

Czech University of Life Sciences Prague

Faculty of Economics and Management

Department of Economics



Master's Thesis

The analysis of foreign trade development in Turkey

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DIPLOMA THESIS ASSIGNMENT

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Thesis title

The analysis of foreign trade development in Turkey

Objectives of thesis

Since the Republic of Turkey is a newly industrialized country and its "economic and social development performance after 2000 has been impressive, leading to increased employment and incomes"(World Bank "Overview", 2021), it becomes interesting to investigate the developmental trends in Turkish foreign trade over the last 21 years and its contribution to domestic economic growth.

To achieve the formulated main goal the following partial research questions will be stated and gradually answered:

1. Which countries were the main trade partners for Turkey in the beginning of the analyzed period and which of them became key partners at the end (both importers and exporters)?
2. What goods constitute the bulk of foreign trade turnover in Turkey?
3. Trade in what items had demonstrated a revealed comparative advantage over the analyzed period?
4. What is the dynamics of associated macroeconomic indicators in Turkey?
5. What are other factors that play an important role in economic development of Turkey?

On the basis of gathered data for the period from 2000 to 2020, the revealed comparative advantage (RCA) of Turkish exports will also be calculated to answer the last reserach question: what sectors of Turkish economy (trade in which items or services) has conquered its own niche in the world market.

Methodology

The theoretical part of the Diploma thesis will be mainly based on a relevant literature review (represented by printed literature, scientific articles, surveys, web sources) and the research of similar studies, using methods such as abstraction, inductive reasoning, analysis, synthesis, and deduction.

The practical part will contain descriptive statistical analysis and qualitative thematic synthesis of the main economic indicators and selected for the analysis variables. Own research work will be mainly based on RCA indices analysis (Balassa, Vollrath and Lafay) along with comparative techniques and statistical inference.

The results of the conducted analysis will be discussed and complemented with the author's corresponding recommendations.

The proposed extent of the thesis

60-80 pages

Keywords

Turkey, Foreign trade, RCA, Macroeconomic indicators

Recommended information sources

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Declaration

I declare that I have worked on my master's thesis titled "The analysis of foreign trade development in Turkey" by myself and I have used only the sources mentioned at the end of the thesis. As the author of the master's thesis, I declare that the thesis does not break any copyrights.

In Prague on 26.11.2021

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The analysis of foreign trade development in Turkey

Abstract

The Republic of Turkey is a newly industrialized country and with impressive economic and social development performance after 2000. It is interesting to investigate the developmental trends in Turkish foreign trade over the last 21 years and its contribution to domestic economic growth.

To achieve the formulated main goal the partial research questions about main traded partners and sectors, sectors that demonstrated a revealed comparative advantage, dynamics of macroeconomic indicators and factors that influenced the economic development of Turkey will be stated and gradually answered:

The work is divided in two parts. The theoretical part of the Diploma thesis will be mainly based on a relevant literature review and the research of similar studies, using methods such as abstraction, inductive reasoning, analysis, synthesis, and deduction.

The practical part will contain descriptive statistical analysis and qualitative thematic synthesis of the main economic indicators and selected for the analysis variables. Own research work will be mainly based on RCA indices analysis (Balassa, Vollrath and Lafay).

Keywords: Turkey, foreign trade, RCA, macroeconomic indicators, export, import, trade partners, trading products, economic growth

Analýza vývoje zahraničního obchodu v Turecku

Abstrakt

Turecká republika je nově industrializovaná země s působivým hospodářským a sociálním rozvojem po roce 2000. Je zajímavé prozkoumat vývojové trendy tureckého zahraničního obchodu za posledních 21 let a jeho příspěvek k domácímu hospodářskému růstu.

K dosažení formulovaného hlavního cíle budou stanoveny a postupně zodpovězeny dílčí výzkumné otázky týkající se hlavních obchodních partnerů a sektorů, sektorů, které vykazovaly odhalenou komparativní výhodu, dynamiky makroekonomických ukazatelů a faktorů, které ovlivnily ekonomický vývoj Turecka:

Práce je rozdělena do dvou částí. Teoretická část diplomové práce bude založena především na rešerši relevantní literatury a rešerši obdobných studií s využitím metod jako abstrakce, induktivní uvažování, analýza, syntéza a dedukce.

Praktická část bude obsahovat deskriptivní statistickou analýzu a kvalitativní tematickou syntézu hlavních ekonomických ukazatelů a vybraných pro analýzu proměnných. Vlastní výzkumná práce bude založena především na analýze RCA indexů (Balassa, Vollrath a Lafay).

Klíčová slova: Turecko, zahraniční obchod, RCA, makroekonomické ukazatele, export, import, obchodní partneři, obchodní produkty, ekonomický růst

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List of abbreviations

- BSEC – Black Sea Economic Cooperation
- CA – Current Account balance
- D8 – Developing eight
- ECO – Economic Cooperation Organization
- EU – European Union
- FTA – Free-Trade Agreement
- G20 – Group of Twenty
- GATT – General Agreement on Tariffs and Trade
- GDP – Gross Domestic Product
- GNP – Gross National Product
- IEAE – International Atomic Energy Agency
- IMF – The International Monetary Fund
- NATO – North Atlantic Treaty Organization
- OECD – Organisation for Economic Co-operation and Development
- OIC – Organization of the Islamic Conference
- OSCE – Organization for Security and Co-operation in Europe
- PNA – Parties to the Nauru Agreement
- RC – Competitiveness indicator
- RCA – Revealed Comparative Advantage
- RMA – Relative Import Advantage
- RTA – Relative Advantages in Trade
- RXA – Relative Export Advantage
- SCO – Soft Corporate Offer
- TL – Turkish Lira
- TUIK – Türkiye İstatistik Kurumu
- UK – United Kingdom
- UN – United Nations
- USA – United States of America
- USD – United States Dollar
- WTO – World Trade Organization
- YoY - Year-Over-Year

1 Introduction

One of the most important means of developing the international economy is international trade. With its help, labour productivity is improved and increased, and the volume of production also increases.

The main source of prosperity in a country is production. In order to produce, first of all, it is necessary to have the production ability. However, ensuring welfare; In addition to the production capability, there is a domestic and international demand for the goods and services produced, which requires marketing and sales. Today, although most of the activities that make up the national income and employment of countries are based on activities targeting the domestic economy rather than the global market, the leading factors that determine the welfare level of countries are their export capabilities and therefore their competitive position in global markets. For this reason, foreign trade in Turkey is important both for development and growth and for ensuring external balance.

Since 1980, the Turkish economy has set aside economic policies based on import substitution and aimed to open up to the outside with a free market economy. In other words, the economy has started to be based on exports, developing production technology and growing accordingly. Export-oriented growth has been made the basic element of open growth. Thus, the economic structure has transformed from an inward-looking consumption industry protected by customs taxes to one that focuses on outward-oriented production goods, based on competition in international markets.

The relevance of considering the topic follows from all that has been said above and is determined by two main circumstances. First, most modern states (including Turkey) are characterized by economic development oriented towards ever deeper integration into the world economy. This trend has become an integral part of the world economy, the international market for goods, services, technologies, and capital. Secondly, foreign economic relations are one of the most difficult spheres of the economy of any country. They represent a whole complex of different directions, forms, methods and means of transferring material, financial and innovative resources between countries. Therefore, international trade always requires the closest attention from economics.

2 Objectives and Methodology

2.1 Objectives

Since the Republic of Turkey is a newly industrialized country and its "economic and social development performance after 2000 has been impressive, leading to increased employment and incomes"(World Bank "Overview", 2021), it becomes interesting to investigate the developmental trends in Turkish foreign trade over the last 20 years and its contribution to domestic economic growth.

To achieve the formulated main goal the following partial research questions will be stated and gradually answered:

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On the basis of gathered data for the period from 2000 to 2020, the revealed comparative advantage (RCA) of Turkish exports will also be calculated to answer the last research question: what sectors of Turkish economy (trade in which items or services) has conquered its own niche in the world market.

2.2 Methodology

The theoretical part of the Diploma thesis will be mainly based on a relevant literature review (represented by printed literature, scientific articles, surveys, web sources) and the research of similar studies, using methods such as abstraction, inductive reasoning, analysis, synthesis, and deduction.

The practical part will contain descriptive statistical analysis and qualitative thematic synthesis of the main economic indicators and selected for the analysis variables. Own research work will be mainly based on RCA indices analysis (Balassa, Vollrath and Lafay) and regression analysis along with comparative techniques and statistical inference.

The results of the conducted analysis will be discussed and complemented with the author's corresponding recommendations.

3 Literature Review

3.1 Overview of the foreign trade

Foreign trade is an exchange between two or more countries. Foreign trade is mostly done on the purchase and sale of goods. However, there may also be service purchases and sales (transportation, insurance, etc.) between countries. When all these relations are made beyond the borders of the country, we can talk about foreign trade (Dixit , et al., 1980).

There have been many relations between countries from the beginning to the present. The most permanent of these is the commercial relations that show the purchase and sale of goods. Significant developments in international transportation, communication and other fields have transformed foreign trade into economic relations (through political and economic developments). However, foreign trade should not be confused with economic relations. Due to the size of the foreign trade involved in economic relations, the two concepts are generally thought to be the same. However, it is always possible to keep the commercial relations between countries alive even if the economic relations are not continuous or disrupted (Gandolfo, et al., 2013).

On the other hand, foreign trade is closely related not only to economic development and raising the level of national welfare, but also to the political destiny of countries, the future of international relations, world peace and security. Both the sale of goods and services outside the borders of the country (export) or the purchase (import) from other countries constitute the subject of foreign trade (Dixit , et al., 1980).

3.1.1 The role and significance of foreign trade

Foreign trade implies the interaction of countries with each other in the framework of the movement of goods (services) across established state borders. Foreign trade gives this or that state a number of advantages (Johnson, 2020).

- The state receives income, which is considered additional, from the sale of goods or services on the territory of other states (Johnson, 2020);
- Foreign trade in goods and services allows the state to expand the internal market for its goods and services (Johnson, 2020);
- This type of trade allows the state to receive those national resources that are located on the territory of the state in a limited amount (Johnson, 2020);

- If the state supplies a product or service within the framework of the world market, this gives an additional opportunity to increase labour productivity in this state (Johnson, 2020).

3.1.2 The main types of foreign trade operations

Foreign trade operations, considered in a generalized form, simply either the export of manufactured products outside the national territory, or, conversely, its import from abroad. Accordingly, it is about export or import (Holopov, 2000).

The export of goods implies the export of goods or services from the country to foreign markets, for which the state receives income in foreign currency. By increasing the share of exports, the state thereby increases the aggregate demand in its country, which is similar to the investment process, thereby increasing employment in its state (Dixit , et al., 1980).

The leading form of foreign trade is commercial transactions formalized by foreign trade agreements (contracts). The country's foreign trade is regulated by the state. For this, such means as customs tariffs, licensing, contingent and other non-tariff restrictions, as well as direct and indirect export subsidies and other means are used (Krugman, et al., 2018).

Import is the opposite of export, when a foreign good or service is imported into the territory of the state with subsequent payment for this good (service). Imports reduce employment and reduce aggregate demand in the country, which is due to the outflow of capital from the country (Gandolfo, et al., 2013).

Usually, imports are an important subject of government regulation. Such regulation can be carried out through the following trade policy instruments: specific and ad valorem duties, quotas, “voluntary” export restrictions, setting minimum import prices, technical barriers, etc. Import restrictions are usually introduced for protectionist purposes (to protect national producers from competition). Import taxes can also be imposed for fiscal purposes (replenishment of the treasury) (Krugman, et al., 2018).

3.2 International trade agreements and organizations

3.2.1 World Trade Organization

The World Trade Organization (WTO) is the only global international organization that regulates the rules of trade between its members. It is based on the WTO agreements concluded, signed and ratified by most countries of the world. The WTO rules are a guideline

for the development and practical application of national legislation in the field of trade and economic relations. The main goal of the organization is stable, predictable and free trade flows between its members (Eken, 2002).

The WTO is the successor to the General Agreement on Tariffs and Trade (GATT), which was signed by 23 countries in Geneva in October 1947 and entered into force on January 1, 1948. GATT initiated the liberalization of trade in goods by reducing import customs duties. For 47 years (before the creation of the WTO), the main legal text of the GATT remained in the form in which it was adopted in 1948. In addition, multilateral agreements with a limited number of participants were adopted. The official date of the creation of the WTO is January 1, 1995. In accordance with the Marrakesh Agreement establishing the WTO, signed on April 15, 1994, 76 members of the GATT became the founding countries of the organization (Department of European Union and Foreign Relations, et al., 2009).

Turkey became a party to the GATT in 1951 and was among the founding members of the WTO (Department of European Union and Foreign Relations, et al., 2009).

Turkey has signed both agreements and as a WTO member country, it has to act within the framework of international legislation. This legislation is one of the basic elements of the Turkish Foreign Trade System (Department of European Union and Foreign Relations, et al., 2009).

3.2.2 The EU Customs Union and Turkey

The European Union Customs Union is a customs union of the countries of the European Union (EU) and a number of other countries that was founded in 1968. It ensures duty-free movement of goods across the territory, regardless of whether these goods are produced within the union or imported and sets standard customs duty rates for goods imported from outside the union. The EU Customs Union also enforces a comprehensive system of regulations for the region's import and export (Unknown2, 2021).

Participating countries:

- all EU members, with the exception of some of their territories,
- Turkey (EU candidate),
- Great Britain (despite leaving the EU, it is also a member of the Customs Union on the terms of temporary participation)

- dwarf states bordering the EU are Andorra, Monaco and San Marino (Unknown2, 2021).

The European Union-Turkey Customs Union is a trade agreement between the European Union (EU) and Turkey. The agreement entered into force on December 31, 1995 following the adoption on March 6, 1995 of the Decision of the Association Council of the European Community and Turkey on the establishment of a customs union between the two parties. Goods can move between the two organizations without any customs restrictions. The Customs Union does not cover important economic areas such as agriculture (to which bilateral trade concessions apply), services, or government procurement (Unknown1, 2021).

3.2.3 Euro-Mediterranean Partnership

On July 13, 2008, in Paris, at the initiative of France, which holds the EU Presidency, the founding summit of the renewed Euro-Mediterranean Partnership, which received the official name “Barcelona Process: Union for the Mediterranean”, took place (Brauch, et al., 2000). This meeting was attended by all 27 EU member states without exception, five European states that are not members of the European Union, but are directly related to the region (Albania, Bosnia-Herzegovina, Monaco, Montenegro, and Croatia), and 11 countries of the southern Mediterranean (Algeria, Egypt, Israel, Lebanon, Morocco, Syria, Tunisia, Turkey, PNA, Jordan and Mauritania) (European Commission, 2021).

The Union is positioned as a natural continuation of the Barcelona process - a process of European and Mediterranean cooperation (Farrugia, 2010). The purpose of this restart is to breathe new life into the partnership and to raise the political level of the strategic relationship between the EU and its southern neighbors (Brauch, et al., 2000). The CAP now includes all members of the European Union and sixteen partners throughout the Southern Mediterranean and the Middle East. The partnership was organized in three main dimensions, which still remain broad areas for partnerships (International Labour Organization, 2010):

1. Political and security dialogue aimed at creating a common area of peace and stability, supported by sustainable development, the rule of law, democracy and human rights (Farrugia, 2010).

2. Economic and financial partnership, including the consistent creation of a free trade zone, aimed at creating favorable conditions for common economic opportunities through sustainable and balanced socio-economic development (Farrugia, 2010).
3. Social, cultural and humanitarian partnerships aimed at promoting intercultural dialogue and understanding between cultures, religions and people, as well as facilitating exchanges between civil society and ordinary citizens, especially women and youth (Farrugia, 2010).

A difficult situation has arisen on the issue of Turkey's inclusion in the new format of relations (TURKEY AND THE EURO-MEDITERRANEAN REGION, 2013). The fact is that N. Sarkozy, while still a presidential candidate, repeatedly opposed the inclusion of the Turkish Republic in the EU (THE EU AND THE EASTERN MEDITERRANEAN: how to deal with Turkey, 2021). Sarkozy envisioned the future of Turkish-European relations only in the format of a member of the Mediterranean Union, and not as a possible full member of the EU (TURKEY AND THE EURO-MEDITERRANEAN REGION, 2013).

It is quite natural that the idea of a new Union was initially very restrained in Turkey, since this state has had the status of a candidate for accession to the European Union since 1999, and accession negotiations are at the final stage (TURKEY AND THE EURO-MEDITERRANEAN REGION, 2013). Therefore, Turkey's participation in the founding summit of the Union for the Mediterranean depended on the position taken by Brussels. Only after the European Commission confirmed the firmness of its position on the continuation of negotiations with Turkey on its accession to the EU, Ankara accepted the offer to participate in the renewed Barcelona process (THE EU AND THE EASTERN MEDITERRANEAN: how to deal with Turkey, 2021).

3.2.4 International Monetary Fund

The International Monetary Fund (IMF) is a specialized agency of the United Nations (UN), created to promote international financial cooperation and international stability in the monetary and financial sphere (Boughton, 2009). The IMF is also committed to promoting international trade, high employment and sustainable economic growth, as well as reducing poverty around the world. The IMF is governed and accountable to by its 188 member countries (International Monetary Fund, 2014). Although the IMF is a specialized agency of the United Nations and participates in the UN Economic and Social Council, it operates

independently and has its own charter, governance structure and finances (Samans, et al., 2007).

The main task of the IMF is to ensure the stability of the international monetary and financial system, the system of exchange rates and international settlements, which allows countries (and their citizens) to conduct transactions with each other. This goal implies prevention of economic and financial crises, large fluctuations in economic activity, high inflation and excessive volatility in exchange rates and financial markets (Samans, et al., 2007). As recent financial crises have shown, countries are becoming more interdependent, and difficulties in one sector can lead to difficulties in other sectors and spread to other countries. Economic and financial stability requires attention at both the national and multilateral levels. The IMF, through its oversight, technical assistance, and lending functions, helps countries pursue sound and appropriate economic policies (Samans, et al., 2007). The Fund's mandate was updated in 2012 to cover the full range of macroeconomic and financial sector issues that affect global stability (Boughton, 2009).

3.2.5 UK-Turkey agreement

The free trade agreement between Turkey and the UK was signed on 29 December 2020, right after the UK-EU agreement, and entered into force on 1 January 2021. The agreement is the continuation of the Customs Union terms, the Association Council Decision regulating agricultural concessions with the United Kingdom and the Turkey-EU European Coal and Steel Community Free Trade Agreement and covers the trade of goods (GOV.UK, 2020). Customs Tax Applications in the Free Trade Agreement will be as follows.

- a. With the agreement, customs duties on industrial products have been zeroed in order to ensure that the existing concessions within the scope of the Customs Union can be maintained in the future (Brader, 2021).
- b. With the agreement, the continuation of the existing conditions with the EU in terms of tax reductions and exemptions was provided with the United Kingdom at a bilateral level (Brader, 2021).
- c. The current market entry conditions of the exporters in the UK have been preserved, and it has been ensured that the competitiveness of the UK against other FTA partners is not adversely affected (Brader, 2021).
- d. The declaration of origin to be made by the exporter on the relevant invoice or other commercial document regarding the information and documents sought in order to

benefit from tax exemptions in the Free Trade Agreement will be used as the origin document of the traded goods between the parties and will not require the approval of an authority (Brader, 2021).

3.3 Magic Quadrant and its components

Economy has different objectives such as price stability, financial stability, economic growth, employment and balance of payments balance. Some of these goals support each other, while others contradict each other. This means that while trying to achieve some goals, other goals can be achieved as well as distanced (Bargaining Structure, Corporatism and Macroeconomic Performance, 1988). For example, in an environment where economic growth is achieved, employment generally increases, and in an environment where price stability is sought, growth and employment may decrease to a certain extent. It presents difficulties in assessing a country's overall economic performance, especially when objectives conflict with each other. In such a case, holistic data that will measure the overall economic performance are needed in order to make more objective and accurate assessments (Dullien, 2017).

It is unclear which variable and/or variables should be taken into account in the measurement of macroeconomic performance or whether there is an order of importance among the variables. As a matter of fact, while the Classics gave importance to economic growth and income distribution in macroeconomic theory, Keynesians emphasized unemployment and argued that the state should intervene in the economy to ensure full employment (Bargaining Structure, Corporatism and Macroeconomic Performance, 1988). With the development of Keynesian economics, especially after the Second World War, the goals of economic policy began to gain certainty and governments announced performance criteria. Kaldor sees this development as a reflection of the powers and responsibilities of governments in the field of economy, although the status of official targets is never clearly defined (Index of Macroeconomic Performance for a Subset of Countries: A Kaldorian Analysis from the Magic Square Approach Focusing on Brazilian Economy in the Period 1997-2012, 2014).

The magic square is an approach that brings together four different variables such as growth, inflation, current account balance and unemployment in the same diagram. This diagram is formed by dividing it into four parts by horizontal and vertical axes, passing right

through the middle point, and placing the current account balance to the right of the horizontal axis, unemployment to the left, growth to the upper part of the vertical axis and inflation to the lower part of the vertical axis. When the numerical values of the variables in question are determined on each axis and combined with each other, a quadrilateral emerges. The area of this rectangle can be used to make a quick visual analysis of the development of a country's macroeconomic performance in terms of sub-years or periods, as well as to compare the macroeconomic performance of different countries in a certain period. The growth of the total area over the years is evaluated as an increase in the macroeconomic performance of the country, while its shrinkage is evaluated as a decrease in the macroeconomic performance (Türkiye'nin 2006-2017 Dönemi Makroekonomik Performansı: Sihirli Kare Yaklaşımı, 2019).

GDP and GDP growth

Gross domestic product (GDP) is the main, most comprehensive official indicator of public welfare. It gives an idea of the general material welfare of the nation, because the higher the level of production, the higher the welfare of the country (Coyle, 2015). As the population is different in all countries, GDP per capita is compared. This indicator is needed in particular in order to adequately compare the economic development of different countries, taking into account the population (Masood, 2021).

There are two types - nominal and real GDP. Nominal (absolute) GDP is expressed in current prices of the given year. Real (adjusted for inflation) - expressed in prices of the previous or other base year (Amadeo, 2021). Real GDP has an advantage over nominal GDP. Based on the dynamics of real GDP, it is possible to estimate how the economy is developing and how the state of the state is deteriorating or improving (Coyle, 2015).

Real GDP does not depend on price changes. It reflects the level and dynamics of the final goods and services produced in the country. In this respect, it has an advantage over nominal GDP. Based on the dynamics of real GDP, it is possible to estimate how the economy is developing, the state is deteriorating or improving (CFI).

The GDP growth rate is an important indicator in the economy, since it is one of the determining factors for the economic growth of a country (Amadeo, 2021). This indicator is adjusted for inflation and therefore has better explanatory power. The GDP growth rate is calculated using the formula below (Coyle, 2015).

Inflation rate

Inflation is one of the most common economic terms used to describe market situations, such as an excessive increase in the general price level, an increase in cash flows or their individual elements (including wages and profits), an increase in costs, an excessive increase in cash savings (Arkadiusz, 2019). The process of inverse to inflation, i.e., the fall in prices, is called deflation (Schwartz , 2010).

In terms of rising prices, inflation is usually divided into three types:

- High inflation means that prices are rising gradually, by about 3-5% per year, as is the case in developed countries (Hagger, 1977).
- Moderate inflation is a positive factor for the economy, stimulating demand and contributing to the expansion of production and investment. This type of inflation is typical of developing countries. The growth of prices is by 10-50% year-on-year (Hagger, 1977).
- Hyperinflation - a companion to crises and wars. Price growth exceeds 50% and can reach astronomical values (Hagger, 1977).

Unemployment

Unemployment is a socio-economic phenomenon in which some part of the able-bodied population cannot find work related to legitimate earnings (Arestis, et al., 2008).

There are the following reasons for unemployment:

- Structural improvements in the economy - the emergence and use of new technologies and equipment leads to a reduction in the number of jobs (machines replace humans) (CFI);
- Seasonal fluctuations - temporary changes in the volume of production and provision of services (and therefore in the number of jobs) in some industries (CFI);
- The cyclical nature of the economy - during a recession or a state of depression, the need for such a factor of production as labor decreases (Economics Online);
- Demographic changes - for example, an increase in people of working age can lead to the fact that the demand for jobs will prevail over supply, which leads to unemployment (Economic Policy Institute);

- Wage Policies - Actions by governments, trade unions, or business leaders to raise the minimum wage may increase production costs and eliminate part of the workforce (CFI).

Types of unemployment:

Structural - the inability to find a job due to differences in the structure of demand and supply of labor of different qualifications (Arestis, et al., 2008). Structural unemployment, for all its disadvantages, may not worry the government, but only when the total number of vacant jobs is not inferior to the number of job seekers, although they may also have other specialties (CFI).

Frictional - limited opportunities for a laid-off employee to find a free job in accordance with their specialty. Frictional unemployment is found even in countries that are experiencing rapid economic growth (Economic Policy Institute). Its reason lies in the fact that a person who is dismissed from his job or who left him on his own initiative needs some time to find a new vacant job. It should suit him both in his specialty and in terms of wages (Economics Online).

In countries with market economies, there are always a certain number of people who, for one reason or another, are looking for a more suitable job for themselves (Verhaar, et al., 2011). In addition, there is always a certain number of unemployed on the labor market who are looking for their first job (youth, women who have raised children, etc.). These people are also included in the list when determining the level of frictional unemployment (Wynn, 2013).

Cyclical - it happens during an economic crisis, when production volumes fall (Economics Online).

Cyclical unemployment is common in countries experiencing a general economic downturn. In this case, the manifestations of the crisis are felt not in individual, but practically in all commodity markets (Economics Online). Difficulties concern the majority of firms in the country, and therefore numerous layoffs occur almost simultaneously in all enterprises. As a result, the total number of unemployed exceeds the number of unemployed (Economic Policy Institute).

Seasonal - depends on seasonal work during certain periods of the year. Seasonal workers are often added to the unemployed. They become unemployed due to the fact that some activities can only be carried out at certain times of the year (Wynn, 2013).

The most striking example is agricultural workers who work during the harvest season and do not have a permanent source of income the rest of the time (Verhaar, et al., 2011).

Current account balance

The current account of the balance of payments is a section of a country's balance of payments that records the volumes of its exports, imports of goods and services, its net investment income and net transfer payments (Economics help). The current account of the balance of payments covers any transactions with economic values (other than transactions with financial assets and liabilities) between residents and non-residents. Also taken into account are transactions related to the gratuitous provision or receipt of values intended for current use. Includes goods, services, income and current transfers. The balances of goods, services, income, and current transfers are commonly referred to as "current account balances" or "current account balances" (OECD).

3.4 Economic growth

The theory of economic growth is one of the most difficult sections of economics devoted to the study of the market economy. The analysis of economic growth has been of particular importance in recent decades (Aghion, et al., 2014). The rise in needs, the depletion of traditional resources, and an increase in the population size determine the solution of a two-pronged task: economic growth and economic efficiency (Barro, et al., 2003).

Economic growth is an increase in the volume of created utilities and, consequently, an increase in economic well-being and living standards of the population (Barro, et al., 2003).

Economic growth is one of the fundamental challenges facing all countries. Its dynamics are used to judge the development of national economies, the living standards of the population, and how the problems of limited resources are solved. Economic growth is the most important characteristic of social production in any economic system (Hudson, 2015).

Economic growth means that at each given time interval, the solution to the problem of limited resources is facilitated to some extent and it becomes possible to satisfy a wider range of human needs (Weil, 2012).

Two main teaching definitions:

- Economic growth is the process of increasing the volume of material goods, improving their quality in accordance with the structure of increasing needs (Aghion, et al., 2014).
- Economic growth is the quantitative and qualitative improvement of the social product over a certain period of time (Aghion, et al., 2014).

Economic growth - in a broad sense, as an indicator of economic development, is the main trajectory of the development of society. Together with social, political, demographic and other characteristics, it determines the direction of movement of society, establishing the nature of social development as a whole (Barro, et al., 2003).

The indicators by which economic growth is measured are usually gross national product (GNP) or gross domestic product (GDP) (Weil, 2012).

Economic growth is usually measured relative to the previous period in percent or in absolute terms. Economic growth is expressed in an increase in the country's real gross domestic product (GDP), in an increase in the economic power of a country, a region (Hudson, 2015).

The rate of economic growth is influenced by many factors - quantitative and qualitative. These are natural and labor resources, capital efficiency, geography, technology and management efficiency. Theorists argue which factors are the main and which are secondary for the growth of the economy. Many believe that their combination and a healthy balance are important (Weil, 2012).

3.5 Comparative advantages

The participation of countries in international trade can have an additional positive effect that contributes to the economic growth of countries. However, this effect can be achieved if the country develops foreign trade relations based on the so-called comparative advantages, in this case both the exporter and the importer of products win. Most scholars believe that only the development of trade based on comparative advantage can bring the most positive effect to countries (Amadeo, 2021). The formation of a structure of foreign trade based on comparative advantages is possible only if the market subjects preserve the

free choice of conditions for mutually beneficial exchange, which excludes significant regulation by the state (The Changing Comparative Advantage of Japan and the United States, 1989). State intervention through the use of various instruments of trade policy can distort the effects of foreign trade, therefore, it should be limited and based on taking into account the existing and potential comparative advantages of the country (López Gallardo, 2005).

Comparative advantages are not a static indicator: some of them weaken over time and can be lost, others - acquired. Analysis of the dynamics of changes in comparative advantages is relevant for each country, which allows building a specific strategy for the development of the country's foreign economic relations (Comparative Economic Advantage Analysis of Alternative Agricultural Production Options in Tanzania, 1998).

3.5.1 Balassa index

Ricardo's theory of comparative advantage suggests that comparative advantage manifests itself in different levels of technology and is revealed by comparing the relative industry costs spent on the production of two goods in two countries (Amadeo, 2021).

The most famous formula for determining the comparative advantage of countries is the Balassa Index, proposed by Bela Balassa in 1965 (The Changing Comparative Advantage of Japan and the United States, 1989). As the object of his research, Balassa chose the structure of exports of industrial goods, since he believed that it most fully corresponds to the comparative advantages available in the countries: its volumes are formed under the influence of both price and non-price factors, About 75% of the world trade turnover falls on industrial finished products, trade in this group of goods is the most liberalized, while trade in raw materials is largely regulated by quotas, subsidies, tariff and non-tariff restrictions, etc (CBS). The Balassa index is calculated as the ratio between the share of exports of a certain product in the total volume of a country's exports and the share of this product in the total volume of world exports (de Benedicts, et al., 2001):

$$BI = \frac{X_{ij}}{X_{it}} \div \frac{X_{nj}}{X_{nt}} = \frac{X_{ij}}{X_{nj}} \div \frac{X_{it}}{X_{nt}}$$

where X is export, i is the country under study, j is a product (or industry), t is a group of goods (or industries), and n is a group of countries (de Benedicts, et al., 2001).

When the index has a value of more than 1, the country in question has a comparative advantage in the export of goods, and this, in turn, indirectly indicates its competitiveness. If the value of the index is less than 1 or even tends to 0, then for the country under consideration, the export of a particular product or group of products is irrational, or requires the use of a number of competent support measures and improving its consumer qualities (Amadeo, 2021).

The proposed index is called the Revealed Comparative Advantage (RCA) coefficient, since the calculation is made on the basis of already available data on the export of goods of a given country or group of countries (CBS).

3.5.2 Vollrath index

Based on the Balassa index, Vollrath in 1991 proposed three more methods for calculating RCA, on the basis of which he derived the following indicators: relative advantages in trade (RTA), logarithm of relative export advantage (RXA), competitiveness indicator (RC) (Amadeo, 2021). The last two indicators, according to Vollrath, are calculated by region. Positive values of all three indicators make it possible to identify comparative advantages (high competitiveness) in the country, while negative values indicate comparative disadvantages (low competitiveness) (López Gallardo, 2005).

$$RTA = RXA - RMA$$

Where RXA and RMA are Balassa type intensity measures which are calculated as below to avoid double counting:

$$RXA = BI = \frac{X_{ij}}{X_{it}} \div \frac{X_{nj}}{X_{nt}} = \frac{X_{ij}}{X_{nj}} \div \frac{X_{it}}{X_{nt}}$$

$$RMA = \frac{M_{ij}}{M_{it}} \div \frac{M_{nj}}{M_{nt}} = \frac{M_{ij}}{M_{nj}} \div \frac{M_{it}}{M_{nt}}$$

where X is export, M is import, i is the country under study, j is a product (or industry), t is a group of goods (or industries), and n is a group of countries (de Benedicts, et al., 2001).

$$RC = \ln RXA - \ln RMA$$

The advantage of expressing these latter two indices in logarithmic form is that they become symmetric through the origin. Positive values of Vollrath's three measures, RTA, $\ln RXA$ and RC, reveal a comparative/competitive advantage.

3.5.3 Lafay index

Analyzing a country's export potential by identifying comparative advantages in the existing export base, including additional criteria for a more comprehensive assessment, is also important and appropriate (The VWRCA Index: Measuring a Country's Comparative Advantage and Specialization in Services. The Case of Poland, 2021).

One of these can be, for example, the Lafay index, in the calculation of which the flows of imports of goods are also taken into account (Amadeo, 2021):

$$LFI = 100 \times \left(\frac{X_i - M_i}{X_i + M_i} - \frac{\sum(X_j - M_j)}{\sum(X_j + M_j)} \right) \times \frac{X_i + M_i}{\sum(X_i + M_i)}$$

Where:

X_i - export of goods i by country.

M_i - import of goods i by country.

X_j - export by the country of all other goods, except for i .

M_j - import by the country of all other goods, except for i .

If Lafay index is greater than zero then it means that sector has comparative advantage and if index is smaller than zero it means that sector has comparative disadvantage.

4 Practical Part

4.1 Overview of the economy of Turkey

The Republic of Turkey is an industrial country with a dynamically developing economy. According to IMF estimates, since 2015, Turkey has been in 13th place in the world in terms of GDP in PPP terms, ahead of the rest of the Middle East. In 2020, it accounted for 1.9% of world GDP in PPP terms. The population of Turkey in 2018 amounted to 84.3 million people, and the value of the indicator in 2000-2020 increased by 27% (Deutsche Welle Türkçe, 2021), which is explained by the high birth rate with relatively low mortality and indicates that only the first demographic transition has been completed in the country.

Turkey is one of the original members of the United Nations and is a member of all UN specialized agencies. The country is a member of the WTO, NATO, OECD, G20, Council of Europe, Interpol, OSCE, IAEA, BSEC. In 1987, Turkey submitted an official application to join the EU and only 12 years later received the status of a candidate for membership in the Union. However, negotiations on this issue are still underway. Cooperation between Turkey and the EU is maintained within the framework of the Customs Union and the Migration Agreement.

Turkey is a permanent observer in the Organization of American States, the African Union, and a SCO dialogue partner. The country is actively engaged in international cooperation in the monetary and financial sphere: it is a member of the Asian Development Bank, the Bank for International Settlements, and the European Bank for Reconstruction and Development. Turkey currently participates in 20 agreements on free trade and economic cooperation.

Turkey is actively involved in regional integration: the country is a member of the Islamic Eight (D8), the Organization of Islamic Cooperation (OIC), and the Turkic Council. Moreover, Turkey became the first country to establish diplomatic and economic relations with all Central Asian countries, which then joined the Economic Cooperation Organization (ECO), created in 1985 by Turkey, Iran and Pakistan.

4.2 Magic Quadrant of Turkey

The table number 1 below represents Turkey's GDP growth, current account as percentage of GDP, inflation rate, and unemployment rate. With the help of this table, a magic square graph was built to better visualize the economic state of the country in the selected years.

Table 1 Data set for Magic Quadrant of Turkey

| | 2000 | 2005 | 2010 | 2015 | 2020 | Optimal |
|--------------------------|-------|-------|-------|-------|-------|---------|
| GPD growth | 6.93 | 8.99 | 8.43 | 6.08 | 1.79 | 3.00 |
| CA as % of GDP | -3.62 | -4.14 | -5.74 | -3.16 | -5.10 | 0.00 |
| Inflation | 54.92 | 8.18 | 8.57 | 7.67 | 12.28 | 2.00 |
| Unemployment rate | 6.50 | 10.64 | 10.66 | 10.24 | 13.92 | 5.00 |

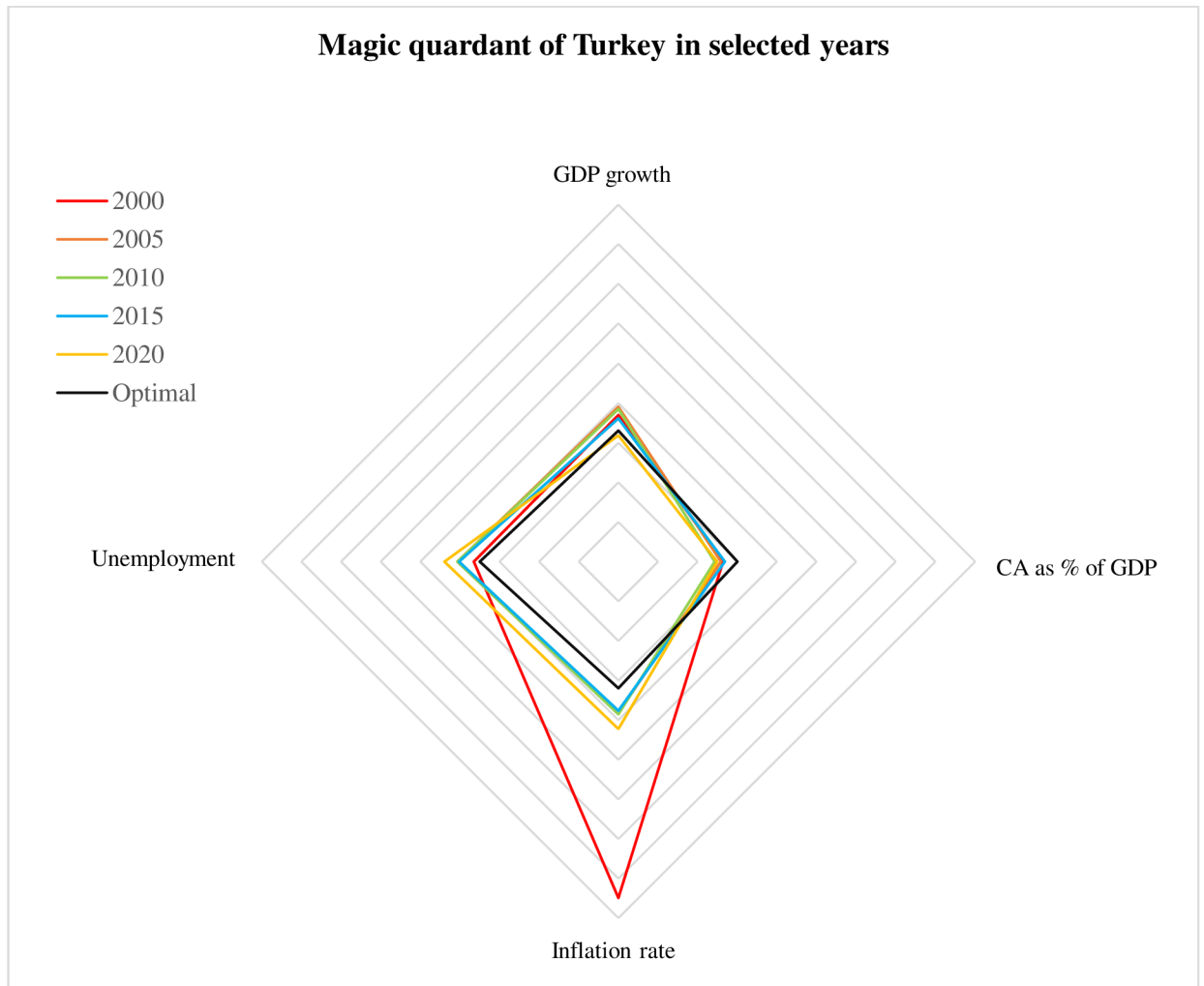
Source: own creation based on data from TUIK

In theory, the larger the square, the better the country's performance is. In this case, it is not so easy to determine which of the squares is larger than the others, since the indicators are not stable and disintegrate. But the squares of 2010 and 2020 are slightly larger than others, and the indicators in the table for these 2 years are slightly better than others.

The results for year 2010 seem better than others and closer to optimal number, however still not ideal.

Magic quadrant is good for better visualization; however, it is not taking into consideration a lot of other factors which can affect the economy of the country.

Graph 1 Magic Quadrant of Turkey in selected years



Source: own creation based on data from TUIK

4.2.1 GDP and GDP growth of Turkey

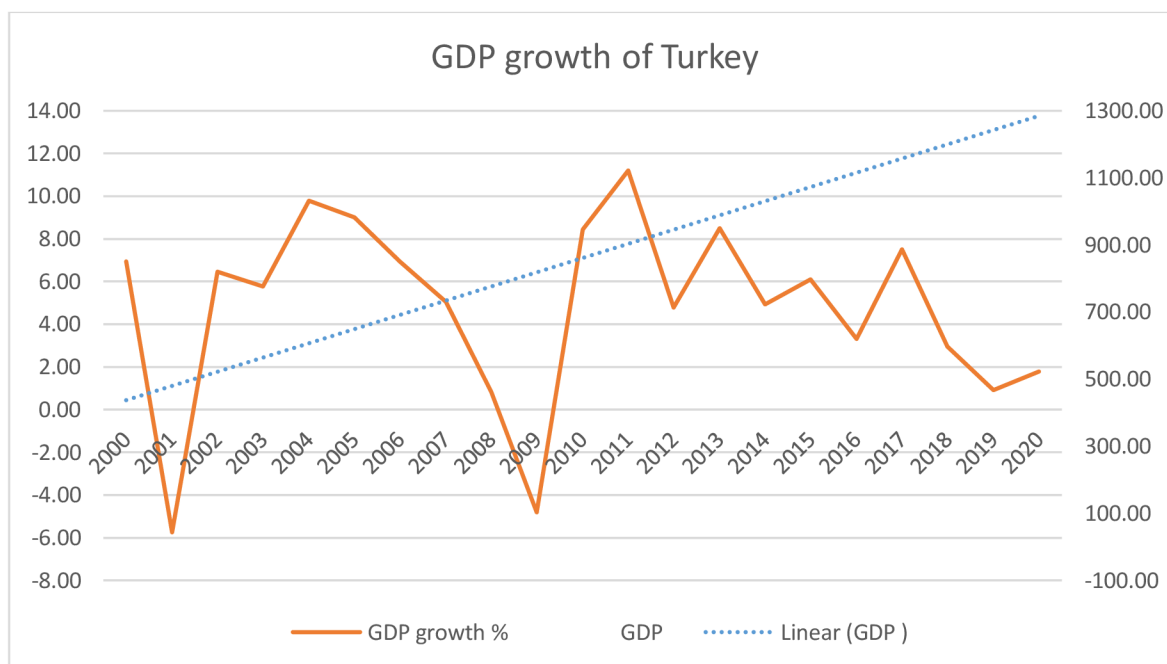
Since 1990, periods of economic growth in Turkey have been followed by short-term recessions. Turkey is currently going through the stage of industrialization, and in recent years has also been actively developing its infrastructure. As can be seen in the graph number 2 below, in 2010 can be seen the start of the longest period of economic recovery in nearly 40 years. In 2000–2020, the country's GDP increased by almost 2.4 times.

In 1999, the growth rate of the country's economy was -3.4%, which was due to a significant reduction in external funding and the devastating Izmir earthquake. At the end of 1999, the country's government began to carry out reforms aimed at stabilizing the situation in the economy through inflation targeting, "pegging" the exchange rate of the national currency to the US dollar, increasing foreign investment and privatizing the largest

companies. The results of the ongoing economic stabilization became noticeable already in 2000: at the end of the year, the country's GDP increased by 6.6.

After the banking crisis in 2001, the Turkish economy grew rapidly until the “great recession” of 2008-2009: on average for 2002-2007, real GDP growth rates exceeded 7% per year. In addition to well-implemented reforms, significant economic growth until 2008 was facilitated by the diversification of the economy and foreign trade, controlled government spending and a favourable situation in the world economy.

Graph 2 GDP growth of Turkey



Source: own creation based on data from TUIK

The global financial and economic crisis had a strong negative impact on the Turkish economy, and the GDP growth rate in 2008 decreased to 0.8%, and in 2009 it became negative and was at the level of -4.7%. The key reasons for the recession were the decline in exports and the rate of accumulation.

After the crisis, Turkey's GDP growth rate was high (on average + 6.8% annually in 2010-2017, but uneven.

Turkey's GDP growth rate in 2018 decreased to 2.9% after 7.5% in 2017. In 2019, according to IMF forecasts, for the first time since the “great recession”, the country's economic growth rates could have been negative, this did not happen, but GDP growth still decreased and amounted to 0.92%. Among the reasons for the contraction in economic activity are the overheating of the economy in previous periods, the contraction of external

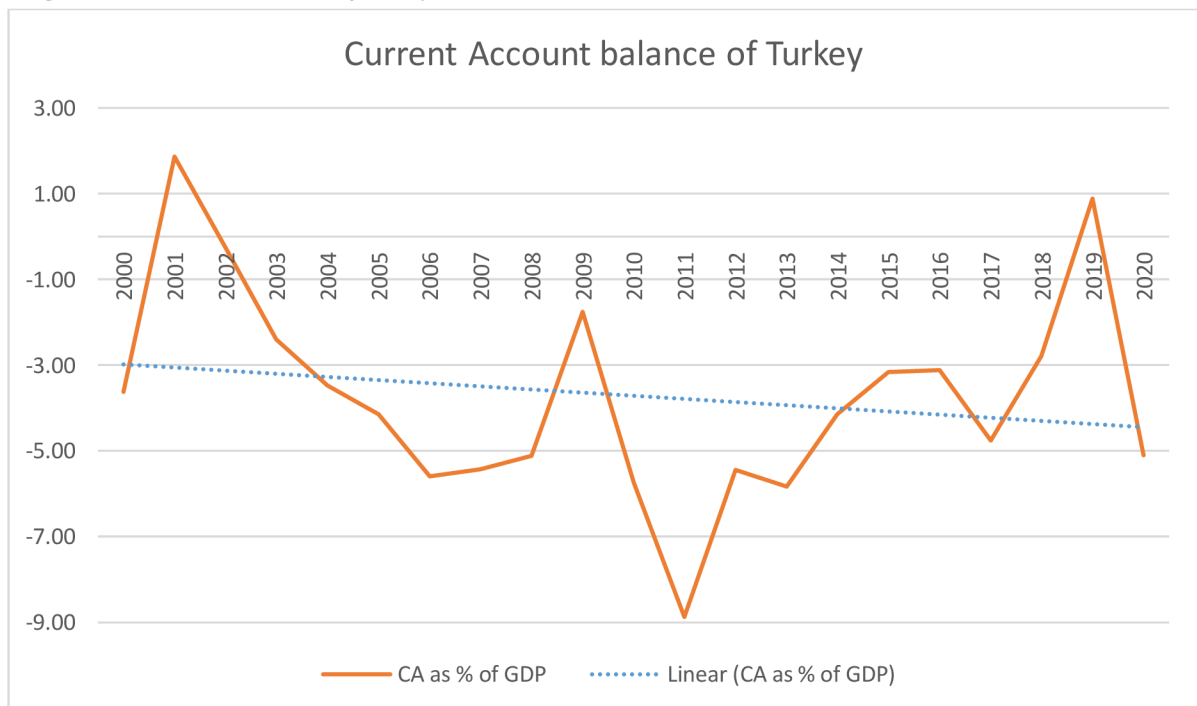
financing, including due to the deterioration of political relations with the United States, high government spending and a current account deficit.

Turkey's economy grew by 1.8% in 2020, compared to 0.9% growth in 2019. An almost 2-fold increase in bank lending in the second half of 2020 made it possible to partially offset the negative consequences of the COVID-19 coronavirus pandemic and related restrictions.

4.2.2 Current account balance of Turkey

The current account balance is one of the indicators of a country's performance. The graph number 3 clearly shows the changes in the current account to GDP of the Republic of Turkey. As you can see, the changes in this indicator are uneven. In most cases, the indicators are negative for various reasons. The budget deficit in 2000 is related to the devastating earthquake in 1998 in southern Turkey. The lowest indicator was in the post-crisis period in 2011. Despite such indicators, for the selected period of time, from 2000 to 2020, Turkey's current account reached positive numbers 2 times, and this is in 2001 and 2019.

Graph 3 Current account balance of Turkey



Source: own creation based on data from TUIK

4.2.3 Inflation rate of Turkey

The biggest achievement associated with the implementation of the stabilization policy since 1998 is the reduction of inflation to single digits in the medium term. While

inflation was 55.8 percent in 1999, it fell to 54 percent in 2000 and remained high during the 2000-2001 crisis. Since 2003, the inflation rate has dropped significantly (21.6 percent in 2003, 8.6 percent in 2004, 8.1 percent in 2005). In addition to the constraining monetary and fiscal policy that has been consistently applied since 2001, the real appreciation of the TL against foreign currencies since 2003 and the significant inflow of foreign resources are some of the main factors leading to this result. The drop in inflation to single digits prompted policymakers to set an annual inflation target of 5.0 percent in 2006 and lower that target to around 3-4 percent in subsequent years.

Following an announcement by the Central Bank in 2005, a clear inflation targeting regime was adopted from the beginning of 2006. However, economic events in the world during this period also negatively affected the Turkish economy. Since May 2006, the change in international capital conditions for developing countries has caused capital outflows from Turkey as well as from many other countries.

Table 2 Target of Tukey's inflation rate

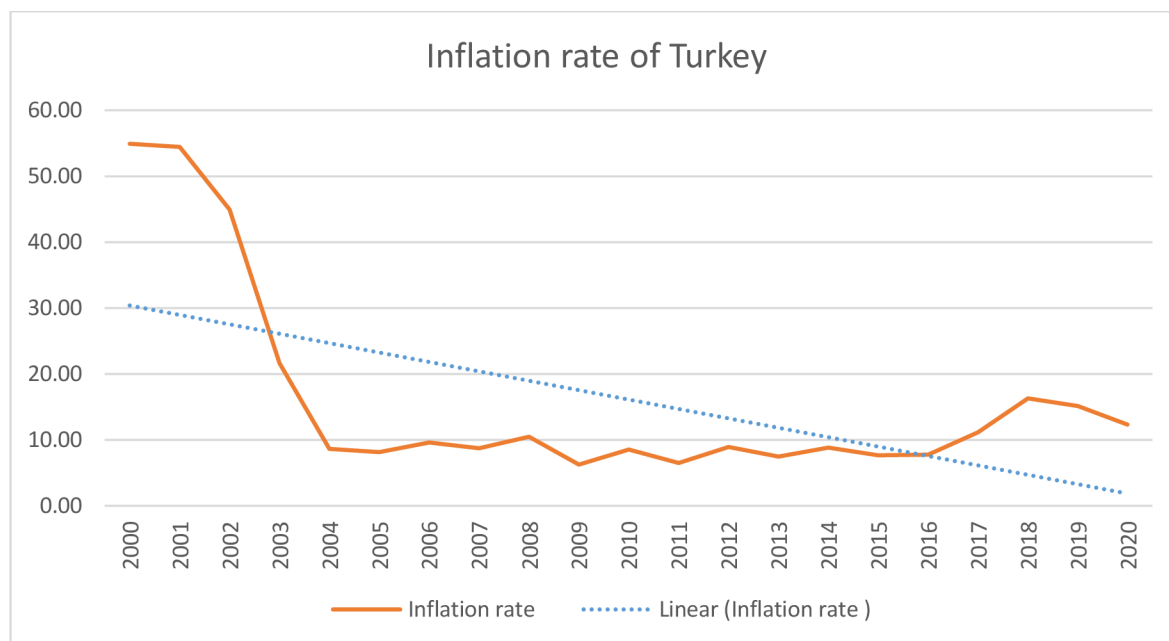
| | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 |
|-------------|-------|-------|------|------|------|------|-------|------|------|------|------|------|
| Forecast | 35 | 20 | 12 | 8 | 5 | 4 | 4 | 7.5 | 6.5 | 5.5 | 5 | 5 |
| Realization | 44.96 | 21.60 | 8.60 | 8.18 | 9.60 | 8.76 | 10.44 | 6.25 | 8.57 | 6.47 | 8.89 | 7.49 |

Source: own creation based on data from TUIK

Looking at the inflation targeting period since 2006, it is clear that the targets have not been met, with the exception of 2009, as shown in table number 2. This was influenced by fluctuations in international markets and the rise in energy prices since 2005. In 2008, the economic downturn was triggered by the global economic crisis, and a sharp increase in the cost of energy and goods, as well as the introduction of additional taxes, put pressure on inflation. Inflation was 6.25% due to reduced demand due to the effects of the ongoing global crisis in 2009 and lower energy prices since the beginning of the crisis in 2010, the effects of the crisis began to wane, and production rose above pre-crisis levels. For this reason, the inflation rate was 8.6%. Since the end of 2010, the Central Bank of Turkey has maintained financial stability as well as price stability. Since it is impossible to manage more than one variable with one instrument, the Turkish Central Bank began to use additional instruments, such as required reserves and the interest rate corridor, in addition to the discount rate. To slow short-term capital inflows and credit expansion, short-term interest rates remained low,

reserve requirements were increased, and the interest rate corridor was widened. In 2011, inflation reached 6.5%, well above the target of 5.5%. Higher-than-expected increases in the price of unprocessed food and the continued depreciation of the Turkish Lira contributed to the bias in the forecasts (CBRT, 2012).

Graph 4 Inflation rate of Turkey



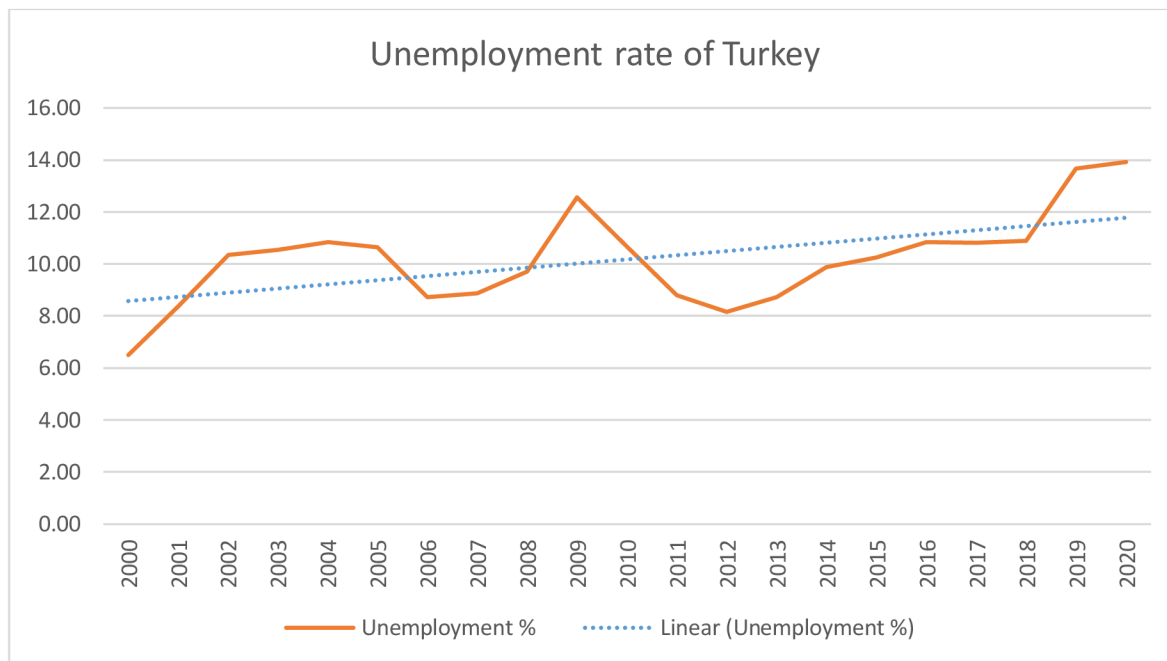
Source: own creation based on data from TUIK

4.2.4 Unemployment in Turkey

Historically, the share of the unemployed population in Turkey in 1980-2000 averaged 7.1% -7.7% and began to increase markedly since 2002-2009 and reaching its maximum of 12.5% in 2009. The growth of unemployment in Turkey at the turn of 2008-2009 was a consequence of the global crisis, the impact of which was overcome as the global economy improved. 2012 was the year in which the share of the unemployed population dropped to 8.4% (the lowest value in the current decade). In subsequent years, the share of the unemployed population only grew. This was partly due to the stagnation in the tourism industry and related industries (passenger air transportation, cargo transportation) due to the sanctions of the Russian Federation introduced in November 2015, which also affected the products of the country's agricultural complex, the export of labour from Turkey to the Russian Federation, and construction companies. In the period 2016-2018 the unemployment rate in Turkey was about 10.9% -11%. The average growth rate of the

employed population in the Turkish economy was in the period 2006-2018 about 1.3% (2% YoY in 2018).

Graph 5 Unemployment rate of Turkey



Source: own creation based on data from TUIK

4.3 International trade and Turkey

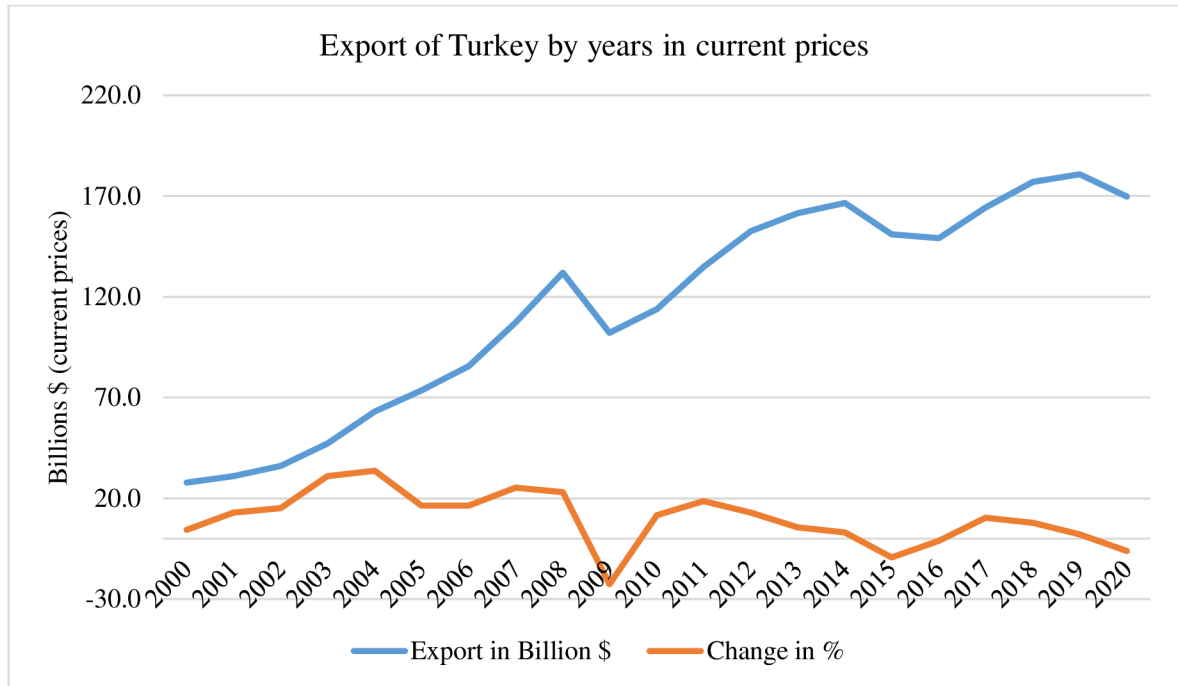
Liberal reforms in the Turkish economy contributed to the growth of foreign trade turnover and the transition from an import substitution model to an export orientation. The structure of exports has changed: the share of agricultural products declined, while the share of industrial goods increased markedly. However, the insufficient provision of energy resources led to the dependence of the national economy on the world market and was also one of the reasons for the chronic deficit of the trade balance of Turkey.

4.3.1 Export and import

Graph number 6 shows Turkey's exports in current US dollars and percentage changes over the period 2000-2020. In 2000, exports amounted to \$ 27.8 billion, and the amount increased until 2009. As a result of the 2008 US economic crisis that affected Turkey's economy, exports fell by 22.6% to \$ 102.1 billion in 2009. Turkey's exports, which continued to rise to \$ 113.9 billion in 2010, reached \$ 152.5 billion in 2012. Despite the decline in exports in 2015 and 2016 as a result of negative factors in the economy, exports reached \$ 164.5 billion with a 10% growth in 2017. In 2018, Turkey's exports grew by 7%

and by 2% in 2019, reaching a maximum value of \$ 180 billion. The Covid-19 pandemic has had a significant negative impact on global trade as a whole, which has affected the Turkish economy as well. As a result in 2020, exports decreased by 6.2% to \$ 169.6 billion.

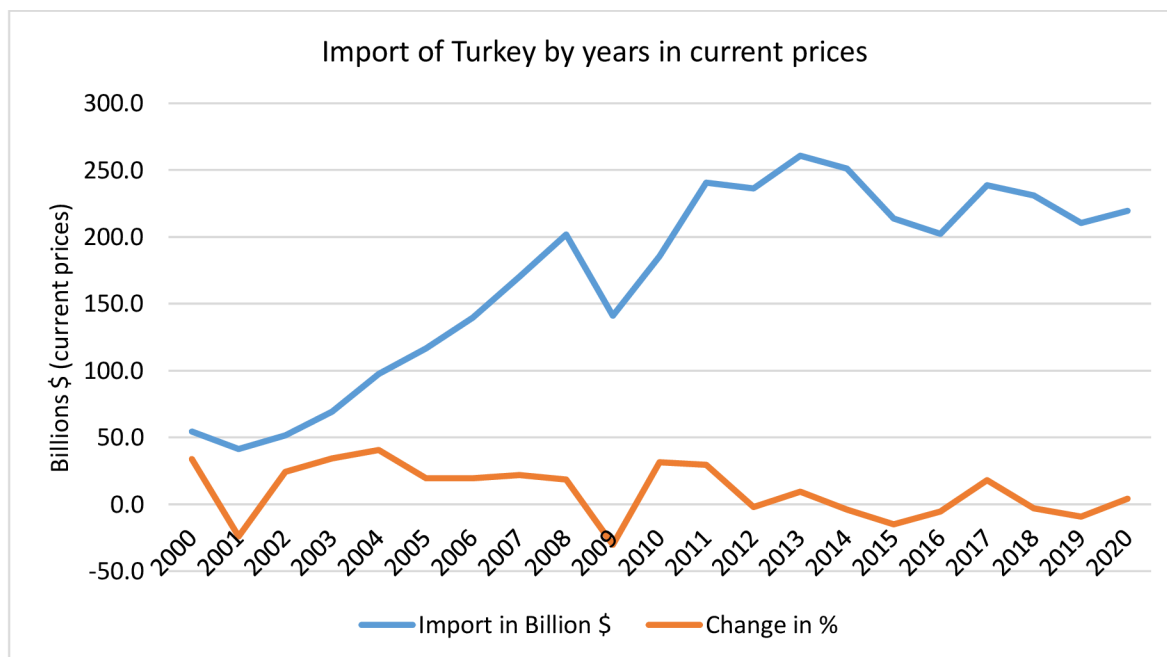
Graph 6 Export of Turkey by years



Source: own creation based on data from TUIK

Graph number 7 provides Turkey's import data for the last 20 years, from 2000 to 2020. In 2000, Turkey's import was \$ 54.5 billion. As a result of the 2001 financial crisis, import fell by 24% to \$ 41.4 billion. After 2002, import as well as export increased rapidly until 2009. In 2008, import increased to \$ 201.9 billion. As a result of the US economic crisis affecting the Turkish economy, import, which fell by 30.2% in 2009 to \$ 140.9 billion, increased to \$ 240.8 billion in 2011. Import again showed a downward trend in 2012, and until 2020, showed positive dynamics only in 2013, 2016 and 2020. In 2020, imports increased by 4.4% compared to 2019 and amounted to \$ 219 billion.

Graph 7 Import of Turkey by years



Source: own creation based on data from TUIK

4.3.2 Trade partners

In today's competitive environment, the main condition for a developing country to suffer from global crises at a minimum level is a production and export structure that ensures competitiveness and makes it sustainable. In addition, diversifying foreign trade based on products and countries will increase the external competitiveness of countries and ensure that they have the least impact on shocks.

Export for Turkey is an indispensable phenomenon for overcoming economic problems, improving people's well-being, and reaching an important point in world trade. In export-led development, export promotion and technical assistance programs are designed to remove both internal and external barriers to exports as a tool to support economic growth.

Table number 3 shows the top 10 countries to which Turkey exported the most in 2020 and data from the same countries for 2000. Based on the data in the table, it can be argued that over the 21-year period, the countries in the list have not changed, but only the order has changed.

Top 10 countries to which Turkey exported the most: Germany, UK, USA, Iraq, Italy, France, Spain, Netherlands, Israel, and Belgium.

Looking at Turkey's last 21-year export period, it can be seen that the country with the largest exports is Germany, the share of exports in 2020 was 9.4% of total exports.

Geographic proximity can be indicated at the beginning of the reasons why Germany ranks first in terms of exports. The influence of German companies established in Turkey, the fact that most textiles and foodstuffs are cheaper in Turkey due to exchange rate differences, and the fact that Turkish citizens living there satisfy their needs according to their culture and habits from Turkey are the main factors that allowed Germany to take first place among the exporting countries.

As a result of Turkey's foreign and export-oriented growth policies in the 1980s, Iraq has become one of Turkey's important trading partners. In this context, Turkish contractors have carried out important projects in Iraq; Turkish-Iraqi relations, especially trade relations, were interrupted by the economic embargo imposed on Iraq after Iraq's invasion of Kuwait in 1990. The operation, which was initiated under the name "Operation Iraqi Freedom" and was carried out by the United States and the United Kingdom, began on March 20, 2003 with logistical support from Turkey and ended in May 2003. As a result of a process that began in 2003, Turkish-Iraqi relations have entered a new period, which can be called the restructuring and reconstruction of Iraq. Due to the above reasons, exports to Iraq in 2000 were zero and resumed only in 2003. In 2020, Iraq is among the top 10 countries to which Turkey exports and the total amount of exports has reached 9 142 million US dollars which accounted for 5.4 percent of total export.

Next on the list are the countries of the European Union: Italy, France, Spain and the Netherlands.

Compared to 2000, the share of exports to Italy and France decreased and amounted to 4.8 and 4.2 percent of Turkey's total exports in 2020. On the other hand, the share in total exports increased for Spain and the Netherlands and in 2020 were at the level of 3.9 and 3.1 percent.

Table 3 Top 10 export partners of Turkey (units in million dollars)

| Country | Year | |
|--|----------------|----------------|
| | 2000 | 2020 |
| Germany <i>Share in general (%)</i> | 5 367 17.1 | 15 979 9.4 |
| United Kingdom <i>Share in general (%)</i> | 2 175 6.9 | 11 236 6.6 |
| USA <i>Share in general (%)</i> | 3 125 10.0 | 10 183 6.0 |
| Iraq <i>Share in general (%)</i> | 0 | 9 142 5.4 |
| Italy <i>Share in general (%)</i> | 2 342 7.5 | 8 083 4.8 |
| France <i>Share in general (%)</i> | 1 895 6 | 7 195 4.2 |
| Spain <i>Share in general (%)</i> | 950 3 | 6 683 3.9 |
| Netherlands <i>Share in general (%)</i> | 892 2.8 | 5 195 3.1 |
| Israel <i>Share in general (%)</i> | 805 2.6 | 4 704 2.8 |
| Belgium <i>Share in general (%)</i> | 688 2.2 | 3 635 2.1 |
| Top 10 countries total <i>Share in general (%)</i> | 18 239 58.1 | 82 035 48.3 |
| Total export | 31 392 | 169 638 |

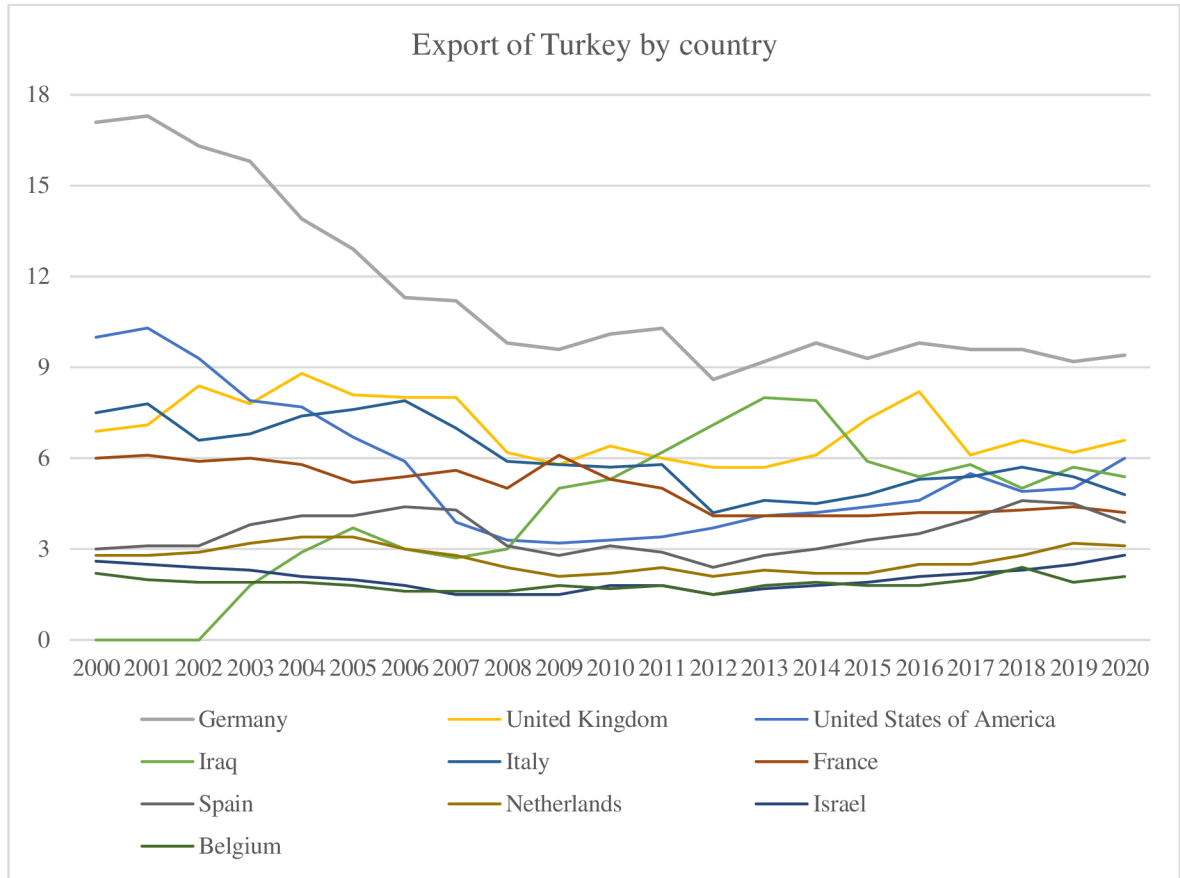
Source: own creation based on data from TCTB

The last in the list of top 10 countries to which Turkey exports the most are Israel and Belgium. The shares of these two countries are almost identical to those of the 2000s. Israel's share in 2000 was 2.6 percent and Belgium's 2.2 percent. And in 2020, Israel's share increased to 2.8 percent, but Belgium's share dropped to 2.1 percent of Turkey's total exports.

Based on the data in the table, it can be emphasized that the total share of the mentioned 10 countries, which in 2000 accounted for 58 percent of Turkey's total exports, but in 2020 the share was 48 percent, which is 10 percent less than 20 years ago.

To illustrate the share changes of all 10 countries in Turkey's total exports from 2000 and 2020, graph number 8 has been plotted below.

Graph 8 Export of Turkey by country



Source: own creation based on data from TUIK

After the 1980s, the process of opening up to abroad accelerated in Turkey, and with the removal of the bans of the products whose import was prohibited and their entry into the country, an increase in imports emerged and brought a foreign trade deficit with it.

Table 4 Top 10 import partners of Turkey (units in million dollars)

| Country | Year | |
|--|----------------|-----------------|
| | 2000 | 2020 |
| China <i>Share in general (%)</i> | 1 322 2.4 | 23 041 10.5 |
| Germany <i>Share in general (%)</i> | 7 163 13.2 | 21 733 9.9 |
| Russian Federation <i>Share in general (%)</i> | 3 380 6.2 | 17 829 8.1 |
| USA <i>Share in general (%)</i> | 3 887 7.2 | 11 525 5.3 |
| Italy <i>Share in general (%)</i> | 4 319 8 | 9 200 4.2 |
| Iraq <i>Share in general (%)</i> | 0 | 8 201 3.7 |
| Switzerland <i>Share in general (%)</i> | 889 1.6 | 7 772 3.5 |
| France <i>Share in general (%)</i> | 3 515 6.5 | 6 988 3.2 |
| South Korea <i>Share in general (%)</i> | 1 170 2.2 | 5 734 2.6 |
| United Arab Emirates <i>Share in general (%)</i> | 39 0.07 | 5 604 2.6 |
| Top 10 countries total <i>Share in general (%)</i> | 25 684 47.4 | 117 627 53.6 |
| Total import | 54 150 | 219 517 |

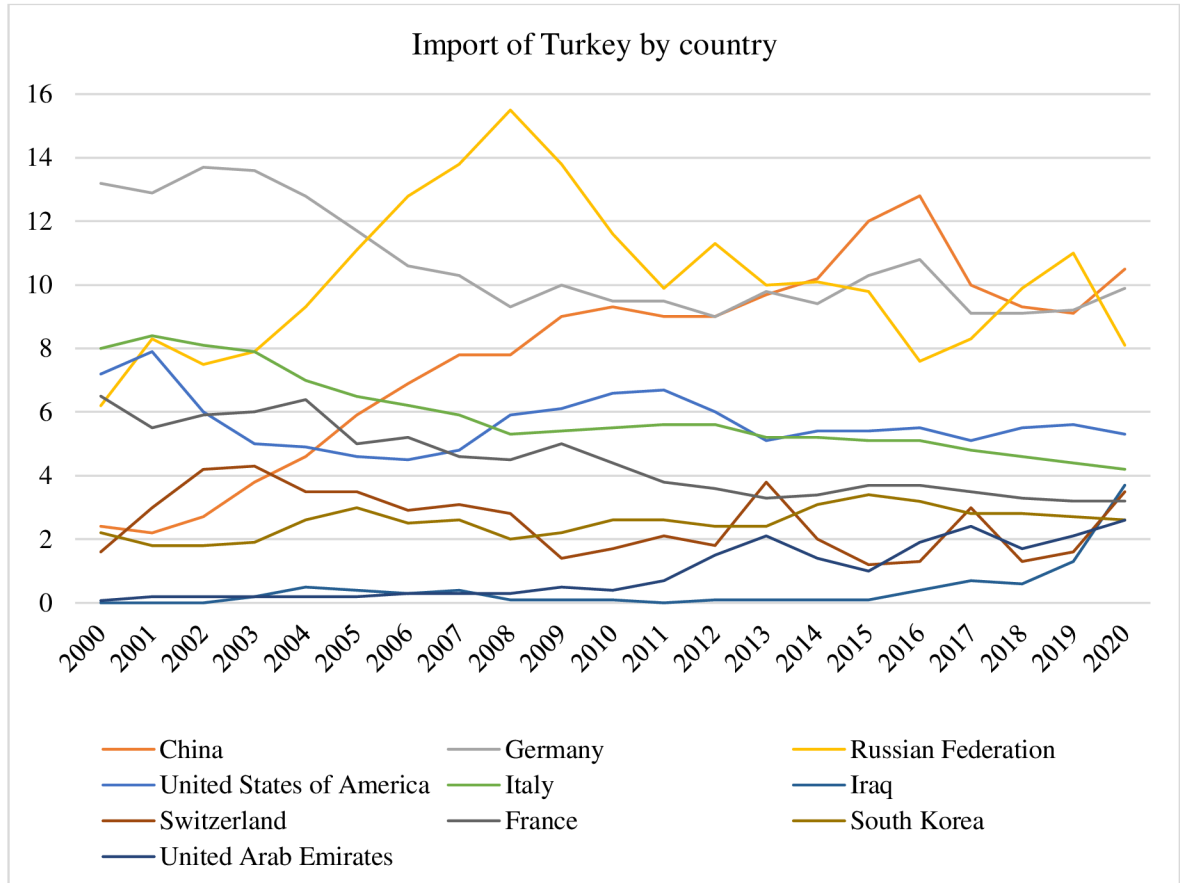
Source: own creation based on data from TCTB

Looking at the data for the last 20 years, it can be seen that in the early 2000s, Turkey mainly imported from Germany. Gradually, the share of Germany in Turkey's imports begins to decline, while the share of the Russian Federation increased and already in 2008, its share reached its peak and amounted to 15.5 percent of all imports of Turkey. In the same years when imports from Russia began to rise, Turkey also began to import more from China. In 2008, China became the leading importing country for Turkey. As can be seen in the graph number 9 for the last 15 years Germany, Russia and China took the leading positions in import. According to the results of 2020, Turkey imported the most from China (\$ 23 041 millions) and this share of imports is 10.5% of the country's total imports. Compared to 2000, imports from China increased by 94%.

Also, trade relations have improved with countries such as Iraq, the United Arab Emirates, Switzerland, and South Korea. Imports from these countries and their share in Turkey's imports as a whole have increased over the past 20 years.

The USA, Italy and France also increased their imports in monetary terms, but the share of the above 3 countries decreased.

Graph 9 Import of Turkey by country



Source: own creation based on data from TUIK

4.3.3 Trading products

Table numbers 5 and 6 show the data of the twenty most exported sectors in Turkey.

For better illustration, the top 3 sectors of each year are marked with 3 colours, green, yellow and blue.

In table number 1, with data from 2000 to 2010, it can be seen that for the first 4 years the knitwear sector was the leader with a share of 12%, and the second and third places were shared by the not knitted clothing and motor land vehicles sectors.

As a result of the significant acceleration achieved in the 2000s, motors land vehicles, which took the leading positions in Turkey's exports in 2004, continued to perform steadily.

The share of the knitwear sector began to decline in 2004, but until 2006 it was still in second place, and already in 2007 the share of the sector was 7.48% and was inferior to such export sectors as machinery and iron and steel.

As well as the motor land vehicles sector, the machinery sector began to accelerate and since 2007 with a share of 8.19% has become the second most exported sector, with the exception of 2008, when the second place was taken by the iron and steel sector with a share of 11.32%.

Table 5 Export of Turkey by product in % as a share of total export 2000-2010

| Product label | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 |
|--|-------|-------|-------|-------|-------|-------|------|-------|-------|-------|-------|
| Motor land vehicles | 7.22 | 7.45 | 9.2 | 11.16 | 13.13 | 13.02 | 13.9 | 14.83 | 13.88 | 11.99 | 12.13 |
| Machinery | 5.34 | 5.57 | 5.96 | 6.33 | 6.54 | 7.14 | 7.62 | 8.19 | 7.77 | 7.96 | 8.27 |
| Electrical - electronics | 7.17 | 7.21 | 7.97 | 7.35 | 7.59 | 7.38 | 7.4 | 6.92 | 6.04 | 6.49 | 6.61 |
| Iron and steel | 6.56 | 6.61 | 6.22 | 6.28 | 8.42 | 6.77 | 7.33 | 7.8 | 11.32 | 7.48 | 7.67 |
| Knitwear | 12.34 | 11.62 | 12.38 | 12.13 | 9.92 | 8.97 | 8.11 | 7.48 | 5.93 | 6.78 | 6.79 |
| Plastics and products | 1.93 | 1.95 | 1.89 | 1.96 | 2.1 | 2.34 | 2.59 | 2.63 | 2.7 | 3.03 | 3.26 |
| Precious stones - metals | 1.64 | 1.51 | 1.73 | 1.71 | 1.69 | 1.8 | 2.13 | 2.45 | 4.08 | 5.8 | 3.29 |
| Not knitted clothing | 8.15 | 8.42 | 9.04 | 8.07 | 7.19 | 6.62 | 5.51 | 5.08 | 4.03 | 4.2 | 4.07 |
| Articles of iron or steel | 3.07 | 3.11 | 3.46 | 2.94 | 3.53 | 3.72 | 3.9 | 3.85 | 4.35 | 4.45 | 4.26 |
| Edible fruit and nuts | 3.91 | 3.83 | 3.27 | 2.95 | 3.01 | 3.4 | 2.79 | 2.49 | 2.16 | 2.94 | 3.07 |
| Mineral fuels and oils | 1.39 | 1.42 | 1.91 | 2.07 | 2.26 | 3.59 | 4.17 | 4.8 | 5.7 | 3.84 | 3.92 |
| Furniture | 0.57 | 0.78 | 1 | 1.34 | 1.36 | 1.3 | 1.29 | 1.38 | 1.43 | 1.56 | 1.57 |
| Aluminium and articles | 1.05 | 1.02 | 0.97 | 1.05 | 1.03 | 1.19 | 1.44 | 1.51 | 1.35 | 1.37 | 1.68 |
| Salt, sulphur and stone | 1.84 | 1.71 | 1.67 | 1.55 | 1.45 | 1.53 | 1.35 | 1.36 | 1.73 | 2.12 | 2.2 |
| Rubber and articles | 1.46 | 1.46 | 1.44 | 1.45 | 1.33 | 1.37 | 1.39 | 1.48 | 1.37 | 1.44 | 1.66 |
| Carpets | 0.83 | 0.84 | 0.8 | 0.81 | 0.82 | 0.91 | 0.87 | 0.92 | 0.88 | 1.05 | 1.11 |
| Woven ready-made goods | 3.35 | 3.37 | 3.49 | 3.45 | 2.94 | 2.68 | 2.25 | 1.97 | 1.59 | 1.61 | 1.61 |
| Vegetable and fruit preparation | 1.7 | 1.69 | 1.43 | 1.42 | 1.55 | 1.74 | 1.31 | 1.23 | 1.09 | 1.25 | 1.31 |
| Preparations of cereals, flour, starch or milk | 0.39 | 0.42 | 0.46 | 0.51 | 0.48 | 0.47 | 0.47 | 0.5 | 0.54 | 0.66 | 0.71 |
| Pharmaceutical products | 0.42 | 0.41 | 0.41 | 0.38 | 0.39 | 0.38 | 0.37 | 0.33 | 0.32 | 0.42 | 0.49 |

Source: own creation based on data from TUIK

Since 2010, the first and second places have been consistently occupied by the motor land vehicles and machinery sectors, accounting for most of Turkey's exports, about 20%.

But in 2012, their shares fell by 1-2% due to the economic downturn in Europe since the countries of the European Union are Turkey's main partners.

In 2013, the motor land vehicles sector began to grow again until 2019. In the aftermath of the pandemic, many factories producing motor land vehicles and spare parts had to suspend their activities, which in turn led to a drop in the share of this sector in Turkey's exports. And for 2020 the share was 13.03%, which is 3% less than before the decline in 2018.

The machinery sector also began to grow in 2013 and in 2020 it accounted for 9.9% of the country's total exports.

Since 2010, the 3rd place was shared by 4 sectors: iron and steel, knitwear, precious stones-metals and electrical-electronics

From 2010 to 2013, the iron and steel sector was in third place, but in 2014 it dropped to 5th place, with a share of 5.87%, yielding to the knitwear and electrical-electronics sectors.

From 2015 to 2017, the third most exported sector was the precious stones-metals sector.

And in 2018 and 2019, the 3rd place was again occupied by the iron and steel sector with a share of 6.88% and 7%.

In 2020, with a share of 5.49%, the electrical-electronics sector is in third place.

Table 6 Export of Turkey by product in % as a share of total export 2011-2020

| Product label | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 |
|--|-------|------|------|-------|-------|-------|-------|-------|-------|-------|
| Motor land vehicles | 11.71 | 9.94 | 11.2 | 11.46 | 12.14 | 13.89 | 15.25 | 15.93 | 14.87 | 13.03 |
| Machinery | 8.57 | 7.87 | 8.56 | 8.62 | 8.57 | 8.7 | 8.81 | 9.43 | 9.82 | 9.9 |
| Iron and steel | 8.32 | 7.43 | 6.53 | 5.87 | 4.56 | 4.34 | 5.24 | 6.88 | 5.54 | 5.19 |
| Electrical - electronics | 6.58 | 6.15 | 6.29 | 6.15 | 5.76 | 5.45 | 5.15 | 5.19 | 5.39 | 5.49 |
| Knitwear | 6.22 | 5.52 | 6.09 | 6.36 | 6.21 | 6.21 | 5.63 | 5.39 | 5.09 | 4.94 |
| Mineral fuels and oils | 4.85 | 5.06 | 4.43 | 3.88 | 3.14 | 2.25 | 2.76 | 2.63 | 4.67 | 2.78 |
| Articles of iron or steel | 4.26 | 4 | 4.05 | 4.03 | 3.8 | 3.48 | 3.57 | 3.89 | 3.7 | 3.75 |
| Precious stones-metals | 2.77 | 3.97 | 4.61 | 4.9 | 7.83 | 8.54 | 6.93 | 4.27 | 4.05 | 3.95 |
| Not knitted clothing | 3.8 | 3.56 | 3.76 | 3.95 | 4.11 | 4.16 | 3.79 | 3.73 | 3.8 | 3.89 |
| Plastics and products | 3.4 | 3.29 | 3.69 | 3.87 | 3.73 | 3.53 | 3.49 | 3.6 | 3.76 | 4.11 |
| Edible fruit and nuts | 2.9 | 2.5 | 2.61 | 2.75 | 3.03 | 2.72 | 2.51 | 2.36 | 2.54 | 2.85 |
| Salt, sulphur and stone | 1.83 | 1.63 | 1.81 | 1.62 | 1.57 | 1.54 | 1.64 | 1.56 | 1.54 | 1.65 |
| Furniture | 1.56 | 1.59 | 1.86 | 1.88 | 1.91 | 1.86 | 1.76 | 1.86 | 2.14 | 2.3 |
| Rubber and articles | 1.92 | 1.59 | 1.64 | 1.65 | 1.51 | 1.54 | 1.59 | 1.68 | 1.61 | 1.57 |
| Aluminium and articles | 1.69 | 1.48 | 1.56 | 1.62 | 1.65 | 1.57 | 1.6 | 1.78 | 1.72 | 1.8 |
| Carpets | 1.19 | 1.31 | 1.44 | 1.49 | 1.4 | 1.34 | 1.38 | 1.35 | 1.41 | 1.54 |
| Woven ready-made goods | 1.59 | 1.25 | 1.44 | 1.41 | 1.32 | 1.37 | 1.28 | 1.22 | 1.17 | 1.49 |
| Vegetable and fruit preparation | 1.23 | 1.13 | 1.19 | 1.33 | 1.52 | 1.3 | 1.2 | 1.14 | 1.15 | 1.39 |
| Preparations of cereals, flour, starch or milk | 0.77 | 0.81 | 1.02 | 1.05 | 1.05 | 1.05 | 1.03 | 1.04 | 1.06 | 1.23 |
| Pharmaceutical products | 0.42 | 0.43 | 0.5 | 0.51 | 0.61 | 0.58 | 0.56 | 0.7 | 0.79 | 1.08 |

Source: own creation based on data from TUIK

Table numbers 7 and 8 show the 20 most imported sectors in Turkey.

In table number 7, which provides data for the first 10 years from 2000 to 2010, it is clearly seen that the largest import item in the specified period was the energy group.

From 2000 to 2004, the top 3 import sectors included mineral fuels and oils, machinery and electrical-electronics. The share of the section called mineral fuels and oils was 20-21% in imports before the crisis in 2001 and began to decline until 2005.

The machinery sector accounted for 15-16% until 2003, and after 2004 the sector's share began to decline.

As well as the mineral fuels and oils sector, the 2001 crisis in Turkey affected the electrical – electronics sector, and in 2002 and 2003 the share of electronics sector

declined. In subsequent years, the share in imports either increased or decreased, but the electronics sector re-entered the top 3 only in 2009, after a 5-year hiatus.

From 2006 to 2008, the most imported sectors were mineral fuels and oil, machinery and iron and steel sectors.

In 2008, the share of the iron and steel sector increased till 11.47% of total imports, and went up to second place, while the machinery sector took third place with a share of 11.16%.

In 2009, in the list of imports by sector, the first place was taken by mineral fuels and oils with a share of 21.22%, followed by machinery sector with 12.16%, and by iron and steel, their share increased to 8.69%.

Table 7 Import of Turkey by product in % as a share of total import 2000-2010

| Product label | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 |
|---------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Mineral fuels and oils | 21.3 | 20.14 | 17.61 | 16.69 | 14.77 | 18.2 | 20.68 | 19.92 | 23.91 | 21.22 | 20.75 |
| Precious stones and metals | 2.23 | 2.6 | 2.99 | 3.99 | 3.86 | 3.62 | 3.16 | 3.47 | 2.8 | 1.42 | 1.64 |
| Machinery | 15.11 | 15.23 | 15.97 | 14.85 | 13.8 | 14.04 | 13.61 | 13.27 | 11.16 | 12.16 | 11.46 |
| Electrical - electronics | 8.67 | 8.78 | 8.48 | 7.96 | 8.58 | 8.28 | 7.8 | 7.82 | 6.88 | 8.69 | 7.89 |
| Motor land vehicles | 4.32 | 4.41 | 4.55 | 7.76 | 10.5 | 9.04 | 8.17 | 7.29 | 6.33 | 6.37 | 7.23 |
| Iron and steel | 3.77 | 4.34 | 5.65 | 6.85 | 8.23 | 8.1 | 8.26 | 9.52 | 11.47 | 8.05 | 8.69 |
| Plastics and products | 4.1 | 4.19 | 4.64 | 4.67 | 4.88 | 4.96 | 4.96 | 5.11 | 4.65 | 4.93 | 5.24 |
| Organic chemicals | 4.46 | 3.93 | 3.66 | 3.36 | 3.09 | 3.02 | 2.61 | 2.35 | 2.19 | 2.37 | 2.37 |
| Pharmaceutical products | 2.59 | 2.63 | 2.8 | 2.91 | 2.78 | 2.44 | 2.17 | 2.07 | 2.16 | 2.9 | 2.38 |
| Optical items | 2.5 | 2.3 | 2.12 | 1.96 | 1.98 | 2.12 | 1.95 | 1.77 | 1.71 | 2.01 | 1.85 |
| Aircraft components | 0.67 | 0.6 | 0.54 | 0.22 | 1.24 | 0.27 | 1.07 | 0.67 | 0.78 | 0.74 | 1.7 |
| Aluminum and products | 1.01 | 1.01 | 1.02 | 1.03 | 0.98 | 1.06 | 1.29 | 1.38 | 1.26 | 1.14 | 1.34 |
| Cereals | 0.56 | 0.43 | 0.73 | 1 | 0.53 | 0.16 | 0.12 | 0.57 | 1.06 | 0.85 | 0.57 |
| Copper and products | 0.69 | 0.77 | 0.85 | 0.82 | 1.11 | 1.25 | 1.77 | 1.85 | 1.62 | 1.41 | 1.78 |
| Rubber and products | 0.76 | 0.88 | 1.02 | 1.1 | 1.09 | 1.03 | 1.11 | 1.1 | 1.1 | 1.1 | 1.25 |
| Cotton | 2.13 | 2.29 | 2.52 | 2.37 | 2.03 | 1.78 | 1.5 | 1.66 | 1.15 | 1.49 | 1.82 |
| Articles of iron or steel | 2.24 | 2.04 | 1.33 | 1.19 | 0.95 | 1.01 | 1.07 | 1.08 | 1.1 | 1.08 | 1.06 |
| Paper and paperboard | 1.61 | 1.58 | 1.67 | 1.68 | 1.57 | 1.51 | 1.46 | 1.45 | 1.29 | 1.57 | 1.52 |
| Miscellaneous chemical products | 1.19 | 1.17 | 1.13 | 1.07 | 0.98 | 0.97 | 0.93 | 0.9 | 0.86 | 1.05 | 0.97 |
| Oil seeds and oleaginous fruits | 0.37 | 0.39 | 0.52 | 0.69 | 0.54 | 0.6 | 0.44 | 0.6 | 0.73 | 0.75 | 0.84 |

Source: own creation based on data from TUIK

The largest impact on the total volume of imports from 2010 to 2014 was made by imports of mineral fuels and oils, the share of this sector fluctuated between 20 and 25 percent, the second sector that most influenced the total volume of imports was the import of machinery sector, with shares from 13 to 15 percent. Another section that had the most impact on imports was, respectively, imports of iron and steel with a share of 7-8%.

Mineral fuels and oils sector ranked on the first place with a 22.37% share among the top 20 sectors that had the highest share in total imports in 2014 and 18.26% in 2015. In

second place is machinery sector with a share of 11.57% in 2014 and 12.35% in 2015; imports of electrical – electronics ranked third with a share of 7.51% in 2014 and 8.51% in 2015.

Mineral fuels and oils in the top twenty with the largest share in total imports in 2017 and 2019. The share of this group in total imports increased by 2.2 points in 2017 compared to the previous year and reached 15.91%, and in 2019 it increased by 0.9 points and reached 19.84%. In second is machinery sector with a share of 11.62% in 2017 and with 10.53% in 2019, imports of electrical – electronics took third place with a share of 9.05% in 2017 and 7.35% in 2019.

Table 8 Import of Turkey by product in % as a share of total import 2011-2020

| Product label | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 |
|---------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Mineral fuels and oils | 22.47 | 25.41 | 22.14 | 22.37 | 18.26 | 13.67 | 15.91 | 19.28 | 19.84 | 13.18 |
| Precious stones and metals | 2.92 | 3.61 | 6.23 | 3.24 | 2.02 | 3.63 | 7.46 | 5.63 | 6.35 | 12.11 |
| Machinery | 11.26 | 11.13 | 12.1 | 11.57 | 12.35 | 13.74 | 11.62 | 11.55 | 10.53 | 11.51 |
| Electrical - electronics | 6.99 | 6.88 | 7.11 | 7.51 | 8.51 | 10.14 | 9.05 | 7.43 | 7.35 | 7.81 |
| Motor land vehicles | 7.14 | 6.14 | 6.81 | 6.63 | 8.47 | 8.98 | 7.45 | 6.23 | 4.76 | 6.97 |
| Iron and steel | 8.48 | 8.3 | 7.16 | 7.07 | 7.13 | 6.33 | 7.17 | 8.25 | 7.15 | 6.88 |
| Plastics and products | 5.22 | 5.29 | 5.4 | 5.72 | 5.92 | 5.85 | 5.67 | 5.8 | 5.61 | 5.35 |
| Organic chemicals | 2.29 | 2.14 | 2.11 | 2.42 | 2.28 | 2.19 | 2.3 | 2.68 | 2.84 | 2.68 |
| Pharmaceutical products | 1.95 | 1.69 | 1.67 | 1.87 | 2.07 | 2.12 | 1.9 | 1.96 | 2.33 | 2.26 |
| Optical items | 1.71 | 1.71 | 1.81 | 1.97 | 2.23 | 2.33 | 2.14 | 2.1 | 2.14 | 2.17 |
| Aircraft components | 1.63 | 1.33 | 0.94 | 1.24 | 1.85 | 2.17 | 1.14 | 1.16 | 1.68 | 1.72 |
| Aluminum and products | 1.35 | 1.26 | 1.28 | 1.46 | 1.61 | 1.44 | 1.48 | 1.74 | 1.73 | 1.55 |
| Cereals | 0.8 | 0.64 | 0.78 | 1.03 | 0.8 | 0.58 | 0.72 | 0.91 | 1.68 | 1.49 |
| Copper and products | 1.71 | 1.64 | 1.47 | 1.47 | 1.44 | 1.37 | 1.42 | 1.5 | 1.44 | 1.46 |
| Rubber and products | 1.4 | 1.28 | 1.21 | 1.16 | 1.22 | 1.29 | 1.26 | 1.26 | 1.24 | 1.23 |
| Cotton | 1.5 | 1.01 | 1.18 | 1.26 | 1.09 | 1.16 | 1.28 | 1.12 | 1.25 | 1.16 |
| Articles of iron or steel | 1.05 | 1 | 1.18 | 1.16 | 1.32 | 1.5 | 1.26 | 1.27 | 1.24 | 1.12 |
| Paper and paperboard | 1.29 | 1.22 | 1.19 | 1.27 | 1.3 | 1.35 | 1.2 | 1.23 | 1.2 | 1.11 |
| Miscellaneous chemical products | 0.92 | 0.87 | 0.83 | 0.91 | 0.99 | 1.02 | 0.95 | 1.02 | 1.04 | 1.09 |
| Oil seeds and oleaginous fruits | 0.7 | 0.71 | 0.66 | 0.92 | 0.91 | 0.92 | 0.82 | 0.85 | 1 | 1.09 |

Source: own creation based on data from TUIK

In 2020, mineral fuels and oils consistently ranked first, even the share of this group in total imports decreased from 19.84% to 13.18%. In second place is the import of precious stones and metals with a share of 12.11%, and machinery sector took third place with the share of 11.51%.

4.4 Revealed Comparative Advantage of Turkey Commodities

4.4.1 Balassa Index

Based on the data collected from the statistical site TUIK of the Republic of Turkey, the Balassa indices were calculated for the selected sectors. The author set out to determine

which sectors of Turkey have an advantage in the world market. The index was calculated by the author for each sector over the years, and since the results were stable and almost at the same level every year, the table number 9 below provides averages for 21 years.

Table 9 21 year average of Balassa indices of Turkey's traded sectors

| Sector | Average | Comment |
|---|---------|--------------------------|
| Carpets | 11.27 | Comparative advantage |
| Salt, sulfur and stone | 6.63 | Comparative advantage |
| Woven ready-made goods | 6.25 | Comparative advantage |
| Knitwear | 5.99 | Comparative advantage |
| Edible fruit and nuts | 5.46 | Comparative advantage |
| Vegetable and fruit preparation | 4.21 | Comparative advantage |
| Not knitted clothing | 3.89 | Comparative advantage |
| Iron and steel | 2.95 | Comparative advantage |
| Articles of iron or steel | 2.45 | Comparative advantage |
| Preparations of cereals, flour, starch, or milk | 2.15 | Comparative advantage |
| Motor land vehicles | 1.53 | Comparative advantage |
| Rubber and articles | 1.49 | Comparative advantage |
| Aluminum and articles | 1.44 | Comparative advantage |
| Precious stones-metals | 1.29 | Comparative advantage |
| Furniture | 1.22 | Comparative advantage |
| Plastics and products | 0.92 | Comparative disadvantage |
| Machinery | 0.64 | Comparative disadvantage |
| Electrical - electronics | 0.48 | Comparative disadvantage |
| Mineral fuels and oils | 0.26 | Comparative disadvantage |
| Pharmaceutical products | 0.18 | Comparative disadvantage |

Source: own creation and elaboration

The sector has a comparative advantage if the calculated Balassa index is greater than one. In this case, the sector of carpets and other textile floor coverings is the most comparatively advantageous. Balassa index of this sector has averaged 11.27 over the past 21 years. Other sectors that have a comparative advantage are salt, sulfur and stone, woven ready-made goods, knitwear, edible fruit and nuts, vegetable, and fruit preparation, not knitted clothing, iron and steel, articles of iron or steel, preparations of cereals, flour, starch or milk, motor land vehicles, rubber and articles, aluminum and articles, precious stones-metals and furniture. The sector of motor and vehicles, which accounts for the bulk of Turkey's export and import, also has a comparative advantage, but the calculated index

equals 2%. The reason for that is the fact that the sector of motor and vehicles accounts for the bulk of the world's export as well.

Despite the fact that the plastics and products, machinery, electrical – electronics, mineral fuels and oils, pharmaceutical products account for an impressive part of Turkey's exports and imports, the Balassa index was less than one. This result implies that these sectors have a comparative disadvantage compared to global performance.

4.4.2 Vollrath Index

To calculate the Balassa index, only the share of exports of a particular sector is taken into account. In the case of the Vollrath index, both the share of exports and the share of imports of the sector are used for the calculation. The author has provided 2 tables below. Table number 1 shows the results with the original export and import data, and table number 2 shows the results, where the data was converted into a symmetric form using logarithm. The results are also demonstrated for an average of 21 years.

According to the Vollrath index, the sector has a comparative advantage when the result is above 0. The sector of carpets and other textiles for floors has a high performance as in the case of the Balassa index. Further, in order, the sectors that have a comparative advantage in comparison with world indicators: woven ready-made goods, salt, sulfur and stone, knitwear, edible fruit and nuts, vegetable, and fruit preparation, not knitted clothing, preparations of cereals, flour, starch or milk, articles of iron or steel, furniture, motor land vehicles, rubber and articles, aluminum, and articles.

Sectors whose results are below zero, and have a comparative disadvantage: electrical – electronics, precious stones-metals, iron and steel, machinery, plastics and products, pharmaceutical products, mineral fuels and oils.

Table 10 21 year average of Vollrath indices (RTA) of Turkey's traded sectors

| Sector | Average | Comment |
|--|---------|--------------------------|
| Carpets | 10.46 | Comparative advantage |
| Woven ready-made goods | 6.01 | Comparative advantage |
| Salt, sulfur and stone | 5.96 | Comparative advantage |
| Knitwear | 5.70 | Comparative advantage |
| Edible fruit and nuts | 5.12 | Comparative advantage |
| Vegetable and fruit preparation | 4.07 | Comparative advantage |
| Not knitted clothing | 3.44 | Comparative advantage |
| Preparations of cereals, flour, starch or milk | 1.91 | Comparative advantage |
| Articles of iron or steel | 1.67 | Comparative advantage |
| Furniture | 0.82 | Comparative advantage |
| Motor land vehicles | 0.66 | Comparative advantage |
| Rubber and articles | 0.39 | Comparative advantage |
| Aluminum and articles | 0.26 | Comparative advantage |
| Electrical - electronics | -0.09 | Comparative disadvantage |
| Precious stones-metals | -0.16 | Comparative disadvantage |
| Iron and steel | -0.22 | Comparative disadvantage |
| Machinery | -0.38 | Comparative disadvantage |
| Plastics and products | -0.67 | Comparative disadvantage |
| Pharmaceutical products | -0.69 | Comparative disadvantage |
| Mineral fuels and oils | -1.23 | Comparative disadvantage |

Source: own creation and elaboration

After modifying of original export and import data to logarithmic form, they became symmetric and calculation results are more accurate.

As can be seen in the table number 11 below, results have slightly changed. The sector of motor and vehicles, which accounts for the bulk of the share of the total export of Turkey, has the highest index result and comparative advantage. Another change is that knitwear sector result have negative numbers compared to table number 10, and it has comparative disadvantage. Otherwise, comparative advantage sectors stay same, only order has changed. They are vegetable, and fruit preparation, woven ready-made goods, edible fruit and nuts, salt, sulfur and stone, not knitted clothing, preparations of cereals, flour, starch or milk, articles of iron or steel, furniture, aluminum, and articles, rubber and articles, carpets.

The sector which has comparative disadvantage are also same but including the knitwear sector.

Table 11 21 year average of Vollrath indices (RC) of Turkey's traded sectors

| Sector | Average | Comment |
|---|---------|--------------------------|
| Motor land vehicles | 13.56 | Comparative advantage |
| Vegetable and fruit preparation | 3.48 | Comparative advantage |
| Woven ready-made goods | 3.18 | Comparative advantage |
| Edible fruit and nuts | 2.84 | Comparative advantage |
| Salt, sulfur, and stone | 2.27 | Comparative advantage |
| Not knitted clothing | 2.25 | Comparative advantage |
| Preparations of cereals, flour, starch, or milk | 2.14 | Comparative advantage |
| Articles of iron or steel | 1.16 | Comparative advantage |
| Furniture | 1.12 | Comparative advantage |
| Aluminum and articles | 0.33 | Comparative advantage |
| Rubber and articles | 0.30 | Comparative advantage |
| Carpets | 0.09 | Comparative advantage |
| Iron and steel | -0.08 | Comparative disadvantage |
| Precious stones-metals | -0.10 | Comparative disadvantage |
| Electrical - electronics | -0.18 | Comparative disadvantage |
| Machinery | -0.49 | Comparative disadvantage |
| Plastics and products | -0.57 | Comparative disadvantage |
| Knitwear | -1.46 | Comparative disadvantage |
| Pharmaceutical products | -1.54 | Comparative disadvantage |
| Mineral fuels and oils | -1.78 | Comparative disadvantage |

Source: own creation and elaboration

4.4.3 Lafay index

Calculation of Lafay index takes into consideration both export share and import share of selected sectors. Due to very small numbers the average for 21 years could not be calculated as for previous indices. Therefore author provided table of results for 5 most traded sectors of Turkey in 21 years. Every result has two different colors of font, green states for comparative advantage and red for comparative disadvantage.

As can be seen from the table number 12 all sectors had as comparative advantage as well as comparative disadvantage over the world in 21-year period. Motor land vehicles' sector index results was not stable and had comparative advantage only 8 years out of 21, and another 13 years has been considered as disadvantageous sector. Sectors of machinery and electrical – electronics are the most advantageous sectors out of 5, because first one had comparative advantage for 14 years and another one for 13 years, for the rest 7 and 8 years had comparative disadvantage. Iron and steel sector results were positive for 9 years and

negative for 12 years. Last sector in the list is the most imported one, minerals and fuels sector. Calculations show that this sector has been advantageous for 11 years and disadvantageous for 10 years.

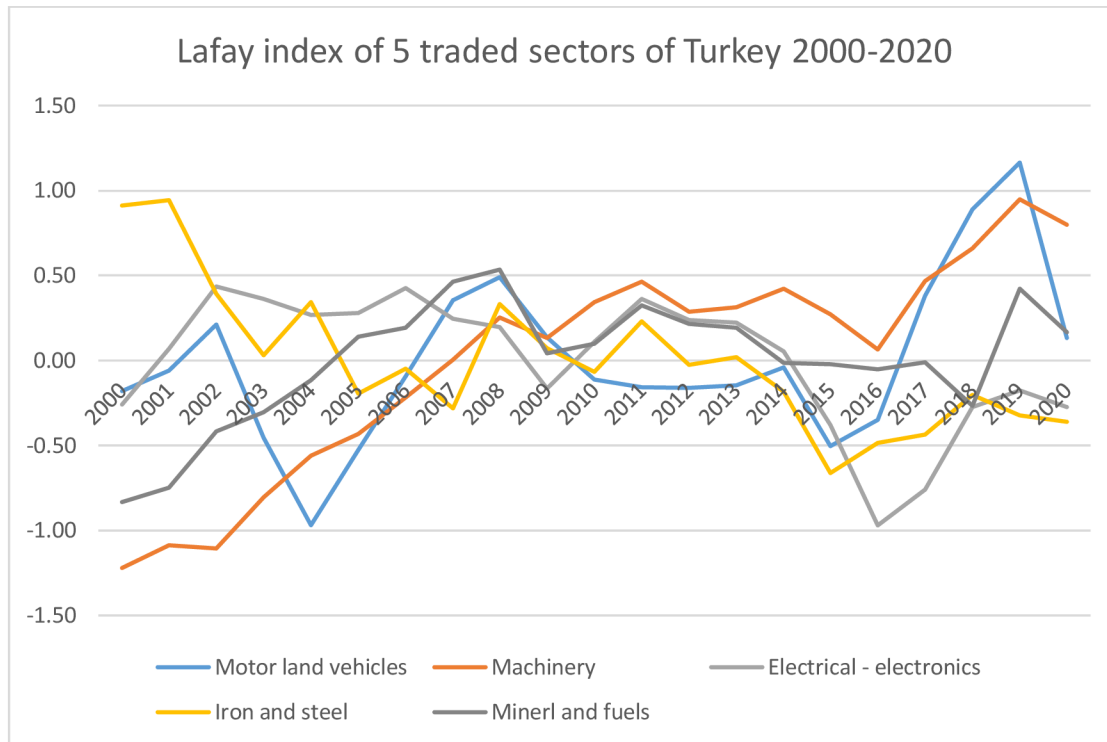
Table 12 Lafay index of 5 traded sectors in 21 years

| Year/Traded sector | Motor land vehicles | Machinery | Electrical - electronics | Iron and steel | Minerals and fuels |
|--------------------|---------------------|-----------|--------------------------|----------------|--------------------|
| 2000 | -0.18 | -1.22 | -0.26 | 0.91 | -0.83 |
| 2001 | -0.06 | -1.09 | 0.07 | 0.94 | -0.75 |
| 2002 | 0.21 | -1.11 | 0.44 | 0.39 | -0.42 |
| 2003 | -0.45 | -0.80 | 0.36 | 0.03 | -0.30 |
| 2004 | -0.97 | -0.56 | 0.27 | 0.34 | -0.12 |
| 2005 | -0.53 | -0.43 | 0.28 | -0.19 | 0.14 |
| 2006 | -0.09 | -0.22 | 0.43 | -0.05 | 0.19 |
| 2007 | 0.35 | 0.00 | 0.24 | -0.28 | 0.46 |
| 2008 | 0.49 | 0.25 | 0.20 | 0.33 | 0.53 |
| 2009 | 0.14 | 0.13 | -0.17 | 0.07 | 0.04 |
| 2010 | -0.11 | 0.34 | 0.11 | -0.07 | 0.10 |
| 2011 | -0.16 | 0.46 | 0.36 | 0.23 | 0.32 |
| 2012 | -0.16 | 0.29 | 0.24 | -0.03 | 0.21 |
| 2013 | -0.15 | 0.31 | 0.22 | 0.02 | 0.19 |
| 2014 | -0.04 | 0.42 | 0.05 | -0.18 | -0.02 |
| 2015 | -0.50 | 0.27 | -0.38 | -0.66 | -0.02 |
| 2016 | -0.35 | 0.07 | -0.97 | -0.49 | -0.05 |
| 2017 | 0.38 | 0.47 | -0.76 | -0.44 | -0.01 |
| 2018 | 0.89 | 0.66 | -0.27 | -0.20 | -0.27 |
| 2019 | 1.16 | 0.95 | -0.18 | -0.32 | 0.42 |
| 2020 | 0.13 | 0.80 | -0.28 | -0.36 | 0.17 |

Source: own creation and elaboration

For more clear picture graph number 10 has been provided below. Looking at this graph it can be seen that indeed the calculated Lafay indices were not stable for all selected sectors over analyzed 21-year period.

Graph 10 Lafay index of 5 traded sectors of Turkey 2000-2020



Source: own creation

4.5 Foreign trade and other factors affected economic growth per period

4.5.1 2000-2009

While Turkey started to implement reforms to solve the economic problems experienced in previous periods in the 2000s, it faced a new crisis in November 2000. On the basis of the November crisis, the increase in demand for foreign currency and TL and the distrust-breaking events of the financial sector were effective. The Turkish economy could not be liberalized and a structure under the control of the state was formed, and the country became open to crises. Another situation that increased the impact of the crisis was the banking sector, which did not have sufficient capital, and the disruptions in the market together with the wrong policies.

The crisis, which took place at the end of November, turned out to be a liquidity crisis. The attitudes of a few banks in country to put other banks in a difficult situation, the loss of confidence of foreigners due to problems in privatization, and the withdrawal of 7 billion dollars in one night by a German and US bank had a great impact on the crisis. At the same time, the fact that the IMF did not give the loan to Turkey on time and the burden of

10 billion dollars of 11 holding banks, which were emptied after the crisis and transferred to the fund management, are among the causes of the liquidity crisis. After the crisis, all public expenditures were approved by the treasury. As a result of the insecurity experienced with the November crisis, the treasury borrowed at a rate of 67%. On February 19, 2001, the incident at the MGK between the President and the Prime Minister of that period was reflected as if it was a state crisis, and the November crisis caused new crises before it could be overcome. The increasing demand for foreign currency, the withdrawal of foreign investors from the market and the increase in the demand of banks and savers for foreign currency further fuelled the crisis. On February 23, 2001, the Central Bank's reserve fell to 5.3 billion dollars, the overnight interbank interest was 7500% and the treasury went to borrow at a rate of 144%.

The most comprehensive stabilization program in the economic history of Turkey came to an end with the February 2001 crisis. On 21 February, free floating rate was started and the next day, the value of TL decreased by 40%. Therefore, there was an increase of 29 quadrillion in foreign debts. In the first half of 2001, 18 banks transferred to the SDIF ensured the continuation of the negativities. Since the banks could not take back the loans they gave, their foreign currency debts increased, and the bankruptcy of the banks accelerated. The banks, which could continue their activities, searched for partners and eighteen thousand people lost their jobs in this sector. With the February 2001 crisis, the exchange rate risk was added to the interest rate risk experienced in November 2000, and a multidimensional crisis was experienced in the banking sector.

After the 2000 and 2001 crises in Turkey, the growth rate increased until the 2008 global economic crisis. In 2002, Turkey took serious steps to get out of the crisis and entered a strong growth process as of 2003. Tight monetary and fiscal policies, together with the implementations to maintain the stability in the macroeconomic structure and to make the economy flexible, effective and productive, have brought the economy back to confidence and stability. Between 2002 and 2007, there were serious increases in economic rates, production and export rates increased, and inflation decreased.

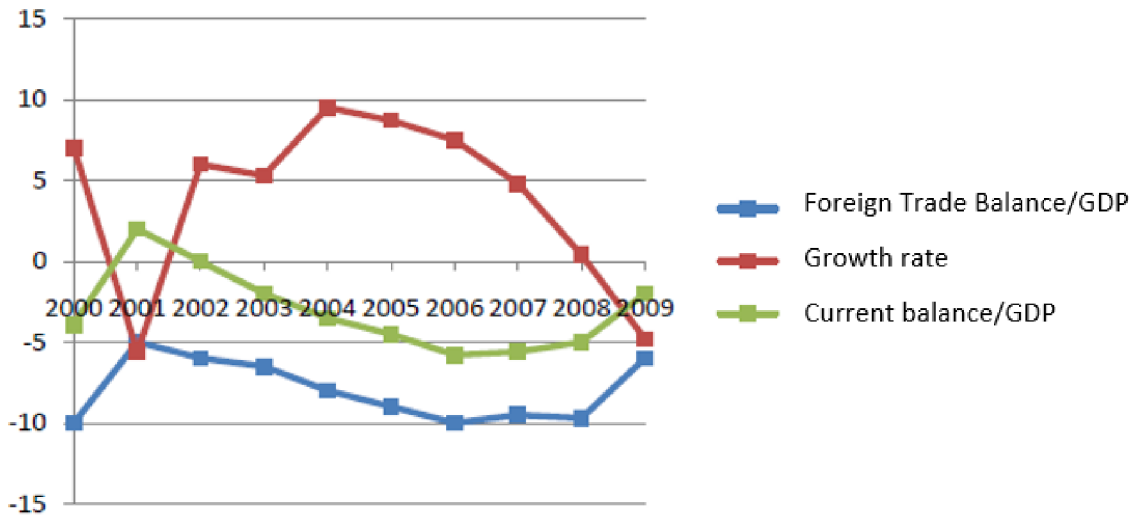
Table 13 Foreign Trade, GDP and Growth Rate in Turkey 2000-2009

| Year | Export (Millions USD) | Import (Millions USD) | Foreign Trade Balance (Millions USD) | GDP (Millions USD) | Foreign Trade Balance/GDP (%) | Growth rate |
|------|-----------------------|-----------------------|--------------------------------------|--------------------|-------------------------------|-------------|
| 2000 | 27 774 | 54 502 | -26 728 | 265 384 | -10.1 | 6.8 |
| 2001 | 31 334 | 41 399 | -10 065 | 196 736 | -5.1 | -5.7 |
| 2002 | 36 059 | 51 553 | -15 494 | 230 949 | -6.7 | 6.2 |
| 2003 | 47 252 | 69 339 | -22 087 | 304 901 | -7.2 | 5.3 |
| 2004 | 63 167 | 97 539 | -34 372 | 390 387 | -8.8 | 9.4 |
| 2005 | 73 476 | 116 774 | -43 298 | 481 497 | -9.0 | 8.4 |
| 2006 | 85 534 | 139 576 | -54 042 | 526 429 | -10.3 | 6.9 |
| 2007 | 107 271 | 170 062 | -62 791 | 648 754 | -9.7 | 4.7 |
| 2008 | 132 027 | 201 963 | -69 936 | 742 094 | -9.4 | 0.7 |
| 2009 | 102 143 | 140 928 | -38 786 | 616 703 | -6.3 | -4.8 |

Source: own creation based on data from TUIK and The World Bank Data

When examining the table number 13, the lowest growth level between the 2000-2009 periods was -5.7% in 2001 after the Marmara earthquake and the 2000-2001 crises. With the economic programs implemented after 2002, positive developments were experienced in the growth rate and trade volume. In 2004, when the highest growth rate took place, foreign trade volume was 160,706 million dollars. When we look at 2005, there was a small fluctuation in the growth rate, and then there was a continuous decrease. At the time of the World Financial Crisis in 2008, Turkey's growth rate was 0.7%, and after the crisis, in 2009, with the effect of the crisis affecting the whole world, the growth rate was -4.8% with the decline in imports and exports. Turkey went on a rising course until the 2008 crisis and achieved a relatively high growth rate. The decrease in inflation figures to single digits in 2004 and the deletion of six zeros from the Turkish Lira increased the confidence in the Turkish currency. Despite all these positive developments for the economy, it could not create positive results in foreign trade and current account balance. Because the increase in the value of the Turkish Lira made imports cheaper but caused exports to be more expensive.

Graph 11 Ratio of Growth Rate, Current Account Balance and Foreign Trade Balance to GDP in Turkey 2000-2009



Source: own creation based on data from TUIK and The World Bank Data

When looking at the growth rates between 2000 and 2009 in graph number 11, the growth rate decreased to -5.7% due to the effects of the 2001 crises and due to this contraction, the current account gave a surplus of 3,760 million dollars. After 2002, the current account has always had a deficit, and the growth has steadily increased. After the global crisis in 2007, the current account deficit increased less than in the previous periods, while the growth started to decline and regressed to 4.7%. In 2009, due to the decrease in the foreign trade balance, the foreign trade balance/GDP ratio increased, and the growth rate decreased to -4.8%.

4.5.2 2010-2020

In 2010, Turkey started to take new steps to get rid of the effects of the crisis and achieved a good recovery. The active domestic demand and the ongoing economic stagnation in Europe left export behind import and the growth rate was 9%. The 2012 has been the year of balancing, the GDP started to rise this year and reached 861,467 million dollars in 2015. The deteriorating situation of the economy all over the world, the ongoing debt crisis in the EU and the increased imports as a result of the increasing domestic demand had an impact on this increase. The reforms made in the economy brought differences in the structure and orientation of foreign trade, and the number of countries to which exports increased in 2012 and reached a record level of 152,462 million dollars.

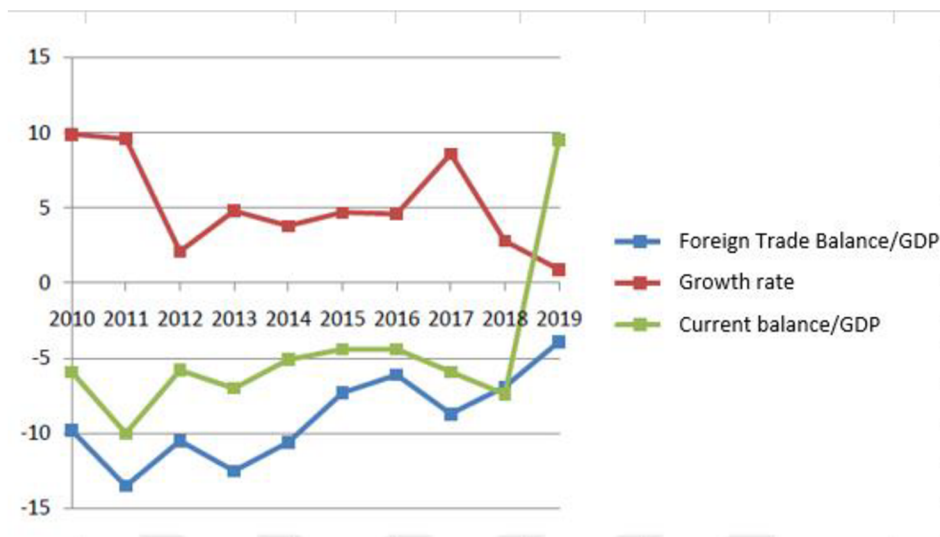
Table 14 Foreign Trade, GDP and Growth Rate in Turkey 2010-2020

| Year | Export (Millions USD) | Import (Millions USD) | Foreign Trade Balance (Millions USD) | GDP (Millions USD) | Foreign Trade Balance/GDP (%) | Growth rate (%) |
|------|-----------------------|-----------------------|--------------------------------------|--------------------|-------------------------------|-----------------|
| 2010 | 113 883 | 185 544 | -71 661 | 731 608 | -9.8 | 9.2 |
| 2011 | 134 907 | 240 842 | -105 935 | 773 980 | -13.7 | 8.8 |
| 2012 | 152 462 | 236 545 | -84 083 | 786 283 | -10.7 | 2.1 |
| 2013 | 151 803 | 251 661 | -99 859 | 823 044 | -12.1 | 8.5 |
| 2014 | 157 610 | 242 177 | -84 567 | 799 370 | -10.6 | 5.2 |
| 2015 | 143 839 | 207 234 | -63 395 | 861 467 | -7.3 | 6.1 |
| 2016 | 142 530 | 198 618 | -56 089 | 856 791 | -6.1 | 3.2 |
| 2017 | 156 993 | 233 800 | -76 807 | 851 490 | -8.7 | 7.4 |
| 2018 | 177 169 | 231 152 | -53 984 | 771 350 | -6.9 | 2.8 |
| 2019 | 180 833 | 210 345 | -29 513 | 754 411 | -3.9 | 0.9 |
| 2020 | 169 638 | 219 517 | -49 879 | 758 453 | -7.0 | 1.6 |

Source: own creation based on data from TUIK and The World Bank Data

When the above table number 14 is examined, can be seen that the growth rate reached the level of 9.2% due to the increase in exports after the 2008 global crisis. Although there was no change in the economic conditions, at the year 2011, the rate of increase in import was higher than the rate of increase in export and the foreign trade deficit increased to 105,935 million dollars. Despite this negative situation, the growth rate was 8.8%. After 2012, the Turkish economy had a fluctuating growth and in 2017, it achieved a growth rate of 7.4% as a result of its good performance.

Graph 12 Ratio of Growth Rate, Current Account Balance and Foreign Trade Balance to GDP in Turkey 2010-2020



Source: own creation based on data from TUIK and The World Bank Data

When analysing the graph number 12 for the years 2010-2019, Turkey, which has re-entered the recovery process in the economy in the first two years, has reached the level of

9%. Although the economic growth process slowed down as of 2011, a growth rate reached 8.8% as of the second half of the year. In 2011, the Turkish economy was the second fastest growing country after China. By 2012, foreign trade increased and the ratio of exports to imports reached 64.5%. Foreign trade volume was 389,007 million dollars in 2012, and Turkey grew by 4.2% as of 2013.

The decrease in domestic demand in 2014 brought the import figures down to 242.177 million dollars compared to the previous year. Despite the narrowing in the external deficit, the ratio of exports to imports was 65.1%. When looking at the growth rate, which was 3% in 2014, 4% in 2015 and 3.2% in 2016, followed a stagnant course and increased to 7.4% in 2017, the reason for the increase here is the increase in exports in foreign trade volume.

The Turkish economy grew by 2.6% in 2018, seasonal and calendar adjusted GDP contracted by 2.4% quarterly in the last quarter of 2018, and the economy contracted by 3% in the 4th quarter but started to grow again in the third quarter of 2019. Despite the negative contribution of net exports, it recorded an annual growth of 0.9% in the third quarter of 2019 with the positive effect of consumption expenditures. The monthly current account balance, which had a surplus as of July 2019 with the effect of weakening domestic demand, low oil prices and increasing tourism revenues, again ran a deficit in November due to the widening in the foreign trade deficit. The 12-month cumulative current account surplus became 2.7 billion dollars after November.

5 Results and Discussion

This part of the thesis is devoted to the final analysis of data from the practical part. In this part, the final answers to the questions asked by the author are provided to achieve the goal and disclose the topic of the work.

The results of the analysis of trading partners, namely, how the list of such countries has changed over the past 21 years, from 2000 to 2020, as well as which countries are Turkey's key partners are now indicated in this paragraph. Further, based on the data from paragraph 5, the author showed which sectors of Turkey make up a significant part of the country's trade. These sectors are considered separately, as exports and imports, also in the span of 21 years. After that, the answer is provided to the third question, which is to identify the comparative advantage / disadvantage of the trading sectors using the Balassa and Wollrath indices. The results for the fourth question are also mentioned in this part. The author summarized the results from paragraph 4, where the macroeconomic indicators of Turkey were examined in detail and visually using the charts built in the Excel program. Last but not least, other factors besides international trade that play an important role in the economic development of a country are mentioned in this paragraph.

5.1 Trade partners

International trade plays an important role in the economy of any country. Trading partners and the exchange of goods with them are also important points in the trading structure. For 21 years, the main trade partners of Turkey were Germany, the USA, China, and Russia. Especially the first country of the four listed, has always and invariably remained in the leading positions as an exporter and an importer.

For better clarity, the partners were separated by export and import. The main export partners of Turkey are Germany, UK, USA, Iraq, Italy, France, Spain, Netherlands, Israel and Belgium.

Germany took a leading position in this list due to factors such as geographic location, namely proximity, many German companies in Turkey, low prices for textiles, food and other goods and of course the fact that the Turkish people living in Germany satisfy their cultural needs from Turkey.

Another thing that should be noted is Iraqi-Turkish trade relations, which stopped in 1990 due to the imposition of the embargo and resumed only 13 years later in 2003 after the Iraqi bailout operation, where Turkey provided logistical support.

The rest of the countries on this list also play an important role in Turkey's trade structure and amount a significant part of exports.

Turkey's imports increased after 1980, when the ban on the import of certain goods was lifted, resulting in a foreign trade deficit.

At the end of 2020, the main import partners were China, Germany, Russian Federation, USA, Italy, Iraq, Switzerland, France, South Korea, United Arab Emirates.

This list has not changed much for 21 years, mainly the order of countries changed depending on changes in the share of Turkey's total imports. For example, in the early 2000s, Germany accounted for a large share of imports, but after 8 years, since 2008, Russian Federation and China accounted for most of the imports of goods. But over the past 15 years, China, Germany and Russian Federation have remained the leaders on this list.

Compared to 2000, the share of countries such as Iraq, United Arab Emirates, Switzerland and South increased, while USA, Italy and France share in Turkey's imports decreased.

5.2 Trading products

During the selected period of 21 years, Turkey's exports by sector did not change significantly. From 2000 to 2010, most of the export was made up of the knitwear, not knitted clothing, and motor land vehicles sectors. However, since 2004, the share of knitwear and not knitted clothing began to decline and currently account for about 8%.

The motor land vehicles sector took the lead in 2004 and still accounts for most of the country's exports. Also, the sector of machinery, which was the third in the list in 2006 and 2008, since 2009 continues to be the second most exported sector. After Turkey became more open to export, mainly the EU countries began to import cars and spare parts from Turkey, as prices were much lower. Against this background, the listed sectors have become leaders in Turkey's exports, accounting for about 20 – 23% of all exports.

Mineral fuels and oils sector has been always most imported over the years, except 2016. The machinery sector has been second most imported sector only with exception in 2008, 2016 and 2020. In 2008 its share dropped, and iron and steel sector took the second place. In 2016 the machinery sector was the most imported sector, while mineral and fuels

sector felt on the second place. And in 2020 the sector of machinery ceded to precious stones and metal sector. Over the 21 years, third place have been shared between sectors of electrical and electronics, motor land vehicles, iron and steel and machinery.

5.3 Comparative advantage sectors based on Balassa, Vollrath and Lafay indices

Based on results of Balassa and Vollrath indices, calculated by author the items which had demonstrated a revealed comparative advantage over the analysed period are mentioned in this chapter. The results of these indices showed which sectors have comparative advantage in the world market.

15 trading sectors of Turkey demonstrated high results in calculation of Balassa index. They are carpets, salt, sulfur and stone, woven ready-made goods, knitwear, edible fruit and nuts, vegetable and fruit preparation, not knitted clothing, iron and steel, articles of iron or steel, preparations of cereals, flour, starch or milk, motor land vehicles, rubber and articles, aluminum and articles, precious stones-metals, furniture.

And the rest of the reviewed sectors have been considered as comparative disadvantageous: plastics and products, machinery, electrical – electronics, mineral fuels and oils, pharmaceutical products.

Vollrath index have been calculated in two ways which were mentioned in the theoretical part. Results of calculation represents similar numbers. The only exception is that in the first way of calculation knitwear sector has comparative advantage in the world market, but after the linearization of import and export data with logarithm this sector is having comparative disadvantage. Otherwise, there are sectors which have stable results in both way of calculation and they are carpets, woven ready-made goods, salt, sulfur and stone, edible fruit and nuts, vegetable and fruit preparation, not knitted clothing, preparations of cereals, flour, starch or milk, articles of iron or steel, furniture, motor land vehicles, rubber and articles, aluminum and articles.

Lafay index results have been provided for 5 traded sectors, due to impossibilities of calculation of 21-year average. Selected sectors are motor land vehicles, machinery, electrical-electronics, iron and steel and minerals and fuels. Results of calculations showed that numbers were not stable for all sectors over the years. However, two sectors out of five, had better results. They are machinery and electrical – electronics. Machinery sector had comparative advantage for 14 years and electrical – electronics for 13 years.

5.4 Dynamics of associated macroeconomic indicators in Turkey

Before the year 2000 the economic situation was negatively affected by different reasons. Facing all that issues, government took actions to stabilize and improve the situation in country by implementing reforms. Consequently, the GDP growth and GDP itself increased for some time, however they were not stable constantly. In the time of the global financial and economic crisis, Turkey's GDP growth showed negative numbers for first time over the past 21 years. According to government information, the main reasons were the decline of exports and and the rate of accumulation. After the crisis, Turkey's GDP growth rate was high, but still not stable. The COVID-19 pandemic has affected country's GDP growth rate which decreased and amounted to 0.92% but increase in bank lending had positive effect and economy of Turkey grew by 1.8% in 2020.

The changes of current account balance of Turkey have been unstable over the years. The negative numbers are the consequences of different cases such as natural disasters, economic crises, another economic reasons. However, Turkey's current account reached positive numbers 2 times, over 21 years and this is in 2001 and 2019.

In the end of 1990s, the inflation rate was high in Turkey, on level of 55%. After the implementation of stabilisation policy, applying fiscal and monetary policies, the numbers decreased, but country reached single digits only in 2004 when inflation rate was 8.1%. To keep the inflation rate on low level, government adopted targeting regime. However, targeted numbers have been reached only twice, in 2003 and 2009. In 2018 inflation rate reached its maximum for last 10 years but it started do decrease and in 2020 inflation rate was 12.28%.

Between 1980 and 2000 unemployment rate in Turkey averaged 7.1% -7.7%. But from 2002 the rate increased till 2005 and reached its maximum of 12.5% in 2009. It was a consequence of the global crisis. Unemployment rate also was not stable indicator. The rate has been increasing and decreasing over the times and in 2020, after the pandemic crisis, the rate reached the highest numbers in the last 21 years, and amounted to 13.92%.

5.5 Factors affected the economic growth of Turkey

Economic growth can be affected by different factors. In case of Turkey, in researched period of 21 year, there were factors such Marmara earthquake in 2001, 2000-2001 crises which had negative effect on it. One of the positively affected factors were economic programs implemented by government and high volume of foreign trade.

Economic growth of Turkey has been negatively affected by World Financial Crisis in 2008 as the whole world. Other factors are decrease in inflation, increased the confidence in the Turkish currency, the active domestic demand and the ongoing economic stagnation in Europe.

6 Conclusion

The formation of the modern socio-economic model of Turkey has not always been straightforward. Back in 1923, the country embarked on the path of modernization along the western model. The strong influence of statist principles on economic life led to the difficulties of restructuring the country, moreover, constant political instability and social tension, resulting in frequent power changes through military coups, slowed down the process of modernization.

January 24 in 1980 decisions started the bravest period of Turkey in terms of opening up and global economic integrations for Turkey have increased significantly since this period. The import substitution economic policy was abandoned, an export-based industrial strategy was adopted, and significant increases were realized in the foreign trade volume. The political crisis in the early 2000s caused significant losses in the economy. The 1999 earthquake, which was already experienced before, had created a significant cost in the economy. While the 2008 crisis had negative consequences all over the world, although Turkey was less affected by this crisis, significant decreases were experienced in export values due to the reflections of the crisis in 2009.

Nowadays Turkey is a regional leader, one of the most developed states of the Muslim world; at the same time, it is closely linked to the European market and strives to become a full member of the European Union.

The geographic distribution of foreign trade in goods has practically not changed over the past decades. Foreign trade is focused mainly on European countries, which account for more than a third of foreign trade turnover. An increase in the share of Arab countries can be noted. The main foreign economic partners of Turkey are Germany, England, the USA, China and Russia.

Turkey is a fairly large player on the world market. However, Turkey's exports are significantly lower than imports. Accordingly, the trade balance in Turkey is persistently negative, despite the fact that over the past decade, the export of Turkish goods has grown significantly. The growth in exports was accompanied by an increase in imports with almost identical dynamics.

The main sectors for export in Turkey are: motor land vehicles, machinery, iron and steel, electrical – electronics and knitwear. Turkey imports mainly mineral fuels and oils,

precious stones and metals, machinery, electrical – electronics, motor land vehicles and iron and steel.

Every country, despite if it is importer or exporter, can have comparative advantage over another country or the world. In case of Turkey, 15 sectors out of 20 had comparative advantage, based on Balassa index. Vollrath index of relative advantages in trade and the competitiveness indicator shows that 12 out of 20 sectors are more advantageous over the world. Results of Lafay index, showed that two sectors out five selected, had comparative advantage more than 12 years.

When Turkey's Foreign Trade structure is examined, can be stated that foreign trade deficit is constantly increasing in this area, the most important market in exports is the European Union, the share of China in imports is increasing every year. The ratio of exports to imports in Turkey is around 70 percent. The decrease in energy prices in recent years has positively affected the foreign trade deficit and has been the most important factor in its decline. External deficit remains the Achilles heel of the Turkish economy. Realizing the structural transformation of the economy and becoming an economy that provides external balance is essential for sustainable growth and development.

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