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**THE RELATIONSHIP BETWEEN ECONOMIC GROWTH AND
FOREIGN TRADE. THE CASE OF AZERBAIJAN**

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ABSTRACT
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FARMAN BAHADURLU

The thesis research is based on the theory and methodology described in the basic studies of domestic and foreign scientists on foreign trade and economic growth. Scientific information methods were used in the research process. Graphical and comparative analysis, including systemic, historical, deductive, induction, analysis and synthesis, statistical, correlation and regression analysis were carried out. The research database consists of: Data contained in statistical reporting materials by the State Statistical Committee of the Republic of Azerbaijan, state statistical committees of important regions, State Customs Committee of the Republic of Azerbaijan; UN publications such as Statistical Yearbook, Monthly Statistical Bulletin; World Bank publications such as World Socio-Economic Indicators and World Bank Atlas.

Keywords: Economic Growth, Foreign Trade, Azerbaijan Republic, Absolute Advantage Theory, Anti-Trade Growth

ÖZ
EKONOMİK BÜYÜME VE DIŞ TİCARET ARASINDAKİ İLİŞKİ.
AZERBAYCAN ÖRNEĞİ
FARMAN BAHADURLU

Tez araştırması, yerli ve yabancı bilim adamlarının dış ticaret ve ekonomik büyüme ile ilgili temel çalışmalarında açıklanan teori ve metodolojiye dayanmaktadır. Araştırma sürecinde bilimsel bilgi yöntemleri kullanılmıştır. Sistemik, tarihsel, tümdengelimli, tümevarım, analiz ve sentez, istatistiksel, korelasyon ve regresyon analizlerini içeren grafiksel ve karşılaştırmalı analizler gerçekleştirildi. Araştırma veri tabanı şunlardan oluşmaktadır: Azerbaycan Cumhuriyeti Devlet İstatistik Komitesi, önemli bölgelerin devlet istatistik komiteleri, Azerbaycan Cumhuriyeti Devlet Gümrük Komitesi tarafından hazırlanan istatistiksel raporlama materyallerinde bulunan veriler; İstatistik Yıllığı, Aylık İstatistik Bülteni gibi BM yayınları; World Socio-Economic Indicators ve World Bank Atlas gibi Dünya Bankası yayınları.

Anahtar Kelimeler: Ekonomik Büyüme, Dış Ticaret, Azerbaycan Cumhuriyeti, Mutlak Üstünlük Teorisi, Ticarete Karşıt Büyüme

PREFACE

The universe of the study will discuss the impact of the country's foreign trade on economic growth, and the Republic of Azerbaijan was chosen as an example. The impact of foreign trade on economic growth in the Republic of Azerbaijan will be studied. The relationship between Azerbaijan's exports and imports, which are trade indicators, and Azerbaijan's GDP will be analyzed using the VAR model. Before performing this analysis, it is important to check whether the variables are stationary, and for this we will be assisted by ADF and PP tests, which will then determine which is the most appropriate delay for the VAR (p) model.

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Contents

ABSTRACT.....	ii
ÖZ.....	iii
PREFACE.....	iv
LIST OF TABLES	vii
LIST OF FIGURES	viii
LIST OF ABBREVIATIONS	ix
INTRODUCTION	1

CHAPTER ONE

FOREIGN TRADE CONCEPT AND THEORIES IN DEVELOPED AND DEVELOPING COUNTRIES

1.1. Foreign Trade Concept in Developed and Developing Countries.....	3
1.2. The Concept of Export	4
1.2.1. Export Types	6
1.3. Foreign Trade Concept.....	7
1.4. Purpose of Foreign Trade.....	8
1.5. Foreign Trade Tools	9
1.6. Foreign Trade Theories	11
1.6.1. Mercantilism.....	12
1.6.2. Classical Foreign Trade Theory.....	13
1.6.2.1. Absolute Advantage Theory	13
1.6.2.2. Comparative advantage theory	14
1.6.3. Neoclassical Foreign Trade Theory.....	15
1.6.3.1. Factor Hardware Theory	15
1.6.4. New Foreign Trade Theories	17
1.6.4.1. Qualified Workforce Theory	18
1.6.4.2. Technology Gap Theory.....	19
1.6.4.3. Product Periods Theory.....	21
1.6.4.4. Scale Economics Theory	21

CHAPTER TWO

RELATIONSHIP BETWEEN FOREIGN TRADE AND ECONOMIC GROWTH

2.1. The Concept of Economic Growth	23
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2.2.	Sources of Economic Growth	23
2.2.1.	Labor Force	24
2.2.2.	Capital	25
2.2.3.	Natural resources.....	25
2.2.4.	Technological Development	26
2.3.	Economic Growth Theories	26
2.3.1.	Exogenous Growth Models.....	27
2.3.2.	Endogenous Growth Models	29
2.3.3.	David Ricardo Growth Model	31
2.3.4.	Technology Acceptance Model	34
2.4.	The relationship between economic growth and foreign trade	36
2.4.1.	Increase in factor supply.....	37
2.4.1.1.	Commercial Purifier Directional Growth	38
2.4.1.2.	Anti-Trade Growth.....	40
2.4.1.3.	Rybezynski Development	41
2.4.2.	Technological Development	42

CHAPTER THREE

EFFECT OF FOREIGN TRADE ON ECONOMIC GROWTH

3.1.	General Information About Azerbaijan.....	43
3.1.1.	Azerbaijan Economy.....	46
3.1.2.	Oil Sector in Azerbaijan	49
3.1.3.	Non-Oil Sector in Azerbaijan.....	52
3.2.	Economic Growth and Foreign Trade Relations Econometric Analysis	53
3.2.1.	VAR Model.....	53
3.2.2.	Unit Root Test.....	54
3.2.3.	Phillips-Perron Unit Root Test.....	56
3.2.4.	Variance Decomposition	56
3.2.5.	Impulse Response Analysis	57
3.2.6.	Granger Causality Test.....	57
3.3.	Emprical Analysis.....	58
CONCLUSION.....		70
REFERENCES.....		74

LIST OF TABLES

Table 3. 1: Key macroeconomic indicators.....	47
Table 3. 2: Production of crude oil (including gas condensate), thousand tons .	50
Table 3. 3: VAR Analysis	58
Table 3. 4: Results of ADF Test	60
Table 3. 5: Results of PP Test.....	61
Table 3. 6: Order Selection of VAR(p) Model.....	62
Table 3. 7: Stability Condition of VAR(3)	63
Table 3. 8: Autocorrelation Test Results.....	64
Table 3. 9: Heteroskedasticity	65
Table 3. 10: Variance Decomposition of GDP	67
Table 3. 11: Variance Decomposition of Export	68
Table 3. 12: Variance Decomposition of Import	69
Table 3. 13: Granger Causality Test Results.....	69

LIST OF FIGURES

Figure 2. 1: Commercial Purifier Directional Growth	39
Figure 2. 2: Anti-Trade Growth	40
Figure 2. 3: Rybczynski Theorem.....	41
Figure 3. 1: Distribution of value added in the non-oil sector by sectors.....	52
Figure 3. 2: Graphs of Level and Natural Logarithmic Values of Variables.....	60
Figure 3. 3: Stability Condition of VAR(3).....	63
Figure 3. 4: Impulse-Response Graphics of VAR(3).....	66



LIST OF ABBREVIATIONS

BP	:British Petrol
UK	:United Kingdom
R&D	:Research and Development
VAT	:Value-added tax
EIA	:Energy Information Administration
USA	:United State of America
GDP	:Gross Domestic Product
AIOC	:Azerbaijan International Operating Company
SOCAR	:Azerbaijan State Oil Company
TFE	:Total Factor Efficiency

INTRODUCTION

Foreign trade as an economic growth factor has played an important role in the formation and development of the economy. The importance of foreign trade is increasing in a developing economy. Such an economy is unstable, only institutional forms of a market type are formed, developing under the influence of globalization, which implies the special role of foreign trade. This is due to the enrichment of countries with production factors, innovative comparisons such as a monopoly on natural and geographical conditions, traditional comparative advantages such as new information technologies, consumer choice, and consumer level.

Economic growth, which is one of the determinants of the development level of the countries, has been a subject explored by economists. Researching the source of economic growth and implementing economic policies in line with this source are necessary for sustainable economic growth.

In the context of globalization, international trade is still the dominant form, despite the increasing diversification of international economic relations. The effect of foreign trade on the economic growth of national economies has increased greatly, but the mechanism of this effect in the groups of countries of the world economy is quite contradictory. Developing and developed economies continue to take advantage of traditional comparative advantages such as monopoly on the production factors and supply of countries and natural and geographical resources. The driving forces of foreign trade in developed economies are the factors caused by leadership and consumer preferences in the implementation of innovative processes, information and communication technologies. Under these circumstances, attention should be paid to the delay of foreign trade research in the context of economic growth. This determines the importance of the subject.

The universe of the study is the impact of the country's foreign trade on economic growth. The sample was chosen as the Republic of Azerbaijan. The effect of foreign trade on the economic growth in the Republic of Azerbaijan will be examined. The study takes theoretical approaches to the study of foreign trade as an economic growth factor and analyzes the impact of exports and imports on economic growth in Azerbaijan, and the commodity structure of exports and imports.

The purpose of this article is to study foreign trade as a factor of economic growth, to determine the mechanism of its influence on the basis of theoretical generalizations and the dynamics of development indicators of Azerbaijan. The items that the study will focus are:

- To explain the concept of “foreign trade” in accordance with globalization conditions.
- To define the mechanism of the effect of foreign trade on economic growth on the basis of systematizing the relationship between foreign trade theories and economic growth.
- To determine the characteristics of the effect of foreign trade on economic growth in a transitive economy.
- Developing and testing hypotheses on the impact of foreign trade indicators on economic growth in the transition economy; To form a theoretical model of foreign trade as a factor of economic growth.
- Within the framework of the proposed model, to determine the patterns and mechanisms of the effect of state foreign trade policy on the economic growth of a developing economy.

The thesis research is based on the theory and methodology described in the basic studies of domestic and foreign scientists on foreign trade and economic growth. Scientific information methods were used in the research process. Graphical and comparative analysis, including systemic, historical, deductive, induction, analysis and synthesis, statistical, correlation and regression analysis were carried out.

The research database consists of: Data contained in statistical reporting materials by the State Statistical Committee of the Republic of Azerbaijan, state statistical committees of important regions, State Customs Committee of the Republic of Azerbaijan; UN publications such as Statistical Yearbook, Monthly Statistical Bulletin; World Bank publications such as World Socio-Economic Indicators and World Bank Atlas.

Chapter One

FOREIGN TRADE CONCEPT AND THEORIES IN DEVELOPED AND DEVELOPING COUNTRIES

1.1. Foreign Trade Concept in Developed and Developing Countries

It is of great importance to determine the welfare gain or loss of welfare arising from the commercial relations of the countries. The measurement of the economic relations is measured by the terms of trade. In this context, the concept of terms of trade is a tool that allows measurement of foreign economic relations.

Although the concept of terms of trade as a measure of trade between countries was first introduced by Ricardo, this concept was expressed by many economists under different names in history. For example, in his study in 1965 of Money, Credit and Commerce, Marshall (1923:12) dealt with the concept of terms of foreign trade as the exchange rate, while Pigou (1965:78) called the real exchange rate, the Taussig (1966:63) terms of trade. Alfred Marshall was the first economist to use the term terms of trade (Groenewegen, 2007:78).

Foreign trade is the trade of goods, services, capital and intellectual property rights between independent countries. In this sense, foreign trade encompasses all of the activities offered to consumers or intermediaries by selling, distributing or creating benefits in other countries or regions, by selling goods, services provided, capital and intellectual property rights in a country. In the narrowest sense, it is the total of foreign trade, import and export activities (Ogbokor, 2017:2294).

Foreign trade is a type of trade that is sometimes complicated and easy to perform, depending on the payment method, delivery method and the legislation of the countries. The main factor that drives firms to sell goods to international markets or to buy goods from international markets is commercial gain. Foreign trade can be classified into 4 groups (Alege, 2005:245).

Normal Trade: It is a type of trade in foreign trade of a country, which is carried out with free foreign exchange within the framework of the foreign exchange regime and does not have a special privilege with the legislation (Alege, 2005:246).

Affiliate Trade: Trade in the form of a trade contract between the two countries where the exporting country requests another transaction or commitment from the importing country for the export price, other than foreign exchange. For example, natural gas agreement signed between Turkey and Russia in 1984. Turkey is importing natural gas from Russia. Russia in the natural gas price in the amount of 35% of purchasing goods exports from Turkey, Turkish contractors have undertaken the obligation to pay up to 35% (Alege, 2005:245).

Border Trade: Border trade is a special foreign trade regime that is executed on the basis of agreements between the two neighboring countries. It envisages the mutual purchase and sale of goods to meet the needs of people on both sides of the border. Low transportation costs and the failure of procedures in normal foreign trade to be applied in border trade are among the advantages of border trade. Pain Gürbulak border crossing on the border with Turkey and Iran are examples of cross-border trade (Ozturk, 2006: 109).

Free Zone Trade: Free zones are the regions where a country is located within the national sovereignty limits, where the financial, economic, foreign exchange and customs legislation valid in the country outside the customs limits are partially or completely excluded (Ministry of Commerce, 2019). Foreign trade companies can obtain many advantages through free zones. For example, domestic sales to free zones are exempt from VAT, as they are considered as exports. The domestic exporter company, which makes the sale, may request VAT paid for the costs incurred in relation to the export of the product, by returning it.

1.2.The Concept of Export

Export, which is the simplest and most widely used way to enter international markets, is to send part of the production of the enterprise abroad and to be sold there. The export of a product produced in the country to abroad and the entry of a currency with international validity in return, in return, creates exports (Deraniyagala, 2003:809). Export of goods is a special customs regime, which is characterized by the export of certain goods outside the country, that is, abroad, with the main goal of selling them on the foreign market (Davis et.a., 2002:1423). Of course, not only goods can be exported, but also such important “things” as services and capital.

Today, exporting goods is nothing more than exporting various material goods abroad or providing a partner, or rather a foreign partner, on a reimbursable basis production services, consumer-class services. Under the export of capital refers to the investment of funds in certain areas outside the country, for example, construction, as well as the operation of various facilities

and enterprises. In the export of capital, one goal is profit. Export can also act as a result of the international division of labor, in addition, it acts as one of the material prerequisites for import (International Trade Centre, 2011:66). It is known that the proceeds from export are the main source of material resources for the purchase of imports. In fact, all import, and export operations are interconnected.

Export of goods should be carried out in accordance with certain requirements, which are indicated in the legislation of a country (Samen, 2010:9). Firstly, the export of goods should be carried out only if all export customs duties have been paid and all necessary customs payments have been made. Secondly, the export of goods requires compliance with all financial and economic policies, as well as other requirements provided for by the Code and various legislative acts of the country on customs. Attention should also be paid to such an important point: those goods that are released in customs regime for export must be exported outside the country in the state in which they were at the time of adoption of the customs declaration (Davis et.a., 2002:1425). The exceptions are goods that have changed as a result of normal wear and tear or goods that have changed, but with proper transportation or storage.

Under export goods understand those goods that are exported from the customs territory of the country. Export of goods is the export abroad of the country, both foreign-type supplies, and some things that are exported by passengers at the time they cross the border. Exported goods may become the subject of customs offenses from the moment they were presented to the customs authority, and up to the moment they are exported from the customs territory (Ecer, Canitez, 2006:9). In accordance with the law, export of goods is also separate multidimensional commercial operations not related to the export of goods from the customs territory of the country.

Goods that fall under the export category require declaration and special customs clearance in the general manner and at the same time, taking into account the features and specifics of this customs regime. If a separate type of goods is exported, then customs officials may tax it with a different tax. Despite this, the export of all goods outside the country, respectively, with the export regime, is regulated by specially developed measures and means that are part of the system of state regulation of foreign economic activity (Ecer, Canitez, 2006:10). The main instruments of state regulation of the export of goods abroad are tax and tariff regulation, currency control and, of course, various non-tariff means.

1.2.1. Export Types

Sometimes the manufacturer exports the product without changing its product (like in the domestic market) and sometimes by making some changes according to its destination. This happens in two ways (Sydow et.al, 2010:15): Indirect export. Direct export.

Indirect exports mean that the enterprise exports its goods to foreign markets through domestic brokerage firms. Enterprises that do not have enough staff in this field, who do not have enough information about foreign markets, start to acquire superficial information about foreign markets, albeit at a low level, with indirect exports. However, in indirect exports, the producer enterprise cannot have information about the buyer's views and thoughts in the foreign market (Sydow et.al, 2010: 19).

Indirect export is much easier than direct export. Because it does not require any special expertise or extensive cash expenses. Exporters in the main country do the job. Management only issues orders. Among the current exporters (Thompson et.al., 2007: 203):

- Sales representatives for producers,
- Representatives of export delegations purchasing for overseas customers,
- Export traders who trade on their own account,
- There are international businesses (mining, construction, and oil companies) that use overseas goods.

Although the risk of losing control in marketing actions is high, it is an important advantage that the company can export even if it has no export knowledge and experience. Furthermore, thanks to indirect exports, the enterprise does not bear political and market risk. However, there are a large number of intermediary people and institutions in indirect exports and avoiding various risks leads to low earnings from sales in such exports. In other words, in indirect exports; While adequate control over marketing activities cannot be established and risks are not assumed, earnings rates also decrease (Smith, 2009: 457).

Direct export is a type of export in which the company, which has reached a certain size, is directed to get rid of the drawbacks of using a domestic intermediary exporter company, and which increases the investment amount and the risk to bear for the increase in profit to be obtained from exports (Türk, Süngü, 2004: 14). In order to hold on to direct exports, management should assign someone within the business the task of dealing with the export business. With the simplest

arrangement, someone, and usually sales managers, is given the responsibility to improve the export business. Local staff can initially manage accounts, loans, and transport to a foreign country. If the business volume increases, a separate export department should be established. In a later stage, the enterprise may choose to establish a sales branch in the host country. The sales branch imports on its behalf from the main business and bills according to the currency of the host country. These types of businesses can grow very large (Mutlu, 2008: 102). In direct export, products are offered directly to the target market without using any intermediary institution or person.

1.3.Foreign Trade Concept

Governments intervene in foreign trade in two ways, directly and indirectly. They intervene directly by using foreign trade policy tools such as foreign trade intervention, customs tariffs and quotas. Direct trade is of great importance in the competitiveness of countries (Stackhammer, 2006: 3). Apart from these, when governments start to affect foreign trade for any purpose, there is indirect intervention. The state's foreign trade intervention is mostly in the form of preventing or limiting these activities (Seyidoğlu, 2003: 116). For example, the effects of exports and imports of measures taken to prevent domestic inflation.

The decisions of countries regarding foreign trade policies may have an impact on economic development, because foreign trade policies are closely related to the volume, composition, employment and price level of national income, industrialization structure and income distribution, i.e. there is a mutual interaction between foreign trade policy and development. According to Karluk (2002: 157), it is a kind of foreign economic policy that includes all the government activities on import and export items. Foreign trade of developing countries depends on international trade (Dixit, 2006: 195)

In a narrow sense, foreign trade policy is regulated by the government's import and export items with interventions such as customs tariffs, quotas, import restrictions and export, while factor movements such as labor, technology and capital can be included in a broad sense. Foreign trade policy is called foreign trade policy (Arda, 2002: 94).

Today, countries that want to carry out their foreign trade policy in the direction of export incentives and imports are trying to achieve this goal through exchange rates. According to Berksoy (1982: 252), he describes the foreign trade policy in a narrow sense as a whole of the measures to directly regulate international trade items. It can be said that foreign trade policy is

one of the synonyms of general economic policy. General economic policy covers the economic and financial structures for the development and stable development of the national economy. Internal economic policy sometimes affects foreign trade policy, and sometimes foreign trade policy affects domestic policy, for example, ensuring stability in the economy, one of the main objectives of foreign trade policy. When it comes to economy stability, price stability and full employment come to mind. For this reason, governments try to implement both policies harmoniously. While developing countries form the basis of economic development economic policy; these countries intensely intervene in foreign trade.

1.4.Purpose of Foreign Trade

General economic policy has goals such as price stability and fair income growth in order to ensure full employment in an economy (Karluk, 2002: 161). There are some reasons for the government to intervene in foreign trade relations and direct foreign trade. It is inconvenient for the balance of payments to remain open for a long time (Bayraktar, 2004: 5). Imbalances in the balance of payments may have some negative consequences on the national economy.

If there is a deficit in the country balance sheet, this deficit must be closed as soon as possible. Countries with foreign deficits can come under pressure both financially and morally. These countries reduce imports on one hand and try to eliminate the foreign deficit by increasing their exports to the maximum level. Since the increase in consumption cannot be met by domestic production alone, more goods are purchased from abroad and the trade deficit increases (Moscow, 2000: 342).

Although the basic logic of foreign trade provides benefits arising from comparative advantage, the level of trade depends on the countries' ability to overcome foreign trade imbalances without putting a heavy burden on society (Walther, 2002: 28). In the opposite case, it is possible to encounter a possibility of lowering the welfare level of the society in order not to give deficit in foreign trade. One of the main objectives of economic policy in developing countries is to ensure economic development. In this respect, while establishing tariff and quantity restrictions on imports in order to protect young industries from foreign competition, they also increase imports of investment goods required for their development (Karluk, 2002: 162).

Because when it is considered for a long time, it does not seem realistic for a country to have all the production resources. To achieve economic stability in the economy, price stability and full employment must be handled together. Underemployed countries try to benefit from foreign trade policy in order to increase employment. The concept of underemployment includes people who do not have regular jobs and who work in temporary jobs (Ertek, 2008: 83).

With the introduction of customs tariffs and quotas, they try to reduce the underemployment of the country by shifting the total demand from foreign goods to domestic goods. However, since the export of the other country will decrease, it affects the balance of payments of that country negatively. The supply of some goods in the country may have decreased and prices may have increased, leading to inflation. In this case, the government tries to eliminate supply shortages by facilitating the import of contracted goods. But since factor and product cannot move from the market under conditions of full competition, price stability and full employment are made difficult to realize together. An exchange rate between the two should be ensured. The relationship between full employment and price stability can be explained by the Philips curve. At the starting point of the Philips curve, there is an opinion that as the demand expands in the labor market, employers will have to increase their wages in order to keep existing workers and find new ones (Paya, 2002: 282). In the Philips curve, there is an inverse relationship between monetary wages and the unemployment rate. In the 1970s, both unemployment and inflation appeared simultaneously - that is, the stagflation Philips curve lost its importance.

1.5.Foreign Trade Tools

Foreign trade policy is the foreign economy policy that covers the activities of the government on import and export items in the Current Account of the Balance of Payments with the most general definition (McKenzie, etall, 1997:73). The tools used by the government to intervene in foreign trade are encouraging exports and reducing imports in order to maintain overall economic stability (Bayraktutan, 2003:175). In this context, while promoting exports, tax reductions applied to export goods, tax refunds, supports to provide cheap inputs, i.e. subsidies, are used as a foreign trade policy tool, while customs tariffs, import quotas and non-tariff barriers are used to reduce imports (Binay,et.all, 1998:53). In this section, exports and imports, two important elements of foreign trade, will be explained and then export and import policy instruments will be discussed.

Export, which is one of the basic tools of economic relations between countries, is an important factor in ensuring the external balance especially for developing countries (Rodriguez, 2002:63). The reasons for the insufficient export in developing countries; The inadequacies arising from the real structure of the country's economy, the lack of competition in the international markets, the overvaluation of the domestic currency, the decrease in the import demand of the foreign country (Samen, 2010:84). Countries must implement various policies to overcome these problems.

Export is the sale of a free circulating good in the country. Sales transactions are generally regulated by countries' regulations. In order for the sale transaction to be of an export nature, the goods and services must have left the customs area, the sale must be in accordance with the export legislation, and the sales price must have been brought to the country in accordance with the foreign exchange legislation of the country (Paya, 1998:285).

While the instruments used in the regulation of foreign trade are implemented as restrictive measures for imports, incentive instruments are generally used for export (Samen, 2010:84). Although there are few applications in practice, export taxes and export quotas are also used to limit the export restrictions applied in the form of limiting the export of goods produced in the country. Export policy tools applied to protect and increase domestic employment are generally implemented in the form of export support (Boratav, 2006:85). The support provided takes place in various stages from the production of the goods until it reaches the foreign market where it will be sold. Supports are in the form of premium system, tax refund and exemption, input incentives and government marketing aids under the title of subsidy or export incentives. In addition, export quotas are listed as export taxes, voluntary export restrictions.

Input Incentives another type of incentive that increases the export is the input incentives. It is applied to the exporter in the form of cheap credit, cheap raw material, discount in transportation fees. The purpose of input incentives is to assist the exporter in areas where the financial power of the exporter is insufficient and to direct him to export. State Marketing Aid businesses in small developing countries are small in size and lack the power to market their products in the foreign market. For this reason, marketing services such as gathering information about foreign markets, opening exhibitions in foreign countries, attending fairs, training export personnel, and packaging are provided by the state with low or no charge (McKenzie, etall, 1997:73).

1.6.Foreign Trade Theories

The international trade theory is based on the work of "The Wealth of Nations" by Adam Smith (Smith, 1976:182), who is regarded as the founder of Classical School of Economics or Classical Liberalism. Let them make the "laissez faire, laissez passer", which means that the basic characteristics of classical liberalism, which also guides the international trade theory, the "homo-economicus", that is, "economic human" assumption that individuals will act according to their economic interests, and that the state does not interfere with the individual behavior of people. - let them pass" and the invisible hand that regulates the economic life, that is, the "invisible hand", in other words, the assumption that there is a price mechanism.

Based on the basic assumptions outlined above, Smith demonstrated the benefits of free foreign trade and international specialization in his book The Wealth of Nations. According to the "Theory of Absolute Advantages", under the assumption of homogeneous labor cost, countries should specialize in the production of the good and produce it at high cost, whichever product they produce at an absolute lower cost. Smith's Theory of Absolute Advantages was insufficient to explain how free foreign trade would take place if the same country had produced multiple goods at a lower cost. For this reason, David Ricardo's (Ricardo, 1821:52) Theory of Comparative Advantages is the true basis of international trade theory, both in terms of closing this gap and its contribution to the development of later theories. Accordingly, the theory stated that if a country is more efficient in the production of more than one product from another country, it should specialize in what goods it produces at a relatively lower cost. Linking the basis of international trade to comparative cost advantages, Ricardo argued that specialization in this way would positively affect foreign trade and growth.

After the Classical Theory, Neo-Classical economists provided expansions to overcome some of their important flaws, based on the assumptions of Ricardo's Comparative Advantages Theory. In this context, Classical economist, John Stuart Mill (Mill, 1909:74), who deals with concepts such as cost and price only from the conditions of supply and criticizes Ricardo's theory, which has the nature of a supply theory, included demand conditions in foreign trade. According to Mill's Law of Reciprocal Demand, if the degree of severity of one country's demand for the property of another is known, it is possible to determine the terms of foreign trade. British economist Alfred

Marshall (Marshall, 2003:85) clarified the effects of supply and demand on the determination of foreign trade terms, which Mill was unable to explain, with the help of offer curves.

1.6.1. Mercantilism

The mercantilist economic thought that emerged and developed in Britain was almost completely abandoned since the early 19th century, when Smith gained an edge over international competition, especially after the Industrial Revolution, after Smith's fierce critique in the *Wealth of Nations*. After this date, Britain started to export not only industrial goods to the world but also the doctrine of whether they should leave or not. Before proceeding with Keynes's assessment of mercantilism, it is necessary to state the preference of classical economic thought to reduce the 'economic' or economic analysis, to an empiristic 'voluntary' market relationship, and to analyze the 'economic' as if it did not have a complex structure of politics, state and interstate. . Classical economics rejects "competing countries" and "competitiveness between countries". However, if countries compete, free competition becomes meaningless. (Fairbrother, 2010: 336).

Mercantilism, which has historically preceded classical economics, considers economics and politics, and the state and classes as intertwined, albeit with a theoretically weak content. It is in relation to the economic and the political, it strongly influences each other at home and abroad, and the country's trade policy is assessed extensively in the country's economic-political conditions. (Graz, 2004: 611). In the classical economy and today's dominant understanding, there is an international trade theory based on consumer preferences. As the empirical phenomena of the market, it is desired to make analysis as if there were no other things other than prices and quantities that would affect the 'economic'.

The exact causes of Keynes' sympathy for mercantilism must be briefly addressed, and the price-specie flow mechanism developed by David Hume, behind the monetary theory of the classical economics he criticizes. While classical economy advocates free trade, it also finds it unnecessary to attach any importance to the balance of foreign trade. Because, similar to the adaptation of goods to equilibrium prices and quantities in the domestic market, it acknowledges that the supply and demand mechanism will ensure the adjustment of equilibrium prices and quantities among countries. One of the reasons for this is Hume's price-coin flow mechanism. According to this view, which affects classical economics and its aftermath, the trade surplus or deficit between countries is compared to the theory of compound vessels. Valuable mines flow into the country that gives surplus and causes prices to rise. This, in turn, reduces exports, increases imports, and the adaptation that is achieved automatically provides the foreign trade balance. The

opposite is also true. (Hume, 1970:60). This argument has been accepted for a long time, starting with Smith, and was used to demonstrate that, as with mercantilists, policymaking to create a favored foreign trade balance is unnecessary because it would undermine itself. Marshall, who was regarded as the "summit of science" in his period, did not question this issue, and continued to accept the role of money in international trade as a "merely passive intermitter" in the book of international trade in J. W. Angell International Price Theory published in 1926. (Milberg, 2002: 247). Therefore, it is possible to evaluate Hume's mechanism as an international scale of the trade economy logic.

1.6.2. Classical Foreign Trade Theory

The main assumptions of these theories, also called supply-side foreign trade theories, to simplify analysis are as follows (Ruffin, 2002:727):

- There are two countries and two various goods,
- Money is not used in international trade,
- Full competition conditions apply in all markets. There is no government intervention.
- The only production factor used in production is labor,
- Labor is mobile within the country and immobile between countries.
- The economy is in full employment,
- In international trade, transportation expenses are zero.

In addition, another important assumption that complements the theory is that both countries need to consume these two goods. The main ones of classical foreign trade theories are: Absolute Advantages Theory, Comparative Advantages Theory and Heckscher-Ohlin Factor Equipment Theory.

1.6.2.1. Absolute Advantage Theory

Adam Smith explains the benefits of free trade and international specialization with the Absolute Advantage Theory. Accordingly, whatever goods a country produces at a lower cost than the other country, it must specialize in the production of those goods and import them from the foreign country by exporting them, which they can produce costly (Zhang, 2008:147).

It should not be forgotten that the cost concept stated by Adam Smith includes only the labor factor. In addition, the mentioned labor factor is homogeneous. In other words, it is accepted that each worker has the same capacity and efficiency in terms of production power (Salvatore, 2011:786).

According to the Theory of Absolute Advantage of goods to Turkey in Germany B should specialize in property. Thus, according to the theory that Germany exported goods to Turkey and from Turkey will import goods from B. In this book, Adam Smith demonstrated the importance he placed on the division of labor, arguing that a wise headmaster could not do anything at home that he could buy cheaper outside (Zhang, 2008:149).

According to the Absolute Advantages Theory, when a country is superior to the other country in terms of both goods, there is no need for foreign trade between these countries. At the point where the theory is blocked in this way about the continuity of foreign trade, David Ricardo's Comparative Advantages Theory comes into play (Seyidoğlu, 2013:98).

1.6.2.2.Comparative advantage theory

According to this theory developed by David Ricardo, if a country produces both goods at lower cost (it has absolute advantage in both goods), it is possible for both countries to make mutual gains thanks to the foreign trade and the market mechanism (Aldrich, 2004:379). A country has a comparative advantage in the goods it produces more effectively than other countries.

Absolute advantages are like a special case of comparative advantages. There are also comparative advantage when absolute advantages take place, but the opposite is not true; that is, in all cases where comparative advantage is achieved, absolute advantage may not be found (Faccarello,2015:123). Comparative advantage theory has aspects that can be discussed in terms of less developed countries. The static approach of the theory may mean that these countries remain as agricultural product exporters in the future as they do today. These developing countries can escape from the position of agricultural products exporter country by developing the industrialization processes with the future dynamic analysis and temporary protection practices (Aldrich, 2004:380).

Although the only factor that creates the cost in theory is the labor factor, the factors such as capital, natural resources and enterprise in real life are also effective in cost formation. Contrary to the fact that the labor factor is considered homogeneous in theory, in real life, factors such as talent, education, knowledge, skill and experience prevent the homogeneity of the labor factor (Maneschi,1998:85). According to Ricardo, although the workforce is fully mobile within the country, completely immobile between countries, in reality, the workforce is not fully mobile within the country, nor is it immobile between countries (Seyidoğlu, 2013:74). In addition, the reasons for the cost differences between countries are not explained in the Comparative

Advantages Theory. The theory that clarifies this point of the theory is the Factor Equipment Theory (Aldrich, 2004:382).

1.6.3. Neoclassical Foreign Trade Theory

Neoclassical foreign trade theory, on the other hand, maintains the main lines of the comparative advantage theory, but claimed that productivity differences are sufficient to activate foreign trade with the opportunity cost approach, which includes other factors along with labor, instead of labor cost, Heckscher-Ohlin theory has linked productivity difference to factor equipment. The main claim of this approach is that trade causes a tendency towards equalization of factor incomes between countries and the disappearance of domestic monopolies. The result of this is the improvement of the income distribution (Baumol, 1977:88).

In brief, in the Neoclassical Foreign Trade Theory, while the concept of opportunity cost is transformed into an analysis tool with the conversion curves, the indifference and comparative advantage theories that are neglected with the help of the offer curves developed by Marshall based on the Mill are also considered in the analysis. . Meanwhile, it seems possible to say that the determinations made by Mill in the context of the effect of technological developments on foreign trade are not developed by neoclassics (Baumol, 1977:90).

1.6.3.1.Factor Hardware Theory

Comparative Advantages Theory revealed that foreign trade between countries is done due to differences in labor productivity. Comparative advantages that arise between countries in a more technical manner arise from the assumption that the production functions of goods are different (Aslan, Terzi, 2006:2). Accordingly, mutual advantages are based on relative price differences between countries and this difference arises from labor productivity. However, it is not possible to explain the real reason of international trade with the model of Ricardo and the analyzes put forward to develop that model. The main reason for this is that economists such as Smith, Ricardo and Mill did not answer the question of what are the factors that make a difference in labor productivity (Kondak, Erdoğan, 2002:78). It will not be possible to say that the Comparative Advantages Theory offers us a sufficient solution without convincingly clarifying the causes of domestic price differences between countries.

Factor Equipment Theory mainly expresses the views of the liberal stance in the 1980s as an international trade model. This theory argues that the comparative advantage of nations is

determined by their relative wealth and the most effective combinations of some production inputs such as capital, labor, land, enterprise and technology. According to this, a country will export the goods that are in abundant use (Yıldız, 2014:249). Therefore, it is stated that Factor Equipment Theory is more variable, more dynamic and more comprehensive than classical Comparative Advantages Theory.

The basis of the Factor Equipment Theory is based on the export of goods with abundant factors used in production and the import of products produced using a scarce factor. The main idea advocated in theory is actually based on a fairly simple and rational idea. Whichever production factor a country has richly, it produces cheaper goods that require the production to be used intensively, so it specializes in these areas and exports them (Aslan, 2005:78). Because the price of the factor, which is relatively abundant in a country, will be cheaper and the factor with the lower price in production will be preferred. Therefore, factor prices in the Factor Equipment Model and the ratio of these prices among countries are of primary importance for foreign trade. It should not be forgotten that the Factor Equipment Theory offers a different interpretation to the Comparative Advantages Approach and is considered an integral part of it. The assumptions on which the Factor Equipment Theory is based are: (Atılğan, 2011:11)

- Only two goods are produced and there are two production factors (labor, capital). Transportation costs are zero and free foreign trade principle is valid. Full competition conditions apply in the goods and factor markets.
- Countries differ from each other in terms of factor equipment.
- Factor density of the goods is different. Some goods require more capital or more labor during their production. The first type is called capital-intensive and the second is called labor-intensive goods.
- Factor densities are not reversed.
- The production function of a good is the same in all countries. This feature means that the technology is the same in all countries.
- Fixed yield conditions according to the scale are valid in production.
- Demand conditions of countries are similar, but not identical.
- Factor mobility within countries is complete and international factor mobility is zero.

Factor equipment, which is a critical variable in Heckscher-Ohlin Theorem, can be determined in two different ways: physical and economical. In the physical approach, factor abundance or factor equipment is determined by the physical quantities of production factors or factor stock. In order to determine the factor equipment, the capital stock / labor stock rates of the countries are compared.

1.6.4. New Foreign Trade Theories

Smith's approach based on the reason for the existence of foreign trade based on economies of scale or increasing returns to scale with today's modern concepts (Leontief, 1954:5), such as Paul Krugman and Elhanan Helpman, one of the famous representatives of the theory recently called the New Foreign Trade Theory. It also significantly affected economists. However, the fact that the deficiencies of Factor Equipment Theory in explaining the latest trends seen in international trade flows became more evident, models that are known as "new trade theories" and which place great importance on the existence of economies of imperfect competition, product differentiation, and scale economies have been developed (Leontief, 1954:6).

The "new foreign trade theory", shaped by the work of Krugman and Grossman and Helpman, emphasizes that rather than throwing the traditional trade theory aside, it is not compulsory to base trade only on relative factor equipment or comparative superiorities as is commonly done and decreasing costs focus on examining the speed of product development of differentiated products and market structure and their reflections on foreign trade (Krugman, 1979:469). With these studies, the traditional full competition assumption is abandoned.

The new theory argues that much of intra-industry and inter-country trade is related to differentiated goods and is carried out by monopolistic producers producing these goods. In the context of microeconomics, while monopoly-oligopoly criteria compare these market types with full competition and emphasize their negativities, the new foreign trade theory perceives monopolistic competition as a compelling reason to increase trade. In the absence of trade, while monopoly position has the potential to neglect quality and increase the price arbitrarily, thanks to trade, competition is intensified even though it is limited by government interventions, product development rate or technological development is accelerating (Seyidoğlu, 2003:81). One of the main features of the new theory emerges in the value attributed to increased yields by scale and their impact on trade earnings.

1.6.4.1. Qualified Workforce Theory

Donald Keesing argued that trade on industrial goods, which constitutes an important part of foreign trade between industry countries, can be explained by the Qualified Workforce Theory. According to this approach, countries equipped with professional or high-quality labor force specialize in high-quality labor-intensive goods and export these goods, while countries where there are plenty of unskilled labor will specialize in the production of goods containing unqualified labor and export such goods.

The similarity between Factor Equipment Theory and Qualified Workforce Theory is remarkable. Training of the workforce and the creation of physical capital requires savings, and therefore it is observed that qualified labor-intensive goods and capital-intensive goods are generally identical. Therefore, some economists find it appropriate to combine these two types of goods under "man-made resources". This modified version of the Heckscher-Ohlin Theory is called the Neo-Factor Equipment Theory (Seyidoğlu, 2003:83).

Keesing in 1965, 1966 and 1968, he tried to find the power of human capital to affect international trade with his analytical and empirical studies. According to Keesing, there are two reasons why qualified workforce should be treated as a separate production factor. The first is that skilled labor can affect the trade and the location of the industry. The second reason is that it plays an important role in explaining economic growth. Therefore, since economic growth and foreign trade are intertwined, the qualified workforce affecting economic growth may also affect trade (Keesing, 1968:5).

While making the keesing analysis, it takes some of the assumptions of the Heckscher-Ohlin Model. These assumptions are no economies of scale, full competition is valid, preferences are similar in all countries and transportation costs are zero. However, unlike the Factor Equipment Theory, Keesing assumes that there are differences in the mobility of factors such as natural resources, capital and skilled labor and unqualified labor. In this case, while factor mobility between countries is zero in the Factor Equipment Theory, Keesing's (1968) model assumes that capital and skilled and unqualified workforce are active, other than natural resources. Although natural resources are not mobile, capital acts at a low cost internationally and a qualified and unqualified workforce at a high cost. In this case, economic activities are divided into two as primary activities established near natural resources requiring direct inputs and secondary

activities located in a place away from natural resources. Since capital mobility between countries is cheaper than labor, relative scarcity of qualified and unqualified workforce plays a key role in determining the place of establishment in terms of secondary activities (Keesing, 1968:5).

Keesing (1968) divided the workforce in each industry into eight occupational groups to examine the effects of professional qualifications on international trade. Then, it calculated the number of skilled labor force required for the trade of 1962 in ten industrial countries in the framework of eight occupational groups and eventually used in exports and imports. Based on the qualified workforce requirements used, it used net qualified workforce coefficients.

The conclusions reached in Keesing's work reveal interesting features. The first feature; The top five industrial countries, including the USA, Germany, the UK, Japan and France, are net exporters in all eight professional groups. The rest of the countries such as Italy, Belgium, Switzerland, Sweden and the Netherlands, on the other hand, are net exporters except for some professional groups. The second feature; The fact that the top three countries such as the USA, Germany and the UK have an important share of approximately 95.4% of the exports made in the industries that require the employment of scientists and engineers defined by Keesing as the first professional group. The share of the USA for the same occupational group was calculated as 48.5% (Keesing, 1968:16). As a result of this study, Keesing has found that the export of many industrial countries is qualified labor intensive and therefore stated that qualified labor force should enter the models as a separate production factor in explaining international trade.

In the context of Qualified Workforce Theory, Factors such as investing in human capital to increase the quality of the workforce, equipping the workforce with capital, manpower and education planning may lead countries to enrich their qualified workforce and reflect this advantageous situation to international trade.

1.6.4.2. Technology Gap Theory

Factor Equipment Theory displays a static structure due to its constant acceptance of technological change. However, in 1961, Posner advanced the Technology Gap Theory by addressing dynamic factors such as technological change as the determinant of trade. (Bo, Geoffrey, 1994:83)

Posner continues the process of technological change with the time lag between the introduction of new technology into existing goods or new goods in one country and the adoption of technology in another country (imitation delay) and the development of a new good and the demand for this property in other countries (demand delay). takes into account. According to Posner, the technology deficit theory is based on the fact that the continuing invention and innovation process basically increases trade between countries with similar factor equipment and preferences. In this context, whether technological innovation will create trade between the two similar countries depends on the net effect of demand and imitation delays. In the event that the demand delay is longer than the counterfeit delay, the producers in the imitating country will adopt the new technology before the consumers in the domestic market begin to demand new goods, and therefore technological innovation will not lead to trade. This can happen when innovation is fairly simple and manufacturers in both countries regularly develop new products. Considering the similarity of the preferences, the probability of this situation arises in places where consumers are slow to react to changes in goods and changes in prices due to the fact that countries produce and invent similar types of goods or the flow of information is low. However, a situation such as the imitation delay being longer than the demand delay is more common. Because the situation in which foreign producers decide to adopt the new technology and learn the new process after the decision, change the factory and equipment and patent protection causes the imitation delay to be longer than the demand delay. As a result of this development, trade emerges through technological innovation (Bo, Geoffrey, 1994:83).

According to the Technology Gap Theory, an important part of the trade between industrialized countries depends on the development of new products and production processes. Innovative firms in industrialized countries obtain temporary monopoly power in the world markets due to the mentioned product and production processes. This temporary monopoly situation lasts until the copyright and patent periods expire. Therefore, industrialized countries in the context of the Gap Theory are initially the exporter of these products (Yoffie, 1993:4). Later, due to the disappearance of monopoly forces and imitation of technology, these products are started to be produced by developing countries that have advantages in terms of labor and natural resources. Thus, as the competitive advantage passes to developing countries, these countries start to export new products and production processes and industrialized countries also import.

Although the Technology Gap Theory gives a dynamic quality to foreign trade theory by including technological change as the determinant of trade, it has not been successful enough in explaining the reasons and magnitude of the technology deficit (Yoffie, 1993:5). Later, Vernon tried to complete the shortcomings of the Technology Gap Theory by developing the Product Periods Theory.

1.6.4.3.Product Periods Theory

In 1966, Vernon proposed the Product Periods Theory, which was seen as an extension and generalized form of the Technology Deficit Theory. This theory presents the dynamic theory of comparative advantages over knowledge intensive products. (Salvatore, 1998:160)

According to the Product Periods Theory, Vernon reveals that during the development of new products, it has gone through many stages and comparative advantage has changed throughout the product periods, and that the invention of new products is concentrated in countries such as the USA. (Salvatore, 1998:165)

The Technology Gap Theory emphasizes the delay in the imitation process, while the Product Periods Theory emphasizes the standardization process. According to these theories, industrial countries are expected to export products representing new and more advanced technologies and to import products that represent old or less advanced technologies (Salvatore, 1998:168).

Products that have undergone the process of changing dynamic comparative advantages throughout the product periods include textiles, radio, television, petrochemical products, leather products, calculators, automobiles, office machines, semi-pass microchips and especially electronic products. While the United States had a large export volume on electronic products such as television buyers, then Europe and especially Japan led to a significant decrease in the US market share. Then Korea and other Asian countries started threatening Japan.

1.6.4.4.Scale Economics Theory

The Factor Equipment Theory assumes that both goods are produced under constant return conditions on a scale in both countries. Therefore, the theory in question cannot explain the emergence of trade based on increased returns by scale when the two countries are similar in each aspect. Looking at today's applications, it is remarkable that many industries have economies of scale, as production is more efficient, and the scale is larger.

According to the Scale Economics Theory, countries with a large domestic market benefit from economies of scale and achieve reduced costs in production. The countries in question export goods to which economies of scale are effective and import other goods. Conversely, countries with a narrow domestic market can benefit from economies of scale by producing to export markets. Thus, countries specialize in a limited range of products that enable them to produce goods more effectively through economies of scale and trade with each other to consume all types of goods.

Increasing returns by scale can be linked to "economies" reflected as cost reductions. These economies are called internal and external economies of scale (Chacholiades, 1990:103). Increasing returns by scale mean that increases in production are higher than the rate of increase in inputs, while the term economies of scale implies that if the production scale in a firm or industry is expanded, the rate of increase in costs is lower than the rate of increase in production, and therefore the average production costs decrease (Seyidoğlu, 1992:652). In this context, the term economies of scale or increasing returns by scale is based on the same thing to be handled with two different approaches, such as production and cost, and as the production scale grows, decreasing costs or increasing returns according to the scale occurs.

Scale economies are divided into two groups as internal and external economies of scale. Intrinsic scale economies mean that average costs decrease only if one firm's own production scale expands, independent of other firms' production scales. One of the industries with internal economies of scale is the automobile industry. When this industry is taken into consideration, it is seen that the average costs of large-scale firms are lower than those of small firms. Increasing efficiency in management, the use of mass production technology and specialization of the workforce play a role in the emergence of internal economies of scale. On the other hand, external scale economies are defined as the decrease in the average costs of each firm, with the increase in the production scale in the industry to which the firm is connected. Industries with external economies of scale include the computer industry and semiconductor chip manufacturing. The development of the industry; It is effective in reducing average costs on the basis of individual firms in the industry by creating a suitable environment for continuous and effective resources in order to train qualified workforce and provide inputs (Seyidoğlu, 1992:87).

Chapter Two

RELATIONSHIP BETWEEN FOREIGN TRADE AND ECONOMIC GROWTH

2.1.The Concept of Economic Growth

Economic growth is basically defined as the periodic increase in the production volume of an economy. An important indicator of the increase in production volume in a country is the changes in Gross Domestic Product (GDP) (Ravallion, 2002:381). Economic growth is an important issue for developing countries as well as developed countries. However, while the developed countries attach importance to the economic growth, in other words, the change of the real GDP over the years, developing countries give importance to the concept of economic development rather than the concept of economic growth. In addition to economic growth, economic development includes not only economic growth but also economic and social areas such as reducing income imbalances in society, reducing unemployment, and modernizing economic and social institutions (Seyidoğlu, 2006:829).

Economic Growth Theories are divided into two main groups as external economic growth theories and internal economic growth theories. In the neoclassical model, it is assumed that technological development is measured only by the share of production that cannot be explained by production factors. In this context, technological development is accepted as an external factor. The reason for this situation is the assumption that technological development is not affected by economic factors, although it has a significant impact on GDP. Recent studies point out that technological development is the result of a reaction to economic signals such as price and profit in the economy. In other words, technological development is an internal process for the economic system (Seyidoğlu, 2006:844-845). The aim of the study is to reveal the points where the external economic growth models and the basic economic models of internal economic growth diverge from each other.

2.2.Sources of Economic Growth

The strategies that countries have implemented in order to maintain their economic lives consistently have increased their importance recently and studies on this issue have gained speed. While economic growth, which is briefly defined as the increase in production, is among the

primary goals of the success plans of the governments, it is necessary to carefully determine and analyze its content and factors. Looking at the main factors that determine the economic growth of a country in the long term, it is seen that it is categorized under four headings. These consist of increases in the labor force, capital and natural resources of the country and technological developments.

2.2.1. Labor Force

Economic growth is determined by the amount of labor and the quality of the labor force. Labor supply in a country depends on the size of the working age population. While the population has transformative effects on the economy both in terms of quantity and quality, transformations in the economy with a feedback affect the population structure (Mujahi, 2013:45). The increase in the workforce following the population growth has been seen as a positive factor in stimulating economic growth for many years. The large population growth, on the one hand, leads to the expansion of the domestic market, on the other hand, it enables an increase in the amount of skilled labor. Nevertheless, the positive and negative effects of the high population increase in labor supply, which will be created in the economic development process of developing countries, are always questioned. Whether the workers added to the labor supply can be used efficiently is closely related to the success or failure of the current economic system (Seguino, 2007:74).

When the population issue is analyzed in terms of labor productivity, how the situation that arises affects economic growth. As long as the increase in the labor force, which occurs due to the population increase, increases the marginal productivity of labor faster than the average productivity; that is, decreasing yields will positively affect economic growth until the law begins to operate (Mujahi, 2013:45). The situation observed in developing countries in general is that there is a high population increase in these countries compared to developed countries and parallel to this, labor productivity is low. Therefore, the population may cause different labor productivity in terms of less developed countries / developed countries. However, in addition to all these, the population is considered as an active and passive two-angle factor of the economy (Mujahi, 2013:48). On the one hand, it is an element that manages the economy and creates the product, while at the same time it is an element guided by the economy and consumes the product.

2.2.2. Capital

Capital has an important place in the increase of production. For this reason, it is a carefully emphasized issue among the determinants of economic growth. Tools, machinery, transportation systems and tools, industrial equipment that make a great contribution to the increase in production are a kind of physical capital. Capital accumulation occurs when some of the current income is saved and converted into investment in order to increase future production and income. The production of goods and services requires the consolidation of capital and labor. If there is insufficient level of physical capital in a country for a large number of workforce, the workforce will not be too productive. Therefore, capital appears as a critical resource in countries that pay attention to growth. Adding all the investments in capital accumulation to soil, physical equipment, and human resources, Todaro (1989:134) drew attention to the importance of capital in resources.

The biggest reason for some economies to lag in the world is the lack of capital accumulation. Because backward countries need a lot of capital accumulation to reach the level of developed countries. However, the phenomenon of poverty occurring in these countries causes low income, low income leads to low savings and this leads to low investment. In this emerging situation, it causes serious problems in capital accumulation, restarts the economic growth process, and causes its vicious circle. In order to complete the development and process, capital accumulation contributes to the creation of new resources (such as earning unused land) or increasing the efficiency of existing resources. As a result, it should be said that; capital accumulation is associated with balancing between present and future consumption (Todaro, 1989:135).

2.2.3. Natural resources

Natural resources refer to the whole of assets that are in nature and can be used or ready to meet human needs. The natural resources reserve of each country is different. This is a result of the natural resources not being distributed homogeneously around the world. For this reason, the natural resource wealth of countries affects different levels of development and development of economies. Economic growth means an increase in production and it is not necessary to have a wealth of natural resources for an increase in production in a country (Seguino, 2007:77). Because, with exceptions, natural resources can be traded, and countries can get the natural resources they do not have from other countries.

The abundance of natural resources in an economy can positively affect economic growth, but natural resources cannot achieve growth alone. A significant part of the inputs used in the production phase is obtained from natural resources. In this case, sustainability of production and economic growth comes to the agenda due to natural resources with renewable and non-renewable features. The natural resource reserve, which provides an advantage in terms of economic growth and development, should be used in accordance with the sustainability criteria.

2.2.4. Technological Development

According to most economists, the most important source of economic growth is technological development. Technology is one of the main dynamics of growth. Technology can be defined as the whole information, organization and techniques required to produce a good or service. Berber (2012:60) divided technology development into three as neutral, labor-intensive and capital-intensive technological development.⁴ Specifying technology as the main source has led to the proliferation of studies on this subject and has helped to carefully examine the views of scientists interested in this subject in history. Looking at these names; Schumpeter was the starting point for efforts to internalize technological development in economic theory. With the explanations of Schumpeter, technology has taken its place as an effective factor in the formation of economic theories.

Looking at developed countries, the high level of technological development contributed to the increase in productivity and helped the economic growth process to increase rapidly. Countries with technology have succeeded in being at the forefront with appropriate input possibilities, the ability to process them and their policies to create their policies based on this efficiency. Technological development has also become an important factor in increasing and expanding scientific studies in the country and in providing international operability and validity. With this, countries with a better educated population have increased their workforce potential by using their technologies consciously, contributing to the formation of stable growth figures.

2.3.Economic Growth Theories

Countries have attempted to increase their strategies and models in the historical process in order to expand and improve their growth rates and their welfare levels that will spread throughout the country. For this purpose, they worked on growth models that will provide efficiency and effectiveness, and with the help of these strategies, they aimed to increase their growth figures. In

this section, growth models will be briefly mentioned in general titles and theoretical objectives will be emphasized. Growth models are divided into two as external and internal growth.

2.3.1. Exogenous Growth Models

Economic growth in classical economic thought has been evaluated based on capital accumulation, mechanization and division of labor. In this context, economic growth has been associated with technological development that provides increased production. The source of growth is savings, accordingly investments and capital accumulation. Savings increase as income increases in an economy and savings are directed to investments for profit. Under perfect competition market conditions, capital can be utilized more efficiently, thus reducing costs and increasing profitability. As a natural result of the increase in profitability, there will be an increase in capital accumulation and investments, and as a result, economic growth will occur. After the World Economic Crisis of 1929, Keynes led the use of monetary and fiscal policies to overcome the economic recession and provide economic growth. Later, the theoretical studies that started with Keynes continued with the contributions of Harrod and Domar (Bassanini et.a., 2001:5).

The Harrod-Domar model is based on two different studies by Roy Harrod (1939:14) and Evsey Domar (1946:137). The model is called the Harrod-Domar Model because the similarities of the two different studies are much more than the differences. The model was created within the framework of a single-factor two-factor market economy. In the economy, the only goods that can be used in both consumption and investment are produced. Since there is no money in the economy, there are no monetary prices. In the model, the state is not involved in economic activities. All of the economic decisions are taken by special decision units. There is a closed economy. In other words, there is no commercial and financial gap in the economy (Domar, 1946:139).

While net investment in the economy creates demand for output, on the other hand, it increases the capacity of the economy to produce output. For example, the establishment of a new factory increases the demand for elements such as brick, iron, machinery. On the other hand, with the completion of the factory, there is an increase in the production capacity of the economy. Assuming that production techniques have not changed, a certain amount of capital is required to achieve a certain production. If K represents the capital stock and Y production level, it is possible to show the average capital output rate as K / Y . In this case, for example, if an investment of 3

units is required to produce output of 1 unit, a capital stock of 300 units is needed for a production of 100 units. The marginal capital output rate ($\Delta K / \Delta Y$) shows how much additional capital is needed to make a certain addition to production. For example, if the net investment is 60 units and the increase in this investment is 20 units, the marginal capital output rate is three. The inverse of the average capital output rate (Y / K) indicates the average efficiency of capital. If 3 units of capital is required for 1 unit of production, the average efficiency of the capital is $1/3$. $\Delta Y / \Delta K$ shows the ratio of the increase in production capacity to the increase in capital stock and is expressed. He defined Domar as a potential social average investment efficiency. (Domar, 1946:140). In order to increase economic growth in the HarrodDomar model, either the savings rate or the efficiency of capital should be increased (Domar, 1946:142).

Since the declining law of efficiency in the Neoclassical Growth Theory operates, when the model becomes stationary, the main factor that determines economic growth is population growth rate and technological developments. A relatively more saving country will be more capital-intensive than in a less-saving country. However, the increase in the saving rate in the steady state does not affect the economic growth rate. The determination of economic growth by external technological developments in the long term means that the income level of countries will converge in the long term. The view that the income gap between developed and developing countries will disappear in the long term is called the “convergence hypothesis” (Kar, 2003:148).

In a situation where the supply of labor remains constant, with the increase in the supply of capital, each worker becomes working with more capital on average. This situation is defined as the deepening of capital. As technology is fixed, as investments in factories and equipment increase, the return on capital is constantly increasing to a lesser extent as a result of the law of diminishing returns. Also, since there is a fixed return assumption according to the scale in this model, total production increases at the same rate as a result of increasing the production factors at a certain rate. Under the assumption that technology does not change in the model, the increase in the amount of capital per capita will end and the economy will stabilize in the long run. This stage is defined in theory as a steady state. In theory, thanks to technological developments, productivity in production and production per worker are increasing. The result is a higher output with the same production inputs. In theory, after the contribution of production factors in

production is calculated, the remaining share shows the contribution of technology to production. This share is called Solow residue or Solow residue (Seyidoğlu, 2006:840-844).

2.3.2. Endogenous Growth Models

The basis of the internal growth model is largely based on the work of Romer (1986) and Lucas (1988). Studies in this field differ significantly from the Neoclassical Growth Theory in terms of the fact that economic growth is realized internally through the interaction of some factors in the internal functioning of the economic system. According to Lucas, the Solow model explains the growth of the United States (USA) economy rather than the economic growth model and does not reflect the economic growth of developing countries (Lucas, 1998: 7).

The internal growth model assumes that economic growth is determined internally by the economic units operating in the market. The factors defined as the engine of growth in the internal growth model are mainly divided into three basic groups (Ehrlich, 1990: 4).

- addressing population growth and human capital accumulation such as Gary Becker, Kevin Murphy, Robert Tamura and Mark Rosenzweig,
- Linking technological development, such as Paul Romer, to entrepreneurial decisions driven by market forces,
- He reviews the role of the public in the growth process such as Robert Barro, Robert King and Sergio Rebelo, Dale Jorgenson, Kun-Young Yun and consider this role as the independent variable of growth.

The internal growth model in the first group, which accepts population growth and human capital accumulation as the decision variable, is based on the work of Becker, Murphy and Tamura in 1990. The most important assumption of the model is that with the internally determined fertility rate, as the human capital rate increases, its return increases. The fertility rate is an economic decision that varies depending on the general level of prices on the one hand and income level on the other. The production of new knowledge is accepted as a linear function of human capital accumulation provided by previous generations. In terms of human capital, the return on investment in people in rich countries is higher than having a child. The opposite is true in relatively poor countries in terms of human capital. Lucas argues that human capital plays an important role in economic growth (Lucas, 1988: 25). In addition, Lucas argues that the increase

in the human capital of the individual contributes to the productivity of other production factors as well as increasing his own productivity (Lucas, 1988: 25).

The work of Romer (1986) played a leading role as the beginning of the internal growth models that linked the technological development to the entrepreneurial decisions driven by the market. According to Romer, economic growth stems from technological developments created by investors who want to maximize their profits (Romer, 1990: 71). Technological innovation is the main source of growth (Becsi and Wang, 1997: 51). Technological advances also increase marginal productivity (Romer, 1986: 1002). Technological innovations enable the company to increase its market share and increase its profitability while also accelerating economic growth from a macro perspective (Korkmaz, 2010: 3321). In the internal growth theory, the definition of capital is not limited to physical capital only. The model also shows human capital and knowledge as the source of economic growth (Becsi and Wang, 1997: 51). According to Romer, (research and development) technological development in the R&D sector is the driving force of growth. Romer's work is based, in a sense, on Arrow (1962:155), which internalizes technological development in the process of economic growth.

When the information that emerges as a by-product during production and investment is considered as a public good, some investments will benefit those who develop the information on the one hand, while the new information will also increase the total information stock in the country. It will benefit from the increased stock of information in other companies and increase their efficiency. This will positively affect the overall economy. However, although the increase in the information stock positively affects the overall economy, firms do not want to share their knowledge with other firms for various reasons, such as maintaining their competitive advantage (Romer, 1986: 1002). Grossman and Helpman argued that changes in technology had a positive impact on trade policy and economic growth. According to the authors, products developed through technological development lead to a comparative advantage in foreign trade and create an increase in world trade (Grossman and Helpman, 1989: 1262).

Contrary to Neoclassical Growth Theory, Intrinsic Growth Theory states that technological development occurs within the economic system and is therefore affected by economic decisions. Also, Internal Growth Theory does not accept the convergence thesis of Neoclassical Growth Theory. He emphasized that the income gap between developed countries may increase over time

if developing countries fail to display sufficient economic performance. In addition, it argues that there may be state interventions in the economy in order to reach the optimal growth rate (Romer, 1986: 1002).

2.3.3. David Ricardo Growth Model

The largest share in the establishment of the classical growth model belongs to Ricardo (1772 - 1823). Since Ricardo made the most important contribution to the model, the first name that comes to mind when it comes to the classical growth model is Ricardo. In fact, Ricardo studied the issue of income distribution in the long run, not directly about growth, and Ricardo's growth model can be derived from the author's ideas about income distribution. The model works with very few functional relationships but draws on some important conclusions and generalizations. This model is called the “magnificent dynamic” because it has very important and bold results (Eltis, 2000:125). Behind the pessimistic looking Ricardo Model lies the conditions and problems of England at the beginning of the 19th century (Hollander, 1995:41).

In this period, which came to the early stages of the industrial revolution, savings and capital accumulation were very fast, and technical innovations increased efficiency in the industrial sector and led to an increase in production. In contrast, the yield in the agricultural sector was very low. Wages were decided at the minimum subsistence level (natural wage) and full employment conditions existed in the economy (Eltis, 2000:127). Leaving aside the details of its basic assumptions, the main idea of the Ricardo model is that the course of the economy can be addressed in two phases: the development phase and the stagnant economy phase. It can be said that the trick of the model is the stagnant economy phase. In the growth analysis, Ricardo emphasized the fertility of the soil, namely natural resources. The change in the income received by the three income groups (entrepreneur-capitalist, landowner, labor owner) in the Ricardo model refers to the process leading to the economic recession. Ricardo's long-term growth theory concludes that profit rates will gradually decrease, and the economy will eventually reach a stagnation. According to him, the decrease in the rate of profit occurs because of the increase in the rent of the landowners. Wages always occur at the minimum level due to population growth. The Ricardo Growth Model is based on two principles. The first principle helps to explain the share (rent share) of landowners from the total product. The second principle specifies how the remaining portion of the total product will be distributed as wages and profits. The mechanism to stop growth and put the

economy into stagnation is the change in the shares of the three classes in the society (laborer, entrepreneur, landowner) from the income distribution.

In the Ricardo model of growth, it is possible to prove algebraically the process that leads the economy to stagnation, that is, the decrease in profit share. As the wage rate is assumed to be constant in the model, the total wage payments (W) at any level of employment will be equal to the product of the volume of employment (N) and the wage rate (w).

$$W = w \cdot N \quad (1)$$

The total product (O) is equal to the product of the average product (A) of the labor capital doses and the volume of employment (N).

$$O = A \cdot N \quad (2)$$

The rate of fee share in the total product can be written as follows:

$$\frac{W}{O} = \frac{wN}{AN} = \frac{w}{A} \quad (3)$$

During growth, while the volume of employment in kind expands, it is necessary to look at the sign of the first derivative of the last equation according to the employment level in order to have an idea about the course of the wage share rate.

$$\frac{d(\frac{W}{O})}{dN} = \frac{d(\frac{w}{A})}{dN} = \frac{w(\frac{dA}{dN})}{A^2} \quad (4)$$

According to the declining yield assumption, that is, as employment increases, the average yield decreases, the expression dA / dN is negative and therefore the first derivative has a positive sign (note that the wage rate and A^2 always carry a positive sign and the negative sign in front of the derivative ratio). What this means is that the wage share rate increases as the level of employment increases, that is, as the economy grows. Rent (R) arises from the difference between the average product (A) and the marginal product of labor capital doses, and this difference is equal to the product of $A-M$ by employment.

$$R = N (A - M) \quad (5)$$

The rent share rate in the total product is as follows.

$$\frac{R}{O} = N (A - M) / AN = 1 - M/A \quad (6)$$

While the economy is growing, it is necessary to look at the sign of the first derivative according to the level of the last equation in order to follow the course of the rent share ratio.

$$d(R/O) / dN = (d/dN) (1 - M / A) = - d (M / A) / dN \quad (7)$$

In case of declining yield, the sign of the expression $d (M / A) / dN$ is negative and the sign of the first derivative is positive (note the negative sign at the beginning), as the employment level is expanding, and the marginal product falls faster than the average product. Therefore, the rate of rent increases during growth. Let's watch the course of the dividend ratio that determines the fate of growth. Profit income (P) is the fraction of the marginal product multiplied by the employment (MN) after subtracting the total wage payments (W).

$$P = MN - W \quad (8)$$

Dividend ratio in the total product can be written as:

$$P / O = MN - W / AN = M / A - W / O \quad (9)$$

In order to have an idea about the course of the rate of profit while the economy is growing, it is necessary to look at the sign of the first derivative of the above equation with respect to employment volume:

$$d (P / O) / dN = d (M / A) / dN - d (W / O) / dN \quad (10)$$

It was seen above that $d (M / A) / dN$ expression was negative and $d (W / O) / dN$ expression carries a positive sign. So, the sign of the $d (P / O) / dN$ derivative is negative. This means: As the economy grows, the rate of profit share in the total product decreases (Barro, 1995:7).

Ricardo argues that, like all classical economists, economic growth is financed from wages from production activities. Profits depend on wages. Ricardo's starting point is the limited supply of land in every country. Ricardo denied the importance of technological development, claiming that technological development could not lead to increased efficiencies in the agricultural sector, therefore the law of declining yields would prevail in the entire economy in the long run, and the

economy would enter stagnation. Ricardo did not show sufficient interest in the model of qualified labor just like in technological development.

2.3.4. Technology Acceptance Model

One of the many models produced to explain the adoption of technology is the Technology Acceptance Model developed by Davis in 1989. Davis's model has the feature of being the most frequently used model in the studies on the use of information systems (Venkatesh, 2000:12). The acceptance model of technology tried to reveal the attitudes, uses, and behaviors of people towards information systems and to explain the role of information systems in human life in the future.

The Reasoning Behavior Theory is the basis of the acceptance model of technology. Davis used SDT to explain the link between technology and people's adoption of these technologies by evaluating the relationships between perceived ease of use, perceived benefit, attitudes, intentions, and actual behaviors (Davis, 1989:11). Technology acceptance model has been tested on many subjects such as e-mail, mobile phones, computer, e-commerce, presentation systems and databases (Lee, Kenneth & Kai, 2003).

In order to achieve permanent growth in per capita income within the framework of this model, we should follow Solow and add technological development to the model. This is done by adding the technology variable (A) to the production function:

$$Y = F(K, AL) = K^a(AL)^{1-a} \quad (11)$$

The technology variable A, which is put in the model in this way, is defined as "increased workforce" or "Harrod-neutral". Technological development occurs with the increase of A over time. For example, a unit of labor is more productive when the technology level is higher. An important assumption of the Solow model is the externality of technological development. Instead of carefully modeling where the technology comes from, we assume that A is growing at a steady rate by looking at the instantaneous state of existing technological progress:

$$\frac{\dot{A}}{A} = g \leftrightarrow A \quad (12)$$

Here g is a parameter that indicates the technology growth rate. Naturally, how this unrealistic assumption about technology can be relaxed is an important achievement of new growth

theories. The capital accumulation equation in the Solow model where technology takes place is as follows:

$$\frac{K}{K} = s \frac{Y}{K} - d \quad (13)$$

To see the growth results of the technology model, let's first rewrite the production function (function 53) in terms of output per worker:

$$y = k^a A^{1-a} \quad (14)$$

After that, let's take the logarithm and derivative:

$$\frac{y}{y} = a \frac{k}{k} + (1 + a) \frac{A}{A} \quad (15)$$

Consequently, note in equation ($\frac{K}{K} = s \frac{Y}{K} - d$) that the growth rate K will remain constant as Y / K is constant. Moreover, if Y / K is constant, the y / k ratio is also constant, and most importantly, y and k will be growing at the same rate. The situation in which capital, output, consumption and population grows at constant rates is called the balanced growth process. Let's use g notation to show the rate of growth of any variable x in a stable growth process. Thus, in the stable growth process $gy = gk$ according to the above thesis. By substituting this relationship in the equation and remembering that $A \cdot / A = g$, the following equations can be written:

$$gy = gk = g \quad (16)$$

That is, in the Solow model process of balanced growth, output per worker and capital per worker both grow at the rate of external technological change (g). The technology model reveals that the source of permanent growth per capita is technological development (Jones 2001, 33–34).

The purpose of the acceptance model of technology; to be able to solve the behaviors of information systems users and the factors that affect their adoption of technology with the least variable with a theoretically verified model. The acceptance model of technology consists of six factors, in which the relations of each other are measured. These; fitness / compatibility, perceived usefulness, perceived ease of use, attitude, intention of behavior and system use (Davis, 1989:13).

2.4.The relationship between economic growth and foreign trade

In the literature on the causality relationship between import, export and economic growth, there are many studies in which different findings are obtained. In parallel to this work in Turkey, import, export and selected major studies and findings obtained in these studies carried out regarding the causal relationship between economic growth can be summarized as follows:

Aktas Şenkardeşler (2018) examined the relationship between Turkey's foreign trade and economic growth of Turkey's economy 1923-2016 period, imports, exports and gross domestic product data is used. According to the results of Johansen Cointegration Test, it found cointegration between the series at 5% significance level, and according to the Error Correction Model results, it found that there is a bilateral causality relationship between GDP and imports in the long run. Aytaç (2017) researched the causal relationship between gross domestic product, export and growth using the quarterly data in the 2001-2016 period using the Granger causality test based on the VAR model and determined a one-way causal relationship from economic growth to exports. Şerifli (2016) investigated the effect of foreign trade on economic growth between 1975-2014 and could not detect a causal relationship between them.

Arvas and Torusdağ (2016), during the period from 1987 to 2015 on the impact of the import and export growth in Turkey were examined by the least square's method. As a result of their analysis, they found that growth and imports are in a positive direction. Korkmaz and Aydın (2015), studies that investigated the relationship between foreign trade and economic growth in Turkey 2001: Q1-2014: Q25 have used quarterly data for the period and the variables examined the causal relations VAR Model forming between. Import has identified with a bi-directional causality between economic growth and growth-wheel drive with rear-wheel drive growth in imports in Turkey had concluded that the current approach of imports. Uçan and Koçak (2014) analyzed the relationship between foreign trade and growth between 1990 and 2011 using quarterly data and found a bidirectional causality between import and growth according to Granger causality analysis based on the vector error correction model, while finding a one-way causality from export to growth. . Çamurdan (2013) examined the relations between import, export and growth with the Johansen Cointegration Test and Granger Causality Test and used the quarterly data between 1999-2013. In the study period related to import export in Turkey, it has reached the conclusion that the growth is based on exports.

Aytaç and Akduğan (2012) investigated the causal relationship between gross domestic product, exports and imports using quarterly data between 2001: Q1-2011: Q3. As a result, they identified causality relationships from imports to both exports and gross domestic product. In the study, where the existence of long-term relationship between variables was also investigated, they also obtained a finding of causality from gross domestic product to imports and exports. Taştan (2010) The relationship between trade and economic growth in Turkey 1985: 01 2009: examined the monthly data for 05 periods and reached their growth and growth-wheel drive exports hypothesis based on imports results in support of.

Ozer and Erdogan (2006), exports in Turkey, imports and their study analyzes the relationship between economic growth have used quarterly data between 2006 and 1987, Granger causality tests and variance analysis sought to determine the direction of causality between variables aid. As a result of their analysis, they determined a causal relationship from exports to economic growth and imports, and also revealed that there was a one-way causality from exports to imports. Saatçioğlu and Karaca (2004), on the other hand, investigated the causal relationship between exports and growth by dividing the years between 1950-2000 into two sub-periods, 1950-1980 and 1981-2000. They concluded that there was no causal relationship between exports and growth for the period of 1950-1980, and there was a causal relationship between exports and growth in the period of 1981-2000.

2.4.1. Increase in factor supply.

Productivity is often defined as the ratio of output to input (Nadiri, 1970:1138) and measures how effectively production factors such as labor and capital are used in an economy to produce at a certain level. Productivity is considered to be the main source of economic growth and competition and is therefore considered as the basic statistical information for many international comparisons and country economic performance assessments. Productivity growth is expressed as “residual”, the difference between growth in total production and growth in total input (Krugman, 1994:66).

According to growth accounting, the source of the change in growth is capital accumulation and changes in labor input. However, the part of the change in output that is not explained by these factors is now called the level of efficiency or the level of technological development. However, the unexplained factor (uncertainty) in output growth is actually Total Factor Efficiency. However,

it should not be forgotten that the growth rate in TFE (now) does not only represent the change in technology (Baier, 2006:27) and should not be used as an indicator of purely technological change. This now includes the effects of political turmoil, external shocks, changes in government policies, political regime, property rights, institutional changes, education-health arrangements, and measurement error (Bosworth, 2003:52).

Total Factor Efficiency (TFE) is important in the context of evaluating the past and potential economic performance of countries. However, due to two reasons, it is difficult to measure and interpret TFE. First, the negligible differences in the assumptions can lead to an incorrect prediction of TFV growth. However, as stated earlier, in cases where TFV growth reflects factors other than technical change; a healthy assessment of economic performance becomes difficult (Ghosh and Kraay, 2000:1).

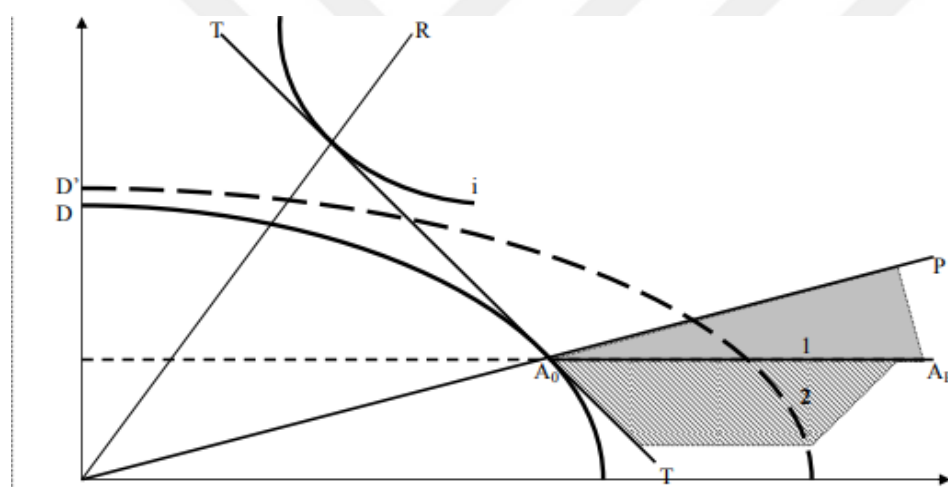
TFV is an important discussion topic in evaluating the economic growth performances of countries and it is one of the most important factors determining income difference between countries (Prescott, 1997:55). Since the growth model of Solow (1957), studies to measure the contribution of production factors and technology to production have accelerated. Especially since Klenow and RodriguezClare (1997:73), this methodology has been used in many analyzes. While neoclassical growth theories were valid until the 1980s, the Neoclassical approach has been replaced by internal growth theories since the 1980s. Neoclassical growth theories assume diminishing returns and technology are external. This approach predicts that the per capita income of all countries will approach each other due to the difference in the marginal productivity of the spread factor in the long run, depending on the convergence analysis. In internal growth theories, especially in neoclassical theory, the assumption that technology is external is criticized and technological change is assumed as an internal variable. It is stated that R&D activities are the main driving force that will ensure continuity in growth in internal growth theories. The information that will be revealed by employing qualified labor is the main source of growth. In this context, qualified growth is accepted as human capital in growth theories (Prescott, 1997:55).

2.4.1.1.Commercial Purifier Directional Growth

While examining the situations other than non-deviant (neutral) growth, let's assume that the factor used intensively in the export sector has increased faster than the factor used in the import goods industry. As the textile is a labor-intensive industry and the labor factor increases

faster, the production possibilities curve is more accurate towards textile (Prescott, 1997:57). Before we mention the effects of the factor used extensively in exports on trade, we investigate the reasons for the short production changes. The product index at the new equilibrium point depends on the ratio of the increase in capital to the increase in labor. If this new ratio is the same as the capital / labor ratio currently used in textile, then the new production point will be on the horizontal line A_0A_E . In other words, while the textile production increases, the production of other goods remains constant (Nadiri, 1970:1140). The reason for this is obvious: Increasing factors (faster increasing labor) While the rate required for textile production fully meets, production in the machinery industry will not be affected in any way.

Figure 2. 1: Commercial Purifier Directional Growth



Source:<https://www.zionmarketresearch.com/market-analysis/residential-air-purifiers-market>
28.07.2020

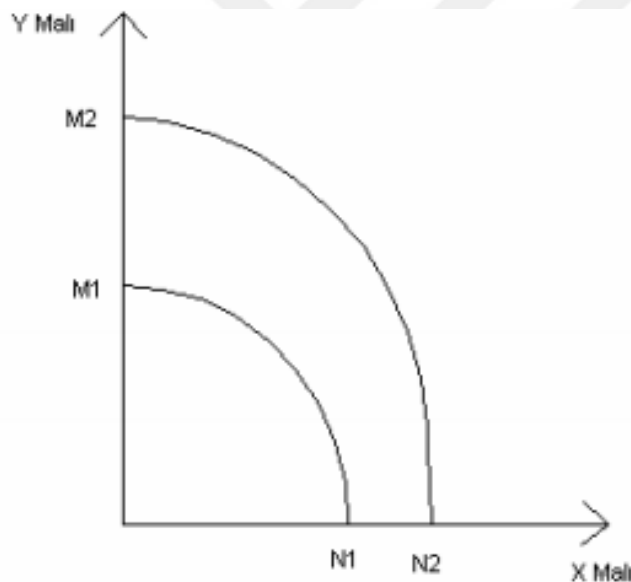
The increase in labor will be operated in textile, the labor-intensive industry. However, a certain amount of capital is required to be able to produce in this sector. Since capital increase cannot meet this need, where will the emerging capital need be met? The only source this can be achieved is the machinery industry (full operation assumption). The demand for capital in the textile industry increases, thus raising the cost of capital, causing this factor to shift from the machinery industry to textile. However, as the textile production increases, the capital leaving the machinery industry causes the production to decrease in this sector, so the economy comes to equilibrium in the area number 2. As a result, it can be said that under the conditions of growth based on a higher rate of the factor used extensively in the export sector, the production of exportable goods will increase

relatively more than the production of importable goods and international trade will also increase the total GDP (Nadiri, 1970:1142). it will expand at a higher rate than after. This type of growth is called commercial growth.

2.4.1.2. Anti-Trade Growth

Growth against trade is the increase in the production of the goods subject to imports under the assumption of fixed factor prices, and if the growth is higher than the increase in the production of the goods in question, the growth against the trade is called counter-growth. In other words, the contraction in export increases. The volume of trade will shrink, as the increase in production will lead to a decrease in both imports and exports of the country. In other words, an anti-trade growth will occur (Tunç, 2004: 110).

Figure 2. 2: Anti-Trade Growth



Source: <http://real-international-trade.blogspot.com/2011/10/international-trade-and-growth.html>
28.07.2020

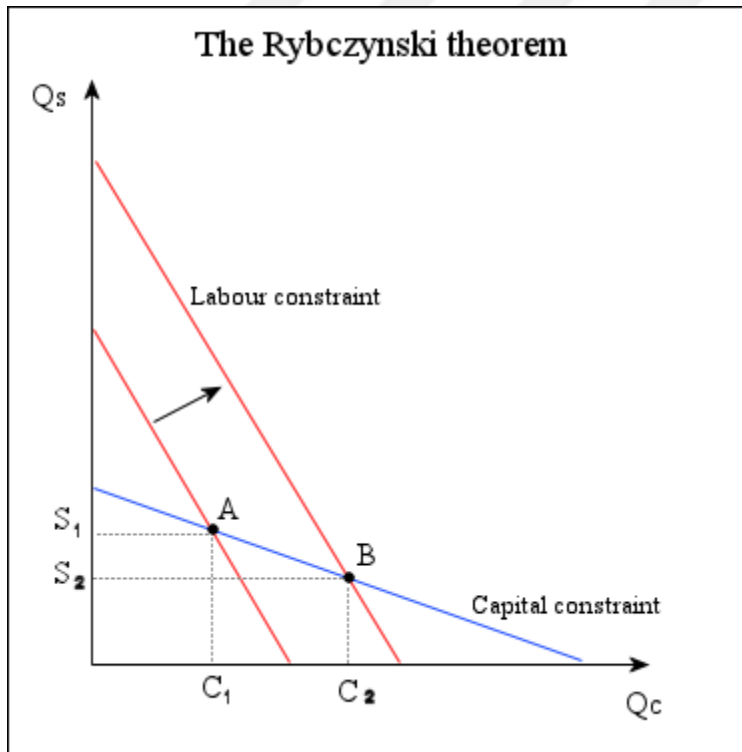
For example, if the amount of capital used more intensively in the production of Y increases faster than the other factor (labor), it produced Y in the national economy, it will increase more than the production of X. The conversion curve in Graph 1.6 illustrates this situation. Such a change in factor will lead to a decrease in foreign trade, as further production of Y will decrease imports.

2.4.1.3. Rybczynski Development

The Rybczynski Theory (1955) based on the Heckscher - Ohlin Theory, analyzes the effects of production, consumption and foreign trade on an increase in the amount of production factors under full employment conditions. The original theory suggests that an increase in the supply of a production factor will increase the production of the goods that use this factor intensively, and the production of the goods that use the intensive factor that will remain constant will decrease. However, Rybczynski states that changes in the amount of two factors will not affect the result. The assumptions on which the theory is based are as follows (Karluk, 2002: 43):

- There are two production sectors in the country and each sector produces according to the linear homogeneous production function,
- Factor densities are different in production,
- Both production factors are fully used.

Figure 2. 3: Rybczynski Theorem



Source: https://tr.wikipedia.org/wiki/Rybczynski_teoremi 28.07.2020

If we explain the Rybczynski Theory on the figure, D is where both production factors are fully used. Suppose that, under the assumption that there is no substitution among inputs, the amount of labor in the economy increases from 900 to 1200 units. As a result of the increase in the labor factor, the labor constraint line will move forward and become $K_1'C_2'$. The production possibilities curve will be $K_1'D_1'KC_1'$. Thus, the full employment point will shift from D to D'. Fabric production will increase from 150 meters to 240 meters, while steel production will decrease from 150 tons to 120 tons.

2.4.2. Technological Development

For the first time in the classical view, Solow marked the relationship between technological development and economic growth. While making this assessment, Solow accepts technology externally. According to the economic literature, internal growth models internalized the technological developments that the Solow model accepted externally in 1980 and afterwards and analyzed that technological developments played a determining role in the economic development process. Initial growth studies were carried out by Lucas and Romer. Romer has determined technological developments as an internal factor in the economy. Lucas included human capital as an internal factor in Romer's model. J. Schumpeter saw the role of the entrepreneurs in the growth of the capitalist system and the adaptation of technical progress to production by the entrepreneurs, that is to say, innovations (innovation). Here, the innovations mentioned by Schumpeter should not be confused with discoveries and inventions. Innovations mean that any discovery or invention starts to be applied in the commercial field. (Shefer & Frenkel, 2005:20) The emergence of technological innovation is related to creativity. Capitalists make their own investments with the technology they add to production. After a while, they make excessive profit and become monopoly in the market (Shefer & Frenkel, 2005:21).

In Marxist theory, its relationship with technology and economic development is fully explained by class relations. According to the Marxist approach, technology is at the heart of the capitalist production process. Labor has ceased to be creativity of people in the production process, with the development of capitalism. The purpose of the use of labor in production under capitalism is not that the producers produce the use value, but the capitalists produce for the exchange value. In other words, production is made directly for capital accumulation. In the production process, capitalists use the labor of the workers to shape the production factors and realize the actual

production. The more labor meant the more profit. With the development of technology, capitalists have taken the place of labor in full control in the production process. In order to maximize their profits, they increased the production and used the technology to dominate the worker's time to do it. In other words, they used the technology to increase the efficiency of labor. Development economics explains technology as an addiction factor. They use the central countries to produce technology and transfer that technology to developing countries to make them dependent on themselves. The central country producing the technology is in a monopoly position. Since the countries that want to buy the produced technology pay astronomical figures, it makes it easy for the central country to easily control the economies of the neighboring countries. Countries that do not want to endure these astronomical figures have found their solution as a solution by understanding their technology or by understanding the technology they purchased very well. Thus, the production of local technologies became imperative at this stage.

We can list technological developments as R&D investments, innovation, developments in information technologies. Economic growth, which is one of the main problems of the macro economy, is important in terms of affecting people's living standards and welfare level (Miroslav et al., 2009: 2). R&D is the key determinant of prosperity and efficiency in the long run (Jones and Williams, 2000:65). R&D investments create many innovations. This promotes economic growth. In recent years, industrial innovations seem to have played a major role in economic growth and regional development (Shefer & Frenkel, 2005:25).

Chapter Three

EFFECT OF FOREIGN TRADE ON ECONOMIC GROWTH

3.1.General Information About Azerbaijan

Azerbaijan is located on geographically, strategically and commercially important roads. Due to its mineral deposits and natural resources, many people wanted to dominate these lands. These struggles on the territory of Azerbaijan not only ensured that the people living on these lands fused with the cultures of other nations, but also whipped up their feelings of nationalism and freedom. From the people who started to settle in their first land, Azerbaijan has gradually fought an

important freedom struggle by losing and sometimes winning (Ahmedova, 2015:4). To better understand this struggle is possible by following his adventure in the historical process.

A person who wants to study the history of Azerbaijan should search for him in the concepts of Eurasia, Turkestan and the Caucasus. The reason for this is that the borders of Azerbaijan have changed in various historical periods according to the power of the rulers. While it was the region starting from the cities of Hemedan and Zencan, which was originally meant with Azerbaijan, to Derbend in the north, this term also included the cities of Ber in the west, Zencan in the east, Deylem and Tarım in the north. From 1828 on the basis of Azerbaijan Aras river, it was divided into two in terms of administrative geography in the north and south. Despite this, both regions had a complete unity in terms of nationality, religion and tradition (Gasimov, 2001:18). However, over time, each party had to bow to its own political judges, and they lived under different governments and with different neighbors.

With its diversity of Azerbaijani climate and natural regions, mountain and forest areas, fertile plains, wide seacoasts, it is a comfortable country to live geographically. It is rich in natural mineral deposits, raw material reserves, especially oil, copper, marble, and gold deposits. Azerbaijan, which has an important position in the Caucasus pass, acts as a bridge connecting Asia to Europe. Important military, strategic and trade routes pass through it (Resulzade, 1991:101). The region on the historical silk road has been a frequent destination for many tribes throughout history, as it is a transit point between east and west, north and south. The Assyrian-Babylonian, Persian-Greek and Macedonian, Parties-Romans, Sassanid-Byzantine, Arabian-Sassanid, Arab-Byzantine, Seljuk-Byzantine, Mongolian-Seljuk, Ottoman-Russian, Rusiran, Iran-Ottoman struggles always took place on these lands. These lands were raided by Turkmen and Mongols. Therefore, Azerbaijan starting from the date of Oguz Turks, Seljuks, Mongols, Arabs, Iranians, Ottomans, Turkey, Tsarist Russia, it is impossible to independently examine the history of the Soviet Union and today's Russia (Alizade, 2010:105).

The Azerbaijani Parliament declared the country's independence on August 31, 1991. On 18 October 1991 the Parliament adopted the Independence Law. The country was governed by the authority granted by the law for the re-establishment of the independence of the Republic of Azerbaijan, which was adopted by the High Soviet of Azerbaijan in 1991 until 12/11/1995. Therefore, Azerbaijan is currently governed by the new Constitution, which was presented to the

public on November 12, 1995, with a vote of 91.9%. According to the Constitution, the country's government is the republic. In the country where the presidential system is dominant, the election of the President is held every five years. The Azerbaijan National Assembly consists of 125 deputies. 25 of them were elected from political parties and 100 were independently elected. More than 30 large and small political parties operate in the country. The independent and independent Azerbaijan Republic, which exists today, is governed by the Constitution, which was adopted by the referendum on 12 November 1995. According to this Constitution, the Azerbaijan state is a democratic, law-based, secular, unitary republic. The principle of separation of powers has been adopted by the Constitution. It is left to the National Assembly, whose legislative power consists of 125 deputies and renewed every 5 years, the executive power to the President and the judicial power to the Courts (Süleymanlı, 2006:76).

Azerbaijan has wide lands compared to other Caucasian countries. Approximately 55% of the country's territory consists of agricultural land and 2.5% consists of urban areas. 12% of the land is forest land. Azerbaijan displays an ecologically diverse geographical structure. The country is covered with plains below sea level, 4,000 meters high mountains, deserts and subtropic areas in the Caucasus region. More than half of the country's territory consists of lowlands. The rivers flowing completely in the Caucasian basin are not suitable for ship transportation. Irrigation systems are regulated by water tanks. The largest water tank is the Mingechaur reservoir located on the Kura river in the west of the country (Gasimov, 2001:20).

Refining with oil and gas production forms the basis of the country's economy. According to the source of Review of World Economy, published by British Petrol (BP), the country has a proven oil reserve of 7 billion barrels. This figure corresponds to 0.6 of the world reserves. The country's reserve / production rate is 29.3. According to the data of Azerbaijan State Oil Company (SOCAR), the country's proven oil reserves are 17.5 billion barrels. However, the classifications used in the calculation of these data are according to the Soviet system and they are larger. The country's oil reserves are therefore much higher than SOCAR data. The country's oil reserves are low compared to the Middle East. Proven reserves in the Middle East are 742.7 billion barrels, corresponding to 61.5% of the world total (Süleymanlı, 2006:76).

Azerbaijan exports its current oil production through 3 different pipelines. 80% of the production is exported through Baku-Tbilisi-Ceyhan (BTC). Apart from these roads,

transportation modes such as highway and railway are also used in the export process. Oil production, especially the Azeri-Çirak-Güneşli region, which has the richest reserves of Azerbaijan, is undertaken by the State Oil Company of the Republic of Azerbaijan (SOCAR) and plays an active role in the export processes. However, SOCAR covers 20% of the country's oil production, while the rest is done by Azerbaijan International Operating Company (AIOC) under BP management. Other companies that make up this consortium, Chevron, Statoil, Turkey Petroleum, ExxonMobil is. BP has been the most important investor in the country since 1992. Other important pipelines in the country are Baku-Novorossiysk and BakuSupsa lines (Süleymanlı, 2006:76).

3.1.1. Azerbaijan Economy

In the period of the USSR, the economic structure of Azerbaijan, which was a sub-part of the Union, was shaped in line with the economic strategy of the Union. All the industrial facilities consisted of huge facilities established according to the Union's needs. In this period, Azerbaijan lost more than they lost. Economic conditions of the country were not considered, and planning was done at the center. Many products were sold to the Union member republics at cheap prices, either as raw materials or intermediate products, and then came to Azerbaijan at high prices as final products. On the other hand, although Azerbaijan has always been an exporter of petroleum and petroleum products, cotton, tobacco, wine, which bring income to the country, Azerbaijan could not own property rights in its own wealth, since the revenues from the sale of these products were concentrated in a single center within the Union¹. The fact that special emphasis has been placed on natural resources and labor-intensive areas has created an environment conducive to crises in the economic structure. Therefore, the dissolution of the USSR resulted not only from political but also from economic conditions (Emiraslanov, 2001:53). In addition to many problems inherited from the planned economy, the conditions in which independence was gained and the negative developments experienced in the first years should be taken into consideration especially in the correct evaluation of the economic structure and development process of Azerbaijan after independence (Hesenov, 2001:4). Economic restructuring and development in the period since the independence of Azerbaijan consists of three basic periods.

The consolidation of the gained political independence and the political uncertainty replaced it in the summer of 1993, when Aliyev became President. Thus, in an environment where

there was political stability, the necessary environment for taking positive steps regarding economic structuring and development was provided. Because, in every country, political stability must be the first to achieve and maintain macroeconomic stability (Ceferzade, 2001:3). Briefly, along with the cease-fire and stability inside, it was time for economic reforms.

The desired increase in production investments could not be achieved due to the fact that the policies pursued in 1996-1997 in Azerbaijan, which provided economic stability, were not supported by state policies that encouraged the real economy, and that the state organs were not sufficient to show the necessary sensitivity to the country before the end of 1997. An important point to be taken into consideration in the country's economic development process; This change and development is the last that 20% of its land is under the occupation of Armenia, so it is deprived of most of its production potential, it lost 300 thousand jobs and the people who lived in these lands (about 12% of the population) had to migrate is obtained in extremely difficult conditions. (Eyyubov, 2001:66)

It can be considered as the third stage in the transformation process from 2001 onwards. The main objectives to be achieved at this stage can be listed as follows (Sujayev, 2003:36): 1. Continuing economic growth by accelerating, 2. Accepting the Second State Privatization Program, restructuring the energy sector and increasing the production capacity, 3. Strengthening the social aspect of economic policies, increasing the level of social welfare, therefore, the revenues from the energy sector are directed to other sectors. Therefore, with the economic policy to be implemented at this stage, it is aimed to develop areas other than the oil sector.

Table 3. 1: Key macroeconomic indicators

	2014	2015	2016	2017	2018
Gross domestic product, million manat	59014,1	54380,0	60425,2	70337,8	79797,3
Income of the population, million manats	39472,2	41744,8	45395,1	49187,9	53688,6
Average monthly nominal salary, manat	444,5	466,9	499,8	528,5	544,6
State budget revenues:					

mln. manat	18400,6	17498,0	17505,7	16516,7	22508,9
in gross domestic product, as a percentage	31,2	32,2	29,0	23,5	28,2
Expenditures of the state budget:					
mln. manat	18709,0	17784,5	17751,3	17594,5	22731,6
in gross domestic product, as a percentage	31,7	32,7	29,4	25,0	28,5
State budget deficit (-), surplus ::					
mln. manat	-308,4	-286,5	-245,6	-1077,8	-222,7
in gross domestic product, as a percentage	0,5	0,5	0,4	1,5	0,3
Deposits of the population in banks (at the end of the year) mln. manat	7188,4	9473,9	7448,7	7561,2	8375,4
Population (end of year), mln. people	9593,0	9705,6	9810,0	9898,1	9981,5
Fixed assets (end of year), mln. manat	110677,9	124008,4	169120,3	182788,5	193491,0
Credit investments (at the end of the year), mln. manat	18542,6	21730,4	16444,6	11757,8	13020,3
Investments in the economy, mln. manat	21890,6	20057,4	22706,4	24462,5	25877,0
Current account balance, mln. USD	10430,5	-222,5	-1363,4	1684,6	6051,1

Source: https://www.stat.gov.az/source/system_nat_accounts/ 28.07.2020

In 2019, GDP growth in Azerbaijan exceeded 2% for the first time in five years, and non-oil GDP production exceeded the global economic growth rate by 3.5%. Economic growth is accelerating amid favorable oil prices on world markets and increased investment in the non-oil sector, with business reform proposals, the need for a revolutionary social package, governance reforms increasing the efficiency of institutions. In the first 11 months of 2019, the growth of the main drivers of the economy was 13.9 percent in the non-oil industry, 11.3 percent in crop production, 15.9 percent in information and communication services and 11.1 percent in tourism (increase in the number of tourists). Economic growth is projected to reach 3 percent in 2020 for the first time

in six years, 3.7 percent in 2021, 3.1 percent in 2022 and 3.2 percent in 2023. Azerbaijan's economic growth in trade partners is projected to average 1.3 percent in 2019 and 2.5 percent in 2020 (non-oil export weight) and oil prices are higher than expected in macroeconomic forecasts. will have a positive impact on the economy (economy.gov.az, 28.07.2020).

In January-May 2020, Azerbaijan produced 1.7% less GDP than in the same period last year, with 1.2% less value added in the oil and gas sector and 2.1% less in the non-oil and gas sector. However, about 4% growth was recorded in agriculture. Production in the non-oil and gas sector increased by 14%, and annual inflation did not exceed 3%. If the situation with the coronavirus continues for a while, if the quarantine regime is applied, albeit intermittently during the third and fourth quarters, in addition to GDP, other macroeconomic indicators will inevitably begin to decline. And the recession trend, as mentioned in the introduction, may eventually manifest itself in the foreign exchange market.

3.1.2. Oil Sector in Azerbaijan

The biggest underground wealth of Azerbaijan, which is very rich in terms of underground resources, is the oil that belongs to the group of fuel mines. Namely, oil production is in the first place compared to other underground wealth, 70% of the country's land has high potential in terms of oil and natural gas. Especially in the Apsheron Peninsula, a great deal of oil is extracted from the oil deposits detected since the 1800s. Thus, in the early 1825, there were about 120 wells to store oil around Baku (Eliyev, 1998:11). There are rich oil reserves in the shelter zone of the Caspian Sea, especially in the Apsheron and Baku archipelago. In addition, large oil fields were detected in Gobustan, Şirvan and Mugan. Indeed, most of the oil reserves are in the Caspian Sea and its surroundings.

According to the reserve volume, Kura-Aras plain (26.2%), Apsheron Peninsula (10.6%) and Guba-Siazan Region (6.7%) follow this reserve region and the share of all these deposits in the country reach 91.2% (Eliyev, 1998:13). Today, more than 70 oil fields are operated in the country, 50% of them are on land and the others are in the Caspian Sea. In addition, a little over 40% of oil reserves (50% of land reserves and 25% of reserves at sea) have been consumed since the production started (Abbasov, 1998:65). Today, oil production in Azerbaijani land is carried out in the Apsheron Peninsula, Kuraboyu, Guba-Siyazen and Gence-Naftalan regions. The characteristics of production according to these regions are as follows.

Table 3. 2: Production of crude oil (including gas condensate), thousand tons

Year	Crude oil production (including gas condensate)
2001	14 909
2002	15 334
2003	15 381
2004	15 549
2005	22 214
2006	32 268
commodity	32 186
2007	42 598
commodity	42 523
2008	44 514
commodity	44 395
2009	50 416
commodity	50 364
2010	50 838
commodity	50 692
2011	45.626
commodity	45.375
2012	43.375
commodity	42.982
2013	43.457
commodity	43.163

2014	42.076
commodity	41.952
2015	41.628
commodity	41.570
2016	41.050
commodity	40.999
2017	38.688
commodity	38.636
2018	38.814
commodity	38.722

Source: https://www.stat.gov.az/source/balance_fuel/ 28.07.2020

In 2019, Azerbaijan produced 37 million 517.6 thousand tons of oil, which is 3.2% less than in 2018. In 2019, Azerbaijan produced 37 million 517.6 thousand tons of oil, of which 37 million 425.8 thousand tons fell to commercial oil. Compared to 2018, oil production decreased by 3.2%, as well as commercial oil production by 3.3%. (www.stat.gov.az, 28.07.2020). In 2019, Azerbaijan produced 35 billion 591.4 million cubic meters of gas (an increase of 16.3%). At the same time, commercial gas production amounted to 24 billion 526.7 million cubic meters (an increase of 27.7%). Earlier, based on operative data, SOCAR said that in 2019, oil production in Azerbaijan amounted to 37 million 453.702 thousand tons (a decrease of 3.4%), gas production - 35 billion 616 million 510.185 thousand cubic meters (increase by 17%).(www.socar.az, 28.07.2020)

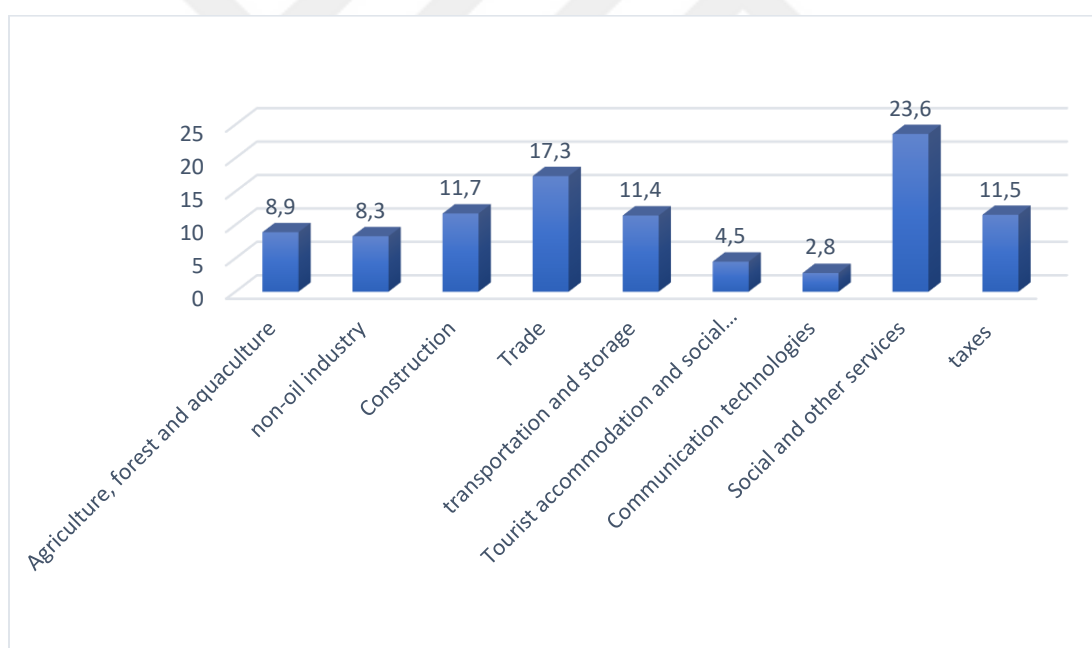
The US Department of Energy's Energy Information Administration (EIA) has increased oil production in Azerbaijan by 20,000 barrels per day for 2019-2020. According to the report, daily oil production in Azerbaijan will reach 800,000 barrels in 2019 and 780,000 barrels in 2020. The EIA forecast for the third and fourth quarters of this year was 800,000 barrels per day, 790,000 barrels for the first quarter of next year, 780,000 barrels for the second quarter and 770,000 barrels for the third and fourth quarters. According to the published report, the daily production forecast

for 2019 was 780,000 barrels, and for 2020 - 760,000 barrels. According to the previous EIA report, the daily production forecast for the third quarter of this year was 780,000 barrels, 760,000 barrels in the fourth quarter, 770,000 barrels in the first and second quarters of next year, 750,000 barrels in the third quarter and 730,000 barrels in the fourth quarter (www.eia.gov, 28.07.2020).

3.1.3. Non-Oil Sector in Azerbaijan

In January-June 2018, 20,637.0 million manat of value added was created in the non-oil sector of the economy, and in general, 52.6% of it fell to the share of social and other services, trade, repair of vehicles and construction. In January-June 2018, the value added in the non-oil sector of the country's economy increased by 2% compared to the same period last year. The share of value added in the non-oil sector in GDP was 55.8% (www.economy.gov.az, 28.07.2020).

Figure 3. 1: Distribution of value added in the non-oil sector by sectors



Source:<https://www.economy.gov.az/article/azerbaycan-respublikasinda-qeyri-neft-sektorunun-inkishafi-2018-ci-ilin-birinci-rubu-uzre/29186> 28.07.2020

The growth rate of value added created in most areas of the non-oil sector was higher than in the corresponding period of the previous year. Compared to the corresponding period of 2017, 7.6% in agriculture, forestry and fisheries, 2.4% in trade and repair of vehicles, 7.1% in transport and warehousing, 7.4% in tourist accommodation and catering, 4.9% in information and

communication, 0.6% increase was registered in social and other services (www.economy.gov.az, 28.07.2020).

In January-June 2018, the volume of value added in the non-oil industry increased by 11.1% compared to the same period last year and reached 1726.6 million manat. The share of non-oil industry in the GDP created during the reporting period was 4.7%, the share of non-oil industry in value added in the non-oil sector was 8.4%, and the share of non-oil industry in value added was 9.9%.

In the structure of value added created in the non-oil industry, the share of mining industry was 3.1%, the share of processing industry was 72%, the share of electricity, gas and steam production, distribution and supply was 21.5%, and the share of water supply and waste treatment was 3.4%. .

In January-June 2018, the non-oil industry produced goods worth 5165.3 million manat and increased by 8.8% compared to the same period last year.

The share of mining industry in the production of non-oil industry is 3% or 157.2 million manat, the share of processing industry is 75.6% or 3906.5 million manat, the share of electricity, gas and steam production, distribution and supply is 18.5% or 954.0 million manat, water supply The share of waste treatment was 2.9% or 147.6 million manat.

3.2.Economic Growth and Foreign Trade Relations Econometric Analysis

3.2.1. VAR Model

The complexity and versatility of economic relations have led to the analysis of many economic events with the help of simultaneous equation systems instead of single equation models. In economic life, macroeconomic variables affect each other mutually. In this case, it is very difficult to separate the variables as completely internal or external variables. Therefore, some restrictions are required to eliminate the determination problem in simultaneous equation systems (Tari and Bozkurt, 2006: 4). Sims criticized such models for being restrictive. According to Sims, if there is simultaneity between variables, all of them should be treated equally, and no distinction should be made between internal and external variables. For these reasons, the Vector Autoregression model developed by Sims is widely used in econometric research (Sims, 1980: 1-

17). Vector autoregression, or VAR model in short, are multi-dimensional linear models in which each variable is defined on its own and the lagged values of all other variables (Temurlenk, (1998): 56).

The advantage of VAR models over other macroeconomic models is that they do not have to decide which variables are internal and which are external. In addition, the VAR model estimates made using the least squares method, which is a simple method, give better results than the more complex simultaneous equation models.

A vector autoregression model in which 3 time series variables such as Y_t , X_t and Z_t are considered consists of three equations. In one equation, the dependent variable is Y_t , in others the dependent variable is X_t and Z_t . Explanatory variables in all three equations are lagged values of all three variables.

$$y_t = \alpha_{10} + \alpha_{11}y_{t-1} + \dots + \alpha_{1k}y_{t-k} + \beta_{11}x_{t-1} + \dots + \beta_{1k}x_{t-k} + \gamma_{11}z_{t-1} + \dots + \gamma_{1k}z_{t-k} + e_{1t} \quad (17)$$

$$x_t = \alpha_{20} + \alpha_{21}y_{t-1} + \dots + \alpha_{2k}y_{t-k} + \beta_{21}x_{t-1} + \dots + \beta_{2k}x_{t-k} + \gamma_{21}z_{t-1} + \dots + \gamma_{2k}z_{t-k} + e_{2t} \quad (18)$$

$$z_t = \alpha_{30} + \alpha_{31}y_{t-1} + \dots + \alpha_{3k}y_{t-k} + \beta_{31}x_{t-1} + \dots + \beta_{3k}x_{t-k} + \gamma_{31}z_{t-1} + \dots + \gamma_{3k}z_{t-k} + e_{3t} \quad (19)$$

Here, α , β and γ are unknown coefficients, and u_{1t} , u_{2t} and u_{3t} denote the error terms.

The VAR model is expressed as the p th order VAR model [VAR (p)], taking into account the number of lags p . In the model, all variables are considered internal, regardless of the internal-external distinction. Since the direct interpretation of VAR model parameters is not meaningful, conclusions are drawn with impulse response and variance decomposition analysis.

3.2.2. Unit Root Test

The consistency of the analysis using VAR models depends on the stability of the variables in the model. In order to determine stationarity, it is necessary to determine whether the mean, variance and covariance of a series are constant over time. Stationarity is mentioned when the mean, variance and covariance of a series do not change with time.

Analysis results using non-stationary series are not consistent. Looking at the regression results of these estimates, R^2 is high and t statistics are significant, but Durbin-Watson statistics value is small. If the regressions obtained with the lagged values of the two variables have unit root, that is, they are not stationary, the t and F tests are meaningless. In this case, the findings are interpreted as false regression symptoms. Regression consisting of these two variables is spurious regression. Whether the variables are stationary or not is determined by the unit root test (Unit Root Test). Series that do not have unit roots, that is, stationary series, are expressed as $I(0)$. Non-stationary series, on the other hand, are made stationary by taking the difference. In order to stabilize a series, the difference in the number of "d" must be taken. This series is called "degree d integrated" series. For example, the series that has been stabilized by taking the first difference is called the first order integrated series and is expressed as $I(1)$. Dickey-Fuller and Extended Dickey-Fuller tests are methods used to test the existence of unit root. In Dickey Fuller test, it is assumed that the error terms are independent and their distribution is the same. In some cases, the error term may be distributed as different variance or serial correlation. Therefore, Dickey-Fuller test has been changed to Augmented Dickey-Fuller test.

Because the error terms do not have a noise process, Dickey and Fuller included additional delay values of the test-dependent variable to eliminate autocorrelation. However, the original Dickey-Fuller test was converted to the Advanced Dickey-Fuller (ADF) test. The appropriate delay length is determined by AIC or SBC. Another way to determine the length of the delay is to test for autocorrelation with LM or DW tests after each ADF regression model. In error terms, a lag in which there is no autocorrelation is treated as a corresponding lag.

There are three cases for the ADF test.

$$\Delta y_{t-1} = \gamma_{t-1} + \sum_{i=1}^p \beta_i \Delta y_{t-i} + u_t \quad (20)$$

$$\Delta y_{t-1} = \alpha_0 + \gamma_{t-1} + \sum_{i=1}^p \beta_i \Delta y_{t-i} + u_t \quad (21)$$

$$\Delta y_{t-1} = \alpha_0 + \gamma y_{t-1} + a_2 t + \sum_{i=1}^p \beta_i \Delta y_{t-i} + u_t \quad (22)$$

The difference between these three regressions still depends on the deterministic elements expressed by α_0 and $\alpha_2 t$.

3.2.3. Phillips-Perron Unit Root Test

According to the distribution theory that supports the Dickey-Fuller tests, error terms are statistically independent from each other and homoskedastic. Thus, when using ADF tests, it is important to make sure that the error terms are uncorrelated and stable. Phillips and Perron (1988) proposed an overview of the ADF test procedure. In the test they propose, the assumptions about the distribution of error terms are quite mild.

The regression established for the Phillips-Perron (PP) test is the AR (1) process.

$$\Delta y_{t-1} = \alpha_0 + \gamma y_{t-1} + e_t \quad (23)$$

To solve the autocorrelation problem in the ADF test, variables are added to the model that represent the lagged values of the dependent variable. To correct the correlation in terms of e_t error, in the PP test, the t statistic of the coefficient γ of the AR (1) model is corrected. Thus, the PP statistic is a modified version of the ADF t statistic. The PP test has a less restrictive condition on error terms than the ADF test. Since the asymptotic distribution of PP t statistics is the same as the asymptotic distribution of ADF t statistics, the critical values of MacKinnon (1991) will be the same. As in the ADF test, the PP test can include a constant, constant, and linear trend, along with a lag in the difference of the variable depending on the regression model.

3.2.4. Variance Decomposition

The variance decomposition shows the ratio of the actions of the dependent variable to its own shock to the shocks of the other variables. Decomposition of variance with another variable

shows that the percentage of change in the variable is its own, and the percentage of variable is derived from other variables. If a value close to 100% of the change in the variant is self-explanatory, it is characterized as an external variable. In this context, variance analysis is used as a side assessment in determining whether variables are internal or external (Tari, 2008: 452-453).

3.2.5. Impulse Response Analysis

The dynamic structure of VAR models provides information for structural analysis. One of the methods used for the purpose of structural analysis is impulse analysis. It is possible to see the effect of the shock applied to one variable in the VAR model on other variables by the reaction analysis. (Hamilton J.D. Time series Analysis ..., p.327). In a multi-variable system, the effect of shocks can be estimated by the methods of impulse response or variance separation. Effect response analysis consists of measuring the response of a system to a series of shocks. (Zellner A., and Palm Franz C., 2004)

3.2.6. Granger Causality Test

In the VAR model, Granger Causality test is used to determine the direction of the relationships between variables. The direction of the relationships is analyzed under the assumption that variables affect each other through distributed lags in three-variable models, y_t , x_t and z_t . If it is more successful than predictive values using information other than y_t variable; The variable y_t is the cause of the x_t variable. This causality between variables is denoted as:

$Y_t \longrightarrow x_t$. If y_t and x_t variables are the causes of each other, the variables are in a mutual causality relationship. shown as $y_t \longleftrightarrow x_t$. The Granger causality test for stationary y_t and x_t variables is as follows.

$$y_t = a_1 + \sum_{i=1}^n \beta_i x_{t-i} + \sum_{j=1}^m \gamma_j y_{t-j} + e_{1t} \quad (24)$$

$$x_t = a_2 + \sum_{i=1}^n \theta_i x_{t-i} + \sum_{j=1}^m \delta_j y_{t-j} + e_{2t} \quad (25)$$

Here, it is assumed that both the error terms expressed in e_{1t} and e_{2t} are not correlated and have a white noise.

3.3.Emprical Analysis

In this analysis, since the analysis of Azerbaijan's GDP, Export and Import variables with VAR analysis is the most basic goal, our variables consist of GDP, Export and Import variables. Data on our variables are obtained from the official website of the World Bank. The data related to the variables are annual data and cover the years 1992-2018. Therefore, there are 27 observations for each variable. Variables consist of continuous data measured in millions of dollars. The natural logarithmic state of the variables will be used in the VAR analysis. The GDP variable symbolizes Gross Domestic Product, the EXP variable symbolizes Export, and the IMP symbolizes Import. The letter L is added to the variables with the natural logarithm, and the letter D is added to the variables with the first difference.

Before starting the analysis, the descriptive statistics of the variables were calculated and the results were presented in Table 3.

Table 3. 3: VAR Analysis

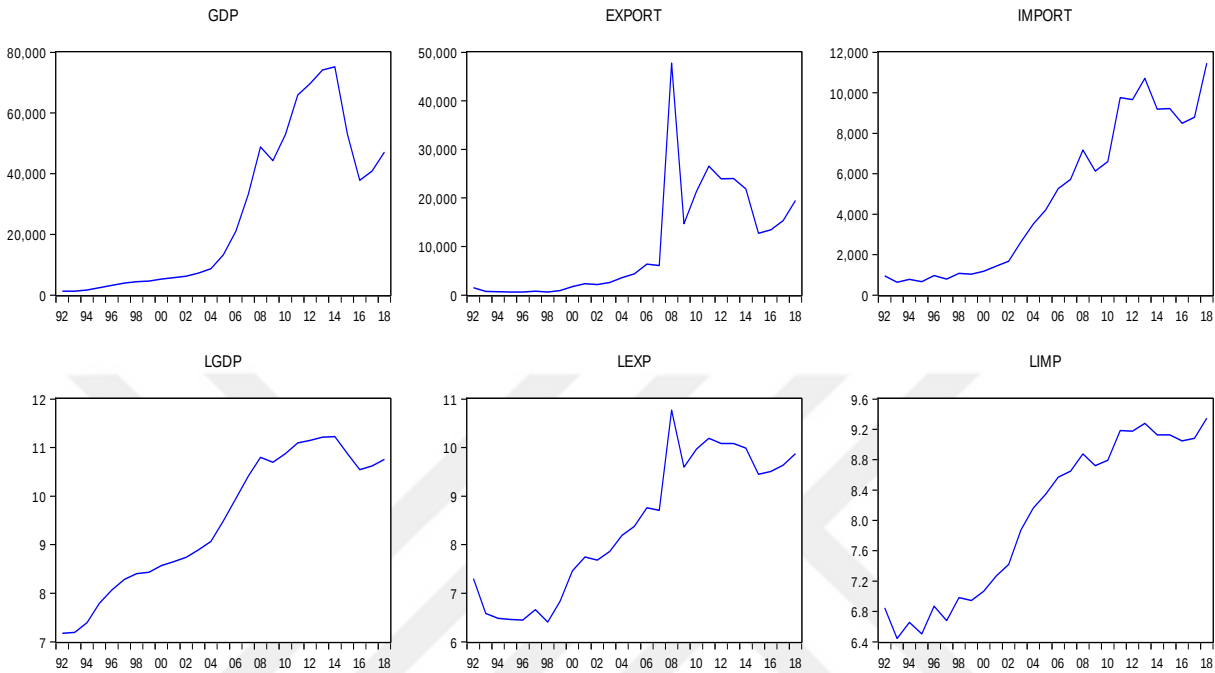
	GDP	EXPORT	IMPORT
Mean	27156.72	10250.13	4801.541
Median	13238.70	4347.200	4211.200
Maximum	75234.70	47756.00	11465.90
Minimum	1309.800	606.1000	628.8000
Std. Dev.	26127.02	11664.75	3786.773
Skewness	0.548272	1.401169	0.305047
Kurtosis	1.795257	4.845902	1.545234
Jarque-Bera	2.985540	12.66800	2.799627
Probability	0.224749	0.001775	0.246643
Sum	733231.4	276753.6	129641.6
Sum Sq. Dev.	1.77E+10	3.54E+09	3.73E+08
Observations	27	27	27

As can be seen from Table 3, the average GDP between 1992 and 2018 was \$ 27.156 billion. During this period, GDP reached a minimum of \$ 1.3 billion and a maximum of \$ 75.234 billion. While the average export was 10.250 billion dollars, the average import was 4.801 billion dollars. While the minimum and maximum exports were \$ 606 million and \$ 47.756 billion,

respectively, imports were \$ 628 million and \$ 11.465 billion, respectively. Since the skewness of the variables is positive, we can express that all variables are inclined to the right. This means that the values of most observable variables in a given period are smaller than average. Since the kurtosis values of the GDP and Import variables are less than 3, it is possible to say that the normal distribution is lower or thicker by comparison. If the kurtosis value of the export variable is greater than 3, it means that this variable is steeper or thinner than the normal distribution. Being a heavy-tailed distribution compared with the normal distribution, it means that up to degiskenliginin variables. Having a thinner tail distribution than the normal distribution means that the variability of the variable is less. In order to examine whether the variables have a normal distribution, when the Jarque-Bera test result, which is a normal distribution test, and the relative probability value are examined, it can be said that the GDP and Import variables have a normal distribution of 5%. However, it cannot be said that the export variable has a normal distribution. Because the probability value of the Jarque-Bera test is less than 0.05.

Since the variables used in the analysis are time series variables, it is necessary to examine the variation of the variables over time. Graphs showing the variability of variables over time contain important information. For this reason, the graphs of the variables are drawn and presented in Figure 1.

Figure 3. 2: Graphs of Level and Natural Logarithmic Values of Variables



As can be seen from Figure 5, all variables have a positive trend. In all three variables, the cause of the 2008 crisis is seen to be declining. Another decrease took place in 2015, when oil prices fell sharply, leading to two devaluations. Because variables have a trend, there is a preconceived notion that these variables are not stationary. Although the graphs show that the variables are not stationary, the safest way to study stationarity is to apply unit root tests on the variables. For this reason, the results of ADF and PP unit root test applied on variables are given in Table 4 and Table 5.

Table 3. 4: Results of ADF Test

UNIT ROOT TEST RESULTS TABLE (ADF)				
Null Hypothesis: the variable has a unit root				
At Level				
		LGDP	LEXP	LIMP
With Constant	t-Statistic	-1.8652	-0.7746	-0.3494
	Prob.	0.3422	0.8090	0.9041
With Constant & Trend	t-Statistic	-1.9535	-2.6755	-2.0019

	Prob.	0.5972	0.2536	0.5732
Without Constant & Trend	t-Statistic	1.2004	1.4245	2.3051
	Prob.	0.9364	0.9574	0.9932
At First Difference				
		d(LGDP)	d(LEXP)	d(LIMP)
With Constant	t-Statistic	-2.4865	-7.3054	-6.8266
	Prob.	0.0305**	0.0000***	0.0000***
With Constant & Trend	t-Statistic	-3.8543	-7.1445	-6.7776
	Prob.	0.0419**	0.0000***	0.0000***
Without Constant & Trend	t-Statistic	-1.9244	-6.9216	-3.5377
	Prob.	0.0533*	0.0000***	0.0427**

Table 3. 5: Results of PP Test

UNIT ROOT TEST TABLE (PP)				
At Level				
		LGDP	LEXP	LIMP
With Constant	t-Statistic	-1.5799	-0.8280	-0.3386
	Prob.	0.4783	0.7942	0.9059
With Constant & Trend	t-Statistic	-0.6526	-2.7233	-2.2674
	Prob.	0.9664	0.2360	0.4356
Without Constant & Trend	t-Statistic	2.1247	0.7599	2.3017
	Prob.	0.9898	0.8720	0.9931
At First Difference				
		d(LGDP)	d(LEXP)	d(LIMP)
With Constant	t-Statistic	-2.5959	-7.3054	-6.5352
	Prob.	0.070*	0.0000***	0.0000***
With Constant & Trend	t-Statistic	-2.9549	-7.1445	-6.5356
	Prob.	0.0637	0.0000***	0.0001***
Without Constant & Trend	t-Statistic	-1.9298	-6.8151	-5.0847
	Prob.	0.0527*	0.0000***	0.0000***

When Table 4 and Table 5 are examined, it is seen that at the 5% significance level, the null hypothesis, which states that the level values of the variables contain unit roots, cannot be rejected. However, according to the results of the ADF and PP tests applied on the first differences of variables, at the 5% significance level, the variables whose first difference was taken are stationary. Based on these results, we can say that the degree of integration of the variables is 1. So, all variables are series I (1).

After concluding that all variables are integrated to the same degree, the VAR (p) model can be established among these variables. Note that the order of the VAR model has not yet been determined. For this purpose, the order of the VAR model will first be determined. While determining the order of the VAR (p) model, the AIC and SIC criteria will be based on.

Table 3. 6: Order Selection of VAR(p) Model

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-1.303755	NA	0.000292	0.374240	0.522348*	0.411488
1	10.89674	20.15734*	0.000223	0.095936	0.688367	0.244930
2	20.85775	13.85879	0.000216	0.012370	1.049125	0.273111
3	31.91752	12.50236	0.000205*	-0.166741*	1.314338	0.205746*
4	39.82903	6.879571	0.000293	-0.072090	1.853314	0.412144

Based on the information presented in Table 6, we can say that the order of the VAR (p) model is 3. Because all criteria indicate that the VAR (3) model is suitable. This means that each variable has 3 lags in the VAR model. Thus, the VAR (3) model has been estimated. Since the coefficients of the VAR (3) model cannot be interpreted economically, the results of the VAR (3) model are not included here. Although the results of the VAR (3) model are not given, the VAR (3) model must satisfy the stability conditions. Besides, the errors obtained from the VAR (3) model must be white noise series. That is, the errors of the VAR (3) model should not include autocorrelation and heteroskedasticity.

Figure 3. 3: Stability Condition of VAR(3)

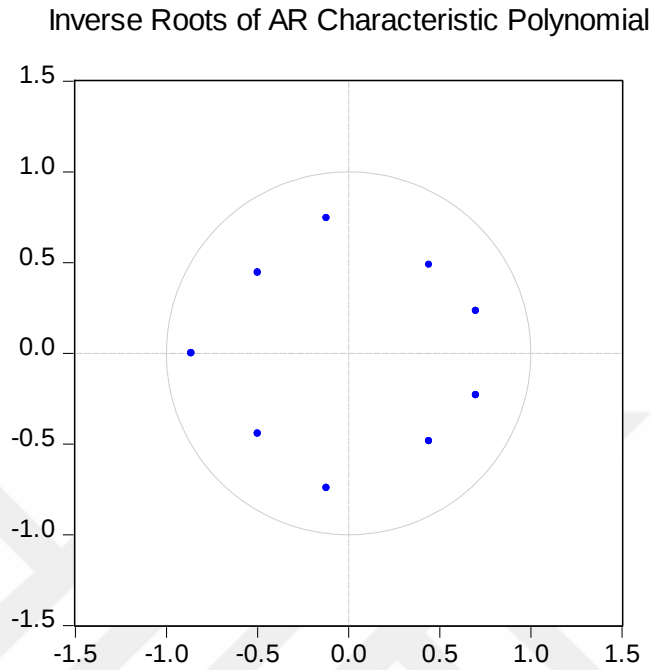


Table 3. 7: Stability Condition of VAR(3)

Roots of Characteristic Polynomial
Endogenous variables: DLGDP DLEXP
DLIMP
Exogenous variables: C
Lag specification: 1 3
Date: 04/23/21 Time: 19:06

Root	Modulus
-0.862275	0.862275
-0.119094 - 0.743194i	0.752676
-0.119094 + 0.743194i	0.752676
0.701409 - 0.231423i	0.738601
0.701409 + 0.231423i	0.738601
-0.496442 - 0.443454i	0.665662
-0.496442 + 0.443454i	0.665662
0.444118 - 0.486097i	0.658431
0.444118 + 0.486097i	0.658431

As can be seen from Figure 6 and Table 7, the characteristic roots of the VAR (3) model are less than one in absolute value. That is, the VAR (3) model satisfies the stability condition. After

determining that the VAR (3) model satisfies the stability condition, it should be examined whether the errors of this model are white noise series. For this purpose, autocorrelation and heteroskedasticity tests were performed on model errors and the results are presented in Table 6 and Table 7.

Table 3. 8: Autocorrelation Test Results

Null hypothesis: No serial correlation at lag h						
Lag	LRE* stat	df	Prob.	Rao F-stat	df	Prob.
1	5.468371	9	0.7917	0.584710	(9, 22.1)	0.7955
2	10.57636	9	0.3059	1.256293	(9, 22.1)	0.3135
3	11.35507	9	0.2522	1.370986	(9, 22.1)	0.2595
4	5.989419	9	0.7410	0.647232	(9, 22.1)	0.7455

According to the information presented in Table 8 there is no autocorrelation in the errors of the VAR (3) model. Because the chi-square table value at 9 degrees of freedom and 5% significance level is equal to 16.91. The calculated LRE statistical value for the LM test is 5.98, and since it is smaller than the chi-square table value, the null hypothesis, which states that there is no autocorrelation in the errors of the VAR (3) model, cannot be rejected. Also, the Rao F statistic equals 0.71. According to the 5% significance level, 9 and 22 degrees of freedom, the F table value is equal to 2.34. The rejection of the H_0 hypothesis fails because the critical value of the F distribution is greater than the calculated F statistic. As can be seen from this, both the chi-square test and the F test for autocorrelation testing failed to reject the null hypothesis. Both tests show that there is no autocorrelation in the errors of the VAR (3) model.

The result of the White test performed to determine whether there is Heteroskedasticity in the errors of the VAR (3) model is presented in Table 7 below.

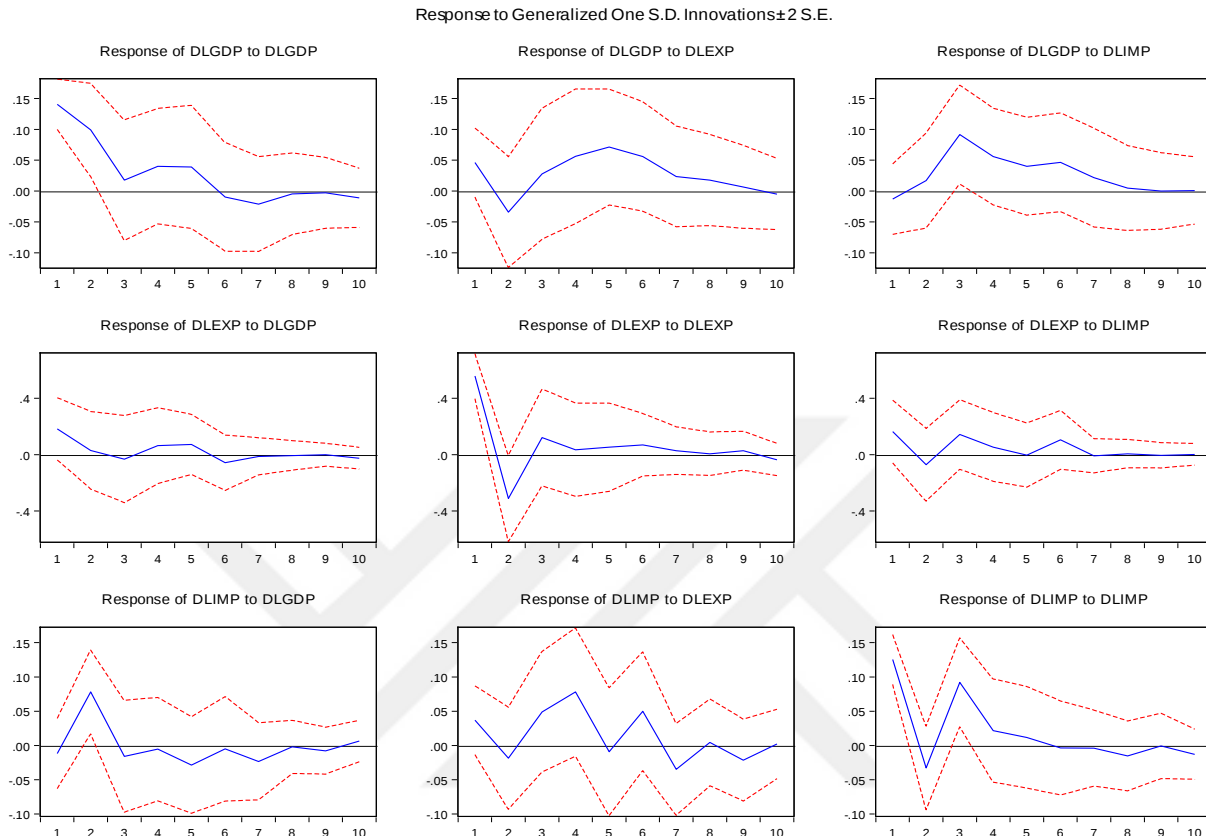
Table 3. 9: Heteroskedasticity

Joint test:		
Chi-sq	df	Prob.
98.97748	108	0.7211

As can be seen from the table, the calculated chi-square value is equal to 98.97. According to 108 degrees of freedom and 5% significance level, the chi-square table value is equal to 124.32. Since the calculated chi-square value is smaller than the chi-square table value, rejecting the H_0 hypothesis fails. Based on this result, it is obvious that the null hypothesis, which states that there is no heteroskedasticity in errors, cannot be rejected. That is, there is no heteroskedasticity in the errors of the VAR (3) model.

The results given in Table 8 and Table 9 show that there is no autocorrelation and heteroskedasticity in the errors of the VAR (3) model. These two results indicate that the errors of the VAR (3) model are followed by the white noise process. Since the VAR (3) model satisfies the stability condition and the white noise condition of the errors, impulse-response analysis, variance decomposition and causality analysis can be performed using this model. The graphics of the impulse-response analysis made using the VAR (3) model are presented in Figure 6.

Figure 3. 4: Impulse-Response Graphics of VAR(3)



By examining the impulse-response graphs, we can obtain the following results.

- The first 2 periods show a statistically significant response to a standard deviation shock occurring in the GDP itself.
- GDP does not show a statistically significant response to one standard deviation shock in Export and Import.
- Only the first period shows a statistically significant response to a standard deviation shock at export itself.
- Exports do not show a statistically significant response to one standard deviation shock in GDP and Imports.
- The first and third periods show a statistically significant response to a standard deviation shock occurring in the import itself.
- Imports do not show a statistically significant response to a standard deviation shock in GDP and Export.

Based on the results of the VAR model, a Variance Decomposition was made in order to determine how much of the changes in the variables in the system were explained by other variables and the results are presented in the graphs below.

Table 3. 10: Variance Decomposition of GDP

Variance Decomposition of DLGDP:				
Period	S.E.	DLGDP	DLEXP	DLIMP
1	0.140542	100.0000	0.000000	0.000000
2	0.193539	78.93971	13.27782	7.782467
3	0.215854	64.13033	11.84898	24.02069
4	0.229121	59.98752	14.47861	25.53388
5	0.241715	56.51158	19.55709	23.93134
6	0.251179	52.47710	24.29052	23.23238
7	0.254291	51.89070	25.30999	22.79931
8	0.255150	51.57265	25.76814	22.65921
9	0.255311	51.52156	25.83368	22.64476
10	0.255562	51.61397	25.78573	22.60030
11	0.255658	51.63814	25.76757	22.59429
12	0.255707	51.61831	25.76682	22.61488

According to the information presented in Table 10, the total change in GDP in the first year is explained by him. In the second year, 78.9% of the total change is explained by itself, while approximately 21% is explained by exports and imports. Although the share of imports is higher in explaining the variance in GDP in the first 4 years, the share of exports increases in the following years. At the end of 12 years, 51.6% of the change in GDP is explained by itself, while 48.4% is explained by export and import.

Based on the information presented in Table 10, we can say that 89.2% of the total change in exports in the first year was explained by itself and 10.8% by the GDP. In the second year, 91.44% of the total change in exports was explained by him, while approximately 8.56% was

explained by GDP and imports. For 12 years, approximately 86% of the total change in exports is explained by itself, 10% by GDP and 4% by imports.

Table 3. 11: Variance Decomposition of Export

Variance Decomposition of DLEXP:				
Period	S.E.	DLGDP	DLEXP	DLIMP
1	0.556630	10.72502	89.27498	0.000000
2	0.655010	7.954621	91.44769	0.597691
3	0.677437	7.659084	89.68175	2.659171
4	0.683073	8.405806	88.24701	3.347185
5	0.687554	9.377145	87.30432	3.318533
6	0.699960	9.734927	86.00794	4.257137
7	0.701280	9.730910	85.92079	4.348299
8	0.701364	9.736680	85.91411	4.349205
9	0.702140	9.715490	85.89427	4.390236
10	0.703325	9.821806	85.78512	4.393075
11	0.703585	9.815707	85.75052	4.433775
12	0.703776	9.810437	85.75707	4.432494

In the light of the information given in Table 11, we can say that 87.38% of the total change in import in the first year was explained by itself and 12.62% by GDP and Exports. In the second year, 57.49% of the total change in imports was explained by him, while approximately 42.51% was explained by GDP and exports. When the import explanation rates of the GDP and Export variables are compared periodically, it is seen that the export explanation rate for imports in all years, except for the second period, is higher than the import explanation rate of GDP.

Table 3. 12: Variance Decomposition of Import

Variance Decomposition of DLIMP:				
Period	S.E.	DLGDP	DLEXP	DLIMP
1	0.125554	0.865508	11.75111	87.38338
2	0.155363	25.76424	16.74453	57.49123
3	0.182850	19.34567	21.91809	58.73624
4	0.201632	15.97968	35.55031	48.47001
5	0.203860	17.57898	34.77748	47.64354
6	0.212507	16.23178	38.59442	45.17380
7	0.215753	16.90980	39.23023	43.85996
8	0.216628	16.78243	38.97645	44.24113
9	0.217776	16.73231	39.41900	43.84870
10	0.218275	16.74373	39.23895	44.01733
11	0.218818	16.75867	39.32323	43.91810
12	0.219097	16.75993	39.27241	43.96766

The causality analysis among the variables included in the system was tested with the Granger causality test and the results are given in Table 13

Table 3. 13: Granger Causality Test Results

VAR Granger Causality/Block Exogeneity Wald Tests				
Sample: 1992 2018				
Included observations: 24				
Dependent variable: DLGDP				
Excluded	Chi-sq	df	Prob.	
DLEXP	9.912813	3	0.0193	
DLIMP	7.634902	3	0.0542	
All	15.77801	6	0.0150	
Dependent variable: DLEXP				
Excluded	Chi-sq	df	Prob.	
DLGDP	2.259329	3	0.5204	
DLIMP	1.195802	3	0.7540	

All	3.838028	6	0.6986
Dependent variable: DLIMP			
Excluded	Chi-sq	df	Prob.
DLGDP	19.00519	3	0.0003
DLEXP	10.47170	3	0.0150
All	25.14186	6	0.0003

According to the results of the Granger Causality test, exports are the cause of GDP at the 5% significance level, while imports are the cause of the GDP at the 10% significance level. At the 5% significance level, GDP and Import are not Granger reasons for Export. At the same time, according to the 5% significance level, GDP and Exports are the Granger reasons for Imports. Based on the result of the causality tests, there is a bilateral causality relationship between GDP and export, GDP and import. The causality between export and import is one-sided and the direction of causality is from export to import.

CONCLUSION

In this analysis, the relations between exports and imports, which are the foreign trade indicators of Azerbaijan, and the GDP of Azerbaijan are analyzed through the VAR model. Before performing the VAR analysis, examinations were made to see if the variables were stationary. According to the results of ADF and PP tests, it was seen that all variables are stationary, but they contain unit root at the level or not. According to the information criteria, the most suitable delay for the VAR (p) model was determined as 3. According to the results of the autocorrelation and heteroskedasticity tests performed over the errors of the predicted VAR (3) model, it can be said that the model errors do not include autocorrelation and different variances.

Impulse-response analysis reveals that the GDP variable does not show a significant response to shocks in exports and imports. The export variable does not show a meaningful reaction to the shocks in import and GDP variables. However, import, on the other hand, turned out to be a reaction against shocks in the GDP variable.

The results of the analysis of variance decomposition also reveal how important exports are in terms of GDP and Import. Exports play an important role in explaining the changes in both GDP and imports. In explaining changes in exports, GDP and imports do not have a considerable explanatory power.

Findings from the Granger causality test show that there is a dual causality relationship between imports and GDP. In addition, it has been determined that there is a causal relationship from exports to imports and GDP, but a causality relationship from imports and from GDP to exports. As it is known, the share of oil and petroleum products in Azerbaijan's GDP and Exports is very high. Therefore, most of the foreign currency included in the country comes from the sale of petroleum and petroleum products. Especially since 2006, with the opening of the Baku-Tbilisi-Ceyhan oil pipeline, billions of dollars of foreign currency inflow to the country in a short time. In the face of this situation, the local currency appreciated according to the manat dollar. The Central Bank has implemented a fixed exchange rate policy against the overvaluation of the manat. As a result, the amount of imports started to increase rapidly as the imported products became more attractive in terms of price and quality. As can be seen from the analysis results, highway exports and GDP imports were the reasons for Granger, due to the oil exports, which played an important role in GDP and export growth. The absence of a causal relationship between GDP and imports in exports can also be explained by oil exports. Considering that the majority of exports consist of petroleum and petroleum products, it is expected that the export variable will not be affected by imports and GDP. Although the export variable is considered to be the endogenous variable, Azerbaijan's exports are the variable with the highest external impact under this model, as the oil price is determined in the world market except Azerbaijan.

Political-Economic Sugestions

Despite all the positive developments experienced after independence and the solution strategies and policies implemented by the governments, there are still certain problems in the Azerbaijani economy, the most important of which are the dependence of the economy on the oil sector, the failure to adopt the employment-friendly economic growth model, regional imbalance, inefficiency of the agricultural sector Socio-economic problems, high interest rates, high tax

burden, inadequate development of public services, low rate of incorporation, weak corporate governance tradition, widespread "cash economy", artificial monopoly, caused by the occupation of Nagorno-Karabakh and surrounding regions by Armenia for 29 years. , informality, corruption and various infrastructure problems. Policy measures may be effective in solving the current problems in the economy in the following directions:

- Following the government's 2008-2012, 2013-2015, 2016-2018 and 2019-2023 programs for sustainable economic development, increasing the employment level, reducing poverty, reducing the unfair distribution of income, reducing different development levels among regions, developing non-oil sectors, and this Continuity of directional government policies:

- To benefit from the applicability of laws and the experience of developed countries in the free market transition process

- It is necessary to move from the economic growth model based on natural resources to the economic growth model based on high technology and productivity. For this, the promotion of new technology transfer to the country, the establishment of technoparks, the implementation of the most perfect models of science-economy cooperation, the establishment of modern production and management systems and optimal size economic units that increase efficiency in the field of resource allocation and use in the economy, increasing the quality of education, especially technical education:

- Efficient use of approximately 43 billion dollars of reserves accumulated in the petroleum fund. Efficient use of investors from this resource and insuring and securing the post-oil period by increasing these resources with effective investments at home and abroad:

- In order to reduce poverty and income inequality, it is necessary to develop existing policy mechanisms for combating poverty, and to actively use fiscal policy tools to reduce income inequality:

- Developing policies that will ensure the continuity of the fight against inflation and minimize the adverse effects of inflation on the economic system:

- The effect of interest policy on bringing unregistered savings to the official sector in the form of investment should be increased. In this respect, minimizing the difference between the

average interest rate applied to deposits and the average return level of capital in the informal sector, and making the rate of interest applied to investment loans effective to encourage investment activities in the official sector may be effective:

-In order to ensure the long-term continuity of foreign exchange revenues, which is an important element of macroeconomic stability in the country, policy measures should be taken to increase the export potential of non-oil sectors in order to reduce the dependence of export revenues on oil:

- In order to ensure the continuity of the budget balance and the realization of the socio-economic functions of the budget more effectively, its dependence on the oil factor should be reduced over time and the level of financing with permanent income sources such as taxes should be increased:

- Developing policies to encourage foreign investments in the non-oil sector, considering that they both accelerate economic development and have a limiting effect on the informal sector:

- State incentive mechanisms should be developed for entrepreneurs. In this respect, the measures to expand the incentives for new entrepreneurs, to develop the cheap crediting mechanism of the National Fund for Support to Entrepreneurship, to increase the effectiveness of the incentive mechanism applied in the agricultural sector, to expand the scientific and knowledge acquisition support to entrepreneurs by the state, and to improve the rewarding mechanism of entrepreneurs by the state will be effective.

-Entrepreneurship infrastructure needs to be developed. In this respect, it is especially important to develop the capital and insurance market, to establish organized industrial zones, to develop the consultancy services sector and the exhibition infrastructure. - The level of ensuring the rights and interests of entrepreneurs in the country should be further increased. In this respect, it is necessary to increase the organizational level of entrepreneurs, to prevent delays in official transactions and to protect intellectual property or copyrights.

- The policy of combating the informal economy should be developed. In this direction, it is important to prepare a state program in the fight against the informal economy, to establish an official central institution, to develop statistical data, to harden the penalties, and to eliminate legal gaps.

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