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The Relationship Between Growth and Foreign Trade in Turkey

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Thesis title

The Relationship Between Growth and Foreign Trade in Turkey

Objectives of thesis

The main objective of this study was to examine the causality relations
between financial development, trade openness and economic growth (GDP) for the Turkish economy.
This research will contain information about economic growth and it's relationship between country.
There will be a theoretical part and practical part in this research.Outcome of this research will show
affect of foreign trade in Turkey's economy.

Methodology

In this study, the relationship between the foreign trade of Turkey and the increase in the growth volume
of the country in that period will be explained.In practical part growth theories and foreign trade theories
will be explained and so on the relationship between those theories.Import, export,

and economic growth will be discussed within the notional and theoretical contexts.

Declaration

I declare that all the information and results presented in this thesis as my original work and using only listed resources and literature. As the author, grants to the Czech University of Life Science Prague permission to distribute copies for this university or other institute of learning.

Prague on 10.11.2020

The Relationship Between Growth and Foreign Trade in Turkey

Abstract

Besides the significant importance of foreign trade in international economic actions, perhaps its main importance is its close link with the macro and micro economic structure in a country. On the one hand, foreign trade is an important cause that can lead to many important economic consequences and therefore is a tool. On the other hand, foreign trade is an important result and one of the objectives of economic policy

In first part of the study contains theoretical information about Turkey's foreign trade history and its relationship between economic growth. Second part contains a variety of econometric methods about selected time series.

This empirical report analyses the relationship between exports, imports and economic growth (represented GDP) using data on Turkey's annual time series for the period 1980-2018. A variety of econometric approaches are used in the analysis, such as: ADF unit root test, Johansen cointegration test, Vector Error Correction Model (VECM).The results of this analysis show that economic growth is positively affected from exports and imports in long term.

In result, the Johansen Cointegration Test indicates the existence of a long-term relationship between international trade and economic development. There is a long-term and collaborative relationship between exports, imports and GDP.

Keywords: Foreign trade,Economic Growth,Economic policy ,Foreign trade in Turkey,Economic Growth in Turkey

Vztah mezi růstem a zahraničním obchodem v Turecku

Abstraktní

Kromě velmi významného zahraničního obchodu v mezinárodních ekonomických akcích, je jeho hlavní důležitostí úzká vazba na makroekonomickou a mikroekonomickou strukturu v zemi. Na jedné straně je zahraniční obchod důležitou příčinou, která může vést k mnoha důležitým ekonomickým důsledkům, a proto je nástrojem. Na druhé straně je zahraniční obchod důležitým výsledkem a jedním z cílů hospodářské politiky

První část studie obsahuje teoretické informace o historii zahraničního obchodu Turecka a jeho vztahu mezi ekonomickým růstem. Druhá část obsahuje řadu ekonometrických metod o vybraných časových řadách.

Tato empirická zpráva analyzuje vztah mezi vývozem, dovozem a ekonomickým růstem (představovaným HDP) s využitím údajů o roční časové řadě Turecka pro období 1980–2018. Při analýze se používají různé ekonometrické přístupy, například: kořenový test jednotky ADF, Johansenův kointegrační test, Vector Error Correction Model (VECM). Výsledky této analýzy ukazují, že ekonomický růst je z dlouhodobého hlediska pozitivně ovlivněn vývozem a dovozem. .

Výsledkem je, že Johansenův kointegrační test naznačuje existenci dlouhodobého vztahu mezi mezinárodním obchodem a ekonomickým rozvojem. Mezi vývozem, dovozem a HDP existuje dlouhodobý vztah založený na spolupráci.

Klíčová slova: Zahraniční obchod, hospodářský růst, hospodářská politika, zahraniční obchod s Tureckem, hospodářský růst v Turecku

Contents

1. Introduction

The relationship between economic development and international trade has always been an important subject of study for scholars. Although several studies have shown that there is a strong association between international trade and economic development, some studies have also shown that there are no results of causality between these variables.

The macroeconomic aim of economic development is one of the central macro-economic objectives of each government. GDP. When measured using the expenditure equation, we infer expenditure on sales, investment, public expenditures and net exports

Today, achieving internal and external macroeconomic balances in the global economy is closely linked to foreign trade. Developments in foreign trade have the power to deeply affect not only micro-companies but also sectors and national economy.

Turkey's economy was a relatively closed economy before the 1980's. After the trade liberalization decision taken in 1980 it has shaped as a global economy. The expanding trade volume of the country's economy has grown over the years and it has been observed that the GDP has increased.

The key aim of this research is to analyze the causal relations in co-integration and error correction models between exports, imports and economic growth in Turkey for the period 1980 to 2018. All the data used in this analysis are collected as annual data in the current $ from the World Bank Indicators database. The study is structured in 2 parts. First part contains theoretical information about the historical background of Turkey's economy. In the practical section which is the second part of research, ADF unit root test and Johansen Cointegration test has been applied to time series in terms of detecting cointegration relationship between selected variables.

1.1. Objectives

International trade elements have become very essential in order to have a strong economy in a globalizing world. With this study, it is aimed to determine the effects of foreign trade on the economy. The main idea behind this study is to find out the correlation between economic growth and foreign trade units such as export and import .In order to better determine this relationship between growth and foreign trade, GDP has been taken as an indicator of economic growth. The data used for this study are annual GDP, export, import data from 1980 to 2018 in the current US$ format.

With the Decisions of January 24, the import substitution growth strategy applied in the pre-1980 period was abandoned, the outward-oriented growth strategy was put into practice and the growth strategy basically aimed to increase productivity and increase the competitiveness of the economy .In this context, it is aimed to determine the effect of increasing foreign trade activities on the economy after 1980.

1.2. Methodology

For several years, the relationship between exports, imports and economic development has attracted the interest of researchers, and this has contributed to the production of international and domestic literature. Quantitative secondary statistics was used in this report. The research used in this study includes the annual time series from 1980 to 2018. The data collection consisted of annual GDP observation, export of goods and services in (current US$),import of goods and services (current US$) in Turkey. All data is taken from World Development Indicators. In terms of having more sensitive analysis these three time series transformed into logarithmic versions.

The data used in the VAR and VEC model must be stationary. For this reason, standard generalized Dickey Fuller (ADF) unit root tests were performed to determine whether the series are stationary or not. After checking stationary levels of all variables, the existence of cointegration between variables was investigated using the Johansen Cointegration

Test under the wider framework of Vector Autoregressive (VAR) model and Vector Error Correction (VEC) models.

2.Theoretical Context

In order to better understand the relationship between economic growth and foreign trade, the research has been divided into two sections. The first section includes a general conceptual analysis of foreign trade and general overview of Turkey's economic model and economic development from 1980's to today. It will also include associated problems about foreign trade and advantages of foreign trade for countries.

2.1.Conceptual Dimension and General Analysis of International Trade

International trade, within the most fundamental sense, is the exchange of a good or service created in a nation to that country in return for the cash, merchandise and services of another nation. It also makes available goods and services that consumers cannot access globally. International trade creates economic, political and social interdependence between countries, international organizations and business circles, and operates in the form of import and export. While it helps economic development especially in developing countries, it is also effective in making various political decisions, establishing regulators such as sanctions, incentives and law. Especially in developed and emerging states, foreign trade is a fundamental portion of the gross domestic (GDP), which upgrades the economy of a nation. Over the course of centuries, foreign trade and economic development have had noteworthy effects on the development of a country, Therefore within the hardship of foreign trade, people are gathered to be substance with what is accessible locally.

2.2. Historical Background of Foreign Trade in Turkey

Turkey has pursued a protectionist trade policy before 1980.It is necessary to investigate the trade openness under 2 section. The primary explanation behind this qualification is that while import substitution economy policies were followed before 1980, after the 1980s, with a rapid change, import substitution trade policies were abandoned and steps towards trade openness were taken.

As the economic crisis in 1929 affected the whole world, exports increased to 75 million dollars, imports increased to 124 million dollars and the foreign trade deficit reached 49 billion dollars. Therefore, from the beginning of the 1930s, foreign trade was restricted in order to reduce foreign dependency. As a result of this, while there was a foreign trade deficit between 1923-1929, there was a foreign trade surplus in 1930 and 1931 Excessive foreign trade continued from 1930 until 1937.+ (Emine & Mesut 2016).

When the distribution of Turkish foreign trade by sectors in this period is analyzed, there is a significant export of agricultural products in parallel with the structure of the agricultural society. In the first years of the Republic, most of our export products (over 85%) were agricultural products (leaf tobacco, grape, cotton, hazelnut, olive oil, angora, rose oil), while imports were generally industrial products and basic consumer goods such as textiles, clothing and sugar. In 1923, approximately 37% of the foreign trade volume of 138 million dollars was export, while 63% was imports. (Muhammed,Güzin,Ünal 2015).

In 1930 and 1931 no intervention measures were taken against the domestic economy, but strict controls were applied to foreign trade. Turkey, like other countries in 1929 was adversely affected by the world economic crisis. The law on import quotas and export control is considered as the first steps of protectionism in economic policy (Muhammed ,Güzin,Ünal 2015).

The 1950s can be named as the second liberal period in the history of the republic. Private sector initiatives in the trade and industry sectors were noteworthy. In addition, it is planned that large capital investments (energy, ports) will be made by the state. As a result of the economic policy implemented between 1950 and 1960, the agricultural sector underwent a radical change with the support of rapid mechanization and product prices and the opening of new areas to production, the rural areas were opened to the market and the process of urbanization began. The main development has been in transportation and other service segments. The government that came to control with the transition to the multi-party period in 1950 adopted the liberal economy policy by excluding the policy of statism, but in 1952, as a result of the doubling of the foreign trade deficit compared to the past year, imports were confined once more and the free import regime was totally abolished from 1953.(Muhammed ,Güzin ,Ünal 2015)

Graph 1.:The ratio of exports to imports
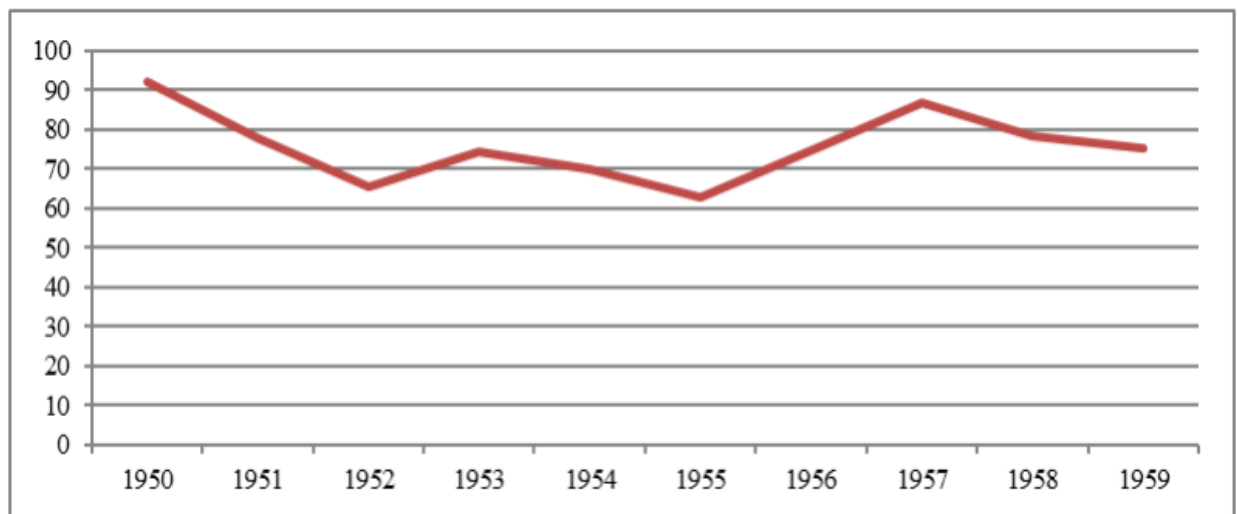
Source:TUIK website

In 1958, an economic stabilization program began to be implemented, which envisaged the reduction of the barriers to imports and the devaluation of the Turkish Lira. As a result of the devaluation in 1959, exports increased 43%, and imports increased 49% as a result of the reduction of import barriers. The economy has grown by about 5%.

In order to allocate the domestic market to domestic production between 1963-1974, the import of goods whose production level reached sufficient quantities was prohibited and an import substitution policy was followed. With the oil crisis in 1974, terms of trade reversed and increased costs made imports difficult. The government has taken measures to facilitate imports in order not to affect production. In 1974, there was an 81% increase in imports. Due to the truth that the economy is dependent on agriculture and agriculture is subordinate on climate conditions, fluctuations are observed within the GDP within the period inspected.(Muhammed ,Güzin,Ünal 2015; Emine & Mesut 2016).

 Between the years 1955-1979, there was no year in which the economy shrank. There's a foreign trade deficit all through the period. At the starting of the period, the export coverage ratio of imports was 78.1% and the growth rate was 12.8%, at the end of the period, the import scope ratio of sends out decreased to 36.8% and the economy shrank by 2.4%.After 1980 Turkish government started to take steps towards trade openness in Turkey's economy. With the economic decisions of January 24, 1980, import substitution arrangements were abandoned and an export-oriented industrialization approach was adopted. Amid these years, different economic studies were carried out on the relationship between exports and financial development. As a result of these studies, encouraging export policy recommendations were produced (Muhammed,Guzin,Unal 2015;Sennur 2009;Rabia 2018).

Turkey has taken important steps towards export-oriented industrialization with the decisions taken on 24 January. We can summarize the decisions taken on January 24 as follows.

-Liberalization of imports

-Transition to "realistic" flexible exchange rate application that put an end to the overvaluation of TL

-Providing institutional support for the promotion of export and foreign capital, export financing and insurance.

-Eliminating price controls by gradually reducing subsidies.,

-Liberalization of interest rates

-TL was devalued by 48% and its value against the dollar was reduced from 47 TL to 70 TL.

With the devaluation in 1980, it was hoped that exports would be increased and thus foreign exchange earnings would be increased. Important changes were made in the import regime in 1984.A foreign trade policy which is more compatible with the world economy was followed by shifting the import quotas to non-tariff barriers. The 1980 Decisions and the following are the economic policy practices that support these decisions. Incentives implemented to increase exports, wages and salaries kept below the level of inflation, domestic demand narrowed to give more importance to foreign markets for exporters, as a result, exports of efforts to hopping purchasing power increased and the trade volume between Turkey and neighboring countries of the Middle Eastern country as a result of the increase occurred in oil prices played an important role in the increase.. The devaluation policies implemented in this period were seen as a factor that increased the international competitiveness of the export sector, while creating a decrease in the purchasing power of the working population. Although there was a slight decrease in the foreign trade deficit in 1988, a significant increase in the foreign trade deficit in 1989 and 1990 has been experienced. In 1994, there was a significant decrease in the foreign trade deficit (Sennur 2009;Emine & Mesut 2016;Tosun and Dani 1990).

As a result of the economic policies implemented since the early 1990's national currency strengthened ,Thereupon exports decreased and imports increased. Until the beginning of 1994, valuable TL had a negative effect on exports and increased imports. However, with the high rate of devaluation in 1994, there was a shrinkage in imports and exports increased.

Before 1980 agricultural products constituted a major part of Turkey's exports . Along with the economic decisions taken in 1980, Turkey's foreign trade structure has changed. While the share of agriculture in exports has decreased, a more industry-oriented export understanding has been adopted (Muhammed,Güzin,Ünal 2015).

2.2. Relevance Between Economic Growth and Foreign Trade

The general perception is that the economy will develop and grow with the increase in exports. Thus, export-based financial policies are significantly important for a country to develop it's economic value. Every product sold abroad allows foreign currencies to enter the country, which allows the local currency to gain value. Therewith, Countries can get raw materials which they do not have in their land and it can be usable to create new items which can be offered as a new export merchandise. However, rising production capacity will contribute to the expansion of exports and the improvement of a society's prosperity. Also, along with large quantities of output, economies of scale will arise. The enhanced ability of foreign trade would increase sales, capital and income distribution, thereby having a positive effect on economic development (Ozmen,Ozer 1999).

In addition, growing foreign trade revenue will also encourage the import of necessary capital and intermediate goods, which can in turn be used in the manufacture of goods and services geared towards exports. Therefore, as a result of growing the amount of foreign trade and local output at the same time, a positive foreign trade balance will unidirectionally contribute to economic growth. The expansion of a positive foreign trade balance could boost the distribution of resources resulting from increased competitive advantage, economies of scale and utilization of capacity; increase the amount of sales of locally produced goods in global markets; produce technological advances through increased competition; and impact positively on employment rates. To obtain the above-mentioned benefits, however, a minimum level of development is required. Export expansion policies are therefore very critical for maintaining a stable foreign trade balance and for improving economic development.(Dilek.,Aytaç ,Mahir &Nayier 2017;Aytaç, Dilek 2010).

An growing amount of foreign trade is conducive to learning, acquisition of technical requirements, specialization in intra-industry fields and increased competition, resulting in higher production efficiency and potential expansion of foreign trade. Economic growth can thus be considered a multiplier of the rise in foreign trade. It is necessary to have a liberal commercial regime to promote the improvement of foreign trade. A liberalized trade regime tends to expand more rapidly and allow for better GDP growth .If a wide array of countries could be equally prone to increasing GDP and foreign trade growth, there could be an overall positive global investment climate, as well as an increase in the global rate of development, consumption and profitability. Global integration will increase the rate of economic growth and the amount of foreign trade on a long-lasting and continuous period, on a regional basis or in a broader context. The rate of flow of innovations, money, know-how and intellectual property will be increased by global sourcing, global procurement of raw materials and related inputs, and accelerated global commercial potential.(Dilek ,Aytaç ,Mahir &Nayier 2017)

In turn, this exchange of ideas, money, know-how and intellectual property will boost many countries' economic and foreign trade potential. Unrestricted and free trade, however, is an integral component of such innovations around the world.

The fact that free trade has positive reflections on economic growth is widely acknowledged. In order to encourage economic development, free trade can be encouraged by decreasing restrictions on exports and imports. An increase in the amount of economic growth will result from an increase in productivity through intensive production and a rising number of customers who have more choices to choose from. Often, an economy becomes more dynamic due to specialization and optimum distribution of resources, and these dynamic gains make additional sources available, such as physical capital and human capital, arising from increasing domestic savings rates, as well as providing enhanced technical changes and increasing innovation. In addition to the above, already established economies of scale and positive externalities such as physical capital accumulation, developing the skills of the current labour force and generating new knowledge and know-how will have a positive spillover effect and increase productivity, economic development and foreign trade opportunities. Moreover, increasing

competition in the domestic and foreign markets, preventing uncertainty and building a favorable investment climate will cause economic growth (Dilek ,Aytaç,Mahir &Nayier 2017).

Another critical factor stimulating global development and positive international exchange opportunities is the openness of exchange. This is also due to the degree of growth of countries. Due to the favorable connection between trade openness and economic growth, a positive investment environment will draw more investors to a region. If the exported goods are much better than the competitors, this will have a positive effect on the country's foreign trade prospects. As an unencumbered commercial and economic climate is conducive to further investment, the effect of trade openness on the growth of a country is important. Tariff and non-tariff barriers to the integration of the global economy should be overcome. Trade openness is often accompanied by financial openness, since the ease and pace of repatriation of remittances, revenues and royalties are indispensable components in attracting foreign investment to a country to accumulate resources and expand economic development (Dilek ,Aytaç ,Mahir &Nayier 2017).

Moreover, it could be argued that greater international integration within the global economy could provide a stronger framework for development and economic growth as a result of increase in foreign trade volumes. Openness to foreign trade will boost economic development and present opportunities for countries and multinationals, as well as increase the wellbeing of individuals.

In this regard, trade liberalization and export-led development are major issues to be discussed as crucial strategies. In order to remove tariff and non-tariff barriers, trade liberalization is now necessary in order to improve the pace of economic output and the amount of foreign trade. The global circulation of production factors may allow countries to specialize and obtain a comparative advantage. Global and domestic markets can function better and ensure growth if policymakers refrain from inefficient intervention. Free trade will then become advantageous to all the parties involved by means of an aggregate rise in productivity and demand. Effective state policies will promote a commitment to free

trade alongside export-led economic growth strategies. In turn, efficient production would make it possible to reduce costs and lower prices (Dilek ,Aytaç ,Mahir& 2017).

By allowing the adoption of contemporary technology and specialization, which is the optimal allocation and use of resources, international trade could stimulate economic growth. The relation to this problem is openness to free trade. Compared to their competitors, countries with strong financial markets, competent human resources, advanced technology and comprehensive R&D activities will do well in foreign trade (Dilek ,Aytaç ,Mahir &Nayier 2017).

The extent of financial development of an economy, however, is a defining factor that has a positive effect on the nexus between international trade and economic growth. The funding of productive investments, the expansion of money and capital markets, and the timely provision of liquidity requirements are key components of economic development and foreign trade. In addition, trade openness is necessary in order for the financial system to work effectively to increase the amount of production.

The level of openness of the economy can also be a driving factor in attracting foreign investors to the national stock markets. Favorable interaction on the stock exchange induces capital accumulation. Improving the capacity for foreign trade will improve national competitiveness, stimulate growth and encourage economic development (Dilek ,Aytaç ,Mahir &Nayier 2017).

2.3. Importance of Competitive Advantage in Foreign Trade

Achieving a competitive advantage in an objective market may mean better profits and higher growth rates along with living standards. Competitive advantage is one of the key factors that can integrate domestic economies with the global economy, resulting in increased export volumes and welfare. Local companies should specialize in certain sectors and extend sales operations overseas in order to be competitive. In the 21st century, domestic businesses with strategic advantages and international commercial transactions can be accomplished in the global marketplace. In order to obtain new inputs,

the free flow of goods, services , technology and capital between foreign markets is necessary and is a basic concept of free trade. Nevertheless, export-led economic growth is a key issue, identifying a competitive advantage for local companies and ensuring productivity , flexibility and profitability both domestically and abroad.(Dilek,Aytaç ,Mahir &Nayier 2017).

For countries, competitiveness is highly essential for economic development. Competitiveness consists of state policies that structure a country's ability to build and maintain an atmosphere conducive to economic growth and free trade. Competitiveness is a state's capacity to produce and sell its products and services to raise its GDP in global markets.

Global competition is based on a country's ability to represent and maintain its share of foreign markets compared to the performance levels and quality of products of its rivals. As a consequence, competitiveness is a mixture of government policies, institutions and relative factors that define the level of successful productivity in a country. In the long term, productivity is directly related to the establishment and maintenance of sustained development. In addition, nations with competitive industries tend to have long-term economic growth and improved international exchange. The productivity of a nation improves how much better its industries can produce and sell their products and services than their rivals on a global scale. Moreover, the degree of competitiveness of a country is also relevant when its industries compete fiercely with each other to build industry-specific capabilities.(Dilek ,Aytaç,Mahir &Nayier 2017).

Conclude, competition is a synthesis of the economic strength of all sectors and firms in the global marketplace. In particular, if these skills are incorporated, there will be country-specific competition, which in turn develops the capacity for welfare and international trade. Improving manufacturing potential, improving human capacity, growing energy production and consumption, and productive capital markets, along with the advancement of international trade volumes, are important for economic growth.

2.4. Foreign Trade and Associated Problems

In the field of international economics and international market, the nature and connection of foreign trade and economic development has been an important subject. Associated with this, openness to trade and economic growth are also critical. None of the world's nations are adequately capable of responding to the needs and expectations of their consumers on their own. International trade thus appears as an important issue in covering a country's deficits by exporting and importing. Consequently, growing amounts of international trade will have a beneficial effect on economic development by expanded production, inflows of hard currencies, and welfare. In addition, an economy that is not limited by barriers and favors trade openness would allow state governments to introduce various policies to boost trade capacity and national efficiency, as well as possible regional integration and international trade agreements (Dilek,Aytaç ,Mahir &Nayier 2017).

Other essential considerations for assessing GDP growth in a nation are government consumption and expenditure. Government expenditure and consumption will trigger an increase in the money stock and decrease the cost of debt, thus strengthening the financial stability and raising industrial production (Dilek ,Aytaç,Mahir & 2017;Ahmet Uğur 2008).

Nevertheless, the effect of government expenditure on production is measured by the ratio of government spending to GDP. The well-being of people of a country can be improved by the optimum distribution of resources combined with government expenditure. In particular, the intensity of the inflow of foreign direct investment (FDI) into the economy is another significant factor that can positively influence economic growth and foreign trade opportunities. The inflow of FDI into a country includes money, technology, intellectual property, know-how, expertise, and the acquisition of managerial talent. All of these important assets are invaluable for developing the productivity rate, performance efficiency, GDP growth and foreign trade capacity of today's standards. FDI can be seen as an additional component to accelerate national development (Dilek,Aytaç ,Mahir Nakip &Nayier 2017; Ahmet 2008).

Economic growth, characterized by an rise in total GDP and an increase in foreign trade volumes, is a major determinant of the economic adequacy of the economy. Nearly all countries in the world are bound by free foreign trade in order to have the tools required for economic production that are not available to everyone. In order to assess the strength of a country's economy, capital mobility, the depth and breadth of financial markets, as well as productivity and effectiveness in real development , along with trade openness, are significant considerations. Increasing the amount of the above-mentioned determinants would lead to sound industrialization, the development of new employment opportunities and the improvement of the welfare of the people. International commerce is accompanied by worldwide competition. International trade and foreign investment inflow will also increase a country's production , efficiency and competitiveness through technology, know-how and money, and impact favorably upon economic development (Dilek ,Aytaç ,Mahir &Nayier 2017).

A nation's financial stability is also directly associated with economic development. This illustrates the vital nature of the well-structured financial system. Financial development might have a beneficial impact on indigenous production and investment; financial development can increase investment projects and productivity by creating opportunities for productive investors to benefit from domestic capacity. This, in turn, would have a beneficial impact on the economic growth of the country and on foreign trade (Sennur 2009).

The impact of human resources on economic growth and relatively on international trade potentials is yet another factor. The advanced level of human resource production raises the amount of output that would contribute to greater economic growth. Thus, in this case, economic development will stimulate the potential of international exchange. Contemporary and well-trained human resources will also promote the implementation and deployment of new technologies, knowledge and know-how that are necessary for progress.

 Moreover, in order to obtain up-to - date technologies, information and know-how, there should be a reasonably unregulated commercial and investment climate in a region. This

includes how open the economy is to external markets and how it encourages international sources of supply within the domestic system. Trade openness would not only have an effect on a country's production and economic potential, but could also boost its capital markets (Dilek ,Aytaç ,Mahir &Nayier 2017).

2.5. Literature Review

Academics and policy makers have undertaken numerous studies and inquiries on exports , imports and economic development. A number of studies have revealed different findings about the relationship between these three variables. Most studies have recently centered on VAR and VEC models and the approach to cointegration.

ÖZMEN - ÖZER - TÜRKYILMAZ 1999 examined the relationships between openness, globalization and economic growth by using Granger causality test for the period 1983-1997 in Turkey.. As a result of the research, a one-way causality relationship from export to growth has been found.

TUNCER 2002 has pointed out the relationship between GDP and foreign trade for the time period 1980-2000 in Turkey by using a Granger causality test.. A two-way causal relationship has been established between GDP and imports. A causal link between GDP and exports has been reported.

ŞİMŞEK 2003 studied causality relationship between GDP and foreign trade between the years 1960-2002 by using Granger causality test in Turkey. One way causal relationship has been found from growth to exports.

ERDOĞAN 2006 has examined the relationship between foreign trade and GDP by using cointegration causality test for time period 1923-2004 in Turkey. In this research a bidirectional causality relationship has been determined between export growth and economic growth.

KURT - BERBER 2008 has pointed out the casual relationship between the variables GDP and foreign trade by using the VAR model for the time period 1989-2003 in Turkey. As a result, a two way causality relationship has been observed between growth and imports, and a unidirectional causality relationship from import to export and export to growth has been determined.

GERNİ - EMSEN - DEĞER 2008 has pointed out that exports and economic growth are affected by imports of intermediate goods and capital goods by using granger causality test between the years 1980-2016 in Turkey. In terms of estimating the effects of Feder 's growth equation, exports have an important and beneficial effect on economic growth. Nevertheless, the export was made after the incorporation of the import variable into the model statistically irrelevant. The results of Granger's causality tests show that importation is a primary export determinant.

SARI-GERNİDEĞER-EMSEN 2010 has examined the casual relationship by using granger causality test and Johansen cointegration test for the period 1990-2008.The findings of this study shows that there is an unidirectional causality from economic growth to exports in the short run .

DEĞER 2010 has studied the effect of foreign trade on GDP by using granger causality test and Johansen cointegration test in Turkey from 1980 to 2006.Findings show that long-term economic growth of Turkey is significant with a range of items, primarily the export structure in the manufacture of exports.

Lee (2010) The study investigated the possibility of a short-term and long-term complex relationship between export , import and income through a multivariate approach. Incorporating the import into the model as a variable gave a reasonable knowledge of the GNP imported results. In the long run, the academic paper did not provide evidence to

support the hypotheses of export-led and imported economic growth. On the reverse, in the short run, it appeared to include evidence of export-led economic growth, export-led economic growth, import-led economic growth, and import hypotheses driven by economic growth. The study revealed that, in the short term, exports and imports are necessary for Pakistan to intensify its economic development.

Uddin, Khan, Alam (2010) In this study Granger's causal analysis and cointegration simulation in the years 1980-2005 studied the causal relationship between exports , imports and Gross Domestic Product in Bhutan. Co-integration research indicates that there is a long-term relationship of balance. The Granger causality test indicates that the direction from export to import both GDP, and from GDP to import, represents a unidirectional causal relationship.

Aytaç and Akdoğan (2012) The study investigated the relationship between international trade and economic growth in Turkey. The link between growth and trade was analyzed. The study found a long-term causality relationship between the variables and also marked a major causality following the export-to-economic growth pattern.

GÜL-KAMACI 2012 The relativity between foreign trade and GDP was tested using the Pedroni cointegration test and the Granger Causality Test for developed countries between 1980-2010 and for developing countries between 1993-2010. The causal relationship between growth and imports and exports has not been described for developed and developing countries. The relationship between import and export causality and development has been observed in both developed and developing countries.

TAŞ 2013 has studied the casual relationship between economic growth and international trade by using Granger causality test for the period 1962-210 in Turkey. Findings stated that a causality relationship from imports to growth has been observed in the period of 1962-1981. Between 1982 and 2010,one way causality relationship from exports to growth was determined.

Khairul Hashim and Mansur Masih (2014) has analyzed the trade-economic relationship in Malaysia through the Granger Causality Test and Impulse Response Functions to see whether trade growth drives economic growth. The findings indicate that economic growth and exports, have a two-way and long-term relationship.

3.Emprical Analysis,Methodology and Data

The analysis refers to data collected from the World Bank database in order to analyze the association between three variables, such as imports of goods and services(Current US$), Gross Domestic Product (GDP) and exports of goods and services (Current US$) for the years 1980 to 2018 in Turkey. Real GDP has been used as an indicator of economic growth in the study. In order to have more detailed and sensitive analysis   we transformed all these 3 time series to logarithmic versions.

 In order to specify the order of stationary for the variables, the ADF unit root test has been applied. The cointegration relation implies an error correction mechanism (ECM). That is, if time series variables have a cointegration relationship, they may be in an equilibrium relationship that they may deviate in the short run but have to return in the long run. At this stage, whether there is a long-term relationship between the series is determined by cointegration analysis.

In this study, the existence of cointegration between variables was investigated using the Johansen Cointegration Test under the wider framework of Vector Autoregressive (VAR) model and Vector Error Correction (VEC) models.

We determined the optimal lag length for our model by using Akaike Information Criteria.

The augmented production function including both exports and imports is expressed as:

$GDPt = f(exports, imports)$

The function can also be represented in a log-linear econometric format thus:

$$\log(GDP)t = \beta0 + \beta1\log(exports)t + \beta2\log(imports)t + \varepsilon t$$

- $\beta0$: The constant term.

- $\beta1$: coefficient of variable (exports) -

$\beta2$: coefficient of variables (imports) -

t: The time trend.

- ε: The random error term assumed to be normally, identically and independently distributed.

3.1 Exports of goods and services in Turkey between the years 1980-2018

Exports are an important aspect of foreign commerce. They are goods and services bought by residents of a country and are made in a foreign country. Associated, they set up the country's trade balance. For industrial economies, exports are highly important because they give people and companies much more product options. The promotion of economic trade, exports and imports for the benefit of all market players is one of the key functions of diplomacy and foreign policy between governments.

Graph 2.Exports of goods and services 1980-2018 in Turkey(current US$)
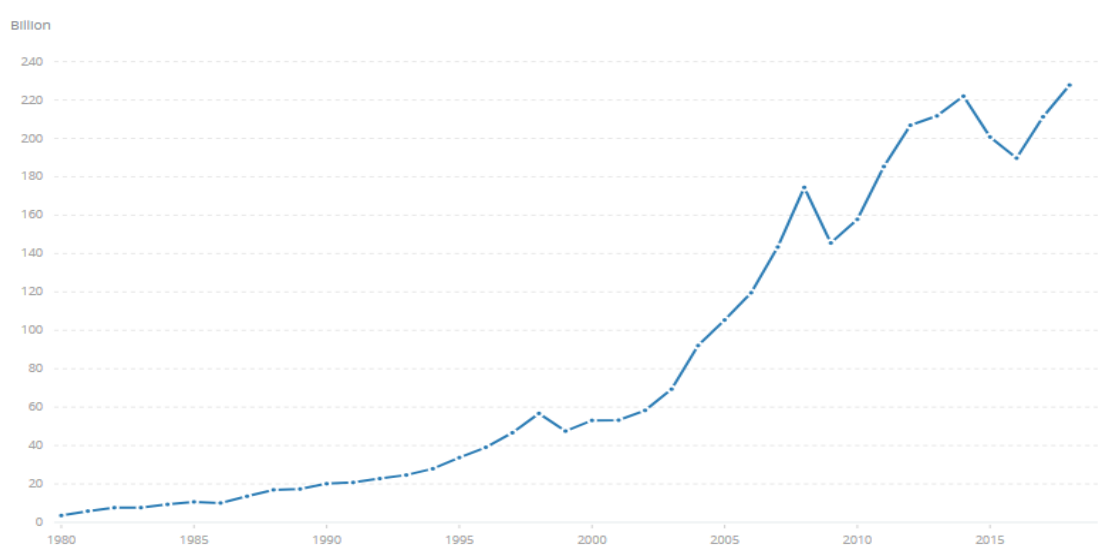
Source: World Development Indicators

Table 1. Exports of goods and services in current US$ from 1980 to 2018 in Turkey

YEAR	Exports of goods and services (BoP, current US$)	Exports of goods and services (annual % growth)	Exports of goods and services (% of GDP)
1980	3,621,000,000.0	..	5.2
1981	5,967,000,000.0	..	8.2
1982	7,808,000,000.0	..	11.9
1983	7,844,000,000.0	..	12.5
1984	9,609,000,000.0	..	15.6
1985	11,119,000,000.0	..	15.9
1986	10,580,000,000.0	..	13.3
1987	14,135,000,000.0	..	15.6
1988	17,581,000,000.0	18.4	18.7
1989	18,194,000,000.0	-0.3	16.2
1990	21,042,000,000.0	3.2	13.4
1991	22,039,000,000.0	3.1	13.8
1992	24,298,000,000.0	11.0	14.4
1993	26,263,000,000.0	7.7	13.7
1994	29,191,000,000.0	15.2	21.4

1995	36,581,000,000.0	8.0	19.9
1996	45,150,000,000.0	22.0	21.5
1997	51,528,000,000.0	19.1	24.6
1998	54,117,000,000.0	12.6	20.6
1999	45,482,000,000.0	-11.2	18.6
2000	50,353,000,000.0	17.4	19.4
2001	49,963,000,000.0	4.6	26.6
2002	54,750,000,000.0	7.8	24.5
2003	70,502,000,000.0	6.7	22.2
2004	91,918,000,000.0	11.6	22.8
2005	106,331,000,000.0	8.1	21.0
2006	119,871,000,000.0	6.5	21.7
2007	145,385,000,000.0	7.3	21.2
2008	178,018,000,000.0	3.8	22.8
2009	145,548,000,000.0	-3.7	22.6
2010	157,441,000,000.0	1.7	20.4
2011	183,647,000,000.0	13.4	22.3
2012	205,516,000,000.0	14.9	23.7

2013	226,267,000,000.0	1.1	22.3
2014	235,583,000,000.0	8.2	23.8
2015	210,353,000,000.0	4.3	23.3
2016	198,973,000,000.0	-1.9	22.0
2017	222,695,000,000.0	12.0	24.8
2018	237,932,000,000.0	7.8	29.5

Source:: World Development Indicators
Country : Turkey

As a result of the decisions taken on trade openness after 1980, we can see that exports have an upward acceleration over the years. With the liberalization of exports, the share of exports in the GDP also increased in percentage over the years. The consequences of the financial crisis in 2008 can be seen with a decrease in exports in subsequent years. That being said, the economic crisis has also caused negative fluctuations in economic growth over the upcoming years.

3.2 Imports of goods and services in Turkey between the years 1980-2018

Imports are goods or services that have been bought from one country and made from another. International trade covers imports and exports. The nation's trade balance, which also is considered as a trade deficit, is negative when the volume of imports of a nation is over the sum of its exports. Countries are more likely to import products or services which their domestic suppliers can not manufacture as efficiently or as cheaply as their exporting country.

Indeed, countries can import in their territories raw or non-existent products. Many nations, for example, import oil as they can not domestically produce it or as they are not capable of processing oil well enough to meet demand. Free exchange and tariff agreements also decide which goods and services can be purchased more easily.

Graph 3 :Imports of goods and services in current US$ between 1980-2018 in Turkey
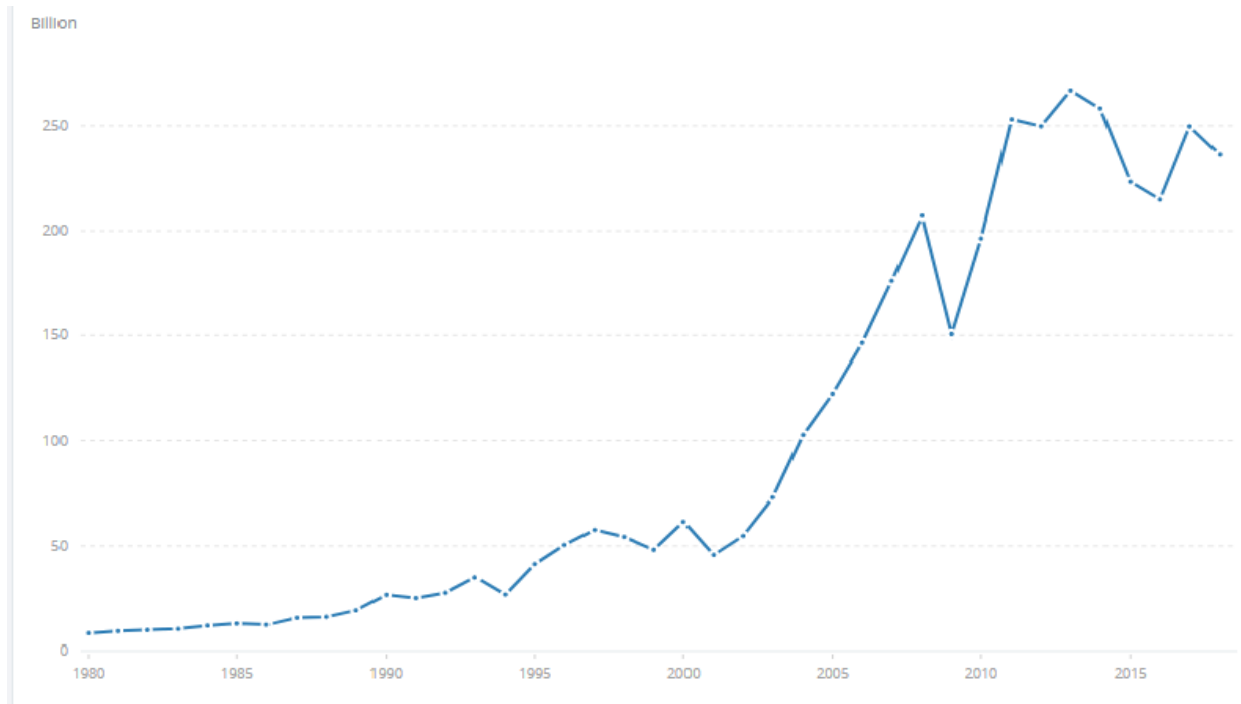
Source:: World Development Indicators

Table 2 : Imports of goods and services in current US$

YEARS	Imports of goods and services (BoP, current US$)	Imports of goods and services (annual % growth)	Imports of goods and services (% of GDP)
1980	8,082,000,000.0	..	11.9
1981	9,035,000,000.0	..	12.9
1982	9,549,000,000.0	..	15.0
1983	10,061,000,000.0	..	16.6
1984	11,533,000,000.0	..	19.7
1985	12,495,000,000.0	..	19.0
1986	12,008,000,000.0	..	16.1
1987	15,179,000,000.0	..	17.8
1988	15,561,000,000.0	-4.5	17.6
1989	18,356,000,000.0	6.9	17.8
1990	25,524,000,000.0	33.1	17.6
1991	24,165,000,000.0	-5.3	16.6
1992	26,567,000,000.0	10.9	17.3
1993	33,603,000,000.0	35.8	19.3
1994	26,306,000,000.0	-21.9	20.4
1995	40,113,000,000.0	29.6	24.4

1996	48,757,000,000.0	20.5	27.8
1997	55,664,000,000.0	22.4	30.4
1998	54,637,000,000.0	2.2	19.7
1999	47,751,000,000.0	-3.6	18.8
2000	61,035,000,000.0	22.0	22.6
2001	44,190,000,000.0	-24.1	22.8
2002	53,255,000,000.0	21.0	23.0
2003	73,519,000,000.0	23.2	23.4
2004	101,624,000,000.0	21.2	25.4
2005	123,395,000,000.0	12.1	24.4
2006	146,861,000,000.0	7.3	26.5
2007	178,124,000,000.0	9.6	26.1
2008	212,027,000,000.0	-2.8	27.1
2009	151,584,000,000.0	-14.3	23.4
2010	197,021,000,000.0	19.5	25.5
2011	252,519,000,000.0	15.4	30.4
2012	248,339,000,000.0	0.7	28.6
2013	274,782,000,000.0	8.0	28.1

2014	267,746,000,000.0	-0.4	27.6
2015	229,374,000,000.0	1.7	26.0
2016	218,373,000,000.0	3.7	24.9
2017	254,937,000,000.0	10.3	29.3
2018	247,606,000,000.0	-7.8	30.6

Source:: World Development Indicators

Following a Turkish economy in the second oil crisis in the 1970s with the rest of the global economy, the need for reform in the Turkish economy became inevitable. With the decisions taken in 1980, significant growth was realized in imports as well as in exports . Especially as a result of the liberalization and rapid economic growth initiated after 1984, the increase in imports has been significantly high. It is possible to say that Turkey has succeeded in the liberalization program but it is also necessary to mention that the process was quite tough in terms of economic indicators. Therefore, 1989 and 1994 stabilization programs were prepared, but the stabilization programs prepared to ensure stability in the economy could not achieve the targeted goals. In this period, besides the liberalization movements, the Customs Union, which was established with the EC in 1996, was the main factor of the developments in imports.

Although there was no significant change in the trade regime in the 2000s, imports increased significantly in this period due to the overvalued TL, but the fact that the increase in exports in the sectors using imported intermediate goods was not higher than the increase in imports caused high current account deficits. Although the Transition to a Strong Economy Program, prepared after the 2001 crisis, had a positive effect on macroeconomic conditions, there was a significant decrease in foreign trade figures due to the impact of the 2008 global crisis. It is possible to attribute this situation to the serious contraction in demand in the international markets. In the post-2008 period, we see that

our imports increased at a higher rate than our exports. This limited both in foreign trade current account taken for explaining the high rate of deficit is rapidly increasing the climate of Turkey's current account deficit in the balance of temporary measures and did not provide a permanent arrangement in the economy.

Although Turkey was not affected as much in the financial sense by the 2008 economic crisis, the global shrinkage was affected depending on demand. The outcome of this situation was a contraction in imports and exports on foreign trade statistics. The current account in Turkey is observed in the process of improving the balance based on the post-2010 reduction of the effects of the global crisis.

3.3 GDP current us$ in Turkey between the years 1980-2018

The overall monetary or market value of all goods and services produced within the boundaries of a specific country within a certain period of time is the Gross Domestic Product (GDP). It serves as a detailed scorecard of the economic health of a specific country as a general measure of total national output.

The country's GDP is determined by combining the following figures: personal consumption, private spending, government expenditure, and exports (less imports).In general, the statistic is expressed as a sum of the dollar and its growth rate as a percentage changes between one period and another (where the timeframe is normally quarterly or annually)

Graph 4.GDP in current $ in Turkey between the years 1980-2018
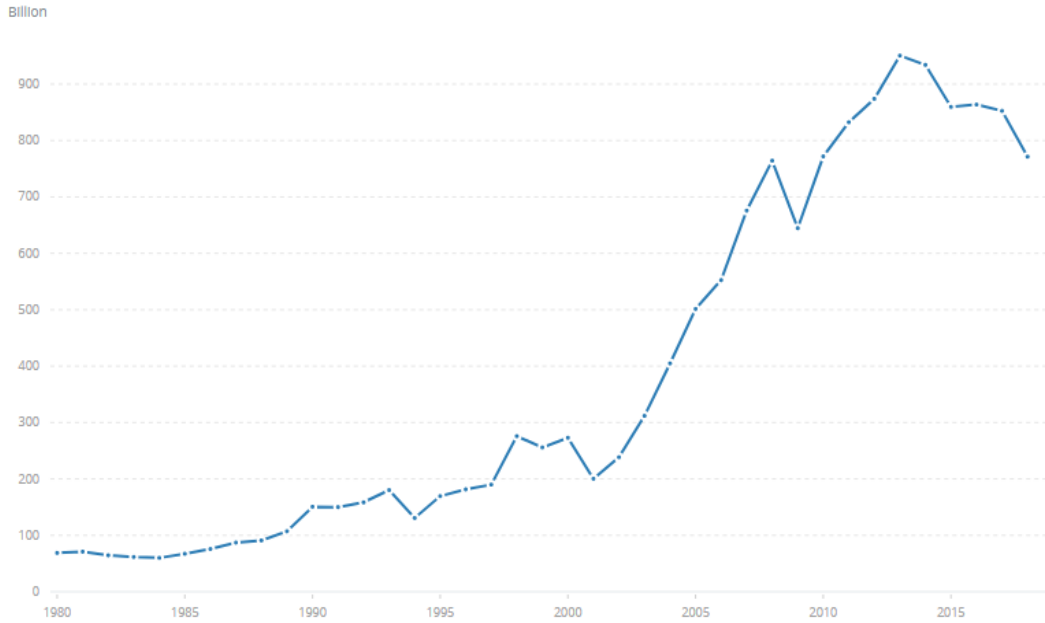
Source:World Bank Indicators

Table 3. GDP (current US$) values between the years 1980-2018 for Turkey.

YEAR	GDP (current US$)
1980	68,789,289,565.7
1981	71,040,020,140.4
1982	64,546,332,580.8
1983	61,678,280,115.5
1984	59,989,909,457.8
1985	67,234,948,264.6
1986	75,728,009,962.8

1987	87,172,789,528.3
1988	90,852,814,005.0
1989	107,143,348,667.1
1990	150,676,291,094.2
1991	150,027,833,333.3
1992	158,459,130,434.8
1993	180,169,736,363.6
1994	130,690,172,297.3
1995	169,485,941,048.0
1996	181,475,555,282.6
1997	189,834,649,111.3
1998	275,768,693,133.9
1999	255,884,300,620.8
2000	272,979,390,275.1
2001	200,251,925,261.1
2002	238,428,125,928.9
2003	311,823,003,797.7
2004	404,786,739,600.1

2005	501,416,301,503.4
2006	552,486,912,915.6
2007	675,770,112,211.2
2008	764,335,657,625.8
2009	644,639,902,000.0
2010	771,901,768,898.1
2011	832,523,680,895.5
2012	873,982,246,603.6
2013	950,579,413,121.1
2014	934,185,915,375.8
2015	859,796,872,683.8
2016	863,721,648,058.0
2017	852,676,779,693.5
2018	771,350,331,372.7

Source:World bank indicators

3.4 Empirical Analysis

3.4.1 Unit Root Test

In order for the regression relationship between variables to be significant in econometric estimates, the variables must be stationary or integrated to the same degree. Granger and Newbold (1974) showed that as a result of the analysis made with non-stationary time series, relationships that do not exist in reality can emerge. In order to eliminate this situation, which is described as spurious regression, the variables to be included in the analysis should be stabilized. For this reason, first of all, whether the variables are stationary or not is investigated with the help of ADF (Augmented Dickey-Fuller) unit root test.

Hypothesis

The hypotheses for the test:

The null hypothesis for this test is that there is a unit root.

The ADF test expands the Dickey-Fuller test equation to include high order regressive processes in the model.

$$\Delta y_t = \alpha + \beta t + \gamma y_{t-1} + \delta_1 \Delta y_{t-1} + \cdots + \delta_{p-1} \Delta y_{t-p+1} + \varepsilon_t,$$

TABLE 4 .ADF Unit Root Test Results for the Level Values of the Variables.

VARIABLES	τ-statistics value	Probability
Log(Gdp)	-0.761115	0.8186
Log(Exports)	-2.726815	0.0789
Log(Imports)	-1.028754	0.7331

Table 5.Test critical values

	%1 level	%5 level	% 10 level
	-3.615588	-2.941145	-2.609066

The results for ADF unit root test for the level values of the variables are above. We can say all 3 variables have unit root test by looking at the table. To reject or accept the null hypothesis it is necessary   to look at t-statistics. ADF unit root test results show the absolute value of Log(Imports) and Log(Gdp)   are lower than indicator critical values on all %1,%5 ,10 ,levesl.Log(Export) is higher than critical value on %10 level.In conclusion,, import and GDP variables are non-stationary at the level of the ADF unit root test results

.In order to have a Johansen Cointegration Test these datas should be stationary.To correct this now we will check these datas on 1st difference level.

Table 6. ADF Unit Root Test Results for the First-Difference Values of the Variables

VARIABLES	т-statistics value	Probability
Log(Gdp)	-6.137117	0.0000
Log(Exports)	-5.700963	0.0000
Log(Imports)	-7.131158	0.0000

Table 7. Test critical values

	%1 level	%5 level	% 10 level
	-3.621023	-2.943427	-2.610263

ADF unit root test has been applied to the first-difference values of the variables and the test results are shown in table 7 . When we look at the table 7 all 3 variables became stationary on the first difference level. Meaning that there is no unit root for these variables.

3.4.2 VAR Lag Order Selection Criteria for Log GDP, Log Exports, Log Imports

Table 8. VAR Lag Order Selection Criteria

Lag	LogL	LR	FPE	AIC	SC	HQ
0	15.92893	NA	9.38e-05	-0.760525	-0.625846	-0.714596
1	102.8413	153.3748*	9.62e-07*	-5.343607*	-4.804891*	5.159889*
2	108.1689	8.461405	1.21e-06	-5.127580	-4.184828	-4.806075
3	111.2346	4.328044	1.78e-06	-4.778504	-3.431715	-4.319210
4	119.9276	10.73850	1.94e-06	-4.760449	-3.009624	-4.163368
5	127.3319	7.839789	2.40e-06	-4.666581	-2.511719	-3.931712

We are using AIC criteria for consistency. When we look at the table it is marked on lag 1 level.In this matter we will use lag 1 for our model. Our optimal lag is 1.

3.4.3 Johansen Cointegration Test

One of the methods used to determine the existence of long-term relationships between variables is Johansen (1990) cointegration analysis. This method requires the calculation of the vector error correction model used when variables are cointegrated to obtain likelihood ratios.

Table 9. Johansen Cointegration Test Results Trace Test

Unrestricted Cointegration Rank Test (Trace)

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.450692	38.24918	29.79707	0.0042
At most 1 *	0.296686	16.08260	15.49471	0.0408
At most 2	0.079385	3.060402	3.841465	0.0802

Table 10. Johansen Cointegration Test Results (Maximum Eigenvalue)

Unrestricted Cointegration Rank Test (Maximum Eigenvalue)

Hypothesized No. of CE(s)	Eigenvalue	Max-Eigen Statistic	0.05 Critical Value	Prob.**
None *	0.450692	22.16657	21.13162	0.0357
At most 1	0.296686	13.02220	14.26460	0.0778
At most 2	0.079385	3.060402	3.841465	0.0802

It is possible to say by looking at Table 10 above on a trace test the null hypothesis has been rejected at none and at most 1 level. Trace test indicates 2 cointegrating eqn(s) at the 0.05 level. By looking at Maximum Eigenvalue test results. Max-eigenvalue test indicates 1 cointegrating eqn(s) at the 0.05 level.'r' indicates the number of cointegration vectors. * Shows rejection of the null hypothesis (no cointegration between series) at the 5% significance level.In this regard we can say there is cointegration relationship between Gdp Export and Import .If series are cointegrated they exhibit a long run relationship among the variables.

Table 11. Normalized cointegrating coefficients (standard error in parentheses)

LGDP	LEXPORTS	LIMPORTS
1.000000	-0.372521	-0.456747
	(0.22517)	(0.22296)

According to Johansen normalization interpretation LGDP is positioned as the dependent variable. The signs of the coefficients are reversed in the long run. Thus, In long run LEXPORTS and LIMPORT has has a positive impact on LGDP on average ceteris paribus. An increase in LEXPORTS and LIMPORTS will lead to increase in LGDP in the long run.

3.4.4 Vector Error Correction

A model of vector error correction (VEC) is a restricted VAR designed for use with non-stationary series considered to be co-integrated.

Table 12. Vector Error Correction Estimates (Long term coefficients)

Cointegrating Eq:	CointEq1
LGDP(-1)	1.000000
LEXPORTS(-1)	-0.372521
	(0.22517)
	[-1.65437]
LIMPORTS(-1)	-0.456747
	(0.22296)
	[-2.04856]
C	-5.795714

LGDP(-1), LEXPORTS(-1), LIMPORTS(-1) are our long term coefficients.

Table 13. Vector Error Correction Estimates (Short term coefficients)

Error Correction:	D(LGDP)	D(LEXPORTS)	D(LIMPORTS)
CointEq1	-0.683532	0.069669	-0.205114
	(0.20358)	(0.17157)	(0.26893)
	[-3.35750]	[0.40608]	[-0.76272]
D(LGDP(-1))	0.354586	-0.281001	0.023548
	(0.25952)	(0.21870)	(0.34281)
	[1.36633]	[-1.28485]	[0.06869]
D(LEXPORTS(-1))	0.136981	0.046441	0.003151
	(0.23169)	(0.19526)	(0.30606)
	[0.59122]	[0.23785]	[0.01030]
D(LIMPORTS(-1))	-0.438812	0.295513	-0.216553
	(0.26507)	(0.22338)	(0.35014)
	[-1.65548]	[1.32292]	[-0.61847]
C	0.066015	0.085997	0.107726
	(0.03062)	(0.02580)	(0.04045)
	[2.15591]	[3.33259]	[2.66329]

D(LGDP(-1)), D(LEXPORTS(-1)), D(LIMPORTS(-1)) are short term coefficients for our model.

Error correction coefficient gives the speed of adjustments within which the model restores its equilibrium following any disturbances. We can interpret this table as; The previous years division from long run equilibrium is corrected at the speed 0.68 percent. The coefficient of ECT with LGDP is negative and statistically significant indicating that there

is a convergence from short dynamics toward long run equilibrium. In case of LEXPORTS adjustment coefficient is positive but not significant which indicates the lack of significant adjustment towards long run equilibrium in any disequilibrium situation. The adjustment coefficients are 0.68 percent and 0.20 respectively towards long run equilibrium in case of disequilibrium situation .

%1 change in LEXPORTS is associated with a %0.13 increase in LGDP on average ceteris paribus in the short run.

%1 change in LIMPORTS is associated with a %0.43 decrease in LGDP on average ceteris paribus in the short run.

The coefficients of LGDP with LEXPORTS and LIMPORTS as dependent variable. A percentage increase in LEXPORTS will lead to an increase in LGDP by 1.3 percent in the short term. A percentage increase in LIMPORTS will lead to a decline in LGDP by %0.43 in short term.

Table 14. VECM model estimated equation of LGDP(Long run coefficient)

	Coefficient	Std. Error	t-Statistic	Prob
C(1)	-0.683532	0.203583	-3.357502	0.0020
C(2)	0.354586	0.259516	1.366333	0.1814
C(3)	0.136981	0.231694	0.591216	0.5585
C(4)	-0.438812	0.265066	-1.655480	0.1076
C(5)	0.066015	0.030621	2.155908	0.0387

(1)D(LGDP) = C(1)*(LGDP(-1) - 0.372521447579*LEXPORTS(-1) -
　　0.456746839976*LIMPORTS(-1) - 5.7957142684) + C(2)*D(LGDP(-1))
　　　+ C(3)*D(LEXPORTS(-1)) + C(4)*D(LIMPORTS(-1)) + C(5)

The long run coefficient **C(1)** is negative and significant which shows lung run causality between LEXPORTS and LIMPORTS to LGDP. Coefficient should have a negative sign showing the ability to bounce back to equilibrium. Interpreting this number tells us that %0.68 of departures from long run equilibrium is corrected each period.

3.4.5 Residual Tests

Table 15. Autocorrelation LM test results.

Null hypothesis: No serial correlation at lag h

Lag	LRE* stat	df	Prob.	Rao F-stat	df	Prob.
1	6.852863	9	0.6524	0.759929	(9, 65.9)	0.6532

Null hypothesis: No serial correlation at lags 1 to h

The pro values are higher than the 0.05 level so there is no serial correlation in this model.

Table 16. VEC Residual Normality Tests

Component	Jarque-Bera	df	Prob.
1	1.320458	2	0.5167
2	0.108946	2	0.9470
3	1.652985	2	0.4376
Joint	3.082389	6	0.7984

Each component represents the variables in the system. We can see all 3 residuals are normally distributed. Overall for the entire model the residuals are normally distributed.

4.Discussion and results

Economic growth is indisputably one of the clear development indicators for a country. In today's world, we see that developed countries are significantly active and competitive in the global market. International trade not only strengthens the markets of nations, it also helps customers to access goods not available in their own countries conveniently. In a country, it is as important to meet the needs of its people as economic development.

Annual statistics from 1980 to 2018 were used for this analysis. The reason why the starting year is 1980 is that the economic structure of the country has changed considerably with the decisions taken in 1980. It is aimed to analyze the effect of foreign trade values that increase with the effect of the decisions taken on the economy.

According to the results obtained from unit root tests, the variables are stationary at the first difference levels. For any cointegration test, all series must be stationary. The most ideal lag interval applied for the model was selected according to the Akaike information criteria and decided as 1. According to the results of the Johansen Cointegration Test, there is co-integration between the series at the 5% significance level. According to the residual test results, no serial cointegration relationship was found between the series. The findings of the Error Correction Model show that there is a bidirectional causality relationship between GDP and imports in the long run. It is possible to interpret the test results as follows, in the long run, exports and imports have a positive effect on economic growth.

More concretely, it was determined that the rise in foreign trade would lead to an increase in economic growth in the long run. Around the same time, it was concluded that the decrease in imports linked to a decline in economic growth. The occurrence of a long-term relationship between the export, import and GDP sequence, the vector was corrected

with normalized co-integrated coefficients and the Vector Error Correction model was carried out. Diagnostic tests indicate that the overall specification adopted is satisfactory.

Our research has taken its place in literature by confirming the hypothesis of the positive effect of foreign trade on economic growth.Turkey should become more active trade player in the global market by improving its production capacity and foreign trade relationships with other countries in order to have a strong economy. Further research might take into account the scenario if Turkey joins the European Union and it's possible effects on foreign trade volume.

5.Conclusion

Turkey's economic structure was relatively closed before 1980.As a result of decisions taken in 1980, trade concept in Turkey has become more outward-looking. The 1980 decisions are generally a change in foreign trade policy, a simple operation to start to integrate with the outside world. It is possible to observe increases in export and import after this period. Thus,it also has been seen that economic growth has increased over the years after being more active in the global market.

As a result of the findings obtained from this study, considering the accuracy of the hypothesis that foreign trade affects economic growth, economic policies that are implemented by the government would affect the economic growth of Turkey. At this point, the importance of export incentive policies should be taken into account. Thus considering that Turkey's production capacity is dependent on exports which bring raw materials to the country, it is necessary to carefully determine foreign trade policies, considering that not only export-supporting policies but also import-supporter policies will affect economic growth.

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7. Appendixes

7.1. Graphs

Graph.5 Logarithmic versions of gdp, exports, imports in current US$
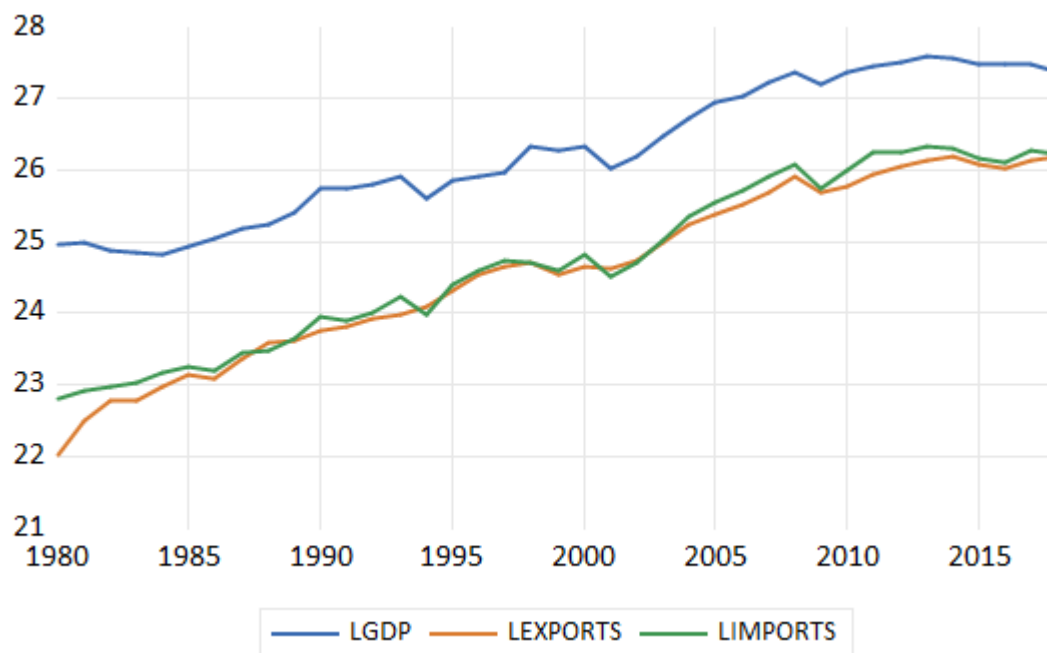
7.2. Tables

Table 17.Gdp,exports and imports data in current US$ transformed to logarithmic version from 1980 to 2018.

	LGDP	LEXPORTS	LIMPORTS
1980	24.95431	22.01002	22.81291
1981	24.98651	22.50951	22.92437
1982	24.89065	22.77841	22.9797
1983	24.8452	22.78301	23.03193
1984	24.81744	22.98597	23.16848
1985	24.93146	23.13192	23.24859
1986	25.05041	23.08223	23.20884
1987	25.19116	23.37192	23.44318
1988	25.23251	23.59008	23.46803
1989	25.39743	23.62436	23.63322
1990	25.7384	23.76979	23.96289

1991	25.73409	23.81608	23.90817
1992	25.78876	23.91366	24.00294
1993	25.91717	23.99143	24.23788
1994	25.5961	24.09713	23.99306
1995	25.85604	24.32279	24.41497
1996	25.92439	24.53326	24.61011
1997	25.96942	24.66539	24.7426
1998	26.34283	24.71441	24.72398
1999	26.26799	24.54058	24.58927
2000	26.33266	24.64232	24.83471
2001	26.02284	24.63455	24.51176
2002	26.19733	24.72604	24.69836
2003	26.4657	24.97891	25.02081
2004	26.72663	25.24416	25.34455
2005	26.9407	25.38982	25.53866
2006	27.0377	25.50968	25.71275
2007	27.23912	25.70265	25.90575

2008	27.36227	25.90515	26.07998
2009	27.19196	25.70377	25.74441
2010	27.37212	25.78232	26.00658
2011	27.44773	25.93628	26.25475
2012	27.49633	26.04879	26.23806
2013	27.58034	26.14498	26.33924
2014	27.56294	26.18533	26.3133
2015	27.47996	26.07205	26.15862
2016	27.48452	26.01643	26.10947
2017	27.47165	26.12907	26.26428
2018	27.37141	26.19525	26.2351

Source:Data taken fromThe World Development Indicators and edited in Eviews.

Table 18. ADF unit root test results for for the First-Difference Values Log(GDP)

Null Hypothesis: D(LGDP) has a unit root				
Exogenous: Constant				
Lag Length: 0 (Automatic - based on AIC, maxlag=1)				
			t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic			-6.137117	0.0000
Test critical values:	1% level		-3.621023	
	5% level		-2.943427	

	10% level		-2.610263	
*MacKinnon (1996) one-sided p-values.				
Augmented Dickey-Fuller Test Equation				
Dependent Variable: D(LGDP,2)				
Method: Least Squares				
Date: 11/13/20 Time: 19:49				
Sample (adjusted): 1982 2018				
Included observations: 37 after adjustments				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(LGDP(-1))	-1.052212	0.171450	-6.137117	0.0000
C	0.068009	0.028365	2.397607	0.0220
R-squared	0.518332	Mean dependent var		-0.003579
Adjusted R-squared	0.504570	S.D. dependent var		0.223444
S.E. of regression	0.157275	Akaike info criterion		-0.809102
Sum squared resid	0.865742	Schwarz criterion		-0.722025
Log likelihood	16.96838	Hannan-Quinn criter.		-0.778403
F-statistic	37.66420	Durbin-Watson stat		1.941416
Prob(F-statistic)	0.000001			

Source:Data taken fromThe World Development Indicators and edited in Eviews.

Table 19. ADF unit root test results for for the First-Difference Values Log(EXPORTS)

Null Hypothesis: D(LEXPORTS) has a unit root				
Exogenous: Constant				
Lag Length: 0 (Automatic - based on AIC, maxlag=1)				
			t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic			-5.700963	0.0000
Test critical values:	1% level		-3.621023	
	5% level		-2.943427	
	10% level		-2.610263	
*MacKinnon (1996) one-sided p-values.				

Augmented Dickey-Fuller Test Equation				
Dependent Variable: D(LEXPORTS,2)				
Method: Least Squares				
Date: 11/13/20 Time: 19:43				
Sample (adjusted): 1982 2018				
Included observations: 37 after adjustments				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(LEXPORTS(-1))	-0.823862	0.144513	-5.700963	0.0000
C	0.080006	0.024966	3.204596	0.0029
R-squared	0.481489	Mean dependent var		-0.011711
Adjusted R-squared	0.466674	S.D. dependent var		0.159016
S.E. of regression	0.116128	Akaike info criterion		-1.415714
Sum squared resid	0.471998	Schwarz criterion		-1.328637
Log likelihood	28.19071	Hannan-Quinn criter.		-1.385016
F-statistic	32.50098	Durbin-Watson stat		2.080234
Prob(F-statistic)	0.000002			

Source:Data taken fromThe World Development Indicators and edited in Eviews.

Table 20. ADF unit root test results for for the First-Difference Values Log(IMPORTS)

Null Hypothesis: D(LIMPORTS) has a unit root				
Exogenous: Constant				
Lag Length: 0 (Automatic - based on AIC, maxlag=1)				
			t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic			-7.131158	0.0000
Test critical values:	1% level		-3.621023	
	5% level		-2.943427	
	10% level		-2.610263	
*MacKinnon (1996) one-sided p-values.				
Augmented Dickey-Fuller Test Equation				

Dependent Variable: D(LIMPORTS,2)				
Method: Least Squares				
Date: 11/13/20 Time: 19:54				
Sample (adjusted): 1982 2018				
Included observations: 37 after adjustments				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(LIMPORTS(-1))	-1.190813	0.166987	-7.131158	0.0000
C	0.107278	0.033214	3.229941	0.0027
R-squared	0.592328	Mean dependent var		-0.003801
Adjusted R-squared	0.580681	S.D. dependent var		0.275555
S.E. of regression	0.178435	Akaike info criterion		-0.556642
Sum squared resid	1.114372	Schwarz criterion		-0.469565
Log likelihood	12.29787	Hannan-Quinn criter.		-0.525943
F-statistic	50.85341	Durbin-Watson stat		2.015048
Prob(F-statistic)	0.000000			

Source:Data taken fromThe World Development Indicators and edited in Eviews.

Table 21. Johansen Cointegration Test results for Log(Gdp),Log(Exports), Log(imports)

Date: 11/13/20 Time: 19:59				
Sample (adjusted): 1982 2018				
Included observations: 37 after adjustments				
Trend assumption: Linear deterministic trend				
Series: LGDP LEXPORTS LIMPORTS				
Lags interval (in first differences): 1 to 1				
Unrestricted Cointegration Rank Test (Trace)				
Hypothesized		Trace	0.05	
No. of CE(s)	Eigenvalue	Statistic	Critical Value	Prob.**
None *	0.450692	38.24918	29.79707	0.0042

At most 1 *	0.296686	16.08260	15.49471	0.0408
At most 2	0.079385	3.060402	3.841465	0.0802
Trace test indicates 2 cointegrating eqn(s) at the 0.05 level				
* denotes rejection of the hypothesis at the 0.05 level				
**MacKinnon-Haug-Michelis (1999) p-values				
Unrestricted Cointegration Rank Test (Maximum Eigenvalue)				
Hypothesized		Max-Eigen	0.05	
No. of CE(s)	Eigenvalue	Statistic	Critical Value	Prob.**
None *	0.450692	22.16657	21.13162	0.0357
At most 1	0.296686	13.02220	14.26460	0.0778
At most 2	0.079385	3.060402	3.841465	0.0802
Max-eigenvalue test indicates 1 cointegrating eqn(s) at the 0.05 level				
* denotes rejection of the hypothesis at the 0.05 level				
**MacKinnon-Haug-Michelis (1999) p-values				
Unrestricted Cointegrating Coefficients (normalized by b'*S11*b=I):				
LGDP	LEXPORTS	LIMPORTS		
-8.847294	3.295807	4.040974		
8.546346	10.97227	-17.76382		
-0.678052	0.445814	-0.831011		
Unrestricted Adjustment Coefficients (alpha):				
D(LGDP)	0.077259	0.030905	0.022628	
D(LEXPORTS)	-0.007875	0.009030	0.030454	
D(LIMPORTS)	0.023184	0.062673	0.035272	
1 Cointegrating Equation(s):		Log likelihood	107.3028	
Normalized cointegrating coefficients (standard error in parentheses)				
LGDP	LEXPORTS	LIMPORTS		
1.000000	-0.372521	-0.456747		
	(0.22517)	(0.22296)		
Adjustment coefficients (standard error in parentheses)				
D(LGDP)	-0.683532			
	(0.20358)			
D(LEXPORTS)	0.069669			
	(0.17157)			

D(LIMPORTS)	-0.205114			
	(0.26893)			
2 Cointegrating Equation(s):		Log likelihood	113.8139	
Normalized cointegrating coefficients (standard error in parentheses)				
LGDP	LEXPORTS	LIMPORTS		
1.000000	0.000000	-0.821488		
		(0.01757)		
0.000000	1.000000	-0.979114		
		(0.02216)		
Adjustment coefficients (standard error in parentheses)				
D(LGDP)	-0.419409	0.593725		
	(0.27496)	(0.25609)		
D(LEXPORTS)	0.146840	0.073124		
	(0.23773)	(0.22141)		
D(LIMPORTS)	0.330514	0.764079		
	(0.34818)	(0.32428)		

Source:Data taken fromThe World Development Indicators and edited in Eviews.

Table 22. Vector Error Correctıon Model results results for Log(Gdp),Log(Exports), Log(imports)

Vector Error Correction Estimates			
Date: 11/13/20 Time: 20:05			
Sample (adjusted): 1982 2018			
Included observations: 37 after adjustments			
Standard errors in ( ) & t-statistics in [ ]			
Cointegrating Eq:	CointEq1		
LGDP(-1)	1.000000		
LEXPORTS(-1)	-0.372521		
	(0.22517)		
	[-1.65437]		

LIMPORTS(-1)	-0.456747		
	(0.22296)		
	[-2.04856]		
C	-5.795714		
Error Correction:	D(LGDP)	D(LEXPORTS)	D(LIMPORTS)
CointEq1	-0.683532	0.069669	-0.205114
	(0.20358)	(0.17157)	(0.26893)
	[-3.35750]	[0.40608]	[-0.76272]
D(LGDP(-1))	0.354586	-0.281001	0.023548
	(0.25952)	(0.21870)	(0.34281)
	[1.36633]	[-1.28485]	[0.06869]
D(LEXPORTS(-1))	0.136981	0.046441	0.003151
	(0.23169)	(0.19526)	(0.30606)
	[0.59122]	[0.23785]	[0.01030]
D(LIMPORTS(-1))	-0.438812	0.295513	-0.216553
	(0.26507)	(0.22338)	(0.35014)
	[-1.65548]	[1.32292]	[-0.61847]
C	0.066015	0.085997	0.107726
	(0.03062)	(0.02580)	(0.04045)
	[2.15591]	[3.33259]	[2.66329]
R-squared	0.277766	0.095101	0.053636
Adj. R-squared	0.187487	-0.018012	-0.064659
Sum sq. resids	0.626924	0.445239	1.093945
S.E. equation	0.139969	0.117956	0.184894
F-statistic	3.076748	0.840763	0.453408
Log likelihood	22.93945	29.27042	12.64014
Akaike AIC	-0.969700	-1.311915	-0.412980
Schwarz SC	-0.752008	-1.094223	-0.195289
Mean dependent	0.064457	0.099615	0.089479
S.D. dependent	0.155281	0.116908	0.179191
Determinant resid covariance (dof adj.)		9.39E-07	
Determinant resid covariance		6.08E-07	
Log likelihood		107.3028	
Akaike information criterion		-4.827179	
Schwarz criterion		-4.043489	
Number of coefficients		18	

Source:Data taken fromThe World Development Indicators and edited in Eviews

Table 23. VEC residual test results results for Log(Gdp),Log(Exports), Log(imports)

VEC Residual Serial Correlation LM Tests						
Date: 11/13/20 Time: 20:07						
Sample: 1980 2018						
Included observations: 37						
Null hypothesis: No serial correlation at lag h						
Lag	LRE* stat	df	Prob.	Rao F-stat	df	Prob.
1	6.852863	9	0.6524	0.759929	(9, 65.9)	0.6532
Null hypothesis: No serial correlation at lags 1 to h						
Lag	LRE* stat	df	Prob.	Rao F-stat	df	Prob.
1	6.852863	9	0.6524	0.759929	(9, 65.9)	0.6532
*Edgeworth expansion corrected likelihood ratio statistic.						

Source:Data taken fromThe World Development Indicators and edited in Eviews

7.3. List of graphs

Graph No 1: The ratio of exports to imports from 1950 to 1959

Graph No 2: Exports of goods and services 1980-2018 in Turkey(current US$)

7.4. List of tables

TableNo 17: Gdp,exports and imports data in current US$ transformed to logarithmic version from 1980 to 2018.

Table No 18 :ADF unit root test results for for the First-Difference Values Log(GDP)

Table No 19 :ADF unit root test results for for the First-Difference Values Log(EXPORTS)

Table No 20 : ADF unit root test results for for the First-Difference Values Log(IMPORTS)

Table No 21: Johansen Cointegration Test results for Log(Gdp),Log(Exports), Log(imports)

Table No 22:Vector Error Correctıon Model results results for Log(Gdp),Log(Exports), Log(imports)

Table No 23: VEC residual test results results for Log(Gdp),Log(Exports), Log(imports)