

THE MINISTRY OF EDUCATION OF THE REPUBLIC OF AZERBAIJAN
AZERBAIJAN STATE UNIVERSITY OF ECONOMICS
INTERNATIONAL GRADUATE AND DOCTORATE CENTER

MASTER DISSERTATION

ON THE TOPIC

**“THE IMPACT OF MONETARY POLICY ON ECONOMIC GROWTH:
EVIDENCE FROM AZERBAIJAN”**

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PUL SIYASƏTİNİN İQTİSADI ARTIMA TƏSİRİ: AZƏRBAYCAN NÜMUNƏSİNDƏ

XÜLASƏ

Tədqiqatın aktualığı: Məlum olduğu kimi monetar siyasət iqtisadi artım, pul vahidinin dəyərində stabillik, inflyasiya və işsizlik kimi ölkə iqtisadiyyatında çox önəm daşıyan iqtisadi vahidlərə təsir etmə qabiliyyətinə malikdir. Bu səbəbdən günümüzdə pul siyasəti istiqamətində aparılan araşdırmalar daha da artmaqdadır. Ələlxüsus XX əsrdən bəri ekonometrik modellərin sürətlə inkişafı bu araşdırmalara daha da təkan vermişdir.

Tədqiqatın məqsəd və vəzifələri: Əsas məqsəd pul siyasəti və qeyri-neft iqtisadi artım arasında uzun müddətli riyazi ekonometrik əlaqənin mümkün olub olmadığını və belə bir əlaqənin mövcudluğu halında pul siyasətinin hansı instrumentinin effektinin iqtisadi artım üzərində daha çox təsiri olduğunu təyin etməkdir. Nəticə olaraq isə effektiv pul siyasəti alətinin istifadəsini mərkəzi banka məsləhət verməkdir.

İstifadə olunmuş tədqiqat metodları: Dissertasiyada pul siyasəti və iqtisadi artım ilə bağlı rəqəmsal məlumatlar yığıldıqdan sonra, tədqiqat metodu olaraq ADF vahid kök testləri, Cohansen kointegrasiya testləri, Vektor Xəta Düzəltmə modelləri istifadə edilmişdir.

Tədqiqatın informasiya bazası: Araşdırmada Dünya Bankı, Beynəlxalq Valyuta Fondu, Mərkəzi Bank, Dövlət Statistika Komitəsinin Azərbaycanda mövcud iqtisadi vəziyyət barədə hesabatları və 2005, Yanvar – 2018, Dekabr dövrləri üzrə pul siyasəti və iqtisadi artımla bağlı aylıq statistik məlumatları istifadə olunmuşdur.

Tədqiqatın məhdudiyyətləri: Tədqiqat aparılması zamanı hər hansı əhəmiyyətli informasiya məhdudiyyətinə rast gəlinməmişdir.

Tədqiqatın nəticələri: Ekonometrik analizlərin nəticəsində məlum olmuşdur ki, pul kütləsinin (M2) qeyri-neft iqtisadi artımına qısa və uzun dönmədə təsiri var və bu təsir müsbətdir. Lakin pul siyasətinin uçot dərəcəsi alətinin iqtisadi artım üzərindəki təsiri əhəmiyyətsizdir.

Nəticələrin elmi-praktiki əhəmiyyəti: Aparılan araşdırma nəticəsində hansı pul siyasəti alətinin effektiv olduğu aşkara çıxarılmışdır. Bu nəticə pul siyasəti tətbiq edən Mərkəzi Bankın qərar qəbul etməsində faydalı olacaqdır.

Açar sözlər: pul siyasəti, mərkəzi bank, uçot dərəcəsi, Vektor Xəta Düzəltmə Modeli, Kointegrasiya

ABBREVIATIONS

ADB	Asian Development Bank
AIC	Akaike information criterion
ARDL	Autoregressive Distributed Lag
CB	Commercial Bank
CBAR	Central Bank of Azerbaijan Republic
CFED	Credit Facility for Economic Development
CIS	Commonwealth of Independent States
DOLS	Dynamic Ordinary Least Squares
EBRD	European Bank for Reconstruction and Development
EU	European Union
FMOLS	Fully Modified Ordinary Least Squares
FPE	Final prediction error
GDP	Gross Domestic Product
HQ	Hannan-Quinn
IMF	International Monetary Fund
KFW	German Development Bank
LRT	Likelihood Ratio Test
SBC	Schwartz Bayesian Criteria
SECO	Swiss State Secretariat for Economic Affairs
SIC	Schwarz information criterion
USAID	United States Agency for International Development
VAR	Vector autoregression
VECM	Vector Error Correction Mode

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INTRODUCTION

Actuality of the work. It is obvious fact that the ultimate objective of a government is to achieve lower unemployment, sustainable economic growth and stability of the prices. In order to obtain these desired results, a government should utilize some economic policies. Monetary policies is one of those economic policies. In economic theory, the views of economics schools on monetary policy differ. In particular, the debate on whether monetary and fiscal policy is effective on economic activities continues today. Classical economists always say that the economy has always reached full employment. They say that money is ineffective in affecting the real economy. Money only affects the overall level of prices. Keynesian economists state that money can affect both the real economy and the general level of prices. Today, the general trend among economics schools is on this line. They try to put forward under various conditions that monetary policy can affect or not affect economic growth. Monetarists claim that fiscal policy is not effective and they base their opinions on the exclusion effect. This view emphasizes the positive relationship between money stock and output. In other words, monetary policy has a greater impact on the economy in general and the link between monetary policy, investment and growth is more dominant than fiscal policy. Rational Expectations Theory (RBT) assesses the effectiveness of monetary policy in different dimensions according to the expectations of the economic units of the policy implementation. As a result of this debate, several questions emerge. Is monetary policy one of the economic policies which is very powerful and important driver to influence macroeconomic indicators such as economic growth, inflation, employment and etc? Are the monetary policies implemented by Central Banks efficient and effective to alter economic situations? In order to address these questions, studies to assess the consequence of monetary policy on the economy have accelerated, in line with the developments in econometric methods. These econometric models gave opportunities to measure and estimate the value and strength of effect of monetary policies on other economic indicators. Thanks to

these econometric models, in this study, impact of monetary policy tools on economic growth were measured and evaluated for Azerbaijan.

Statement of problem and level of learning. Main issue to identify here is examining the existence of the link between monetary policy and economic growth. The study level encompasses analyzing data of Azerbaijan for this purpose.

The purpose and missions of research. The main goal of the study is to measure the effectiveness of monetary policy in Azerbaijan by using several econometric methods and examining which specific monetary policy tool is more effective to implement by the Central Bank of Azerbaijan. Then giving policy recommendation based on the results of the analyze.

Subject and Object of the study. The main objects of the study are the key macroeconomic processes in the economy, the Central Bank's reports, bulletins, rules. Besides, monthly data for discount rate, money supply, exchange rate and non-oil GDP were used as objects of the study, while running econometric analyze. Monetary theories existing in international sphere were also reveiwed in this study.

Research methods. In this study, models such as ADF unit root tests, VECM, VAR, FMOLS and other cointegration models were used to find the relationship between monetary policy and economic growth. All the data and relevant information were secondary.

Research database. All data related to non-oil GDP, money supply, discount rate and exchange rate were mainly taken from Azerbaijan statistical committee, World Bank and CBAR. All data covers the monthly period of 2005:M1 – 2018:M12.

Limitations of research. While examining all of the relevant secondary data and information in this study, no significant issue has been identified during the process.

The practical importance of the study. As a result of this study, it has been identified that money supply has significant effect on economic growth of non oil sector, while discount rate offered by CBAR has insignificant negative impact.

This findings can be useful for Central Bank, while implementing monetary policy in Azerbaijan.

The structure and length of dissertation. First part of this study deals with monetary policies and theories related to money. In the second chapter, the monetary policy in Azerbaijan and the role of Central Bank of Azerbaijan in implementing monetary policy were covered. Third part of the study consists of the literature review, methodology, data and model specification.

CHAPTER I. MONETARY THEORIES AND POLICIES

1.1. Monetary theories

As a subject of research, monetary issues interested many scientists since the time of ancient period, because they are full of mystery and paradox. The central part of all research on the circulation of money is the question of how money originated and what underlies it. Since ancient period, with the development of economic and cultural relations, great thinkers have been attempting to explain how various signs are readily accepted in exchange for benefits in the form of food, drink, clothing and other things. In current conditions, there is not a satisfactory level of information to the society about a clear understanding of the basics of the functioning of monetary systems. That's why, at the present stage of development, majority of human society again face with the difficulties to understand the processes underlying the monetary issues.

In the ethnological sense, "money" can be called any signs of value that serve for exchange, for the acquisition of other items, for the purchase or hiring of human labor (Aktash et al., 2008, p 98-113). Friedrich Hayek, a Nobel Prize winner in economics, thinks that a noun was chosen unsuccessfully to designate money. Hayek claims that to clarify financial marvels, it would be increasingly helpful if money were a descriptor depicting a property that different things have in different and changing degree (F. A. Hayek, 2001, p 144-146). In his opinion, the word "currency", derived from the Latin *valutus* (having value), is for this reason more appropriate, since objects may have different values. The Austrian and American economist, specialist in the theory of currency relations, Fritz Mahlup, agrees with him, who, for the same reason, sometimes speaks of "money" and "almost money."

In this part, concentrating on monetary theories, economic approaches such as classical, neo-classical, Keynesian, Monetarist approach and their views toward monetary issues were analyzed in a comprehensive manner.

1.1.1. Classical Approach.

Majority of the economist know that Adam Smith is the original pioneer of classical economic approach. In the book of "Wealth of Nations", he dealt with

several economic concepts which are well-known in recent years too. He is most known for the term of Invisible Hand and Division of Labor. After Adam Smith, other significant researches in classical view of economy were done by famous scholars such as D. Ricardo, J.B. Say and T. Malthus.

Main idea in classical view was that the market shouldn't be intervened by external sources. Everything will be in equilibrium in the economy itself. So there is no need to any government force to intervene the market and market should be free of such kind of effects. As a result of this situation, classical economists believed that the economy would balance everything.

Nowadays everyone recognizes Adam Smith as the father of economics. It is an obvious fact that he was a defender of free economics and laissez-faire market. Based on the theory of invisible hand, he stated that everyone's activity will be beneficial for the society at the end, whereas each individual attempts to boost his or her wealth. Because when people exploit limited resources in order to increase their wealth, they increase overall wealth of the nation. At last, total wealth of the nation rises.

In the perception of Adam Smith, labor was the most vital resource in the economy which generated the wealth. Also A. Smith thought that consumption is the main driver of production. Unless there is consumption, then there will be no need for production.

Smith evaluated precious metals as a means of exchange; however he finds out that precious metals such as gold and silver can change over time. At last he ends up with the decision that the most appropriate means which doesn't change a lot over time is labor and it is real price of produced goods. He didn't consider rent on land as a cost, but he considered it as a surplus. (Dooley, 2002, p 54-56)

Another important discovery of Adam Smith is division of labor. In order to increase productivity and efficiency, he claimed that labor should be specialized in specific tasks. He proved this by practicing pin production and showed that division of tasks among labor increase productivity.

One of the well-known classical economists, David Ricardo had also valuable contribution on economics. He put forward the concept of comparative advantage, decreasing return and many other important theories which are very beneficial in the economy. D. Ricardo attempted to express that the price of the product is directly related with the amount of the labor used to produce those products. (Stigler,1958, p 54-71).

Ricardo, under the concept of comparative advantage, states that if any product can be bought at more affordable prices, then there is no need to produce those products in local economy.

Another well-known name of classical approach defender is Jean Baptiste Say. He also claims that free trade and free market without government intervention must be achieved in order to obtain economic prosperity. Main quote of Say is that “every supply creates its own demand”. But some economist doesn’t wholly agree with this statement.

1.1.2. Neo-Classical approach

Neo-classical approach similar to classical approach, but they have some differences too. First, Neo-classical theory concentrates on individual choices, whereas classical approach focuses on production and supply of commodity. Furthermore in neo-classical approach processes were analyzed by mathematical models, graphs and etc. Marshal is a famous economist who found and supported neo-classical approach. He generated the thought of drawing supply and demand in graphs. He also put forward the marginal utility principles. He shared the similar view with Keynes on the effect of money demand.

Another famous figure of neo-classical view is Arthur Cecil Pigou. He was an English economist who found two well-known notions in economics such as Pigou’s wealth effect and Pigovian tax. Pigovian tax concept simply means that considering social cost of any economic activity, additional tax should be imposed on negative externalities to amend inefficient market outcome. Pigou’s wealth effect indicates that individuals will spend more when they expect that their equity portfolio’s value will increase.

Irving Fischer is also a neo-classical approach defender. He had several researches on monetary and economic theories. The most famous ones are utility theory, interest rate and investment theory.

1.1.3. Keynesian approach

John Maynard Keynes explains his view about the monetary theories in his popular work called “The General Theory of Employment, Interest and Money”. main purpose of this book was to analyze the reasons of 1929’s Great Depression and address the issues in this Depression. In contrast to classical approach of economics, Keynesian economists defend government intervention as one useful option to prevent recession and they claim that during severe recession government spending should be increased in order to increase aggregate demand and stabilize the economic situation.

Keynes declined the concept that velocity in quantity theory was stable and he claimed that monetary demand was an important factor to alter interest rate. In Keynesian view, there are 3 drivers to demand money:

1.1.3.1. Transactional motive to demand money.

This demand for money contains the amount of money that individuals desire to have to perform daily transactions.in Keynesian view, it is assumed that transactional motive to demand money takes a particular portion of income of individuals and Keynes introduced Marginal Propensity to Consume (MPC) which shows the part of income that will be expended during the period.

1.1.3.2. Precautionary demand for money

Individuals save money to finance themselves from sudden future activities or opportunities which are possible to happen. In Keynesian economic approach, it was identified that the amount of precautionary demand would be proportional to income too.

1.1.3.3. Speculative demand for money

As money has a property of storing value, people save money for this purpose. It is very important to consider the fact that In Keynesian view, 2 types of valuable assets that are money and bonds are taken into account. Keynes stated that

relative value of bond will increase as the interest rate on bonds increase. As a result of this situation, individuals will shift to buy more bonds and general demand for bonds will increase.

Keynes clarified that at lower interest rate demand for money will be higher than supply of money, whereas at higher interest rate, supply of money will be more than demand of money. He put liquidity preference function forward stating that quantity of money depends on the level of interest rate.

1.1.4. Monetarist approach

Emerging of monetarist approach is related with the famous economist Milton Friedman. Main perception in monetarist view is that economic stability can be easily obtained by altering money supply.

Monetarists think that total goods, services in short term and price level in long term could be influenced with the help of altering money supply. So in monetarist view, money supply is considered to be the most effective tool to alter for the purpose of achieving economic prosperity.

M. Friedman claimed in his studies that inflation is a monetary incident. That's why, he puts forward that rising level of money supply will always lead to Inflationary issues. So steadiness of prices must be the prior goal of policymakers.

In his work of "the Quantity Theory of Money: Restatement", Friedman considered money as a valuable asset and applied the asset theory to money. He also stated the money demand is a function of interest rate and expected price increases of other valuable assets. Differing from Keynesian approach, Friedman statement of increasing probable return in other valuable assets such as bonds and stocks will affect money demand badly and people will demand less money in this situation. But Keynesian economists assumed that these changes in expected return of valuable assets have no impact on money demand.

1.1.5. Neo Keynesian approach

It is observed that the new Keynesian theory has an important place in recent years. As the mainstream, neo Keynesian approach is taught in top universities as a macroeconomic theory, and the works of those economists and professionals, such

as Ben Bernanke, Alan Blinder, Stanley Fischer, Geogary Mankiw, Joseph Stiglitz, Lawrence Summers, John Taylor and Janet Yellen, are published in prestigious publications.

One of the most important differences of the new Keynesian view is that although it is a macroeconomic theory, microeconomic foundations are developed in detail and despite the adoption of rational expectations of classical view, neo Keynesian economists accept existence of asymmetric information.

The basic assumption of the new Keynesian approach is the price and wage rigidity and this result is also due to the behavior of the economic agents that make the optimization.

One of the most important elements in this structure is the assumption that there is incomplete competition in the production market in contrast to the Keynesian approach. In particular, in monopolistic competitive or oligopolistic markets, firms are considered to have some degree of price control, which explains part of the price rigidity. Again, it is argued that the firms do not change their prices against the decrease in demand due to the menu cost. As a result, production and employment may decrease.

1.1.6. New Consensus

The New Consensus can be seen as a reflection of New Keynesian theory on monetary policy. As a result of adverse economic developments such as unemployment, inflation and increased interest rates in the 1970s and 1980s, central banks and economists have begun to question and seek new approaches to the Monetarist approach, which advocates targeting of monetary aggregates to reduce inflation. Eventually, a new macroeconomic theory, called the New Consensus, which contains new monetary policy strategies has been developed by new Keynesian economists.

1.2. Conducting Monetary Policy

1.2.1. Monetary policy perception in different approaches.

In the modern world, the monetary policy in any nation is one of the most powerful levers of macroeconomic regulation of the national economy.

Historically, it is one of the first forms of economic regulation. Its possibilities were manifested during the global economic crisis of the 1930s. Theoretical studies have confirmed the dependence of macroeconomic indicators on monetary variables. Thus, a fluctuation in the amount of money in circulation can affect the processes of production, exchange, and consumption. Inflation after the Second World War was provoked by expansionary monetary policy with low-interest rates, and restrictive policies revealed signs of its restraining development.

Conducting a coherent and balanced monetary policy is the most important aspect of economic management, on which the sustainable development of the economic system largely depends. Theoretical and methodological studies on the content, conduct of state monetary policy, and the problems of monetary regulation of the economy have revealed the many facets and diversity of these categories. Their interrelations with other methods of state regulation of the economy are also diverse: financial policy, monetary policy, etc.

The management and regulation of the economy presupposes the existence of a number of elements that are interconnected and represent a certain system. This applies to any method of regulation of the economy, including the monetary regulation. The regulatory system should contain:

- goals;
- object;
- the subject;
- impact mechanism;
- tools;
- methods.

The presence of all elements gives a more complete and precise definition of the essence of the method of state regulation of the economy. There are many publications on the issues of the state monetary policy and the problems of monetary regulation of the economy, but the points of view on the definition, nature, content of the category of "monetary policy" are different.

Professor O. I. Lavrushin considers monetary policy as the most important direction of state economic policy. Being a part of the national economic policy, it should be "inscribed" in the general goal of the development of the national economy and contribute to the achievement of macroeconomic equilibrium. Monetary regulation is interpreted as the implementation of short-and long-term measures to control the dynamics of money turnover. In this case, it is intended to

apply certain measures by the state, primarily in the face of an independent central bank, affecting the dynamics of money turnover.

A systematic approach to the definition of monetary policy is used in their work and other scientists. In particular, the researchers I.V. Danilova and A.V. Rezepin noted that monetary policy is directly aimed at maintaining the stable performance of the financial system in the country, attaining banking and financial stability. Monetary policy is a complex system of macroeconomic relationships and socio-economic institutions (Berk, 1998, p 145-170). This definition does not represent the specific composition of the elements of the regulatory system.

The narrowing, restriction of objects of monetary policy application to the sphere of monetary circulation and the sphere of credit, as well as the absence of an indication of the mechanism and tools of influence are characteristic of most of the monetary policy interpretations found in the literature. So, in the Big Economic Dictionary, ed. A.N. Azriliyana gives the following definitions: "Monetary policy - a set of measures in the field of money circulation and credit, aimed at regulating economic growth, curbing inflation, providing employment and leveling the balance of payments; serves as one of the most important methods of state intervention in the process of reproduction ". "Monetary regulation is one of the main means of state influence on economic processes" (Bashci, 2012, p 23).

Researchers A.M. Babich and L.P. Pavlova believes that monetary policy is a course pursued by the government of the country and measures implemented in the field of money circulation and credit. This definition specifies the subject of the policy - not the state as a whole, but the government of the country, however, does not specify the institution responsible for the generation and implementation of relevant monetary policy, does not disclose the specifics, objectives of monetary regulation.

Researcher S.R. Moiseev understands monetary policy as one of the directions of state policy of regulating the economy, thereby defining this category as a type of state economic policy. A more complete, in the authors' opinion, definition of monetary policy is presented by G. G. Fetisov. According to him,

monetary policy is considered as the most important direction of the state's economic policy and is a set of measures developed by the central bank in conjunction with the government in the field of monetary and credit relations in the country. Through these measures, the monetary sphere is affected by the reproduction process in order to regulate economic growth, increase production efficiency, ensure employment of the population, stability of foreign economic relations, that is, to solve the most important strategic tasks facing the economy of each country.

This interpretation represents the subject composition of the regulation without indicating the factors of the institutional viability of the regulation, the object and the goals to be achieved, but does not reveal the mechanism of influence and the tools used. The authors believe that in addition to the inclusion of a set of elements of the regulatory system, the adequacy of identifying the content of monetary policy also depends on the qualitative composition of each element.

Most of the researchers divided the goals of monetary policy into several levels:

- Strategic (final or long-term) or “political variables”;
- Intermediate or medium-term (“monetary policy regime”);
- Operational (tactical) goals or procedures.

Monetary policy is only one element of economic policy. Consequently, its strategic goals are part of a global strategy, which is determined by the country's highest authorities. As an element of the system, monetary policy only contributes to the achievement of the established common goal. By itself, it is not able to produce the desired results. Monetary authorities can pursue only the achievement of a private goal, which, in combination with other private goals designed to implement the relevant part of the policy in other areas, allows government agencies to succeed in implementing their economic policies.

Macroeconomic equilibrium, price stability, financial and banking stability, sustainable economic development or stable economic growth can be considered as a priority goal of monetary policy. These goals reflect a certain state of the main

macroeconomic parameters, namely: steady growth in production, increase in production efficiency, internal and external stability of the national monetary unit, full employment of the labor force and a positive balance of payments. Usually the strategic goal is developed in the law on the central bank.

When pursuing monetary policy, central banks inevitably face the problem of choosing between policies that stimulate economic growth and anti-inflationary policies. Monetary methods do not allow achieving these goals at an acceptable level. Therefore, the chosen course of monetary policy should be equally combined with other areas of state economic policy.

Due to the lack of legally established functions of modern central banks in achieving the goals of full employment and economic growth, the objectives of their achievement are solved indirectly. Therefore, individual economists expand the list of strategic goals, highlighting as the latter the sustainability of interest rates in the domestic money market, the balance in individual segments of the national financial market, and the stability of the domestic foreign exchange market.

The authors propose to classify the objectives of monetary policy: the degree of coverage of the economic system; on the boundaries of the action; the degree of impact by the central bank.

1.2.2. Objectives of monetary policy by the extent of the economic system

Common goals which are characteristics of all economic policy as a set of methods of state regulation of the economy are steady growth in production, full employment of the labor force, stable prices, a positive balance of payments;

Specific goals that are characteristic for some particular purposes such as the stability of interest rates in the domestic money market, the stability of the domestic foreign exchange market, the balance in certain segments of the national financial market.

Delimitation of goals should not be perceived as an absolute opposition. In fact, there is only a common monetary policy, implying the existence of close ties between them. Central banks seek to achieve their ultimate goals by acting on

second-level goals which are intermediate or medium-term. The central bank chooses a basic monetary variable and sets (targets) its desired values for the medium term.

There are the following most common options for targeting various variables based on international practice:

- Inflation targeting: an interim objective of monetary policy is missing, coincides with the ultimate goal, or it is an inflation forecast;
- Targeting the exchange rate: the intermediate goal is the exchange rate of the local currency unit;
- Monetary targeting: an interim goal is monetary aggregates;
- Nominal income targeting: an intermediate goal is the growth of nominal gross domestic product (a regime that exists only in theory);
- Interest rate targeting: the intermediate goal is the money market interest rate.

The central bank has the right to choose one or several target variables. Among economists, a consensus has not yet been reached on the most optimal mode of monetary policy. Each of the modes has both advantages and disadvantages.

The central banks of most developed countries use different controlled exchange rate regimes and monetary policy regimes that target one or more monetary variables. Central banks in emerging markets prefer exchange rate targeting. In the 2000s, the number of central banks using or switching to inflation targeting has increased.

The third level of monetary policy objectives are operational (tactical) goals or procedures. They occupy a central place in the monetary policy toolkit. The central bank's tools do not directly allow to achieve some intermediate goals, so a set of monetary parameters is selected, which the central bank can directly influence. Having a monopoly on the issue of money, the central bank can regulate either the price or the amount of money in circulation. In the first case, he manages the interest rates of the money market, and in the second, the money base or its

components such as bank reserves, net foreign assets, domestic credit. Furthermore, operational objectives include the exchange rate and monetary aggregates.

In the context of information asymmetry, the central bank is forced to make the choice of the most appropriate goals for its policy, since targeting prices and amounts of money are two sides of the same process. The choice of operating goals is determined by the monetary policy regime, and the operational goals and the degree of development of the national financial system, in turn, determine the use of specific monetary policy tools.

The determining elements of the system of monetary regulation are the objects of regulation. The properties of the economic fundamentals of monetary policy are determined by the properties of its objects.

The objects of regulation, according to most researchers, are the demand for money and the money supply. Researcher G.G. Fetisov (2008) refers to the object of the impact of measures in the monetary sphere the entire reproduction process. The demand for money and the money supply depend on many factors, which is reflected in the ability to accurately predict these values. Quantitatively, they can not be assessed absolutely accurately and definitively by participants in the money turnover. Therefore, there are so-called objects derived from them, which include the volume and structure of the money supply in circulation, the rate of turnover of money and the level of saturation of the economy with money, the volume of loans provided to participants of the cash flow including the banking system, coefficients of monetary (banking) multiplication, the volume and structure of cash income and expenses of participants in the cash flow, the rate of the national currency in compared to other currencies.

These indicators largely reflect the presence of permanent links between individual parts of the cash flow. The subject of monetary policy can be interpreted both in a broad sense - the state, and in the narrow sense - the government of the country, the government together with the central bank and commercial banks. Researcher OI Lavrushin considers the independent central bank to be the subjects

of monetary policy in accordance with its inherent functions of the conductor of the monetary policy of the state and the system of commercial banks.

Central bank independence is recognized by most researchers as a necessary factor for successful monetary policy. Meanwhile, the central bank is closely connected with the state. Being a part of the economic mechanism, the central bank, as an independent link within the whole, ensures its unity. Also it is not just an independent economic entity, but also an independent one, since it has the exclusive right to be the only issuer of cash in the country. As the main entity in the monetary sphere, responsible for the carrying out monetary policy, he is independent in his judgments and actions. In addition, his independence lies in the fact that he can accept and take into account other opinions, but at the same time is free from their influence and has the right to make decisions based on his own understanding of the possibility not to harm, but to ensure the implementation of his main task.

The outcomes of current researches show that the sovereignty level of the central bank from the state, freedom of its monetary regulation are not the only condition for the successful implementation of monetary regulation (Hameed et al., 2011, p 138-131). Currently, theoretical researchers and representatives of the central banks of the world are increasingly recognizing the importance of openness and transparency of the central bank's activities in the field of monetary management.

This is due to the following reasons:

- the growing independence of central banks, which provides for increased requirements for their accountability;
- Exacerbation of the problem of expectations of economic agents in financial markets: Fluctuations in expectations often impede the conduct of optimal monetary policy, increasing the transparency of the central bank gives more confidence to its policies and allows it to be made more effective.

The power of monetary policy depends on the stability of the banking system too. The banking sector is a channel through which the impulses of monetary regulation are transmitted to the entire economy. It is banks within the framework

of monetary relations that ensure the continuity of the production and consumption spheres. The Central Bank, exercising monetary regulation, affects primarily the resources of commercial banks, stimulating or limiting the credit potential of the banking system and the saturation of the economy with monetary resources. In addition to institutions that directly carry out monetary regulation, the bodies that are directly involved in its implementation are among the subjects of monetary policy. Thus, the state of the monetary sphere in the country is influenced by such institutions as the Ministry of Finance, the treasury, the deposit insurance agency and a number of other organizations.

The central bank can influence the interim objectives of monetary policy through monetary transmission mechanisms. These mechanisms are a system of variables through which money supply affects economic activity. The structure of the transmission mechanism consists of channels, which are chains of macroeconomic variables, through which the impulse of changes generated by the subjects of monetary control by means of regulation tools is transmitted.

1.2.3. Monetary policy instruments

It is necessary to use monetary policy instruments defined and controlled by central banks to ensure that the desirable result of the monetary policy is achieved. Central banks adjust the variables such as money supply, exchange rates and interest rates that they can influence in order to meet the monetary policy targets that cannot be under their direct control. Various tools have been used to adjust these variables, but basic monetary policy tools that are now actively employed are open market operations, discount lending and reserve requirements. Through these instruments, central banks try to direct the monetary and credit volume of the economy in line with the monetary policy. These tools existed before the Financial Crises of 2008 and are called conventional monetary policy tools.

1.2.3.1. Open Market Operations

Most commonly, central banks utilize open market operations (OMOs) in order to adjust the money supply. In general, OMO can be defined as the process of trading of government securities (securities representing treasury borrowing) as

a fixed or forward repurchase (repo / reverse repo). When the central bank conducts open market operations, it appears that this has some impacts on other economic indicators, primarily liquidity in the economy. These are:

- Change in money supply (total effect of liquidity and credit volume in the economy),
- Changes in available funds held by financial institutions, (change in free reserves)
- Change in the price and yield of marketable securities (market equilibrium interest rate)
- Changes in the expectations of economic agents.

As open market transactions affect the total quantity of the money which is in the hands of individuals, it also changes the currency and loan volume. Furthermore, it affects the price of securities, the rate of return and supply of securities according to the current demand in the market. As a combination of all these effects, economic agents' expectations for future development of the economy also change.

In open market operations, purchase transactions will lead to a rise in money supply, monetary base and the reserves of banks (loanable funds), but it will lead to a reduction in the market securities prices and, consequently, in the relevant interest rates. As it was mentioned, if the interest rates should be decreased in order to eliminate the contraction in the economy, the central bank will be able to use the purchase option of bonds in the open market. As a result, the interest rates will decrease and the amount of the money in circulation will rise which will stimulate the economy. But when central banks sell securities, then interest rate will eventually rise.

When compared with other monetary policy instruments, it is seen that open market operations are the most effective tools that central banks can use. The first reason is that The open market operation is completely under the full control of the central bank. The results of the open market operations are certain, it increases or

decreases the money supply in the market precisely. At the same moment, it is changeable and can be easily and quickly returned if an unexpected effect is seen.

1.2.3.2. Discount Rate Policy

The discount rate policy applied by the central banks is the policy which deals with altering the interest rate on loans given by central banks to commercial banks. In the process of application of discount rate policy, central banks determine discount interest rate within the framework of monetary policy. Thus, banks can use funds from the central bank, but they are liable for additional interest charge which central banks charge. With the help of this method, the central bank can adjust the interest rates and liquidity in the economy.

Discount policy will be helpful to decrease the funding to commercial banks by increasing the discount rates of the central bank in the periods of economic development, this higher discount rates will result in higher interest rates and lower money supply. Discount rate policy can be used as a monetary policy tool by ensuring their expansion. However, it cannot be claimed that it is under the monitoring of the central bank as much as open market operations in terms of its effects and ease of use. First, the success of the application depends on the degree of sensitivity of banks and firms to the discount rate (credit demand elasticity). The volume of banks in the financial market, other domestic and foreign funding opportunities may prevent the commercial banks from applying for discount rate of central banks. Furthermore, the discount policy cannot be implemented as quickly and flexibly as open market operations.

1.2.3.3. Required reserve ratios

The reserve requirements can be defined as the money that commercial banks have to keep in their accounts at the central bank in a certain proportion of total money amounts of those banks. Main objective here is to be able to pay its liabilities in their balance sheets with the help of these required reserves, if any recession occurs. Central banks, with the application of required reserve, can directly affect the balance sheets of banks and prevent the use of all liquid assets. Although mandatory reserve policy seems like a precautionary measure against

deposit withdrawals in banks to gain the trust of depositors in the system, it has come to the forefront as an important tool for the control of the money and credit volume of some developing countries.

Thanks to authority to change required reserve ratios, central banks may reduce or raise the credit expansion by increasing or decreasing reserves which are offered to customers by commercial banks. Since the central bank's mandatory reserve policy application has a special place in implementing desirable monetary policy, central banks also choose to use this tool in order to regulate or stimulate economic situation.

Monetary policy instruments such as credit ceiling determination, maturity / interest incentives and the implementation of a selective credit policy have also been used by central banks in the past and have lost their importance since they are no longer valid and effective. On the other hand, it is seen that especially the speeches, reports or results of the speeches to be made by the head of the central bank or other officials are used in the monetary policy especially to direct expectations of individuals.

1.3. Theoretical background about monetary policy effect on economic growth

The researches about the roles of monetary policy in ensuring sustainable economic growth is currently one of the most hot issues of economic theory and practice. Its relevance is due to a long period of economic recession in many countries of the world. In most modern studies, a conclusion is made about the exceptional possibilities of the central bank's influence on virtually all aspects of economic life, and it is prescribed the primary duty to stimulate economic growth and business activity. Politicians and the public support this topic especially actively, believing that the central bank's position in the phase of stimulating economic growth should be significantly strengthened by developing and implementing appropriate monetary policy or implementing direct measures aimed at developing the real economy. That's why they see monetary policies as one of the way to rescue from economic recession.

Modern changes in the development of global financial market and national economies require a constant review of previously developed concepts and approaches, as well as the search for new methods and tools of monetary impact on economic growth, taking into account the specifics of governments implementing economic policies and developing the monetary market, which makes the proposed research.

The main method of implementing the main functions of the central bank is monetary policy. In economic theory, its content is defined as a system of measures by which the state influences the amount of money in circulation in order to curb rising prices and inflation, as well as ensure growth in production and employment, thus maintaining macroeconomic equilibrium. In practice, monetary policy is understood to mean a set of measures in the sphere of money circulation and credit, aimed at ensuring the stability of the national monetary unit based on the use of a set of methods and tools, which include interest rates on central bank operations, mandatory reserve requirements, securities transactions in the open market, refinancing of banks, setting benchmarks for the growth of the money supply, foreign exchange intervention, regulation of the import and export of capital, issue of central bank bonds and transactions with them, direct quantitative restrictions, etc.

Among these methods and tools for the purpose of implementing monetary policy, virtually none of them that would directly influence economic growth or serve as a direct incentive for it. This kind of approach is relevant with the theory of "neutrality of money", the founders of which in the scientific literature are considered to be D. Hume and J. S. Mill. In fact, the property of money neutrality follows from the equation of exchange by I. Fisher (1926), however this theory has found the most complete expression in modern interpretation by M. Friedman (1956) and has been adopted by almost all representatives of the neoclassical direction in modern economic theory.

In accordance with the theory of "neutrality of money", a change in the amount of money released into circulation in the long-run only affects price

changes and does not affect changes in the volume of investments, production and employment. As a result, quantitative changes in the money supply will only contribute to a rise in the overall price level in the economy and a rise in the inflation level. Furthermore, based on Fishkind (1977), it is quite plausible to claim that change in the volume of money in the circulation will affect the nominal and not the real variables such as real interest, real GDP growth, unemployment, relative prices.

Thus, the practical implementation of the provisions of the theory of neutrality of money leads to the fact that central banks do not have at their disposal effective tools and methods of direct impact on economic growth. However, as practical experience shows, this influence can occur indirectly through the banking system and the financial sector through the use of channels of the monetary transmission mechanism. So, some it is thought that the monetary channel plays a secondary role in the monetary transmission mechanism, and therefore the management of money supply is inferior to the dominant role of other monetary policy tools. (Walsh et al., 2010, p 532-541)

The main task of the developing and carrying out of monetary policy by the central bank is to achieve the highest possible equilibrium of the money market, more clearly to maintain a balance between the overall mass of money in circulation and the need for it. It should be considered that the achievement of this equilibrium has a cyclical nature in accordance with the dynamics of economic cycles or economic activity cycles of business entities and is carried out through monetary and credit regulation, implemented in the short or medium term.

In the scientific literature, it is very often that equilibrium of the market with the help of tools and methods of monetary policy is identified with economic cycles (Hameed, 2011, p 138-131). The problem of economic cycles distinguished in economic theory has an independent significance and is associated with issues of macroeconomic balance. Undoubtedly, monetary regulation has a significant impact on economic cycles, but this effect is most frequently demonstrated already in those stages of the economic cycle where certain government intervention is

required, including the central bank. When it was talked about link between monetary policy and the activities of market entities, then cycles of economic market conditions (business activity) are being considered, which have a short, often short-term or medium-term nature. At the same time, a central bank, as an instrument of monetary regulation, can actively use the expectations of economic entities and manage them, forming certain models of expected behavior in the monetary market.

In accordance with world experience, the principle of the so-called compensatory regulation, which is concentrated on a combination of two opposing sets of measures applied at different stages of economic cycles, is the basis for the implementation of monetary policy. Based on the theoretical concepts about developing and carrying out monetary policy, it can be stated that the main object of monetary regulation is the aggregate money supply in circulation. Depending on the state of the economic situation, the central bank can implement two main types of monetary policy, which have different effects on the volume of money supply in the economy - restrictive or stimulating.

The results of a stimulating monetary policy are to increase the volume of money in circulation by lowering interest rates, increasing the volume of refinancing of financial institutions, liberalization of financial activities, etc. The expansionary monetary policy is usually used to expand credit, increase business activity, stimulating investment processes, overcoming the decline in production, increasing consumer spending. However, critics of the implementation of such a monetary policy believe that the liberalization of the monetary market and credit expansion can stimulate inflationary and devaluation processes, reduce financial stability and cause a financial crisis (Mankiw, 1988, p 1-82).

According to the theory, both supporters of the first approach and the second are right. However, it should be considered that in this case, the authors absolutize the final results, expressing extreme points of view. The truth is that the central bank develops and implements a certain type of monetary policy in the context of the overall economic goals of the state, taking into account the real state of the

economy, historical and political features of development in a country, as well as the state of the economic situation.

In the scientific literature, the practical experience of individual developed countries in the implementation of non-standard monetary instruments in the form of “quantitative” and “credit easing” is cited as an important example of the positive impact of monetary policy on the economy. Thus, non-standard measures of the European Central Bank’s (ECB) monetary policy on “credit” and “quantitative easing” were initially aimed at expanding bank lending, and, beginning from 2014, at redeeming secured bonds and securitized loans, that is, in fact, at supporting banking liquidity.

In contrast to the ECB, the main focus of unconventional measures of the US Federal Reserve, the Central Bank of England and the Bank of Japan was the purchase of distressed securities, mainly mortgage-backed securities. This means that the central banks of these countries focused on stabilizing the financial sector, and the ECB focused on improving the conditions for financing and lending to non-financial corporations and the public (T. Batu, 2005,p 45-53).

According to the IMF, since 1999, in the whole world, the rates of economic growth and inflation were very close, except for the crisis years of 2008–2009. In the group of countries with developed economies, inflation exceeded the rate of economic growth only in 2008–2009, and in the eurozone in 2001–2003, in 2008–2009. and in 2011–2013. In the G7 countries, this situation was observed only in 2008–2009 and 2011, that is, during crises. (IMF, Annual report, 2015). Therefore, most central banks as the main strategic goal of their activities determine the regulation of inflation through the use of an appropriate monetary regime. Currently, to achieve this goal, many countries have switched or are moving to use the inflation targeting mode, which allows central banks to contain inflation and, in the medium term, to maintain its level within the established target or so-called inflation target.

According to most economists, the use of monetary targeting of inflation or its milder forms contributes to macroeconomic stability, which, in turn, is a

prerequisite for economic growth. According to European Central Bank (ECB) specialists, inflation targeting is a monetary policy strategy concentrated on maintaining price stability which is based on minimizing deviations in inflation forecasts from the proclaimed target level of inflation target, using the interest rate policy as an operational guideline for monetary policy.

The transition of central banks to the use of the monetary regime of targeting inflation presupposes the existence of a number of institutional conditions that determine its effectiveness. The main conditions are:

- A high level of central bank independence in the process of developing and carrying out monetary policy, the clear implementation of strategic, intermediate and operational objectives, as well as instruments to achieve them;

- A developed financial sector, a well-functioning capital market and, above all, a highly liquid government securities market;

- Balanced fiscal policy and a high level of its coordination with monetary policy. This is thanks to the known fact that the budget deficit is one of the main factors affecting the level of inflation. As evidenced by the experience of countries with emerging markets, the independence and sovereignty of the central bank is directly proportional to the growth of the budget deficit: the higher the budget deficit, the lower the level of central bank independence;

- High level of communication policy of the central bank.

The foundation of the monetary regime, which is based on targeting inflation, is the mechanism for managing the interest rates of the money market, which serve as the main instrument for restraining inflation and the main channel for the influence of monetary policy on the behavior of market entities.

At the same time, in order to transfer impulses from a central bank to economic entities, including the real sector of the economy, an effective transmission mechanism of monetary policy plays an important role, because a central bank in an economy influences economic situations through regulation of the monetary market. This regulation is believed to have an influence even on real sector of economics.

Thus, the use of the monetary mode of targeting inflation doesn't only ensure price stability, but also contributes to ensuring overall financial and macroeconomic stability, which creates prerequisites for the sustainable development of the economy. In addition, this monetary regime, by enhancing the interest rate channel among transmission mechanism of monetary policy, allows activating the action of other channels and transmits monetary impulses to business entities. As a result, it stimulates the development of the real sector and economic growth.

A study of theoretical and practical issues of the developing and carrying out monetary policy by central banks in order to stimulate economic growth made it possible to confirm the notion that the tools and methods of this policy can have only indirect effects on economic growth. This is thanks to the known fact that ability of central banks to resolve these issues is not limited by their power. Because solutions of these also depend on issues reflexes of other monetary institutions changes in monetary policy.

Implementing monetary policy can provide effective results only in certain conditions under which business entities will carry out actions that coincide with the goals and objectives of state economic policy, including those focused on ensuring economic growth. This influence can be realized most efficiently in conditions of macroeconomic stability in the presence of a balanced monetary market and a stable banking system. Therefore, the main task of monetary regulation is to ensure the stability of the banking system and to develop reliable mechanisms for managing inflation. Eventually, this approach focuses on the fact that only with low inflation rate, the financial system remains stable, that's why lower inflation rate in the economy is a prerequisite for ensuring sustainable economic growth.

The theoretical basis for the influence of monetary policy on economic growth is related to the theory of neutrality of money that means there could be indirect effect of monetary policy on economic growth. But certain methodological prerequisites such as the independence of a central bank, the legislative definition

of its main functions in the form of a hierarchy of goals, a set of monetary methods and tools aimed at managing inflation must be in good situation, before implementing monetary policy. The practical implementation of these issues is reflected in the fact that the majority of central banks have chosen to contain inflation as the main strategic goal of their activities, using the monetary targeting mode of inflation, which allows maintaining inflation in the medium term within the established target.

The basis of the monetary targeting mode of inflation is the money market interest rate management mechanism, which serves as the main instrument for controlling inflation and the main channel of monetary policy tool on stimulating economic growth. Functioning of monetary transmission mechanism allows transmitting of impulses between the central bank and other economic entities, including those in real economy. Therefore, the activation of the channels of the monetary transmission mechanism serves as a reliable basis for stabilizing the banking system and ensuring economic growth.

CHAPTER II. MONETARY POLICY IN AZERBAIJAN

2.1. Central Bank of Azerbaijan Republic. Roles and duties of CBAR.

2.1.1. Historical background of Central Bank of Azerbaijan.

Until the mid-19th century, as in other countries of the world, there was also no central bank settlement authority on the territory of Azerbaijan. Only after Azerbaijan's entry into the path of capitalism did the first steps for regulating the banking and financial sector began to form. Only in 1860 the State Bank of the Russian Empire was established and a year later its Baku branch was opened. The main purpose of this department was to expand the turnover and accelerate the development of the credit system. As a result of the accelerated development of capitalist relations, already at the end of the nineteenth century, Azerbaijan, in comparison with other regions of the Caucasus, had the most developed credit and banking system, which combined about 200 credit departments (S. A. Abdullayev, 2001, p 142-148).

In connection with the formation on May 28, 1918 of the first democratic republic in the Muslim world - the Azerbaijani People's Republic, by the decision of the Government of Azerbaijan Republic dated March 7, 1919, the Azerbaijan State Bank was established (S. A. Abdullayev, 2002, p 58-63).

After a short period of the formation of a democratic republic - the Azerbaijan Democratic Republic (1918, May 28), on March 7, 1919, the Government of the Republic of Azerbaijan established the Azerbaijan State Bank for the first time in the Muslim world. On September 16 of the same year, the Parliament of the Republic of Azerbaijan adopted the charter of the Azerbaijan State Bank, prepared by the Ministry of Finance. On September 30, 1919, the grand opening of the Azerbaijan State Bank took place, and from that day the bank began to carry out its activities (M. M. Baghirov, 1995, p 439-441)

The main goal of the Azerbaijan State Bank was to facilitate the turnover of money, assist trade, industry and agriculture, as well as perform the function of strengthening the monetary system. The authorized capital of the State Bank was 50,000,000 rubles. (A. Abbasov, 2003, p 67-73).

The authority to issue banknotes belonged to the State Bank. In general, for the period of the existence of the Azerbaijan Democratic Republic, the amount of issue of banknotes amounted to 2 billion 345 million rubles. In order to ensure the convertibility of the local currency, the state determined the exchange rates of currencies of other countries by means of Bank Bonds.

However, on April 28, 1920, as a result of the occupation of Azerbaijan by the Bolshevik Russia, despite the formal preservation of state independence (under the name of the Azerbaijan Soviet Socialist Republic), the state's monetary system was finally destroyed. By the order of the Financial Commissariat of May 31, 1920, the Azerbaijan State Bank was renamed the Azerbaijan People's Bank. According to the Azerbaijan Revolutionary Committee's order, in 1920, all banks and other credit organizations were nationalized and incorporated into the Halyk Bank. Thus, banking shifted exclusively to the state monopoly.

In 1923, in connection with the creation of the State Bank of the USSR, its Baku branch was created and the banking system under the state's monopoly began to be controlled from the center. In accordance with the Constitution of the Union of Soviet Socialist Republics, adopted in December 1936, Azerbaijan became part of the USSR as a "sovereign" republic, and thus the Azerbaijan Department of the State Bank of the USSR continued its activities until the end of 1991.

On October 18, 1991, after the restoration of state independence of Azerbaijan, a legal basis was founded for the creation of a banking system of a free, independent Azerbaijan, including the creation of a central bank. Due to the establishment of the law concerning creation of central bank of Azerbaijan Republic, issues related to an independent banking system and the legal basis for circulation of the monetary unit, the national currency, powers and status of the Central Bank were considered. As a result, the Central Bank of Azerbaijan Republic (CBAR) was declared the highest institution pursuing the country's relevant policies in the field of loans, money circulation, settlements, currency

relations, regulating the activities of the banking system and performing the functions of a reserve bank.

Foundation of Central Bank is based on the president's decree about "Establishment of the Central Bank of the Republic of Azerbaijan" dated on February 11, 1992. The first law about regulating the activities of Central Bank of Republic of Azerbaijan was published on August 7, 1992, and it was called the law about Central Bank of the Republic of Azerbaijan. Eventually, on December 1, 1992, the Milli Majlis of the Azerbaijan Republic adopted the law "On the approval of the charter of the Central Bank of the Azerbaijan Republic". In the mentioned law, the Central Bank was defined as the central bank of the state, which has the exclusive rights to issue banknotes and to perform the functions of the reserve system. Meantime, it was given the right to regulate the activities of the banking system and exercise control.

In the second paragraph of Article 19 of Azerbaijan's Constitution, the proper rights to issue and withdraw money from circulation were stated to belong only to the Central Bank of Azerbaijan Republic. This paragraph of Article 19 of Azerbaijan Republic's Constitution was prepared by a commission led by national leader Heydar Aliyev, and adopted at a referendum on November 12, 1992. At the same time, the constitution defined the location of the Central Bank in the exclusive ownership of the state. The adoption of the new Constitution announces the beginning of a new stage in Azerbaijan in the field of state-building. It was thanks to this incident that new constructive work began in the sphere of banking legislation.

So, on the 10th and 14th of June 1996, the new edition has already been adopted by the laws "On the Central Bank of the Azerbaijan Republic" and "On the banks and banking activities of the Azerbaijan Republic".

In order to develop the banking system and its regulatory and legal framework, and to further deepen ongoing consecutive reforms, the decree of the President of Azerbaijan on December 26, 2002 was given the task of redrafting

banking laws. Namely, as a result of state care, the laws “On the Central Bank of the Azerbaijan Republic” and “On Banks” were adopted in a new edition in 2004.

The new law about the activities of the Central Bank which is called "On the Central Bank of the Republic of Azerbaijan", adopted on December 10, 2004, more precisely defined the legal status, goals and functions of the Central Bank, its place and role in a number of other state structures, provided for appropriate mechanisms to increase the responsibility and transparency of the Central Bank.

New banking laws have created more favorable conditions for the implementation of effective activities in all functional areas of the Central Bank.

The definition and implementation of monetary and exchange rate policies, the regulation and development of the state's payment system, the implementation of banking control, the storage and management of the state's international gold reserves, are all part of the important functions of the Central Bank.

The principles, forms and methods of banking development, confirmed by new banking laws, have created a favorable initiative to more effectively protect the interests of creditors and depositors, exercise banking control in accordance with the Basel principles, and increase the reliability of the country's banking system. It was the first time that Azerbaijan banking legislation, the requirements related to the moral qualities of administrators have been promoted.

But banking reforms cannot be considered as completed, because the reforms are being developed nowadays with the purpose of obtaining more favorable banking sector in Azerbaijan. New projects and state programs are planned to be implemented for developing the banking system.

2.1.2. Duties of the Central Bank

Based on Article 5 of new legal base which is about the Central Bank of Azerbaijan, the functions of the CBAR include the following issues:

1. Determines and implements the currency and monetary policy of Azerbaijan; So Central Bank of Azerbaijan is the only entity which is responsible for implementing contractionary or expansionary momonetary policy with the purpose of achieving several economic goals.

2. Organizes the circulation of money, on the basis of the second paragraph in Article 19 of the Azerbaijan's Constitution, implements release into circulation and withdrawal of currency from circulation;

3. Regularly determines and announces the AZN rate in relation to foreign currencies;

4. In accordance with the law, implements monetary regulation and control in the country;

5. Maintains and manages international gold and foreign exchange funds at its disposal;

6. In accordance with the law, compile the balance of payments and participate in the preparation of the forecast balance of payments of the country;

7. In accordance with the Law of Azerbaijan "On Banks", CBAR licenses, regulates the activities of banks, in the manner prescribed by law, and exercises control over banking activities;

8. Organizes, coordinates, regulates the activities of payment systems and exercises control over them on the basis of legislation;

9. CBAR also implements the other functions mentioned in the Law "On the Central Bank of the Azerbaijan Republic" and in other laws.

The central bank is a state body and the main bank of Azerbaijan which oversees the activities of other banks. In carrying out the functions and powers identified by the Constitution and laws of the state, the Central Bank is independent and unlawful interference and pressure in its activities is unacceptable. The second clause of Article 19 ("Currency Unit") of Azerbaijan Republic's Constitution states that the right to issue and withdraw money from circulation belongs only to the Central Bank. CBAR is in the exclusive ownership of the state. According to the Constitution, the Central Bank does not belong to any of the state authorities (legislative, executive and judicial). At the same time, the presentation of the issues related to the activities of Central Bank in the second chapter of the Constitution, called the "Foundations of the State", proves that the Central Bank is a state structure with a special status.

New legal base prepared for determining the activities of the Azerbaijan Republic's Central Bank reflects the relationship of the Central Bank with other government agencies, defines its rights and obligations as a bank and financial agent of the state, takes into account its participation in discussions of issues related to the main directions of state economic policy, including issues such as the budget - tax, price - tariff, the volume of domestic and external debt and issues of their management. This legal norm leads to more effective solution of the existing issues and coordination of activities between the bodies that implement the state's economic policy.

In the law of December 10, 2004 about the Central Bank of Azerbaijan, effective mechanisms were defined with the purpose of increasing the transparency of the activities and increasing responsibility of the Central Bank. Main purpose was to increase accountability to the state and public. Thus, according to the Law, the submission to the relevant state body of a report on the activities of CBAR, the requirement to inform the public about the policies being implemented and the results of the bank's activities ensure the transparency of its activities. The central bank is accountable only to the President of Azerbaijan.

One of the foundations that ensures the transparency of the activities of CBAR is the application of corporate governance standards in the banking management system. Thus, some processes such as direct confirmation by law of the organizational structure of the Central Bank, distribution of powers between the management bodies, forms and basic principles of internal control and regulation by law of issues related to resolving conflicts of interest in managing a bank create opportunities for full transparency of the Central Bank's activities.

The central bank has an independent balance sheet, authorized capital and other property. Except as otherwise provided by law, ownership of the capital and other assets of Central Bank by other parties is not allowed. The authorized capital of the CBAR is 50 billion AZN. The CBAR cannot be declared bankrupt.

The management functions of the Central Bank are carried out by the Board of Management and members of the Management Board. As it is stated in the

Constitutional Law of Azerbaijan, members of the Central Bank's Board of Directors are selected by the Milli Majlis of Azerbaijan Republic with the agreement of the President. The Chairman of the Board of the CBAR is appointed by the President of Azerbaijan from the members of the Board of Management.

The new law allows to penetrate into all functional areas of the CBAR, to implement effective control over the areas regulated by the Central Bank.

2.1.3. International Relations of CBAR

From the point of view of financial and credit needs, the international relations of the Central Bank are primarily directed toward the relationship between international financial and credit institutions, developing the necessary cooperation with donor organizations and foreign central banks, expanding the international relations of the Central Bank, as well as strengthening the international image of the Central Bank and providing foreign technical assistance to reforms implemented in the Central Bank. This cooperation is carried out in three directions:

2.1.3.1. Cooperation with international financial and credit institutions

In order to attract financial and credit resources for the development of the state, including the Central Bank and the banking system as a whole, the Central Bank of the country maintains intensive cooperation with international financial and credit institutions.

Together with the International Monetary Fund (IMF), it cooperates within the framework of the Poverty Reduction Program and the Credit Facility for Economic Development (PRGF). In addition, the IMF experts provided technical assistance to the Central Bank in the preparation of many systematic bases such as developed Central Payment System, Central Report System and etc. For the preparation of the laws "On Banks" and "On the Central Bank of Azerbaijan" in accordance with the requirements of international standards, cooperation with the IMF was carried out. In order to implement the measures that were foreseen by the State Strategy for Azerbaijan in 2003-2004, the Central Bank worked closely with the World Bank.

In rendering assistance to reforms carried out in the financial sector of Azerbaijan, a special place is occupied by the Project "Providing World Bank Technical Assistance to the Financial Sector". The project on the basis of progressive technologies in the Republic of Azerbaijan implemented very serious work for the development of payment systems, including the Clearing and Settlement System for Small Payments, the Card Press Center, the Centralized Credit Register and others.

EBRD which stands for The European Bank for Reconstruction and Development is active in strengthening the financial sector in Azerbaijan. Its activities in the financial sector are implemented in the following areas: securing credit lines to banks, participation in the capital of private banks and the Microfinance Bank and in the privatization of state-owned banks.

The opening representation office of the Asian Development Bank (ADB) in Azerbaijan in 2004 created more favorable conditions for active cooperation with this structure. Throughout 2004, ADB experts held consultations and discussions on the preparation of "Financing Residential Apartments".

2.1.3.2. Collaboration with central foreign banks

With several goals such as familiarizing with the existing world best practices and new technologies, achieving the implementation of these standards and technologies in the banking system of Azerbaijan and determining the authoritative place of the Azerbaijan Central Bank among the central banks of foreign countries, CBAR maintains cooperation with central foreign banks of developed countries of the world. out with the Bundesbank of Germany, the central banks of Poland, Switzerland, Czech Republic, Turkey, Kazakhstan, France.

2.1.3.3. Cooperation with other organizations

The relations of the Central Bank with other international organizations are mainly aimed at obtaining technical support to the reforms conducted in the bank. For this purpose, close relations were established with the Swiss State Secretariat for Economic Affairs, the German Development Bank, the United States Agency for International Development.

2.2. Monetary Policies and Instruments followed by CBAR

2.2.1. Monetary policies in Azerbaijan

Monetary policy is the main power of a state to achieve economic objectives such as price stability, lower inflation rate and etc. To achieve these goals, combinations of different methods are developed. Ultimately, monetary policy plays the role of regulator of such important economic indicators as money demand or lending volumes. Monetary policy is a very important part of national economic policy, because first of all, stimulation of economic growth, solution of the problem of employment of the population, indicators of living standards and many other economic factors depend on it. In the Republic of Azerbaijan, the monetary policy is implemented by the Central Bank of Azerbaijan. In general, monetary regulation has the following objectives:

- Regulation of the credit activity of the banking system;
- Regulation of capital flows;
- Control over interest rates in the local financial market, aimed at curbing their growth;
- Increase in the loan offer, taking into account priority government objectives.

Among main directions of monetary policy in Azerbaijan in upcoming years, ensuring the sustainability of money (price stability) remains the main goal of the Central Bank of Azerbaijan.

Depending on the situation in the economy and objective toward economic growth, two monetary policies can be implemented:

Expansionary monetary policy – Once there is a recession or a severe depression in the economy, then with the purpose of stimulating the economy, the central bank attempts to increase money supply by using specific monetary policy tools. As a result of increased money supply, the interest rate decreases. So this situation stimulates individuals and firms to invest or consume more as the opportunity cost of investments or consumption (interest rate) is lower. As a result, aggregate demand rises and the rising aggregate demand helps the economy to

recover. So recessions or lower economic growth can be vanished by applying expansionary monetary policy.

Contractionary monetary policy –In some cases, aggregate demand in overall country increases rapidly. This case leads to high inflation rates, so it should be prevented. In order to hinder this situation, contractionary monetary policy should be applied. This policy is all about decreasing money supply in the economy. The reduction in money supply will raise the interest rates. Eventually, as a result of contractionary monetary policy, the opportunity cost of investment and consumption will increase. So individuals will have a tendency to invest and consume less. Ultimately, the too rapid growth will be prevented.

2.2.2. Monetary policy instruments in Azerbaijan and comparison with other countries

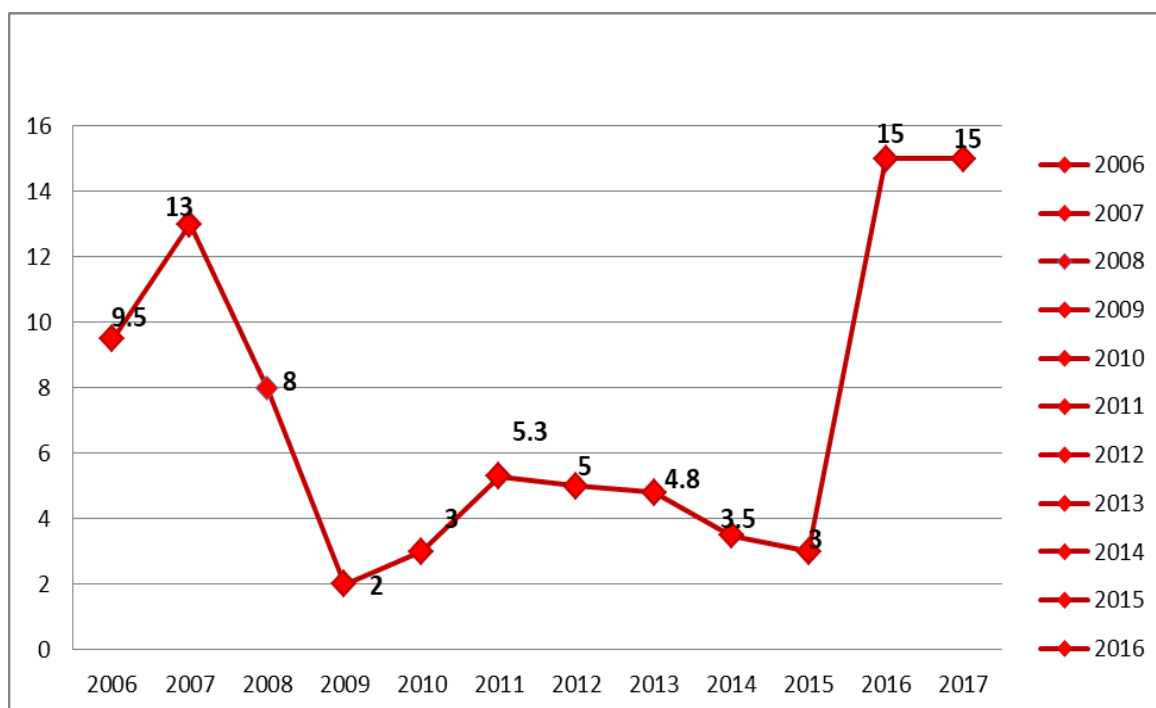
Since 2004, main monetary policy instruments in Azerbaijan are discount rate, required reserve ratio, open market operations, interest rate corridor. While most of them are very useful and suitable for the purpose of effective economic policy.

2.2.2.1. Discount rate policy

The Central Bank, which are called as “lender of last resort” provides loans from its reserves to some commercial banks in case of emerging liquidity problems in those banks. But the CBA doesn’t lend money without any rate. It charges interest rate for those loans and this rates are called discount rates. This discount rate is different from the interest rate that commercial banks charge to individuals or firms. But Central Bank can also affect indirectly to that interest rate by altering discount rate that it impose on given loans. Because if commercial banks get loans at higher discount rate from CBA, then in order to earn profit they should add their own interest rate will be more than the discount rate.

The discount rate which is one of the tools for carrying out the monetary policy is very crucial for commercial banks. Because the discount rate, the rate on the loans given by lender of last resort which is the Central Bank of Azerbaijan, identifies the cost of lending from Central banks.

Figure 1. Discount rates (%) for years



Source: CBAR, Statistic Bulletin 12/2018

So Central bank can influence interest rate by modifying discount rate. In the figure 1, it can be simply seen that, the central bank switched the discount rate a lot from 2005. Especially in 2009, in order to protect the economy from bad effect of Financial crises of 2008, the CBA decreased the rate from 8% to 2%. By doing this, the CBA tries to lower interest rates in the market. Because lower interest rates will foster consumption and investment, which ultimately stimulate the economy. In 2015-2017, to reduce the high inflationary conditions, it raised the rate from 3% to 15%.

2.2.2.2. Required reserve ratio

Another important instrument in regulating money supply in the economy is required reserve ratio. The central bank of Azerbaijan tries to switch required reserve ratio to raise or reduce money in circulation. This ratio points out the required amount of reserves of commercial banks that must be saved in the central bank accounts and can't be used to lend to potential customers. Main intention to keep these mandatory reserves inaccessible is to be able to solve possible liquidity problems of the banking industry in the future. Thanks to mandatory reserves,

CBA can manage not only quantity of AZN in circulation, but also quantity of other currencies in circulation in the economy. So this method of monetary policies can help to regulate all types of currencies in circulation. As it can be noticed from the Table 1, sharp decreases in required reserve ratio happened in 2009-2011. The ratio decreased from 6% to 0.5% during the period. This decrease is intended to reduce the effect of global crises and probable recessions in the economy. Next reduction in the rate was pursued between 2014 and 2016. During this time, the rate decreased from 2% to 0.5% again. It shows that the ratio sharply decreased and can be sign of the change in the value of the money supply which is positively affected to the inflation rate for the Azerbaijan.

Table 1 Required Reserve Ratio

ACTIVITY PERIOD	REQUIRED RESERVE RATIO	
	National currency	Foreign currency
01.01.2003 - 31.01.2006	10	10
01.02.2006 - 15.07.2008	10	10
16.07.2008 - 13.10.2008	12	12
14.10.2008 - 30.11.2008	9	9
01.12.2008 - 31.01.2009	6	6
01.02.2009 - 01.03.2009	3	3
01.03.2009 - 01.01.2011	0,5	0,5
01.01.2011- 01.05.2011	0,5	0,5
01.05.2011-01.07.2011	2	2
01.07.2011-31.01.2012	2	3
01.02.2012-31.07.2014	3	3
01.08.2014 -01.03.2015	2	2
01.03.2015 - 02.03.2016	0,5	0,5
from 03.03.2016	0,5	1

Source: CBAR, Statistic Bulletin 12/2018

2.2.2.3. Open Market Operations

Current value of open market operations among CBA's monetary tools is remarkably rising. Two different roles of open market operations could be mentioned:

- Direct funds to the budget of the state.
- To be one of the Central Bank's essential tools for regulating money market.

Table 2 REPO and inverse REPO operations

EAR Y	Repo		Reverse Repo	
	1-day		1-day	
	%	Quantity mln. AZN	%	Quantity mln. AZN
2005	9,2	4,7	-	-
2006	4,0	0,5	16,0	9,0
2007	5,0	371,3	19,0	-
2008	1,0	771,7	13,0	-
2009	1,0	31,9	7,0	-
2010	1,0	127,9	7,0	
2011	1,0	738,2	7,0	
2012	1,0	58,2	7,0	
2013	1,0	1085,5	7,0	
2014	0,1	0,0	5,0	
2015	0,1	0,0	5,0	
2016	12	0	18	
2017	10	0	18	

Source: CBAR, Statistics Bulletin, (12/2018)

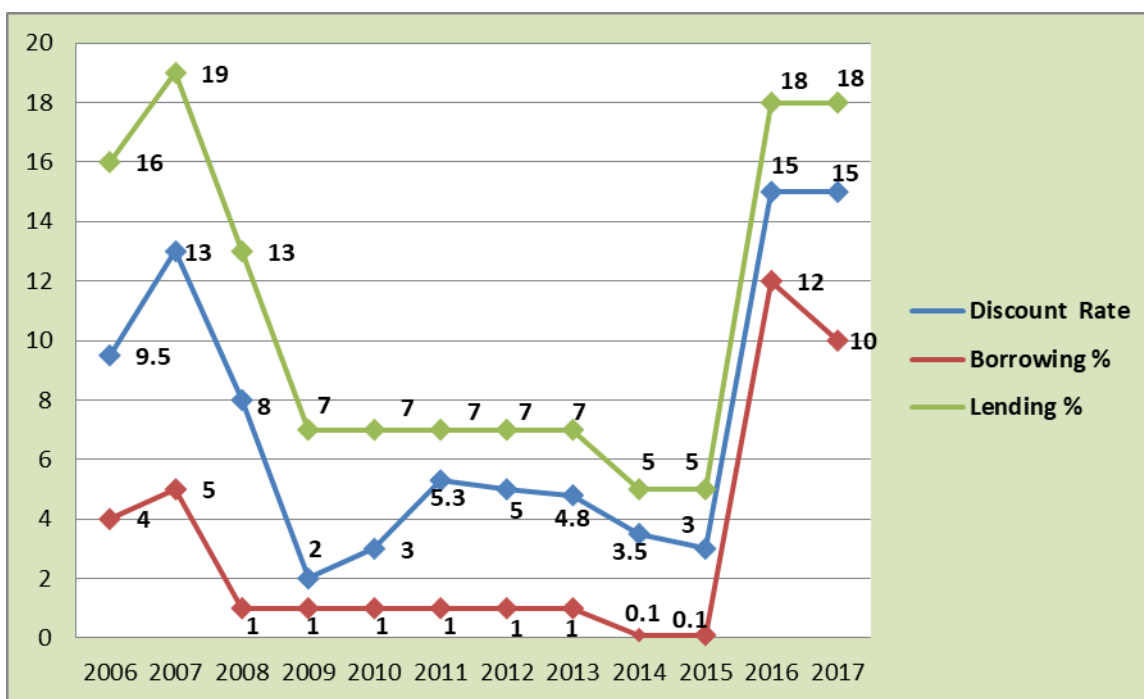
The CBA purchases or sells government bonds to have an impact on quantity and growth of money in the circulation, it also influences credit situations in the state. In order to implement open market operations, repo and reverse-repo transactions are used. Utilizing repo and reverse-repo tools started first time in 2001 in Azerbaijan. In repurchase transactions, the CBA buys market securities, but in reverse-repo it sells securities. So in repo operations, money supply will increase, as central bank injects additional money to the economy. But in reverse-repo operations total amount of money in the circulation will decrease. Because the CBA withdraws money from circulation by selling securities.

As it is pointed out in the Table 2, from 2005 to 2014 repo operations were employed by the Central Bank. Reverse-repo operations were only utilized in 2006 in amount of 9 mln. AZN. After that period, reverse repo transactions weren't used in Azerbaijan. If the comparison among years is pursued, it could be seen that starting from 2016 interest rates on repo operations increased significantly from 0.1% to 10%.

2.2.2.4. Interest Policy

Since 2007, the Central Bank of Azerbaijan has begun to use “interest rate corridor policy” to regulate money in circulation. Thanks to “interest rate corridor”, instead of regulating money market directly, it has been accepted to direct the change intervals of discount rates in free market conditions.

Figure 2 Interest Rate Corridor



Source: CBAR, Annual report, 2017

In figure 2, it can be concluded that lower graph indicates the overnight repo rates, upper graph points out reverse-repo rates. The graph between repo and reverse-repo rates shows discount rate of the Central Bank of Azerbaijan Republic (CBAR). In the figure 2, the differences in interest rate intervals between upper and lower bounds were decreased year by year. The main purpose in decreasing

these intervals is to reduce uncertainty in interest rates and indirectly obtain stability in the economy.

2.2.2.5. Comparison with other countries

In western countries, several instruments below are used in order to implement monetary policy:

- Standards for mandatory reserves of commercial banks deposited in the central bank (reserve requirements);
- interest rates for refinancing commercial banks (discount rate regulated by Central Banks);
- open market operations;
- currency regulation;
- setting benchmarks for the growth of money supply;

In a developed market economy, the aforementioned tools act very effectively as factors for reducing inflation and stimulating growth. In the Eurozone, they allow you to keep the growth of prices in the framework of 1-2% per year. They achieve this with the help of applying following methods:

- compress the money supply in circulation during periods of rising inflation,
- force banks to reduce lending volumes, primarily the real sector,
- force the securities market to reduce the size of investments and thus reduce the demand for manufactured goods and services.

In periods of decline in production, the use of the same tools to expand the money supply allows for the opposite effect. But all this is valid only when there is a high degree of integration, "participation" of banks and the stock market in the real production of goods. Under the conditions of Azerbaijan, the central bank of Azerbaijan can limit the credit resources of banks with the help of these instruments, however, since banks and the market for securities have not achieved high development yet in the country, this will have little effect on the money

supply to the real sector, and then it will have a very weak effect on both the volume and the prices of goods produced here.

The activity of the CBAR to ensure the stability of the monetary unit creates the prerequisites for economic growth and the solution of other problems. However, this statement is too general to be fair in all cases. The CBA has the ability to influence inflation only by reducing the money supply. But such a reduction is full of many negative consequences for the economy: For example, it reduces resources for development. Therefore, in some cases, in our opinion, it is appropriate for the CBA to set a task not to fight inflation, but to set other goals, in particular economic growth by expanding lending to producers and lowering interest rates.

It should also be noted that in domestic legislation there are no specific provisions, which would indicate that the main bank of the country should contribute to the development of domestic production. In our opinion, since monetary policy has a great influence on the economic development of a country, a change in legislation in such a plan would make the policy more effective.

The monetary policy of the CBAR has, in principle, the same objectives and is carried out by the same methods as in other developed countries. In a certain sense, this policy is classical: The main direction in it is maintaining the purchasing power and exchange rate of the national currency. However, in practice the question of how to improve the monetary policy of any central bank is always relevant. For example, the US Federal Reserve Act defines the objectives of monetary policy in such a way that it must: "ensure the elasticity of money circulation, deliver funds to commercial banks through the discount rate channel as a lender of last resort, provide more efficient supervision of banking activities in the United States."

The monetary policy of the CBA, in our opinion, should not be limited only to maintaining the purchasing power and rate of the AZN. The classic version is more suitable for countries with a stable market economy. But experience shows that even in these countries, in which capitalism has developed over the centuries,

attempts are being made to expand the influence of central banks on socio-economic processes. Taking into account the characteristics of the transition economy in Azerbaijan and the complexity of the tasks solved by the state, appropriate changes could be made to the current legislation so that the CBA coordinates the needs of the money supply with the needs of the real economy, that is, the monetary policy should ensure economic growth.

Given some easing in fiscal policy, the CBA in 2018 will continue to pursue a conservative monetary policy. To this end, the Central Bank will ensure the formation of adequate monetary conditions, - noted in the statement of the CBA on the main monetary policy direction for 2018 and the medium term. As part of this policy, the CBA plans to keep the discount rate in the positive zone taking into account the dynamics of inflation and inflation expectations. will continue to pursue a flexible exchange rate policy in order to effectively absorb external shocks, while the bank plans limited participation in operations in the foreign exchange market in order to prevent short-term changes in the exchange rate.

On November 29, Ilham Aliyev, President of Azerbaijan, signed a decree on securing the activities of the Credit Guarantee Fund. The head of state approved the charter and structure of the organization, "The procedure for providing guarantees for loans attracted by entrepreneurs in AZN", "The procedure for applying the credit rating system and other risk management tools" and "The procedure for issuing subsidies on interest accrued on loans issued to entrepreneurs in AZN".

As it is an obvious fact, in recent years, monetary authorities implemented a tight monetary policy, and as a result, the monetary base in the country for the relevant monetary aggregates decreased significantly. In this regard, the policy of CBAR, which is to refuse to further lower the discount rate, causes a certain suspicion.

In the process of using the “wide lending channel” of the transmission mechanism and carrying out operations on the open market, the central bank sells government-issued securities. The mechanism of using this tool is that if during a

decline in the national economy caused by a cumulative reduction in demand, the central bank is interested in increasing the money supply in circulation, then it is trying to increase the money resources of commercial banks. Commercial banks are beginning to sell part of their assets, thereby obtaining an opportunity to expand lending. All this will lead to expansion and lowering the price of the loan, which is commonly called the policy of “cheap money”. If the economy is “overheated,” the central bank starts selling government securities, reducing the overall mass of money in circulation. Thus, free cash of commercial banks decreases, and thus the supply of credit decreases. This policy is called the policy of "expensive" money, or credit restriction. This process has a similar reverse mechanism. In accordance with the legislation, the Central Bank of Azerbaijan can conduct the following operations on the open market:

- buying and selling and other operations with securities issued by the state;
- purchase and sale and other operations with securities of own issue;
- purchase and sale and other operations with foreign currency.

However, we note that in the course of the operation of a “wide lending channel”, operations in the open market with securities are conducted by the Central Bank of Azerbaijan on a very limited scale. The main obstacles to their intensive use are the underdevelopment of the secondary securities market, as well as the lack of funds to conduct operations at the required scale. In the future, the Central Bank of Azerbaijan needs to pay more attention to this instrument. In our opinion, open market operations will be of increasing interest to Azerbaijan as the domestic stock market develops, with the following advantages:

- Flexibility and accuracy of the tool, which allows to achieve the desired change in the money supply;
- Do not require lengthy administrative approvals and have a quick corrective impact on money supply;
- Constant monitoring of the volume of operations;
- Easily reversible.

The reverse operations – repo and reverse repo, which represent the purchase or sale of securities with the obligatory performance of a reverse transaction at a fixed time at a predetermined rate, are considered more effective. They also belong to the “wide lending channel”. If the central bank buys securities on the terms of their repurchase by the seller after a certain time (as a rule, not more than a week later), then it is direct repo. If the central bank sells securities and redeems them back after some time, then this operation is called reverse repo. It should be taken into account that there are specific difficulties in carrying out these operations through the credit channel mechanism in the economy of Azerbaijan. The Central Bank of Azerbaijan also uses the “narrow lending channel” of the transmission mechanism in the process of refinancing commercial banks and deposit operations of the central bank. However, they are unilateral tools, since with a lack of liquidity, commercial banks have the opportunity to replenish it with a central bank loan, and excess liquidity can be placed on the deposit account in central bank. At last, the central bank has the ability to regulate the amount of money in circulation, either by withdrawing excess cash from circulation or by expanding the money supply.

The interest channel among transmission mechanisms has great importance in modern conditions. By regulating interest rates on their operations, the central bank, makes money more expensive or cheaper and affects their quantity in circulation, while simultaneously signaling the banking system about the value of money in the prevailing market conditions. We agree with the thought of some economists that the effectiveness of the transmission mechanism of monetary policy largely depends on the degree of state intervention in the work of financial markets, that is, control of interest rates, the volume or terms of bank lending, and also due to the existence of such a mechanism banks can dictate the level of rates for the money market. Changes in money market rates, in turn, are transmitted to other markets (Mankiw, 2012, p 340). The Central Bank of Azerbaijan Republic also highlights the priority channel of the transmission mechanism. When setting the

discount rate, the CBA takes into account the country's macroeconomic situation and the state of the financial market.

To enhance the effectiveness of the interest rate channel among the CBA's monetary policy transmission mechanisms, in our opinion, it is necessary to more efficiently manage the interest rates of the money market and form an effective and understandable system of interest rate. As directions for improving the system of monetary policy instruments, the CBA may recommend introducing a key rate, by analogy with the Bank of Russia, and also pay closer attention to the formation of the boundaries of the interest rate corridor. Other variations of the "interest channel" ("replacement channel", "income and flow channel") in the economy of Azerbaijan are practically not used at present. In addition, the "currency channel", which was actively used by the Central Bank of the Azerbaijan Republic in 2018, can also be considered a priority channel of the transmission mechanism. In this regard, it should be noted that the "exchange rate channel" may be the main channel of transmission mechanism in developing countries, which is characterized by a high level of dollarization of the economy and a weak national currency, and underdeveloped financial markets. One of the most important feature of monetary policy in Azerbaijan is the exchange rate policy of the CBA. In order to maintain macroeconomic stability, improving financial stability and stimulating net exports, the exchange rate is an important driver in Azerbaijan.

The exchange rate directly or indirectly affects many macroeconomic indicators, such as inflation, balance of payments, investment activity, etc. Therefore, the value of the exchange rate is multifaceted and often controversial. Versatility is manifested in the fact that any change in the exchange rate affects a wide range of economic parameters. For example, strengthening the exchange rate leads to higher prices for goods of foreign production, which partially affects domestic producers through increased exports, and, consequently, leads to an increase in aggregate demand, employment and strengthening the position of domestic producers, to an increase in their profits and tax deductions to budgets all levels. Despite the positive trends, there is also a negative increase in production

costs and the possibility of reducing its volumes, which leads to increased inflationary processes caused by rising inflationary expectations of the population and a reduction in foreign investment. For this reason, the Central Bank of Azerbaijan needs to pay special attention to strengthening the national currency, taking into account the fact that moderate strengthening of the manat does not adversely affect non-oil exports.

CHAPTER 3. THE EMPIRICAL ANALYSIS OF MONETARY POLICY AND ECONOMIC GROWTH LINK IN AZERBAIJAN

3.1. Literature Review

In this part, the recent studies in which main aims are to analyze relationship between monetary policy and economic growth are reviewed. It is concluded that because of the importance of the topic there are vast of studies which are devoted to investigating the relationship between economic growth and monetary policy.

In the context of monetary policy and economic growth, Dilshad Ahmed et al., (2016) examined the existence of link between monetary policy and economic growth in Pakistan employing Autoregressive Distribution Lag (ARDL) to the data spanning from 1973 to 2014. The empirical outcomes indicate that there is a statistically significant long-run relationship between money supply and exchange rate, which positively affects economic growth. By using Vector AutoRegressive (VAR) model, Berument and Dincer (2008) investigated monetary policy vitality in Turkish economy and findings summarize that monetary policy has a temporary effect on output, whereas it has a lasting effect on prices.

Ali et al (2008) in their study for Southeast Asian countries, the effects of monetary and fiscal policy on economic growth has been analyzed. The effect of money supply on economic growth both in the short and long term was found to be positive in the study conducted using ARDL boundary test. It is observed that fiscal policy has no effect on economic growth both in short and long term. As a result, it is revealed that the economic growth-enhancing effect of monetary policy is much higher than fiscal policy.

Yucel (2009) for 1989 and 2007, using monthly data in his study of economic growth has studied the relationship between trade openness and financial development. In the analysis, while there is a negative link between financial improvement and economic growth, there is a positive link between openness and economic growth. In Granger causality analysis, a two-way relationship was found between financial development, openness and economic growth.

In Mohammed's (2009) study for Pakistan, M2 was examined with the help of the VAR model, whether there is a long-term relationship between public expenditures and economic growth. In the cointegration analysis, while there was a negative relationship between public expenditures and M2, a positive relationship was found between M2 and economic growth. Ogunmuyiwa and Ekone (2010) with the least-squares method and error correction model in Nigeria, a positive effect of the increase in money supply on economic growth has been determined. Jawaid et al. (2010) showed that the effect of monetary policy on economic growth was positive in the long-run and more effective than fiscal policy as a result of the co-integration and VAR analyzes for the Pakistani economy. Floor (2010) of public expenditure it has made to Turkey by using the bounds testing approach in studies analyzing the impact on economic growth has been achieved in my direction finding of increased economic growth, the increase in public spending. Sakyi (2011) in his study for Ghana found that there is a positive relationship between external openness, economic growth and external aid in both short and long term in the autoregressive AR model. In this analysis, it is concluded that public expenditures have a negative effect on economic growth.

In the study of Fasanya, Onakoya and Agboluaje (2013), the relationship between monetary policy and economic growth was investigated for 1975-2013. As a result of the Var analysis, a long-term cointegration between monetary policy and economic growth emerged.

In the study of Chipote and Makhetha-Kosi (2014), whether monetary policy for South Africa encourages economic growth, there is a positive relationship between monetary policy and economic growth in the long period of time. In other words, the long-term monetary policy affects economic growth. Ivri off and Yildirim (2013) in Turkey, South Africa, Brazil, China, India and Russia based on a sample comprising six countries formed the structural VAR model. In this situation, outcomes indicated that the implementation of the tight monetary policy has a negative impact on inflation and growth through interest rates. So government can oversee the inflation and economic activities by monetary policy.

There are several investigations which are focused on the link between monetary policy and economic growth in Azerbaijan as well. Shahriyar Mukhtarov et al. (2016) analyzed influence of monetary policy tools on production and prices by using VECM (Vector Error Correction Model) for the period span of 2001:4-2014:3. Findings clarify both credit channel and interest channel are significant factors in Azerbaijan economy. A study by Hasanov Fakhri (2011) et al., analyzed two main macroeconomic variables, inflation and economic growth, in Azerbaijan for the period of 2000-2009. Results of the investigation reveal that there is non-linear association between inflation and economic growth in Azerbaijan, there is a 13% threshold level of inflation for GDP growth. Under threshold level of 13% there is statistically significant positive relationship, but over 13% there is negative relationship between them. This can help to monetary policymakers to hold inflation below threshold to avoid from its negative effect on GDP growth. According to the findings of Duzgun (2010) using the ARDL (Autoregressive Distributed Lag) method, monetary policy has a positive effect but it is not statistically significant to effect Azerbaijani economy. Public expenditure has a negative and significant effect. An expanding monetary policy is stimulating the economy, while an expanding fiscal policy narrows the economy. The budget deficit caused by the expansionary fiscal policy will reduce private investment through interest rates and reduce the economy. The findings in both directions suggest that the Monetarist view is valid. However, the fact that the variable representing monetary policy is meaningless reveals that monetary policy is ineffective on the economy. As a result, fiscal policy is more effective on the economy of Azerbaijan. The existence of supportive results of the monetarist view has emerged. But there are some exceptional cases. The most important reason for this is the economic situation of the country, the method used in the analysis and the characteristics of the selected data.

As a result of these researches, it can be concluded that in each country the link between monetary policy and economic growth differs. But the question is how the link is in Azerbaijan.

3.2. Methodology

As mentioned in the literature review part, VECM is one of the most utilized econometric models to analyze the relationship between monetary transmission mechanisms and economic growth. Therefore, in this study, the effect of monetary policy on economic growth of Azerbaijan for the period 2005M04-2018M12 was tested with the Vector Error Correction Model (VECM).

3.2.1. Data

International empirical researches were taken into consideration in the selection of variables. Then unit root test was employed for each of the variables to determine if the variables are stationary or not. By using Johansen cointegration test, the existence of long-run relationship among variables was examined. Granger causality tests were also used to further evaluate the relationship among economic variables. It is recommended to use logarithmic values instead of actual values of series. Main objectives to take log version of variables are to avoid potential outlier issues and changing variance problems (heteroskedasticity). The symbols and explanations of the variables used in this econometric model are summarized in Figure 3. There it should be considered that even if the data are given in normal form. But log form were taken into account in the model.

Figure 3 Explanation of Variables

NGDP	Non-oil GDP
M	Money Supply (M2)
INT	Discount Rate
EXC	Real Exchange Rate

Source: <https://econpapers.repec.org/article/hurijarbs/>
Chosen by the author based on the linked above

3.2.2. The Model and its Specification

Unit root test

Well-known econometricians, Dickey and Fuller (1979) developed a unit root test to test non-stationary series. The key to Dickey Fuller's tests is determine whether a series is stationary or not. The existence of the unit root is the same as the statement that the series is non-stationary. Dickey Fuller's basic model of first-order autoregressive process (AR (1)) is as follows:

$$Y_t = pY_{t-1} + e_t \quad (I) \quad t=1,2,\dots$$

According to the model, if the variable series is stationary, then $|p| < 1$. But if the series is non-stationary, then $|p| = 1$. A time series with $P = 1$ is usually called a random walking process. In this case, the indicated null hypothesis is written as $H_0: p = 1$ and the alternative hypothesis is $H_a = |p| < 1$. Beside this, Dickey and Fuller (1979: 428) also propose three alternative equations that a series can be represented:

$$Y_t = m + pY_{t-1} + e_t \quad (II)$$

$$Y_t = m + Bt + pY_{t-1} + e_t \quad (III)$$

if Y_{t-1} is subtracted from both sides of the equations, then the equations (I), (II) and (III) can be written in the form of difference equations:

$$Y_t - Y_{t-1} = (p-1)Y_{t-1} + e_t$$

$$\Delta Y_t = (p-1)Y_{t-1} + e_t$$

$$\text{If } p-1 = \delta$$

$$\Delta Y_t = \delta Y_{t-1} + e_t$$

Analogically,

$$\Delta Y_t = \mu + \delta Y_{t-1} + e_t$$

$$\Delta Y_t = \mu + \beta t + \delta Y_{t-1} + e_t$$

The Dickey-Fuller unit root test deals with testing whether $p = 1$ or $p-1 = \delta = 0$ in all models above. if t statistic is less than the critical value, the null hypothesis for the existence of the unit root is rejected and the result is a static Y_t process. It means that the data series is stationary.

In unit root test developed by Dickey and Fuller (1979), the whole series is treated as a first-order autoregressive process and suggests that there is no autocorrelation in the error terms. In 1981, Dickey and Fuller developed the new unit root test to include additional delayed values of the variable series to remove autocorrelation problem. In the so-called Dickey-Fuller unit root test, the lag length in additional terms is obtained by the Akaike Criterion (AIC) or the Schwartz Bayesian Criteria (SBC) and the models for the ADF unit root test with further lags will be as follows:

$$\Delta Y_t = \delta Y_{t-1} + \sum_1^j a_j \Delta Y_{t-j} + e_t$$

$$\Delta Y_t = \mu + \delta Y_{t-1} + \sum_1^j a_j \Delta Y_{t-j} + e_t$$

$$\Delta Y_t = \mu + \beta t + \delta Y_{t-1} + \sum_1^j a_j \Delta Y_{t-j} + e_t$$

Co-integration test

Before 1980s, level forms of non-stationary data couldn't be used in running regression, as non-stationary data could result in very strong relationship among unrelated variable series because all were functions of time. This situation was not logical to interpret. In order to solve this problem, differenced form of variables were used in regression models. But this could only estimate short-run relationship among variables. In order to run long term relationship among non-stationary variables, economic theories predict a long-term and stable relationship among some variables and this long-run relationship is called co-integration. The simple conditions for co-integration are below:

1. First differenced forms of various variable series must be stationary I(1)
2. Level form of residuals series must be stationary I(0),

If these conditions are met, then these variables are co-integrated. Thus, there is long-run relationship among those variables.

Johansen co-integration test

Johansen co-integration approach is widely used in the process of developing long-term relationship. In the theory of co-integration, it is stated that the variables predicted by the long-term relations will not move away from each

other a lot. Johansen cointegration test analyzes how many independent linear combination (r) exists for n variables where, as a result, a stationary process is generated. In cointegration process, it is assumed that there are common non-stationary processes under each variable. So, it can be represented as:

$$\begin{aligned} X_{1,t} &= a_1 + b_1 Z_{1,t} + b_2 Z_{2,t} + \dots + b_k Z_{k,t} + e_{1,t} \\ X_{2,t} &= a_2 + c_1 Z_{1,t} + c_2 Z_{2,t} + \dots + c_k Z_{k,t} + e_{2,t} \\ &\dots \\ X_{n,t} &= a_n + v_1 Z_{1,t} + v_2 Z_{2,t} + \dots + v_k Z_{k,t} + e_{n,t} \end{aligned}$$

The number of $Z_{i,t}$ can be assumed as:

$$k = n - r$$

Where, n and r are the number of variables and the number of independent linear combinations respectively.

3 possible outcomes should be considered:

1. $r=0$ and $k=n$. in this condition, time series variables aren't cointegrated.
2. $0 < r < n$, $0 < k < n$. in this case, there is cointegration among variables.
3. $r = n$, $k = 0$. In this condition, all variables are stationary and cointegration isn't appropriate here.

So, with the help of analyzing the number of independent combinations, hypothesis for existence of cointegration can be formulated.

Johansen cointegration test has 2 types which are called the maximum eigenvalue test and the trace test.

Trace test

In trace test, the number of linear combination (R) is tested to be equal to a given number (R_0) and alternative hypothesis is that R is greater than R_0 .

$$H_0 : R = R_0$$

$$H_1 : R > R_0$$

Here if it is assumed that $R_0 = 0$ which means there is no cointegration and if corresponding p-value is lower than the critical value, then H_0 can be rejected

which means there is at least one cointegration relationships. But if p-value is more than critical value, then there is not enough evidence to claim existence of cointegration.

Maximum Eigenvalue Test

Null hypothesis is the same as trace test which indicates the number of linear combination (R) is equal to a given number (R_0). But alternative hypothesis is different which claims the number of linear combinations is one-unit greater than the given number (R_0).

$$H_0 : R = R_0$$

$$H_1 : R = R_0 + 1$$

When $R_0=0$, rejection of null hypothesis will lead to existence of only one cointegration relationship, but if there is more than one cointegration relationships then trace test will be more powerful than eigenvalue test.

Vector Error Correction Model (VECM)

After ascertaining that there is at least one cointegration relationship, then error correction model should be used to make correction to the model. Initially, model is $Y^e = a + Bx^e$. Y^e and $x^e \rightarrow$ equilibrium or long-run values.

If we add lagged values, then the equation will be as below:

$$Y_t = c + m_1x_t + m_2x_{t-1} + kY_{t-1} + v_t$$

If we do further mathematical transformation to the equation above, then the equation will be

$$\Delta y_t = c' + m_1\Delta x_t - (1 - k)(Y_{t-1} - a - Bx_{t-1}) + v_t$$

$(Y_{t-1} - a - Bx_{t-1})$ is called long-run dynamics or error correction mechanism in the model.

Long-run dynamic of Vector Error Correction Model (VECM) is the crucial element to regulate changes independent variables. When specific value of independent variables fluctuates more than the mean, then the dynamic performs its operations toward solving this problem. Without this dynamic Vector Error Correction Model (VECM) is meaningless.

3.3. Estimation and Results

First, stationarity of variables series which are used in the model must be examined. As it was stemmed in methodology part, Augmented Dickey-Fuller (ADF) test was employed to test whether variable series are stationary or not. In ADF test, maximum lag order was determined at 2, and optimal lag order was

Table 3 Results of ADF unit root tests

Variable	Panel A:	Panel B:	Resu lt
	Level	1st difference	
	Actual value	Actual value	
<i>NGDP</i>	-0.6597	-3.6069***	I(1)
<i>M</i>	-1.0980	-9.6469***	I(1)
<i>INT</i>	-1.6102	-9.0521***	I(1)
<i>EXC</i>	-1.2750	-8.6978***	I(1)

Notes: Maximum lag order is set to two and optimal lag order (k) is selected based on Schwarz criterion in the ADF test; *, ** and *** accordingly indicates rejection of null hypothesis at 10%, 5% and 1% significance levels; critical values are taken from the table prepared by MacKinnonun (1996). Time period: 2005:M1-2018:M12.

Source: <https://data.worldbank.org/country/azerbaijan>. ADF test were examined by the author using the data in the mentioned link

selected by Schwarz Information Criterion in ADF test. Based on the outcomes of ADF tests, for level forms of variable series there is not satisfactory level of evidence to claim that at least one of the variable series at level form is stationary. Because all of NGDP, M, INT, EXC have unit roots (non-stationary) at level form. But in the ADF test outcomes for first differenced forms of NGDP, M, INT, EXC, it was found that first differences of these variable series have no unit roots. Hence these variables are I(1). Table 3 summarizes brief results of ADF unit root tests for the variables. As an outcome of ADF test, all variable series were found to be I(1). This outcome permits us to estimate long-run relationships among variables. So cointegration test can be proceeded. If cointegration model can be proceeded, it means that it is plausible to expected to have long-run relationships among economic growth, non-oil GDP and discount rate.

So as a next step, based on the results of unit root tests which were done in eviews, we can pass to the next phase of our economic investigation.

To operate Johansen cointegration test, first optimal lag number must be determined. For the purpose of determining optimal lag number for variables, VAR (Vector Autoregression) model should be utilized.

Table 4 Lag Length Selection Criteria Tests

Lag	LogL	Information Criteria				
		LR	FPE	AIC	SC	HQ
1	277.7792	NA	4.83e-07	-3.192429	-2.890003	-3.069656
2	333.6693	106.3275	2.97e-07	-3.678894	-3.074042*	-3.433347*
3	351.0105	32.14473*	2.92e-07*	-3.695250*	-2.787972	-3.326930
4	359.1531	14.69627	3.22e-07	-3.599427	-2.389723	-3.108333

* indicates lag order selected by the criterion, LR: sequential modified LR test statistic (each test at 5% level), FPE: Final prediction error, AIC: Akaike information criterion, SC: Schwarz information criterion, HQ: Hannan-Quinn information criterion

Source: <https://data.worldbank.org/country/azerbaijan>. Lag length selection criteria was operated by the author in eviews using data in mentioned source

By estimating VAR among variables, we can examine which lag number is appropriate in our case. VAR lag length selection criteria result is shown in Table 2. According to the outcomes of the VAR lag length criteria, 3 lags were chosen. Because three of the Lag interval test criteria which are sequential modified LR test statistic (each test at 5% level), Final Prediction Error (FPE), Akaike information criterion (AIC) suggest to select 3 lags. Only other 2 test criteria (HQ and SC) suggest selection of 2 lags.

Test results for residuals of VAR model can be considered in Panel A – Panel D of Table 6. According to Part A of Table 3, null hypothesis claims that there is no autocorrelation among error terms and p-value is more than 5%. Therefore there is no serial correlation or autocorrelation among residual series. Analogically, the outcomes of heteroskedasticity and normality test for error terms in Panel B and C of Table 6 state that the residuals are normally distributed and there is no heteroskedasticity problem. VAR stability test results in Panel D of Table 6 conclude that all roots of characteristic polynomial are inside of the unit circle which means VAR model is stable. The outcomes of these tests show that VAR model is reliable. Johansen cointegration test was used to examine existence of long-run relationships. Products of Johansen cointegration test are presented in

Panel E and F of Table 7. Trace and Maximum Eigenvalue tests in Johansen cointegration give the similar outcome, as both of the tests present lower p-value (0%) and cause to reject the null hypothesis of no cointegration relationship.

Table 5 VAR residual diagnostics and Johansen cointegration tests

Panel A: LM test for Serial Correlation				
Lags	LM-Statistic	P-value		
1	14.567	0.5565		
2	17.056	0.3819		
3	15.950	0.4564		
4	8.4284	0.4916		
Panel B: Normality Test ^b				
Statistic	χ^2	d.f.	P-value	
Jarque-Bera	7.3515	4	0.118	
Panel C: Test for Heteroscedasticity ^c				
White	χ^2	d.f.	P-value	
Statistic	186.11	160	0.077	
Panel D: Test for Stability				
Modulus		Root		
0.638833		0.542900 - 0.336702i		
0.638833		0.542900 + 0.336702i		
0.466035		0.158324 - 0.438318i		
0.466035		0.158324 + 0.438318i		
Notes: ^a The null of the LM Test is no serial correlation in residuals at lag of h th order; ^b The Normality Test is the Urzua (1997) system normality test, for this test the null states multivariate normality of residuals;				
^c The null for White Heteroscedasticity Test claims that there is no cross terms heteroscedasticity in the residuals; ^d VAR stability test results conclude that all roots of characteristic polynomial are inside of the unit circle; χ^2 stands for the Chi-square distribution; d.f.=degree of freedom.				
Panel E: Johansen Cointegration Rank Test (Trace)				
Null hypothesis	Eigenvalue	Trace statistics	0.05 Critical value	P-value
None *	0.275261	0.275261	47.85613	0.0000
At most 1	0.078720	0.078720	29.79707	0.2603
At most 2	0.054127	0.054127	15.49471	0.3483
At most 3	3.55E-05	3.55E-05	3.841466	0.9383
Panel F: Johansen Cointegration Rank Test (Maximum Eigenvalue)				
Null hypothesis:	Eigenvalue	Max-Eigen Statistic	0.05 Critical value	P-value
None *	0.275261	53.12073	27.58434	0.0000
At most 1	0.078720	13.52859	21.13162	0.4049
At most 2	0.054127	9.181706	14.26460	0.2713
At most 3	3.55E-05	0.005854	3.841466	0.9383

Source: <https://data.worldbank.org/country/azerbaijan>. This source was used by the author in the process of modeling above

Trace and Maximum Eigenvalue tests in Johansen cointegration give the similar outcome, as both of the tests present lower p-value (0%) and cause to reject the null hypothesis of no cointegration relationship. So based on the test results, there is at least one cointegration relationship among variables.

Table 6 Outcomes Of Tests From The Different Cointegration Methods

Method	VECM	DOLS	CCR	FMOLS
Panel A: Long-run equations				
Regressor	Coef. (Std. Er.)	Coef. (Std. Er.)	Coef. (Std. Er.)	Coef. (Std. Er.)
M	0.52 (0.09) ***	0.60 (0.10) ***	0.58 (0.90) ***	0.58 (0.09) ***
INT	-0.03 (0.03)	-0.04 (0.03)	-0.03 (0.02)	-0.03 (0.02)
EXC	1.01 (0.36) **	1.09 (0.38) ***	1.02 (0.35) ***	1.02 (0.35) ***
Panel B: Residuals diagnostics tests results for VECM				
$Q_{AR(2)}$	2.54 [0.863]			
LM_{SC}	1.04 [0.409]			
χ^2_{HETR}	103.6 [0.072]			
JB_N	4.46 [0.346]			
Notes: Dependent variable is NGDP; Coef. and Std. Er. denote coefficient and standard error; *, ** and *** indicate significance levels at 10%, 5% and 1%; Probabilities are in brackets; $Q_{AR(2)}$ = Q-statistic from testing AR(2) process; LM_{SC} = Lagrange multiplier statistic of serial correlation test; χ^2_{HETR} = Chi-squared statistic for heteroscedasticity test; JB_N = Jarque-Bera statistic for testing normality; In VECM, Jarque-Bera statistic was taken from the option of Orthogonalization: Residual Correlation (Doornik-Hansen).				

Source: <https://data.worldbank.org/country/azerbaijan>. Based on the mentioned sources tests were examined by the author

To run cointegration model among variables, we utilized Vector Error Correction Model (VECM). Besides VECM, with the intention of robustness test, we also employed DOLS, FMOLS and CCR methods among variables (see table 6). Then we compared all results and found out that almost all methods provided the same results. The results of these tests indicate that Money supply and exchange rate have significant effect on non-oil GDP, while the impact of discount rate which is offered by Central Bank of Azerbaijan Republic to other commercial banks is statistically insignificant. In order to match regression assumptions, all tests related to residuals were done in VECM. The outcomes of residuals diagnostic tests present that residuals are normal, stable and there is homoskedasticity. As all assumptions about residuals are satisfied, it can be stemmed that the Vector Error Correction Model in this case is reliable.

In the table 7 below, direction of causality can be easily considered by clarifying results of Granger causality. According to the table, we reject null hypothesis in first and last two cases, but in the other cases we can't reject null hypothesis as p-value is more than 5%. As a result of Granger causality test, it can be concluded that Money supply and exchange rate cause to non-oil GDP, while discount rate doesn't cause to non-oil GDP. On the other side, changes in non-oil GDP doesn't cause to changes in money supply and discount rate, but it causes to changes in exchange rate in Azerbaijan.

Table 7 Granger causality test results

Null Hypothesis	CH-sq.	p-value
LOGM does not Granger cause LOGNGDP	27.95437	00
LOGNGDP does not Granger cause LOGM	3.231935	87
LOGINT does not Granger cause LOGNGDP	3.906052	18
LOGNGDP does not Granger cause LOGINT	1.365955	51
LOGEXC does not Granger cause LOGNGDP	7.238698	58
LOGNGDP does not Granger cause LOGEXC	10.13434	53

Source: <https://data.worldbank.org/country/azerbaijan>. Using the data in the mentioned source Granger test were done by the author in eviews.

CONCLUSION AND RECOMMENDATION

Non-oil exports. This predicted increase in net exports would also affect GDP. But the interesting question is that how effective these policy tools are in Azerbaijan's economic growth.

In order to determine effectiveness of monetary policy tools, this study attempts to analyze whether monetary policy instruments in Azerbaijan are effective or not. Within this context, the monthly data of 2005:M1-2018:M12 were taken into account. In the process of analyzing variable series, firstly ADF unit root tests were operated to determine stationarity of variables. As an outcome of ADF test, it was found that all variables were non-stationary at their level form, but their first differenced forms are stationary. Thanks to the results of ADF test, it is plausible to estimate a cointegration relationship among variables.

VAR model was employed to examine optimal lag length criteria. Based on the results, majority of the lag length criteria tests suggested adding 3 lags of variables. Further residual To regulate economic situations, monetary policy is very useful tool in any economy. In Azerbaijan, several monetary policy tools have been employed for years with the aim of obtaining economy stability. Beside this, several devaluations (2015, February and December) were implemented with the purpose of increasing the value of oil and diagnostics tests were operated for VAR and the residuals were found to be normally distributed, no autocorrelation and heteroskedasticity existed among them. Therefore the results of VAR test were considered to be reliable.

Granger causality test under VAR were employed to reach a conclusion about the direction of the causality among variables. It was found that money supply and exchange rate are effective drivers to change non-oil GDP, while discount rate doesn't cause to non-oil GDP.

After VAR test, Vector Error Correction Model (VECM) was employed among variables and residuals diagnostic tests results for VECM stated that the model was suitable. But for the purpose of robustness testing, besides Johansen cointegration test, other tests such as FMOLS, DOLS and CCR were utilized. All

of the outcomes of different cointegration tests were found to be similar. According to the results of these tests, it was determined that money supply and exchange rate have significant impact on non-oil GDP, but discount rate was considered as insignificant driver of non-oil GDP. Additionally, 1% increase in money supply was supposed to have 0.52% increase in non-oil GDP and 1% increase in exchange rate will lead to 1.01% increase in non-oil GDP.

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