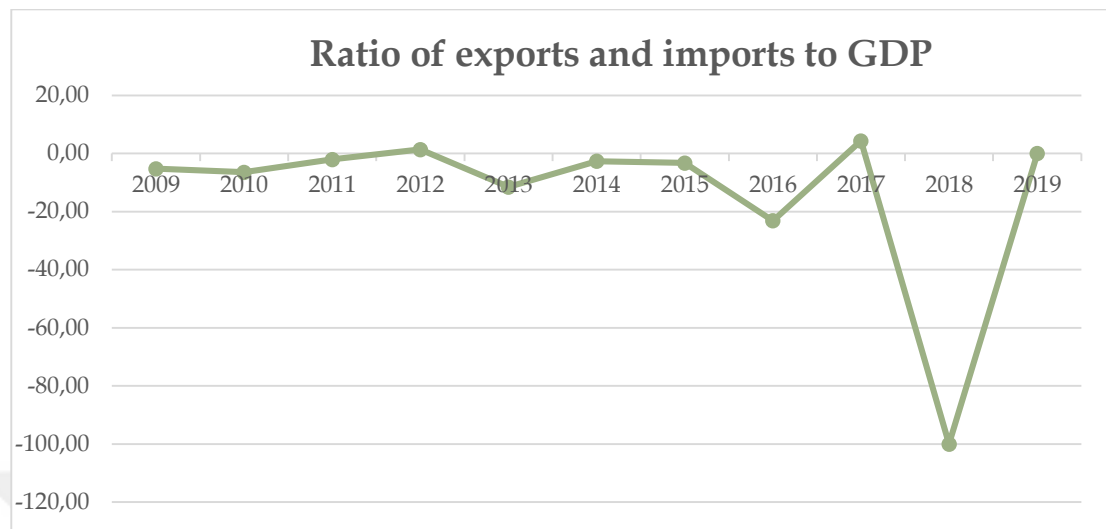


**Figure 10.** Growth rate trend of the ratio of imports and exports to GDP for the period (2009-2019).

It is clear from the above figure that during the period from 2009 to 2019, the growth rate indicators of the volume of the ratio of imports and exports to the GDP were in continuous fluctuation, rising and falling approximately in the all years of study, where the growth rate was negative in 2009, reaching 5.24%, and it was In slight fluctuation in the ascension and descent until it reached 23.14% in 2016, then increased in the following year to reach 4.34% in 2017, and decreased in the last year until it reached its peak in a negative decrease to 100.00% in 2018.

-      The GDP inflation also seen as  a large fluctuation in the ascension and descent and between negative and positive approximately at all period of our research, as seen by the growth rates, where the growth rate seems positive about in  all the years of our study , but it continually change  between ascension and descent, as it going between 3679.28% as a highest rate in 2015, and between 4.9five percent  as a lowest rate in 2018, and the growth rate was negative approximately in the all years of study, but it continually change   between ascension and descent as well, as it ranged between 79.4718% as a highest rate in 2014 and 48.62% as a lowest rate in 2016, bringing the annual growth rate to negative On average, 171.07% in the study time. The following figure shows the evolution of the growth rate of the gross domestic products inflation indicator.

**Figure 11.** Growth rate trend of the GDP inflation index for the period (2009-2019).

It is clear from the above figure that during the period from 2009 to 2019, of the growth rate indicators of GDP inflation were in a large fluctuation that continued to ascension and descent approximately in the all years of study, where the growth rate was negative in 2009, reaching.69.164%, to fall in the following year to 184.97%, and then it rose to 48.8five percent in 2011, and then started falling until it reached its peak of negative 4718.79% in 2014, and then rose in the following year until it reached its peak of positive 3679.28% in 2015, and then began to decline until It reached negative 209.14% in 2017, then rose positively to 4.9five percent in 2018, then decreased to negative 100.00% in the last year.

**-** Oil rents also seen as a large fluctuation in the ascension and descent approximately in the all years of study, as it seen by the growth rates, where the growth rate seems positive in the all of the period of our study, but it continually change between rising and falling , between 22.29% as a highest rate in 2018 and between 0.01 % at a lowest rate in 2014, and the growth rate seems negative in the all of the period of our study, The yearly growth rate was negative on average 8.78 percent over the research period, with the highest rate (100.00 percent) in 2019 and the lowest rate (4.73 percent) in 2012. The graph below depicts the evolution of the

oil rents index's growth rate.
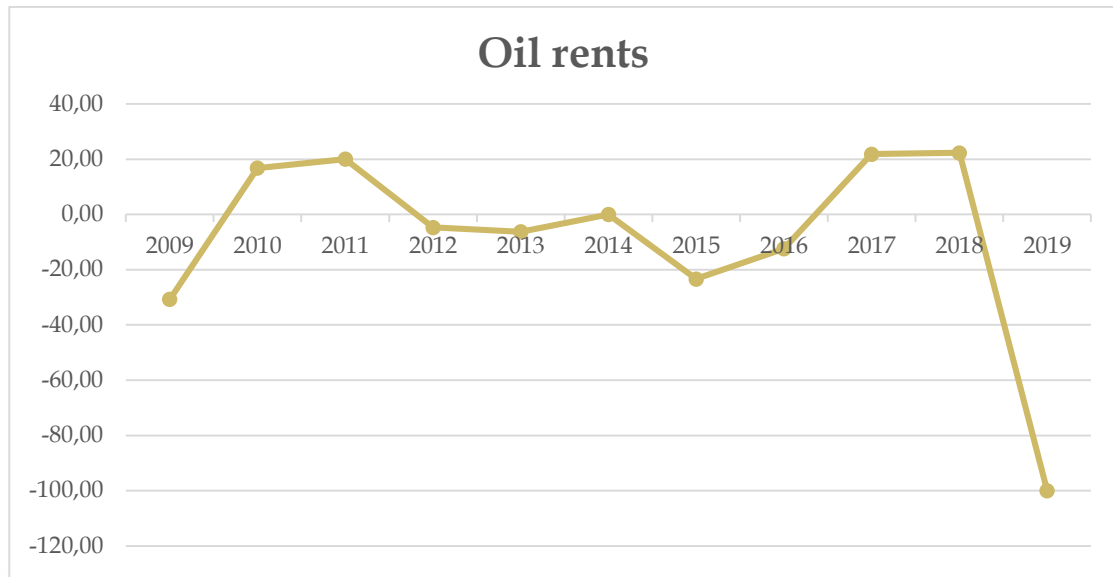


**Figure 12.** Growth rate of the oil rents index for the period (2009-2019).

It is clear from the above figure that during the period from 2009 to 2019, the indicators of growth rates for oil rents were in continuous fluctuation, rising and falling approximately in the all years of study, where the growth rate was negative in 2009, reaching 30.74%, then rising to 20.03% in in 2011, and then regressed in the decline in subsequent years until it reached its peak of negative decline to 23.38% and 12.43% in 2015 and 2016, respectively, to rise after that to reach 22.29% in 2018, to reach negative in the last year to 100.00% in 2019.

# CHAPTER FOUR
## STANDARD ANALYSIS
**MEASURING THE EFFECTIVENESS OF THE FOREIGN TRADE SECTOR AND ITS ROLE IN SUPPORTING THE TRADE BALANCE IN IRAQ**

### 4.1 Introduction

In the four chapters, an attempt was made to make one of the study objectives, namely, descriptive analysis of the study variables and growth rates of variables and in this chapter will try to achieve the second goal of this thesis, which is to make evaluation and analyze the standard relationship between the foreign trade sector and the trade balance.

Foreign trade has tools for making targeted values in order to achieve the ultimate goal of development and support the trade balance, and since the goal of this study is to estimate the impact of the foreign trade sector on the trade balance, our targeted values are the volume of imports, the volume of exports, and oil rents, The ratio of imports and exports to GDP, and the rate of GDP inflation, and based on previous studies, a model of this study has been formed.

As a result, this chapter contains three sections: The first section describes the study's conventional model, while the second section examines the time series' stability. (The root of the unit), and the third with the presentation and discussion of the standard analysis results of the impact of foreign trade sector indicators on the trade balance.

### 4.2 Description of the standard model of the study

Several previous studies, such as the study (Nayef), (Nayef. 2019) "Measuring and analyzing the influence of some economic variables on foreign trade in Iraq for the period (2000-2019)", this study dealt with the basics of each of the macroeconomic variables and foreign trade in addition to show the relationship between them, by analyzing the study variables economically and standarderaly, where the study concluded that the commodity structure of Iraqi exports depends by (99%) on its oil exports.

Also, the study of (Rasheed), (Rashid. 2016) "Analysis of the relationship between Iraq's foreign trade and gross domestic products for the period (1980-2013)", the study concluded that the Iraqi economy is considered a rentier economy, as it is unilateral and depends in its foreign trade on its oil exports And that most of its

revenues are from it, in addition to the weakness of other economic sectors such as the industrial, commercial and agricultural sectors, and the dependence of these economic sectors in the production process on foreign imports of products and services for the perpetuation of their production wheel, so it is necessary to study the components of foreign trade, both exports and imports, and their relationship to some indicators of Iraqi gross domestic products .

The standard model for estimating the influence of the foreign trade sector (independent variables) on supporting the trade balance (dependent variable) has been explained in period s of a basic linear regression model, which looks like this:

*GDP* **equal** $\alpha_0 + \beta$ **RIE + IMP+ EXP + OIL+ INF+** *ut*

**Where:**

**GDP equal** the rate of change in GDP (a standard of the trade balance).

**RIE equal** the ratio of imports and exports to the gross domestic product (a standard of the foreign trade sector).

**IMP** equal volume of imports ( a Standard of the foreign trade sector).

**EXP** equal volume of exports (a measure of the foreign trade sector).

**OIL** equal Oil rents (a measure of the foreign trade sector).

**INF** equal GDP inflation rate (a measure of the foreign trade sector).

$\alpha_0$ equal value of the constant.

$\beta$ equal Marginal slope.

*Ut equal* random error.


It is clear from the above standard function that it has been assumed that the correlation is directly proportional (positive) between independent variables (Ratio of Imports and Exports to GDP (RIE), (IMP), (EXP), (OIL) and (INF), and the dependent variable (GDP).

We can see that this standard model will be used to predict in the influence of the foreign trade sector (independent variables), and the trade balance (dependent variable), and after the form of the standard model data for the research factors were gathered, reflected in data (the ratio of imports and exports to gross domestic product, the volume of imports, the volume of exports, oil rents and the rate of gross domestic product inflation) as independent variables, as well as data on the rate of gross domestic product, has been taken from the yearly financial report of the Central Statistical institution for

the thesis study period (2008-2019), and these data were used as a quarterly data .As may be seen in appendix No. A.

Before estimating the modeling approach that was previously created, the consistency of the time-series data of the system variables was evaluated, which we shall explain in the following subject. Many of the variables were missing data for some years, like the lack of information for the oil rents variable two years before the end of the time series, and the other factor (the ratio of export industries as well as imports RIE) data was missing during the last year of the time series due to a lack of necessary data for that, due to the circumstances or situations that Iraq faced in those years. Based on what we mentioned about the nature of the relationship between the foreign trade sector and the trade balance, this study assumes the existence of a direct (positive) relationship between the foreign trade sector and the trade balance, in this sense, the standard model in this study has been built to predict and measure the influence relationship between the study variables of the foreign trade sector and the gross domestic product as a standard of the trade balance, as follows:

An estimation will be done for the following equation to achieving the purpose of measuring the influence of the foreign trade sector on the trade balance in Iraq during the period 2008-2019, based on the theory of the economy, additionally the models used in earlier studies of the same subject. Considering the following equation:

**GDP equal  f (RIE + IMP + EXP + OIL + INF …+ ut)**

**(1)**

**t equal  2008 – 2019**

## 4.3. Time Series Stability Test (Unit Root)

The problem of period data instability is observes as one of the most significant issues in basic analysis, as major of the data related to economy suffers from it due to the lack of the trend factor, which includes the certain circumstances that affect all variables in the study in the same or negative directions. Because the arithmetic value and variance of the period changes over time, regression based on unstable time series data is frequently misleading, leading to shaded conclusions and hence the inaccuracy of the findings of applying the Ordinary Least Squares (OLS) technique in estimating these functions.

To test the stability of the time series, the UNIT ROOT TEST TABLE (PP) method was applied. The time series were not static, neither at the first level nor in the first difference.

Then, the extended Dickey-Fuller test method, UNIT ROOT TEST TABLE (ADF), was applied, as it was static in the first difference, and it is explained as follows:

### 4.3.1 Testing the stability of the time series of GDP rate data

The GDP data seems not stable in the analysis at the first level with a secant (C) and a temporal trend (Trend), where it achieved (P - value equal 0.1346), which is more than the significance level of five percent. The difference one was then calculated, and it was discovered to be stable at the difference one since the (P-value) was less than five percent, resulting in (P-value equal 0.0002), as indicated in Appendix No. B.

As a result, after subtracting the initial difference, the time series data for the GDP rate was steady.

### 4.3.2 Testing the time series stability of imports volume data:

As for the time series data on the volume of imports (IMP), it was found that it is unstable at the first level, where it reached (P - value equal 0.9775), This is higher than the criterion of significance of five percent. The first difference was then calculated, and it was discovered that the data on the rate of change in the volume of imports was stable at the first difference because the (P-value) was less than five percent, resulting in (P-value equal zero), indicating that the data on the rate of change in the volume of imports is stable at the first difference.

### 4.3.3 Testing the stability of the time series of exports volume data:

The export volume rate (EXP) data was not stable at the level one, with a secant (C) and a temporal trend (Trend), where it achieved (P - value equal  0.9995), which is larger than the threshold of significance of five percent. The difference one was taken, the time series data for the export volume rate observed to be stable at the difference one because the (P-value) value seems lower than five percent, reaching (P-value equal 0.0017), and thus the time series data for the export volume rate was stable after taking the first difference.

### 4.3.4 Testing the stability of the time series of oil rents data

The data on the oil rents rate (OIL) was not steady at the first level, where it achieved (P - value equal 0.0662), which is larger than the significance level of five percent. The difference one was then calculated, and it was discovered to be stable at the difference one since the P value seems lower than five percent, resulting in (P-value equal  zero), and so the time series data for the rate of oil rents seems stable after the first difference.

### 4.3.5 Testing  the time series  stability   of data on the ratio of exports and imports to GDP:

The data on the ratio of exports and imports to gross domestic product (RIE) was not steady at the first level, where it reached (P - value equal 0.8194), that is larger than the level of meaningful of five percent. The difference one was then calculated, and it observed to be stable at the difference one because the (P-value) value seems lower than five percent, resulting in (P-value equal 0.0007), and thus the period of data for the ratio of exports and imports to GDP were stable after the first difference was calculated.

### 4.3.6 Testing the stability of the time series of inflation rate data:

The inflation (rise in average price of products) rate (INF) data seems not stable at the level one with a segment (C) and a temporal trend (Trend), where it achieved (P-value equal 0.6593), which seems larger than the five percent meaningful threshold. The first difference was calculated. And it observes to be stable at the difference one since the (P-value) seems lower than five percent, resulting in (P-value equal 0.0059), and the period of  data for the inflation rate were therefore steady after the difference one.

**4.4 Presentation and discussion of the standard analysis results of the influence of the trade sector in supporting the trade balance**

After doing the test of the stability of the time series of data on the study dependent and independent variables; The equation of the standard model that was previously deperiod ined was estimated in order to measure the influence of the foreign trade sector in supporting the trade balance, some variables expressing the foreign trade sector were selected, as indicators of the independent variables under study, on the trade balance (represented by the rate of gross domestic product) as an indicator for the dependent variable.

Depending on the data on rates of change in independent variables, and data on the rate of gross domestic product represents the dependent indicator, and after dividing them into quarterly data, the equation on multi linear regression analysis was estimated on those data using the ordinary least squares (OLS) method through the statistical analysis program ( E-VIEWS), where the tests for estimating the model were conducted, depending on the best model for delays, testing the search for the existence of a long-period .The test results were.

### 4.4.1. Model estimation

The model was predicted using the (OLS) way within the software of the autoregressive distributed lag method (ARDL model), as well as the (E-VIEWS) program to deperiod ine the best of the model delays.

Table 3 . ARDL model's estimation of the linear regression equation.

| Statement / Variables | GDP | IMP | INF | OIL | RIE | EXP |
|---|---|---|---|---|---|---|
| Number of delays models selected | 12500 | | | | | |
| The best number of delays selected | 4 | 4 | 4 | 3 | 4 | 4 |
| Number of views | 44 | | | | | |

**Source: Researcher design**

It is obvious from the above table that the number of models of delays that the program tested is (12,500) tests, as it is clear from the table that the best model of delays that were chosen is with the number of delays (4) for the dependent variable (GDP rate),

and (4) for the rate of change in the volume of imports IMP and (4) for rate of change in the inflation rate INF and (3) for rate of change in oil rents (OIL) and (4) for rate of change in the ratio of exports and imports to GDP (RIE) and (4) for rate of change in the volume of exports (EXP), as the test was done here based on the results of the (AIC). Akike info criterion test, and it is clear from the table that the number of models is (44) due to the delays that the model took it.

### 4.4.2 the possibility analyzing of the errors correction in the long period (ɦ).

This test was conducted for the depending on how possible to correct short-period errors during the long-period, and a percentage of short-period errors which will be addressed during the long-period per unit time to return to the equilibrium position, and after conducting the test on the (E-VIEWS) statistical program, the show results were obtained in this table.

**Table 3. Significant test results and correction coefficient indication ɦ**

| error correction parameter | parameter value | standard error | t-test | P-value |
|---|---|---|---|---|
| ɦ | -0.4231 | 0.0417 | 10.1506 | 0.0000 |
| independent variables | | | | |
| RIE | -2.2389 | 90.4344 | -5.4319 | 0.0001 |
| IMP | -2.1620 | 0.1562 | -13.8385 | 0.0000 |
| EXP | 0.0027 | 0.0001 | 19.4875 | 0.0000 |
| OIL | -2.2739 | 20.5440 | -25.8784 | 0.0000 |
| INF | -7.8072 | 59.5904 | -18.8901 | 0.0000 |
| $a_0$ | 1.5869 | 0.8622 | 34.9703 | 0.0000 |
| **GDP equal $\alpha_0$ + B (RIE) + (IMP) + (EXP) + (OIL) + (INF) ut.** <br> **GDP equal 1.587 - 2.239 (RIE) - 2.162 (IMP) + 0.027 (EXP) - 2.274 (OIL) - 7.807 (INF).** | | | | |

**Source: Researcher design**

The value of the correcting error parameter is (-0.4231) related to a negative sign, and it is significant in period of study (P-value= 0), which is less than the level of significance (five percent), so the conditions for the error correction parameter are met, and there is a good chance to correct short-period errors over a long period and return to the equilibrium position. Table No. (4)shows that the value of the marginal slope of the rate of difference in GDP reached (1.587), and in relation to the rate of change in the ratio of imports and exports to GDP (-2.239), and in relation to the rate of imports

volume (-2.162), and these results Negative, and therefore where the rate of GDP has an inverse relationship with the rate of change in the ratio of imports and exports to GDP, and the rate of change in the volume of imports of the foreign trade sector indicators , that is, the greater the rate of change in the ratio of imports and exports to GDP and the rate of change In the volume of imports (RIE) (IMP), by one unit, this led to a decrease in the rate of GDP as a measure of the trade balance by (-2.239) (-2.162), respectively.

As for the volume of exports rate (0.027), this result is positive, and therefore, where the rate of GDP has a direct (positive) relationship with the rate of change in the volume of exports of the foreign trade sector index, that is, the greater the rate of change in the volume of exports index (EXP), by one unit this led to an increase in the rate of GDP as a measure of the trade balance by (0.027).

As well as for the rates of change in oil rents, and the rate of GDP inflation (-2.274) (-7.807), and these results are negative, and therefore, where the rate of GDP has an inverse relationship with the rate of change in oil rents and the rate of change in GDP inflation for the foreign trade sector indicators , that is, whenever the rate of change in the oil rents index and the inflation rate of gross domestic product (OIL) (INF) increased by one unit, this led to a decrease in the rate of GDP as a measure of the trade balance by (-2.274) (-7.807), respectively.

In this sense , the obtained results must be handled with care, as it appears from the above table the result of the t-test for the (RIE) variable, which reached (-5.432) and with a significant level of (P-value equal 0.0001), which is less than the significant level (five percent ), and also The (t) value of the variable (IMP) which amounted to (-(13.839) and a level of significance amounted to (P-value equal 0.0000) , and also the (t) value of the variable (EXP) which amounted to (19.488) and a level of significance amounted to (P-value equal zero) And also the (t) value of the variable (OIL), which amounted to (-25.878) and a level of significance amounted to (P-value equal zero), and also the (t) value of the variable (INF), which amounted to (-18,890) and with a level of significance amounted to (P- value equal zero), These values are smaller than the level of significance (five percent ), which indicates that the value of the parameter is significant in the statistics science at the level of significance (five percent ), that is, proofing the statistical significance of the influence of the independent variables under study on the gross domestic product in the short period . This means that the alternative hypothesis is accepted, which states

### 4.4.3 Examination of the existence of a long-period relationship in the estimated model.

This analyzes t will be configure out whether if there is a relationship on the long period trending from the independent variables represented in the rates of financial inclusion to the rate of gross domestic product (GDP), and judging the explanatory power of the estimated model in the long and short period, and judging the significance of the estimated model.

**Table 4 WALD TEST to examine the existence of a long-period relationship**

| The number of independent variables K | Test F | critical value at level five percent | |
|---|---|---|---|
| | | $_1$H | $_0$H |
| 5 | 4.440 | 3.79 | 2.62 |

**F-Statistic test results , $\overline{R^2}$, $R^2$**

| F | P-value | Value of $R^2$ | $\overline{R^2}$ value |
|---|---|---|---|
| 28.242 | 0.0000 | 0.9751 | 0.9406 |

**Source: Researcher design**

The null hypothesis for this test was rejected because the calculated value of (F-Statistic) reached (4.440) when the number of independent variables in the estimated model reached (5), which is greater than the critical value (the upper bound H1) of (3.79) and (the lower bound H0) of (2.62), and thus the null hypothesis for this test was rejected (GDP).

In order to judge whether the estimated model is significant or not, this is evident from the F-statistics value, which reached 28,242 and with a probability of (P-value equal 0.0000), which indicates the significance of the estimated model at the level of significance of five percent.

It is evident from the above table that the value of the adjusted coefficient of deperiod inaction R2 was (0.975), which means that changes in the independent variables (foreign trade) explain (97%) of the changes in the dependent variable (the rate of return on GDP). As for the remaining percentage (3%) which was not explained by the result, it is due to other variables that were not containd in the estimated model.

### 4.4.4 Testing the existence of a serial autocorrelation problem.

According to the ARDL methodology, the test adopted to detect the serial autocorrelation problem is the BREUSCH - GODFERY TEST, that is on the basis of a lagrangian multiple (LM Test), and after applying the analyses to the E-VIEWS program, the results shown in the table below:

**Table 5 Results of correlation LM test**

| Statement | Test value | P-value |
|---|---|---|
| F-statistics | 3.2364 | 0.0723 |
| chi-square | 14.6257 | 0.0007 |

**Source: Researcher design**

It is obvious from Table (6) that the probability of the (F-statistics test value) and the of the chi-square statistic.

Where it was significant in period s of F-statistics with a probability which was greater than the level of significance (five percent), and thus we accept the null hypothesis which states that there is no serial autocorrelation of errors in the predicted model, which we predicted, that is, the variance is homogenous in terms of mistakes.

As for the probability of the chi-square statistic where it was significant in significance was less than the level of significance (five percent), and thus we accept the alternative the hypothesis indicates that in the estimated model, which we calculated, there is a serial autocorrelation of mistakes, implying that the variance of errors is heterogeneous.

The purpose of this standard study is to determine the truth of the link between foreign trade and the trade balance in Iraq, as demonstrated by testing and measuring the most important factors, and the impact of the foreign trade sector on six trade balance indicators. which are the GDP rate (as an indicator of the dependent variable), the volume of imports, the volume of exports, oil rents, the ratio of imports and exports to the gross domestic product, and the rate of GDP inflation (as indicators of independent variables), and as indicators for interpreting the results under study, during the period from 2008 – 2019.

It was found by testing the variables that there is a direct relationship between only one variable, which is the exports variable, which links between foreign trade and the trade balance, and a significant effect for all variables, which indicates that the role of the foreign trade sector has an influence or a role in supporting the trade balance in Iraq.

It can be said that the Iraqi foreign trade sector depends by (97%) on its exports.

# CHAPTER FIVE
# FINDINGS AND RECOMMENDATIONS

## 5.1 The Results

The external trade sector is one of the most important sectors of the national economy, both in period s of its contribution to the trade balance, gross domestic product and gross national product, or by providing jobs and employment of labor directly or indirectly, as well as creating value added. The importance of external trade also comes from its interlocking relations with other sectors, where the foreign trade sector plays an important role in most international economies where it provides the economy with the products and services it needs other than the ones available locally, through import activity while at the same time enabling it to dispose of its surplus of various products and services through export activity.

Over the past five decades, the foreign trade sector has contributed in increasing the degree of interdependence between the nations of the world, which greatly maximizes the volume of commodity and monetary flows between nations, which has increased the influence of trade on the different economic aspects of most nations of the world. And perhaps the most important characteristics of foreign trade is to enable all nations to seek relief from foreign trade through well-being and also economic efficiency, because through trade products and services are exchanged, which is due to the exporting nations with financial resources.

The structure of Iraq's commerce sector with the rest of the globe is unbalanced. The reason for this is the market transparency strategy implemented after 2003, as well as the processes for eliminating customs protection, rather than the domination of products or international exchange over a single commodity in its raw form ready for export. Oil accounts for about 98 percent of the nation's entire exports and 92 percent of its overall earnings. It makes the highest contribution to GDP, but underdevelopment has depleted its major industries. As a result, the Iraqi economy is suffering from lower growth rates in other areas, despite the fact that it possesses untapped potential and natural resources. As a result, the Iraqi economy has lost its natural resource comparative edge. Due to the underdevelopment of the production system, there is a commodities imbalance in its non-oil sectors, as well as a lack of worldwide demand for such exports. As a result of the export of a single commodity with a comparative advantage in return for the import of multiple commodities in their diverse forms, kinds, and quality, it suffered from a trading relationship marked by inequality with the outside world, resulting in

products imbalances. The structure of its commercial sector, as well as a persistent trade imbalance in its other sectors (non-oil), make it difficult to implement economic development strategies.

The trade balance is calculated by subtracting the value of the state's exports from the value of its imports. Their worth is measured in period s of a currency. If the state's imports exceed its exports, it is considered to have a trade imbalance or deficit. Imports refer to products and services purchased by the state's population from foreign companies. Products manufactured by private state companies abroad and returned to the nation for sale are also considered imports, even if revenues benefit the importing nation. There are advantages to both importing and exporting products, but prolonged trade imbalances, also known as trade deficits, are generally seen as negative for any nation's economy.

The trade balance is used to help economists and analysts understand the strength of the nation's economy for other nations. The nation that suffers from deficit in the trade balance, tend to borrow money mainly to buy their products and services; however, the nation that have surplus in their trade balance, tend to lend money to the nations that suffer from a deficit. In some cases, the trade balance is linked to the political stability of the state because it refers to the level of foreign investment in the nation.

The current research problem was mainly in the study of the influence of the foreign trade sector on the trade balance of the trade sector in Iraq, how did it affect the macroeconomic indicators, and how it affected the level of gross domestic products, on the balance of payments ... The most important problem is the question: "What is the influence of the foreign trade sector on Iraq's trade balance"?

The aim of this research is to achieve the following objectives:

1-      Provide an appropriate theoretical framework that illustrates the concept of foreign trade liberalization, as well as the concept of trade balance.

2-      Highlighting the relationship between the foreign trade sector and the trade balance in Iraq.

3-      Discuss the foreign trade sector's progress in the Iraqi economy.

4-      To know the extent to which Iraq's objectives are achieved by following various policies in the foreign trade sector.

5-      Trying to take note of the issue of foreign trade and trade balance in Iraq

This study found the following findings:

1-      The rate of gross domestic products (GDP) has continually change meaningfully in all years of our research, as seen by the growth rates, where the growth rate seems to be positive but changing between the ascent and the descent, ranging from a highest rate of 15.21% in 2017 to 0.7% lowest rate in 2015, and the growth rate was negative in 2018, 2019 (2.49, 0.56) to an average annual negative growth rate of 5.67% during the study period. The general economic performance may be affected by fluctuations in world commodity prices, particularly oil prices, which directly affect value added and export earnings, and income in the service, production and other sectors is quickly affected by domestic and external conditions. The following figure shows the evolution of the growth rate of the gross domestic products index.

2-      The volume of imports also continually change  significantly in the ascent and the descent in approximately all of the years of our research, as seen  by the growth rates, and we note that it  seems to be positive for approximately all of the years of our research but continually change  between the ascent and the descent, ranging from a highest rate of 33.20% in 2013 to 2.60% At a lowest rate in 2014, the growth rate was negative in 2015, 2016, 2017 (15.21, 5.04, 0.22), with an average annual growth rate of 8.50% over a period of study.

3-      The volume of exports also continually change significantly in the ascent and the descent in approximately all of the years of our research, as noticed by the growth rates, and we can see that the table that the growth rate seems to be positive for approximately all of the years of our research, but continually change between the ascent and the descent, going from a highest rate of 51.11% to a higher level. In 2011, between a lowest rate of 4.19% in 2014, the growth rate seems to be negative approximately in the all years of our research but fluctuating between ascent and the descent as well, ranging from a highest rate of 35.26% in a year 2015 and a lowest rate of 3.93% in 2013, with an average annual growth rate of 6.01% during the study period.

4-      The ratio of exports and imports to gross domestic products has continually change  in ascent and the descent, as noticed by growth rates, as we can observe from table (**2**) which data in the two years end of the time period were not available because there was insufficient data for that years of our research, because conditions in the nation at the time, where the growth rate was positive in 2012, 2017 (1.37, 4.34), .The growth rate was negative approximately all of the years of our research, but was fluctuating between a low and a highest rate of 100.00% in 2018 and a lowest rate of 2.04% in 2011, with an average annual growth rate of 13.50% during the study period,

indicating the low and weak level of foreign trade in Iraq, so the nation's internal and external turmoil affects national economic activity.

5- Gross domestic products inflation experienced substantial turbulence in the ascent and descent between negative and positive in approximately all years of our research, as noticed by growth rates, and was positive for approximately all of the years of our research but continually change between the ascent and descent, ranging from a highest rate of 3,679.28% Higher in 2015 and a lowest rate of 4.9five percent in 2018, the growth rate seems to be negative approximately in the all years of our research but fluctuating between height and lowest as well, ranging from a highest rate of 4,718.79% In 2014, it was a lowest rate of 48.62% in 2016, with an average yearly growth rate of 171.07% during the study period.

6- Oil rents have also experienced substantial turbulence in the ascent and descent approximately in the all years of our research, as watched by growth rates, where the growth rate seems to be positive for approximately all years of study of our research but continually change between the ascent and descent, going from a highest rate of 22.29% in 2018 to 0.01% lowest rate in 2014, and the growth rate seems to be negative for approximately all of the school years as it noticed in 2019 as a higher percentage (100.00%) and 2012 as a lower percentage (4.73%), reaching the annual growth rate seems to be Negative on average 8.78% during the period of our research.

**The findings of the standard analyze are:**

1- There is an inverse relationship between the rate of change in the ratio of imports and exports to GDP and the rate of change in the volume of imports of foreign trade sector indicators.

2- There is a correlation between the gross domestic product rate and the rate of change in the volume of exports of the Foreign Trade Sector Index.

3- There is an inverse relationship between the GDP rate and the rate of change in oil rents and the rate of change in GDP inflation of foreign trade sector indicators.

4- A long-term relationship is trending from independent variables in the standard model (import and export ratio to gross domestic product), (import volume), (export volume), (Oil rents) and (GDP inflation rate), to the dependent variable the rate of gross domestic product.

5- A statistically significant relationship between the ratio of imports and exports to GDP, the volume of imports, the volume of exports, oil rents and the rate of GDP inflation and between the gross domestic product.

## 5.2 Recommendations

Based on the obtained results of the previous study, the research makes the following recommendations:

1. Diversifying sources of income and not relying on raw material revenues such as oil.

2. Develop and encourage non-oil exports and thus compete in world markets.

3. Supporting local productive sectors to meet domestic needs and rationalize imports in order to achieve economic development goals.

4. Develop productive sectors using modern technical methods to increase productivity efficiency, and try to encourage export and rationalize imports.

5. Develop a balanced investment program for different economic sectors and create a balanced and sustainable economic base.

6. Building economic integration based on encouraging exports, increasing trade between nations, and increasing the rate of economic cooperation.

7. Holding studies, seminars and international scientific conferences that are concerned with the foreign trade sector and seeking to form free zones.

8. Use ICT means in trade and focus on e-commerce to shorten distances and time and increase the flow of products and services.

9. Delay the liberalization of foreign trade and accelerate the re-establishment of the national economy by developing economic policies that stimulate and develop domestic production and increase its efficiency to the point where it can withstand foreign products.

10. A strategy should be developed to diversify the structure of exports and imports, shifting from the export of raw materials to the export of fully industrial products, which requires the provision of an environment conducive to production.

11.Create competitive domestic industries to increase exports and reduce imports, by encouraging the private sector and supporting small and medium-sized enterprises.

12. Creating the right environment for investment to attract foreign capital.

## CONCLUSION

We conclude from the above. The importance of this research is reflected in the fact that it deals with the role of the foreign trade sector by supporting Iraq's trade balance comprehensively, as well as in trying to analyze the effects of economic reforms that contained the foreign trade sector in Iraq on the trade balance; therefore, the problem of research was the influence of the foreign trade sector on the trade balance of the trade sector in Iraq, i.e. the problem of this research lies in the question: "What is the influence of the foreign trade sector on the trade balance in Iraq?"

The aim of this research is to highlight the relationship between the foreign trade sector and the trade balance in Iraq, to discuss the march of the foreign trade sector in the Iraqi economy, and to know the extent to which Iraq's objectives are achieved by following various policies in the foreign trade sector. The study assumed that the Iraqi trade balance has seen as continuous volatility to this day, especially in exports outside hydrocarbons, and that the conflicts and war that exist mainly affect Iraq on the Iraqi economy, especially in the foreign trade sector, and the research assumed that in recent years the Iraqi economy has seen satisfactory results in the foreign trade sector that enable it to integrate into the world economy easily.

The research relied on the descriptive approach to the concepts of the study, the analytical approach to the analysis of tables and commercial statistics to answer the hypotheses and questions of the research. The time frame for research was defined from 2008 to 2019. This study found the following results: the rate of gross domestic products (GDP) continually change significantly in the rise and decline in all years of the study. The volume of imports also continually change significantly approximately in the all years of study. The volume of exports also continually change significantly approximately in the all years of this study. The ratio of exports and imports to GDP has continually change (faced ups and downs). gross domestic products inflation has experienced significant volatility in the rise and decline between negative and positive in all years of the study. Oil rents have also faced a fluctuation approximately in the all years of the study.

The influence of the foreign trade sector on six trade balance indicators, namely the gross domestic product rate (as an indicator of the dependent variable), the volume of imports, the volume of exports, oil rents, the ratio of imports and exports to GDP, the indicator of gross domestic products inflation (as indicators of independent

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variables), and as indicators for interpreting the results studied, were measured during the period 2008-2019. It was found through the variable test that there was an inverse relationship between only one variable, the export variable that links foreign trade and the trade balance, and the moral influence of all variables, indicating that the role of the foreign trade sector has an influence or role in supporting Iraq's trade balance.

Through the results of the previous study, the researcher recommended the need to diversify sources of income and not to rely on the revenues of raw materials such as oil. Develop and encourage non-oil exports and thus compete in world markets. Supporting local productive sectors to meet domestic needs and rationalize imports in order to achieve economic development goals. Develop productive sectors using modern technical methods to increase productivity efficiency, and try to encourage export and rationalize imports. Also, it delay the liberalization of foreign trade and to accelerate the re-establishment of the national economy by developing economic policies that stimulate and develop domestic production and increase its efficiency to the point where it can withstand foreign products.

Iraq's economy currently enjoys significant investment in the oil sector, and the 2021 budget is about 130 trillion dinars, approximately 89.65$ billion, based on an average oil price of 45$ per barrel over the year, and expects oil exports to the nation at an average of 3.25 million barrels per day. This necessitates the Iraqi government's rapid interest in foreign trade in Iraq, where the Iraqi economy has great opportunities to enhance performance and return to growth in the coming period, by obtaining exceptional returns through the convergence between the Iraqi government and neighboring nations.

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# APPENDICES

## Appendix no A  Dividing data into quarterly by (E-VIEWS 9)

| Date | GDP | IMP | EXP | RIE | OIL | INF |
|------|-----|-----|-----|-----|-----|-----|
| 2008Q1 | 1.12E+11 | 3.91E+10 | 9.81E+13 | 99.76169 | 63.25142 | 67.58138 |
| 2008Q2 | 1.15E+11 | 4E+10 | 8.37E+13 | 98.63379 | 55.06959 | 39.06888 |
| 2008Q3 | 1.18E+11 | 4.09E+10 | 7.18E+13 | 97.45381 | 48.27379 | 15.91916 |
| 2008Q4 | 1.21E+11 | 4.17E+10 | 6.25E+13 | 96.22176 | 42.864 | -1.86778 |
| 2009Q1 | 1.23E+11 | 4.26E+10 | 5.56E+13 | 94.93763 | 38.84023 | -14.2919 |
| 2009Q2 | 1.25E+11 | 4.34E+10 | 5.12E+13 | 93.60143 | 36.20249 | -21.3533 |
| 2009Q3 | 1.27E+11 | 4.43E+10 | 4.93E+13 | 92.21315 | 34.95076 | -23.0519 |
| 2009Q4 | 1.28E+11 | 4.51E+10 | 4.99E+13 | 90.77279 | 35.08506 | -19.3877 |
| 2010Q1 | 1.28E+11 | 4.58E+10 | 5.61E+13 | 88.494 | 39.69503 | 7.422082 |
| 2010Q2 | 1.29E+11 | 4.67E+10 | 6.04E+13 | 87.26403 | 41.36551 | 14.69874 |
| 2010Q3 | 1.31E+11 | 4.77E+10 | 6.61E+13 | 86.29653 | 43.18615 | 20.22507 |
| 2010Q4 | 1.33E+11 | 4.87E+10 | 7.3E+13 | 85.59149 | 45.15695 | 24.00107 |
| 2011Q1 | 1.35E+11 | 4.87E+10 | 8.68E+13 | 85.3457 | 49.35429 | 26.35755 |
| 2011Q2 | 1.37E+11 | 5.03E+10 | 9.4E+13 | 85.08688 | 50.79486 | 26.50057 |
| 2011Q3 | 1.4E+11 | 5.23E+10 | 1E+14 | 85.01182 | 51.55504 | 24.76095 |
| 2011Q4 | 1.42E+11 | 5.48E+10 | 1.05E+14 | 85.12051 | 51.63484 | 21.13868 |
| 2012Q1 | 1.43E+11 | 5.75E+10 | 1.1E+14 | 87.60923 | 49.43163 | 7.901387 |
| 2012Q2 | 1.47E+11 | 6.11E+10 | 1.13E+14 | 87.20691 | 48.79169 | 3.606773 |
| 2012Q3 | 1.51E+11 | 6.52E+10 | 1.14E+14 | 86.10985 | 48.11241 | 0.522462 |
| 2012Q4 | 1.55E+11 | 6.99E+10 | 1.15E+14 | 84.31803 | 47.39379 | -1.35155 |
| 2013Q1 | 1.63E+11 | 7.95E+10 | 1.09E+14 | 78.85674 | 46.06295 | 0.705937 |
| 2013Q2 | 1.68E+11 | 8.36E+10 | 1.08E+14 | 76.86529 | 45.4948 | 0.164061 |
| 2013Q3 | 1.72E+11 | 8.65E+10 | 1.08E+14 | 75.36899 | 45.11647 | -0.25599 |
| 2013Q4 | 1.76E+11 | 8.83E+10 | 1.09E+14 | 74.36781 | 44.92794 | -0.5542 |
| 2014Q1 | 1.8E+11 | 8.83E+10 | 1.18E+14 | 75.15744 | 47.0632 | 3.433951 |
| 2014Q2 | 1.82E+11 | 8.79E+10 | 1.17E+14 | 74.62827 | 46.40071 | 1.713572 |
| 2014Q3 | 1.84E+11 | 8.65E+10 | 1.12E+14 | 74.07596 | 45.07446 | -1.5508 |
| 2014Q4 | 1.85E+11 | 8.42E+10 | 1.05E+14 | 73.50051 | 43.08442 | -6.35916 |
| 2015Q1 | 1.83E+11 | 7.7E+10 | 8.3E+13 | 75.07124 | 37.78841 | -22.5244 |
| 2015Q2 | 1.83E+11 | 7.43E+10 | 7.51E+13 | 73.5818 | 35.52771 | -26.4956 |
| 2015Q3 | 1.84E+11 | 7.22E+10 | 6.93E+13 | 71.20151 | 33.66013 | -28.0856 |
| 2015Q4 | 1.85E+11 | 7.06E+10 | 6.55E+13 | 67.93036 | 32.18566 | -27.2944 |
| 2016Q1 | 1.83E+11 | 7.06E+10 | 6.45E+13 | 58.56519 | 30.37128 | -20.5685 |
| 2016Q2 | 1.86E+11 | 6.99E+10 | 6.46E+13 | 55.59358 | 29.97624 | -16.4363 |
| 2016Q3 | 1.9E+11 | 6.95E+10 | 6.64E+13 | 53.81238 | 30.26752 | -11.3443 |
| 2016Q4 | 1.95E+11 | 6.92E+10 | 7E+13 | 53.22158 | 31.24513 | -5.29249 |
| 2017Q1 | 2.12E+11 | 6.8E+10 | 7.85E+13 | 66.18703 | 34.37198 | 8.387578 |
| 2017Q2 | 2.17E+11 | 6.86E+10 | 8.43E+13 | 63.0307 | 36.13706 | 13.69156 |
| 2017Q3 | 2.2E+11 | 7E+10 | 9.06E+13 | 56.11842 | 38.0033 | 17.28793 |
| 2017Q4 | 2.2E+11 | 7.2E+10 | 9.73E+13 | 45.45021 | 39.97069 | 19.17671 |
| 2018Q1 | 2.13E+11 | 7.64E+10 | 1.12E+14 | 12.62113 | 50.67791 | 17.60235 |
| 2018Q2 | 2.12E+11 | 7.92E+10 | 1.17E+14 | 1.803018 | 49.39214 | 16.77813 |
| 2018Q3 | 2.11E+11 | 8.2E+10 | 1.19E+14 | -5.40906 | 44.75204 | 14.94853 |

| 2018Q4 | 2.11E+11 | 8.48E+10 | 1.18E+14 | -9.01509 | 36.75763 | 12.11354 |
|--------|----------|----------|----------|----------|----------|----------|
| 2019Q1 | 2.1E+11 | 8.77E+10 | 1.15E+14 | -9.01509 | 25.4089 | 8.273162 |
| 2019Q2 | 2.1E+11 | 9.05E+10 | 1.08E+14 | -5.40906 | 10.70585 | 3.427396 |
| 2019Q3 | 2.11E+11 | 9.34E+10 | 9.95E+13 | 1.803018 | -7.35153 | -2.42376 |
| 2019Q4 | 2.11E+11 | 9.64E+10 | 8.8E+13 | 12.62113 | -28.7632 | -9.2803 |

# Appendix no B  Time series stability test

**UNIT ROOT TEST TABLE (PP)**

**At Level**

| | GDP | IMP | EXP01 | OIL | RIE | INF |
|---|---|---|---|---|---|---|
| With Consta t-Statistic | -1.1436 | -0.9101 | -2.0034 | 0.1670 | -0.5226 | -3.7905 |
| *Prob.* | *0.2845* | *0.9675* | *0.8774* | *0.0056* | *0.6907* | *0.7764* |
| | n0 | n0 | n0 | *** | n0 | n0 |
| With Consta t-Statistic | -1.7696 | -1.7222 | -2.2593 | -0.6260 | -1.9521 | -3.6474 |
| *Prob* | *0.4470* | *0.9726* | *0.6116* | *0.0364* | *0.7035* | *0.7256* |
| | n0 | n0 | n0 | ** | n0 | n0 |
| Without Con t-Statistic | 2.6018 | 1.3821 | -0.5875 | -1.3669 | -1.4944 | -3.9025 |
| *Prob.* | *0.4575* | *0.1571* | *0.1250* | *0.0002* | *0.9973* | *0.9563* |
| | n0 | n0 | n0 | *** | n0 | n0 |

**At First Difference**

| | d(GDP) | d(IMP) | d(EXP01) | d(OIL) | d(RIE) | d(INF) |
|---|---|---|---|---|---|---|
| With Consta t-Statistic | -3.8111 | -2.3686 | -2.7702 | -0.5172 | -3.5853 | -3.7660 |
| *Prob.* | *0.0054* | *0.1560* | *0.0705* | *0.8783* | *0.0099* | *0.0061* |
| | *** | n0 | * | n0 | *** | *** |
| With Consta t-Statistic | -3.8430 | -2.3424 | -2.5728 | -0.5667 | -3.5036 | -3.4490 |
| *Prob.* | *0.0229* | *0.4037* | *0.2940* | *0.9763* | *0.0508* | *0.0574* |
| | ** | n0 | n0 | n0 | * | * |
| Without Con t-Statistic | -3.0215 | -2.0200 | -2.8000 | -0.2821 | -3.4866 | -3.8555 |
| *Prob.* | *0.0033* | *0.0427* | *0.0061* | *0.5789* | *0.0008* | *0.0003* |
| | *** | ** | *** | n0 | *** | *** |

**UNIT ROOT TEST TABLE (ADF)**

**At Level**

| | GDP | IMP | EXP01 | OIL | RIE | INF |
|---|---|---|---|---|---|---|
| With Consta t-Statistic | -0.7591 | -1.2169 | -3.0864 | 0.3312 | 1.7213 | -3.3951 |
| *Prob.* | *0.1346* | *0.9775* | *0.9995* | *0.0662* | *0.8194* | *0.6593* |
| | n0 | n0 | n0 | n0 | n0 | n0 |
| With Consta t-Statistic | -1.0732 | -3.1162 | -2.7989 | -0.9860 | -0.2589 | -3.4427 |
| *Prob.* | *0.2051* | *0.9360* | *0.9891* | *0.0581* | *0.9208* | *0.1150* |
| | n0 | n0 | n0 | * | n0 | n0 |
| Without Con t-Statistic | 1.5189 | 0.7876 | -0.5939 | -0.6035 | -0.5222 | -3.4032 |
| *Prob.* | *0.4546* | *0.4505* | *0.4839* | *0.0011* | *0.9659* | *0.8797* |
| | n0 | n0 | n0 | *** | n0 | n0 |

**At First Difference**

| | d(GDP) | d(IMP) | d(EXP01) | d(OIL) | d(RIE) | d(INF) |
|---|---|---|---|---|---|---|
| With Consta t-Statistic | -4.9988 | -2.3033 | -2.6636 | -0.2230 | -0.1956 | -3.7787 |
| *Prob.* | *0.0002* | *0.0000* | *0.0017* | *0.0000* | *0.0007* | *0.0059* |
| | *** | *** | * | *** | *** | *** |
| With Consta t-Statistic | -4.9608 | -2.2779 | -2.5437 | -0.7283 | -1.1977 | -3.4911 |
| *Prob.* | *0.0014* | *0.4370* | *0.3069* | *0.9647* | *0.8967* | *0.0522* |
| | *** | n0 | n0 | n0 | n0 | * |
| Without Con t-Statistic | -3.0403 | -1.9948 | -2.6930 | -0.0135 | 0.5853 | -3.8633 |
| *Prob.* | *0.0031* | *0.0451* | *0.0082* | *0.6730* | *0.8384* | *0.0003* |
| | *** | ** | *** | n0 | n0 | *** |

Notes: (*)Significant at the 10%; (**)Significant at the 5%; (***) Significant at the 1%. and (no) Not Si
*MacKinnon (1996) one-sided p-values.

**This Result is The Out-Put of Program Has Developed By:**
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**College of Business and Economics**
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## Appendix no C  Estimate the equation of linear regression according to a model ARDL

Dependent Variable: GDP
Method: ARDL
Date: 08/28/21   Time: 23:25
Sample (adjusted): 2009Q1 2019Q4
Containd observations: 44 after adjustments
Highest rate dependent lags: 4 (Automatic selection)
Model selection method: Akaike info criterion (AIC)
Dynamic regressors (4 lags, automatic): IMP INF OIL RIE EXP01
Fixed regressors: C
Number of models evalualted: 12500
Selected Model: ARDL(4, 4, 4, 3, 4, 4)

| Variable | Coefficient | Std. Error | t-Statistic | Prob.* |
|---|---|---|---|---|
| GDP(-1) | 0.151792 | 0.148685 | 1.020895 | 0.3235 |
| GDP(-2) | -0.019443 | 0.153034 | -0.127049 | 0.9006 |
| GDP(-3) | 0.127360 | 0.126367 | 1.007863 | 0.3295 |
| GDP(-4) | 1.163410 | 0.125367 | 9.279999 | 0.0000 |
| IMP | 2.228179 | 0.104034 | 21.41771 | 0.0000 |
| IMP(-1) | -0.155342 | 0.197392 | -0.786970 | 0.4436 |
| IMP(-2) | 0.047061 | 0.200366 | 0.234875 | 0.8175 |
| IMP(-3) | -0.121081 | 0.164959 | -0.734005 | 0.4743 |
| IMP(-4) | -1.084044 | 0.134302 | -8.071668 | 0.0000 |
| INF | -83099581 | 20365229 | -4.080464 | 0.0010 |
| INF(-1) | 7596700. | 26507050 | 0.286592 | 0.7783 |
| INF(-2) | -7367865. | 26495525 | -0.278080 | 0.7847 |
| INF(-3) | 6495901. | 23348796 | 0.278211 | 0.7846 |
| INF(-4) | 3.85E+08 | 38585484 | 9.984274 | 0.0000 |
| OIL | 1.20E+09 | 60586469 | 19.83519 | 0.0000 |
| OIL(-1) | -1.26E+08 | 1.60E+08 | -0.783535 | 0.4455 |
| OIL(-2) | 23907045 | 1.62E+08 | 0.147595 | 0.8846 |
| OIL(-3) | -1.38E+08 | 1.19E+08 | -1.155563 | 0.2659 |
| RIE | 1.01E+09 | 25003849 | 40.36346 | 0.0000 |
| RIE(-1) | -1.09E+08 | 1.23E+08 | -0.890677 | 0.3872 |
| RIE(-2) | 21994240 | 1.25E+08 | 0.175584 | 0.8630 |
| RIE(-3) | -1.01E+08 | 99252591 | -1.020299 | 0.3238 |
| RIE(-4) | -7.19E+08 | 77056909 | -9.336386 | 0.0000 |
| EXP01 | -0.000718 | 5.41E-05 | -13.27408 | 0.0000 |
| EXP01(-1) | 3.00E-05 | 4.25E-05 | 0.706130 | 0.4909 |
| EXP01(-2) | -1.92E-06 | 4.30E-05 | -0.044621 | 0.9650 |
| EXP01(-3) | 2.84E-05 | 3.60E-05 | 0.790044 | 0.4418 |
| EXP01(-4) | -0.000463 | 4.91E-05 | -9.427204 | 0.0000 |
| C | -6.71E+10 | 7.32E+09 | -9.178765 | 0.0000 |

R-squared 0.999966   Mean dependent var 1.73E+11 Adjusted R-squared 0.999903   S.D. dependent var 3.23E+10

| | | | |
|---|---|---|---|
| S.E. of regression | 3.19E+08 | Akaike info criterion | 42.23865 |
| Sum squared resid | 1.52E+18 | Schwarz criterion | 43.41459 |
| Log likelihood | -900.2502 | Hannan-Quinn criter. | 42.67474 |
| F-statistic 15800.49 | Durbin-Watson stat 1.170447 | Prob(F-statistic) 0.000000 | |

*Note: p-values and any subsequent tests do not account for model          selection.

## Appendix no D   Significant test results and correction coefficient indication ɧ

ARDL Bounds Test
Date: 08/28/21   Time: 23:28
Sample: 2009Q1 2019Q4
Containd observations: 44
Null Hypothesis: No long-run relationships exist

| Test Statistic | Value | k |
|---|---|---|
| F-statistic | 4.439592 | 5 |

Critical Value Bounds

| Significance | I0 Bound | I1 Bound |
|---|---|---|
| 10% | 2.26 | 3.35 |
| five percent | 2.62 | 3.79 |
| 2.five percent | 2.96 | 4.18 |
| 1% | 3.41 | 4.68 |

Test Equation:
Dependent Variable: D(GDP)
Method: Least Squares
Date: 08/28/21   Time: 23:28
Sample: 2009Q1 2019Q4
Containd observations: 44

| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|---|---|---|---|---|
| D(GDP(-1)) | 0.224221 | 0.204488 | 1.096499 | 0.2873 |
| D(GDP(-2)) | 0.117994 | 0.183440 | 0.643233 | 0.5282 |
| D(GDP(-3)) | -0.170520 | 0.193535 | -0.881080 | 0.3899 |
| D(IMP) | 1.345968 | 0.132255 | 10.17706 | 0.0000 |
| D(IMP(-1)) | -0.315823 | 0.228007 | -1.385149 | 0.1829 |
| D(IMP(-2)) | -0.211136 | 0.224554 | -0.940246 | 0.3595 |
| D(IMP(-3)) | 0.122308 | 0.232296 | 0.526518 | 0.6050 |
| D(INF) | -1.19E+08 | 38246877 | -3.116796 | 0.0060 |
| D(OIL) | 9.55E+08 | 1.37E+08 | 6.966626 | 0.0000 |
| D(OIL(-1)) | -3.94E+08 | 2.08E+08 | -1.894238 | 0.0744 |
| D(OIL(-2)) | -3.40E+08 | 2.27E+08 | -1.498441 | 0.1514 |
| D(RIE) | 8.43E+08 | 47455145 | 17.76430 | 0.0000 |
| D(RIE(-1)) | -2.34E+08 | 1.41E+08 | -1.667565 | 0.1127 |
| D(RIE(-2)) | -1.64E+08 | 1.41E+08 | -1.160877 | 0.2609 |
| D(RIE(-3)) | 70077020 | 1.05E+08 | 0.665630 | 0.5141 |
| D(EXP01) | -0.000243 | 5.75E-05 | -4.222491 | 0.0005 |
| D(EXP01(-1)) | 0.000116 | 7.13E-05 | 1.624210 | 0.1217 |
| D(EXP01(-2)) | 0.000104 | 7.65E-05 | 1.363295 | 0.1896 |
| D(EXP01(-3)) | -1.75E-06 | 4.06E-05 | -0.043094 | 0.9661 |
| C | -1.61E+10 | 1.30E+10 | -1.235616 | 0.2325 |
| IMP(-1) | 0.092804 | 0.049618 | 1.870358 | 0.0778 |
| INF | 24305333 | 31653774 | 0.767849 | 0.4525 |
| OIL(-1) | 1.46E+08 | 1.06E+08 | 1.374693 | 0.1861 |
| RIE(-1) | 37464993 | 56302842 | 0.665419 | 0.5142 |
| EXP01(-1) | -0.000124 | 5.76E-05 | -2.155002 | 0.0450 |
| GDP(-1) | 0.086362 | 0.062281 | 1.386654 | 0.1825 |

| | | | | |
|---|---|---|---|---|
| R-squared | 0.975140 | Mean dependent var | | 2.05E+09 |
| Adjusted R-square | 0.940612 | S.D. dependent var | | 3.32E+09 |

| | | | | |
|---|---|---|---|---|
| S.E. of regression | 8.08E+08 | Akaike info criterion | | 44.14676 |
| Sum squared resid | 1.18E+19 | Schwarz criterion | | 45.20105 |
| Log likelihood | -945.2287 | Hannan-Quinn criter. | | 44.53774 |
| F-statistic | 28.24222 | Durbin-Watson stat | | 2.385728 |

## **Appendix no E** WALD test to examine long-term relationship (Bonds Test)

ARDL Cointegrating And Long Run Form
Dependent Variable: GDP
Selected Model: ARDL(4, 4, 4, 3, 4, 4)
Date: 08/28/21   Time: 23:26
Sample: 2008Q1 2019Q4
Containd observations: 44

Cointegrating Form

| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|---|---|---|---|---|
| D(GDP(-1)) | -1.271327 | 0.180577 | -7.040362 | 0.0000 |
| D(GDP(-2)) | -1.290770 | 0.163230 | -7.907671 | 0.0000 |
| D(GDP(-3)) | -1.163410 | 0.125367 | -9.279999 | 0.0000 |
| D(IMP) | 2.228179 | 0.104034 | 21.417712 | 0.0000 |
| D(IMP(-1)) | -0.047061 | 0.200366 | -0.234875 | 0.8175 |
| D(IMP(-2)) | 0.121081 | 0.164959 | 0.734005 | 0.4743 |
| D(IMP(-3)) | 1.084044 | 0.134302 | 8.071668 | 0.0000 |
| D(INF) | -83099580.7 | 20365228.88 | 0.000000 | 0.0000 |
| D(INF) | 7367864.77 | 26495525.44 | 0.000000 | 0.0000 |
| D(INF) | -6495900.75 | 23348796.39 | 0.000000 | 0.0000 |
| D(INF) | -385248047. | 38585484.01 | 0.000000 | 0.0000 |
| D(OIL) | 1201743892 | 60586469.44 | 0.000000 | 0.0000 |
| D(OIL(-1)) | -23907045.4 | 161977046.1 | 0.000000 | 0.0000 |
| D(OIL(-2)) | 138001275. | 119423370.8 | 0.000000 | 0.0000 |
| D(RIE) | 1009241842 | 25003849.22 | 0.000000 | 0.0000 |
| D(RIE(-1)) | -21994239.8 | 125263293.0 | 0.000000 | 0.0000 |
| D(RIE(-2)) | 101267302. | 99252591.16 | 0.000000 | 0.0000 |
| D(RIE(-3)) | 719433044. | 77056908.52 | 0.000000 | 0.0000 |
| D(EXP01) | -0.000718 | 0.000054 | -13.274076 | 0.0000 |
| D(EXP01(-1)) | 0.000002 | 0.000043 | 0.044621 | 0.9650 |
| D(EXP01(-2)) | -0.000028 | 0.000036 | -0.790044 | 0.4418 |
| D(EXP01(-3)) | 0.000463 | 0.000049 | 9.427204 | 0.0000 |
| CointEq(-1) | 0.423119 | 0.041684 | 10.150621 | 0.0000 |

Cointeq equal  GDP - (-2.1620*IMP -729991708.6820*INF -2273945143.4987        *OIL -
238858114.6268*RIE + 0.0027*EXP01 + 158690316749.9809 )

Long Run Coefficients

| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|---|---|---|---|---|
| IMP | -2.161979 | 0.156229 | -13.838536 | 0.0000 |
| INF | -729991708. | 38644095.59 | -18.890123 | 0.0000 |
| OIL | -227394514 | 87870445.20 | -25.878384 | 0.0000 |
| RIE | -238858114. | 43973434.90 | -5.431873 | 0.0001 |
| EXP01 | 0.002659 0.000136 19.487351 | | | 0.0000 C 1586903167    4537861268. |
| | 34.970288 | 0.0000 | | |

## Appendix no F  Serial correlation LM test results

Breusch-Godfrey Serial Correlation LM Test:

| | | | |
|---|---|---|---|
| F-statistic | 3.236401 | Prob. F(2,13) | 0.0723 |
| Obs*R-squared | 14.62569 | Prob. Chi-Square(2) | 0.0007 |

Test Equation:
Dependent Variable: RESID
Method: ARDL
Date: 08/28/21   Time: 23:30
Sample: 2009Q1 2019Q4
Containd observations: 44
Presample missing value lagged residuals set to zero.

| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|---|---|---|---|---|
| GDP(-1) | -0.054651 | 0.132346 | -0.412939 | 0.6864 |
| GDP(-2) | 0.145387 | 0.145988 | 0.995880 | 0.3375 |
| GDP(-3) | -0.084533 | 0.116647 | -0.724694 | 0.4815 |
| GDP(-4) | -0.001065 | 0.110326 | -0.009657 | 0.9924 |
| IMP | -0.000947 | 0.091311 | -0.010375 | 0.9919 |
| IMP(-1) | 0.027874 | 0.173652 | 0.160518 | 0.8749 |
| IMP(-2) | -0.150731 | 0.186193 | -0.809542 | 0.4328 |
| IMP(-3) | 0.109657 | 0.151060 | 0.725918 | 0.4808 |
| IMP(-4) | -0.005597 | 0.117962 | -0.047444 | 0.9629 |
| INF | -5150920. | 18282179 | -0.281745 | 0.7826 |
| INF(-1) | 10978588 | 23669435 | 0.463830 | 0.6504 |
| INF(-2) | 5945498. | 24060223 | 0.247109 | 0.8087 |
| INF(-3) | -10889782 | 21254906 | -0.512342 | 0.6170 |
| INF(-4) | -4782972. | 33932773 | -0.140954 | 0.8901 |
| OIL | -7789975. | 53503052 | -0.145599 | 0.8865 |
| OIL(-1) | 32522239 | 1.41E+08 | 0.230188 | 0.8215 |
| OIL(-2) | -1.21E+08 | 1.50E+08 | -0.802897 | 0.4365 |
| OIL(-3) | 89478064 | 1.11E+08 | 0.807578 | 0.4339 |
| RIE | 17486021 | 23492222 | 0.744332 | 0.4699 |
| RIE(-1) | 15234251 | 1.08E+08 | 0.140795 | 0.8902 |
| RIE(-2) | -1.02E+08 | 1.18E+08 | -0.867932 | 0.4012 |
| RIE(-3) | 71709594 | 91609167 | 0.782777 | 0.4478 |
| RIE(-4) | 7456941. | 68221172 | 0.109305 | 0.9146 |
| EXP01 | 2.33E-05 | 4.90E-05 | 0.476734 | 0.6415 |
| EXP01(-1) | -3.06E-05 | 3.92E-05 | -0.779308 | 0.4498 |
| EXP01(-2) | 3.24E-05 | 4.04E-05 | 0.803024 | 0.4364 |
| EXP01(-3) | -1.76E-05 | 3.24E-05 | -0.543771 | 0.5958 |
| EXP01(-4) | 9.49E-06 | 4.35E-05 | 0.218309 | 0.8306 |
| C | -1.61E+09 | 6.50E+09 | -0.247228 | 0.8086 |
| RESID(-1) | 0.812896 | 0.319673 | 2.542896 | 0.0245 |
| RESID(-2) | -0.226313 | 0.341283 | -0.663125 | 0.5188 |

| | | | |
|---|---|---|---|
| R-squared | 0.332402 | Mean dependent var | -5.88E-05 |
| Adjusted R-squared | -1.208208 | S.D. dependent var | 1.88E+08 |
| S.E. of regression | 2.80E+08 | Akaike info criterion | 41.92549 |
| Sum squared resid | 1.02E+18 | Schwarz criterion | 43.18253 |
| Log likelihood | -891.3607 | Hannan-Quinn criter. | 42.39166 |
| F-statistic | 0.215760 | Durbin-Watson stat | 2.167644 |
| Prob(F-statistic) | 0.999745 | | |