

T.C.
ISTANBUL AYDIN UNIVERSITY
INSTITUTE OF GRADUATE STUDIES



**INCOME DISTRIBUTION IN AZERBAIJAN AND ITS EFFECT ON
ECONOMIC GROWTH**

MASTER THESIS

Farid AHMADOV

**Department of Business
Business Management Program**

October, 2020

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DECLARATION

I hereby declare with respect that the study “Income Distribution In Azerbaijan And Its Effect On Economic Growth”, which I submitted as a Master thesis, is written without any assistance in violation of scientific ethics and traditions in all the processes from the Project phase to the conclusion of the thesis and that the works I have benefited are from those shown in the Bibliography. (15/10/2020)

Farid AHMADOV

FOREWORD

In order for me to do this study, my advisor, To Prof. Dr. Erginbay UĞURLU, my jury members who contributed to my thesis with their constructive criticism throughout the thesis; Asst. Prof. Dr. Mortaza OJAGHLOU, Asst. Prof. Dr. H. Gülçin BEKEN, Asst. Prof. Yusuf MURATOĞLU Asst. Prof. Dr. Özgül UYAN. I would like to express my gratitude to my dear professors and employees at the IAU Institute of Social Sciences, where I completed my master degree, and my family and friends who always supported me in all matters.

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INCOME DISTRIBUTION IN AZERBAIJAN AND ITS EFFECT ON ECONOMIC GROWTH

ABSTRACT

The relationship between economic growth and income distribution was first explored by Kuznets in the literature. Kuznets stated that with the economic growth and the increase in per capita national income, income inequality also increased. But in the later stages of growth, income distribution inequality will move towards a decreasing trend. According to the findings, Kuznets expressed the relationship between income distribution and income level as "inverse U-curve". Income distribution is a very important concept in terms of showing how much the individuals in the economy get from the total income. In general, it is curious that economic growth cannot see the positive effect of individuals in society, and individuals demand an increase in their share from income in parallel with growth. In this case, policy makers are required to take initiatives that correct income distribution, especially with the help of the most appropriate macroeconomic tools.

Keywords: *Income Distribution, Economic Growth, Azerbaijan*

AZERBAYCANDA GELİR DAĞILIMI VE EKONOMİK BÜYÜMEYE ETKİSİ

ÖZET

Ekonomik büyüme ile gelir dağılımı arasındaki ilişki ilk olarak literatürde Kuznets tarafından araştırılmıştır. Kuznets, ekonomik büyüme ve kişi başı milli gelirdeki artışla birlikte gelir eşitsizliğinin de arttığını belirtti. Ancak büyümenin sonraki aşamalarında gelir dağılımı eşitsizliği düşüş eğilimine doğru ilerleyecektir. Bulgulara göre Kuznets, gelir dağılımı ile gelir düzeyi arasındaki ilişkiyi "ters U eğrisi" olarak ifade etmiştir. Gelir dağılımı, ekonomideki bireylerin toplam gelirden ne kadar elde ettiğini göstermesi açısından çok önemli bir kavramdır. Genel olarak, ekonomik büyümenin bireylerin toplumdaki olumlu etkisini görememesi ve bireylerin büyümeye paralel olarak gelirden paylarının artmasını talep etmesi ilginçtir. Bu durumda politika yapıcıların, özellikle en uygun makroekonomik araçlar yardımıyla gelir dağılımını düzelten girişimlerde bulunmaları gerekmektedir.

Anahtar kelimeler: *Gelir Dağılımı, Ekonomik Büyüme, Azerbaycan*

1. INTRODUCTION

Equality in income distribution is one of the most important criteria for a country's level of development. Inequality of income distribution in a country will cause social unhappiness and unrest. Therefore, the fact that all segments of the society get a fair share from the national income created is of great importance in terms of social welfare.

The relationship between economic growth and income distribution was first explored by Kuznets in the literature. According to Kuznets' hypothesis, income inequality is lower compared to low income countries. In addition, Kuznets stated that with the economic growth and the increase in per capita national income, income inequality also increased. However, in the later stages of growth, income distribution inequality will move towards a decreasing trend. According to the findings, Kuznets expressed the relationship between income distribution and income level as "inverse U-curve".

Kuznets used the data of England, Germany and the United States while revealing the relationship between growth and income distribution. The reason for limiting its work to these countries is that the available data is scarce, and the resources are not reliable (Kuznets, 1955, 4-6). With the following periods, the data available and the resources became more reliable. As a natural result of this situation, many economists who came after him examined the relationship between income distribution and growth with different methods. The studies conducted differ from the results found. Our study will be put forward considering these different results.

Income distribution is a very important concept in terms of showing how much the individuals in the economy get from the total income.

1.1 The Importance of Study

Economic growth is one of the issues that occupy minds in the economic literature. However, achieving economic growth alone is not enough. If the aim is to raise the welfare level of the society, there will be other targets that must be achieved along with economic growth. In other words, only economic growth is not enough to increase the welfare of the society. How fair and desirable can economic growth at the expense of the losses of large masses be extremely unfair? At this point, the importance of ensuring a fair situation in the income distribution becomes evident in the economic growth process. In fact, the best situation is to achieve an improvement in income distribution while economic growth is experienced. However, reaching or not achieving this ideal state will depend on the nature of the relationship between economic growth and income distribution. If reducing income inequality and accelerating economic growth can be accomplished together, there is no problem, but otherwise it may be a problem of choice.

In the analysis of the relationship between economic growth and income distribution, there are limitations in terms of variables, country and time. Limitations on Variables; There is no single indicator in the economic literature explaining some concepts belonging to a country. For example, there are different indicators such as GDP, energy consumption, life expectancy that show the welfare level of a country. In this context, there are tens of indicators in the literature as an indicator of financial development. Some of these indicators are related to the banking system; the other part is related to the capital market. This is divided into three as financial depth, financial reach and financial efficiency. Each part is also represented by more than one indicator in itself.

There are also limitations regarding the GINI coefficient that shows Equality in the income distribution. GINI coefficient is a very difficult variable to obtain compared to other data. Calculation costs come after it is difficult to obtain. Especially in recent years, both national and international GINI coefficient data have become easier, but the comparability of these data is important in terms of country and time. The low quality of observations, reliability of the questionnaires and synthetic measurements are the most serious problems in the

GINI coefficient data. In this context, in the literature that calculates the GINI coefficient, the five leading basic databases have been examined. Then, the GINI coefficient obtained from the database, which is stated to be three to eight times better than alternative databases in terms of comparability and is synthetic, although primary data is consistent, was used.

1.2 The aim of the Study

The purpose of this study is to solve income distribution in Azerbaijan and to select correct macroeconomics instruments. This study examines the income distribution problem in terms of economic growth factors. The effect of income distribution on a country's economic performance will be different for a country that is open to the outside world and a country that has closed itself outside. Also, as is known from the Stolper - Samuelson Theorem, the foreign trade event itself has an impact on the income distribution in a country. For the purpose, answers to the following questions will be sought:

- How is the economic growth income distribution relationship?
- How is income distribution affected in an economically developed and underdeveloped economy?
- Does the economic structure have an impact on income distribution?

The main hypothesis of this study is that there is a long-term relationship between financial development and income distribution. In addition, the sub-hypotheses are as follows:

H₁: There is a long-term relationship between economic development and income distribution.

H₂: The development of the capital market has a positive effect on ensuring Equality in income distribution.

H₃: Its economic development has a positive effect on ensuring Equality in income distribution.

The GINI coefficient was found by Italian statistician Corrado GINI (1912). This coefficient is determined from the Lorenz curve. It is calculated by proportioning the area between the Lorenz curve and the absolute equation line

to the area of the triangle. The smallest value of the GINI coefficient is equal to zero, which means that the Lorenz curve is equal to the absolute equation line, it is concluded that there is no income inequality in this economy. Income inequality increases as the GINI coefficient increases. When this value is 1, it is understood that all income in the economy is collected in one person and the income inequality is maximum.

The GINI coefficient showing the inequality of countries in income distribution is shown in various databases in the literature. Leigh (2007) states that researchers working on income inequality in the last decade have used one of three databases. The first of these databases was created by Deininger & Squire, which includes 138 countries. The second is the World Income Inequality Database (WIID), covering 154 countries by a newer database, United Nations University and World Institute for Development Economics Research. The third is Luxembourg Income Study (LIS), data from 30 countries are presented. Estimated Household Income Inequality Data Set (EHII) maintained by the University of Texas project Galbraith has been added to these three global databases in recent years. Fifthly, The Standardized World Income Inequality (SWIID) Database, which belongs to Solt, appears as a comprehensive data set that researchers are interested in.

1.3 Literature Review

Peçe et.al., (2016) realized analysis on effect on economic growth of income distribution in Turkey. In this study, Turkey's period 1977-2013 was analyzed the effect on real GDP income distribution. The GINI coefficient was used as the income distribution criterion. First of all, the existence of cointegration between variables was determined by Johansen (1988) cointegration test. After the cointegration was detected, Toda-Yamamoto (1995) Granger causality test determined a Granger causality from GINI coefficient to real GDP. After determining the direction of causality, it was revealed that there was a negative correlation between GINI coefficient and per capita real GDP by establishing cointegration regressions with FMOLS, DOLS and CCR models. Accordingly, when the GINI coefficient decreases (that is, income distribution improves), real GDP increases. So, during the period 1977-2013 GDP of Turkey's economy, the

improvement of income distribution has reached the conclusion that the positive effects.

Peçe, Ceyhan, Akpolat (2016) Conducted an Econometric Analysis on the Effect of Income Distribution on Economic Growth in Turkey. One of the most important issues of economics is national income distribution, in other words, income distribution. The issue of income distribution balance stands out as one of the most important goals of the economic policies of almost all countries today. The issue of income distribution is not only a social problem, but also an economic problem. Two basic criteria are used to measure the personal income distribution. One of them is Lorenz Curves and the other is the Gini coefficient. Gini coefficient can be used in econometric models and analyzes rather than Lorenz curves. By establishing relationships between the Gini coefficients and macroeconomic and social indicators of a country over the years, the interaction between variables can be measured. In this context, Gini Coefficient is accepted as the independent variable, for example, economic growth, inflation, unemployment, external deficit and internal deficit, etc. By using economic indicators and social indicators such as crime and punishment as dependent variables, the effect direction and degree of impact of the national income balance or imbalance can be determined. It is very important to carry out such studies. Because countries can obtain much more effective and rational results when they determine and implement their economic policies based on the data obtained as a result of such scientific studies. In this study, Turkey's period 1977-2013 was analyzed the effect on real GDP per capita income distribution. The Gini coefficient was used as the income distribution criterion. First of all, the existence of cointegration between variables was determined by Johansen (1988) cointegration test. After cointegration was determined, a Granger causality from Gini coefficient to real GDP per capita was determined with the help of Toda-Yamamoto (1995) Granger causality test. After determining the direction of causation, cointegration regressions were established with FMOLS, DOLS and CCR models, and a negative relationship was found between the Gini coefficient and real GDP per capita. Accordingly, when the Gini coefficient decreases (i.e. when the income distribution improves), real GDP per capita increases. So, during the period 1977-2013 real per capita GDP of

Turkey's economy, the improvement of income distribution has reached the conclusion that the positive effects.

In the analysis of the relationship between income distribution injustice and economic growth, the Kuznets hypothesis was generally tested. According to Kuznets (1955), the income distribution injustice increases with economic growth at the first stage, but as the growth continues in the future, the relationship reverses and the income distribution injustice tends to decrease. Kuznets expressed this hypothesis as "Inverted U Hypothesis". Barro (2000) examined the relationship between income and Gini coefficient in his study covering a hundred countries and suggested that this relationship changes according to the development levels of the countries, confirming Kuznets's hypothesis. Likewise, Huang (2004) examined the relationship between per capita income and income inequality in his study on income distribution and found a strong relationship between variables, confirming the Kuznets hypothesis.

Alesina and Perotti (1994), on the other hand, examined the relationship between income inequality and growth in socio-political terms, and it was stated that the inequality of income distribution causes social unrest in countries, thus causing social and political instability, a recession in the economic situation and as a result of this stagnation. It has been concluded that economic growth has declined. Erkal et al. (2015) wrote about income inequality in social and economic terms and analysed the relationship between poverty, income inequality and economic growth across 11 countries between 1998-2010. According to the analysis results, it was determined that the increase in income inequality and the resulting poverty caused growth. Coral and Azer (2013) conducted by Central Asian and Caucasian countries on the observation intervals have a negative impact on income distribution, economic growth in work covering the years 1995 to 2009, especially Turkey and Azerbaijan this effect has been found to be at a higher level.

Again, Persson and Tabellini (1994) analysed developed and developing countries in different categories and concluded that there is a negative relationship between income distribution injustice and economic growth in both groups. Jong-Hee Kim (2016) divided the countries into two groups as low-

income and high-income countries in his study consisting of forty countries in the OECD and the European Union covering the years 2004-2011. In the study investigating the prevalence of the financial system, income inequality and economic growth, economic growth has been interpreted based on per capita income. According to the findings, a strong effect of the improvement in the fairness of income distribution in the low-income countries group has been found on growth, while this relationship is even stronger in low-income countries with high economic fragility.

2. ECONOMIC GROWTH CONCEPT

2.1 Definition and Measurement of Economic Growth

It is referred to as “economic growth” that a country expands its production opportunities limit by increasing the amount of scarce resources it has or improving their quality or by changing production technology and institutional framework to reach higher production levels (Üstünel, 1988:58). Economic growth can also be defined as the continuous increase of production factors to increase real national income Per capita (Ünay, 1983:248).

The increase in national income is the most important indicator in terms of economic growth. “National income” refers to the sum of the income that the production factors participating in economic activities in a country's economy over a period of time, generally within a period of one year (Köklü, 1972:85). National income indicates the level of economic well-being of a country. There are other concepts related to national income. Of these, “gross national product (GNP)” gives the sum of the monetary values of goods and services produced by a country's economy in a period (usually one year). In other words, the sum of the product prices of the products and services created by all production factors (natural resources, labor, capital and enterprise) together in the society gives GNP. Another concept is "net national product (SMH)". Capital goods used in the production of goods and services wear out and wear out over time. These parts, which are eroded, actually go into the manufactured goods. Therefore, in order to calculate the actual amount of goods and services produced, the wear shares of the equipment participating in production, that is, the depreciation, must be subtracted from GNP. As a result, SMH is obtained. Another concept is "personal income". Although some values are not included in the national income, they enter the budget of the person and increase his purchasing power. Income elements such as retirement and social insurance contributions are subtracted from national income to find personal income. On the other hand, “usable income” is reached after the personal taxes are deducted

from personal income in order to find the income that individuals can use freely. “National income per capita” is a concept that gives a better idea about the welfare level of the country. For this, national income is divided by the population of that country and per capita national income is reached. Nominal and real national income concepts are also important concepts. “Nominal national income” is the form of income expressed in money. “Real national income” is the amount of goods and services that can be purchased with nominal national income (Acar, 1998:195).

The first and foremost problem for highly developed and highly industrialized countries is to ensure that these resources are fully utilized. In countries that have not yet developed their resources and have not been adequately industrialized, achieving economic growth comes before all the problems and greatly affects whether they can be linked to positive solutions. However, it should not be forgotten that the growth problem is also important for developed countries and has a critical value especially in long-term economic competition. Even in a developed country, it is not sufficient to ensure that full use of scarce resources is available and the problems of using these scarce resources in the production, with which methods, and how to divide the product among them, and even if these solutions comply with the conditions of effectiveness. If a country that has found the best solutions to all these problems has a stagnant economy, its production capacity will never change from one year to the next. In contrast, if the capacity to produce goods and services in a country that has not been able to find the best solutions to other economic problems can increase significantly every year, its economic life will show tremendous vitality and dynamism, and the level of welfare of the society will increase significantly over time (Üstünel, 1988:59).

Economic growth was not only a problem of the 20th century. A. Smith, R. Malthus, D. Ricardo, one of the classical economists, proposed ideas about the growth of an economy. Likewise, the founder of scientific socialism, K. Marx, explained how the growth in the capitalist system took place. However, the marginalist flow and neo-classical economic analysis methods that were born in the second half of the 19th century did not give the necessary place for growth by turning the economy into more static, short-term and micro-analysis. After

these dates, economic analysis was mostly concerned with short-term fluctuations in national income, employment level and prices. In other words, the issue of economic conjuncture has been given a great deal of attention. The issue of growth was introduced by moving from static analysis to long-term macro dynamic analysis. Only short-term static analyzes have been useful steps in transition to long-term analyzes. From the analysis of a short-term event that happened at once, growth analysis was initiated by examining the continuous macroeconomic variable flows occurring in the long term (Ünay, 1983:247).

Like every living being, the national economy is a growing and expanding asset. Capital stock, population amount, labor force, natural resources in a country sometimes grow in a balanced and sometimes unbalanced way. The main purpose is that these factors that ensure production develop in harmony and provide a current that will maximize national income per capita without breaking each other. Thus, the detection, observation and control of dynamic forces that provide this growth and development are vital. The most important of these dynamic forces are investments. As stated above, economic growth was called the continuous increase of production factors in a way to increase real national income per capita. Creating this is the increase in the level of macro variables such as investment, workforce, natural resources, technological level, organization style (Dobb, 1973:183). Economic growth does not steadily go along a trend in the long run, and sometimes it shows fluctuations, i.e. descents and rises. In other words, national income does not always increase at the same rate, this rate fluctuates. These fluctuations in the level of macroeconomic balance are called conjuncture. More precisely, fluctuations in the general level of national income, employment and prices are called economic conjuncture. So, long-term fluctuations and long-term growth fell into one another. Therefore, economic growth and economic growth are inseparable in macroeconomics (Ünay, 1983:248).

There are four factors that are essential in the growth process in each country. These are the quantity and quality of the workforce, the quantity and quality of the natural resources, the quantity and quality of the real capital and the technological level reached by the society. These are the "essential" elements of economic growth. These factors basically define the production potential of

each economy, the technology involved in the process of combining labor, natural resources and capital in the production process. In practical terms, it is very difficult to separate technology from resources, because the quality of resources is the reflection of the technological level reached by a society (Peterson, 2001:393).

2.2 Determinants of Economic Growth

Classical, keynesian, neoclassical growth theories were considered Orthodox, while Marxist, post-Keynesian, institutional, and structuralist were considered heterodox. In addition to being dynamic / stable, according to the economic structure of the country, it also has some features such as short / long term, balanced / unbalanced and internal / external. These characteristics are referred to as the main and political-institutional determinants of economic growth, as described in the third part of the first part and vary depending on a number of factors that form the main purpose of our study.

The main determinants of economic growth are investment and capital accumulation, employment (workforce) increase, innovation and technology, which are considered as the driving and driving factors in the economic growth of each country, regardless of the conditions, and the total factor productivity resulting from all of these factors. Investment and capital accumulation considered as the most important indicator of a country's ability to produce goods in a certain period; In addition to providing productivity and employment increase as a result of learning process and positive externalities, it creates economies of scale by enabling the application of new technologies in production and helps economic growth by increasing the level of welfare in the country. TFV, which emerged as a result of the separation of the effect of capital and labor productivity on GDP growth, has recently been considered as an important growth factor in the economic growth analysis of developed countries and NGOs, and it is revealed that this productivity is due to technological development or efficiency increase.

The factors such as fiscal, monetary, foreign trade, exchange rate, industrial and technology policies and advanced financial system, effective institutional structure and macroeconomic stability in the globalization process are

considered as the political and institutional determinants of growth. Since these factors do not develop at the same level and speed in each country, they have a special importance in explaining the growth differences between countries. Among these factors, fiscal policy includes tools such as public spending, taxes and budget balance. In general, productive public spending is considered to affect growth positively and non-productive ones negatively. Although taxes delay growth because they hinder investment and venture activities, a permanent or stable budget balance that is sustained in the long term increases the growth rate. Inflation, on the other hand, affects growth negatively due to the distortion it creates in the distribution of capital resources.

2.2.1 Human capital

The relationship between human capital and economic growth is one of the issues that are emphasized in the economic literature. The reason for this is that human capital is at least as much a necessary input as the physical capital in producing the desired level of national output and achieving economic growth. In addition, the intense competition experienced in the global economy in the world economy necessitates the production and use of information technologies, increasing the importance of human capital day by day. In the broadest sense, human capital refers to the level of knowledge, ability and skill that society or the individual has (Kar & Ađır, 2003:181). Although the importance of human capital for economies has been expressed since Adam Smith, the lack of a systematic study until the mid-1900s was felt in the literature of economics. Denison, Schultz and Becker have attempted to develop the concept of human capital based on the opinions of Smith regarding this deficiency.

The impact of human capital on economic growth is explained by internal growth models and Neo-classical growth theory. In studies on this subject, the impact of human capital on growth is determined by the impact of education, which is a measurable indicator of human capital, on economic growth. In studies, other human capital elements other than education are not included in the analysis. Therefore, all explanation efforts are based on the relationship between education and growth (Atik, 2006:12).

The impact of human capital on economic growth is explained in the literature by internal growth models (CPA) and Neo-classical growth theory. In the related literature, the impact of human capital on growth is explained by the impact of education, which is a measurable indicator of human capital, on economic growth. Based on the critical importance of human capital in economic growth; main purpose of this study; Turkey has with the elements included in the analysis of human capital to generate predictions about the direction of economic growth and direction of the relationship between economic growth and human capital elements to try to determine the size.

2.2.2 Physical capital

In neoclassical growth models, the growth process depends on a given production function and all countries have this production function. In other words, technology is a public good shared by all poor or rich countries (Yeldan, 2010: 96-97). There are two main factors of production that determine output in this production function: labor (labor) and physical capital. However, in Neoclassical growth models, the workforce and its growth rate are determined entirely by external factors independent of the variables of the model, and in short, the model takes them as data. The growth rate of the physical capital stock depends on the investments and the volume of the existing physical capital stock. Since neoclassical theory does not anticipate an investment function independent of savings and the savings automatically turn into investments, the ratio of savings to physical capital stock gives the growth rate of the physical capital stock (Akyüz, 2009: 383).

In this context, the reason for the economic growth differences between countries is the differences in physical capital stock. Therefore, countries with high savings / physical capital stock ratio -*ceteris paribus*- tend to be richer. Such countries accumulate more capital per worker. Consequently, countries with more capital per worker have higher output per worker. In contrast, countries with high population growth rates have to be impoverished according to the Neoclassical growth model (Jones, 2001: 29).

The second stage of the neoclassical growth model is the steady-state equilibrium, where the physical capital stock does not expand further in the long

run, and all macroeconomic balances remain at a relative stagnation. When the physical capital stock reaches steady state, the investments will be equal to wear and there will be no pressure to increase or decrease the physical capital stock (Mankiw, 2009: 220). In the steady state balance, the marginal physical product of physical capital decreases and the growth rate becomes zero. An external technological development will not completely destroy the negative effect of the reduction of the marginal physical product of physical capital, it will only delay it for a while (Kibritçioğlu, 1998: 214). Therefore, in the long-term steady state balance, output increase, i.e. growth, is determined by the growth rate of the workforce and technological developments (Thirlwall, 2006: 136). In the neoclassical growth model, however, technology, a public good, will not affect the growth process, and with all countries becoming stationary in the long run, growth disparities between countries will disappear. Because the stationary economy will remain there, and the economy that is not stationary will turn towards the stationary situation. Therefore, regardless of which capital stock level the economy begins with, the steady state reaches the capital stock level in the long run. In this sense, the steady state represents the long-term equilibrium of the economy (Mankiw, 2009: 220).

2.2.3 Structural and Institutional Policies

Emphasis on institutional structure differences in explaining economic growth dates back to the beginning of the 20th century, but the studies in which the effect of the institutional structure on economic performance was investigated based on experiment, especially in the 1990s. The most important reason for this can be stated as the difficulties in defining and measuring the institutional structure. When we look at the literature, it is striking that many researchers who test this relationship use different indicators to define the institutional structure. Accordingly, the indicators commonly used as a measure of the institutional structure in theoretical and experimental studies; rights and freedoms, the rule of law, the level of corruption, property rights, social capital and the quality of bureaucracy. In addition, it is seen in the literature that the majority of the studies that test the relationship between institutional structure and economic growth use the panel data analysis method. Studies using single-country time series data, which analyze the effects of the institutional structure

on economic growth, may be encountered in recent years, although few. In this direction, the literature of the study is presented in two sections as studies that apply time series and studies using panel data method.

Barro (1994:20), one of the first studies that tested the relationship between institutional structure and economic growth by using panel data analysis method for multiple countries, investigated the effect of democracy on growth as an element of the institutional structure for 100 countries in the period covering 1960-1990, and the positive effect of democracy on growth; The rule of law has revealed that it depends on free market, small public spending and high human capital. When these variables and per capita real gross domestic product (GDP) are kept constant, it is concluded that the overall effect of democracy on growth is negative. De Haan and Siermann (1995:175) investigated the direct and indirect effects of the democratic regime on economic growth and found that there is no strong relationship between democracy and economic growth. In his study covering 67 countries, Rodrik (2000) found findings that a high-quality growth was achieved in participatory democracies. Accordingly, participatory democracies; they lead to higher quality growth that is more predictable and stable, resistant to shocks and ensures equity in income distribution. According to the findings of Tavares and Wacziarg (2001:1341), democracy affects growth positively by increasing human capital accumulation and decreasing income inequality, while preventing growth by preventing physical capital investments and increasing the ratio of public consumption expenditures to GDP. Considering these two effects, the overall effect of democracy on economic growth is negative and weak.

Carlsson and Lundström (2001:33) found that some of the components of economic freedom affect growth positively and some of them are negative in their studies that analyzed the impact of economic freedom on growth in the period spanning 1975-1995. Findings from Scully's (2002:77) study indicate that the level of economic freedom positively affects economic growth. Dawson (2010:177) examined the relationship between economic freedom and macroeconomic volatility and found that the relationship in question was negative. On the other hand, Vanssay and Spindler (1994:24) found that there is no strong relationship between economic freedoms and economic growth in

their work for 100 countries. The findings obtained by Dawson (2003:479) in his study show that economic and political freedoms are the most important reason for the increase in economic growth.

In the studies of Siddiqui and Ahmed (2010:197), the relationship between institutional quality and economic performance was investigated. In the study conducted for 43 countries, it was concluded that there is a strong link between institutional quality and economic growth. Torstensson (1994:231) analyzed the impact of property rights on economic growth for 68 countries in the period 1976-1985. In this study, two aspects of property rights, “the degree of property of the state” and “the existence of arbitrary seizure of property” were taken into account. According to the results of this research, there is a negative and insignificant relationship between state ownership and growth. However, a negative and significant relationship was observed between arbitrary seizure and economic growth.

Akçay (2002:1) examined the impact of corruption on economic growth for 54 countries. The main finding of the research is that there is a statistically negative and significant relationship between corruption and economic growth. Mauro (1995) found that corruption has a negative impact on economic growth, leading to a low investment rate. In his study for OECD countries, Tanzi and Davodi (1997) revealed the channels in which high corruption affects economic growth. Accordingly, high corruption affects economic growth by leading to high public investments, low public revenues, low operating and maintenance expenditures and low public infrastructure quality.

Sabatini (2006) investigated the relationship between social capital and the quality of economic development for Italy. In the study, a wide set of variables consisting of four indicators related to the structural dimension of social capital, as well as about 200 variables representing different aspects of economic development, were used. Indicators of human development and health status of urban ecosystems, public services, gender equality and labor market indicators were used to measure the quality of development. Social capital, on the other hand, was measured by strong family ties (usually binding social capital), weak informal ties (bridge social capital), voluntary organizations (unifying social capital) and indicators of political participation. In the study, a positive relation

was found between the quality of development and weak informal ties in the regions of Italy, and a negative relationship between the quality of development and strong family ties. The analysis shows a strong correlation, especially between informal ties and social welfare, as well as between the health status of voluntary organizations and urban ecosystems. On the other hand, there is no relation between active political participation and social welfare. Finally, the role of public spending in education, health, social aid and environmental protection was analyzed, and no relation was found between social capital and development indicators.

Şanlısoy and Kok (2010:101), the impact of political instability on economic growth were examined in terms of Turkey. The data covering the years 1987-2006 consist of quarterly observations. The political risk index data obtained from the International Country Risk Guide (ICRG) index prepared by the Political Risk Service (PRS) was used as an indicator of political instability. The said index; It consists of 12 sub-components: political stability, socio-economic conditions, investment profile, internal conflicts, external conflicts, corruption, the influence of the military in the political arena, the influence of religion in the political arena, legal regulations, ethnic tensions, democratic transparency and the quality of bureaucracy. The inverse relationship between political research results to economic growth, is consistent with literature in terms of Turkey is that they were valid.

Another time-series studies that investigated the institutional structure and economic growth for Turkey relations Beşka and Manan (2009:47) belongs. Beşka and Manan (2009:48), the relationship between democracy and economic freedom with economic performance have searched for Turkey. In the study, the political rights and civil liberties index obtained from Freedom House were used as a measure of democracy. "Economic Freedom in the World (EFW: 2) index" prepared by the Fraser Institute was used to measure economic freedom. As a result of the tests, it has been observed that the relationship between democracy and economic performance is positive in some established models and negative in some models. On the other hand, a positive relationship has been found between economic freedoms and economic performance.

2.2.4 Innovation and R&D

Measuring innovation activities at the national level is not an easy process. Because there is no perfect innovation measurement method. Innovation performance is generally measured using R&D and patent data. For this purpose, generally R&D expenditures, more specifically, the ratio of R&D expenditures to Gross Domestic Product (GDP) and patent statistics are used (Wang, 2013: 1). In this approach, R&D expenditures can be considered as input, and patent statistics can be considered as output. The increasing competition brought by globalization and digitalization, the density of information reached, the ever-changing needs have made the concepts of innovation and R&D the most important concepts that businesses and countries emphasize. Innovation involves the extraction and commercialization of new ideas. The most important feature that distinguishes the concept of innovation from the concept of invention is the commercialization of innovation. In other words, it can be defined as “Innovation = Invention + Commercialization”.

Although they do not emphasize that innovation is the driving force of economic growth, Adam Smith, David Ricardo and Karl Marx stand out as the first economists to handle innovation historically (Kantarıcı, 2017: 41). Influenced by the works and ideas of Karl Marx, Schumpeter is the first economist to state that innovation is the driving force of growth, emphasizing that "the system is constantly undergoing renewal and constantly destroying old factors and creating new ones". In this context, it is observed that developed countries continue their innovation activities intensively and concentrate on the necessary infrastructure and R&D activities. Especially after 1990's, the investment in information increased more than the investment in machinery and equipment, and even outperformed countries such as Finland and America (OECD, 2007: 6).

When the share of R&D expenditures in GDP is analyzed, it is seen that this rate is higher in developed countries than in developing countries (Ballı and Güreşçi, 2017: 105). This information is extremely important in terms of showing that the R&D expenditures made have a positive effect on growth. In the report prepared by the OECD in 2007, it was stated that the R&D spending rate increased especially in the developing OECD countries. In this context, in

the study, "There is a long-term relationship between innovation and economic growth." The hypothesis constructed as ' G7 countries is analyzed. The main problem of the research was determined as "Global competition created by the impact of innovation on economic growth in G7 countries".

When the literature on economic growth is analyzed, it is concluded that innovation R&D expenditures have a significant impact on growth at both enterprise and industry and country level, regardless of which variables are measured such as number of patents or number of innovations (Cameron, 1996: 5). Recent growth theories emphasize the importance of technological change and innovation on economic growth (Geroski, et al., 1993: 198). Some of the main innovation indicators used in studies examining the effect of innovation on economic growth are as follows (Karaöz and Albeni, 2004: 4);

- The amount of innovation made in the economy in certain periods,
- Patents, patent applications,
- Scientific publications,
- R&D expenditures,
- Number of researchers.

Competitiveness of countries affects their economic potential. The most important factor that increases the competitiveness is the innovations made by the enterprises in the country. Therefore, innovation is the most important factor of economic growth, employment growth and quality of life for countries (Elçi, 2007: 31). Innovation is a fundamental factor in determining the international competitiveness of firms and increasing the quality of welfare and quality of life in macro scale of countries (Işık & Kılınç, 2011: 14). In this context, innovation has become the indispensable tool of countries in many processes from the economic growth to the development of living standards in the global world (Yılmaz and İncekaş, 2018:154).

2.2.5 Economic performance

In the literature, there are many studies investigating the relationship between financial development and economic growth. In many of these studies, financial development affects economic growth in the right direction, in some, financial

development adversely affects economic growth, while in others, there is no relationship between financial development and economic growth.

The first studies investigating the relationship between financial development and economic growth have been made for underdeveloped and developing countries. The impact of financial development will have a different effect depending on the stage of a country's economic development. In addition, the importance of each of the financial systems at different stages of development may be different. (Elçi, 2007: 33)

For developed countries, the composition and efficiency of financial intermediation may be more related to economic growth, while the level of financial intermediation can be much more important for economic growth in the early stages of development. The financial structure emerges very differently in different parts of the world. It is not possible to claim that there is a single relationship between the financial structure and the level of growth or per capita income. It is clear that banks are the center of financial intermediation.

2.2.6 Commercial openness

Foreign companies entering the market with the liberalization of foreign trade may cause the profits of existing domestic companies to decrease. Against the risk of decreasing profits in the competitive environment, domestic companies can contribute to both financial development and economic growth by making new investments and acquiring new technologies and new production techniques (Rajan & Zingales, 2003:5). In this context, companies have to innovate with commercial openness and this necessity can provide economic growth by increasing the quality and increasing the output level (Harrison, 1996:419). In developed countries, commercial openness can support growth with the capital flow it brings. In less developed countries, commercial openness causes the existence of a competitive environment. In this context, companies can increase the output level by ensuring the efficiency of production by technology transfer, by imitation of quality goods, which are the subject of global trade, in order to ensure the continuity of their assets. This situation can contribute to economic growth. The high commercial openness, at the same time, the purchase of

technology-intensive products produced in developed countries and the production of these high-tech products through imitation can increase the quality and increase the output, leading to the development of less developed countries (Miller and Upadhyay, 2000 :400).

The institutional structure is one of the determinants of the relationship between commercial openness and economic growth. Commercial openness and the entry and investment of foreign companies into the market can be directly related to the quality of the corporate structure. Especially in low-income countries, institutional structure is very important in realizing economic growth (Baltagi et al., 2007:285). The expansion of the volume of financial transactions with commercial openness can provide financial development. Financial development can increase efficiency in capital formation by increasing resource mobility. However, financial development can help achieve economic growth and eliminate income inequality (Banerje and Newman, 1993:274). Nevertheless, financial openness leads to a decrease in interest rates difference between countries. In this way, idle savings become effective and turn into investments. With the investments made, the output level increases, and economic growth occurs (Miller & Upadhyay, 1991:399).

The fact that the price elasticity of goods which are subject to foreign trade is high with openness may have an effect on increasing uncertainty and income fluctuation. At this point, increasing insurance demand can contribute to financial development (Newbery and Stiglitz, 1984:1). Transformation of idle savings into investment with financial development can contribute to economic growth (Edwards, 1997:383). If the export volume of the country increases with the openness of trade, foreign exchange income increases. Increasing foreign exchange income is included in production, and the output level can contribute to growth by increasing it. (Esfahani, 1991:95).

2.2.7 Foreign direct capital

The studies examining the relationship between foreign direct investment and economic growth differ in terms of the methods and results followed. The studies examining the country groups are in the majority but there are also

single country applications. Below, some studies on the subject have been evaluated especially in terms of the methods used and the results obtained.

Among these studies, Blomström, Lipsey and Zejan (1994:11) study was conducted for developed and developing countries and it was found that foreign direct investment positively affected growth in countries with rich income per capita. The results of the Borensztein, De Gregorio and Lee (1998:115) study covering 69 developing countries support the results of Blomström et al. (1994:15). According to the results of Borensztein et al. (1998:77), foreign direct investment affects growth negatively in countries where human capital is very low and positively in growth in other countries.

De Mello (1999:15), in her study, the effect of foreign direct investment on capital accumulation, economic growth and increase in total factor productivity in countries with and without 32 OESD members were investigated within the framework of time series and panel data methods. According to the study results, the growth effect of foreign direct investments depends on the degree of complementarity and substitution with domestic investments.

Nair-Reichert and Weinhold (2000:153) and in the study of foreign direct investment to developing countries, including Turkey and 24, as economic growth was examined using methods of causal relationship panel. According to the results of the study, the researchers state that the relationships between the variables show heterogeneity according to the countries and therefore the estimation methods assuming homogeneity among the countries will give erroneous results. According to the research results of Nair-Reichert and Weinhold, direct capital investments have a higher impact on future growth in outward-oriented economies.

Another study, similar to Merlevede and Schoors (2004:13), is the study of Campos and Kinoshita (2002:28), where the relationship between foreign direct investments and growth in 25 transition economies is analyzed using panel data methods. According to the results of this study, foreign direct investments have strong positive effects on growth. The results of Lyroudi, Papanastasiou and Vamvakidis (2004:97) conducted for 17 transition economies and using Bayesian coupling analysis are completely different from the results of Campos and Kinoshita (2002), Merlevede and Schoors (2004:13). According to the

results of Lyroudi et al. (2004:98), foreign direct investment has no effect on growth. In this study, the same result was reached when the data set was divided into two groups as fast and slow growing transition economies.

Hansen and Rand (2004:4) examined the GDP ratio and the relationship of growth in foreign direct investments in 31 developing countries through panel coordination and Granger causality analysis. As a result of the causality test, he found a two-way causality relationship between the variables. In addition, the test results show that foreign direct investments affect GDP in the long term. Another study in which transition economies are taken into consideration is the study of Nath (2005:5). According to the conflict results using the panel fixed effects method and covering 13 transition economies, foreign trade affects economic growth significantly and positively. Another important factor affecting growth is domestic investments. In cases where the foreign trade variable is included in the panels, the coefficients of the foreign direct investment variable were found statistically insignificant. In the growth ties estimated without including the foreign trade variable, the coefficients of foreign capital investments were found significant.

2.2.8 Socio-cultural factors

The relationship between economic structure and social and cultural structure has gained importance by evaluating economic developments. Because, although it is not possible to analyze economic development only in economic terms, it is seen that results cannot be obtained unless the human element and responses of the schemes created during the economic development analysis are included. Developments in the analysis of economic growth are from tangible and countable elements to incomprehensible and incongruous facts; If one side of the economy is directed towards substance and wealth, the other side is directed towards human behavior. No matter where and at what time, behind the economic life there is the human reality and its norms of living and mentality. Economic and social factors should be considered as a whole. Economic activity occurred within a social structure, developed and gained sociability within the social structure. The transition of economic measures and policies from an abstract situation to a concrete ground is possible by shifting to the realities of social and cultural structure.

The development is considered as the separation from the usual trajectory of economic functioning and leaping to a new level of equilibrium at a higher level. Economic development and growth must be supported by social integration policies in order to avoid disruption in the new balance situation. Karl Marx took a determinist approach to the interaction of the economic and social cultural structures, but Max Weber opposed him. Weber acknowledges the effects of the economic structure on the social-cultural structure, but opposes the issue being addressed with a deterministic and single-factor approach. According to Weber, the causal relationships of the society, which is an economic, political or religious one that cannot be determined unilaterally and unilaterally, are partial and possible (Aron, 1986:55). While Weber examined the relationship between culture and economic activity, he revealed that culture shapes economic activities. According to Weber, every society has a culture and society has its own system of beliefs and values through culture. According to Marx, all of the relations of production constitute the economic structure of society; this is the real foundation on which certain forms of social consciousness correspond and legal and political superstructures rise (Bottomore, Nisbet, 1990:12). Marx argues that infrastructure and superstructure should be distinguished in every society. According to him, the infrastructure is economical. The infrastructure consists of production forces and production relations. In the superstructure, legal and political institutions determine the general nature of life, social, legal and spiritual processes of life (Aron, 1986). The task of world views and moral understandings, which are the superstructure institutions, is to show the interests of the owners of the means of production in the infrastructure as if it were the truth (Ülgener, 1983:55).

Other thinkers about the interaction of economic structure and social-cultural structure; Schumpeter states that economic development is not possible to analyze in pure economic terms. According to Keynes, results cannot be obtained unless economic development analyzes lead up to the human elements behind abstract schemes and their reactions. For example, the investment decision is a product of a formation process shaped in the inner world of man. Hirschman argues that developments in the analysis of economic growth are from objective, tangible and countable elements to incomprehensible and

uncountable facts. According to Marshall, if one side of the economy is directed towards matter and wealth, the other face is directed towards human behavior (Ülgener, 1983:57). The difference of year-end profitability and productivity of two businesses in two different countries, whose sector, technology, inputs are the same in number and quality, is due to the cultural differences of the human element. The relationship between the economic structure and the social-cultural structure has been evaluated in many ways by many thinkers. In the light of all these evaluations, the relationship between the two is an undeniable reality. It is not possible to evaluate one element of the truth without affecting the other aspects of reality. In every society, economic development is in a structure knitted with elements outside the economy, namely the religious, aesthetic, cultural and social values of the society. When all kinds of economic activities such as capital accumulation, investment movements, production, consumption, and purchasing decisions are examined in depth, they lead to the inner world of the human phenomenon behind these activities and this inner world; It is shaped by the external environment of the human, namely the social and cultural environment.

2.2.9 Demographic structure

The phenomenon of aging observed in industrialized countries keeps demographic developments and the relationship of these developments with economic activity on the agenda. Due to concerns about the sustainability of pension systems, it is observed that the public finance channel has been highlighted in the studies on demography. On the other hand, while the discourse of long-term stagnation (Summers, 2013:11) has been accepted on a broader basis recently, the acceptance of demographic developments as one of the important causes of long-term stagnation (Teulings & Baldwin, 2014:12) has been another factor that brought demography to the agenda.

Although demography is mainly discussed over industrialized countries, important and even more evident demographic developments are experienced in developing and underdeveloped countries. These countries continue their demographic transition and experience a social transformation. In the first stages of the demographic transition, while the population growth rate increases, then the population age structure shifts between the groups. The change in the

weight of the growing population and the age groups with different needs within the total population is of great importance, besides its direct economic effects, it has consequences in many social issues such as internal migration and urbanization.

As the population age structure differs, macroeconomic variables are affected due to the change in the share of age groups with different economic behavior in the total population. The share of the elderly and children, who have been defined as "addicted" because they have no labor income, or who have met their consumption in the past by using the current savings of other age groups, and the increase in the share of those who have labor income, exceeding their consumption in the population, is different. It has macroeconomic results. In other words, population movements cause low frequency developments on basic macroeconomic variables such as total savings, capital accumulation, efficiency and factor prices. Along with the demographic transition, the increasing life span and declining birth rates highlight changes in the population age structure, thereby strengthening macroeconomic outcomes. Increasing lifetimes as well as the aggregation effect, under the assumption that there is no change at the age of retirement, definitely increases the time spent in retirement and affects the consumption / saving decisions of individuals at all ages.

Bloom and Williamson (1998:419) defined demographic transition as a change from high mortality and birth rates to low mortality and birth rates. Demographic transition started with the emergence of better nutrition conditions as a result of the spread of public health practices in Western Europe and the reflection of productivity increases on the agricultural sector. Lee (2003:168) gives the first years of the 19th century as the start date for significant decreases in death rates in Western Europe, and the last quarter of the same century as the start date for decreases in birth rates.

Bloom and Williamson (1998:422) presented a hypothetical chart that summarizes the concept of demographic transition. The first stage, birth and death rates fluctuate at a high level, while death rates start to decrease. Despite the decline in mortality rates, the birth rate maintains its high levels for a while and the population growth rate tends to increase. Later on, birth rates also start to decline² and parallel to the onset of late, the stationary structure prevails at a

later date compared to the mortality rate. The relationship between birth and death rates brings with it an increase in the population growth rate and thus the population level during the demographic transition. Population growth rate first rises, then decreases above the pre-transition level and eventually stabilizes near the pre-transition level.

2.3 Economic Growth Theories

The main problem that economic growth theories focus on has been the causes of current income differences between countries and the sources of economic growth in the long run. In the context of these theories, it has been stated that production factors such as labor, natural resources, physical capital and technology are the main factors that determine growth. In the growth literature, however, recent studies have demonstrated that these elements are not sufficient to explain growth alone and have gained different perspectives. New research in this area has progressed through the internalization of technological advances, the handling of the concept of capital from a broader perspective, and an institutional approach to growth. In new growth theories, while the factors such as technology level, physical and human capital levels, saving rate are expressed as the apparent determinants of growth, it has been revealed that social capital and institutional factors are the main determinants of growth.

In short, the phenomenon of social capital, which is defined as the economic examination of trust relations between individuals and institutions, is considered as a factor directly related to the successes of countries in economic, political and social areas (Woodhouse, 2006: 84). Studies examining the relationship between social capital and economic growth have increased significantly in recent years. The common point emphasized by these studies is that social capital affects economic growth in many ways. The effects of social capital on economic growth appear directly and indirectly. Direct effects are realized by reducing transaction costs and preventing externalities that increase these costs. Indirect effects, on the other hand, occur by affecting factors that contribute to economic growth such as trust, human capital, physical investment and convergence.

2.3.1 Traditional growth theories

In all societies or political structures that have existed since the early times of history, there is a desire to be superior, more developed and stronger than another. Among all this enthusiasm, one of the most pronounced concepts in history is economic growth. If the growth rate is high, the production of goods and services increases, enabling a higher standard of living. Less unemployment, more jobs, usually occur with high growth rates. Growth is a target and the hope of most societies (Fischer, 1998: 13).

Economic growth is the rate of increase of a country's national income compared to the previous year. In other words, it is the positive difference between the real gross domestic product (GDP) realized in the current year and the real GDP realized in the previous year. On the other hand, there is an ongoing debate throughout the history about the sources of economic growth and the conditions of change. Most of these discussions have followed a parallel course related to the socio-cultural and economic structure of their time.

In the economic debate, between 1450 and 1750, Mercantilism was influential and based its opinions on precious metals. Physiocracy, which developed in the 18th century, advocated that the economy, like everything else, was in parallel with the natural order, and based its argument on these foundations. Adam Smith, who lived in the 18th century, and with the views such as the invisible hand, free and uninterrupted market he proposed during this period, was considered the intellectual father of modern economics. In the late 18th century, Thomas Malthus examined the correlation between population and production and claimed that there was a decreasing trend in the amount of output per capita as a result of this correlation. In the early 19th century, David Ricardo sought answers to the questions of what laws determine the distribution of national income among the factors of production and what their factor shares are. In the same century, “Marxist Theory of Growth”, based on the idea that Marx was considered to be the father of thought and that all history consisted of class struggles, became a very influential trend in this period and later stages of history. John Maynard Keynes, who came to the forefront with the 1929 World Economic Crisis, was an important factor in overcoming the effects of the crisis with his demand-oriented policies and an interventionist state approach.

Innovation economics began to appreciate in the middle of the 20th century and Schumpeter was one of the pioneers in these views.

Mercentalism is the total of ideas that developed between 1450-1750, that is, between the Middle Ages and Physiocracy. It is the name of commercial capitalism economically (Kazgan, 1993: 35). Basically, it is the economic policy that aims to obtain precious metals, and obliges the rules and restrictions on trade and industry to obey, and makes it compulsory to bring a balance of payments in favor, and sees the interests of its country above all else in international competition (Özsağır, 2008: 1). In this view, which is based on the domination of precious metals, national wealth is measured by most of the precious metals, and another feature is that it is an interventionist doctrine.

In this view, which adopts statism, the state should determine and manage economic activities. These two principles bring along the principle of “giving importance to foreign trade”. Accordingly, foreign trade should be done to enter more precious metals into the country. The aim is an active (export > import) foreign trade balance. Therefore, according to this view, which measures the wealth and growth of countries with the excess of precious metals owned, the increase (growth) of the countries' wealth increases in the amount of valuable assets and money in the country (Özsağır, 2008: 2) and intensely on the domestic and foreign economic activities of the state. needs to intervene (Seyidoğlu, 2003: 21).

The Harrod-Domar model is based on two different studies by Roy F. Harrod (1939) and Evsey D. Domar (1946). Since the similarities of the two different studies are much more than their differences, the model is called the Harrod-Domar Model. The model is constructed within the framework of a two-factor market economy with a single property. In the economy, the only good that can be used for both consumption and investment is produced. Since there is no money in the economy, there are no monetary prices. In the model, the state does not take part in economic activities. All economic decisions are taken by special decision-making units. There is a closed economy. In other words, there is no commercial and financial openness in the economy (Turan, 2008: 27).

The Harrod-Domar model has been criticized for its inability to explain the economic growth performance of economies other than developed countries and

its assumptions. Especially in the 1950s, various studies were carried out to eliminate the shortcomings of the Harrod-Domar model. It is seen that the basic assumptions of these studies are determined within the framework of the classical economic view. In this context, full competition conditions prevail in the economy and full employment is in question. The shares of production factors are determined according to the marginal productivity of the production factors. There is substitution between labor and capital. There is a decreasing marginal efficiency in production factors and technology is exogenous. Economists such as Solow and Swan made important contributions to this model, which is named as Neoclassical Growth Theory or Solow Growth Theory in the literature (Incekara and Tatoğlu, 2008: 25). The Solow Model was later developed by various economists (Ehrlich, 1990: 1).

Solow's growth model reveals how savings, population growth and technological development will affect output growth over time. According to the model, both income and capital stock will grow by the sum of the population growth rate and the rate of technological change (increasing labor productivity). Without population growth and technological progress, sustainable economic growth will not be possible. Because the decreasing marginal returns of capital, which is the accumulable production factor of the total production function, will slow growth in the long run by reducing investment motives. In this case, the factors that will ensure economic growth in the long run will be the exogenous population growth rate and technological change. The Solow-Swan model can be formulated as follows: $Y = f(K, L; T)$

In this equation, K represents capital, L represents the labor force, and T represents the technological change that is not seen as a production factor but is added to the production function as an exogenous factor.

According to the Solow-Swan model, the growth process occurs as follows: the change in the amount of capital depends on the level of income, since income and capital are interconnected within the framework of a functional relationship (s: saving rate). Since the marginal productivity of capital at a certain level of Y falls, the effect of capital on production surplus will decrease relatively. As a result, capital accumulation will become an increasingly difficult process and eventually lead to zero growth in the long run. When the model is adapted to the

international framework, it is concluded that the per capita national income of the countries will converge (converge) in the long run.

Because according to the basic hypothesis of neo-classical economics, all actors display similar behaviors and make choices. Therefore, it is assumed that there is no difference in saving rates between countries. Due to the same tendency to save, poor countries are expected to catch up with rich countries in the long run. However, as emphasized before, historical data do not confirm this trend. While it is possible to talk about the convergence of per capita national income of developed countries over time, the difference in per capita income between developing countries and developed countries is gradually increasing. Similar analyzes can be used for the investment and consumption components of income.

Among the main features of Physiocracy, which advocate the necessity of human societies to be governed by the law, are: (Özsağır, 2008: 2).

- Efforts to understand the functioning of the economic order within the framework of a model established by the method of abstraction,
- distinguish society according to their functions,
- Search for the source of wealth, not exchange, during the production process,
- Making agricultural production central to thought systems.

According to this view defending natural order, social and economic rules are formed with a natural law force. The only productive field in terms of production is the agricultural sector. According to this view, only agriculture leads to more production than consumed. This excess is expressed as “net product” by physiocrats. Other activities (trade-industry), on the other hand, are considered as infertile activities because they do not generate net income. Therefore, according to physiocrats, agriculture forms the basis of accumulation of capital that realizes growth (Özgüven, 1988:3). In summary, according to Physiocracy, economic growth can be achieved with the increase in agricultural production, which is the only productive sector. It can be said that this idea,

which may be partially valid for the period they live in, is not valid in today's conditions predominantly with industrial production.

2.3.2 Endogenous growth theories

Internal growth models claim that technology in an economy is created by special research activities and human capital accumulation. By default, technology is produced as a result of human capital accumulation and research activities of firms. These models internalize the technology and at the same time eliminate theoretical problems such as imperfect competition by linking to the technology created as a result of the profit motivation of the companies. In these models, the output function is assumed to be constant by scale, as in Neo-classical growth models (NBM).

R&D-based models led by Romer (1987: 56-62) and Grossman and Helpman (1991: 43; 1994: 23-44) went one step further by including incomplete competition in the growth model. Schumpeter's conceptual framework is at the core of its R&D activities (Schumpeter, 1970:85). Schumpeter sees the phenomenon of technological research and development and innovation as the engine of economic change. Defining innovation as the creation of a new production function, Schumpeter stated that this could include a new product or production method, as well as a new form of organization and the opening of new markets. In this context, innovation, which is attributed to entrepreneurs and therefore to firms and formed within the innovative firm, is one of the most important elements of capitalist development. These models sit on three sectors; The final product sector, intermediate goods sector and R&D sector. The R&D sector generates new ideas and designs using human capital. After the creation of these new ideas, these ideas are sold to the intermediate goods sector. The intermediate goods sector patents these new ideas and becomes a monopoly and sole producer of new products designed by these ideas. In the next stage, the intermediate goods sector sells them to the final product sector. R&D sector is the key sector in this model in terms of sustainable growth.

Generally, empirical studies on these models involve testing the effects of R&D variables on Total Factor Efficiency (TFV). Jones (1995) used the simple time series for France, Germany, Japan, and the USA in his R&D-based growth

model study, using scientists and engineers instead of TFV and increasing the number of engineers and scientists despite a steady increase in their TFV. could not find any evidence of an increase. Jones interpreted these results as “there is already knowledge, but the problem is in reaching it” (Jones, 1995: 495-525).

Aghion and Howitt took the views put forward in Schumpeter's work published in 1942 as the starting point while establishing the "creative destruction" model. According to Schumpeter, “The engine and the main driving force of the capitalist system are new consumer goods, new production or transportation methods and new markets. This process constantly undermines the economic structure from the inside, constantly destroys the old and creates a new one. The process of creative destruction is the main truth of capitalism” (Schumpeter, 1970: 83). The most important factor in the creative demolition model is the technological innovations that provide a continuous improvement in the quality of the products and the patent competition that provides dynamism to these innovations (Cheng and Dinopoulos, 1992: 409-410).

Based on these observations, Aghion and Howitt (1998) stated that the increase in the number of scientists and engineers did not cause an increase in efficiency in a similar way. First of all, the technology becoming complicated over time makes R&D investments necessary to keep the innovation rate constant. Second, the emergence of an innovation directly affects only a small part of the economy, so the diffusion effect in the information stock is small. Aghion and Howitt stated that instead of using the number of engineers and scientists working in the R&D sector, the share allocated to R&D should be used in testing the impact of R&D-based models. The internal growth theories in economic literature provide a solid framework suitable not only theoretically but also for empirical studies. With internal growth theories, more data becomes meaningful and usable, and in this way, it is possible to answer more questions on the nature of economic growth and technological change.

2.4 Developments in Economic Growth

When the historical process in the economy is analyzed, it can be said that there are two stages of globalization in the world capitalism process. The first is experienced in 1870-1914, while the second is the process that has taken place

since the 1970s. The common point in both processes is the increase in trade between countries and consequently growth figures. However, XIX. In the 19th century, the first wave of globalization was created from a relatively equal world economy, while the second wave was founded on these inequalities. In this regard, there has been an important difference between the two waves of globalization. In addition, while there were more goods movements in the first wave of globalization, the second wave resulted in an increase in capital movements (Yeldan, 2001: 16).

In the 19th century, many new countries initially struggled with both political independence and economic development. These countries, as a political goal, are national unity and independence; as an economic goal, they have adopted modernizing the country's economies. Economic development focused on four issues in this period (World Bank, 1991: 33):

- Physical capital accumulation: Since the inadequacy of physical capital and infrastructure investments is seen as the biggest obstacle to development, the aim of economic policy was to realize capital accumulation by increasing savings and investments.
- Agriculture: It has been seen as the basic sector in which the necessary resources are provided for the investment in the industry. However, policies trying to protect the industry have caused the terms of trade to develop against agriculture. Industrialization has been seen as a way to reduce unemployment in the countryside. However, the negative effects of discrimination against agriculture have emerged over time.
- Trade: Initially, many countries preferred to grow with an import substitution strategy. In this period, it is thought that integration into the global world will cause instability. Therefore, protectionist policies were preferred. Considering that trade will have more negative effects on development, it is assumed that import substitution will enable national industries to grow and reduce foreign dependency.

- Market failure: It was argued that the market would not be trusted in the early stages of development, so the state should manage the development process. The role of the state in the rapid industrialization success of the Soviet Union in the 1950s affected political decision makers at that time. Also, the exit from the 1929 crisis was seen as the success of the state.

In the 1980s, the steps taken towards the liberalization of international trade in the world during the globalization process, the elimination of the barriers to capital movements have further integrated the economies of the country. It is generally accepted that a liberal foreign trade regime will accelerate economic growth. In the 1980s, economists began to strongly recommend market-based development strategies to poor countries, based on reforms that include removing trade barriers and opening international trade to foreign competition. The Latin American Economic Commission (ECLA) also faced protectionist policies and started outwardly open policies. In fact, the World Bank, the IMF and other multilateral organizations have routinely stipulated for financial aid and commercial liberalization (Edwards, 1993: 1359). These organizations have introduced a number of structural regulatory measures for developing countries, such as increasing privatization, promoting foreign capital, loosening pressures on the private sector, and devaluing national currency to increase the competitiveness of local products in the international market.

It was asserted that the crises in 1970s were caused by Keynesian economic policies, the high social spending, the gains of the working class during the Golden Age and the industrialization model based on import substitution were shown as the cause of the crises. While developing countries transitioned to liberal economy policies in the late 1970s, structural adjustment programs applied to developing countries also played an active role in establishing a free market economy by integrating with the global economy (Temiz, 2004: 77). In addition to liberalization movements worldwide, other noteworthy developments are; World production and trade, which reached the highest growth rate in the period of 1994-2004, slowed down again, unprecedented increases in oil prices, emergence of East and South Asia as a new growth pole, developments in terms of trade revealed a new pattern of income distribution,

"new geography of trade" It can be listed as the development of South-South trade and the continuation of global imbalances in current deficits (Aktan, 2006: 70).

2.4.1 Gross domestic product

As mentioned above, the relationship between GDP and exports in the literature has been demonstrated by regression and correlation analysis in the studies of authors such as Blumenthal (1972:617), Michaely (1977:49), Blassa (1978:181) as mentioned above. Later, the production function was based on models with the work of authors such as Feder (1982:59), Marin (1992:678) and Thornton (1996:413). However, as mentioned at the beginning, these studies focused on developing countries. In the 1990s, with the studies of Kunst and Marin (1989:609) and Marin (1992:679), the export relationship with GDP started to be developed in developed countries, and the expression of the relationship with empirical analyzes in these studies expanded towards causality and cointegration analyzes.

Today, the relationship between GDP and imports is handled in a large number of studies within the framework of cointegration analyzes that examine long-term co-movements among variables and causality tests used to determine the direction of the possible relationship. For this purpose, in this section, similar studies on the subject matter and the findings they have obtained will be briefly discussed. Studies to examine the relationship between GDP and exports are basically divided into two different types of data. In the first group, there are cointegration tests and causality analyzes using time series data. The second group includes panel cointegration tests and panel causality analysis using panel data, which provides the advantage of analyzing the relationship between GDP and exports for multiple countries together. Some of the studies in the first group that analyze with time series data are given below.

The study of Ramos (2001:613) examined the relations between exports, imports and economic growth for the Portuguese economy between 1865-1998 with the Granger causality analysis. While the analysis results do not find a one-way causality relationship between these variables, it has determined that there is a feedback effect from export to economic growth and from import to

economic growth. The test results show that there is cointegration between export growth and economic growth. In their study, Bilas, Bošnjak and Franc (2015:22) investigated the relationship between Croatia's GDP between 1996 and 2012 and exports of goods and services. The results of the research confirm the claim that there is a one-way causality relationship from exports to GDP. According to the results of cointegration analysis, it has shown that there is a long-term equilibrium relationship between the variables as well as short-term correlation. Exports and GDP are acting together in the long term in Croatia. For this reason, they state that Croatia should pay more attention to the export sectors.

Medina-Smith (2001) used the cointegration tests and the Vector Error correction model in the study of Costa Rica using the annual data between 1950-1997. The results show that the export-based growth hypothesis is valid in Costa Rica and exports have a positive effect on economic growth, but this effect is relatively small in the short and long term. Paul and Chowdhury (1995:177) analyzed the data between 1949 - 1991 for Australia and the relationship between exports and GDP with Granger causality analysis. As a result of the analysis, it was concluded that there is a causality from exports to GDP. They also reached the conclusion that the increase in exports in Australia provided economic growth.

Awokuse (2003:126) examined the relationship between exports and economic growth by stating that he did not find it complicated and persuasive. Therefore, Awokuse, who wanted to reconsider the export-based growth hypothesis for Canada, benefited from the Granger causality test, Vector Autoregressive and Vector Error Correction models. The results of the analysis show that there is a one-way causality relationship between real exports from real exports to real GDP in the long term. Thornton (1996:413) examined the relationship between cointegration and Granger causality analysis and export and economic growth variables for Mexico between 1895-1992. Analysis results show that these two variables are co-integrated, that is, they act together in the long run. In addition, according to the results of the Granger causality test, it states that there is a positive and meaningful causality relationship from exports to economic growth.

3. EFFECT OF ECONOMIC GROWTH ON INCOME DISTRIBUTION

3.1 Definition of income distribution

In addition to expressing the definition of economics, individuals' attempts to meet their infinite needs with limited resources (Robbins, 1932:11) constitute one of the main problems that have been going on for centuries. When this problem is called the distribution problem, in other words, it seeks to answer the question of how limited resources should be distributed by economic units. The distribution problem in question is behind the scenes of the income distribution problem of the economic units that shape their economic life in order to ensure the satisfaction of their endless needs with limited resources (Bilgiç, 2015: 3).

Conceptually, although income distribution and distribution mean sharing, their meaning changes economically. In a monetary economy where the tramp system¹ is not included, the distribution of income reflects the concept of income distribution. Distribution, on the other hand, expresses a concept that includes the economy of the tramp opposite the income distribution and includes the income distribution (Özcan, 2016:31). While the factor that creates the distribution relations is the whole of the social relations that determine the way the income obtained in a country is distributed among individuals and various groups, the income that falls on the share of individuals or groups also expresses the income distribution (Ulutürk and Ersezer, 2005: 88-89).

Since income distribution is a sociological phenomenon, it is also an important economic problem in addition to being frequently examined in the field of social sciences. The problem of income distribution occurring in societies constitutes one of the biggest problems of all economic systems and therefore has become an issue that attracts the attention of individuals both sociologically and economically from past to present.

Income distribution, in addition to the income that individuals have; It is also important because it reflects the living standards of individuals and society in

terms of being a concept related to other social and economic factors such as culture, quality of life, entertainment, health and education (Özcan, 2016: 30).

According to another definition, income distribution is distributed by the market functioning and / or public economy decision making bodies among the production factors that produce these resources again (Kirmanoğlu, 2013: 201). The income distribution, which is an important source of problems in the national economies, has a high impact on the consumption and savings trends in the economies, as well as the quantity and quality of the goods and services produced and consumed. Considering the way individuals evaluate their income as consumption or investment, it is seen that the income distribution is in direct relationship with these two options (Karluk, 2007: 69).

In the distribution of income, there are five basic principles: equality and justice, need, minimum level of living, high level of income level, and finally working principle. According to the principle of equality and justice, it is not fair for all segments of the society to earn an equal income, but absolute equality causes injustice and negatively affects economic growth. According to the need principle, it is foreseen that income should be distributed in accordance with the needs of individuals. The principle of minimum life level means to guarantee the life of individuals to a minimum. The principle of limiting the level of income at the highest-level states that the income differences between individuals should not exceed a certain limit, and finally, the working principle states that all individuals should earn as much income as they work.

Regardless of which economic system societies adopt, there are two characteristics an economy should have. One of these features is efficiency and growth, the other is justice. Sometimes it may be necessary to make some sacrifice from justice in order to provide more effectiveness, and it may be necessary to sacrifice some activity to provide more justice. In this case, it is possible to mention that these two principles contradict from time to time (Kirmanoğlu, 2013: 202).

Sharing the income created in a country's economy over a certain period of time between individuals or production factors expresses the income distribution and the income distribution differs from country to country. It is never possible to find an equitable and fair income distribution line in any country (Eğilmez &

Kumcu, 2004: 126-127). In addition, income distribution is not only an economic phenomenon but also a phenomenon affected by the socio-cultural structure of the society, the distribution of the population and the population, and the perspective of the society on the concepts of equality and justice (Çakır, 2002: 91).

3.2 The importance of income distribution

The status of income distribution in a country is an important indicator for the level of development of that country, the state of social justice in the country, education and health facilities. Income distribution is an important factor affecting savings and consumption volume. Saving income and directing these savings to investment plays an important role in the growth of a country. Therefore, income distribution and growth are interrelated.

In a country, if the total revenue is low or the increase is distributed among certain factor owners despite the increase in total revenue, other individuals will have to take very small shares from the distribution. It is necessary to increase the national income and distribute the increased income by considering the principles of social justice in order for individuals to get large shares from the national income. (Boratav, 1997: 9)

Social justice is an aim to be achieved for every country. States try to ensure the distribution of justice in terms of their means and thus prevent social conflicts. However, the development level or development policies of each country are different, and the tools to be used in improving the income distribution are different. Some countries under development may also be in a position to pursue policies that disrupt income distribution. In summary, income distribution has economic, social and political effects, and the way to achieve social peace is a fair income distribution.

3.3 Types of income distribution

The main source of income is wages. But often its size is not enough to meet even the most necessary conditions for the existence of people. Therefore, the state needs to regulate wages, and the population - to look for more profitable

sources of income. The incomes of the majority of the population are often very low compared to the incomes of a small part of the population. In this regard, there is social tension in society, which the state must also overcome. The higher the income, the higher the demand for goods and services produced by various industries, the higher the quality of the product, because there is a motive for achieving better final results, its competitiveness, increasing production efficiency, so the economic situation in the country is improving. Therefore, the regulation of income, wages is part of the policy of any state. Thus, the incomes of the population and the sources of their formation deserve close attention, and all the problems associated with them require prompt resolution. That is why this topic is relevant at any time, in any country, with any economic structure. (Özcan, 2016: 33).

Analysis of distribution types in terms of macroeconomic indicators is of special importance in determining the socioeconomic status of a country and in determining its economic problems (Özcan, 2016: 33). The types of income distribution that emerge by examining the income distribution from various angles are dependent on each other. Generally functional, personal, sectoral and regionally examined types of income distribution are within the same framework and are therefore in a relationship and interaction with each other. This relationship and interaction between them are determined by the general economic structures and development levels of the countries (Uysal, 2007: 254).

As can be seen in Figure 1, although the functional income distribution depends on the sectoral income distribution, the sectoral income distribution also constitutes the regional income distribution due to historical geographical differences in the economic activities, and the personal income distribution occurs depending on the other three distribution types. It means that a change in any of these distribution types affects other distribution types as well. Factors such as development levels, growth strategies and geographical characteristics of countries determine the intensity and magnitude of the interaction between distribution types (Uysal, 2007: 254-255).

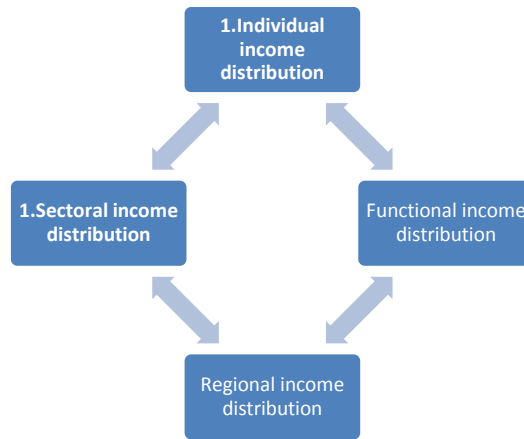


Figure 3.1: Relationships Between Income Distribution Types

Source: (Uysal, 2007:255).

In determining the policies for the regulation and improvement of the income distribution, the bilateral relationship between distribution types should be addressed and the multiple relationships between them should be examined, otherwise it is not expected to reach the goal of regulating and improving the income distribution (Uysal, 2007: 255).

3.3.1 Individual income distribution

In the personal income distribution, it is not important where income is obtained and what it contains, but how much it is. Here, the degree of inequality, that is, the factors that lead to uneven distribution due to the differences between the highest and lowest income segments are examined. Looking at this type of distribution, it is possible to say that the inequalities between different classes are a good and impartial indicator, since it is not entirely clear which households (such as laborers or capital owners) reflect the population (Aktan & Vural, 2002: 2). For this reason, it is used quite a lot in international comparisons to measure the performance of an economy. In addition to this feature, personal income distribution can also be used to investigate what causes inequality in income distribution (Çalık, 2008: 2).

The personal distribution of income can also be defined according to different personal characteristics. In other words, besides the size of income, it can be defined according to the type of income, socio-economic groups, professions, sectors, regions, educational status, age and gender (Doğan & Tek, 2007: 97).

It cannot be said that personal income is distributed equally for any country on earth. Because there are many factors that affect this inequality; The country's economic policy and market structure, laws, trade union rights, historical background, as well as individual's level of intelligence, capabilities, and courage in entrepreneurship cause differences in personal income (Canbey Özgüler, 2014: 59-60). The fact that there are no big differences between personal income distributions is actually desired. Because, to the extent that justice is provided in the distribution of personal income, peace is provided in the social sense in the country, with the disappearance of differences in welfare, there is an increase in welfare and the formation of social classes in society is prevented (Türk, 2005: 322). In addition, justice in the distribution of personal income does not allow the rentier class to grow, as it increases the equal opportunity among individuals and provides economic stability (Canbey Özgüler, 2014: 60).

3.3.2 Functional income distribution

When the functional income distribution is evaluated from another point of view, the wages and profits of individuals from various social classes differ today. For example, the income of the landowner and the worker who cultivates the land varies or that a company manager receives high wages despite working in the status of workers explains this situation, which constitutes the opinion that the functional income distribution does not contain very healthy data. Considering the individuals with income in the past and present, the fact that there is no clear distinction between social classes today and the reason why the functional income distribution has started to lose its functionality reveals the negative side of this distribution type. Today, due to the development of the service sector, the fact that women have a greater say in the economic field, there are gender-based income differences, the increase in population density and migration from rural to urban areas, such as regional distinctions, widespread use of capital markets throughout the world and the fact that labor factor owners make transactions in this market. It causes the interest in functional income distribution to be channeled into a more detailed area (Doğan & Tek, 2007: 95-96).

There is also information that can be obtained from this type of distribution and this constitutes the positive aspects of the functional income distribution. Functional income distribution allows to make inferences about a country's level of development. Accordingly, it is observed that the share of wage earners in national income has increased in developed countries and the share of agricultural sector in developing countries has increased (Güçlü & Bilen, 1995: 161). Another advantage is that it is possible to calculate national income through functional income distribution. In addition, the effects of this distribution on employment and national income can be investigated by examining the changes in the national income shares of the factors over the years. According to one view, if the share of wage income increases while the share of profit income in national income decreases, then investment is expected to decrease, employment decrease and accordingly growth rate is expected to be negatively affected (Dinler, 2009: 296).

3.3.3 Regional income distribution

Regional income distribution means that the shares of individuals living in a country from national income differ according to the regions they live in. This type of distribution allows to determine the differences between the regions of a country according to the level of development (Aktan & Vural, 2002:2).

Regional income distribution shows the regional distribution of income in a country. Because the distribution of national income can be at different rates within the borders of the country. Thus, with this distribution type, the proportion of individuals living in different parts of the same country from national income can be seen (Bronfenbrenner, 1971:26). Regional income distribution, also known as geographical income distribution, is effective in determining regions of a country as underdeveloped, developing and developed, since all regions of countries are not developed equally. While inequality in interregional income inequality in underdeveloped countries is high, inequality in regions is fairer in developed countries (Öztürk, 2009:20).

3.3.4 Sectoral income distribution

Sectoral income distribution shows the share of agriculture, industry, service and various other sectors from national product. Accordingly, the sectoral

income distribution shows that the sectors affect the distribution of the national product, in addition to the shares they receive from the national product, as well as the long-term changes and the public sector in favor of or against the sectors (Uysal, 2007:251). The sectoral income distribution shows how much the production sectors contribute to the income, as well as how different production sectors contribute to the national income. The share of agriculture, industry and service sector in national income can be determined with the help of sectoral income distribution. In addition, this type of distribution can be expressed as a concept that reflects the distribution of income obtained between public and private sector by taking ownership of the means of production (Öztürk, 2009:20).

Sectoral income distribution provides important information about countries' economic performance and development level. This distribution, which is not in a stationary form, is examined according to years and offers the opportunity to make comparisons for the concerned. It guides economic policies by providing important data to countries such as the position of countries in the stages of industrialization and whether or not to give more weight to the sectors in the globalization process (Kuştepe & Halaç, 2004:147). Thus, this distribution type is very useful in the economic development process in terms of monitoring the shares of countries and sectors within the national product. Under the assumption that the conditions are normal, the share of industry and service sectors in the national product is expected to increase as the country develops and the share of the agricultural sector in the national product is expected to decrease (Çalışkan, 2010:94).

3.4 Methods of Measuring Income Distribution

Income distribution measurement methods are expected to provide some principles. These principles are as follows (Aktan and Vural, 2002: 13);

- Pigou-Dalton transfer principle: Where there is an income transfer from poor to wealthy individuals, it should not lead to an increase in income inequality or a reduction in inequality. Also, transfers from rich individuals to poor individuals should not lead to a reduction in income distribution inequality.

- Principle of independence from income scale: Measurement methods should not be affected by the same proportional changes. For example, if there is a change in the income of all individuals at the same rate even in the case of a devaluation, inequality should not change.
- Population principle: An increase in population rates should not change measurement methods.
- Symmetry principle: Properties other than individuals' incomes should not affect income distribution inequality.
- Segregation principle: Any change in the subgroups of income distribution should affect the overall distribution in the same direction. When there is an increase or decrease in income distribution inequality in subgroups, an increase or decrease should occur in the same way throughout the distribution.

The distribution of income, which is an important study subject of economics and sociology, is a specific issue that is of interest to all segments of society today. The fact that the income distribution is at a reasonable level is of great importance in order to maintain social peace and stability. It is a big problem both for countries where income distribution is distorted and for countries that have advanced in development. Income distribution and exact measurement are also extremely difficult and important (Aydın, 2012: 148). There are various methods in the literature for measuring income distribution inequality (Acar, 2015: 46).

3.4.1 Percentage shares

Percentage shares analysis is the most commonly used in measuring personal income distribution and the most understandable among inequality measurement methods. In the percentage shares analysis, the percentages of the percentage shares they receive from income are calculated by ordering from the lowest to the largest according to the income they have. In this measurement method, households are divided into 100 groups of 1%, 20% of 5%, 10% of 10% and 5% of 20%, and the shares of each group from the total income are compared. In order to perform percentage share analysis, households are divided into so many

groups, which percentage shares are to be analyzed after the households are ranked from small to large according to their total available income. The usable income for each group is proportioned to the total available income, so that the percentages of households belonging to the income are obtained (Öztürk & Göktolga, 2010: 8).

In the percentage shares analysis, the share of each group from the income and the share of the total population should be equal so that the income can be divided equally. Especially when making international income distribution comparisons, households are divided into five equal 20% groups and comparative analysis of each group is made (Öztürk and Göktolga, 2010: 8).

3.4.2 Lorenz curve

The Lorenz curve, developed by American statistician Max Lorenz, is a graphical representation method that is frequently used in income distribution studies and is based on calculating some of the income distribution inequality measures. The curve is obtained by ordering the income of individuals or households from the smallest to the largest (Öztürk, 2012:433). In order to create the Lorenz curve, which is used quite widely in the measurement of income distribution, the population is shown on the horizontal axis and income on the vertical axis in the form of percentage shares. The population on the horizontal axis is divided into 5 parts of 20%, and the rates showing the percentage share of these 5 parts from income are determined cumulatively. The curve formed from the accumulated places is called the Lorenz curve (Kirmanoğlu, 2013:204).

Assuming that all individuals receive an equal share of income, the equilibrium, that is, the full equality line, occurs. A certain percentage of the population receives the same percentage of income on the co-distribution line, which reflects the absolute equality in income distribution in a country. The Lorenz curve, which creates a 45-degree line when income is shared equally among individuals; As the distance between the co-distribution line opens and the inequality in income distribution increases. That is, as the inequality increases, the Lorenz curve will shift to the right and the width between it and the co-distribution line will increase (Doğan & Tek, 2007:99).

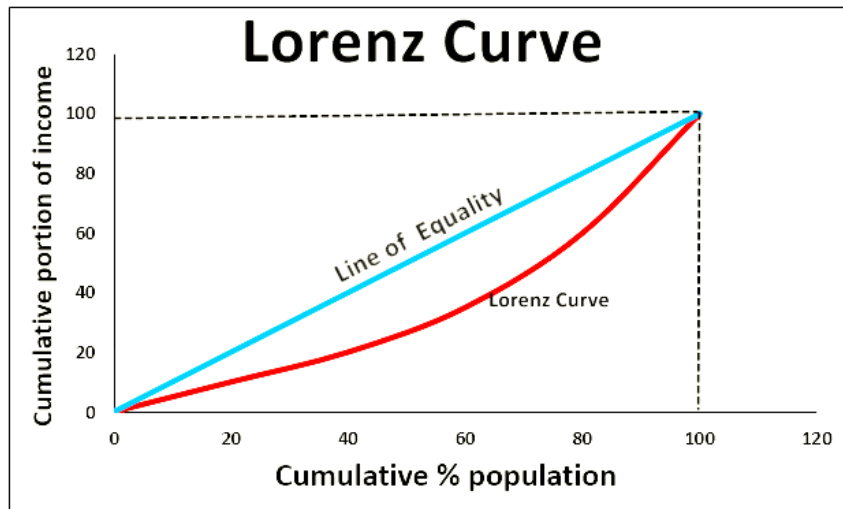


Figure 3.2: Lorenz curve

Source: <https://www.wallstreetmojo.com/lorenz-curve/>

The absolute equality line, also known as Figure 2, is equal in each point on the co-distribution line. As the distance between the Lorenz curve and the absolute equality line is opened, the deterioration in the income distribution gets worse (Eğilmez, 2012: 1). The Lorenz curve provides a comparison of inequality in income distribution occurring at different times for the same country or for different countries (Aktan and Vural, 2002:20).

3.4.3 GINI coefficient

The Gini coefficient was calculated in 1912 by the statistician named Corrado Gini using the Lorenz curve. Income distribution measurement has gained a new expression form with the Gini coefficient (Eğilmez, 2012: 1). The independence and transfer principle features that are desired to be found in methods that measure income inequality are in the Gini coefficient (TÜSİAD, 2000: 178).

The Gini coefficient can be found by dividing the area A covered by the Lorenz curve in Figure 2 into the area (A + B) below the absolute equation curve. Gini coefficient is zero if the calculated values are on the absolute equation curve. The coefficient always takes a value between zero and one, and when this coefficient takes a value close to zero, the income distribution inequality decreases; expresses an increase in inequality in income distribution when it gets close to one value (Eğilmez, 2012: 1).

When Gini coefficient takes zero, it means full equality in income distribution, and when it takes a value, it expresses full inequality. However, the Gini coefficient can never take zero or one value, because in any country in the world, there is no question that income is distributed fairly or unfairly (Öztürk, 2009: 56).

3.4.4 Atkinson Inequality Measure

In his study, Atkinson suggests a measure of income distribution inequality based on the welfare level of the society as a starting point for the distribution of income in the cases where the income distribution inequality criteria differ from each other (TÜSIAD, 2000: 181). The Atkinson index is an index derived from the Social welfare function. The social welfare function, which has some basic features, is considered to be a summable function derived from the sum of each person's welfare function. This is the most critical assumption of social welfare function because it is based on the assumption that personal benefit is comparable (Cowell, 2000: 46-47).

The degree of sensitivity of the society to the inequality, symbolized by the Atkinson index, ϵ gives different results according to time and country. It is stated that when the society becomes sensitive to inequality, in other words, when the degree of the public's desire to avoid inequality increases, ϵ grows (TÜSIAD, 2000: 181). The value that society gives to inequality is between 0 and infinite. The fact that this value is 0 means that the society is indifferent about the income distribution, that is, it does not care about the income distribution, while the value is infinite, it means that the society is only interested in the individuals with the lowest income. The Atkinson index also reflects how much of the income at that time is sufficient when it is aimed to reach the social welfare level in a certain period if the income is evenly distributed. It is also possible to express the index as a measure of potential earnings caused by the redistribution of income (DPT, 2001: 8).

3.4.5 Kuznets coefficient

A study by Simon Kuznets in 1955 suggests a relationship between income distribution and growth. According to this relationship, as income level increases, inequality in income distribution first increases and then decreases.

The relationship between income distribution and growth is called the inverse U hypothesis, and the curve that shows the relationship between these parameters is known as the Kuznets curve (Doğan & Tek, 2007: 99). The inverse U hypothesis is explained by the labor force shifting from agriculture to sectors other than agriculture. Productivity is higher in sectors other than agriculture compared to agriculture. Production will increase when migration occurs for other sectors, but this increase in production will cause the income distribution to deteriorate. Then, the income will increase and correct the distribution of the deteriorated income (Canbey Özgüler, 2014: 91).



Figure 3.3: Kuznets curve

Source: <https://www.investopedia.com/terms/s/simon-kuznets.asp>

Kuznets curve, which is one of the most important facts of the economic development process, appears as inverted-U when there is inequality on the vertical axis and income parameters on the horizontal axis. According to Kuznets, as the level of development of countries increases, inequality increases at the beginning, then peaks and finally decreases (Acemoğlu & Robinson, 2002:183).

$$K = Y_i [(X_i / Y_i) - 1]$$

X_i : i. sector share

Y_i : i. sector's share in employment

Kuznets coefficient is a Lorenz curve measure determined by sectors, just like the Gini coefficient. This coefficient takes a value between 0-1 for an economy with two sectors. Kuznets coefficient is 0 when the sectoral average is equal to the country average. If a single sector in the country ensures the production of

total output and the sector's share in employment is very small, then the Kuznets coefficient becomes 1 (Canbey Özgüler, 2014: 92).

3.5 Theoretical approaches to explain income distribution

Income distribution has been one of the important problems of countries since the past. This is why it has become a subject that has been handled many times and examined within the framework of various economic theories. In this section, we will examine the views of economic theories about income distribution.

The Isocrates show this in general terms by trying to explain how the income generated from agriculture is shared on the distribution. This approach is an important approach in terms of determining the relationship between the production in the agricultural sector and the sharing of income from production. From another point of view, although Quesnay has made a static analysis, it reveals the relationship between both the creation of income and the use of income for the first time (Uysal, 1997: 13).

Physiocrats are thought to be divided into three classes of society and these classes; they are barren, including landowners, tenants performing agricultural activities, artisans and financial capital groups. Tenants who carry out agricultural activities from these classes, that cultivate the soil, are real productive class according to Physiocrats. Therefore, only the activity that provides production is agricultural activity. Because the tenants who carry out agricultural activities provide their livelihood with the residual they create, they also meet the needs of the other two classes (Ulutürk and Ersezer, 2005: 91). The table created by physiocrats shows how the agricultural product produced is distributed among classes (Canbey Özgüler, 2014: 232).

Physiocrats, who do not characterize income distribution as a problem requiring a solution, did not mention the intervention of the state in income distribution, consistent with the idea of natural order (Ulutürk and Ersezer, 2005: 91). Physiocrats, while rejecting the intervention of the state in the economy, argue that wealth is not from exchange, but from production (Ulutürk and Ersezer, 2005: 91).

The classics examined the income distribution as a three-factor model, wage, rent and interest. Later on, the functional division was completed by Schumpeter with the addition of entrepreneurial profit to this three-factor model (Canbey Özgüler, 2014: 234). The idea that the revenues obtained were deserved income was defended by the Classics that emerged at the time of industrial capitalism as well as the capitalists. Income distribution theories are largely based on Ricardo's declining law of return in the classical school. In addition, wage and population theories are effective in shaping other studies on the distribution of income by the Classics. In the income distribution analysis of the classics; Wage is defined by the living conditions of a working individual; Rent is defined as a surplus on marginal product and on the other hand, profit shows a tendency to decrease (Ersezer, 2004: 17).

Neo-Classical economics has made a significant change in classical value theory by making the transition from subsistence or natural wage understanding to marginal yield-wage understanding, thereby creating an alternative to labor theory of value. In this approach, the exchange value of the goods determines the use value, that is, the benefit of that good (Canbey Özgüler, 2014: 242). Distribution in the theory of income distribution in neo-classical economics is considered as a special problem of price theory in the form of factor pricing. Due to the study of the theory of value-added in neo-classical economics, the problem of distribution with production is also addressed. The problem of distribution is examined in two different ways as the distribution between individuals and between factors. The distribution of income among individuals depends on the distribution of production factors and factor prices among individuals. The objective conditions of production and marginal productivity theory in neo-classical economics are considered as the main factors that determine the distribution (Akyüz, 2009: 82).

Although Keynes described full employment and income distribution as two important problems of the capitalist system, he did not establish an income distribution model. Keynes defines profit as the difference between the sales value of production and costs, as well as expresses production costs as the sum of wages, rent, interest and the normal earnings of entrepreneurs. Total production cost is equal to the monetary income of the society. Naturally, the

income generated by the society depends on the decisions to be taken by different groups in the economic system. Unless monetary authorities make decisions to eliminate changes that may occur, increases or decreases in factor prices will cause price fluctuations at the same rate, resulting in unchanged profits. Although Keynes limited his views on distribution to this extent, he did not establish a theory of macro income distribution (Alkin, 1969-1970: 131-132).

3.6 Income Distribution Policies

The social policy of the state is a set of measures to improve the material well-being, spiritual and physical development of the population, and provide support to people with disabilities and low-income citizens. An important place in the social policy of the state is occupied by the income policy of the population. Its main content is the creation of favorable conditions that allow the economically active part of the population to earn funds, the value of which consists of the amount of wages received, income from property ownership, payments from public consumption funds and some others. As a rule, low-income groups of the population enjoy priority in the social activities of the state. The basis for regulating the income of the population is various manifestations of the insolvency of the market economy, one of the manifestations of which is the uneven distribution of the income of the population. Regulation is a complex purposeful impact of subjects on various objects, which is carried out in order to give a certain focus and obtain the desired results. Accordingly, the regulation of the population's income is a whole series of purposeful actions of the subjects at all stages of the formation of the population's income.

The income distribution is affected by the primary and secondary income distribution and the creation of equal opportunities in education. Distribution policy tools that affect income distribution generally emerge in the form of fiscal, money, price, income, wealth and education policies, and although they are considered as separate policies, it is impossible to distinguish them from each other in practice. Fiscal policy determines the transition from gross income to net income and affects transfer revenues and direct tax revenues. It

redistributes income by collecting different levels of tax from different income groups and transferring transfer levels at different levels. Thus, the state affects primary income distribution through taxes and public expenditures (Aksu, 1993: 52).

If the fiscal policy is used as an income distribution policy, firstly a difference occurs in taxes. This has revealed an increasing rate of taxation system. A higher rate of tax is levied on higher income groups and income distribution varies in favor of low-income groups. One reason for increasing taxation of income is the decreasing marginal benefit of income. The other reason is that high income groups benefit from public activities more than low income groups and are therefore subject to increasing taxation (Aksu, 1993: 53).

Wage policies are carried out jointly with the state and collective bargaining parties. While the state plays a role in determining the minimum wages, the parties to collective agreements also play a role in determining the minimum and actual wages. Wage policies are determined differently by trade unions, employers' unions and the state. Employee unions aim to improve the wage structure by prioritizing wage increases. Employer unions, on the other hand, are against the demands of labor unions and do not want to decrease their profits. Employer unions argue that excessive wage increases lead to price increases, unemployment and a slowdown in economic growth. Governments, on the other hand, attach importance to the five objectives of economic policy, which are economic growth, price stability, full employment, balance of payments balance and fair income distribution. There are two views regarding the extent to which wages will increase in growing economies. The first is the productivity-based wage policy, and the second is the active wage policy. The first is adopted by employers and governments, while the second is adopted by trade unions (Aksu, 1993: 47).

The state also makes an arrangement in favor of those engaged in agriculture with the price policy measures it applies (Aksu, 1993: 49). The floor and ceiling price practices of the state are among these measures. In the base price application, the state determines a price above the market price of a product and purchases the excess supply. This practice imposes loads on the government in the form of purchasing, storage and marketing costs. Sectoral income

distribution changes in favor of agriculture with this application. At the same time, as a result of the price increases in these agricultural products, the functional income distribution will have changed against wage earners. The government applies the ceiling price application especially in the periods of hyperinflation. This application is in the form of freezing prices and annotation. In ceiling price application, the price of the product is determined below the market price. In this case, excess demand and shortage of goods cause the black market to arise. For this reason, the state should take measures to prevent black market. With the ceiling price application, the state corrects the personal income distribution in favor of fixed income people (Berberoğlu, 2001: 151).

Wage and price policies, which are income distribution policies, form the basis of the income policy. While the income policy was limited only to the wage policy, it covered all income groups and the policies of these income groups later on. The purpose of the income policy is to ensure price stability. Starting from the fight against inflation, it was implemented especially in the form of limiting wages. Income policy aimed at price stability has neglected the income distribution and has therefore failed. However, in later researches, it was tried to give importance to income distribution policies, but the incomes policy came to a dead end as a result of statistical inadequacies in practice. Trade unions have tried to fill this gap in income policy with wealth policy and the method of participating in decisions in businesses. Due to the drawbacks of the practices of the income policy to combat inflation, the obligation to take into account the fair income distribution has emerged (DPT, 1994).

One of the important tools of the income distribution policy is wealth policy. The acquisition and preservation of wealth in democratic countries is guaranteed by the constitution. It is necessary to divide the wealth into two as previously acquired wealth and newly formed wealth. In the practice of spreading the distribution of income and wealth, there is no interference with previously earned wealth. Changing the wealth distribution is valid for newly created wealth. The main purpose of the wealth policy is to increase the saving powers of the wider segments and to spread the wealth to the masses, especially the wage sector. The most effective tool for spreading wealth is using income. This is about savings. The necessary condition for the formation of wealth is to

direct accumulated savings to investment. The main problem here is that the incomes of the people in the low-income group are not able to save with their own means as they can only meet their basic needs (Aksu, 1993: 50).

3.7 Factors Affecting Income Distribution

There are many social and economic factors that affect income distribution in a particular country. The income distribution is influenced by almost all the events of the economy and directs the consumption, spending, even the tastes and preferences of the society. Therefore, it is imperative that each factor affecting the income distribution is well analyzed. A good analysis of these factors will help improve the welfare levels of households, which will play an important role in reducing inequality. Market structure, demographic factors, education level, wealth distribution, inflation and regional development differences can be listed as factors affecting income distribution.

In an economy, in conditions of perfect competition in the goods and factor markets, more imperfect competition conditions apply. Firms operating in markets with flawless competition conditions can gain excessive profit by artificially reducing their production and raising their prices. This situation changes the income distribution in favor of the owners of monopolistic and oligopolistic firms (Metin, 2012: 94).

Population growth has become an important factor affecting income distribution in countries with migration. Along with the population growth rate, the inability to realize investments caused unemployment. For this reason, it is difficult for them to benefit from education and health services among the groups that cannot generate income in the society. The same situation is encountered in places receiving immigration. Households have a hard time even having the income to meet their minimum lives.

Another important factor affecting the income distribution is whether the individual has globally valid knowledge and skills. Although education is an effective policy tool in reducing distribution imbalance, there is no policy that ensures equality of opportunity in education. Because high income is required for a good education. Considering the low level of education in rural areas, low

educated individuals migrate from rural areas to the city and are employed as cheap labor due to sectoral income inequality. And sectoral income inequality negatively affects the functional distribution (DPT, 2001: 63-64).

The amount of special returns expected from the education phase completed in underdeveloped countries increases much more than the cost of the education level to the student. In these countries, as many training stages must be undertaken to maximize the difference between expected benefit and cost (DPT, 2001: 64).

Another factor that makes a difference in income distribution is the distribution of wealth. The differences in the majority of the land in the hands of a certain part of the developing countries have made the differences clear. Indirect taxes on land, buildings and wealth are important in eliminating the imbalances in income distribution related to wealth. As a result of the increase in the value of wealth, the distribution of income distribution in favor of the owner of the wealth is eliminated to some extent with direct taxes on wealth. Otherwise, due to the imbalance in the distribution of wealth, the injustice in income distribution increases even more (DPT, 2001: 63).

Inflation is the short rise in the general level of prices in the economy. If there is high inflation in an economy, there are inequalities in income distribution. While wealthy people with high income are not affected by inflation, people with fixed income will have difficulties in using the goods and services they use the same income.

Economic development in a country does not start simultaneously in every region within the country or in all settlements within the region. There is an imbalance in the nature of economic developments. First, centers with favorable conditions develop. Therefore, there are more or less intense socio-economic development differences between regions, which have occurred with economic development. Employment opportunities are high, and wages are high in developed regions. In the backward regions, unemployment rate is high, and wages are low. Existing businesses are small businesses that appeal to the region and work with labor-intensive technology. Interregional development difference constitutes one of the most important causes of personal income differences (Dinler, 2003: 280-281).

3.8 Income Distribution Inequality Criteria

Inequality refers to the situation of inequality in rights and opportunities in general and status and is a concept at the center of social justice theories. However, as the concept of inequality tends to mean different things to people, it can lead to errors or confusion in public debate. Although there are some differences, inequality is conceptually common globally. Many researchers often use the concepts of “income inequality”, “monetary inequality” or more generally “inequality in living conditions” to distinguish economic inequality from others.

The debate over economic inequality is mostly based on two views. The first concerns the inequality created by the results of the material dimension, which is one of the sources of happiness, and this may be the result of talent and effort, as well as conditions (ethnicity, family history, gender, etc.) out of anyone's control. This view addresses the concept of inequality with a perspective directed towards success. The second view concerns the inequality of opportunity, that is, the circumstances beyond the control of any person are focused on the conditions and outcomes of their own subjective and potential characteristics, other than their talents and efforts. According to this view, success is not a directed perspective; success is potential; it is uncertain (Balestra et al., 2018: 24). Although these views have made explanations about the origin of inequality, inequality in the world has now gone beyond a conceptual or theoretical debate and has become a global and challenging problem.

The global inequality measured between countries and individuals, regardless of where they live (i.e. ordering all individuals in the world from the poorest to the richest) is significantly complex. This is mostly due to the apparent difference in the average income of the richest compared to the poor. But in the past few decades, market integrations have been driven by rapid economic growth in China, India and other major and poor countries of South Asia; it is observed that inequality among individuals has decreased due to the fact that the general world income distribution shifts from the poorest to the lesser. In other words, the beneficial effects of growth in some large and poor countries on poverty reduction mean a reduction in inequality among individuals (Birdsall, 2006: 19).

Despite the periodic or inter-country variation and decrease of inequality, global income inequality continues and deepens; therefore, this table differs between countries. Among countries, and particularly among the richest and poorest countries, the increase in inequality continues due to the steadily increasing difference in growth rates of successful developed economies compared to other economies. The rich countries of Europe, North America and Australia, which were already rich 100 years ago through the industrial revolution, continue to grow on a per capita basis. Income inequality is also affected by the distribution of this growth and enrichment among countries and individuals.

4. THE EFFECT OF INCOME DISTRIBUTION ON ECONOMIC GROWTH IN AZERBAIJAN

4.1 Macroeconomic indicators

Azerbaijan is recognized by the world as a sovereign republic, has participated in many international organizations and cooperates with many independent states of the world in political, economic, cultural and other fields. To maintain state independence, Azerbaijan needs to ensure the country's economic independence (arxiv.mtk.az/content/index). To achieve this, it must create a free and free economy.

According to the Asian Development Bank (ADB) 'Asian Development Outlook 2019' report, economic growth has increased by 2.5% in 2019, as a result of increased public investment and consumption in the Republic of Azerbaijan. Azerbaijan and Asiya Development Bank, 2019). This is an indicator of the growth and development of the Azerbaijani economy every year. In the table, the main macroeconomic indicators of the country, which appeared between 2014-2018, are shared. In this direction, the country's economic growth process can be analyzed.

Table 4.1: Basic macroeconomic indicators

	2014	2015	2016	2017	2018
Gross domestic product, million manats	59014,1	54380,0	60425,2	70337,8	79797,3
Population income mln manat	39472,2	41744,8	45395,1	49187,9	53688,6
Average monthly nominal salary, manat	444,5	466,9	499,8	528,5	544,6
State budget revenues:					
mln manat	18400,6	17498,0	17505,7	16516,7	22508,9
In gross domestic product, in percent	31,2	32,2	29,0	23,5	28,2
State budget expenses:					
mln manat	18709,0	17784,5	17751,3	17594,5	22731,6
In gross domestic product, in percent	31,7	32,7	29,4	25,0	28,5
State budget deficit (-), surplus:					
Mln manat	-308,4	-286,5	-245,6	-1077,8	-222,7
In gross domestic product, in percent	0,5	0,5	0,4	1,5	0,3
Deposits of the population in banks (at the end of the year). Mln manat	7188,4	9473,9	7448,7	7561,2	8375,4
Population (by the end of the year), million people	9593,0	9705,6	9810,0	9898,1	9981,5
Fixed assets (at the end of the year). Mln manat	110677,9	124008,4	169120,3	182788,5	193491,0
Credit investments (until the end of the year), mln. Manat	18542,6	21730,4	16444,6	11757,8	13020,3
Investments in economy, mln manat	21890,6	20057,4	22706,4	24462,5	25877,0
Current account balance, mln. US Dollars	10430,5	-222,5	-1363,4	1684,6	6051,1

Source: Stat.gov.az

In the January-June 2018 period, residents of the Republic of Azerbaijan produced 37009.1 million manats or 1.3% more GDP than the same period of the previous year. This is equivalent to 53.3% of 2019 GDP. Nominal GDP increased by 5187.3 million manats. In this period, 7.6% in agriculture, 1.2% in industry, 2.4% in trade, 7.1% in vehicle repair, transportation and storage, 7.4% in tourism and catering. there was a 4.9% increase in information and communication and a 10.5% decrease in construction. The added value produced in the non-oil sector of the economy increased by 2.0% compared to the same period of the previous year and by 0.1% in the oil sector. The share of the non-oil sector is 55.8%.

4.2 Gross Domestic Product

International rating agency Standard & Poor's (S&P) is estimated at 3.5 percent annual GDP growth in Azerbaijan in 2019-2020. According to S&P experts, the Azerbaijani economy recovered in 2018. According to S&P experts, the Azerbaijani economy will recover in 2018. GDP grew 2 percent (\$ 44 billion in nominal value) next year, 3.5 percent (\$ 47 billion) in 2019, and will grow by 3.5 percent (\$ 48 billion) in 2020: "Estimates from Shah Deniz-2 gas field Investing in the non-oil sector will also increase the confidence in the economy and the slowdown in inflation. " According to S&P, the investment volume in the Azerbaijani economy was 5.5% in 2017, 3.5% in 2018, and in 2019. Increased by 2.5% and will increase by 2.5% in 2020.

The average annual inflation rate of 12.4% in Azerbaijan in 2016 fell to 9% in 2017, and 2018-2020 inflation continues to slow down. Annual inflation appears to be 7% in 2018 and 5% in 2019-2020. According to the report, the positive balance of Azerbaijan's foreign trade turnover is kept as 12.3% of GDP in 2017-2020, 12.7% in 2018 and 14.3 in 2019. This ratio will be equal to 14.8% in 2020. S&P states that the state budget deficit was 3.2 percent of GDP in 2017. However, in 2018, the state budget surplus will be 1% of GDP. In 2019-2020, the surplus in the implementation of the state budget will account for 2.5% of GDP.

Table 4.2: Gross domestic product - manat, dollar and euro

	Total			Per capital			1\$= manat	1euro= manat
	Million manat	Million dollars	Million euro	Manat	Dollar	Euro		
1990	0,3	2443,3	-	0,1	346,3	-	0,0001	-
2000	4718,1	5272,8	5687,2	593,2	662,9	715,1	0,8948	0,8296
2001	5315,6	5707,7	6373,6	661,7	710,5	793,5	0,9313	0,8340
2002	6062,5	6235,9	6603,3	747,5	768,9	814,2	0,9722	0,9181
2003	7146,5	7276,0	6431,9	872,7	888,5	785,4	0,9822	1,1111
2004	8530,2	8680,4	6980,0	1030,4	1048,5	843,2	0,9827	1,2221
2005	12522,5	13238,7	10603,3	1494,3	1579,8	1265,3	0,9459	1,1810
2006	18746,2	20983,0	16713,8	2208,2	2471,6	1968,8	0,8934	1,1216
2007	28360,5	33050,3	24126,3	3296,6	3841,7	2804,4	0,8581	1,1755
2008	40137,2	48852,5	33174,0	4603,7	5603,3	3805,1	0,8216	1,2099
2009	35601,5	44297,0	31738,9	4033,2	5018,2	3595,6	0,8037	1,1217
2010	42465,0	52909,3	39952,0	4753,0	5922,0	4471,7	0,8026	1,0629
2011	52082,0	65951,6	47377,4	5752,9	7285,0	5233,3	0,7897	1,0993
2012	54743,7	69683,9	54180,2	5966,1	7594,3	5904,7	0,7856	1,0104
2013	58182,0	74164,4	55826,1	6258,3	7977,4	6004,9	0,7845	1,0422
2014	59014,1	75234,7	56581,1	6268,0	7990,8	6009,6	0,7844	1,0430
2015	54380,0	52996,8	47785,6	5706,6	5561,5	5014,6	1,0261	1,1380
2016	60425,2	37862,8	34217,8	6269,6	3928,6	3550,4	1,5959	1,7659
2017	70337,8	40867,9	36213,7	7226,0	4198,5	3720,3	1,7211	1,9423
2018	79797,3	46939,6	39712,0	8126,2	4780,1	4044,1	1,7000	2,0094

Source: State Statistics Committee of the Republic of Azerbaijan.
<https://www.stat.gov.az/>

According to the table, the gross domestic product produced by the country's residents increased by 1.4% in 2018 compared to the previous year and reached 79797.3 million manats. GDP per capita was 8126.2 manats or \$ 4780.1. The value added in the non-oil sector of the economy increased by 1.8 percent and the oil sector by 0.6 percent ([ww.stat.gov.az/n](http://www.stat.gov.az/n))

In 2017, the country's foreign exchange reserves increased by \$ 4.4 billion, exceeding \$ 42 billion. Achieving dynamic economic growth in the country, that is, the type of budget, also requires the implementation of tax policy, achieving scientifically sound budget balances and consequently restructuring the budget system. The main purpose of the restructuring of the budget system is to prevent the possibility of an effective impact on the implementation of market reforms at the state level and to prevent inflation. It is no secret that the economic

development of any country is one of the key factors in economic policy, which determines the sustainability of growth rates and the high efficiency of reforms.

Reforms implemented in the country in recent years have allowed for a radical change in the budget sector of the economy, the creation of optimal financial resources and spending at all levels of the budget system. Thus, the development of financial independence of the administrative-regional institutions, while maintaining adequate budget centralization, on the other hand, performed new tasks in the field of budget regulation of regional development.

4.3 Empirical Application

4.3.1 Data Set

In this section, we investigated selected variables to investigate their moves in 2000-2018. The variables are GDP growth, GDP per capital constant, GDP constant, and Inflation. GDP is the abbreviation for gross domestic product. Figure 4.2: GDP growth, GDP per capitaconstant, GDP constant, Inflation. Per capita GDP (nominal) does not reflect differences in living costs and inflation rates of countries; Therefore, the use of per capita GDP base in purchasing power parity is arguably more useful when comparing living standards between nations, while nominal GDP is more useful for comparing national economies in the international market. Real gross domestic product (GDP) is an inflation-adjusted measure that reflects the value of all goods and services produced by an economy in a given year and is often referred to as "constant-price," "inflation-corrected", or "constant dollar" GDP. Real GDP makes comparing GDP from year to year and from different years more meaningful because it shows comparisons for both the quantity and value of goods and services. Inflation is named as inflation, and the source of the variable is World Bank Data, and according to the World Bank data, inflation is defined as the annual percentage that measures the change in the cost of production and that is reflected on the average consumer when he gets many goods and services that affect the consumer, positively or negatively, and that can be repaired or changed at certain times, for example annually.

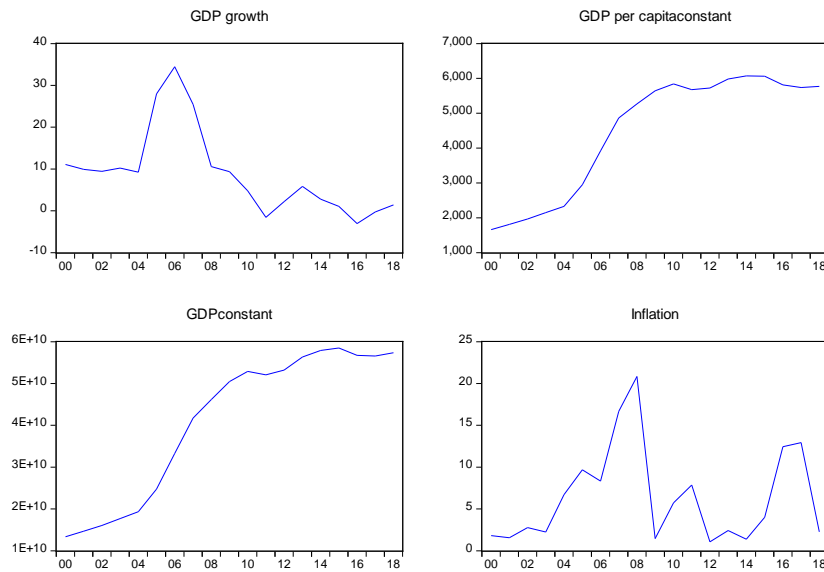


Figure 4.1: GDP Growth, GDP Per Capitaconstant, GDP Constant, Inflation

GDP action is shown in the chart below. Recession appears between 2000-2005 in the graph. There is a huge leap forward between 2005-2007, because of the development of non-oil sectors. The reasons for the increase and decrease after 2007 are the change in oil prices in the world market.

Above is the trend of per capita GDP constant. The development of tourism, increase in tax revenues, increase in oil price, and increase in agricultural income caused an increase in per capita GDP from 2000 to recent years.

In the above chart we see that I tend to GDP constant. We see a sharp increase from 2000 to 2010. There is an increase and stagnation from 2010 to 2018. In this period, revenues increased in the oil sector, non-oil sector, transportation and storage, information and communication, tourist accommodation and public sector of the economy. In the catering sector, agriculture, forestry and fishing, trade, vehicle repair, social and other services increased. At the same time, production in the non-oil industry has increased compared to the previous years.

Inflation: The price indices of consumption goods and paid services provided to the population are shown in the chart below. These include food products, non-food products, and paid services. Between 2000 and 2004, there was a stagnation in general products and services. The rate increased partially between 2004-2005. There was a jump in rates due to the global crisis in 2007-2008, followed by a sharp decline in rates after 2008. The decrease in the value of

manat after 2015 has had an effect on inflation and the reason for the increase in recent years is the change in oil prices.

In this section, we investigated selected variables to investigate their moves in 2000-2018. The variables are Corporate Tax, Free Tax, Individual's income tax, Land Tax, Property Tax, Taxes on International Economic Activities, and Value-added tax. It is the type of tax levied on the earnings of an institution. Corporate tax is calculated over the net corporate income earned by the taxpayers within the relevant accounting period. Tax exemption, in short, is the event of exemption of a taxpayer or taxpayer group. This exemption can be partial or complete. Income tax; It is a type of tax levied on the income of real persons, ie persons who are not institutionalized, who can obtain rights and exercise authority. Income is the net amount of earnings and revenues earned by a natural person in a calendar year. Land tax is an annual tax levied at the end of the calendar year on all property you own that is above the land tax threshold. Your principal place of residence is exempt, and other land tax exemptions and concessions apply. Value Added Tax is the tax that is collected from the delivery of goods and services and paid by the buyer to deliver the goods or services.

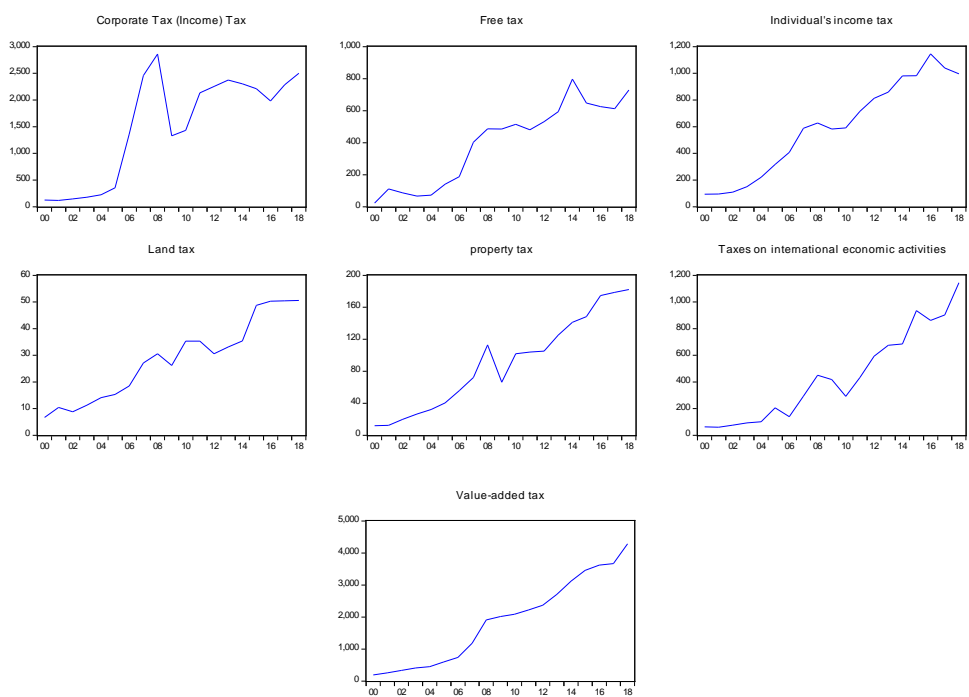


Figure 4.2: Corporate Tax (Income) Tax, Free tax, Individual's income tax, Land tax, Property tax, Taxes on international economic activities, Value-added tax.

In the chart, stagnation in corporate tax revenues is observed between 2000-2005. Incomes started to increase starting from 2006, reaching a peak in 2008 (2862.3 mln manat). This is because oil is \$ 140 a barrel. In the following years, economic recovery, opening new businesses and income from oil increased the income tax of individuals.

The subject of excise tax is in the territory of the Azerbaijan Republic. Alcohol, beer and all kinds of alcoholic beverages, produced or imported, constitute tobacco products and petroleum products. We can see free tax trend on the chart. It started to increase in 2001 and the share of the free tax in the budget was 13.4% or 104.6 million Manat. In the same year, the share of free tax in budget revenues ranked third, after VAT and corporate tax. The weight of the free tax in the budget is shown as an increase in the coming years.

In the chart below we see the individual income tax trend. Resident and non-resident individuals are payers of income tax. In the graph, we see that the individual income tax has increased from 2000 to the present. In addition to the oil sector, revenues from the service sector and construction sector, which have a large share in the country, have also increased rapidly. As a result, individuals' tax revenue started to increase rapidly.

As of 02.02.1993, "Land Tax" has been applied in the Republic of Azerbaijan. Land property owned or used by real and legal persons within the borders of the Azerbaijan Republic constitutes the subject of land tax. Although revenues decreased slightly in 2000, they started to increase again in 2001. In 2008, 31 million Manat income was transferred to the state budget from the land tax, although it was the highest amount so far, its place in budget revenues was 0.3% in total. In some years the share of land tax is partially decreasing. One of the reasons why both the property tax and the land tax are low in the budget is that the income of the people is not at the desired level and the tax rates are low.

One of the important directions of the development of local enterprises in the modern conditions of increasing the level of integration of Azerbaijan into the world economy is foreign economic activity. It is part of the economic activity of the enterprise and is characterized by the independence of the enterprise in the selection of external counterparts, sorting and contract policy. Foreign economic of the enterprise. Opportunities to participate in the activity depend

on how dynamically its business develops, as well as the export potential of the enterprise and its ability to manage them. The export potential of an enterprise is a set of available opportunities and resources to produce a competitive product, sell it, and serve a foreign market in the short and long term. This concept integrates resource and outcome approaches that express potential and implements a systematic approach to enterprise management. Here, resources manifest themselves as the input of the system, the sale of a competitive product as the output of the system. Let's focus on the main economic tools of foreign trade regulation taxes, excises and value added tax (VAT). According to the economic content, they are all indirect taxes. Taxes on activities related to the foreign economy have been increasing since 2000. One of the reasons for this is the strengthening of the country's foreign relations and the fact that export revenues bring significant revenue to the tax budget.

VAT law in Azerbaijan was adopted in 1991. The name of this tax is referred to as the "Law on Additional Value Tax" in the Republic of Azerbaijan. Until the tax assembly was accepted, the principle of origin was applied in the payment of VAT, but after January 1, 2001, the arrival principle was accepted. Value Added Tax has always been one of the main income sources of the budget. For a long time, VAT was in the first place among tax revenues. The share of value added tax in the budget has been increasing since 2000. The reason why Value Added Tax has an important place in the state budget revenues is that the tax base is wide. Therefore, although tax rates are reduced, tax revenues are increasing every year. It should also be said that although the rate of value added tax has been reduced from 26% to 18% in the last ten years, tax revenues have increased seven times.

In this section, we investigated selected variables to investigate their moves in 2000-2018. The variables are Income Total, Inflation, and Net Primary and Secondary Income. Total Revenue The sum of the income generated by all factors of production in the economy, the revenue generated by the amount of goods sold by the firm at the unit price. The distribution of income in the form of labor, profit, interest and wages from the national income that emerges without any interference in the functioning of the market economy is called primary income distribution. This income distribution may not be fair due to

various institutional factors and market disruptions. The state interferes with the functioning of the market economy for various reasons and tries to make the income distribution fair by interfering with the income distribution. Because inequalities in income distribution can have negative effects on economic growth, development and efficiency. This intervention of the state in income distribution is called secondary income distribution. The state can affect income distribution in various ways. For example, due to the progressive tax application, the collected revenues can be transferred to low income groups, some goods and services can be provided to low-income people with low prices or direct income payments can be made in the form of transfer expenditures. Income inequality in the primary income distribution stage is considered to be much higher than in the final stage where income is redistributed.

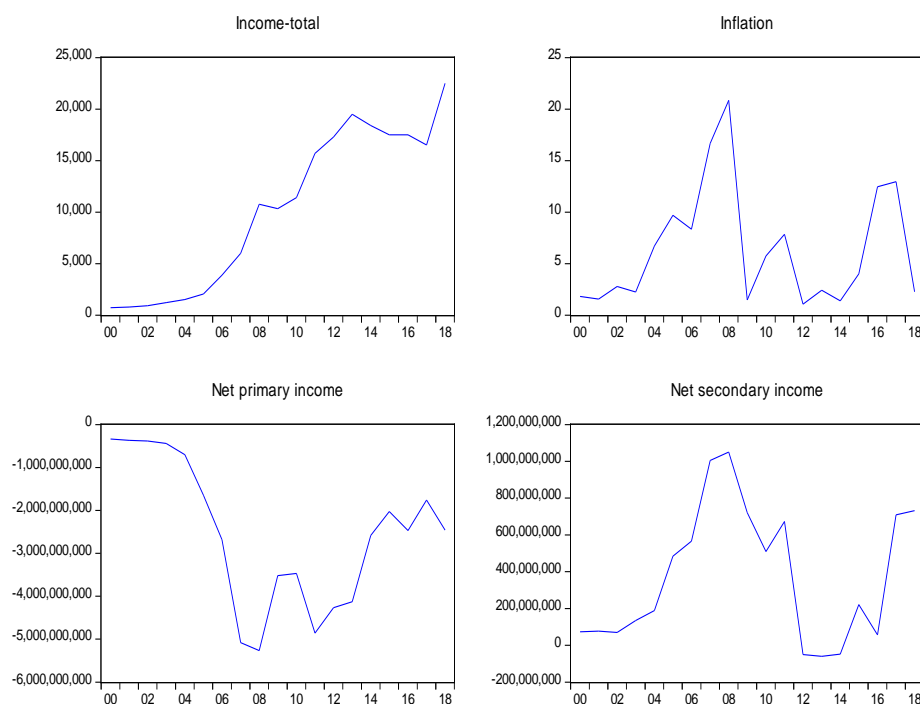


Figure 4.3: Income total, Inflation, Net primary and secondary income

We see the trend of total income in the chart above, we see that the revenues increased partially between the years 2000-2008. The global economic crisis in 2008 had a partial effect on the decrease in revenues. The reason for this is that oil prices fell during these years. Revenues have risen sharply in recent years. Increasing sales of petroleum products to other countries and increasing tax revenues in the country indicate that the total income has been the highest in recent years.

We see the inflation graph in the graph above. We see the highest level of inflation in 2008. The main reason for this is the impact of the global crisis. After the global crisis, there was a decline in inflation. Inflation increased between 2010 and 2012. Until 2015, there seems to be stagnation in inflation. The decline in the value of the manat between 2015 and 2017, that is, the value of 1 dollar from 0.78 cents to 1.55 cents and again to 1.70 cents, had a major impact on inflation in 2017. In recent years, taking control and the increase in oil production as well as non-oil production in the country did not cause an increase in inflation.

The balance of payments records an economy's transactions with the rest of the world. Balance of payments accounts are divided into two groups: the current account, which records transactions in goods, services, primary income, and secondary income, and the capital and financial account, which records capital transfers, acquisition or disposal of nonproducer, nonfinancial assets, and transactions in financial assets and liabilities. The current account balance is one of the most analytically useful indicators of an external imbalance. A primary purpose of the balance of payments accounts is to indicate the need to adjust an external imbalance. Where to draw the line for analytical purposes requires a judgment concerning the imbalance that best indicates the need for adjustment. There are a number of definitions in common use for this and related analytical purposes. The trade balance is the difference between exports and imports of goods. From an analytical view it is arbitrary to distinguish goods from services. For example, a unit of foreign exchange earned by a freight company strengthens the balance of payments to the same extent as the foreign exchange earned by a goods exporter. Even so, the trade balance is useful because it is often the timeliest indicator of trends in the current account balance. Customs authorities are typically able to provide data on trade in goods long before data on trade in services are available.

We see the primary income graph above. There seems to be a sharp decline in the 2000-2008 range as the country imports more and exports are weak. After the 2008 crisis, there is an increase and stagnation until 2010. In 2011, it is seen as -4.86 million dollars. There was an increase until 2015. There was a decrease in the value of manat after 2015, but there was an increase again in

2017. Azerbaijan net primary income was at level of -2,459 million US dollars in 2018, up from -1,759 million US dollars previous year, this is a change of 39.78%.

Net secondary income also increased until 2008. The value of net secondary income in 2010 appears to be 539,131,000 dollars. There is an increase again within 1 year. The peak decrease was in 2012, stagnation appears until 2014. It increased in 2015 and decreased again in 2016. There is a sharp increase until 2017. In 2018, net secondary income for Azerbaijan was 731 million US dollars. Though Azerbaijan net secondary income fluctuated substantially in recent years, it tended to increase through 2000 - 2018 period ending at 731 million US dollars in 2018.

Table 4.3: Descriptive Statistics of the Selected Variables

	CORPORATE TAX, INCOME TAX	FREE TAX	GPD GROWTH	GDP PER CAPITA CONSTANT	GDP CONSTANT	INCOME TOTAL
Mean	1506.916	399.6842	8.996267	4486.180	4.10E+10	10235.29
Median	1983.200	485.1000	9.253801	5642.527	5.05E+10	10762.70
Maximum	2862.300	797.3000	34.46621	6072.586	5.85E+10	22508.90
Minimum	117.6000	22.40000	-3.064200	1658.805	1.34E+10	714.6000
Std. Dev.	996.4735	254.6237	10.1798617	1722.826	1.75E+10	7742.203
Observations	19	19	19	19	19	19

The Median of the corporate tax is 1983.200, the maximum value is 2862.300, the minimum value is 117.6000 and the Standard Dev. is 996.4735 million manats. Different from this, the free tax average is 485.1000, the maximum value is 797.3000, the minimum value is 22.40000 and the Standard Dev. is 254.6237 million manats. Average growth of GDP appears to be 8.996267, maximum value 34.4662, minimum value -3.064200 and finally standard Dev. is 10.17986 mln manats. The average fixed GDP per capita constant is 5642,527, the maximum value is 6072,586, the minimum value is 1658,805 and finally the standard Dev. It is 1722.826 million manats. The mean GDP constant appears to be 5.05E + 10, maximum value 5.85E + 10, minimum value 1.34E + 10, and standard deviation 1.75E + 10. Median of the total income is 10762.70,

the maximum value is 22508.90, the minimum value is 714.6000, and the standard deviation is 7742.203

Table 4.4: Descriptive Statistics of the Selected Variables

	INDIVIDUAL'S INCOME TAX	INFLATION	LAND TAX	MINING TAX	NET PRIMARY INCOME
Mean	595.5842	6.429485	28.35263	102.4842	-2.55E+09
Median	590.2000	4.009438	30.60000	116.1000	-2.47E+09
Maximum	1145.700	20.83729	50.60000	147.7000	-3.35E+08
Minimum	94.00000	1.068103	6.700000	47.50000	-5.27E+09
Std. Dev.	355.9438	5.782994	14.90076	33.33830	1.67E+09
Observations	19	19	19	19	19

The median of individual income tax appears to be 590.2000, a maximum of 1145.700, a minimum of 94.00000, and a standard deviation of 355.9438. The median of inflation is 4.009438, the maximum value is 20.83729, the minimum value is 1.068103, and finally the standard deviation value is 5.782994. The median of the land tax is 30.60000, the maximum value is 50.60000, the minimum value is 6.700000, and the standard deviation is 14.90076. The median value of the mining tax is stated as 116.1000, the maximum value is shown as 147.7000, the minimum value appears to be 47.50000, and finally the standard deviation is set at 33.33830. The primary income median value is set at -2.55E09, the maximum value is shown as -3.35E + 08, the minimum value is -5.27E + 09. The standard deviation is shown as 1.67E + 09.

Table 4.5: Descriptive Statistics of the Selected Variables

	NET SECONDARY INCOME	PROPERTY TAX	TAXES ON INTERNATIONAL ECONOMIC ACTIVITIES	VALUEADDED TAX
Mean	3.74E+08	90.07895	443.0474	1874.637
Median	2.22E+08	101.8000	418.1000	2012.800
Maximum	1.05E+09	182.2000	1143.700	4287.600
Minimum	-60003187	11.80000	59.90000	190.8000
Std. Dev.	3.66E+08	58.10312	342.7056	1347.311
Observations	19	19	19	19

The median value of the secondary income is 2.22E + 08, the minimum value is -60003187, the maximum value is 1.05E + 09, and finally the standard deviation is 3.66E + 08. The median value of property tax is 101.8000. The maximum value of property tax is 182.2000. The minimum value is 11.80000 and finally the standard deviation is 58.10312.

4.3.2 Model

Regression analysis is one of the fundamental areas of interest in statistics. It is the prediction of the behavior of a random variable using a model. It is used to measure the size of the relationship between variables. Even if we use a single variable, regression analysis can be performed by using multiple variables. More generally, regression analysis can be expressed as a class of statistical models that are used to define, predict or predict the causal relationship between a response variable and one or more explanatory variables. Usually researchers are concerned with the relationship between variables. How these variables affect the dependent variable is determined by a coefficient. This coefficient is called the regression coefficient of the variable and shows the degree of commitment. What is important is that there is a cause and effect relationship between the affected and the affected. Simple regression model is a model that includes a dependent and an independent variable as shown below.

$$Y_i = \alpha + \beta X + \varepsilon_i$$

Where Y; dependent (result) variable and is assumed to have a certain error. X; It is an independent (reason) variable and it is assumed to be measured without error. α ; is constant and is the value that Y gets when $X = 0$. If is the regression coefficient, it expresses the amount of change that will occur in Y in terms of its

own unit, while X changes 1 unit in terms of its own unit. ε_i ; random error term and assumed to show normal distribution with mean zero variance σ_2 . This assumption is not necessary for parameter estimates but for significance checks of coefficients.

Autocorrelation

Autocorrelation problem is that the assumption that there is no relationship between error terms ($E(u_j, u_j) = 0, i \neq j$) is not valid. In other words, there is a relationship between error terms: $E(u_j, u_j) \neq 0, i \neq j$.

Autocorrelation problem usually arises when predictions are made with time series data.

Some of the causes of pipeline dependency are as follows:

- It is observed that there is a relationship between error terms in time series, especially when they contain trends. This type of data has cyclical movements, there is momentum, and this causes the variables to be related to them. If the error is high in one period, it means high in the other period.
- This problem may also arise if there are variables that should be included in the equation but are not included. For example, let's say that $Y_t = \beta_1 + \beta_2 X_t^2 + V_t$, although the equation $Y_t = \beta_1 + \beta_2 X_t^2 + \beta_3 X_t^3 + U_t$ should be guessed. In this case it will include the effects of $V_t X^3$. Because $V = \beta_3 X_t^3 + U_t$. If it affects X_t^3 then v contains a systematic shape
- If the mathematical form of the equation is determined incorrectly, the problem of sequential dependency may arise. For example, if the model is square ($Y_t = \beta_1 + \beta_2 X_t + \beta_3 X_t^2 + u_t$), a linear model ($Y_t = \beta_1 + \beta_1 X_t + v_t$) is estimated. In this case, the term error also includes the mathematical format error.

Autoregressive conditional variance models; structured according to the absolute or squared values of the data. So conditional variance; It can be defined as the relation of lagged error terms with their squares and lagged conditional standard deviations or variances. Using the squares of error terms means that if the deviations are higher than a certain value, the future predictions will be higher. In the article of Engle published in 1982, variance

was not constant in the estimation phase of ARCH (autoregressive conditional variance) models, but variance was combined with regression. In this study, Engle focused on the difference between conditional and unconditional variance in ARCH models. According to Engle, ARCH processes with zero mean have not unconditional constant variance, but variance that changes depending on the past and are also non-autocorrelated processes. However, Engle suggested that if the variance is constant, it is necessary to calculate the variance since fluctuations and shocks in the economy cannot be measured. In this approach, it is assumed that the process generating the variance is as follows:

$$\mathcal{U}_t^2 = \alpha_0 + \alpha_1 \hat{u}_t^2 - 1 + \alpha_2 \hat{u}_t^2 - 2 + \dots + \alpha_q \hat{u}_t^2 - q + v_t$$

In the 2000s, Pesaran (PSS) introduced a cointegration test approach called autoregressive distributed delay (ARDL) boundary test. The cointegration test offered by Pesera has achieved many successes, the fact that the variables are not fixed and all the variables are integrated in the same order, it met the expected observations and surpassed the other cointegration tests. Many researchers use this test frequently because applications involve economic variables during mixed or unknown integration. Later, while Pesaran developed the limit test approach, he made some hypotheses. Pesaran presented two tests for cointegration: F test and T test. However, with these tests, it is necessary to work with the assumption of I (1) dependent variable in order to reach a valid result. As Pesaran said, degenerate cases mean non-cointegration. Errors occur when the lagged levels of the dependent or independent variables in the error correction term are insignificant. While the case where the lagged level of the dependent variable is insignificant is shown as the 'degenerate lagged dependent variable' situation, the insignificant lagged levels of the dependent variables show the opposite. These errors do not fill the gap between dependent and independent variables, so cointegration is not valid. The importance of the general F test shows that the lagged level of the variables is important together when doing the margin test. In some cases, the F test is of great importance. However, in some cases, it is necessary to use t test for the delayed level of the dependent variable to exclude the case of the degenerate delayed dependent variable. In some cases, Additional testing is used. The advantage of the Supplementary test to exclude the degenerate situation is great, and in this case

the dependent variable assumption is overcome thanks to the Supplementary test. This reduces the risk of false test results. By combining this new test with the two tests offered by Pesaran, we get more accurate results.

In this study, the autoregressive distributed lag (ARDL) bounds test proposed by Pesaran & Shin (1999) and Pesaran et al. (2001) is employed to examine the co-integration relationship for both long and short run between growth, inflation and income. the model is shown in model¹ (1):

$$g = f(\pi, y) \quad (1)$$

Where g refers the growth of GDP, π ; inflation and y ; net primary income. The testable version and also ARDL model of equation (1) can be written as follow as:

$$g_i = \alpha_0 + \alpha_1 \pi_i + \alpha_2 y_i + \varepsilon_i \text{ And ARDL model:}$$

$$\Delta g_t = \alpha_0 + \sum_{q=1}^{p1} \alpha_{1q} \Delta g_{i,t-q} + \sum_{q=0}^{p2} \alpha_{2q} \Delta \pi_{i,t-q} + \sum_{q=0}^{p3} \alpha_{3q} \Delta y_{i,t-q} + \beta_1 g_{i,t-1} + \beta_2 \pi_{i,t-1} + \beta_3 y_{i,t-1} + \varepsilon_t$$

ARDL Bound Test can be used to any data as long as it is not I (n > 1). In other words, it can be applied to I (0) variables or I (1) variables or even for series which are stationary in combination of I (0) and I (1) variables.

Unit root test:

As mentioned above ARDL bounds testing to co-integration can be employed regardless of the stationary level of series or level of integration of them, but if any data is integrated of I (2) or higher level, ARDL bound test cannot be applied. Table 1 shows result of unit root test:

¹ For data restrictions in Azerbaijan, three series are selected.

Table 4.6: Unit Root Test Results

Variables	ADF ²		PP ³	
	Intercept	Trend and Intercept	Intercept	Trend and Intercept
G	-1.93 (1)	-2.83(1)	-1.32(0)	-2.04(1)
Δg	-2.96(0) **	-3.20 (1) *	-2.81(4) *	-2.66(5)
π	-2.79(0) *	-2.63(0)	-2.68(4) *	-2.48(4)
$\Delta \pi$	-4.33(1) ***	-4.19(1) **	-6.1(16) ***	-7.03(16) ***
Y	-1.63(0)	-1.24(0)	-1.70(1)	-1.36(1)
Δy	-3.11(3) **	-3.27(1) *	-3.11(3) **	-3.18(6) *

Note. The signs *, ** and *** following the t-statistics represent 10%, 5%, and less than 1% significance level respectively and parenthesis shows optimal lag.

As Table 1 shows; all variables are I (1) or I (0). Therefore, ADRL bound test can be applied. Table 2 shows the results of long run coefficient of ARDL the models;

Table 4.7: Long run coefficients of ARDL Bounds model

	MODEL I ARDL (1,0,0)
Dependent variables	G
C	56.44 (0.515)
π	-2.01 (-0.31)
Y	1.4×10^{-8} (0.46)
EC_{t-1}^4	-0.095
Breusch–Godfrey LM test	F = 1.55 [0.25] N.R ² =3.69 [0.15]

Note: parenthesis show t-Statistic values

The estimated long-run coefficients, error term and also LM test for serial correlation also of ARDL are summarized in Table 2. According the table 3, economic growth is positively but statistically not significantly related to the

² Based on AIC

³ Based on artlett Kernel

⁴ $EC_{t-1} = g - (-2.01 \pi + 0.0000y + 56.44) = -0.095$

income and also inflation effects growth negatively but same as income it is not statistically significant.

The coefficient of error term (-0.095) is negative and also it is between 0 and -2 but it is not statistically significant. Table 3 shows F-Bounds Test Results and Pesaran critical value. According table 3, F-Statistics is 1.7 while is it much smaller than critical value of the lower bound (3.35) for 10% in Pesaran table.

Table 4.8: F-Bounds Test Results

Test Statistic	Value	Significant level	I(0)	I(1)
F-Statistics	1.7	%10	2.63	3.35
		%5	3.1	3.87
		%2.5	3.55	4.38
		%1	4.13	5

By considering the coefficient of error term and also F-Bounds Test Results, there is no any long run relationship between selected variables. The table 4 shows short-run coefficient of ARDL models;

Table 4.9: Short-run coefficient of ARDL model

Dependent variables	MODEL ARDL (1,0,0)
C	5.38 (1.67)
π	- 0.19 (-0.56)
Y	1.40*10 ⁻⁹ (1.27)

Note: parenthesis show t-Statistic values

The short run coefficients are not statistically significant as well.

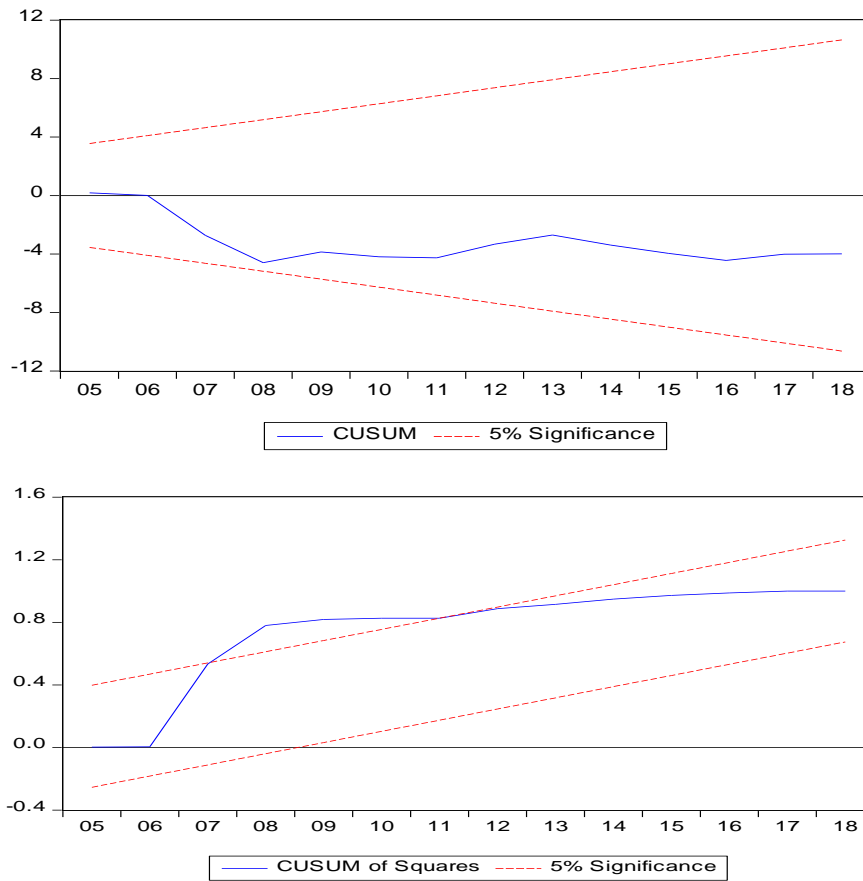


Figure 4.4: Stability tests

Graph 1 shows CUSUM and CUSUM of Squares of stability tests.

According to the CUSUM test the ARDL model are stable while according to CUSUM of Squares between 2007-2011, model is not stationary.

In summary there is no any long and short run relationship between growth in Azerbaijan and selected variables.

5. CONCLUSION

In order to maintain the economic stability of the country, the first thing is to eliminate the factors that prevent economic stability and to prepare a smooth ground. While there are opinions arguing that these obstructive factors can be removed through reforms, there are also opinions arguing that it is impossible to remove them through reforms? According to reform advocates, the economy can be purified from the negative aspects of the old order and new progress can be made in the way of development. The natural dynamics of the economy also have the power to achieve this.

Tax reform is the leading reform in the economic field. As well as providing healthy financial resources for development with tax reform, it is also important in terms of realizing the reforms in social areas indirectly. Tax reform alone will not suffice to achieve stability. There is a need for reforms in other areas that support and strengthen the tax reform. These must complement each other like the gears of a machine. Otherwise, there is no result.

After the tax reform, money and credit institutions should be regulated so that they can contribute to economic development. Investment and development banks are needed here. Investment and development banks have a very important place in a country's economy. In addition, this institution should be built not according to regional needs, but in a way that needs the whole economy.

The state should then attach importance to infrastructure. Organized industrial zones should be encouraged and necessary facilities should be provided to them. Then, reforms should be made in the social field. Making these transactions depends on public will. As such, there is a need for a strong public will. This will should follow up activities, be strong and determined, while supporting development. When investments are made after these stages, investing as much as the increase in the Gross National Product will accelerate the economic development and bring it to high levels.

There are three classes in economic development. These; it is a class of administrators, entrepreneurs and scientists. Eliminating some obstacles by administrators means throwing the ball to entrepreneurs, entrepreneurs contributing to economic development by making investments, scientists who will guide this development with their ideas will ensure that this development continues.

In the study, the relationship between economic growth and income distribution between 2000 and 2018, income distribution in an economically developed and underdeveloped economy, and the effect of economic structure on income distribution are discussed. Economic recovery in Azerbaijan after 1995 started. Increasing public revenues by developing tax policies has been started. During this period, personal and functional income distribution increased, and regional and sectorial income distribution did not develop as expected. Economic activities started to be concentrated in the capital Baku and its surroundings, and sectors based on natural resources were developed. Since the 2000's, the Azerbaijani economy has begun to recover. According to a research conducted by the World Bank in 2007, the Gini Coefficient in Azerbaijan was 36.5 in 2001. This rate is at a level that can be considered as positive when compared to various countries of the world. Additionally, the results achieved from Azerbaijan are in the same line with the result of the relationship between the Gini coefficient for some countries and the volume of revenues from natural resources. It is also expected that the Gini coefficient in Azerbaijan will not depend on the volume of GDP per capita. Thus, an important part of GDP in the country is related to oil revenues and the share of wages in these revenues is rather small. Transfer of some parts of oil revenues to the state budget and redistribution influence on the reduction of inequality in the income distribution. In the same study, the distribution of income in countries among population groups within the country is also examined. As of 2001, 7.1% of the Azerbaijani population is first degree poor, 11.5% is second degree poor, 15.3% is third degree middle, 521.2 is close to good, 44.5% lives well. According to the figures of the United Nations organization in 2008, it is reported that the Gini coefficient in Azerbaijan is 36.5. Ensuring and maintaining social peace in Azerbaijan depends largely on the fairness of income distribution and the

minimum income level not falling below a certain point. In this sense, intervention by the state in the distribution of income should be seen as a requirement of the social state. Many factors can be effective in determining the policies for income distribution. It is possible to list these factors as economic, political, social and cultural factors. Economic factors such as the position of the state in the economy, the level of development, economic system, economic conjuncture and the growth strategy followed are at the top of these factors. Regional development should be supported and the budget allocated for the regions should be increased. However, with such practices, the pressure of those who migrate to the capital Baku and its surroundings for employment purposes and those who want to migrate can be reduced. Another result is that some of those who go to the capital city and its surroundings for the same purposes can return. The effectiveness of the efforts to combat poverty should be increased, new policies should be developed and implemented. Policies should be followed especially for people in the lowest income group. The minimum wage determined for employees should be increased. The wage levels of health and education sector employees should be increased. This policy can also reduce interest relations in these sectors. Not only the industrial sector but also other sectors should be developed and the country's economy should not be dependent on the oil industry, and incentives and loans should be provided to those who will invest in non-oil sectors. Agricultural and tourism sectors should be given importance. In promoting non-oil sectors, competition should be prioritized, exports should not be neglected, and priority should be given to production that can compete in world markets. With these practices, a positive contribution can be made to the sectorial income distribution.

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