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**ANALYSIS OF IMPORT FROM TURKEY TO IRAQ AND
NORTHERN IRAQ REGION**

YÜKSEK LİSANS TEZİ

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SOSYAL BİLİMLER ENSTİTÜSÜ MÜDÜRLÜĞÜ'NE

Siirt Üniversitesi Lisansüstü Eğitim-Öğretim ve Sınav Yönetmeliğine göre hazırlamış olduğum “Analysis of Import From Turkey to Iraq and Northern Iraq Region” adlı tezin tamamen kendi çalışmam olduğunu ve her alıntıya kaynak gösterdiğimi taahhüt eder, tezimin kağıt ve elektronik kopyalarının Siirt Üniversitesi Sosyal Bilimler Enstitüsü arşivlerinde aşağıda belirttiğim koşullarda saklanmasına izin verdiğimi onaylarım.

Lisansüstü Eğitim-Öğretim yönetmeliğinin ilgili maddeleri uyarınca gereğinin yapılmasını arz ederim.

Tezimin tamamı her yerden erişime açılabilir.

[Tarih ve İmza]

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ÖZET

YÜKSEK LİSANS TEZİ

TÜRKİYE'DEN İRAK VE KUZEY İRAK BÖLGESİNE İTHALATIN ANALİZİ

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Irak'ın ve Kuzey Irak Bölgesi'nin (KIB) yerel mal ve hizmet ihtiyaçları, uluslararası pazarlardan ve tüm komşu ülkelerden yapılan ithalata dayanmaktadır. Bütün komşu ülkeler arasında Türkiye hem Irak hem de KIB için en büyük ticaret ortağıdır. Ancak, Türkiye'den ithal edilen malların oranı KIB bölgesinde farklılık göstermektedir. Bu tez çalışmasının amacı, 2004-2017 yılları arasında Türkiye'den Irak'a ve KIB'e yapılan ithalatı etkileyen faktörleri incelemektir.

Bu amaçla zaman serileri analizi için uygun ekonometrik modeller kullanılmıştır. Zaman serileri kullanılması sebebi ile durağanlık test edilmiş ve yapısal kırılmalar dikkate alındığında zaman serilerinin trend çevresinde durağan olduğu tespit edilmiştir. İthalatı etkileyebilecek teorik değişkenler olan Gayrisafi Yurtiçi Hasıla (GSYİH), döviz kuru ve nüfus modellerde kullanıldığında, sadece GSYİH istatistiksel olarak anlamlı değişken olarak tespit edilmiştir. Buna ilaveten Johansen eşbütünleşim sonuçları elde edilememiştir. Bütün bu beklenmeyen durumların sebebi gözlem sayısının az olması olasıdır.

Anahtar sözcükler: Türkiye, Irak, Kuzey Irak Bölgesi, İthalat, GSYİH.

ABSTRACT

MASTERS THESIS

ANALYSIS OF IMPORT FROM TURKEY TO IRAQ AND NORTHERN IRAQ
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Supervisor: Prof. Dr. Arzdar KIRACI

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Iraq's and Northern Iraq Regions (NIR) local needs of goods and services depend on imports from international markets, and between all neighbors, Turkey is the biggest trade partner for both Iraq and NIR. However, the ratio of imports from Turkey is different in the NIR region. The purpose of this thesis study is to analyze the factors affecting import from Turkey to Iraq and NIR during the period 2004 to 2017.

For this purpose, appropriate econometric models are used for time series analysis. The use of time series requires stationarity and when the structural breaks are considered, the time series are found to be stationary around the trend. The theoretical variables gross domestic product (GDP), exchange rate and population that can affect imports are used in the models, and only GDP was found to be statistically significant. In addition, Johansen cointegration results could not be obtained. All of these unexpected results might be due to the small number of observations.

Keywords: Turkey, Iraq, Northern Iraq Region, Import, GDP.

ABBREVIATIONS

Abbreviations Explanation

TR	: Turkish Republic
NIR	: Northern Iraq Region
NIG	: Northern Iraq Government
GDP	: Gross Domestic Product
WTO	: World Trade Organization
NTT	: New Trade Theory
GATT	: General Agreement on Tariffs and Trade
NAFTA	: North American Free Trade Agreement
DR-CAFTA	: Dominican Republic-Central America Free Trade Agreement
TBT	: Technical Barriers to Trade
ADF	: Augmented Dickey-Fuller
PP	: Philips-Perron
KPSS	: Kwiatkowski-Phillips- Schmidt-Shin
VECM	: Vector Error Correction Model

Symbol Explanation

%	: Percentage
\$: US Dollar

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INTRODUCTION

The purpose of this thesis study is to determine the factors affecting Iraq's and Northern Iraq Regions (NIR) imports from Turkey during the period 2004 to 2017. While trade considered as the entire exchange activities of goods and services among the buyers and sellers, international trade is the mutual dimension of this process among countries, while the reciprocal purchases and sales among countries are at the start of international trade activities.

One of the two most essential components of international trade is the export of products and services produced within a country to another country and the other is the import of a product that is rare or not produced in a particular country. International trade is one of the most critical indicators in evaluating the economic condition of countries imports, and exports figures are essential for countries in giving accurate decisions about the future investments of the government and the private sector, as well as the creation of economic policies. Many economic types of research show that international trade has a strong relation with economic development (Drozd & Miškinis, 2011).

In the modern world, there is a mutual interdependence of the various national economies. Today it is hard to find a closed economy. However, the degree of openness varies from one country to another. Thus, in the modern world, no country is entirely self-sufficient. Self-sufficiency, in a sense used here, means the proportion of the goods and services consumed by their total output produced within a country. However, the degree of self-sufficiency varies from one nation to another (Belay Seyoum, 2000).

Accordingly, the study investigates the effect of population, Gross Domestic Product (GDP), exchange rates on Iraq and NIR import from Turkey. The study finds that in Iraq and NIR, GDP has a positive impact on import from Turkey. Exchange rates play a dynamic role in a nations free-market economics throughout the world. For this reason, exchange rates are between the most analyzed, and governmentally manipulated economic actions and most counties struggled to moderate their domestic currency fluctuations by imposing regulatory restrictions on exchange rate movements,

particularly Iraqi government. However, exchange rates came out to be statistically insignificant (Foote, Block, Crane, & Gray, 2004).

The study also finds that in 2004 the population of NIR was 4 million and it has increased yearly in 2017 the total population of NIR reached 5.7 million. However, the population of Iraq from 2004 to 2017, increased from 26 million in 2004 to 38 million in 2017, even though increases in population have no significant impact on the countries import and export. Since Iraq and its northern region is an oil producer any decreases or increases in prices of crude oil led to decreases or increases in importing goods, the main reason for that long run wars in Iraq destroyed the national industry Iraq and NIR could not be able to satisfy local needs (KBI, 20018).

Iraqi imports have increased because of the reason of an increase in the openness of the Iraq border against foreign goods and services after the Iraq war. Another reason is the increase in the GDP of Iraq by the increase in the price of crude oil because crude oil constitutes more than 90 percent of Iraqi GDP. It means any change in oil price could directly reflect on all sectors in Iraq, especially import and consumption. However, from 2013 to 2016, the value of Iraq imports from Turkey has decreased because of ISIS war in Mosul and dropping in oil price than in 2017. Again import starts to increase because of the uprising in the price of oil and defeat ISIS (Cordesman, 2015).

The results demonstrated that the exchange rate of Iraqi dinar (IQD) per dollar in Iraq and its NIR from 2003 to 2017, the highest rate is 1420 diner per us dollar, and lowest is 1200 Iraqi dinar per one us dollar. It means the exchange rate of Iraqi dinar does not fluctuate very much, Iraqi central bank has played well to make exchange rate of Iraqi dinar constant, even there is only Iraqi central bank that makes monetary policy, but exchange rate of IQD is the little different from Baghdad to Erbil the difference happened because of market factors (Kami & Bayoumy, 2016).

This thesis organized into three chapters. Chapter one, which comprises the background of the study, the literature relevant to the study topic that includes two sections, while the first section includes the concept of international trade, theories of international trade, advantage and disadvantage of international trade. According to previous literature, it is required to discuss background of international trade in each

research about trade, export or import. The second section contains the concept of import, advantage, and disadvantage of import, trade policy, and restrictions, and determines of import. This thesis has focused on import very strongly because the dependent variable of this paper is import because of that it is needed to discuss all things that related to import, its concept, advantage and disadvantage and import policy.

Chapter two includes two sections, first discusses NIR-Turkey relations and section two investigates Iraq-Turkey relations. According to literature background it is required to briefly discuss the history of political and economic relationships between Iraq and NIR whit Turkey, because the history of relationship may reflect the current relationship between NIR and Turkey or Iraq and Turkey.

Chapter three includes three parts; part one discusses all data used in the thesis for NIR and Iraq; part two discusses the unit root test and stationary then part three will briefly examine the effect of GDP, population, and exchange rates on both Iraq and the NIR imports from Turkey. Most important chapter of this paper is this one, because this chapter practically analyses the reality of relationship between Kurdistan-Turkey and Iraq-Turkey, then practically illustrates the level of effect of each independent variable which is GDP, population and exchange rate on the dependent variable.

CHAPTER ONE

BASIC CONCEPTS

This chapter aims to review the literature related to the study variables besides defining them. However, this chapter includes two subparts, first concisely discusses the definition and concept of international trade, advantage and disadvantages of international trade, classical and modern theories of international trade and finally, the deterrents of international trade. The second subpart is about import, discusses the import briefly, since the dependent variable of this thesis is import. Also, argues the concept and definition of import, advantage, and disadvantages of import, policies and restrictions, free trade and finally discusses according to previous literature it is required to discuss background of international trade in each research about trade, export or import. However, the second section contains the concept of import, advantage, and disadvantage of import, trade policy, and restrictions, and determinants of import. This paper has focused on import very strongly because the dependent variable of this paper is import because of that it is needed to discuss all things that is related to import which is concept, advantage and disadvantage and import policy.

1.1. THE CONCEPT OF INTERNATIONAL TRADE

According to Daneshjo (2014), international trade is the exchange of goods, services and capital between countries, at least two countries should be involved in the activities, that is, the aggregate of activities relating to trading between merchants across borders (Abiodun, 2017). Alternatively, in another word international trade is involved in the distribution of goods across national borders, and gives countries and consumers the opportunity to have goods and services not available in their own countries (Ellis, 2003). International trade can bring many benefits. By providing a bigger market, it allows producers to produce more cheaply, as producing a more significant quantity usually lowers the costs. So, this aspect is especially important for smaller economies, as they will have to produce everything expensively if they cannot trade and have a bigger market. By increasing competition, international trade can force producers to become more efficient (Lamaj, 2015).

Trading globally gives consumers and countries the opportunity to be exposed to goods and services not available in their own countries (Heakal, 2018). There is all kind of product that can be found on the international market (food, oil, clothes, jewelry, spare parts, wine, stocks, currencies, and water). Services are also traded: banking, tourism, consulting and transportation. A product that bought from the global market is an import, and the product that sold to the global market is an export (Vasudeva, 2011).

International trade and the accompanying financial transactions generally conducted to provide a nation with commodities it lacks in exchange for those that it produces in abundance; such transactions, functioning with other economic policies, tend to improve a nations standard of living (Harrod, Wonnacott, & Pierce, 2015).

1.1.1. The Definition of International Trade

According to Vijayyasri (2013, p. 112), international trade fundamentally is an international transformation of commodities, inputs, and technology which promotes welfare in two ways. It extends the market of a countries output beyond national frontiers and may ensure better prices through exports.

Through imports, it makes available commodities, inputs, and technology which are either not available or are available only at higher prices, thus taking consumers to a higher level of satisfaction. However, international trade refers to as the transfer of goods and services which include capital goods from one country to another (Hassan, Aboki, & Audu, 2014).

1.1.2. The Advantages of International Trade

In regard, the international trade economists and researchers mentioned some significant advantages of international trade as follows:

1.1.2.1. The Natural Resource and Technology Level

According to Parikh (2014), all countries are not skilled with the same amount of natural resources, and hence it is not possible for countries to be self-independent on

everything and therefore with the help of international trade a nation can import from other nations the products which cannot be made by them.

However, Cross (2016), argues that some nations have better technology, and their location is such that they can produce the product at relatively cheaper rate than any other nation and therefore it is better for other countries to import such product rather than producing it in their own country because it leads to waste capital and resources.

1.1.2.2. The Real Income

When a country involves in international trade its household's real purchasing power will increase. Their incomes give further because they can obtain at a lower cost the goods and services they have been buying. Consumption and income are the two main channels through which the welfare of a household may be affected by international trade. The first channel works via the impact on household expenditure, as the total cost of consumption for household altered through the influence of trade on the prices of consumption items (Thompson, 2007).

The second channel works via the impact on earnings, as international trade may affect the wage incomes of individuals, based on their industry affiliation or skill level. If consumer prices decline in a way that benefits households, the gains through this channel may be substantial, and households may experience overall welfare gains, even in the presence of wage losses. It is therefore essential to consider the additional impact on a household's budget when analyzing the impacts of international trade. Consumer benefits should be a prominent part of any trade discussion and weighed against the reservations opponents to trade liberalization raise. From a public interest perspective, the government should keep any policy responses to particular concerns with imports and their effects as focused as possible and guard the benefits of trade to the consuming public very carefully (Marchand, 2017).

It is important to recognize that the time had long passed when imports consisted mostly of luxury items only the rich could afford. The leading U.S. import companies are Wal-Mart, Target, Home Depot, Dole, Lowes, and Sears. The everyday goods that "big box" stores, in particular, bring into the country are available at affordable prices

that can help consumers with modest incomes stretch their budgets. Imports benefit ordinary people and especially lower-income households (Chad, 2015).

1.1.2.3. The Wages

Cashin, Pattillo, Sahay, and Mauro (2001) mention that jobs that are related to international trade tend to pay better than those that are not related. For instance, in Western Europe, those working in export-oriented companies collect a 10%-20% wage premium over the average wage. While WTO (2016), reported that in the United States, the premium is 6% and in Sub-Saharan Africa, the figure is 34%. Generally, wages in economies that are open are higher than in closed economies. Workers in the manufacturing sector in open economies earn three to nine times more than those in closed economies.

1.1.2.4. Poverty

Trade liberalization also could lead to faster growth in average incomes, and that growth increases the incomes of the poor “proportionately,” thus leading to decreased absolute poverty (Santos-Paulino, 2012). Trade openness could be effective in reducing poverty. Specifically, cross-country analysis and case studies of China and Morocco indicate that it is difficult to assert that trade liberalization is a dominant force for poverty reduction (Dollar & Kraay, 2004).

While, other comparative studies find that growth reduces poverty but the estimated relationship varies widely (Ravallion, 2006). The effect ultimately is most substantial in countries with less inequality in income and assets, and a higher degree of capital account liberalization associated with a lower income share for the poor (Arestis & Caner, 2009).

1.1.2.5. Life Standard

There is a strong correlation between trade and income, and trade and inequality in the cross-section of countries, but inferring causality complicated due to indigent problems. Countries with higher trade openness tend to have higher living standards and lower income inequality. The gap between more open and less open economies

regarding their GDP per capita and income coefficient is persistent, and if anything it has extended in the last two decades. (Cerdeiro & Komaromi, 2017).

1.1.2.6. Competition

According to UNCTAD (2005), competition policy at the regional level also ensures that countries that are members of regional trade areas can benefit more fully from market opportunities created as a result of such enterprises. For instance, commercial agreements between vertically related entities, such as manufacturers, traders, and retailers, can create an anti-competitive impact by excluding potential producers and suppliers in the respective supply chain.

However, competition law and policy may also address concerns in commodity markets, which are exposed to cartelization by buyers due to the insufficient negotiating power of smallholder farmers regarding the small number of buyers, ordinarily large-scale corporations. Buying cartels observed in significant commodity products, such as coffee, cotton, tea, tobacco, milk, and fish which small farmers in many developing countries and LDCs heavily depend on as a significant source of revenue (Qaqaya & Lipimile, 2008).

1.1.3. Disadvantages of International Trade

Even though, international trade has advantages, but, economists argued that it has some essential disadvantages as revealing:

1.1.3.1. Exploitation

According to Obialar (2017), one of the international trade disadvantages is that its indications to the exploitation of importing country, by the exporting country because importing country is a price taker and hence it has to pay the price fixed by exporting country. Through international trade, the developed countries often exploit the underdeveloped and developing countries both economically and politically. Most countries in Africa and Asia have been exploited at one time by developed countries under the disguise of trade.

1.1.3.2. Unhealthy Competition with Local Industries

With imported products looking more appealing and cheaper and with the attitude of buyers thinking that imported products are better than local ones, home industries especially the infant ones have little or no chance of survival (Shukla, 2009).

1.1.3.3. Invasion of Culture

The international trade might lead to an attack on a nations culture. Young residents of impoverished nations get accustomed to foreign consumption pattern and lifestyles (Singh, 2012).

1.1.3.4. Unemployment

Local small manufacturers are going out of business, so foreign trade also leads to unemployment because many products which are manufactured by local manufacturers cannot compete with imported products due to better quality and low production price (UNCTAD, 2013).

1.1.4. Theories of International Trade

1.1.4.1. Classical Theories of International Trade

As, Masood and Bajwa (2015, p. 136), describe this process in their study assumes a countries trade with other countries to be related to the intensity of its imports and exports with them. Which means nations will be able to profit if they deploy enough means for the production of services as well as goods in which they have an economic advantage. So, classical trade theory comprehensively explains the situation in which nation can produce products it keeps an advantage in, for the local utility, and consequently exporting the surplus quantities. Subsequently, it is level-headed for nations to import products in which they yield an edge.

In the same context, Berkum and Beiji (2000), mention that this edge could come from national variations in factors like resource bequest, labor, capital, technology or

entrepreneurial skills so most classical international trade theories find their roots in Adam Smith's theory of total advantage.

1.1.4.2. Mercantilism Theory

Mercantilism is considered to be the first or oldest theory of international trade, mercantilists such as John Law a Scots financier at the 16th century, believed that the economics of each country, prosperity and political power came from its stocks of precious metals. Cross-border trade and policies dominated the theoretical discussions in the West between the 16th and 18th centuries.

In this regard, Verter (2015) indicated that Mercantilists believe that the wealth of each country could determine by the amount of its gold and silver holdings. Gold and silver had the status of currency during that time; the model stressed that nations should simultaneously discourage imports through tariffs and quotas and encourages exports through export subsidies and support, in addition to the collection of precious metals. Mercantilists promoted export trade because its increase a countries good (wealth) and vice versa to import. Trade under mercantilism is a zero-sum game, with winners who win only at the expense of losers (Langdana & Murphy, 2014).

Therefore, it is believed that mercantilists are against free trade and favoring protectionist policies to minimize import and maximize export in the purpose of increasing precious metal. However, there are assumptions of Mercantilism theory as follows:

- a) The wealth of nations depends on precious metal such as gold and silver.
- b) Gold and silver were the medium of exchange between countries during the 16th and 18th centuries.
- c) Countries could maximize the amount of gold and silver by exporting, and it could minimize by importing goods from other countries.
- d) The government should use a high tax on import goods.
- e) An extensive range subsidy on exporting industries to promote the countries export.
- f) Nationalism policies.
- g) Countries should have a trade surplus.

1.1.4.3. The Theory of Absolute Advantage

At the late 18th century, Adam Smith the famous classical economists published his book “the wealth of nations” and explored his theory of absolute advantage as a part of his efforts to make a case for free trade. Rangasamy (2003, p. 3) in his research discusses that according to the theory of absolute advantage, a country specializes in the production of those goods in which it has an absolute advantage and trades these for goods in which it does not have an absolute advantage.

Also, Harberler (1937, p. 67), discuss this in his book that Adam Smith developed his theory of international trade in a realistic manner in which he attacked the mercantilists views on what constituted the wealth of nation and what contributes the increasing wealth and welfare of nations. Adam Smith promoted free trade by comparing nations to households.

While, every household finds it worthwhile to produce only some of the products it consumes and to buy other products using the proceeds from what the household can sell to others. The same should apply to nations: households never to attempt to make at home what it will cost more to make than to buy (Pegul, 2010). Nevertheless, there are assumptions of an absolute advantage as follows:

- a) There are two countries and tow commodities; both countries produce this as commodities.
- b) Labor is the only factor of production
- c) Both countries have the fixed amount of labor and fully employed in both countries.
- d) Labor is free moved from a product to another product but is immobile between countries.
- e) Goods are free moving between countries and transportation costs are zero.
- f) The level of technology is constant.
- g) Production cost is constant.
- h) Money not used as the medium of exchange.

1.1.4.4. The Theory of Comparative Advantage

In the early 18th century, the British economist David Ricardo discussed his theory of international trade that so-called comparative cost theory. Comparative advantage is one of the most fundamental theories of international trade. Ricardo answered the question of what happens when a country has an absolute advantage in producing all commodities. In the Ricardian model, trade is determined by comparative cost not total efficiency in production, so differences in comparative costs form the basis of international trade. The law of comparative advantage indicates that each country will specialize in the production of those commodities in which it has the most significant comparative advantage or the least comparative disadvantage. Thus, a country will export those commodities in which its comparative advantage is the greatest and import those commodities in which its comparative disadvantage is the least (Blaug, 1997).

According to Bin (2000, p. 45), the theory holds that a difference in comparative costs of production is the necessary condition for the existence of international trade. However, this difference reflects a difference in techniques of production. According to this theory, technological differences between countries determine the international division of labor and consumption and trade patterns. It holds that trade is beneficial to all participating countries. However, the comparative advantage theory has some assumptions as follows:

- a) There are two countries, and both countries produce only two goods.
- b) The two goods produced by the two countries are the same.
- c) Labor is the only factor production, and the amount of labor is unchanged in both countries.
- d) Tastes are similar in both countries.
- e) Both commodities produced under the law of constant return and cost,
- f) The factor of production is free moved from a product to another product within a country, but it is immobile between countries,
- g) Technology level is unchanged in both countries.
- h) Factors of production wholly employed in both the countries.
- i) The exchange ratio for the two commodities is the same

- j) Transport costs not incurred in carrying trade between the two countries.

1.1.4.5. The Theory of Heckscher – Ohlin

According to Pagul (2010), the theory of Heckscher – Ohlin is an addition of complexity to Ricardo's theory; it published in an article by Swedish economist Eli Heckscher in 1919 called the effect of foreign trade on the distribution of income. Besides, a clear overall explanation was developed by his Swedish student Bertil Ohlin in 1930 and published his famous book international and international trade. The theory was based on the Ricardian comparative advantage.

However, Pagul further argues that Heckscher – Ohlin's theory of trade in the Ohlin's own words, commodities requiring for their production much of abundant factors of production and little of scare factors exported in exchange for goods that call for factors in opposite proportion, thus indirectly, factors in abundant supply are exported and factors in scanty supply imported. In this context, Salvatore (2003, p. 125) illustrates this in his book a nation will export the commodity whose production requires the intensive use of the nation's relatively abundant and cheap factor. Besides, import the commodity whose production requires the intensive use of the nation's relatively scares and high factor in short we can say the country whose rich in labor exports the labor-intensive commodity and import capital-intensive commodity. While, the Heckscher – Ohlin theory has some assumptions as indicated:

- a) There are two countries (A, B) and to commodities (X, Y).
- b) There are two factors of production (labor, capital).
- c) Commodity X is labor intensive, and commodity Y is capital intensive.
- d) Technology is the same in both countries.
- e) Both commodities are produced under the constant returns to scale in both countries.
- f) There is an incomplete specialization in production in both countries.
- g) Tastes are similar in both countries.
- h) There correctly employed both factors of production in both countries.
- i) There is perfect factor mobility within a country but not mobility between countries.

- j) International trade balanced between countries.
- k) There is no transportation cost between countries.

1.1.5. Modern Theories of International Trade

Like classical theories of international trade, there are various modern theories of international trade, but new trade theories take a different method from the classical models of why countries involved in international trade. Classical trade theories focus on the country, but modern theories focus on firms more than countries. The new trade theorists described that engaging in international trade will increase market size, these reduce the average cost in an industry labeled by monopolistic competition (Zhang, 2000).

Furthermore, modern international trade theories include location theory, the product life cycle theory, the new trade theory and Factor price equalization as follows:

1.1.5.1. Location Theory

In 1909 Alfred Weber the German economist formulated the modern location theory. Location theory is disturbed by the geographic location of economic activity, and it has become an integral part of geographical economics, spatial economics, and regional science. The core assumption of his theory is that firms will choose a location to minimize their total costs because Weber believes transportation costs play an essential part in the location of an industry (Crina, 2010).

While transportation costs influenced by the weight to transported and the distance to cover, location theory discourses questions of what economic activities located where and why. Location theory is assumptive that agents act in their self-interest. Firms hence choose locations which it maximizes their profits and individuals choose locations that maximize their utility. An advantage is a saving of cost, i.e., a possibility for the industry to produce at this point a particular product at less cost than elsewhere, to accomplish the entire productive and distributive process of a specific industrial product cheaper at one place than at another (Friedrich, 1929).

Recent research about location theory Dima (2010, p. 65), states that firms will choose locations that will maximize their profits, and consumers will choose those

locations that will maximize their utility. Although the location theory does not provide criteria to determine a firm to choose the best locations, it can provide details on the ways companies internationalize, at global level, based on the elements associated to the location: tax level, technological transfers requirement, political risk, unions power, and attitude towards foreign companies.

Moreover, Crina (2010), mentioned that once with the opening of the national economies, it proves to be possible and advantageous for a corporation to the benefit of the existent differences between regions and cities in terms of salary levels, market potential, employment regulations, taxation, environmental regulations, local infrastructural facilities and human resources. While the location theory has some assumptions:

- a) Perfect competition prevails in the market.
- b) No variations in transport costs.
- c) A large number of firms and consumers.
- d) Raw materials differ according to the weight. Several raw materials, available everywhere.
- e) The works fixed within the region and changing of wage rate is a necessary condition of the theory.
- f) Presence of an isotropic basic.
- g) Apart from labor cost, transport cost, and agglomeration economies, all other factors are not considered.
- h) Industries are trying to maximize profits and minimize their costs.

1.1.5.2. The Product Life Cycle Theory

According to Granham (1979), the theory of a product lifecycle was first introduced in the 1950s to explain the expected life cycle of a typical product from design to obsolescence, a period divided into the phases of product introduction, product growth, maturity, and decline. The goal of managing a products lifecycle is to maximize its value and profitability at each stage. When a specific product first presented in a country, it shows rapid progress in sales because market demand is unsatisfied. As more people who want the product buy it, demand and sales level off.

When demand has fulfilled, product sales decline to the level required for product replacement. In international markets, the product life cycle accelerates due to the presence of follower economies that hardly introduce innovations but quickly duplicate the successes of others.

However, according to Morgan and Katsikeas (1997, p. 69), the theory of a product lifecycle was developed by Vernon in the 1960s proved to be a reasonable frame of reference for explaining and predicting patterns of international trade, but of multinational companies as well. So, this can be considered the theory that unifies the development of multinational companies, showing without a doubt that trade flows linked to the international trade, the life cycle theory suggests that a trade cycle begins when the mother company makes a product. Then by its subsidiaries and then by any other company anywhere in the world the production costs are the lowest possible. At the same time, the theory explains how a country that initially appears as an exporter of the products can end as an importer when the product reaches the last stage of its life cycle. The technological innovations and market expansion influence the essence of this theory. Technology is the primary factor in the development and creation of new products, whereas the size and the structure of the market. Also, the product life cycle theory has some assumption (Morgan & Katsikeas, 1997):

- a) Each good has a limited life.
- b) Different buyer groups buy products during different phases.
- c) Product life cycle analysis conducted for a product category.
- d) The duration of the product lifecycle changes for different types of products.
- e) The product lifecycle stages require a different marketing strategy.

1.1.5.3. The New Trade Theory (NTT)

According to Medin (2014), the new trade theory is an economic theory that was developed in the 1970s, as a way to predict international trade patterns, then in 1987 Paul Krugman, American economist published a famous article titled is free trade passé? In this article, Krugman discusses that how this new theory provided a rationale for industrial policy. An industrial policy normally thought of a policy aimed at influencing a countries industrial structure to create the highest possible national

income. However, new trade theory states that the country or the firm's ability to achieve economies of scale can be incredibly talented when it comes to international trade.

Feis, Grunewald, and Feis (2016, p. 6) have proposed that international trade can cause the average cost of goods to drop because of the variety of goods available. International trade is beneficial to all parties involved because it helps consumers connect with economies of scale, allows them greater variety, and achieves lower, more competitive prices. So, the new trade theory based on some assumptions as follows:

- a) There are two same countries.
 - b) Labor is the only factor of production.
 - c) A large number of firms.
 - d) Each of this firm producing unique, similar and unique good.
 - e) Production under firm-level economies of scale.
 - f) Monopolistic competition.
 - g) Free market entry and exit, profits are zero in equilibrium level.
 - h) Consumers have a love for variety
- Full employment of factors of production.

1.1.5.4. Factor Price Equalization Theorem

American economist Paul A. Samuelson published his theory of factor price equalization in 1948; his theorem assumes that if factors of production are freely mobile between countries Then factor prices would be equal in all countries, and the factor price equalization theory states that if the prices of the outputs equalized between countries involved in the free trade, then the price of the input factors will also be equalized among countries. Berger and Westermann's (2001, p. 1) factor price equality theorem mention that countries producing the same product mix with similar technologies and the same product prices must have the same factor prices for the same factors. While factor prices might differ between countries that find themselves within different cones of diversification, they should be the same when factor endowments are such that all countries select the same range of goods to produce.

Thus, this implies that the wages and rents will converge across the countries with free trade, an example to clarify this theorem. The openings up to trade for an abundant

labor country for instance country (A) will increase the price of labor-intensive goods, for instance, clothes, and thus lead to an increase in clothes production. As there is a significant demand for clothes in foreign markets, the demand for factors of production rises in the clothes sector. Because clothes are labor-intensive goods, increasing demand for labor in the country (A)'s factor market will absorb labor from the capital-intensive industry, for instance, steel, to boost the production of clothes (Chacholiades, 1978).

The expanding clothes industry absorbs relatively more labor than the amount released by the contracting steel industry. The price of labor is bid up, and whereas it is relative price rises, the relative price of capital declines. As a result, the factors of production will become more capital intensive in both sectors leading to a decline in the marginal productivity of capital and an increase in that of labor in both sectors (Lam, 2015). While factor price equalization assumptions are:

- a) Two countries, two commodities and two factors of production.
- b) Free Trade.
- c) Perfect competition.
- d) No transportation cost.
- e) Identical production function.
- f) Constant return to scale.
- g) Perfectly mobile factors within each country

1.1.6. Determinants of International Trade

1.1.6.1. Transportation Cost and Tariff Barrier

According to Rodrigue and Notteboom (2016), transport costs are defined as a monetary measure of what the transport provider must pay to produce transportation services. They come as fixed and variable costs, depending on a variety of situations related to geography, administrative barriers, infrastructure, energy, and on how passengers and freight passed. Three significant components, related to transactions, shipments and the friction of distance, effect on transport costs.

However, Bisnchi (2001), argued that globalization has wholly improved international trade, giving to trade costs a more and more significant role for the

economic balance of countries and companies. In literature, the phrase of the globalization widely debated, and many economists and journalists have stressed the link between global markets and the dramatic reduction of transportation costs at the beginning of the 20th century. However, trends towards globalization and geographical regionalization have led to the decreasing role of trade restrictions as an influencing factor on international trade, then the relative importance of transport costs has risen, and these costs have become a determinant of international trade. Furthermore, the stronger influence of transportation cost in less developed countries is related to the fact that these countries have poor transport infrastructures and first distribution systems, making the cost of trade across space higher in less developed countries than somewhere else within some of the factors that cause higher transportation cost.

In this context, Inmaculada et al. (2002), mentioned that there is some critical question about information technology is that does information technology mark the end of the importance of distance? The answer to this question is; the cost of moving materials using different modes has changed at different rates across groups without always showing the expected decrease over time. Only the cost of moving information has steadily declined from 1960 to 1994, 92% of the transport cost of information technology has decreased, but the cost of moving goods has not declined continuously, e.g., the cost of sea transport declined during the 1940's and 1950's, but since then there has been no clear declining trend.

1.1.6.2. Geography and the Role of Distance

During the last two decades international trade has continuously grown throughout the world. Although trade restrictions have decreased to a greatest low level and factor mobility has significantly improved, global inequality shows no signs of convergence. A possible cause of income differentials is the distance to markets, for any given product, the higher the transportation costs, the lower the capacity to be an inexpensive exporter and the more expensive it becomes to import, these have led to an extremely globalized economy, higher request for foreign goods and a highly specialized international supply. Nevertheless, trade restrictions such as the geographical distance between countries, no seaboard access, no common borders,

different legal traditions, no historical partnerships, and different languages remain (Meza-Cordero, 2011).

The correlation between geographical distance and international trade volumes is one of the most robust determinants of international trade. Distance determines much more than geography: it is history, culture, language, social relations, and many other things. In recent studies, some authors have considered the debate on the interpretation factors such as informational costs, tastes and preferences, unfamiliarity and distance effects. The more it is difficult to trade space for a cost, the more the friction of distance is essential. It can express regarding length, time, economic costs or the amount of energy used for international exchange (Le, 2017).

There are numerous reasons why the genetic distance between two countries increases trade costs. In the presence of flawed information, familiarity declines with geographic distance. Hence, information costs are higher among distant countries. Given that our measure of genetic distance positively correlates with geographic distance and that it provides a summary statistic for intergenerational transmitted traits, higher distances could result in higher informational asymmetries between countries. The explanation for smaller trade volumes between distant countries could be the lack of established trading networks (Fensore, Legge, & Schmid, 2016).

1.1.6.3. Technology and Innovation

Technological innovation plays a significant role in the worldwide relationship. So, it means technological differences between countries are an essential determinant of international trade. Theories of international trade highlight the importance of technological innovation in explaining the international competitiveness of each country. Classical thinking, which stressed international differences in technology in conjunction with international differences in real wage levels as a source of comparative advantage, dominated trade theory until the appearance of the Heckscher–Ohlin (H–O) theory which centered on resource donations as the primary factor elucidation international trade patterns. However, technological innovation once again came to the head of research into international trade with the development of the technology gap (Ramos & Zarzoso, 2010).

Although, WTO (2013), reported that a countries technological level is determined not only by domestic innovation but also by the transmission of technology from abroad. Usually, while the previous is particularly crucial for high-income countries, the latter mostly affects technological progress in middle and low-income countries.

1.2. GLOBALIZATION (IMPORT)

According to Mora (2010), the phenomenon of globalization of the world economy leads to a diminishing of the borders between states. There is an essential role of international trade in this process, which appears in much more different forms than in the past. The term of globalization is used to define a general tendency for national economies to convert more integrated with each other. So, this happens because of a combination of advanced logistic technologies and communication technologies, improved capital flows and decrease of trade barriers by national governments. Globalization is a general trend that has caused an increase in international trade over the last three or four decades.

While, Savrul and Incekara (2015), argued that a radical change of economic life be presented with the process of globalization which resulted in the oversimplification of the market economy, increase in production, circulation of products, information, people and capital, execution of technical systems becomes more efficient. Countries are no longer self-sufficient in the international economy, and they are included in a trade at altered levels to sell what they produce to obtain what they are in need. The countries typically produce more efficiently in some economic sectors than its trade partners. As maintained by conventional economic theory, eventually trade helps economic efficiency, and it can decide that the globalization of production is contributing to the globalization of trade.

1.2.1. The Concept and Definitions of Import

According to Ahmadeo (2017), import is foreign goods and services bought by residents of a country. Residents include businesses, citizens, and the government. It does not matter what the imports are or how they sent. They can be shipped, sent by

email, or even hand-carried in personal luggage on a plane. If they are produced in a foreign country and sold to domestic residents, they are imports. However, Sawyer and Sprinkle (2004), argued that import a part of domestic consumption and investment that a country purchases from foreign producers.

In this regard, Pirja (2016), defines import as imports are the goods or services exchanged between two countries, when one of the countries domestic country, purchases them with the purpose to use and trade them inside the country. The country that takes these products inside either lacks their production, or there is insufficient supply to fulfill the domestic demand.

However, according to Capela (2008), it is hard to imagine a more exciting time for international trade than the present. The opportunities for importing and exporting are developing at a remarkable rate and with those changes come challenges. Many factors have donated to this growth: the implementation of trade agreements such as the North American Free Trade Agreement (NAFTA), the establishment of the World Trade Organization (WTO), and the Dominican Republic-Central America Free Trade Agreement (DR-CAFTA), the continued economic integration of Europe, and the growth of emerging markets such as China, India, Turkey, and more.

In another world imports of goods and services denote the value of all goods and other market services received from the rest of the world. So, import is one of two central part of international trade, and import is reverse of export. Imports are essential for businesses and individual consumers. All countries often need to import goods that are either not readily available domestically or are available cheaper overseas. Individual consumers also benefit from the locally produced products with imported components as well as other products that imported into the country. Often, imported products provide a better price or more choices to consumers, which help increase their standard of living (Grimsley, 2014).

While, Muuls and Pisu (2009), discussed it in their book It is a well-known fact that the world is becoming economically more integrated. Between 1990 and 2004, world exports of goods and services increased by 116 percent, surging to 9,216 billion \$. So, this outstripped the rise in world GDP. Recently, research efforts on the effects of the increasing internationalization of national economies on such outcomes as growth,

employment, and wage levels; have increasingly relied on the availability of firm-level data sets.

In the same context, Uğur (2008, p. 56), in his research discussed the relationship between import and economic growth. He argued that the theoretical relationship between imports and economic growth incline be more complicated than that between exports and grow both non-economic and economic factors determine the demand for imports. These generally include economic activity, relative prices, exchange rates, production or labor costs, domestic and external economic conditions, and political circumstances. Latest growth models emphasize the importance of imports as a primary channel for foreign technology and knowledge to flow into the home economy (Batiz & Batiz, 1985).

1.2.2. The Advantages of Import

Following are most important benefits of importing goods from abroad.

1.2.2.1. Productivity and Technology

According to Jienwatcharamongkhol (2013), imports as a part of international trade has a positive impact on productivity and technology developing, accessing to the international market through the import of intermediate participations will raise firms productivity, the so-called learning by importing. A prevailing opinion, particularly in small open economies or developing countries such as Sweden, is that in general international trade favors productivity and growth. Several earlier studies on developing countries have focused on analyzing the impact of import competition on the market at the industry and firm levels, in many empirical analyses, the evidence shows that the impact of import competition on labor productivity is positive.

Moreover, using American manufacturing data found that increasing imports could lead to an increase in labor productivity in highly concentrated industries (Liuyi, 2013). Recent theories suggest that trade could increase not only the level of productivity but also the growth rate through its effects on technology there are several aspects of import, which lead to a change in technology and productivity. Sjöholm (1999, p. 23), explains it in his research the mechanisms by which technological change

achieved can divide into three: increased competitive pressure, an embodiment in imports and knowledge transfer through commercial contacts.

1.2.2.2. Life Standard

According to Anlacan (2012), imports will improve people's standard of living of the importer country, countries continue to import both raw materials and finished products because they can obtain them less expensively abroad, countries import partially finished products, which they in turn finish and sell domestically. It is frequently possible to find items of better quality abroad it means the goods that related to import has very higher quality. However, Seker (2012, p. 3), found that two-thirds of the high-quality increase caused by importing is attributable to an increase in the variety of intermediates used and the rest is due to an increase in quality.

1.2.2.3. Cheap Sources

Out of the many profits of importing goods and services, comparative advantage is the most common reason why companies and firms choose to source products from foreign markets. Comparative advantage means that the conditions in a foreign market allow for much cheaper production costs, low labor costs, and lower tax. Further, if a company or firms want to get the products or materials need at a significantly cheaper rate, importing is a quicker and easier way to cut costs and boost your profit margins (Daniel, 2010).

1.2.2.4. More Variety

According to Pelavo (2012), there are many items like product or manufacturing items or natural resources available abroad that are not available inside. So, import is an important channel to achieve a variety of innovated goods or serviced that unavailable within the country and required natural resources for manufacturing or daily household necessary. Also, Strawser, Abu-Aish, and Audain (2001, p. 9) indicate the importance of import in his book as imports bring consumers an astounding variety of goods and services and introduce price competition that helps restrain inflation.

1.2.3. The Disadvantages of Import

Following are some disadvantages of importing goods and services from other countries.

1.2.3.1. Unemployment

According to Xiao (2018), increasing in imported goods and services, will increase unemployment. If everything imports from other countries, the people who live in the local country will not have any job opportunities. However, Tuhin (2015), mentions that the effect of import on unemployment in his report as the practical reason for suspecting import competition from low-wage countries to be a cause of manufacturing job loss in high wage. That is, the continuation of the considerable net loss of manufacturing jobs in advanced economies overlaps well with their continued massive imports of manufactures from populous developing countries.

1.2.3.2. Manufacturing and Industry

The impacts of imports on the market of domestic industries and manufacturing differs between sectors, in this case, substantial increases in imports over the past few years have severely impacted local broiler production. Intense competition with low-priced poultry parts resulted in producers exiting the industry or converting operations to layer production. Always foreign manufacturing uses high of level technologies and better factors of production than developing countries, so it means foreign goods will have better quality and their price will be less than locals. Local manufacturing could not be able to compete with imported goods (Sharma, Nyange, Detuetre, & Morgan, 2005).

Hence, Ambareesh (2017), discusses it in his report foreign goods are substituting domestic goods so domestic manufactures may lose their business and this may cause to the total collapse of the local industry.

1.2.3.3. Foreign Exchange Rate

Monetary policy makers believe that foreign exchange of local currency loss by importing goods. There is the danger that will be a sudden significant change in the exchange rate of currency. So, this may result in sorrow a loss if the local currency falls in value. There are; however, numerous ways of evading your foreign exchange risks to lessen the impact of currency fluctuations (Olivei, 2008).

1.2.3.4. Trade Policy-Import

Foreign trade policy is known as an import-export policy. As Export-Import policy (or EXIM Policy) the EXIM polices are adopted by any country regarding the exports and imports goods and services with other countries. As known trade policies are of two types, the free trade policy, and the protectionism trade policy. In free trade policy, there is complete nonappearance of restrictions on the export and importing of goods and services between countries. There is also a complete absence of tariffs, quotas, taxes, and subsidies on productions, factors use and consumption (Bose, 2015).

Theoretically, the free trade has several advantages for mostly the developed countries but if we will talk about the developing countries the free trade does not prove much productive or proved to be a disadvantage. As earlier much of developing countries also have a type of closed economy, and free trade was also absent until the 1980's. After 1990, by the emergence of new policy countries trade come with the contact of foreign countries and became the part of the liberalized economy or globalized economy after the last two decades (Bose, 2015).

1.2.3.5. Free Trade-Trade Liberalization

According to Lee (2005), trade liberalization is a move towards freer trade through the reduction of tariff and other barriers, is generally perceived as the primary driving force behind globalization. Rapidly increasing flows of goods and services across national borders have been the most visible aspect of the increasing integration of the global economy in recent decades.

However, according to Linder and Pugel (1996, p. 32), trade liberalization is free trade or a condition without tariff barriers or with a reduction of tariff and non-tariff barriers imposed on the inflow and outflow of goods and services. The foundation of free trade stemmed from the eighth and ninth centuries when Adam Smith and David Ricardo settled the basis for international trade as part of their efforts to make a case for free trade. Over the past sixty years, particularly in the last three decades, one of the unusual characteristics of the world economy has been that developing countries have experienced rapid trade liberalization (Zakaria, 2014).

The critical trade liberalization reforms in practically all countries were one-sided, reforms made by the country acting alone, rather than being applied as part of an agreement with trading associates. However, various agreements with trading partners have sealed in the reform efforts. Most obviously, the multidimensional negotiations during the Uruguay round of the GATT that concluded in the establishment of the WTO in 1995 resulted in African countries making commitments to open trade policies and declaring their bound tariffs (Ackah & Morrissey, 2005).

1.2.3.6. Protectionism or Import Restriction

According to Durusoy, Sica, and Beyhan (2015), protectionism is an economic policy of restraining trade between countries, concluded approaches such as tariffs on imported goods, restrictive quotas, and a variety of other restrictive government regulations are designed to limit imports and stop foreign take-over of local markets and industries.

In this context, Fouda (2012), argued that this policy is closely allied with anti-globalization. This term mostly used in the context of economics; protectionism refers to policies or doctrines which protect businesses and living wages within a country by restricting or regulating trade between foreign countries. Ma and Lu (2011, p. 72), state the primary aim of protection in their research as the infant industry argument asserts that a new industry which has a potential comparative advantage may not get started in a country unless it gives temporary protection against foreign competition.

Also Johansson (2009, p. 6), answered why countries apply protection systems the trade regulation which a country introduces to safeguard domestically produced goods

and services from the foreign competition. Another aim of protection is that governments to limit over-specialization if it means that the country could become over-dependent on the export sales of one or two products. Any change in the world markets for these products might have severe consequences for the country's economy (Chacholiades, 1978). Consequently, protectionist governments to protect the local market from import use some import restriction instrument known as tariff and nontariff barriers:

1.2.3.7. Tariff Barriers

Tariff is a tax imposed by the government on imported goods. In overall, a country imposes tariffs for two reasons: to reduce the import of specific commodities or to raise government revenue. Tariffs measure price on imports and trade cost, as well as being an indicator of a countries openness. For this reason, tariffs are often used to measure the effects of trade liberalization (Joramo, 2016). Rising revenue sometimes imposes responsibilities on imports and at others to protect domestic producers.

While, Ellsworth and Leith (1984), mentioned that tariff has some protective effect by diverting demand to other goods. The imposition of tariff creates a net loss of consumers' satisfaction this loss is far from imaginary, even thoughts it may not be realized by a consumer who is unaware of the existence of particular tariff.

The tariff has a positive effect on domestic production because tariff will increase the price of imported good them domestic producer can expand their production and sales. There are two types of the tariff; specific tariff is stipulated as money amount per imported unit, for example, ten dollars per ton. Another type of tariff is ad valorem tariff this type of tariff was the percentage of the estimated market value of the good when they received imported goods (Pegul, 2010).

1.2.3.8. Nontariff Barriers

Although historically tariffs have been a most crucial form of trade restriction, there are many other types of trade restriction. While tariffs on imported goods have declined last two decades, use of nontariff barriers increased worldwide. Nontariff barriers include quantitative restriction, subsidies, anti-dumping restrictions, customs

valuations, product standards, voluntary export restriction, technical regulations administrative policy and bureaucratic rules designed to make it difficult for import to enter the country (Mohan, Khorana, & Choudhury, 2012):

1.2.3.8.1. Import Quota

According to Kreinin (2002), a quota is the essential nontariff barriers; it is a quantitative restriction on the number of goods allowed to import. An import quota sets a limit on the number of imported commodities, this restriction is common in developing countries and used by industrial countries to protect domestic agriculture.

While Salvatore (2003), argued that import quota also could be used to protect domestic industry or for the balance of payment reasons, after WW2, Western Europe uses import quota very common, all industrialized countries use import quota to protect their agriculture sector. Moreover, developing countries to stimulate import substitution of manufactured product, so, the import quota makes the commodity scarce so it will increase the price of imported goods.

1.2.3.8.2. Anti-Dumping

According to Bolton (2011, p. 13) dumping is a situation in which the export price of a product is lower than its selling price in the exporting country. While a product is having dumped if it introduced into the market of another country at less than the reasonable value of the product and it causes material damage to an established industry of the country. GATT stipulates that to offset or prevent dumping a contracting party may levy on any dumped product an antidumping duty not greater in amount than the margin of dumping in respect of such countries (Aggarwal, 2002). So, this is an unfair trade practice which can have a distortive effect on international trade as it keeps competitors out of a particular market, the imposition of anti-dumping duty might affect the price levels of the products manufactured using the subject goods.

However, fair competition in the market will not be reduced by the anti-dumping actions also the imposition of an anti-dumping duty would remove the unfair advantage gained by the foreign exporters through their dumping performs, would prevent the

decline of the domestic industry and would create conditions for fair trade (Chacko, 2011).

1.2.3.8.3. Administrative Barriers

With the diminishing use of tariff restrictions of trade, the focus of trade policymakers has increasingly shifted towards less standard sorts of trade barriers, including administrative barriers to trade. Administrative trade barriers are bureaucratic procedures that a trading firm has to get through when shipping the product from one country to the other. Note that this definition does not involve administrative regulations as product standards technical or health regulation as an example, the administrative barrier is the task of preparing health certificates, but not that of making the product itself comply with the health requirements (Hornok & Korena, 2015).

1.2.3.8.4. Technical Barriers to Trade

Technical barriers to trade refer to set technical regulations and voluntary standards that define particular characteristics that a product should have, such as its size, design, shape, labeling, packaging, marking, or performance. The technical barriers to trade agreement objectives to guarantee that technical regulations, standards, and conformity assessment procedures are doing not create unnecessary difficulties in trading (Egge, 2016).

At the same time, it recognizes WTO members' right to implement measures to achieve appropriate policy aims, such as the protection of human well-being and safety, or environmental protection. The technical barrier to trade agreement strongly encourages members to base their measures on international standards as a means to facilitate trade. Through its transparency provisions, it also aims to create an expected trading environment. Technical barriers to trade refer to the use of the domestic regulatory process as a means of protecting domestic producers (WTO, 2015).

1.2.4. Determinants of Import

Followings are some factors effecting importing goods and services from other countries.

1.2.4.1. Import Restrictions

The economic variances between developed and developing countries are the principal of a different behavior among them in the determinants of imports. Many developing countries have essential economic weaknesses, such as debt-related, high inflation rates and unemployment, unequal income distribution and poverty. Because of these weaknesses, developing countries characterized by higher levels of import protection than developed countries, and a number of them remain dependent on foreign aid. It may use import restrictions for two reasons; protect local industry from high-quality foreign competition and second as a source of revenue for the government (Anlacan, 2012).

According to El-Agrra (1984), the combinations of tariffs, quotas, or other trade restrictions impose significant costs. Tariffs or quantitative restrictions protect domestic industries from foreign competition by raising the prices of imported goods. In this case, some argue that import restrictions should decrease the importation of goods and services. About import barriers, some study uses disaggregated cross-country, cross-industry data of industrial goods in 1988.

These studies measure levels of protection by country and industry and find that tariff and non-tariff barriers differ from one sector to another, and in general, both of them are found to be lower between developed countries. The higher tariff levels in developing countries may reproduce the more significant position of tariff revenue in government finance. Their measures of protection by industry indicate that antidumping practices and other non-tariff barriers apply overall to import on sensitive commodities (Lee & Swagel, 1997).

1.2.4.2. Exchange Rate

According to James (2017), the exchange rate is the value of a currency in relations to another. Exchange rates fluctuate conditional on the demand for a particular currency. If there is a high demand for a countries currency, then its price will tend to rise. Because currencies vary in price, it can often be cheaper to buy goods in one country and sell them in another. Because of this exchange rates have a significant impact on importing goods and services from international markets.

In the same regard, Dave and Gondaliya (2015), mentioned that several studies are showing the relation between the exchange rate and foreign trade. The foreign exchange rate was used as a dependent variable, in this case, import is dependent variable, and it means the exchange rate has an impact on importing. So, there is a positive relationship between the exchange rate and import if the foreign exchange rate of local currency increases local citizens could be able to buy more goods from foreign markets, and the opposite is right when the foreign exchange rate decreases the purchasing power of local citizens decrease to buy goods from foreign markets (Pettinger, 2017).

1.2.4.3. Population

Since the population increasing, there has increased pressure on the natural resources, goods, and services that we rely on for survival. Natural resources include a variety of substances and energy sources that we take from the environment and use. They can divide into renewable and nonrenewable resources, but firms produce goods and services in all countries and type of precuts, quantity and variety of goods and services is differing from a country to another, as it known there is some factor affecting production of goods and services for instance technology level, productivity, and natural resources. So, this difference in factors of production drives countries to exchange goods and services between each other; it means there is no country around the world that able to satisfy all local population needs of goods and services without international trade (Cunningham, 2017).

Often a rise in imports occurs because there is a rise in general spending as it known increasing population rate is one most important factor that increases the aggregate consumption. Consumption on goods and services include personal consumption, gross private domestic investment, government purchases of goods and services. So, by increasing of the population, their needs will increase countries has to import goods from another country because goods or services that satisfy domestic needs or wants can be produced less inexpensively or efficiently by other countries (Chioma, 2009).

1.2.4.4. Gross Domestic Product (GDP)

GDP is defined as the final value of the goods and services produced within the geographic boundaries of a country during a specified period, usually a year. GDP growth rate is an essential indicator of the economic performance of a country. World trade has experienced an essential increase in the last decades, and import is part of the international trade. In this context, income is a primary determinant of consumption in general; there is an association between import and income, if there is growth in GDP domestic demand on import will increase (Diacona & Maha, 2015).

However, Kahram (2014) points out that the dependence of the arrangement of a households consumption carrier on its income means that national income determines the aggregate demand for diverse types of goods. In fact, while with homothetic partialities demand for any good only depends on aggregate income; with non-homothetic preferences, the attendant demand for new things is higher when there are more well-off households.

Consequently, with fixed costs of innovation, countries with a higher awareness of wealthy households manufacture varieties of the most recent years. Some of these varieties are exported from industrialized to less developed countries if enough consumers find them affordable. In specific, bilateral trade will be determined not only by the changes in technology and endowments, as well as the similarity in aggregate incomes (Savrul & Incekara, 2015).

CHAPTER TWO

IRAQ AND NIR RELATIONS WITH TURKEY

The purpose of this chapter is to provide a brief discussion about the background of historical relations each Iraq, NIR and Turkey. Then the economic relation between NIR and Turkey, Iraq and Turkey. It is essential to discuss the background of each country and their relations because the geography of this thesis is about Iraq, NIR and Turkey.

This chapter divided into two parts, part one discusses the brief background of NIR, history of relation between NIR and Turkey and economic relation between NIR, while second part discusses the same for Iraq, firstly a brief background about Iraq then history of relation between Iraq and Turkey lastly the economic relation between both countries. According to literature background it is required to briefly discuss the history of political and economic relationships between Iraq and NIR with Turkey, because the history of Iraq with Turkey is different to history of NIR and may this history reflect the current relationship between NIR-Turkey and Iraq-Turkey,

2.1. TURKEY-NIR RELATIONS

2.1.1. A Brief Background about NIR

As this part of the study focuses on the NIR, it is important to present some geographical, political and economic information about the region. NIR located in the north of Iraq consists of four governorates Erbil, Sulaimaniyah, Duhok and Halabja and the total population are approximate 5,755,043 in 2017. It borders Syria to the west, Iran to the east, and Turkey to the north. Area: 40,643 square kilometers (KBI, 20018). While NIR is an autonomous region within Iraq and it has the most of it is dominates, for instance, political, economic, financial and others during NIR parliament and NIR presidency as well as NIG (May, 2015).

According to Snow (2017), since Iraqi independence in 1958, Iraqi Kurds have mostly been treated like second-class citizens. The Iraqi government under precedency of Saddam Hussein was particularly brutal in its response to Kurdish irredentism, most

notably during its 1988 genocidal Al-Anfal campaign, when it deployed chemical weapons against civilian populations in Halabja. After the first Gulf War and its unsuccessful Kurdish uprising, a U.S.-enforced no-fly zone was established over northern Iraq to prevent further retaliation from the Iraqi government. This 1991 no-fly zone led to the 1992 foundation of a precariously situated, unrecognized de facto state.

The NIR was formed in 1992, the first democratically elected parliament the NIR developed experience and expertise throughout successive cabinets, especially after the fall of the former regime in 2003. From 1992 to 2003 despite NIR in Iraq but still, Iraq's former Ba'ath regime has dominated whole Iraq, and they had a closed economy. NIR had to get a small part of Iraqi budget enough to survive because of that NIR during that time has no developed; the main reason for researching about NIR is that, after falling Ba'ath regime by international collaboration the region has developed vast higher than middle and south of Iraq. After falling the Ba'ath regime, Iraq uses free market as its economic system and federation as it is a political system, so NIR has gained significant consequences (May, 2015).

However, according to World Bank (2015), the regions GDP has increased from 30 IQD in 2004 to 30,000 IQD in 2014 besides obtained lots of political and economic benefits and started to develop from 2004. 2004-2014 was a golden period for NIR's development because the most of NIR's development is belong to that period.

2.1.2. A Brief History of Turkey-NIR Relations

NIR had a historical relation with Turkey republic from 1991 when former Turkish President Turgut Özal broke with Turkey's policy against negotiating by meeting with NIR politicians. Özal later released doors for Kurdish autonomy in the NIR, first by lifting Turkey's objection to communication between the U.S. and Iraqi Kurds, and later by allowing the U.S. to enforce a no-fly zone from Incirlik Air Base (Moustakis & Chaudhuri, 2005).

In this context, Aldroubi (2018), indicated that NIR and Turkey relations are more developed from 2007, despite opposition from some elements of the public and security sectors in Turkey. Ankara pursued a multidimensional foreign policy framework to assist economic development and stability in the region. The first official Turkish

government delegation visited Erbil in 2008 to formalize strategic dialogue with the NIG. The follow-on trip by Turkish foreign minister to Erbil in October 2009 was a significant moment in Ankara-Erbil relations as it marked the first visit by a Turkish foreign minister since the establishment of the NIR.

However, Sosnowski (2016), mentions that during 2012 to 2014 NIR Leaders, subsequently visited Ankara to discuss economic, energy, political, and military cooperation and continue strengthening bilateral and economic relations between Turkey and NIR. Soon afterward, Turkish foreign minister traveled to Erbil and confirmed vital humanitarian assistance and military support for the NIR, to include training of the peshmerga, in response to the threatening advances of the Islamic State of Iraq and Sham.

This relationship continued until the NIR decided to process with the controversial referendum on independence on September 25/2017. Despite Turkey's severe and sustained oppositions, has provoked a severe crisis of relations between Ankara and Erbil (Uyanik, 2017).

Despite their concerns, the Turkish politicians did not take any actions to try to make the regions president change his decision to hold the referendum. Neither did they decide to close the Habur Border, nor close economic cooperation or stop the flow of oil through Turkish territory. This behavior raised some worries about the Turks' real intentions. NIG officials, for example, argued that they consider the Turkish decision-makers declarations to be domestic political instruments, the aim of which is to respond to the outcry amongst the nationalist constituency that forms an important part of president Erdoğan's support (Wasilewski, 2017).

2.1.3. Turkey-NIR Economic Relations

In specific, economic relations extended with more than 1,500 Turkish companies registered by the NIG. From 2003 to 2017, Turkish companies' domination of the NIR's business sectors, increased border traffic, and increased infrastructure association have all solidified the economic relationship between Ankara and Erbil. The bedrock of this friendship has been economic ties; Turkish exports to Iraq, including goods from the

area governed by the NIG to the rest of Iraq, have increased significantly between 2007 and 2013 (Uyanik, 2017).

In 2007, According to estimates based on total Turkish exports to Iraq, exports to the area governed by the NIG stood at \$1.4 billion, making the NIG Turkey's nineteenth largest export market. In 2011, the NIG became a sixth largest export market of Turkey, with exports of \$5.1 billion. By 2013, thanks to \$8 billion in Turkish exports, the NIG had risen to become a third largest export market to Turkey. It means less than a decade the region went from Turkey's 19th largest export market to its third largest. Strategic sectors such as banking and finance, infrastructure, oil and natural gas, exports, and education have a robust Turkish presence in the region (Cagabtay, Fidan, & Sacikara, 2015).

According to Fidan (2015), by 2013, Turkey's trade with Iraq amounted to \$11.9 billion, making Iraq Turkey's second biggest export market and Turkey Iraq's, including the NIG's, largest external trading partner.

While Turkish exports through Ibrahim Khalil gate, known as Habur in Turkey to NIR in 2007 worth \$1,422,383,546 and increased to \$8,029,664,342 in 2013, also stood at 8.5 billion dollars in 2015. After 2014 Iraq government cut down the part of NIR in Iraqi budget, then NIR start to export its crude oil freely form Turkish Ceyhan boundary, according to officials NIR has signed an economic contract with Turkey government for 50 years so NIR exports 540,000 barrels per day via Turkish Ceyhan boundary in 2016. Turkey's need for crude oil is 505 thousand barrels per day, and Turkey imports of natural gas are 46.164 billion cubic meters in 2016 (Sabah, 2017).

In 2012, NIG minister of trade and industry during his visit to Turkey in a press conference pointed out that every month twenty-five new Turkish companies were launched in NIR, with more than half of foreign companies registered in the NIR being Turkish (Cagabtay, Fidan, & Sacikara, 2015).

However, six air company that fly between NIR and the Turkey, Atlas Global, Iraqi Airways, Onur Air, Pegasus Airlines, Turkish Airlines, and Zagros Air. Four of these airlines are Turkish companies includes (Turkish Airlines, Pegasus Airlines, Atlas Global and Onur Air) based on information collected from the airline websites, the airline market analysis firm, and airports' flight schedules, in 2014 at least seventy-eight

weekly flights operated between Turkey and the area governed by the NIG during the summer high flying season (Romano, 2015).

Another aspect of the economic relationship between NIR and Turkey is investment, from 2003 year by year, local and foreign investment in NIR has increased, according to the regions board of investment from 2003 until 2016 local and foreign investors have invested 47,218,601,844\$ in 749 projects in different sectors in the NIR. Moreover, approximately 55% of all investment in Iraq is taking place in the NIR (Park, 2013). However, Turkish investors have participated in both foreign direct investment and joint investment in NIR, during the given period total foreign direct investment in the NIR is 49 projects and Turkish investors do 17 of these projects. It means Turkish investment come first in the NIR by participating 34.69% of total foreign direct investment in NIR. However, on joint investment, there is 30 joint investment took placed in NIR during that time (Romano, 2015).

In the same regard, Mahmoodabadi (2016), argued that Turkish investors have participated in joint investment and had done 8 of 30 joint projects in NIR, it means 26.66% of the joint project in NIR has done by Turkish investors. Most of the Turkish full owned investment projects in NIR are in the housing sector are seven projects, and rest of projects are industry five projects, education 2 and one projects in each sector of health, tourism and trade. Also, two projects of Turkish joint investment in NIR are in the housing sector, and fives are in industry sector the last one at tourism sector.

2.2. TURKEY-IRAQ RELATIONS

2.2.1. A Brief Background about Iraq

As this part of the study focuses on Iraq, it is important to present some geographical, political and economic information about Iraq. Formerly Iraq was known as Mesopotamia (in Greek meaning; the land between the two rivers), and the term of Iraq had been used from 8th century by Arab geographer. Iraq is located in middle-east and shares borders with Turkey to the north, Kuwait and Saudi Arabia to the south, Jordan to the west, Syria to the northwest, and Iran to the east. It has a narrow section of coastline at Umm Qasr on the Gulf. It occupies 434,924 square kilometers, and in 2017

its population was estimated to be 38,274,618. Iraq consists of 19 provinces (governorate), and Baghdad is the capital city of Iraq, and four provinces of Iraq belongs to the NIR (Kirmanj, 2013).

According to Tripp (2000), during the 16th and 17th centuries, the lands that were to become territories of modern states of Iraq were gradually incorporated into the Ottoman empire as three provinces based on cities of the Baghdad, Basra, and Mosul. It was here that Ottoman sultan was lengthy their domains during these years and trying to check the desires of the Safavid shah of Persian.

However, under the Ottomans, each province was run by its separate administration, and each province had little in mutual with the other two. Basra enjoyed strong ties to lands during the Gulf region. The people of Baghdad knew slight about the people of Basra and Mosul, and the people from the latter provinces knew even less about the Baghdadis, the population of the coastal province of Basra was involved mainly of Shiite Arabs and the central province of Baghdad was dominated by Sunni Arabs, even though it had a large Shiite population. The northern province, placed on Mosul, was mostly Kurdish, with large pockets of Arabs, Assyrians, and Turkmen (Kirmanj, 2013).

At the close of the World War One, the British were in possession of the three Turkish Provinces that make up modern Iraq: Baghdad, Mosul, and Basra. Much like today, each of the provinces possessed its own separate cultural, ethnic, and religious identity. Basra connected to Persia through trade and history. Baghdad considered to Palestine and Damascus for trade and cultural influence. The people of Mosul were not Arabs at all, but were Kurds of Euro-Persian decent and looked to the north for ethnic identity. Unlike modern Iraq, the social and economic environment was much different in 1918. The massive majority of the country had never been exposed to a central government and had relied on people and sheiks for necessary administration and the rule of law. Also, the massive majority of the population was illiterate, with slight exposure to civil order and governmental oversight (Sharp, 2008).

On October 3, 1932, the thirteenth yearly assembly of the league of nations voted consistently to admit the Kingdom of Iraq. Part of the Ottoman territory occupied by the associated powers during the first world war and then turned over to British

administration under league of nations oversight, Iraq was the first and would, in fact, remain the only mandated territory to shed its tutelary status and be approved independence through collective agreement. This new state initially created as the Kingdom of Iraq, and Emir Feisal Ibn Hussein installed as the King for his family's cooperation with the British against the Ottoman Turks during first world war (Pedersen, 2017).

In 1932 Iraq received independence; the new country did not delight its political domination under British mandate and demanded for independence, the first Arab mandate in the region to gain its freedom. Nevertheless, independence did not free it from British involvement in Iraq's interior affairs; driven of course, by Iraq's precious oil assets and the control of that industry by the British dominated Iraqi Petroleum Corporation (Malinowski, 2002).

In 1958 General Abd al-Karim Qasim in a bloody coup finished the kingdom system in Iraq. In the beginning, general Qasim and his leftist free officers association were extremely popular for a numeral reason, not the least of which was the removal of British and Western influence from the country and the nationalization of the oil industry. Popular support quickly eroded, and members of the Baath party deposed Qasim in 1963. The Baath party is fundamentally a socialist party, which at first formed in Syria in the late 1940s with the aim to unify the Arab world into a united democratic socialist Arab nation. Saddam Hussein has controlled all real power in the state. Also, Saddam Hussein hold the positions of president, chairman, the prime minister, and secretary general of the Baath party. Through control of the Baath party, which Saddam has filled with his closest friends and families, he can maintained his control over the state (Malinowski, 2002).

In 20, March 2003, a coalition of nations, principally the United States and Great Britain, attacked Iraq, contending that the Iraqi government, headed by Saddam Hussein, had developed or was in the process of developing chemical weapons and weapons of mass destruction, The Second Gulf War taken just three weeks and ended with Saddam Hussein's overthrow in 2003 (Lando, 2015). After captured Baghdad in 2003, al-Qaeda allied jihadists seized the northern province of Nineveh and its capital Mosul, the country's second-largest city. In June 2004 US-led administration

transferred power to the Iraqi government. Iraqis vote in the first multiparty election in 50 years; a poll Sunni Arabs mostly did boycott (Tomasevic, 20014).

In June 2006, the approval of a full, stable government under prime minister Nouri al Maliki followed months of harsh debate about power distribution among Iraq's major parties. The effectiveness of the new coalition government remained in hesitation; however, reconstruction of the economy and civil society remained slow. In the meantime, the death of insurgent leader al Zaraqawi in May 2006 was followed by an increase of militia activity and terrorist attacks, especially on civilian targets close to Baghdad. In the early months of his administration, Maliki made the sectarian resolution a top priority (Johnson, 2011).

During 2003-2017 Iraq has an economy whose petroleum wealth has created its form of the Dutch disease, which the CIA rates Iraq as receiving 80% of its export revenues and 90% of its government income from the petroleum sector. As known the oil sector is one of the lowest rates of permanent employment relative to capital and dependence on the locally made technology of any sector in the country. Meaningful youth unemployment is probably well above 25% (Dobbins, Jones, Runkle, & Mohandas, 2009).

Agriculture sector only contributes 3.3% of GDP; however, is 21.6% of labor force. Industry mostly petroleum contributes 65.6% of GDP, but mostly unproductive state industries make it some 21.6% of labor force. Services contribute 32.2% of GDP; however, are 59.8% of labor force mainly government and security services. The compensation of all government and SOE employees has consumed a steadily growing ration of the GDP and a far more significant percentage of the GDP than in other area states. It is not possible to entirely count many aspects of Iraq's current economic problems, but it is clear that war is making them worse. That play the primary role in dividing the country and that beating Islamic State of Iraq and Sham (ISIS) will not end the divisions and form of violence in Iraq without far more government action and reform effort that have planned to date. The reforms declared so far by the prime minister will only have a limited effect at best, and at least to date, the Iraqi government may well present at least as much of a danger to itself as ISIS does (Cordesman, 2015).

2.2.2. A Brief History of Iraq-Turkey Relations

To clarify the Turkey-Iraq relations, these different stages should be clarified. Initially, these two countries emerged as sovereign countries after the First World War; Iraq became a political unity as a British mandate, and the Republic of Turkey became a sovereign country apart from the Ottoman Empire. While Turkey became an official state in the international ground by the Lausanne Treaty of 1923, the Grand National Assembly in Ankara, founder of modern Turkey, was mostly running the government since 1920 (Sonmez & Kurban, 2017).

Collaboration on Mosul marked two-sided relations between Iraq and Turkey until the Kuwait issue in 1990, the subsequent Gulf war to end Iraq's occupation of the emirate in 1991, and the establishment of self-governing by Kurdish governorates in Dohuk, Erbil, and Sulaimaniyah in northern Iraq. In effect, after creating an autonomous entity in the north with American support. The Turkish government then decided to deal directly with the prevailing conditions in the NIR, which in fact includes the Mosul province which Ottoman had to dominate this province, minus the modern Mosul and Kirkuk provinces (Al-Qassab, 2017).

The United States-led attack in 2003 caused instability on the border of Turkey with Iraq just as its fright of Kurdish autonomy in northern Iraq was growing dramatically. The Justice and Development Party or (AKP) took advantage of the vacuum created by the Bush Government's war in Iraq to hollow its toes in Middle East diplomacy. Because Turkey had long-lasting relations with Israel, could boast that it was perhaps the only regional country that had pleasant relations with everyone else (Barkey, 2011).

The Iraq war made it authoritative for Turkey to further cooperate with its close neighbors, including Iran and Iraq since the war led to a seismic shift in the strategic balance of power and caused profound structural changes in the Middle East. As such, Iraq's fusion from a unitary state into a sectarian divided entity had grave implications on the total order of the region. Turkey encouraged efforts towards Iraqi political resolution during which it brought together US Ambassador in Istanbul and the Sunni Arab Party representatives and the in 2005. So, this was a turning point in Sunni Arab contribution to the political process (Al-Qassab, 2017).

In 2006 Turkey hosted training programs related to democratization and competent authority for Iraq's political parties from all sectarian and ethnic backgrounds which have been appeared by more than 500 Iraqi representatives, and the Turkish ministry of foreign affairs offers training programmers to Iraqi representatives. Newly, Turkey played an essential role in mediating with Sunni followers of the Iraqi parliament to support the status of forces contract with the United States in 2008. All political parties participated in a conference on Iraq's constitution in July 2006 in Istanbul hosted in assistance with the United Nations Assistance Assignment in Iraq. Moreover, Turkey initiated the neighboring countries procedure, to bring together Iraq with its neighbors for governmental discussions. This initiative evolved into the distended ministerial of neighboring countries meetings, now involving the neighbors of Iraq, G8 Countries, as well as the UN, Arab League and the European Commission (Turunc, 2011).

At the beginning of 2018 in the conference in Kuwait City for international donors to rebuild Iraq. Baghdad says it requirements nearly \$90 billion to rebuild after a terrible war with the ISIS terrorists which overwhelmed homes, hospitals, schools and economic infrastructure, displacing millions of people. Turkish foreign minister said; Turkey promised \$5billion in loans and investment, making the country one of the top donors. Turkey will help redevelop the cities of Baghdad, Kirkuk, Mosul, Erbil, Sulaimaniyah, and Tal-Afar, through the Turkish international cooperation and development agency to help Iraqi to return to their home (Jabri, 2018).

2.2.3. The Turkey-Iraq Economic Relations

According to Turunc (2011), economic and strategic benefits are assisting political cooperation between Iraq and Turkey, but the energy and water security are the main complications to enduring good relations. While few analysts believe that water alone can become the reason of war between Iraq and Turkey; however, its undermining effect is apparent. The interaction between Turkey and Iraq is rapidly increasing, with economic and strategic benefits driving administrative assistance.

There are still longer-term challenges remain to be solved, above all about energy and water security. Iraq is one of the most important trading partners for Turkey and is

becoming an indispensable source of energy. It attaches a great deal of importance to stability and territorial integrity in Iraq and realizes those matters as central to its stability and security. Turkey has become more active in Iraqi affairs, including burgeoning investment and trade relations, close communication with powerful political actors and pro-active engagement with Iraqi Kurds (Altunisik, 2006).

Before 2003 Iraq's ruling party was Baath, and it was a socialist party, the country had a mixed economy. Most people worked in the private sector; however, a majority of these jobs were in the free business. Many were engaged in trading or survival agriculture or some other form of self-employment. Possibly no more than a fifth of the labor force worked for regular pay in an officially registered firm (Turunc, 2011).

The government did not set prices for private commodities, but it controlled all oil incomes and the prices of refined oil products. In 1990s Iraqi president, Saddam Hussein created the food rationing system in answer to a UNs embargo imposed days after Iraq occupied Kuwait. This system increased after 1996 when the United Nations oil-for-food program allowed Iraq to sell oil in exchange for humanitarian imports. Iraqis were free to extra their rations with purchases from the private sector, but their capacity to do so were narrow by low incomes (Altunisik, 2006).

Those at the lowest of the Government pay scale, like teachers, earn less than \$10 per month before the 2003 war. In 2001, GDP per capita was about \$960 per year at the market exchange rates, with oil production accounting for more than two-thirds of that amount. Without the NIR, aggregate GDP was a little more than \$21 billion (Foote, Block, Crane, & Gray, 2004). However, during that time (before 2003) the trade between Iraq and Turkey amounted to about \$940 million. In 1995 Turkish export to Iraq was 371 million \$ and 488 million \$ amount imported from Iraq, this amount increased yearly especially after 2003 war of Iraq, Turkish export to Iraq increased to 2,812 million \$ and import from Iraq increased to 645 million \$ in 2007 (Kirisci, 2009).

After 2003 Iraq and Turkey economic relationship have improved, because Iraq has opened to international markets and UN discarded the oil-for-food program. Iraq could export their oil and imports from international markets without any restriction Turkey's trade ministry estimates that the trade volume between Turkey and Iraq overdid \$6 billion in 2010, boosting Iraq's position from Turkey's tenth biggest trade

partner to the fifth biggest. On 19 October 2010, the Iraqi government created a committee to growing economic and business relations with Turkey with estimates for two-sided commercial exchange reaching 12 billion \$ by the end of 2011 (Turunc, 2011).

However, according to Pusane (2016), Turkey's exports to Iraq reached 10,822,143.97\$ in 2012 and increased to 11,948,905.27\$ in 2013 and Iraq become the third biggest Turkish exporter. However, from 2015 to 2017 trade between Iraq and Turkey has decreased to 7,636,669.61 \$ in 2016 this decreasing happened because of dropping the price of oil. Energy such as crude oil and natural gas is the main feature in the relation between Iraq and Turkey. Turkey's highest level of crude oil imports was 505.90 Barrel/Day in 2015, and the lowest record was of 287.00 Barrel/Day in 2009 Imports crude oil reported at 503.80 Barrel/Day in 2016 (Winrow, 2014).

Turkey is the top 20 highest oil importer in 2016 ranked in the 19th country. Turkey is registering the second most significant increase in demand in the world behind China. In 2005 Turkey has consumed 26.571 billion cubic meters, of natural gas, in 2012 the amount increased to 45.922 billion cubic meters. Also, in 2015 increased to around 50 billion cubic meters of natural gas, still experiencing demand growth despite slowing economic growth and a host of geopolitical risks affecting Turkey's neighborhood (Tuncalp, 2015).

According to OPEC statistics, Iraqi export of crude oil has increased from 1,472.20 million b/day in 2005 to 3,803. Million b/day in 2016. Energy, trade and economic relations have generated increasing exchange between Turkey and Iraq in last decade; Turkey hopes that increasingly stabilizing Iraq will create further demand for goods, services, and resources, which in return will create significant business opportunities for Turkish companies. Excluding the oil and gas sector, Turkey is the largest commercial investor in Iraq. Turkish companies generally provide manufactured goods, furniture, and special-tenacity products and associated consumables (Winrow, 2014).

In February 2018 in the conference of Iraq Petroleum in Berlin, officials, business representatives, and analysts told that Iraq had become a definite number two in OPEC oil production, coming close to 5 million barrels per day in 2017, with nearly 4 million

exported. Moreover, Baghdad is planning a main seawater injection program with the aim of further expanding manufacture, first to 7 million barrel per day and eventually to 9 million (Tuncalp, 2015).

The following target would put it in the same league as Russia, Saudi Arabia, and the United States. Iraq's potential gas production is also vast it wastes an incredible 16 billion cubic meters, yearly in flaring alone, or 0.5 percent of global production. A joint project between, Iraqi government Shell and Mitsubishi will be the most considerable flaring capture effort in the world, providing 2 billion cube meters yearly for much-required electricity generation. Iraq's determined plan is to capture and use all of its gas production with zero flaring by 2021. The initial objective is to replace more expensive, less well-organized, and dirtier oil products, but if Iraq reaches its seizure goal, it could become not only a gas exporter but also a gas transit hub linking Turkey, Saudi Arabia, Iran, Jordan, Syria and other key economies (Knights & Jeffrey, 2018).

According to Lee (2018), Turkey is the second country after China between the countries that have companies doing business in Iraq, with 117 companies working on industrial, energy and agriculture projects to tolerate such economic ties. Temporarily, 89% of construction projects have been completed in Iraq by Turkish firms since 1975, with \$11.3 billion of that, coming after the 2003 invasion. Turkish commercial activity in Iraq amounted to some \$3.7 billion in 2011, comprising 6.6% of total foreign commercial activity, putting it just behind the Netherlands \$3.8 billion, the UK \$4.1 billion, the United State \$6.9 billion and South Korea \$12 billion (Bozarslan, 2018).

CHAPTER THREE:

**COMPARING THE FACTOR EFFECTING IRAQ AND NIR IMPORT FROM
TURKEY FROM 2004-2017**

This chapter aims to analyze and discuss the data used in the study and comparing the factors affecting the import of Iraq and NIR from Turkey during the period 2004-2017. The data and information is obtained from the NIG's ministry of trade and industry, region's board of statistics, Iraq board of statistics and World Bank.

As it known the primary aim of the thesis is to discuss the effect of independent variables which is GDP, population and exchange rate on dependent variable which is imports. This section is a case study and practically examines the effect of each independent variable on dependent variable for both Iraq imports from Turkey and NIR imports from Turkey and economically analyses the results.

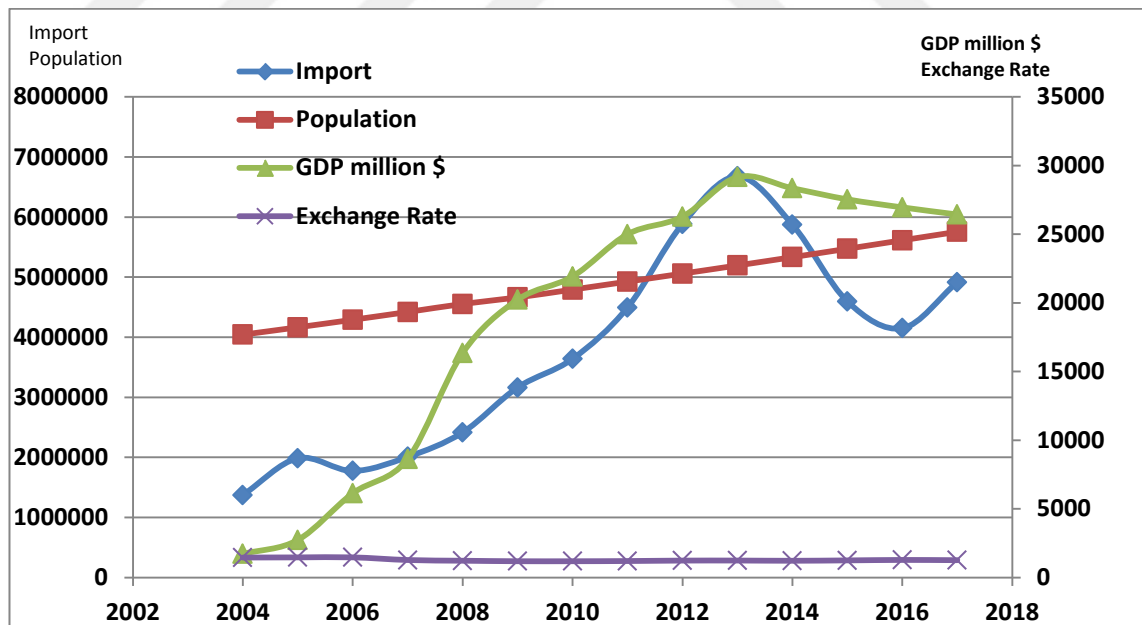
This chapter includes three parts; part one discusses all used data in the thesis for NIR and Iraq, part two discusses the unit root test and stationary then part three will briefly examine the effect of GDP, population and exchange rate on both Iraq and the NIR imports from Turkey. Most important chapter of this paper is this one, because this chapter practically analyses the reality of relationship between NIR-Turkey and Iraq-Turkey, then practically illustrates the level of effect of each independent variable which is GDP, population and exchange rate on depend variable

3.1. ILLUSTRATION OF DATA USED IN STUDY

For analyzing the factors affecting Iraq and NIR imports from Turkey this study focuses on GDP, population and exchange rate as the independent variables for both Iraq and NIR. The answer to the question why this study focused on mention independent variables only while there are other factors affecting import is that there are lots of reason that drives us to use this variable, most important reasons are; most of Iraq and NIR's import from Turkey is consumer goods. Iraq and NIR households are willing to consume Turkish goods more than other countries because data of NIR and Iraq shows Turkey is biggest exporter countries for both NIR and Iraq (NIG, 2018).

Increase in a number of the population will increase the consumption, Then Iraq and NIR import will increase because their economies cannot satisfy local needs. Another factor that this thesis focused on is GDP the reason why this study focused on GDP is that from 2004 to 2017 Iraq and NIR GDP has risen sharply (World Bank, 2018). Increase in GDP has increased personal income in NIR and Iraq. As it is known there is a positive relationship between national income and consumption, increase in Iraq and NIR GDP, their people able to buy goods and services will increase and satisfy their needs, they depend on Turkish goods and services (Mora, 2010). Last independent variable in this thesis is the exchange rate, while the exchange rate is one of the most important determinants of international trade, the nominal exchange rate is the rate at which currency can exchange. A meaningful relationship exists between net import and the real exchange rate within a country. When the real exchange rate is high, the relative price of goods at home is higher than the relative price of goods abroad; in this case, import is likely because foreign goods are cheaper it means the local consumer can buy more goods per unit of local currency (Kang, 2016).

Figure 3.1. Data for the NIR



Source: NIG (2018).

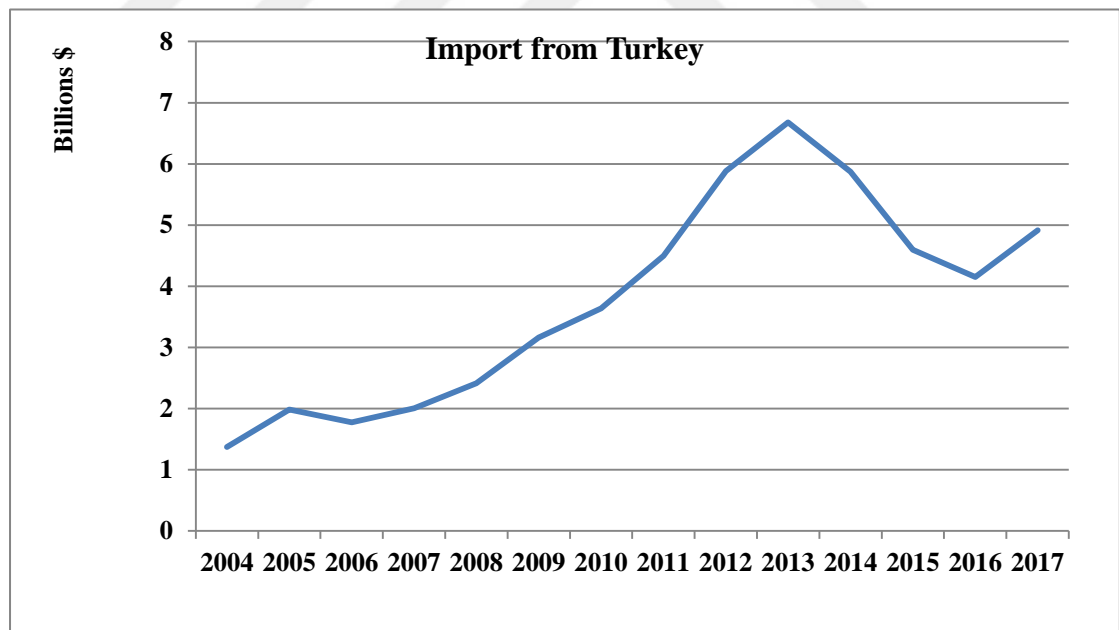
Figure 3.1 illustrates, all used data for NIR, which includes both independent and dependent variables. Horizontal is the period of research which starts from 2004 to

2017; the research duration starts from 2004 because Iraq after gulf-war which is led by US-coalition in 2003 has changed economically and politically. The dependent variable for the NIR is yearly imports from Turkey from 2004 to 2017. The independent variables for the NIR side of research which is yearly population, GDP and exchange rate (NIG, 2018).

As it is evident from Figure 3.1 there is a trend change in the data. The effects of political turmoil and violent conflict that quickly spread through the country realized in critical macroeconomic indicators (Guiu, 2015). So, the ISIS war and the protracted reduction in oil prices have resulted in a 21.6 percent contraction of the non-oil economy since 2014 and contributed to a sharp deterioration of fiscal and current accounts World Bank (2018). This fact is considered in the analysis of the following parts.

3.1.1. NIR Imports from Turkey during 2004-2017

Figure 3.2. Total Region Import from Turkey



Source: NIG (2018).

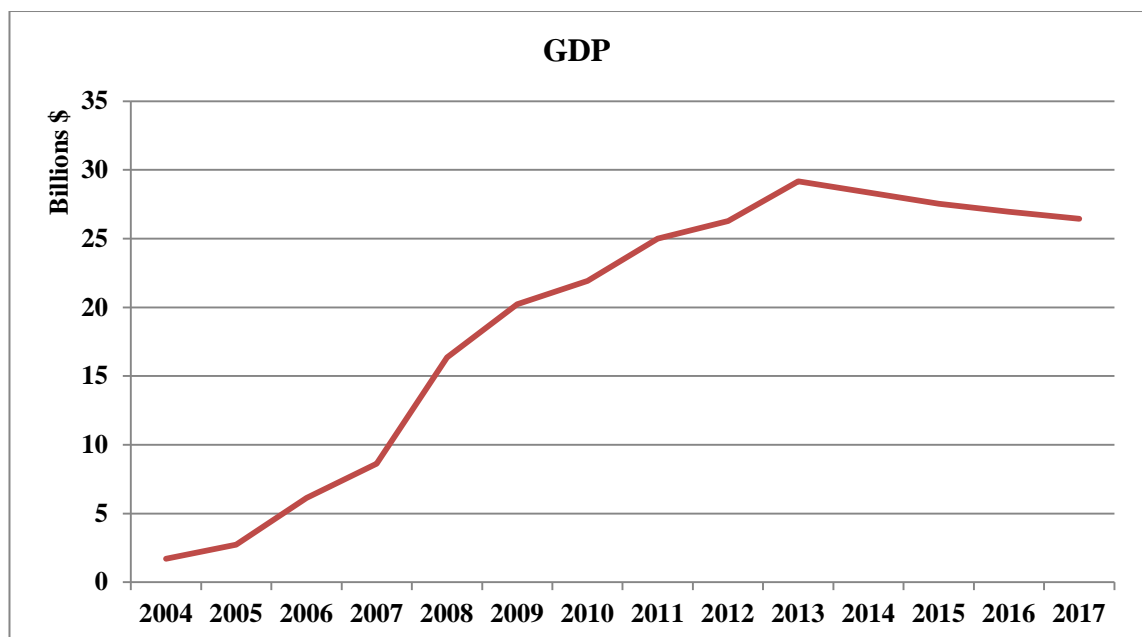
As revealed in Figure 3.2 the total value imported by NIR from Turkey, it shows that after 2004 until 2013 import of NIR from Turkey has increased, the primary cause of this increase is that; after gulf-war, UN removed the sanctions on Iraq. However,

during this condition, NIR could import goods and services in foreign markets freely without any restriction, and the other reason is that new government of Iraq decided to prepare 17% of the public budget for the region by increasing the price of crude oil during last decade budget of Iraq has increased (NIG, 2018).

However, during 2003 to 2013 economic growth of NIR was more than 10% yearly. Another factor of increase of import from Turkey is that NIR government reduced all import restriction especially tariff on Turkish export to NIR. After 2008 the NIR government and Turkey have signed several economic and political contracts to improve trade between two sides (Srhnk, 2011).

Nevertheless, in February 2014 Iraq decided to cut the part of NIR public budget, and it increased the problems between central government and NIR in one hand, on the other hand, the price of oil dropped in 2014 for 28 US dollar p/b. Moreover, a terrorist group of ISIS attacked Mosul second biggest city of Iraq after few months also attacked Sinjar so NIR faced economic and security finance crises during this year (2014-2017) GDP of NIR has decreased because of the mentioned reasons. Moreover, finally affects the import of NIR from Turkey in 2017 Kurdish Peshmerga and Iraqi forces defeated ISIS and price of oil started to increase, and importing of goods and services has increased in 2017 (Mamakani, 2015).

Figure 3.3. GDP of the NIR



Source: NIG (2018).

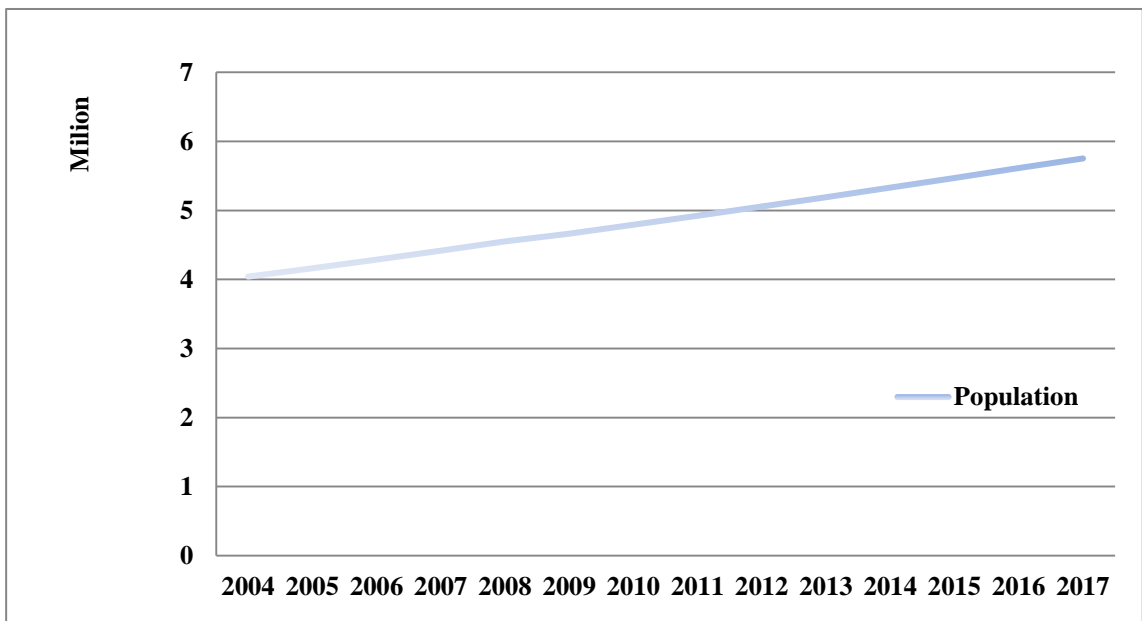
3.1.2. GDP of NIR During 2004-2017

Figure 3.3. illustrates the GDP of NIR from 2004 to 2017. It shows that from 2004 to 2013 the GDP of NIR has increased year by year from 1.7 billion \$ in 2004 to 29 billion \$ in 2013. The main reason for this increase is participating NIR in public budget of Iraq, increase in the price of crude oil, improvement the private sector in NIR, publishing the new law of investment. However, from 2014 to 2017 GDP has decreased because of violence of ISIS and cutting the part of NIR in Iraqi budget (Srhnk, 2011).

3.1.3. Population of NIR during 2004-2017

As shown in a Figure 3.4. The growth in NIR's population. NIR includes three provinces of Erbil, Duhok, and Sulaimaniyah but now Halabja becomes a province. In 2004 the population of NIR was 4 million, and it has increased yearly in 2017 the total population of NIR reached 5.7 million. The main reason for the increase in population was an improvement in the health sector (decreasing death and extend life) or getting better of life standard caused by increasing marriage and birth. In the analysis, the logarithm of the population used because population increases geometrically (Whitcomb, 2014).

Figure 3.4. Population of NIR

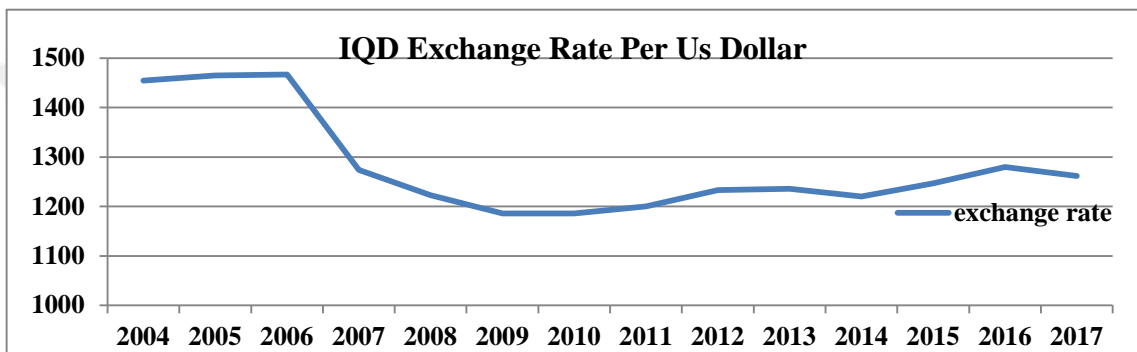


Source: NIG (2018).

3.1.4. Exchange Rate in NIR During 2004-2017

Figure 3.5. shows the exchange rate of Iraqi dinar per dollar in NIR from 2003 to 2017. Highest rate is 1420 diner per us dollar, and lowest is 1200 Iraqi dinar per one US dollar. It means the exchange rate of Iraqi dinar does not fluctuate very much, Iraqi central bank has played well to made exchange rate of Iraqi dinar constant, even there is only Iraqi central bank make monetary policy, but exchange rate of IQD is the little different from Baghdad to Erbil the difference is happened because of market factors (Cordoba, 2013).

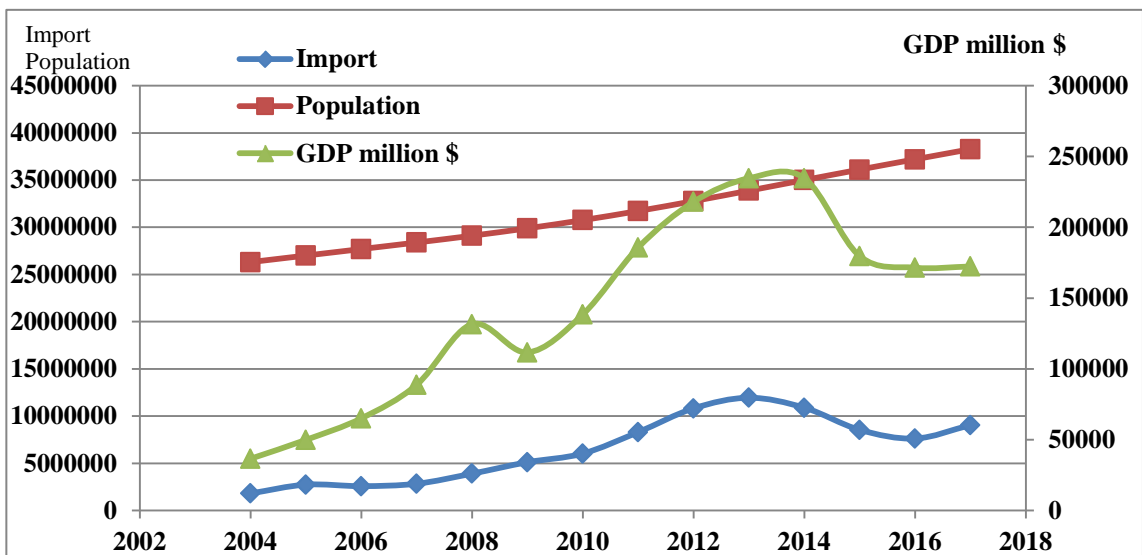
Figure 3.5. Exchange Rate of Iraqi Dinar Per Dollar in NIR



Source: Gomashini, et al (2013).

3.1.5. Iraqi Data

Figure 3.6. Data for Iraq



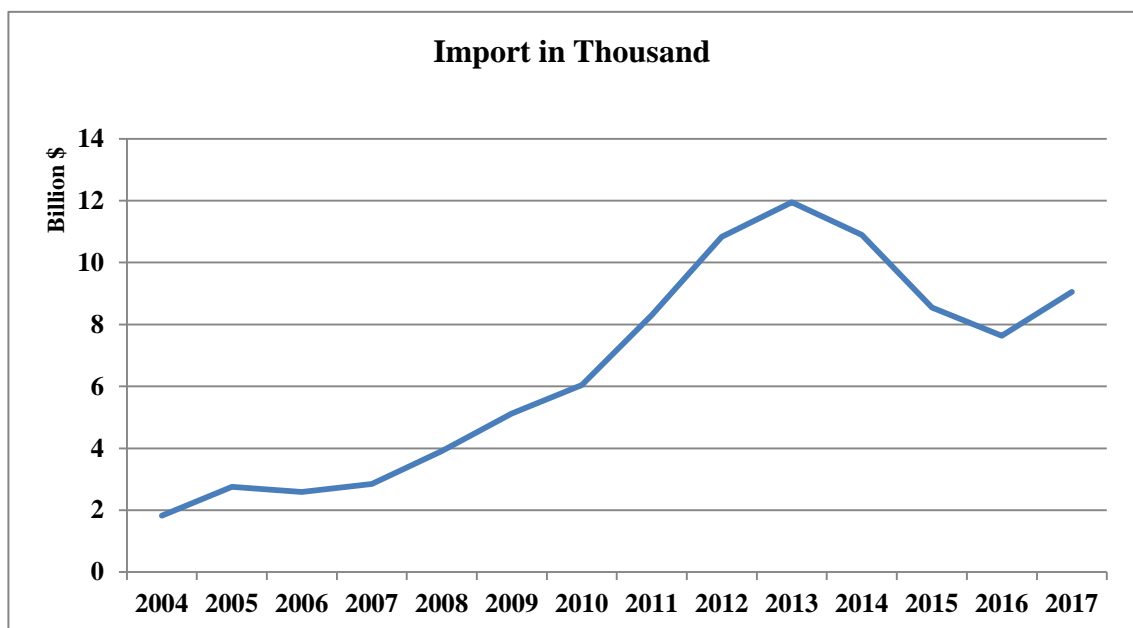
Source: NIG (2018).

Figure 3.6 shows all used data for Iraq which includes both independent and dependent variables, except exchange rate, which is illustrated previously. The research duration starts from 2004 because Iraq after the US-led invasion (gulf-war) in 2003, has faced many changes in the field of economic, politic and socially, the second column is depending variable for Iraq side, which is the yearly import of Iraq from Turkey during 2004 to 2017 (World Bank, 2018).

3.1.6. Iraqi Import from Turkey During 2004-2017

As revealed in Figure 3.7 the total value of Iraqi import from Turkey in billion dollars. It shows from 2004 to 2013 Iraqi import has increased. The reason of increase is the openness of Iraq border against foreign goods and services after Iraq war. Another reason would be increase in the GDP of Iraq by increase in the price of crude oil because crude oil calculates more than 90 percent of Iraqi GDP. It means any change in oil price could directly reflect on all sectors in Iraq especially import and consumption. However, from 2013 to 2016 value of Iraq imports from Turkey has decreased because of ISIS war in Mosul and dropping in oil price than in 2017. Again imports starts to increase because of the uprising in the price of oil and defeated ISIS by Kurdish Peshmerga and Iraqi forces (World Bank, 2018).

Figure 3.7. Total Value of Iraq Import form Turkey

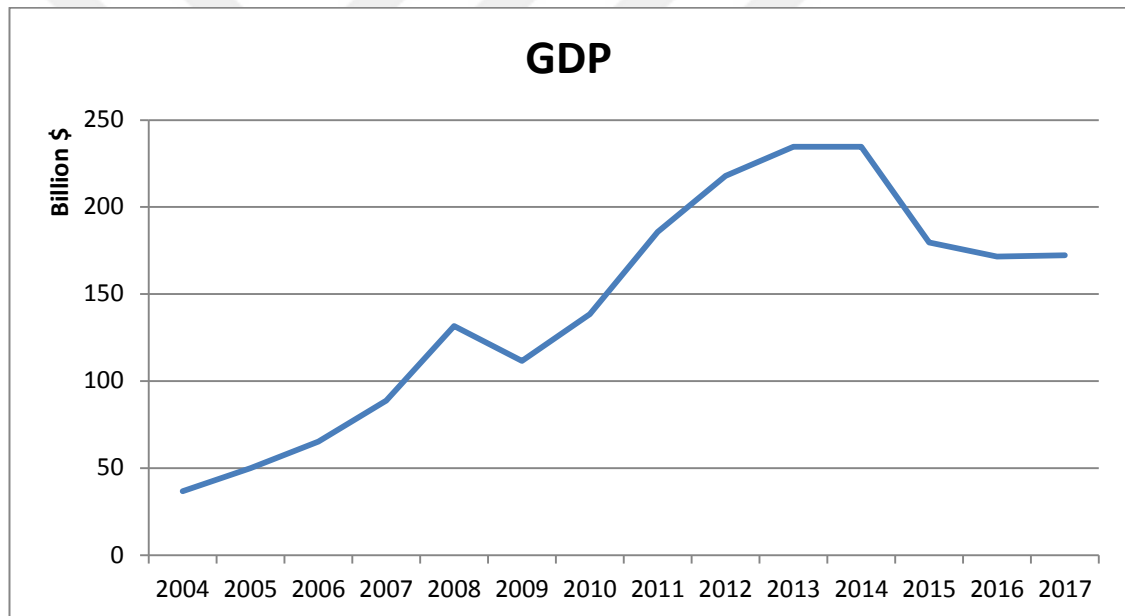


Source: NIG (2018).

3.1.7. GDP in Iraq During 2004-2017

Figure 3.8 illustrates the GDP of Iraq from 2004 to 2014. After the U.S.-led invasion of Iraq in 2004, UN removed the decision of oil-food and removed all restriction against importing goods and services from foreign markets. So, Iraq from 2004 until our day could invest in the oil sector and extract, export their oil freely, and the price of crude oil has increased year by year. All of this situation affected GDP of Iraq positively, but from 2014 to 2017 ISIS attacked Iraq and price of crude oil has dropped from 120\$ to 28\$ per barrel as it known exportation of oil calculates 90% of Iraq GDP it means any changes in oil price will effect GDP of Iraq (Kami & Bayoumy, 2016).

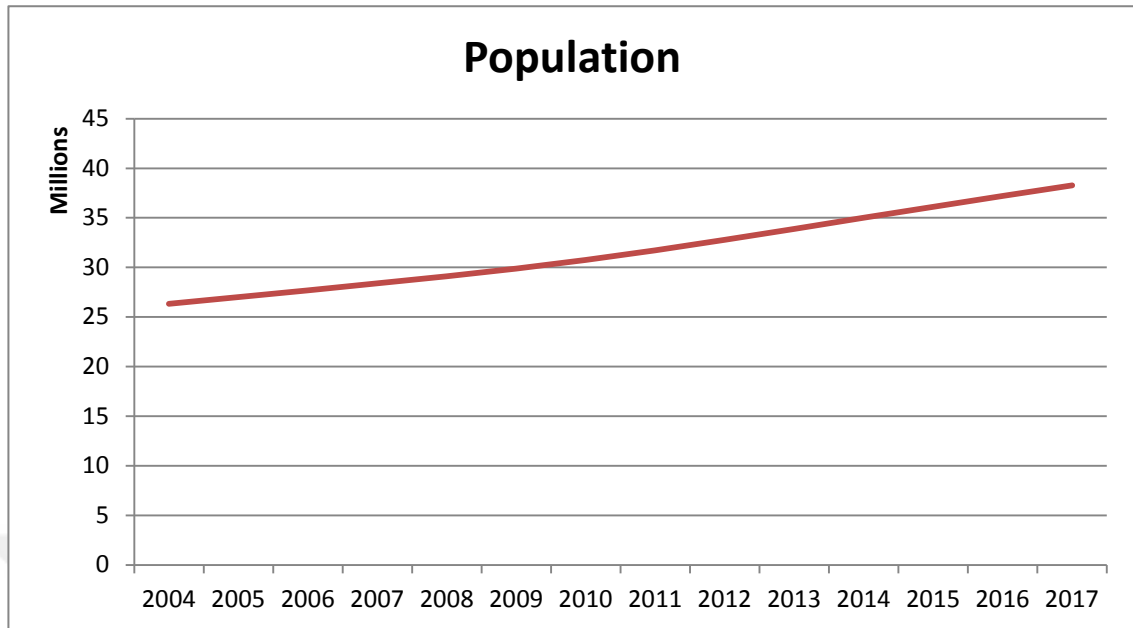
Figure 3.8. The Gross Domestic Product of Iraq



Source: World Bank (2018)

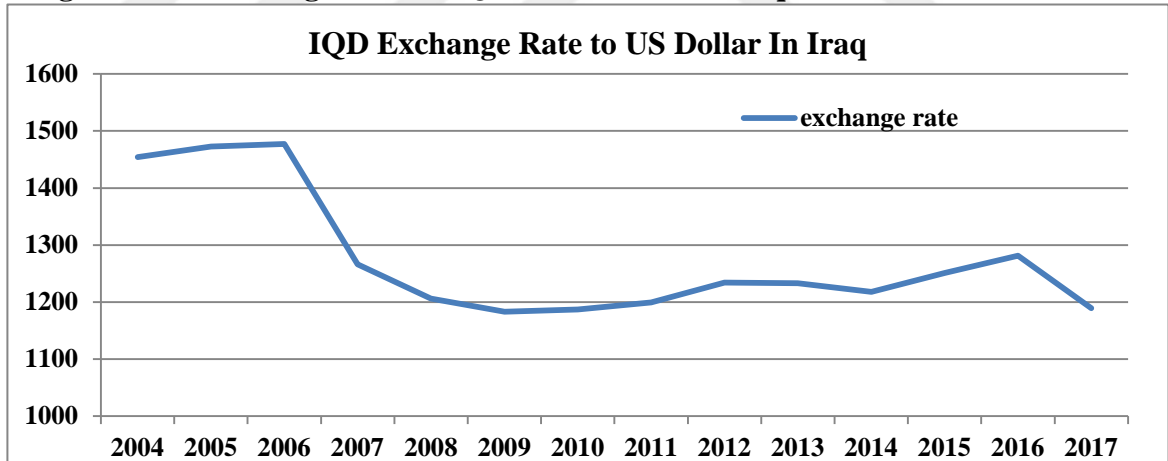
3.1.8. Population of Iraq During 2004-2017

As revealed in a Figure 3.8 the population of Iraq from 2004 to 2017, it shows Iraq population increased from 26 million in 2004 to 38 million in 2017, there are some reasons effecting population growth, but health improvement and birth are most active. After the end of the Baath regime, increase in public income and investment in health sector decreased the death, so it increased population (McDonald, 2014).

Figure 3.9. Population of Iraq

Source: World Bank (2018)

3.1.9. Exchange Rate in Iraq During (2004-2017)

Figure 3.10. Exchange Rate of IQD to US dollar in Iraq

Source: World Bank (2018)

Figure 3.10 illustrates the exchange rate of Iraqi dinar per dollar from 2003 to 2017. It indicates that highest rate was 1454 diner per us dollar in 2004, and lowest is 1183 Iraqi dinar per one us dollar in 2009, it means the exchange rate of Iraqi dinar does not fluctuate very much, Iraqi central bank has played well and supply tenth of millions of US dollar per day to made exchange rate of Iraqi dinar constant (Lee J. , 2018).

3.2. MODEL SPECIFICATION

The study model analysis contains the unit root test, Augmented Dickey-Fuller (ADF), Philips-Perron (PP), Johansen cointegration test, and VECM modeling. While they are all employed to reach the primary aim of this thesis study which is comparing the factors affecting Iraq and NIR import from Turkey during the period 2004 to 2017. Through an econometric analysis of import from Turkey to Iraq and its northern region. However, this section divided into two parts: First model specification used in the study. Second, presenting the results of the examine the relationship between study variables.

3.2.1. Unit Root Test

According to Ojoko et al (2014) the researchers could examine the unit root test, through three standard techniques of unit root test namely; the Augmented Dickey-Fuller (ADF), Phillips-Perron (PP), and the Kwiatkowski-Phillips-Schmidt-Shin (KPSS) tests. However, Dickey and Fuller (1981) the ADF test is the basis of the stationary tests of the time series, and most of the stationary tests based on this test. While the Phillip-Perron tests the zero hypothesis is the presence of the unit root test versus the static of the trend, nevertheless by engaging a non-modified test of the Augmented Dickey-Fuller that does not add the first differences obtain to the dependent variable as explanatory variables. Accordingly addressing the problem of self-engagement in an alternative way, However, Hill, Griffiths, and Lim (2011, p. 488), argued that if the unit root comprises the series are integrated and time series that does not contain a unit root or stationary strings be integrated zero-degree. Besides, often we find an economic time series from the degree of complementarity between zero (0) or (1). There are many tests used to detect the degree of cointegration of the time series, and the extent of stationary.

3.2.1.1. Stationary Tests

According to Ojoko et al. (2014), stationarity tests of a series is a significant portent since it can affect its behavior. If x and y series are non-stationary casual processes (integrated), so, modeling the x and y relationship as a simple OLS relationship as in equation 2 will only produce a spurious regression.

$$Y_t = a + \beta X_t + \varepsilon_t \quad (1)$$

However, time series stationarity is the statistical feature of a series such as its mean and difference over time. If both are continual over time, then the series is a stationary procedure (i.e., is not a random walk/has no unit root), then, the series defined as being a non-stationary procedure (i.e., a random walk/has unit root).

Variance a series using variance operations produces other sets of observations such as the first-differenced values, the second-differenced values and so on.

x level	x
1st-difference value	Δx
2nd-difference value	$\Delta^2 x$

(2)

If a series is stationary without any differencing, it is designated as I(0), or integrated of order 0. On the other hand, a series that has stationary first differences is designated I(1) or integrated of order one (1).

According to Battal (2015, p. 6), the stationarity is fundamental in the study of time series, and if the time series is not stationary, will not obtain appropriate outcomes and a stationary time series will achieve if the characteristics achieved such as the stationary of average values and variance over time. Further, some self-correlation of successive time values of the phenomenon. However, the stationary is that most economic indicators contain an upward trend over time and in some cases may be descending direction. So, in such a situation, it is difficult to use economic indicators in the analysis and prediction and decision-making economic critical to overcoming this statistical quandary, it is correct to say that statisticians and economists have asked to find solutions that address this problem. Among the most famous of these are Engle Granger and others.

3.2.1.2. Cointegration Estimate

According to Battal (2015, p. 6) the researchers using the cointegration estimate to determine the number of cointegration vectors by using Johansen's approach with two different test statistics as the trace test statistic and the maximum eigenvalue test statistic. So, according to Ojoko, Adejumo, Adekanye, Victor, and Ogheneruemu (2014) the trace statistic tests the null hypothesis that the number of different

cointegration relationships is less than or equal to r against the alternative hypothesis of more than r co-integrating relationships, and defined as:

$$\theta_{\text{trace}}(r) = -T \sum_{j=r+1}^p \ln(1 - \hat{\theta}_j) \quad (3)$$

3.2.1.3. Johansen and Juselius Cointegration Test

In this regard, Johansen and Juselius (1990) mentioned that processes use two tests to determine the number of cointegration vectors: The maximum eigenvalue test and the Trace test. The maximum eigenvalue statistic tests the null hypothesis of r cointegration relationships against the alternative of $r+1$ cointegration relations for $r = 0, 1, 2, \dots, n-1$. These test statistics computed as:

$$LR_{max} \left(\frac{r}{n} + 1 \right) = -T * \log(1 - \lambda) \quad (4)$$

According to Ojoko et al. (2014), where λ is the maximum eigenvalue and T is the sample size. Trace statistics examine the null hypothesis of r cointegration relationships against the alternative of n cointegration relationships, where n is the number of variables in the system for $r = 0, 1, 2, \dots, n-1$. Its equation computed according to the following formula:

$$LR_{tr} \left(\frac{r}{n} \right) = -T * \sum_{i=r+1}^p \log(1 - \lambda) \quad (5)$$

In some cases, trace and maximum eigenvalue statistics may yield different results. Besides, Alexander (2001), indicates that in this case the results of the trace test should be preferred. However, this is significant in the theory of cointegration, that indicating in the nonappearance of a different cointegration, the balance among the variables remains doubtful and problematic.

While, a long-term equilibrium between the two established series tested by testing the cointegration of variables using the Johansen and Johansen -Juselius methods used in models involving of more than two variables (Almounsor, 2017, p. 5).

3.2.2. Vector Error Correction Model (VECM)

According to Hill et al. (2011, p. 500) the VECM used to define the short- and long-term equilibrium relationship between economic variables. Besides, VECM can apply in the case of small samples, so unlike previous traditional methods.

VECM model approaches to play when it has proven that, there exists a long-run relationship among the variables under deliberation. So, this allows the researcher to estimate the cointegrated series. However, according to Ojoko et al. (2014), in a situation, there is no cointegration, VECM is no longer required, and we can proceed to Granger causality tests directly to establish a causal relationship between the variables. The VECM regression equation is given below as thus:

$$Y_t = a_1 + \rho_1 e_1 + \sum_{i=0}^n \beta_i Y_{t-i} + \sum_{i=0}^n \phi_i \Delta X_{t-i} + \sum_{i=0}^n \gamma_i Z_{t-i} \quad (6)$$

$$\Delta Y_t = a_2 + \rho_2 e_1 - 1 + \sum_{i=0}^n \beta_i Y_{t-i} + \sum_{i=0}^n \phi_i \Delta X_{t-i} + \sum_{i=0}^n \gamma_i Z_{t-i} \quad (7)$$

According to Adeniji (2013) in VECM, the cointegration rank shows the number of cointegration vectors. For example, a rank of two indicates that two linearly independent combinations of the non-stationary variables will be stationary.

A cynical and significant coefficient of the ECM (i.e., e_{t-1} in the above equations) indicates that any short-term fluctuations between the independent variables and the dependent variable will give rise to a stable long-run relationship between the variables.

3.2.3. Granger Causality Test

A general specification of the Granger causality test in a bivariate (X, Y) context can express as:

$$Y_t = a_0 + a_1 Y_{t-1} + \dots + a_i Y_{t-i} + \beta_1 X_{t-1} + \dots + \beta_i X_{t-i} + \mu \quad (8)$$

$$Y_t = a_0 + a_1 Y_{t-1} + \dots + a_i X_{t-i} + \beta_1 X_{t-1} + \dots + \beta_i X_{t-i} + \mu \quad (9)$$

According to Adeniji (2013) in testing for Granger causality, two variables are usually examined together, while testing for their interaction. All the possible results of the analyses are four:

- Unidirectional Granger causality from variable Y_t to variable X_t .
- Unidirectional Granger causality from variable X_t to Y_t .

- Bi-directional causality.
- No causality.

3.2.4. Linear Regression Model for NIR and Iraq Data Sample

3.2.4.1. Model Specification Import Function of NIR Import from Turkey

Import function illustrates the factor affecting import. Furthermore, the import function shows the effect of independent (population, GDP, and Exchange rate) variables on dependent variables which is an import.

$$\text{Import} = F(X_1, X_2, X_3)$$

Import depended on a variable, and its value depends on (X_1, X_2, X_3) which are independent variables.

The following is the main linear regression model which will use for analysis:

$$Y = \alpha + \beta_1 \log(P) + \beta_2 (GDP) + \beta_3 (R) + \mu$$

Where Y is Import, P is the logarithm of the population, GDP is the gross domestic product, E is the exchange rate, and μ is the residual term.

3.2.4.2. Unit Root Tests for NIR

In order to avoid spurious regression, the stationary of data is determined, by using Augmented Dickey-Fuller (ADF) and Phillips-Perron test, to select the optimum ADF lag, Akaike Information Criterion (AIC) used. Stationarity of the variables are checked both an intercept and a linear deterministic trend included and again once with an intercept is included only. Johansen cointegration test is used to determine the cointegration in the regressions used for analysis.

Simulation results of Stadnytska (2010), demonstrated that for growing time series the test should begin with a unit root with drift and time trend unit root test and then continue with the more restricted case of a unit root with drift. Rejection of the null hypothesis in the first test can treat as substantial evidence of a deterministic trend. If the null is not rejected in either test, the growth in the observed series is probably due to a stochastic trend. In addition, Hegwood and Papell (2007), using panel methods that incorporate structural change, they reject the unit root null in favor of the alternative of

trend stationary, with one or two changes in the slope for two panels with postwar data and one or two changes in both the slope and the intercept for a panel with long-horizon data. They conclude that real GDP levels better characterized as regime-wise trend stationary than as either trend stationary without structural change or difference stationary with unit roots. There is a trend of change in Iraqi data, and this fact also confirmed in this thesis.

As summarized in the Tables below, the results of the stationary testing for the time series of the study variables through using the Dickey-Fuller ADF and the Phillip-Perron (PP) tests, the results revealed that some of the variables are not stationary at the original level of data based on the PP and the ADF tests.

Table 3.1. Level Unit Root Test with Trend and Intercept

Variables	ADF	PP	Result	Table
Y	-4.306630 (0.0268)	-4.847204 (0.0106)	Stationary	A.1, A.2
Pop	12.20399 (0.9999)	12.20399 (0.9999)	Non-Stationary	A.3, A.2
GDP	0.196119 (0.9942)	0.196119 (0.9942)	Non-Stationary	A.5, A.6
ER	-4.306630 (0.0268)	-4.847204 (0.0106)	Stationary	A.7, A.8

Note: *t*-statistics and bracket contain *p*-value.

Table 3.2. Level Unit Root Test with Intercept

Variables	ADF	PP	Result	Table
Y	-1.667483 (0.4189)	-1.326868 (0.5834)	Non-Stationary	A.9, A.10
Pop	-5.100458 (0.0042)	-7.252081 (0.0001)	Stationary	A.11, A.12
GDP	-2.272342 (0.1935)	-2.272342 (0.1935)	Non-Stationary	A.13, A.14
ER	-8.262425 (0.0000)	-49.34362 (0.0001)	Stationary	A.15, A.16

Note: *t*-statistics and bracket contain *p*-value.

Table 3.3. Level Unit Root Test with the Trend and Intercept with a Breakpoint

Variables	Dickey-Fuller min-t	Breakpoint	Result	Table
Y	-5.856788 ($p < 0.01$)	2012	Stationary	A.17
GDP	-29.12884 ($p < 0.01$)	2012	Stationary	A.18

Note: *t*-statistics and bracket contain *p*-value.

There is a structural change in data; especially import and GDP illustrated in Figure 3.1. According to Hegwood and Papell (2007) the structural change affects a unit

root test; therefore, unit root tests have to perform considering this change. Table 3.3 summarizes these test results. Both of these variables become stationary after taking into account the structural change.

3.2.4.3. Simple Linear Regression Model for NIR Data Sample

Table 3.4. Level Regression Results

Dependent Variable: IMP				
Method: Least Squares				
Date: 06/15/18 Time: 04:29				
Sample: 2004 2017				
Included observations: 14				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
LPOP	-8198099.	4991990.	-1.642251	0.1316
GDP	0.310	0.074901	4.144983	0.0020
ER	8697.110	3628.909	2.396619	0.0375
C	1.13E+08	73036902	1.545969	0.1531
R-squared	0.889542	Mean dependent var		3782035.
Adjusted R-squared	0.856405	S.D. dependent var		1715262.
S.E. of regression	649981.2	Akaike info criterion		29.84223
Sum squared resid	4.22E+12	Schwarz criterion		30.02482
Log-likelihood	-204.8956	Hannan-Quinn criter.		29.82533
F-statistic	26.84404	Durbin-Watson stat		2.059794
Prob(F-statistic)	0.000042			

Note: t-statistics and bracket contain p-value.

As presented in the Table 3.4 the result illustrates the effect of each independent variables on the dependent variable. It can be noted that there are statistically significant and non-significant coefficients from the model.

The slope of the population is -8198099 which is of the wrong sign and statistically insignificant. Insufficient observations might be the reason for the insignificance of this variable.

Since Iraq and its northern region is an oil producer, decreases or increases in prices of crude oil lead to decreases or increases in importing goods, the main reason for that long run wars in Iraq destroyed the national industry. Furthermore, as expected the value of GDP is positive, and it has a positive impact on import, the coefficient value of an independent variable which is GDP of NIR's people is 0.31, it tells us that by 1 \$ increase in GDP increases imports by 0.31 \$ with ignoring influencing other variables. Also, the sign of the value is positive; it explained that GDP has a positive impact on

requesting items from Turkey and it is statistically significant as well ($p = 0.0020 < 0.05$). Due to Iraq and NIR GDP depends on oil dollar by 98%, as mentioned above the Iraqi wars destroyed most Iraqi economy sectors; however, when the volumes of Iraq and NIR oil export increase that led to increasing GDP.

Moreover, the coefficient of the exchange rate is positive, which is unexpected. During the analysis the variation in exchange rate is small and this variable is not statistically significant at 1% level. Also change in trend of the economy might be the reason for this unexpected result. Excluding the population variable and repeating the regression this variable becomes statistically insignificant even at 5% level.

It is also worth mentioning that model itself is significant since the p -value of the F test is much less than the significance level (0.01 and 0.05). Therefore, we can say that there is a linear relationship between the dependent variable and independent variables. Also, the variability of independent variables influences import variable by 88.95% which showed in R square from the above table. Likewise, despite having those significant results, the model is also not suffering from autocorrelation issue because the value of the Durbin Watson test is around 2. Thus, we can conclude that the model reflects the nature of the relationship between a response variable and explanatory variable reasonably. Because of the few numbers of observations and near-singular matrix Johansen Cointegration test could not perform, however, as shown all variables previously are stationary.

3.2.4.4. Model Specification Import Function of Iraqi Import from Turkey

The following is the main linear regression model which will use for analysis:

$$\text{Log}(Y) = \alpha + \beta_1 \text{sqrt}(P) + \beta_2 \text{log}(GDP) + \beta_3 \text{log}(R) + \mu$$

Where Y is import, P is the square root of the population, GDP is the gross domestic product, E is the exchange rate, and μ is the residual term.

3.2.4.5. Unit Root Tests for Iraq

As revealed in the tables below, similar to the NIR results, the results of Iraqi data reveal that the stationary testing for the time series of the study variables through using the Phillip-Perron (PP) and the Dickey-Fuller ADF tests, whereas the results reveal that

all the variables are not stationary at the original level of data based on the PP and the ADF tests.

Table 3.4. Level Unit Root Test with Trend and Intercept

Variables	ADF	PP	Result	Table
Y	-3.541654 (0.0972)	-0.722708 (0.9464)	Non-Stationary	A.19, A.20
Pop	-1.996045 (0.5261)	-1.744630 (0.6718)	Non-Stationary	A.21, A.22
GDP	1.304136 (0.9994)	-0.161205 (0.9851)	Non-Stationary	A.23, A.24
ER	-8.610429 (0.0005)	-7.577483 (0.0002)	Stationary	A.25, A.26

Note: *t*-statistics and bracket contain *p*-value.

Table 3.5. Level Unit Root Test with Intercept

Variables	ADF	PP	Result	Table
Y	-1.070568 (0.6761)	-1.913757 (0.3164)	Non-Stationary	A.27, A.28
Pop	1.300388 (0.9958)	3.696968 (1.0000)	Non-Stationary	A.29, A.30
GDP	-3.145351 (0.0479)	-3.239958 (0.0408)	Stationary	A.31, A.32
ER	-4.183122 (0.0138)	-4.502822 (0.0047)	Stationary	A.33, A.34

Note: *t*-statistics and bracket contain *p*-value.

There is a structural change in data; especially import and GDP illustrated in Figure 3.6. According to Hegwood and Papell (2007), structural change affects a unit root test; therefore, unit root tests have to performed considering this change. Table 3.6 summarizes these test results.

Table 3.6. Level Unit Root Test with the Trend and Intercept with a Breakpoint

Variables	Dickey-Fuller min-t	Breakpoint	Result	Table
Y	-6.798178 ($p < 0.01$)	2011	Stationary	A.35
Pop	-6.633211 ($p < 0.01$)	2014	Stationary	A.36
GDP	-377.4579 ($p < 0.01$)	2014	Stationary	A.37

Note: *t*-statistics and bracket contain *p*-value.

3.2.4.6. Simple Linear Regression Model for Iraqi Data Sample

As presented in the Table 3.7 the result illustrates the effect of each independent variables on the dependent variable. It can be noted that there are statistically significant and non-significant coefficients from the model.

The slope of the population is 0.000363 which is of the correct sign, but statistically insignificant. Insufficient observations might be the reason for the insignificance of this variable. It is also important to consider the nature of the impact which is not as significant as p -value= 0.1717 is greater than 0.05.

Additionally, the value of GDP is 0.950091; it means that 1% increase in Iraqi GDP increases imports by 0.950091 with ignoring influencing other variables. Plus, it also has a positive effect because the sign of the value is positive and the impact is statistically significant. Therefore, Iraq's GDP depends on oil dollar by nearly 98%, as mentioned above the Iraqi wars destroyed most Iraqi economy sectors, however, when the volumes of Iraq oil export increase that led to increasing GDP. However, in recent years Iraqi government increased its oil production to support the country's economic sectors and its population.

Table 3.7. Level Regression Results

Dependent Variable: IMP				
Method: Least Squares				
Date: 06/16/18 Time: 00:01				
Sample: 2004 2017				
Included observations: 14				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
SPOP	0.000363	0.000247	1.472418	0.1717
GDP	0.950091	0.201377	4.717976	0.0008
ER	0.948353	1.025557	0.924719	0.3769
C	-4.438615	8.742560	-0.507702	0.6227
R-squared	0.942644	Mean dependent var		15.54103
Adjusted R-squared	0.925438	S.D. dependent var		0.624972
S.E. of regression	0.170655	Akaike info criterion		-0.463384
Sum squared resid	0.291233	Schwarz criterion		-0.280796
Log-likelihood	7.243686	Hannan-Quinn criter.		-0.480286
F-statistic	54.78358	Durbin-Watson stat		1.317439
Prob(F-statistic)	0.000002			

Note: t-statistics and bracket contain p-value.

Moreover, the coefficient of the exchange rate is positive, which is unexpected. During the analysis the variation in exchange rate is small and this variable is not statistically significant at 5% level. Also change in trend of the economy might be the reason for this unexpected result.

As discussed in the NIR model, here the F test shows a good result and the relationship is also linear since the p -value of the F test is very low (p -value <

significant level). Moreover, R square is 94.26%, this can explain that 94.26% of response variability is due to independent variables and the rest is for other factors we do not consider them or goes back to randomness. Because of the few numbers of observations and near-singular matrix Johansen Cointegration test could not perform; however, as shown all variables previously are stationary.



CONCLUSION

There is no other scientific work that investigated the factors affecting imports from Turkey to NIR and Iraq. Therefore, this thesis is the first attempt to find these factors.

The main purpose of this thesis is to analyze the factors influencing the levels of imports from Turkey to Iraq and its northern region during the period of 2004 to 2017. The study concludes that, during the mentioned period the GDP of Iraq and its northern region has significantly increased, it can be said that the main reason behind this increase is due to the rise of oil prices and levels of oil production, consequently, this increase of GDP has resulted in the increases of personal income and consumption. It's clearly known that, the level of income is positively linked to the levels of consumption. Therefore, Iraqi and Kurdish consumers are buying more products to satisfy their need and wants.

Based on the data analyses in section three parts 3.1.1 and 3.1.6 of this study Iraqi and NIR import has increased during the selected period and this increase can be linked to the lenient and flexible laws of Iraq customs and borders to the imports of foreign goods and services. Another reason for the increase of Iraq's GDP resulted from the rise of crude oil prices, as crude oil calculates for more than 90 percent of Iraqi GDP, so, this similar to findings of Otterman (2015). He states that any change in oil price could directly reflect on all sectors in Iraq especially the consumption of goods and services, thus imports.

Meanwhile, as it stated in section two part 2.2.3, from 2013 to 2016 the levels of Iraq imports from Turkey has decreased and this decrease can be the result of ISIS war in Mosul and dropping in the oil price. However, again in 2016 the levels of import starts to increase because of the defeats of ISIS and the price changes in crude oil as well as the levels of production. Later on, the study concluded that since Iraq and its northern region is an oil producer, any decreases or increases in prices of crude oil will lead to decreases or increases of importing goods as mentioned by Cordesman (2015).

Furthermore, as expected the value of GDP is positive, and it has a positive impact on import. As presented in model analyses in the section three part 3.2.4.3 of the thesis, the coefficient value of an independent variable which is GDP of NIR's people is

0.31, and that tells us that by 1 \$ increase in GDP increases imports by 0.31 \$, with ignoring other variables that are influential. Also, the sign of the value is positive; it explained that GDP has a positive impact on requesting items from Turkey and it is statistically significant as well ($p = 0.0020 < 0.05$). Due to Iraq and its northern region's GDP depends on oil dollar by 98%, as mentioned above the Iraqi wars destroyed most Iraqi economy sectors, similar to Otterman (2015) found that when the volumes of Iraq and NIR oil export increase that led to increasing GDP.

Additionally, as indicated in third section part 3.2.4.6 the value of GDP is 0.950091; it means that 1% increase in Iraqi GDP increases imports by 0.950091 with ignoring influencing other variables. Plus, it also has a positive effect because the sign of the value is positive and the impact is statistically significant. Therefore, Iraq's GDP depends on oil dollar by nearly 98%, as mentioned above the Iraqi wars destroyed most Iraqi economy sectors, however, when the volumes of Iraq oil export increase that led to increasing GDP. So, this result comparable to Kami and Bayoumy (2016) argued that in recent years Iraqi government increased its oil production to support the country's economic sectors and its population.

According to the result of the model analysis in parts 3.2.4.3 and 3.2.4.6 showed in third section the NIR and Iraq effect of the exchange rate is insignificant. During the analysis the variation in exchange rate is small and this variable is no statistically significant at 5% level. Also change in trend of the economy might be the reason for this unexpected result. The exchange rate of Iraqi dinar does not fluctuate very much, Iraqi central bank has played well to made exchange rate of Iraqi dinar constant, even there is only Iraqi central bank make monetary policy, but exchange rate of IQD is the little different from Baghdad to Erbil the difference is happened because of market factors (Rasheed, 2017).

Furthermore, the model itself is significant since the p -value of the F test is much less than the significance level. Consequently, we can say that there is a linear relationship between the dependent variable and independent variables. Also, the variability of independent variables influences import variable by 88.95% heightened in the section three parts 3.2.4.3 and 3.2.4.6 which showed in R square from the above table. Likewise, despite having those significant results, the model is also not suffering

from autocorrelation issue because the value of the Durbin Watson test is around two. Thus, we can conclude that the model reflects the nature of the relationship between a response variable and explanatory variable reasonably.



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APPENDIX

Table A. 1

Null Hypothesis: IMP has a unit root				
Exogenous: Constant, Linear Trend				
Lag Length: 1 (Automatic - based on SIC, maxlag=2)				
			t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic			-4.306630	0.0268
Test critical values:	1% level		-4.992279	
	5% level		-3.875302	
	10% level		-3.388330	
*MacKinnon (1996) one-sided p-values.				
Warning: Probabilities and critical values calculated for 20 observations and may not be accurate for a sample size of 12				
Augmented Dickey-Fuller Test Equation				
Dependent Variable: D(IMP)				
Method: Least Squares				
Date: 06/14/18 Time: 06:08				
Sample (adjusted): 2006 2017				
Included observations: 12 after adjustments				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
IMP(-1)	-0.732741	0.170143	-4.306630	0.0026
D(IMP(-1))	1.141224	0.241911	4.717542	0.0015
C	406772.8	347397.4	1.170915	0.2753
@TREND("2004")	322994.2	86277.36	3.743673	0.0057
R-squared	0.769873	Mean dependent var		244280.7
Adjusted R-squared	0.683576	S.D. dependent var		779582.8
S.E. of regression	438528.0	Akaike info criterion		29.08144
Sum squared resid	1.54E+12	Schwarz criterion		29.24307
Log-likelihood	-170.4886	Hannan-Quinn criter.		29.02159
F-statistic	8.921143	Durbin-Watson stat		1.938483
Prob(F-statistic)	0.006233			

Table A. 2				
Null Hypothesis: IMP has a unit root				
Exogenous: Constant, Linear Trend				
Lag length: 1 (Spectral OLS AR based on SIC, maxlag=2)				
			Adj. t-Stat	Prob.*
Phillips-Perron test statistic			-4.847204	0.0106
Test critical values:	1% level		-4.886426	
	5% level		-3.828975	
	10% level		-3.362984	
*MacKinnon (1996) one-sided p-values.				
Warning: Probabilities and critical values calculated for 20 observations and may not be accurate for a sample size of 13				
Residual variance (no correction)				4.48E+11
HAC corrected variance (Spectral OLS autoregression)				6.43E+12
Phillips-Perron Test Equation				
Dependent Variable: D(IMP)				
Method: Least Squares				
Date: 06/14/18 Time: 06:14				
Sample (adjusted): 2005 2017				
Included observations: 13 after adjustments				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
IMP(-1)	-0.222622	0.228373	-0.974816	0.3526
C	852923.0	510399.8	1.671088	0.1257
@TREND("2004")	34605.99	102777.6	0.336707	0.7433
R-squared	0.145509	Mean dependent var		272625.9
Adjusted R-squared	-0.025390	S.D. dependent var		753358.1
S.E. of regression	762861.9	Akaike info criterion		30.12672
Sum squared resid	5.82E+12	Schwarz criterion		30.25709
Log-likelihood	-192.8237	Hannan-Quinn criter.		30.09992
F-statistic	0.851435	Durbin-Watson stat		0.972459
Prob(F-statistic)	0.455552			

Table A. 3				
Null Hypothesis: LPOP has a unit root				
Exogenous: Constant, Linear Trend				
Lag Length: 4 (Automatic - based on AIC, maxlag=4)				
			t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic			12.20399	0.9999
Test critical values:	1% level		-5.521860	
	5% level		-4.107833	
	10% level		-3.515047	
*MacKinnon (1996) one-sided p-values.				
Warning: Probabilities and critical values calculated for 20 observations and may not be accurate for a sample size of 9				
Augmented Dickey-Fuller Test Equation				
Dependent Variable: D(LPOP)				
Method: Least Squares				
Date: 06/15/18 Time: 02:30				
Sample (adjusted): 2009 2017				
Included observations: 9 after adjustments				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
LPOP(-1)	0.705456	0.057805	12.20399	0.0066
D(LPOP(-1))	-1.112127	0.032270	-34.46354	0.0008
D(LPOP(-2))	-0.635602	0.017340	-36.65612	0.0007
D(LPOP(-3))	-0.278152	0.016776	-16.58001	0.0036
D(LPOP(-4))	-0.086419	0.017709	-4.880090	0.0395
C	-10.63244	0.878024	-12.10951	0.0068
@TREND("2004")	-0.019356	0.001529	-12.66258	0.0062
R-squared	0.999278	Mean dependent var		0.026020
Adjusted R-squared	0.997112	S.D. dependent var		0.001257
S.E. of regression	6.76E-05	Akaike info criterion		-16.31580
Sum squared resid	9.13E-09	Schwarz criterion		-16.16240
Log-likelihood	80.42111	Hannan-Quinn criter.		-16.64683
F-statistic	461.3629	Durbin-Watson stat		3.446587
Prob(F-statistic)	0.002164			

Table A. 4				
Null Hypothesis: LPOP has a unit root				
Exogenous: Constant, Linear Trend				
Lag Length: 4 (Automatic - based on SIC, maxlag=4)				
			t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic			12.20399	0.9999
Test critical values:	1% level		-5.521860	
	5% level		-4.107833	
	10% level		-3.515047	
*MacKinnon (1996) one-sided p-values.				
Warning: Probabilities and critical values calculated for 20 observations and may not be accurate for a sample size of 9				
Augmented Dickey-Fuller Test Equation				
Dependent Variable: D(LPOP)				
Method: Least Squares				
Date: 06/15/18 Time: 02:27				
Sample (adjusted): 2009 2017				
Included observations: 9 after adjustments				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
LPOP(-1)	0.705456	0.057805	12.20399	0.0066
D(LPOP(-1))	-1.112127	0.032270	-34.46354	0.0008
D(LPOP(-2))	-0.635602	0.017340	-36.65612	0.0007
D(LPOP(-3))	-0.278152	0.016776	-16.58001	0.0036
D(LPOP(-4))	-0.086419	0.017709	-4.880090	0.0395
C	-10.63244	0.878024	-12.10951	0.0068
@TREND("2004")	-0.019356	0.001529	-12.66258	0.0062
R-squared	0.999278	Mean dependent var		0.026020
Adjusted R-squared	0.997112	S.D. dependent var		0.001257
S.E. of regression	6.76E-05	Akaike info criterion		-16.31580
Sum squared resid	9.13E-09	Schwarz criterion		-16.16240
Log-likelihood	80.42111	Hannan-Quinn criter.		-16.64683
F-statistic	461.3629	Durbin-Watson stat		3.446587
Prob(F-statistic)	0.002164			

Table A. 5				
Null Hypothesis: GDP has a unit root				
Exogenous: Constant, Linear Trend				
Lag Length: 0 (Automatic - based on SIC, maxlag=2)				
			t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic			0.196119	0.9942
Test critical values:	1% level		-4.886426	
	5% level		-3.828975	
	10% level		-3.362984	
*MacKinnon (1996) one-sided p-values.				
Warning: Probabilities and critical values calculated for 20 observations and may not be accurate for a sample size of 13				
Augmented Dickey-Fuller Test Equation				
Dependent Variable: D(GDP)				
Method: Least Squares				
Date: 06/14/18 Time: 06:22				
Sample (adjusted): 2005 2017				
Included observations: 13 after adjustments				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
GDP(-1)	0.033199	0.169282	0.196119	0.8484
C	4.57E+09	1.24E+09	3.677526	0.0043
@TREND("2004")	-4.69E+08	4.47E+08	-1.049713	0.3186
R-squared	0.387002	Mean dependent var		1.90E+09
Adjusted R-squared	0.264402	S.D. dependent var		2.43E+09
S.E. of regression	2.08E+09	Akaike info criterion		45.95021
Sum squared resid	4.33E+19	Schwarz criterion		46.08058
Log-likelihood	-295.6763	Hannan-Quinn criter.		45.92341
F-statistic	3.156634	Durbin-Watson stat		1.796599
Prob(F-statistic)	0.086556			

Table A. 6				
Null Hypothesis: GDP has a unit root				
Exogenous: Constant, Linear Trend				
Bandwidth: 0 (Newey-West automatic) using Bartlett kernel				
			Adj. t-Stat	Prob.*
Phillips-Perron test statistic			0.196119	0.9942
Test critical values:	1% level		-4.886426	
	5% level		-3.828975	
	10% level		-3.362984	
*MacKinnon (1996) one-sided p-values.				
Warning: Probabilities and critical values calculated for 20 observations and may not be accurate for a sample size of 13				
Residual variance (no correction)				3.33E+18
HAC corrected variance (Bartlett kernel)				3.33E+18
Phillips-Perron Test Equation				
Dependent Variable: D(GDP)				
Method: Least Squares				
Date: 06/14/18 Time: 06:25				
Sample (adjusted): 2005 2017				
Included observations: 13 after adjustments				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
GDP(-1)	0.033199	0.169282	0.196119	0.8484
C	4.57E+09	1.24E+09	3.677526	0.0043
@TREND("2004")	-4.69E+08	4.47E+08	-1.049713	0.3186
R-squared	0.387002	Mean dependent var		1.90E+09
Adjusted R-squared	0.264402	S.D. dependent var		2.43E+09
S.E. of regression	2.08E+09	Akaike info criterion		45.95021
Sum squared resid	4.33E+19	Schwarz criterion		46.08058
Log likelihood	-295.6763	Hannan-Quinn criter.		45.92341
F-statistic	3.156634	Durbin-Watson stat		1.796599
Prob(F-statistic)	0.086556			

Table A. 7				
Null Hypothesis: IMP has a unit root				
Exogenous: Constant, Linear Trend				
Lag Length: 1 (Automatic - based on SIC, maxlag=2)				
			t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic			-4.306630	0.0268
Test critical values:	1% level		-4.992279	
	5% level		-3.875302	
	10% level		-3.388330	
*MacKinnon (1996) one-sided p-values.				
Warning: Probabilities and critical values calculated for 20 observations and may not be accurate for a sample size of 12				
Augmented Dickey-Fuller Test Equation				
Dependent Variable: D(IMP)				
Method: Least Squares				
Date: 06/14/18 Time: 06:32				
Sample (adjusted): 2006 2017				
Included observations: 12 after adjustments				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
IMP(-1)	-0.732741	0.170143	-4.306630	0.0026
D(IMP(-1))	1.141224	0.241911	4.717542	0.0015
C	406772.8	347397.4	1.170915	0.2753
@TREND("2004")	322994.2	86277.36	3.743673	0.0057
R-squared	0.769873	Mean dependent var		244280.7
Adjusted R-squared	0.683576	S.D. dependent var		779582.8
S.E. of regression	438528.0	Akaike info criterion		29.08144
Sum squared resid	1.54E+12	Schwarz criterion		29.24307
Log likelihood	-170.4886	Hannan-Quinn criter.		29.02159
F-statistic	8.921143	Durbin-Watson stat		1.938483
Prob(F-statistic)	0.006233			

Table A. 8				
Null Hypothesis: IMP has a unit root				
Exogenous: Constant, Linear Trend				
Lag length: 1 (Spectral OLS AR based on SIC, maxlag=2)				
			Adj. t-Stat	Prob.*
Phillips-Perron test statistic			-4.847204	0.0106
Test critical values:	1% level		-4.886426	
	5% level		-3.828975	
	10% level		-3.362984	
*MacKinnon (1996) one-sided p-values.				
Warning: Probabilities and critical values calculated for 20 observations and may not be accurate for a sample size of 13				
Residual variance (no correction)			4.48E+11	
HAC corrected variance (Spectral OLS autoregression)			6.43E+12	
Phillips-Perron Test Equation				
Dependent Variable: D(IMP)				
Method: Least Squares				
Date: 06/14/18 Time: 06:35				
Sample (adjusted): 2005 2017				
Included observations: 13 after adjustments				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
IMP(-1)	-0.222622	0.228373	-0.974816	0.3526
C	852923.0	510399.8	1.671088	0.1257
@TREND("2004")	34605.99	102777.6	0.336707	0.7433
R-squared	0.145509	Mean dependent var	272625.9	
Adjusted R-squared	-0.025390	S.D. dependent var	753358.1	
S.E. of regression	762861.9	Akaike info criterion	30.12672	
Sum squared resid	5.82E+12	Schwarz criterion	30.25709	
Log likelihood	-192.8237	Hannan-Quinn criter.	30.09992	
F-statistic	0.851435	Durbin-Watson stat	0.972459	
Prob(F-statistic)	0.455552			

Table A. 9				
Null Hypothesis: IMP has a unit root				
Exogenous: Constant				
Lag Length: 2 (Automatic - based on SIC, maxlag=2)				
			t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic			-1.667483	0.4189
Test critical values:	1% level		-4.200056	
	5% level		-3.175352	
	10% level		-2.728985	
*MacKinnon (1996) one-sided p-values.				
Warning: Probabilities and critical values calculated for 20 observations and may not be accurate for a sample size of 11				
Augmented Dickey-Fuller Test Equation				
Dependent Variable: D(IMP)				
Method: Least Squares				
Date: 06/14/18 Time: 06:38				
Sample (adjusted): 2007 2017				
Included observations: 11 after adjustments				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
IMP(-1)	-0.160096	0.096011	-1.667483	0.1394
D(IMP(-1))	0.929494	0.228564	4.066674	0.0048
D(IMP(-2))	-0.649368	0.247999	-2.618427	0.0345
C	943277.4	400566.7	2.354857	0.0507
R-squared	0.763348	Mean dependent var		285682.1
Adjusted R-squared	0.661926	S.D. dependent var		803678.1
S.E. of regression	467291.5	Akaike info criterion		29.22258
Sum squared resid	1.53E+12	Schwarz criterion		29.36727
Log likelihood	-156.7242	Hannan-Quinn criter.		29.13138
F-statistic	7.526446	Durbin-Watson stat		1.829985
Prob(F-statistic)	0.013555			

Table A. 10				
Null Hypothesis: IMP has a unit root				
Exogenous: Constant				
Lag length: 2 (Spectral OLS AR based on SIC, maxlag=2)				
			Adj. t-Stat	Prob.*
Phillips-Perron test statistic			-1.326868	0.5834
Test critical values:	1% level		-4.057910	
	5% level		-3.119910	
	10% level		-2.701103	
*MacKinnon (1996) one-sided p-values.				
Warning: Probabilities and critical values calculated for 20 observations and may not be accurate for a sample size of 13				
Residual variance (no correction)			4.53E+11	
HAC corrected variance (Spectral OLS autoregression)			2.68E+11	
Phillips-Perron Test Equation				
Dependent Variable: D(IMP)				
Method: Least Squares				
Date: 06/14/18 Time: 06:40				
Sample (adjusted): 2005 2017				
Included observations: 13 after adjustments				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
IMP(-1)	-0.158412	0.120478	-1.314856	0.2153
C	857921.6	489190.9	1.753756	0.1073
R-squared	0.135821	Mean dependent var	272625.9	
Adjusted R-squared	0.057259	S.D. dependent var	753358.1	
S.E. of regression	731471.8	Akaike info criterion	29.98414	
Sum squared resid	5.89E+12	Schwarz criterion	30.07106	
Log likelihood	-192.8969	Hannan-Quinn criter.	29.96628	
F-statistic	1.728847	Durbin-Watson stat	1.010307	
Prob(F-statistic)	0.215310			

Table A. 11				
Null Hypothesis: LPOP has a unit root				
Exogenous: Constant				
Lag Length: 4 (Automatic - based on AIC, maxlag=4)				
			t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic			-5.100458	0.0042
Test critical values:	1% level		-4.420595	
	5% level		-3.259808	
	10% level		-2.771129	
*MacKinnon (1996) one-sided p-values.				
Warning: Probabilities and critical values calculated for 20 observations and may not be accurate for a sample size of 9				
Augmented Dickey-Fuller Test Equation				
Dependent Variable: D(LPOP)				
Method: Least Squares				
Date: 06/15/18 Time: 02:34				
Sample (adjusted): 2009 2017				
Included observations: 9 after adjustments				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
LPOP(-1)	-0.026455	0.005187	-5.100458	0.0146
D(LPOP(-1))	-0.762110	0.122489	-6.221870	0.0084
D(LPOP(-2))	-0.556550	0.118999	-4.676920	0.0185
D(LPOP(-3))	-0.345927	0.116961	-2.957629	0.0597
D(LPOP(-4))	-0.194389	0.114172	-1.702596	0.1872
C	0.484582	0.087737	5.523142	0.0117
R-squared	0.941397	Mean dependent var		0.026020
Adjusted R-squared	0.843725	S.D. dependent var		0.001257
S.E. of regression	0.000497	Akaike info criterion		-12.14147
Sum squared resid	7.41E-07	Schwarz criterion		-12.00999
Log likelihood	60.63662	Hannan-Quinn criter.		-12.42521
F-statistic	9.638363	Durbin-Watson stat		1.168501
Prob(F-statistic)	0.045654			

Table A. 12				
Null Hypothesis: LPOP has a unit root				
Exogenous: Constant				
Bandwidth: 6 (Newey-West automatic) using Bartlett kernel				
			Adj. t-Stat	Prob.*
Phillips-Perron test statistic			-7.252081	0.0001
Test critical values:	1% level		-4.057910	
	5% level		-3.119910	
	10% level		-2.701103	
*MacKinnon (1996) one-sided p-values.				
Warning: Probabilities and critical values calculated for 20 observations and may not be accurate for a sample size of 13				
Residual variance (no correction)				1.69E-06
HAC corrected variance (Bartlett kernel)				4.61E-07
Phillips-Perron Test Equation				
Dependent Variable: D(LPOP)				
Method: Least Squares				
Date: 06/15/18 Time: 02:36				
Sample (adjusted): 2005 2017				
Included observations: 13 after adjustments				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
LPOP(-1)	-0.014633	0.003844	-3.806812	0.0029
C	0.252236	0.059125	4.266136	0.0013
R-squared	0.568489	Mean dependent var		0.027163
Adjusted R-squared	0.529261	S.D. dependent var		0.002058
S.E. of regression	0.001412	Akaike info criterion		-10.14672
Sum squared resid	2.19E-05	Schwarz criterion		-10.05980
Log likelihood	67.95365	Hannan-Quinn criter.		-10.16458
F-statistic	14.49182	Durbin-Watson stat		2.419734
Prob(F-statistic)	0.002909			

Table A. 13				
Null Hypothesis: GDP has a unit root				
Exogenous: Constant				
Lag Length: 0 (Automatic - based on SIC, maxlag=2)				
			t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic			-2.272342	0.1935
Test critical values:	1% level		-4.057910	
	5% level		-3.119910	
	10% level		-2.701103	
*MacKinnon (1996) one-sided p-values.				
Warning: Probabilities and critical values calculated for 20 observations and may not be accurate for a sample size of 13				
Augmented Dickey-Fuller Test Equation				
Dependent Variable: D(GDP)				
Method: Least Squares				
Date: 06/14/18 Time: 07:01				
Sample (adjusted): 2005 2017				
Included observations: 13 after adjustments				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
GDP(-1)	-0.133550	0.058772	-2.272342	0.0441
C	4.38E+09	1.23E+09	3.546247	0.0046
R-squared	0.319456	Mean dependent var		1.90E+09
Adjusted R-squared	0.257588	S.D. dependent var		2.43E+09
S.E. of regression	2.09E+09	Akaike info criterion		45.90089
Sum squared resid	4.81E+19	Schwarz criterion		45.98781
Log likelihood	-296.3558	Hannan-Quinn criter.		45.88303
F-statistic	5.163538	Durbin-Watson stat		1.388568
Prob(F-statistic)	0.044126			

Table A. 14				
Null Hypothesis: GDP has a unit root				
Exogenous: Constant				
Lag length: 0 (Spectral OLS AR based on SIC, maxlag=2)				
			Adj. t-Stat	Prob.*
Phillips-Perron test statistic			-2.272342	0.1935
Test critical values:	1% level		-4.057910	
	5% level		-3.119910	
	10% level		-2.701103	
*MacKinnon (1996) one-sided p-values.				
Warning: Probabilities and critical values calculated for 20 observations and may not be accurate for a sample size of 13				
Residual variance (no correction)				3.70E+18
HAC corrected variance (Spectral OLS autoregression)				3.70E+18
Phillips-Perron Test Equation				
Dependent Variable: D(GDP)				
Method: Least Squares				
Date: 06/14/18 Time: 07:04				
Sample (adjusted): 2005 2017				
Included observations: 13 after adjustments				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
GDP(-1)	-0.133550	0.058772	-2.272342	0.0441
C	4.38E+09	1.23E+09	3.546247	0.0046
R-squared	0.319456	Mean dependent var		1.90E+09
Adjusted R-squared	0.257588	S.D. dependent var		2.43E+09
S.E. of regression	2.09E+09	Akaike info criterion		45.90089
Sum squared resid	4.81E+19	Schwarz criterion		45.98781
Log likelihood	-296.3558	Hannan-Quinn criter.		45.88303
F-statistic	5.163538	Durbin-Watson stat		1.388568
Prob(F-statistic)	0.044126			

Table A. 15				
Null Hypothesis: ER has a unit root				
Exogenous: Constant				
Lag Length: 2 (Automatic - based on SIC, maxlag=2)				
			t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic			-8.262425	0.0000
Test critical values:	1% level		-4.200056	
	5% level		-3.175352	
	10% level		-2.728985	
*MacKinnon (1996) one-sided p-values.				
Warning: Probabilities and critical values calculated for 20 observations and may not be accurate for a sample size of 11				
Augmented Dickey-Fuller Test Equation				
Dependent Variable: D(ER)				
Method: Least Squares				
Date: 06/14/18 Time: 07:18				
Sample (adjusted): 2007 2017				
Included observations: 11 after adjustments				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
ER(-1)	-0.792394	0.095903	-8.262425	0.0001
D(ER(-1))	0.147874	0.115199	1.283639	0.2401
D(ER(-2))	0.212309	0.122228	1.736987	0.1260
C	978.5019	120.6236	8.112026	0.0001
R-squared	0.911099	Mean dependent var		-18.63636
Adjusted R-squared	0.872998	S.D. dependent var		64.10191
S.E. of regression	22.84417	Akaike info criterion		9.370557
Sum squared resid	3652.993	Schwarz criterion		9.515246
Log likelihood	-47.53806	Hannan-Quinn criter.		9.279350
F-statistic	23.91307	Durbin-Watson stat		1.429089
Prob(F-statistic)	0.000471			

Table A. 16				
Null Hypothesis: ER has a unit root				
Exogenous: Constant				
Lag length: 5 (Spectral OLS AR based on SIC, maxlag=5)				
			Adj. t-Stat	Prob.*
Phillips-Perron test statistic			-49.34362	0.0001
Test critical values:	1% level		-4.057910	
	5% level		-3.119910	
	10% level		-2.701103	
*MacKinnon (1996) one-sided p-values.				
Warning: Probabilities and critical values calculated for 20 observations and may not be accurate for a sample size of 13				
Residual variance (no correction)				2459.892
HAC corrected variance (Spectral OLS autoregression)				1.003093
Phillips-Perron Test Equation				
Dependent Variable: D(ER)				
Method: Least Squares				
Date: 06/14/18 Time: 07:32				
Sample (adjusted): 2005 2017				
Included observations: 13 after adjustments				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
ER(-1)	-0.273542	0.146243	-1.870469	0.0882
C	335.9612	188.1457	1.785644	0.1017
R-squared	0.241309	Mean dependent var		-14.84615
Adjusted R-squared	0.172337	S.D. dependent var		59.26613
S.E. of regression	53.91795	Akaike info criterion		10.95344
Sum squared resid	31978.60	Schwarz criterion		11.04036
Log likelihood	-69.19737	Hannan-Quinn criter.		10.93558
F-statistic	3.498655	Durbin-Watson stat		1.608580
Prob(F-statistic)	0.088244			

Table A. 17				
Null Hypothesis: IMP has a unit root				
Trend Specification: Trend and intercept				
Break Specification: Trend and intercept				
Break Type: Innovational outlier				
Break Date: 2012				
Break Selection: Minimize Dickey-Fuller t-statistic				
Lag Length: 1 (Automatic - based on Schwarz information criterion, maxlag=3)				
			t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic			-5.856788	< 0.01
Test critical values:	1% level		-5.719131	
	5% level		-5.175710	
	10% level		-4.893950	
*Vogelsang (1993) asymptotic one-sided p-values.				
Augmented Dickey-Fuller Test Equation				
Dependent Variable: IMP				
Method: Least Squares				
Date: 06/15/18 Time: 03:01				
Sample (adjusted): 2006 2017				
Included observations: 12 after adjustments				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
IMP(-1)	-0.135123	0.193813	-0.697181	0.5168
D(IMP(-1))	0.753882	0.166898	4.517019	0.0063
C	1048717.	329967.0	3.178249	0.0246
TREND	548465.3	93203.71	5.884587	0.0020
INCPTBREAK	2355244.	944994.8	2.492335	0.0550
TRENDBREAK	-714909.6	229712.7	-3.112191	0.0265
BREAKDUM	-681421.0	633025.5	-1.076451	0.3309
R-squared	0.988938	Mean dependent var		4132604.
Adjusted R-squared	0.975665	S.D. dependent var		1587920.
S.E. of regression	247712.4	Akaike info criterion		27.96912
Sum squared resid	3.07E+11	Schwarz criterion		28.25198
Log likelihood	-160.8147	Hannan-Quinn criter.		27.86440
F-statistic	74.50280	Durbin-Watson stat		2.723993
Prob(F-statistic)	0.000100			

Table A. 18				
Null Hypothesis: IMP has a unit root				
Trend Specification: Trend and intercept				
Break Specification: Trend only				
Break Type: Innovational outlier				
Break Date: 2012				
Break Selection: Minimize Dickey-Fuller t-statistic				
Lag Length: 4 (Automatic - based on Schwarz information criterion, maxlag=4)				
			t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic			-29.12884	< 0.01
Test critical values:	1% level		-5.067425	
	5% level		-4.524826	
	10% level		-4.261048	
*Vogelsang (1993) asymptotic one-sided p-values.				
Augmented Dickey-Fuller Test Equation				
Dependent Variable: IMP				
Method: Least Squares				
Date: 06/15/18 Time: 04:07				
Sample (adjusted): 2009 2017				
Included observations: 9 after adjustments				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
IMP(-1)	-3.291064	0.147313	-22.34059	0.0285
D(IMP(-1))	4.071246	0.119140	34.17204	0.0186
D(IMP(-2))	2.764155	0.129714	21.30955	0.0299
D(IMP(-3))	2.505969	0.101810	24.61405	0.0258
D(IMP(-4))	1.720177	0.049364	34.84703	0.0183
C	6898314.	252573.6	27.31209	0.0233
TREND	1381176.	32572.79	42.40275	0.0150
TRENDBREAK	873628.4	67506.98	12.94130	0.0491
R-squared	0.999960	Mean dependent var		4821575.
Adjusted R-squared	0.999680	S.D. dependent var		1142212.
S.E. of regression	20441.90	Akaike info criterion		22.26911
Sum squared resid	4.18E+08	Schwarz criterion		22.44442
Log likelihood	-92.21101	Hannan-Quinn criter.		21.89079
F-statistic	3568.007	Durbin-Watson stat		3.643145
Prob(F-statistic)	0.012890			

Table A. 19

Null Hypothesis: IMP has a unit root				
Exogenous: Constant, Linear Trend				
Lag Length: 4 (Automatic - based on SIC, maxlag=4)				
			t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic			-3.541654	0.0972
Test critical values:	1% level		-5.521860	
	5% level		-4.107833	
	10% level		-3.515047	
*MacKinnon (1996) one-sided p-values.				
Warning: Probabilities and critical values calculated for 20 observations and may not be accurate for a sample size of 9				
Augmented Dickey-Fuller Test Equation				
Dependent Variable: D(IMP)				
Method: Least Squares				
Date: 06/15/18 Time: 22:04				
Sample (adjusted): 2009 2017				
Included observations: 9 after adjustments				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
IMP(-1)	-2.651450	0.748648	-3.541654	0.0713
D(IMP(-1))	2.529821	0.468897	5.395262	0.0327
D(IMP(-2))	2.380357	1.066902	2.231093	0.1554
D(IMP(-3))	1.343463	0.346613	3.875972	0.0606
D(IMP(-4))	1.018184	0.474057	2.147808	0.1648
C	36.67801	10.22591	3.586772	0.0697
@TREND("2004")	0.493248	0.148848	3.313767	0.0803
R-squared	0.976737	Mean dependent var		0.093154
Adjusted R-squared	0.906947	S.D. dependent var		0.197450
S.E. of regression	0.060232	Akaike info criterion		-2.729764
Sum squared resid	0.007256	Schwarz criterion		-2.576367
Log likelihood	19.28394	Hannan-Quinn criter.		-3.060794
F-statistic	13.99536	Durbin-Watson stat		3.396224
Prob(F-statistic)	0.068179			

Table A. 20

Null Hypothesis: IMP has a unit root				
Exogenous: Constant, Linear Trend				
Bandwidth: 4.45 (Newey-West automatic) using Quadratic Spectral kernel				
			Adj. t-Stat	Prob.*
Phillips-Perron test statistic			-0.722708	0.9464
Test critical values:	1% level		-4.886426	
	5% level		-3.828975	
	10% level		-3.362984	
*MacKinnon (1996) one-sided p-values.				
Warning: Probabilities and critical values calculated for 20 observations and may not be accurate for a sample size of 13				
Residual variance (no correction)				0.026498
HAC corrected variance (Quadratic Spectral kernel)				0.025755
Phillips-Perron Test Equation				
Dependent Variable: D(IMP)				
Method: Least Squares				
Date: 06/15/18 Time: 22:06				
Sample (adjusted): 2005 2017				
Included observations: 13 after adjustments				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
IMP(-1)	-0.147933	0.198756	-0.744293	0.4738
C	2.438782	2.878423	0.847263	0.4167
@TREND("2004")	-0.003113	0.032384	-0.096136	0.9253
R-squared	0.277377	Mean dependent var		0.123402
Adjusted R-squared	0.132853	S.D. dependent var		0.199312
S.E. of regression	0.185601	Akaike info criterion		-0.331261
Sum squared resid	0.344477	Schwarz criterion		-0.200888
Log likelihood	5.153196	Hannan-Quinn criter.		-0.358058
F-statistic	1.919239	Durbin-Watson stat		1.271541
Prob(F-statistic)	0.197042			

Table A. 21

Null Hypothesis: POP has a unit root				
Exogenous: Constant, Linear Trend				
Lag Length: 4 (Automatic - based on SIC, maxlag=4)				
			t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic			-1.996045	0.5261
Test critical values:	1% level		-5.521860	
	5% level		-4.107833	
	10% level		-3.515047	
*MacKinnon (1996) one-sided p-values.				
Warning: Probabilities and critical values calculated for 20 observations and may not be accurate for a sample size of 9				
Augmented Dickey-Fuller Test Equation				
Dependent Variable: D(POP)				
Method: Least Squares				
Date: 06/15/18 Time: 22:09				
Sample (adjusted): 2009 2017				
Included observations: 9 after adjustments				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
POP(-1)	-0.210551	0.105484	-1.996045	0.1840
D(POP(-1))	0.500756	0.501828	0.997863	0.4235
D(POP(-2))	0.132931	0.709795	0.187282	0.8687
D(POP(-3))	0.312848	0.680379	0.459815	0.6908
D(POP(-4))	-0.654994	0.433042	-1.512542	0.2695
C	0.598092	0.299048	1.999985	0.1835
@TREND("2004")	0.000379	0.000181	2.091490	0.1716
R-squared	0.999763	Mean dependent var		0.001755
Adjusted R-squared	0.999053	S.D. dependent var		0.000129
S.E. of regression	3.96E-06	Akaike info criterion		-21.98740
Sum squared resid	3.14E-11	Schwarz criterion		-21.83400
Log likelihood	105.9433	Hannan-Quinn criter.		-22.31843
F-statistic	1407.249	Durbin-Watson stat		2.999909
Prob(F-statistic)	0.000710			

Table A. 22

Null Hypothesis: POP has a unit root				
Exogenous: Constant, Linear Trend				
Bandwidth: 1 (Newey-West automatic) using Bartlett kernel				
			Adj. t-Stat	Prob.*
Phillips-Perron test statistic			-1.744630	0.6718
Test critical values:	1% level		-4.886426	
	5% level		-3.828975	
	10% level		-3.362984	
*MacKinnon (1996) one-sided p-values.				
Warning: Probabilities and critical values calculated for 20 observations and may not be accurate for a sample size of 13				
Residual variance (no correction)				
				1.10E-08
HAC corrected variance (Bartlett kernel)				
				1.77E-08
Phillips-Perron Test Equation				
Dependent Variable: D(POP)				
Method: Least Squares				
Date: 06/15/18 Time: 22:28				
Sample (adjusted): 2005 2017				
Included observations: 13 after adjustments				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
POP(-1)	-0.183507	0.098004	-1.872447	0.0906
C	0.521890	0.277942	1.877694	0.0899
@TREND("2004")	0.000339	0.000165	2.051034	0.0674
R-squared	0.598804	Mean dependent var		0.001668
Adjusted R-squared	0.518564	S.D. dependent var		0.000173
S.E. of regression	0.000120	Akaike info criterion		-15.02344
Sum squared resid	1.43E-07	Schwarz criterion		-14.89306
Log likelihood	100.6523	Hannan-Quinn criter.		-15.05023
F-statistic	7.462722	Durbin-Watson stat		0.509871
Prob(F-statistic)	0.010394			

Table A. 23

Null Hypothesis: GDP has a unit root				
Exogenous: Constant, Linear Trend				
Lag Length: 4 (Automatic - based on SIC, maxlag=4)				
			t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic			1.304136	0.9994
Test critical values:	1% level		-5.521860	
	5% level		-4.107833	
	10% level		-3.515047	
*MacKinnon (1996) one-sided p-values.				
Warning: Probabilities and critical values calculated for 20 observations and may not be accurate for a sample size of 9				
Augmented Dickey-Fuller Test Equation				
Dependent Variable: D(GDP)				
Method: Least Squares				
Date: 06/15/18 Time: 22:30				
Sample (adjusted): 2009 2017				
Included observations: 9 after adjustments				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
GDP(-1)	1.070336	0.820724	1.304136	0.3221
D(GDP(-1))	-1.559350	0.943724	-1.652338	0.2403
D(GDP(-2))	-1.668979	0.907566	-1.838962	0.2073
D(GDP(-3))	-1.115965	0.722916	-1.543700	0.2626
D(GDP(-4))	-0.843422	0.573018	-1.471894	0.2789
C	-9.510102	8.272915	-1.149547	0.3692
@TREND("2004")	-0.300248	0.161958	-1.853864	0.2049
R-squared	0.718343	Mean dependent var		0.029960
Adjusted R-squared	-0.126628	S.D. dependent var		0.178913
S.E. of regression	0.189903	Akaike info criterion		-0.433129
Sum squared resid	0.072126	Schwarz criterion		-0.279732
Log likelihood	8.949078	Hannan-Quinn criter.		-0.764159
F-statistic	0.850139	Durbin-Watson stat		2.652364
Prob(F-statistic)	0.629323			

Table A. 24

Null Hypothesis: GDP has a unit root				
Exogenous: Constant, Linear Trend				
Bandwidth: 8 (Newey-West automatic) using Bartlett kernel				
			Adj. t-Stat	Prob.*
Phillips-Perron test statistic			-0.161205	0.9851
Test critical values:	1% level		-4.886426	
	5% level		-3.828975	
	10% level		-3.362984	
*MacKinnon (1996) one-sided p-values.				
Warning: Probabilities and critical values calculated for 20 observations and may not be accurate for a sample size of 13				
Residual variance (no correction)				0.019326
HAC corrected variance (Bartlett kernel)				0.004272
Phillips-Perron Test Equation				
Dependent Variable: D(GDP)				
Method: Least Squares				
Date: 06/15/18 Time: 22:31				
Sample (adjusted): 2005 2017				
Included observations: 13 after adjustments				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
GDP(-1)	-0.135422	0.166306	-0.814292	0.4344
C	1.823389	1.790261	1.018504	0.3324
@TREND("2004")	-0.016726	0.025867	-0.646626	0.5324
R-squared	0.494644	Mean dependent var		0.119130
Adjusted R-squared	0.393573	S.D. dependent var		0.203543
S.E. of regression	0.158506	Akaike info criterion		-0.646871
Sum squared resid	0.251242	Schwarz criterion		-0.516498
Log likelihood	7.204663	Hannan-Quinn criter.		-0.673669
F-statistic	4.894013	Durbin-Watson stat		2.150560
Prob(F-statistic)	0.032960			

Table A. 25

Null Hypothesis: ER has a unit root				
Exogenous: Constant, Linear Trend				
Lag Length: 4 (Automatic - based on SIC, maxlag=4)				
			t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic			-8.610429	0.0005
Test critical values:	1% level		-5.521860	
	5% level		-4.107833	
	10% level		-3.515047	
*MacKinnon (1996) one-sided p-values.				
Warning: Probabilities and critical values calculated for 20 observations and may not be accurate for a sample size of 9				
Augmented Dickey-Fuller Test Equation				
Dependent Variable: D(ER)				
Method: Least Squares				
Date: 06/15/18 Time: 22:32				
Sample (adjusted): 2009 2017				
Included observations: 9 after adjustments				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
ER(-1)	-2.937798	0.341191	-8.610429	0.0132
D(ER(-1))	1.335299	0.284997	4.685308	0.0427
D(ER(-2))	-0.337025	0.139612	-2.414014	0.1372
D(ER(-3))	0.298695	0.078676	3.796510	0.0629
D(ER(-4))	0.324983	0.087858	3.698965	0.0659
C	20.77040	2.401952	8.647301	0.0131
@TREND("2004")	0.012491	0.003824	3.266355	0.0823
R-squared	0.977702	Mean dependent var		-0.001577
Adjusted R-squared	0.910809	S.D. dependent var		0.032152
S.E. of regression	0.009602	Akaike info criterion		-6.402175
Sum squared resid	0.000184	Schwarz criterion		-6.248778
Log likelihood	35.80979	Hannan-Quinn criter.		-6.733205
F-statistic	14.61583	Durbin-Watson stat		3.024341
Prob(F-statistic)	0.065413			

Table A. 26

Null Hypothesis: ER has a unit root				
Exogenous: Constant, Linear Trend				
Lag length: 4 (Fixed Spectral OLS-detrended AR)				
			Adj. t-Stat	Prob.*
Phillips-Perron test statistic			-7.577483	0.0002
Test critical values:	1% level		-4.886426	
	5% level		-3.828975	
	10% level		-3.362984	
*MacKinnon (1996) one-sided p-values.				
Warning: Probabilities and critical values calculated for 20 observations and may not be accurate for a sample size of 13				
Residual variance (no correction)				0.001896
HAC corrected variance (Spectral OLS-detrended AR)				0.068777
Phillips-Perron Test Equation				
Dependent Variable: D(ER)				
Method: Least Squares				
Date: 06/15/18 Time: 22:34				
Sample (adjusted): 2005 2017				
Included observations: 13 after adjustments				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
ER(-1)	-0.330382	0.219471	-1.505357	0.1631
C	2.359481	1.590066	1.483889	0.1687
@TREND("2004")	-0.001691	0.004658	-0.362960	0.7242
R-squared	0.216805	Mean dependent var		-0.015477
Adjusted R-squared	0.060166	S.D. dependent var		0.051214
S.E. of regression	0.049649	Akaike info criterion		-2.968500
Sum squared resid	0.024650	Schwarz criterion		-2.838127
Log likelihood	22.29525	Hannan-Quinn criter.		-2.995297
F-statistic	1.384109	Durbin-Watson stat		1.537465
Prob(F-statistic)	0.294678			

Table A. 27

Null Hypothesis: IMP has a unit root				
Exogenous: Constant				
Lag Length: 4 (Automatic - based on SIC, maxlag=4)				
			t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic			-1.070568	0.6761
Test critical values:	1% level		-4.420595	
	5% level		-3.259808	
	10% level		-2.771129	
*MacKinnon (1996) one-sided p-values.				
Warning: Probabilities and critical values calculated for 20 observations and may not be accurate for a sample size of 9				
Augmented Dickey-Fuller Test Equation				
Dependent Variable: D(IMP)				
Method: Least Squares				
Date: 06/15/18 Time: 22:37				
Sample (adjusted): 2009 2017				
Included observations: 9 after adjustments				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
IMP(-1)	-0.186113	0.173845	-1.070568	0.3628
D(IMP(-1))	1.140170	0.436356	2.612934	0.0795
D(IMP(-2))	-1.042538	0.555565	-1.876538	0.1572
D(IMP(-3))	0.537122	0.513468	1.046068	0.3724
D(IMP(-4))	-0.455400	0.341711	-1.332705	0.2748
C	3.070094	2.720937	1.128322	0.3413
R-squared	0.849009	Mean dependent var		0.093154
Adjusted R-squared	0.597356	S.D. dependent var		0.197450
S.E. of regression	0.125291	Akaike info criterion		-1.081642
Sum squared resid	0.047093	Schwarz criterion		-0.950159
Log likelihood	10.86739	Hannan-Quinn criter.		-1.365382
F-statistic	3.373736	Durbin-Watson stat		2.784203
Prob(F-statistic)	0.172882			

Table A. 28

Null Hypothesis: IMP has a unit root				
Exogenous: Constant				
Bandwidth: 2 (Used-specified) using Bartlett kernel				
			Adj. t-Stat	Prob.*
Phillips-Perron test statistic				
			-1.913757	0.3164
Test critical values:	1% level		-4.057910	
	5% level		-3.119910	
	10% level		-2.701103	
*MacKinnon (1996) one-sided p-values.				
Warning: Probabilities and critical values calculated for 20 observations and may not be accurate for a sample size of 13				
Residual variance (no correction)				
				0.026523
HAC corrected variance (Bartlett kernel)				
				0.035526
Phillips-Perron Test Equation				
Dependent Variable: D(IMP)				
Method: Least Squares				
Date: 06/15/18 Time: 22:40				
Sample (adjusted): 2005 2017				
Included observations: 13 after adjustments				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
IMP(-1)	-0.165230	0.080545	-2.051407	0.0648
C	2.685175	1.249754	2.148564	0.0548
R-squared	0.276709	Mean dependent var		0.123402
Adjusted R-squared	0.210956	S.D. dependent var		0.199312
S.E. of regression	0.177045	Akaike info criterion		-0.484183
Sum squared resid	0.344796	Schwarz criterion		-0.397268
Log likelihood	5.147192	Hannan-Quinn criter.		-0.502048
F-statistic	4.208270	Durbin-Watson stat		1.247449
Prob(F-statistic)	0.064818			

Table A. 29

Null Hypothesis: SPOP has a unit root				
Exogenous: Constant				
Lag Length: 3 (Automatic - based on SIC, maxlag=4)				
			t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic				
			1.300388	0.9958
Test critical values:	1% level		-4.297073	

	5% level		-3.212696	
	10% level		-2.747676	
*MacKinnon (1996) one-sided p-values.				
Warning: Probabilities and critical values calculated for 20 observations and may not be accurate for a sample size of 10				
Augmented Dickey-Fuller Test Equation				
Dependent Variable: D(SPOP)				
Method: Least Squares				
Date: 06/15/18 Time: 23:09				
Sample (adjusted): 2008 2017				
Included observations: 10 after adjustments				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
SPOP(-1)	0.009558	0.007350	1.300388	0.2502
D(SPOP(-1))	1.746464	0.485353	3.598339	0.0156
D(SPOP(-2))	-1.121290	0.828935	-1.352687	0.2341
D(SPOP(-3))	0.019474	0.566818	0.034356	0.9739
C	-25.08756	23.98275	-1.046067	0.3434
R-squared	0.999459	Mean dependent var		85.83810
Adjusted R-squared	0.999026	S.D. dependent var		9.963808
S.E. of regression	0.311007	Akaike info criterion		0.808853
Sum squared resid	0.483628	Schwarz criterion		0.960146
Log likelihood	0.955734	Hannan-Quinn criter.		0.642886
F-statistic	2308.110	Durbin-Watson stat		2.698596
Prob(F-statistic)	0.000000			

Table A. 30

Null Hypothesis: SPOP has a unit root				
Exogenous: Constant				
Bandwidth: 2 (Newey-West automatic) using Bartlett kernel				
			Adj. t-Stat	Prob.*
Phillips-Perron test statistic			3.696968	1.0000
Test critical values:	1% level		-4.057910	
	5% level		-3.119910	
	10% level		-2.701103	
*MacKinnon (1996) one-sided p-values.				
Warning: Probabilities and critical values calculated for 20 observations and may not be accurate for a sample size of 13				
Residual variance (no correction)				38.52339
HAC corrected variance (Bartlett kernel)				78.91188
Phillips-Perron Test Equation				
Dependent Variable: D(SPOP)				
Method: Least Squares				
Date: 06/15/18 Time: 23:10				
Sample (adjusted): 2005 2017				
Included observations: 13 after adjustments				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
SPOP(-1)	0.032686	0.006133	5.329649	0.0002
C	-101.0824	34.26825	-2.949739	0.0132
R-squared	0.720849	Mean dependent var		81.28283
Adjusted R-squared	0.695471	S.D. dependent var		12.22710
S.E. of regression	6.747417	Akaike info criterion		6.796835
Sum squared resid	500.8041	Schwarz criterion		6.883750
Log likelihood	-42.17943	Hannan-Quinn criter.		6.778970
F-statistic	28.40516	Durbin-Watson stat		0.384552
Prob(F-statistic)	0.000241			

Table A. 31

Null Hypothesis: GDP has a unit root				
Exogenous: Constant				
Lag Length: 0 (Automatic - based on SIC, maxlag=4)				
			t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic			-3.145351	0.0479
Test critical values:	1% level		-4.057910	
	5% level		-3.119910	
	10% level		-2.701103	
*MacKinnon (1996) one-sided p-values.				
Warning: Probabilities and critical values calculated for 20 observations and may not be accurate for a sample size of 13				
Augmented Dickey-Fuller Test Equation				
Dependent Variable: D(GDP)				
Method: Least Squares				
Date: 06/15/18 Time: 23:12				
Sample (adjusted): 2005 2017				
Included observations: 13 after adjustments				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
GDP(-1)	-0.231226	0.073514	-3.145351	0.0093
C	2.829156	0.862659	3.279577	0.0073
R-squared	0.473514	Mean dependent var		0.119130
Adjusted R-squared	0.425651	S.D. dependent var		0.203543
S.E. of regression	0.154257	Akaike info criterion		-0.759755
Sum squared resid	0.261747	Schwarz criterion		-0.672840
Log likelihood	6.938410	Hannan-Quinn criter.		-0.777620
F-statistic	9.893230	Durbin-Watson stat		1.891055
Prob(F-statistic)	0.009319			

Table A. 32

Null Hypothesis: GDP has a unit root				
Exogenous: Constant				
Bandwidth: 2 (Newey-West automatic) using Bartlett kernel				
			Adj. t-Stat	Prob.*
Phillips-Perron test statistic				
			-3.239958	0.0408
Test critical values:	1% level		-4.057910	
	5% level		-3.119910	
	10% level		-2.701103	
*MacKinnon (1996) one-sided p-values.				
Warning: Probabilities and critical values calculated for 20 observations and may not be accurate for a sample size of 13				
Residual variance (no correction)				
				0.020134
HAC corrected variance (Bartlett kernel)				
				0.018564
Phillips-Perron Test Equation				
Dependent Variable: D(GDP)				
Method: Least Squares				
Date: 06/15/18 Time: 23:14				
Sample (adjusted): 2005 2017				
Included observations: 13 after adjustments				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
GDP(-1)	-0.231226	0.073514	-3.145351	0.0093
C	2.829156	0.862659	3.279577	0.0073
R-squared	0.473514	Mean dependent var		0.119130
Adjusted R-squared	0.425651	S.D. dependent var		0.203543
S.E. of regression	0.154257	Akaike info criterion		-0.759755
Sum squared resid	0.261747	Schwarz criterion		-0.672840
Log likelihood	6.938410	Hannan-Quinn criter.		-0.777620
F-statistic	9.893230	Durbin-Watson stat		1.891055
Prob(F-statistic)	0.009319			

Table A. 33

Null Hypothesis: ER has a unit root				
Exogenous: Constant				
Lag Length: 4 (Automatic - based on SIC, maxlag=4)				
			t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic			-4.183122	0.0138
Test critical values:	1% level		-4.420595	
	5% level		-3.259808	
	10% level		-2.771129	
*MacKinnon (1996) one-sided p-values.				
Warning: Probabilities and critical values calculated for 20 observations and may not be accurate for a sample size of 9				
Augmented Dickey-Fuller Test Equation				
Dependent Variable: D(ER)				
Method: Least Squares				
Date: 06/15/18 Time: 23:15				
Sample (adjusted): 2009 2017				
Included observations: 9 after adjustments				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
ER(-1)	-2.201358	0.526248	-4.183122	0.0249
D(ER(-1))	1.282169	0.584714	2.192813	0.1159
D(ER(-2))	-0.032035	0.213294	-0.150192	0.8901
D(ER(-3))	0.355353	0.157701	2.253333	0.1096
D(ER(-4))	0.387927	0.176151	2.202235	0.1149
C	15.65669	3.743464	4.182407	0.0249
R-squared	0.858754	Mean dependent var		-0.001577
Adjusted R-squared	0.623344	S.D. dependent var		0.032152
S.E. of regression	0.019732	Akaike info criterion		-4.778381
Sum squared resid	0.001168	Schwarz criterion		-4.646898
Log likelihood	27.50271	Hannan-Quinn criter.		-5.062121
F-statistic	3.647903	Durbin-Watson stat		1.489804
Prob(F-statistic)	0.157914			

Table A. 34

Null Hypothesis: ER has a unit root					
Exogenous: Constant					
Lag length: 5 (Fixed Spectral OLS AR)					
				Adj. t-Stat	Prob.*
Phillips-Perron test statistic					
				-4.502822	0.0047
Test critical values:					
1% level				-4.057910	
5% level				-3.119910	
10% level				-2.701103	
*MacKinnon (1996) one-sided p-values.					
Warning: Probabilities and critical values calculated for 20 observations and may not be accurate for a sample size of 13					
Residual variance (no correction)					
				0.001921	
HAC corrected variance (Spectral OLS autoregression)					
				4.95E-05	
Phillips-Perron Test Equation					
Dependent Variable: D(ER)					
Method: Least Squares					
Date: 06/15/18 Time: 23:30					
Sample (adjusted): 2005 2017					
Included observations: 13 after adjustments					
Variable	Coefficient	Std. Error	t-Statistic	Prob.	
ER(-1)	-0.281550	0.166414	-1.691868	0.1188	
C	1.998364	1.190380	1.678762	0.1213	
R-squared	0.206488	Mean dependent var	-0.015477		
Adjusted R-squared	0.134350	S.D. dependent var	0.051214		
S.E. of regression	0.047649	Akaike info criterion	-3.109258		
Sum squared resid	0.024975	Schwarz criterion	-3.022343		
Log likelihood	22.21018	Hannan-Quinn criter.	-3.127123		
F-statistic	2.862418	Durbin-Watson stat	1.585737		
Prob(F-statistic)	0.118770				

Table A. 35


Null Hypothesis: IMP has a unit root				
Trend Specification: Trend and intercept				
Break Specification: Trend and intercept				
Break Type: Innovational outlier				
Break Date: 2011				
Break Selection: Minimize Dickey-Fuller t-statistic				
Lag Length: 3 (Automatic - based on Schwarz information criterion, maxlag=3)				
			t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic			-6.798178	< 0.01
Test critical values:	1% level		-5.719131	
	5% level		-5.175710	
	10% level		-4.893950	
*Vogelsang (1993) asymptotic one-sided p-values.				
Augmented Dickey-Fuller Test Equation				
Dependent Variable: IMP				
Method: Least Squares				
Date: 06/15/18 Time: 23:45				
Sample (adjusted): 2008 2017				
Included observations: 10 after adjustments				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
IMP(-1)	-0.533463	0.225570	-2.364959	0.2547
D(IMP(-1))	1.235860	0.172526	7.163338	0.0883
D(IMP(-2))	1.103294	0.344342	3.204070	0.1926
D(IMP(-3))	0.223792	0.123955	1.805429	0.3220
C	22.87622	3.378476	6.771167	0.0933
TREND	0.091699	0.033340	2.750440	0.2220
INCPTBREAK	0.571776	0.139787	4.090339	0.1526
TRENDBREAK	0.076923	0.045046	1.707660	0.3373
BREAKDUM	-0.200616	0.101008	-1.986138	0.2969
R-squared	0.999510	Mean dependent var		15.87046
Adjusted R-squared	0.995594	S.D. dependent var		0.357873
S.E. of regression	0.023755	Akaike info criterion		-5.144595
Sum squared resid	0.000564	Schwarz criterion		-4.872268
Log likelihood	34.72297	Hannan-Quinn criter.		-5.443336
F-statistic	255.1939	Durbin-Watson stat		3.659455
Prob(F-statistic)	0.048378			

Table A. 36

Null Hypothesis: SPOP has a unit root				
Trend Specification: Trend and intercept				
Break Specification: Trend only				
Break Type: Innovational outlier				
Break Date: 2014				
Break Selection: Minimize Dickey-Fuller t-statistic				
Lag Length: 4 (Automatic - based on Schwarz information criterion, maxlag=4)				
			t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic			-6.633211	< 0.01
Test critical values:	1% level		-5.067425	
	5% level		-4.524826	
	10% level		-4.261048	
*Vogelsang (1993) asymptotic one-sided p-values.				
Augmented Dickey-Fuller Test Equation				
Dependent Variable: SPOP				
Method: Least Squares				
Date: 06/15/18 Time: 23:55				
Sample (adjusted): 2009 2017				
Included observations: 9 after adjustments				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
SPOP(-1)	0.906629	0.014076	64.40814	0.0099
D(SPOP(-1))	0.216288	0.147379	1.467568	0.3808
D(SPOP(-2))	0.175120	0.196840	0.889653	0.5371
D(SPOP(-3))	0.369657	0.182553	2.024933	0.2920
D(SPOP(-4))	-0.900065	0.127491	-7.059842	0.0896
C	574.5046	74.98778	7.661310	0.0826
TREND	11.31192	1.265737	8.937024	0.0709
TRENDBREAK	-1.089099	0.194516	-5.599013	0.1125
R-squared	1.000000	Mean dependent var		5822.773
Adjusted R-squared	1.000000	S.D. dependent var		250.2115
S.E. of regression	0.052548	Akaike info criterion		-3.473638
Sum squared resid	0.002761	Schwarz criterion		-3.298328
Log likelihood	23.63137	Hannan-Quinn criter.		-3.851958
F-statistic	25911898	Durbin-Watson stat		3.443611
Prob(F-statistic)	0.000151			

Table A. 37

Null Hypothesis: GDP has a unit root				
Trend Specification: Trend and intercept				
Break Specification: Trend and intercept				
Break Type: Innovational outlier				
Break Date: 2014				
Break Selection: Minimize Dickey-Fuller t-statistic				
Lag Length: 3 (Automatic - based on Schwarz information criterion, maxlag=3)				
			t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic			-377.4579	< 0.01
Test critical values:	1% level		-5.719131	
	5% level		-5.175710	
	10% level		-4.893950	
*Vogelsang (1993) asymptotic one-sided p-values.				
Augmented Dickey-Fuller Test Equation				
Dependent Variable: GDP				
Method: Least Squares				
Date: 06/15/18 Time: 23:56				
Sample (adjusted): 2008 2017				
Included observations: 10 after adjustments				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
GDP(-1)	-2.016334	0.007991	-252.3198	0.0025
D(GDP(-1))	1.190414	0.005349	222.5679	0.0029
D(GDP(-2))	0.427696	0.003857	110.9010	0.0057
D(GDP(-3))	0.026750	0.002887	9.266342	0.0684
C	33.76017	0.087492	385.8651	0.0016
TREND	0.511507	0.001541	331.9357	0.0019
INCPTBREAK	0.636151	0.003660	173.8142	0.0037
TRENDBREAK	-0.745719	0.002193	-340.0667	0.0019
BREAKDUM	-0.095557	0.002062	-46.34151	0.0137
R-squared	0.999999	Mean dependent var		12.06139
Adjusted R-squared	0.999988	S.D. dependent var		0.249820
S.E. of regression	0.000854	Akaike info criterion		-11.79638
Sum squared resid	7.29E-07	Schwarz criterion		-11.52406
Log likelihood	67.98191	Hannan-Quinn criter.		-12.09512
F-statistic	96319.73	Durbin-Watson stat		3.106975
Prob(F-statistic)	0.002492			

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EDUCATION AND TRAINING		
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Master of Economics	Siirt University, Faculty of Economic and Administration, Siirt (TURKEY)	2016 - 2018
WORK EXPERIENCE		
Ministry	Position and Responsibilities	Time Interval
Salahaddin University	Research Assistant	2013 - 2016
Gran Technology company	Assistant director of marketing and sales	2016 - present
PERSONEL SKILLS		
Languages	Kurdish mother language	
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	Arabic	
	Persian	
Computer skills	MS Word, MS Excel, MS PowerPoint, MS Access Database.	