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MONETARY POLICY

Tutorial Manual

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В настоящем учебном пособии излагаются вопросы денежно-кредитного регулирования экономики, представлены цели и инструменты денежно-кредитной политики государства. Теоретический материал сопровождается примерами из российской и зарубежной практики. После каждой темы приводятся контрольные вопросы и задания, направленные на закрепление изученного материала. Учебное пособие предназначено для студентов бакалавриата ИЭП ННГУ, обучающихся по направлению подготовки 38.03.01 «Экономика».

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ПРЕДИСЛОВИЕ

Целью данного пособия является ознакомление студентов с особенностями использования инструментов денежно-кредитного регулирования, составляющих основу экономической деятельности государства на базе инструментального аппарата макроэкономики.

В настоящем учебном пособии излагаются вопросы денежно-кредитного регулирования, анализируются особенности проведения монетарной политики в различных странах. Теоретический материал сопровождается примерами из российской и зарубежной практики.

Вопросы, представленные в данном пособии, рассматриваются в рамках курса «Государственное регулирование экономики», и являются частью всестороннего изучения государства как экономического субъекта.

Данная дисциплина относится к дисциплинам по выбору вариативной части блока Б.1, изучается в 6 семестре по направлению подготовки 38.03.01 «Экономика». Трудоемкость дисциплины составляет 5 зачетных единиц.

Целями освоения дисциплины «Государственное регулирование экономики» являются изучение влияния органов законодательной и исполнительной власти различных иерархических уровней управления на организации, рынки и конкурентную среду, направлений, механизмов и инструментов регулирования экономических процессов в национальном хозяйстве, а также умение анализировать происходящие социально–экономические процессы и оценивать необходимость их регулирования.

Процесс изучения дисциплины направлен на формирование следующих компетенций, относящихся к расчетно-экономической, аналитической, научно-исследовательской, деятельности обучающихся:

(ОК-2) способность анализировать основные этапы и закономерности исторического развития общества для формирования гражданской позиции

(ПК-6) способность анализировать и интерпретировать данные отечественной и зарубежной статистики о социально-экономических процессах и явлениях, выявлять тенденции изменения социально-экономических показателей

Планируемыми результатами обучения по дисциплине **«Государственное регулирование экономики»** являются:

(ОК-2);	**Знать** З 1 (ОК-2) Основные этапы и методы государственного регулирования экономики.

	<u>Уметь</u> У 1 (ОК-2) уметь высказывать свои взгляды по использованию мер государственного регулирования, поддерживать справедливое решение или протестовать против ошибочного и несправедливого **<u>Владеть</u>** В 1 (ОК-2) Навыками критического мышления при применении мер государственного регулирования, влияющих на экономику
(ПК-6)	**<u>Знать</u>** З 1 (ПК-6)Экономические основы и показатели в рамках государственного регулирования экономики различных стран. **<u>Уметь</u>** У 1 (ПК-6) Интерпретировать показатели, характеризующие экономические процессы и тенденции, возникающие под воздействием органов государственного управления на основании данных отечественной и зарубежной статистики. **<u>Владеть</u>** В 1 (ПК-6) Навыками расчета и анализа показателей, лежащих в основе применения инструментов государственного регулирования экономики для регулирования социально-экономических процессов

Учебное пособие включает 2 самостоятельные главы, составленных в соответствии с рабочей программой дисциплины.

Материал пособия позволяет сформировать и развить у обучающихся общие навыки применения базовых понятий применительно к реализации основных принципов государственного регулирования экономики посредством актуальных методов в современных рыночных условиях в соответствии с формулировкой необходимых знаний, умений и владения применительно к ОК-2 и ПК-6.

INTRODUCTION

The purpose of this manual is to familiarize students with the peculiarities of using the tools of monetary regulation, which form the basis of the state's economic activity based on the macroeconomic instrumental apparatus.

This tutorial outlines the issues of monetary regulation, analyzes the features of monetary policy in different countries. The theoretical material is accompanied by examples from Russian and foreign practice.

The questions presented in this manual are considered in the framework of the course "Economic Policy" and are part of a comprehensive study of the state as an economic entity.

The goal of the discipline is the study of the principles, methods, tools of governmental economic policy.

The course "Economic Policy" is a part of the optional courses. The discipline is taught in the 6th semester. The workload of the discipline is 5 ECTS.

The discipline is devoted to the economic aspect of public policy making, monetary tools, inflation and methods to reduce it.

Student's Competences to be Developed as a Result of the Learning of the Course Material:

GCC – 2 (ОК – 2) be able to analyze the main stages and patterns of society's historical development to build one's citizenship;

PC – 6 (ПК – 6) be able to analyze and interpret the data of domestic and foreign statistics on socio- economic processes and phenomena, to identify trends and changes in socio-economic indicators.

Results of the Learning of the Course Material:

GCC – 2	**To be able** to express their views on the use of government regulation, to support a fair decision or to protest against an erroneous and unfair; **To know** the main stages and methods of state regulation of the economy; **To have the critical thinking skills** in the application of government regulation measures affecting the economy
PC – 6	**To be able** to interpret on the basis of domestic and foreign statistics the indicators that characterize the economic processes and trends arising under the influence of government. **To know** the economic fundamentals and indicators within the framework of state regulation of the economy in different countries; **To have the skills** of calculating and analyzing the indicators underlying the

	application of state regulation instruments of the economy for regulating socio-economic processes

The manual includes 2 chapters, compiled in accordance with the work program of the discipline.

CHAPTER 1. MONETARY POLICY

Money is an instrument that can be used to buy and sell goods, to earn through your work, to invest, etc.

The main functions of money are distinguished as: a medium of exchange; a unit of account; a store of value; a standard of payment etc.

1.1. The Banking System of the Russian Federation and the Main Functions of the Central Bank

The banking system of the Russian Federation consists of two levels:

- the first level is represented by the Central Bank;
- the second level is represented by different commercial banks and other financial institutions.

Legal Status of the Central Bank of the Russian Federation can be defined as it follows:

Article 75 of the Constitution of the Russian Federation establishes a special legal status of the Bank of Russia, gives it the exclusive right:

- to issue currency (Part 1);
- protect the ruble and ensure its stability, which is the main function of the Bank of Russia (Part 2).

The status, purposes, functions and powers of the Bank of Russia are also spelled out in Federal Law No. 86-FZ, dated July 10, 2002, ‘On the Central Bank of the Russian Federation (Bank of Russia)’, and other federal laws.

According to Article 3 of the Federal Law ‘On the Central Bank of the Russian Federation (Bank of Russia)’, ***the goals*** of the Bank of Russia are:

- to protect the ruble and ensure its stability,
- promote the development and strengthen the Russian banking system, ensure the stability
- development of the national payment system, develop the financial market of the Russian Federation and ensure its stability.

In accordance with Article 34.1 of the Federal Law ‘On the Central Bank of the Russian Federation (Bank of Russia)’, ***the main objective*** of the Bank of Russia’s monetary policy is

- to protect the ruble and ensure its stability by maintaining **price stability**.

The stability of the national currency means the preservation of its buying capacity through **sustainably low inflation** rather than a fixed exchange rate against other currencies.

When inflation is low, the volume of goods and services which can be bought for the same amount of rubles changes only insignificantly over a long period of time. This bolsters the

confidence of households and businesses in the national currency and creates favourable environment for Russian economic growth[1].

The main functions of the Central Bank of the Russian Federation are:

- To control emission of the national currency, the Central Bank has a monopoly on money creation, controls the issue of notes and coins;
- To be the banker to the government;
- To manage government finances (the execution of the budget and public debt management, storage of foreign reserves and mandatory reserves of commercial banks);
- To hold gold and foreign-exchange reserves that can be used when trying to influence the exchange rate;
- To be the Banker to commercial banks (this is the clearing center and the lender of last resort);
- To promote and maintain monetary and financial stability to contribute to a healthy economy;
- To regulate the banking sector (the Central Bank produces the banking law and controls compliance, coordinates the activities of commercial banks by issuing and withdrawal of licenses);
- To explore monetary policy (money supply in the economy and inflation, exchange rate, simultaneously serving as a buyer and seller of foreign currency).

1.2. Monetary Aggregates

Monetary aggregates are the money circulating in an economy to satisfy its current monetary needs. They are used for the analysis of quantitative changes of monetary circulation and to develop measures on regulation of the dynamics of the money supply. The different types of money are typically classified as "M"s. Monetary aggregates are financial assets that either function directly as money and as the medium of exchange or they are extremely liquid and easily converted to money. The monetary aggregates usually range from M0 (narrowest) to M3 (broadest), its quantity depends on the country's central bank.

In developed countries the following units are used to determine the money supply.

The aggregate ***M0*** is equal to cash in circulation (paper notes and coins) and funds on current accounts.

The aggregate ***M1*** is equal M0 plus time and savings deposits in commercial banks.

The aggregate ***M2*** is equal M1 plus savings deposits in specialized credit institutions.

[1] https://www.cbr.ru/eng/today/

The aggregate ***M3*** is equal M2 plus deposit certificates of major commercial banks, it can also include other commercial paper, savings bonds, etc.

There are two indicators for monetary aggregates collected by the OECD:

- "narrow money" (M1); a means of exchange;
- "broad money" (M3); a way to store value.

Monetary aggregates are measured as a seasonally adjusted index based on 2010=100[2].

1.3. Monetary Policy: Definition and Objectives

Monetary policy represents one of approaches to stabilization (together with the fiscal, foreign trade, structural policies) aimed at smoothing the economic fluctuations.

The legislative branch has delegated responsibility for monetary policy to the Central Bank, but retains oversight responsibilities for ensuring that the Central Bank is adhering to its statutory mandate of “maximum employment, stable prices, and moderate long-term interest rates.”

In the Russian Federation Monetary policy constitutes an integral part of the state policy and is aimed at enhancing wellbeing of Russian citizens. The Bank of Russia implements monetary policy in the framework of:

- inflation targeting regime, and
- sees price stability,
- albeit sustainably low inflation, as its priority.

Given structural peculiarities of the Russian economy, the target is to reduce inflation to 4% and maintain it within that range in the medium run.

The monetary policy affects the economy through interest rates, its main parameter being the Bank of Russia key rate. Taking into account the pass-through effect of the monetary policy on the economy, central bank decisions are based on the economic outlook and assessment of risks to achieve the inflation target over the mid-term horizon, and also on possible threats to sustainable economic growth and financial stability.

The Bank of Russia maintains energetic communication policy, clarifying the motives and expected outcome of its monetary policy decisions, as public awareness of these efforts may enhance their effectiveness[3].

The Central Bank alters the size of the nation’s money supply by manipulating the size of excess reserves held by commercial banks. Excess reserves are critical to the money-creating

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[2] https://www.oecd-ilibrary.org/finance-and-investment/narrow-money-m1/indicator/english_7a23d68b-en?parentId=http%3A%2F%2Finstance.metastore.ingenta.com%2Fcontent%2Fthematicgrouping%2F6ac4b7ed-en

[3] https://www.cbr.ru/eng/DKP/

ability of the banking system. The Central Bank controls excess reserves and the money supply; we will explain how changes in the stock of money affect interest rates and aggregate demand.

1.4. Tools of Monetary Policy

The Central Bank can influence the money-creating abilities of the commercial banking system. There are three instruments of monetary control which The Central Bank uses to influence commercial bank reserves:

1) Open-market operations
2) Changing the reserve ratio (Reserve requirement)
3) Changing the discount rate

1) Open-Market Operations

Open-market operations are the most important way the Government controls the money supply. Open-market operations refer to the buying and selling of government bonds by the Central Bank in the open market. It buys and sells bonds from or to commercial banks and the general public. These purchases and sales of government securities affect considerably the excess reserves of commercial banks.

If securities are purchased from commercial banks and the public, commercial bank reserves are increased. If the Central Bank sells securities in the open market, commercial bank reserves are reduced.

2) The Reserve Ratio

At the same time The Central Bank can manipulate the legal reserve ratio to influence the ability of commercial banks to lend.

Raising the reserve ratio increases the amount of required reserves banks must keep. If banks lose excess reserves, their ability to create money by lending is diminished.

Lowering the reserve ratio changes required reserves to excess reserves and enhances the ability of banks to create new money by lending.

So, a change in the reserve ratio affects the money- creating ability of the banking system in two ways:

1) It affects the size of excess reserves,
2) It changes the size of the monetary multiplier.

Changing the reserve ratio is a powerful technique of monetary control, but it is used infrequently.

Table 1.1.

Required Reserve Ratios in different countries (Updated Feb. 22, 2019)

Country	Required reserve (in %)	Country	Required reserve (in %)
Bangladesh	6.00	Lebanon	30.00
Brazil	45.00	Lithuania	6.00
Bulgaria	10.00	Malawi	15.00
Burundi	8.50	Mexico	10.50
Chile	4.50	Nepal	6.00
China	13.50	Nigeria	20.00
Costa Rica	15.00	Pakistan	5.00
Croatia	14.00	Poland	3.50
Czech Republic	2.00	Romania	8.00
Eurozone	1.00	Russia	5.00
Ghana	9.00	South Africa	2.50
Hungary	2.00	Sri Lanka	8.00
Iceland	2.00	Suriname	25.00
India	4.00	Switzerland	2.50
Israel	9.00	Taiwan	7.00
Latvia	3.00	Tajikistan	20.00

Source: based on [http://www.centralbanknews.info/p/reserve-ratios.html]

3) The Discount Rate

One of the functions of the Central Bank is to be a “lender of last resort”. Central banks lend to commercial banks which can have unexpected and immediate needs for additional funds. This transaction is analogous to a private person’s borrowing from a commercial bank.

Thus, the Central Bank will make short-term loans to commercial banks. In this case the interest rate is called the discount rate (table 1.2.).

Table 1.2.

Official Interest Rates of Central Banks (in %)

Central banks	Current interest rate
Reserve bank of Australia	1.5 %
Federal reserve	2.5 %
Swiss national bank	-0.75 %
European central bank	0 %
Bank of Japan	-0.1 %
Reserve bank of New Zealand	1.75 %
Bank of Canada	1.75 %
Bank of England	0.75 %

Central banks	Current interest rate
Bank of the Russian Federation	7.75 %

Source: based on [https://www.fxstreet.ru.com/economic-calendar/world-interest-rates]

In Russia for the last five years there were the considerable changes in Official interest rates of Central bank (Table 1.3.)

Table 1.3.

Official Interest Rates of the Central Bank of the Russian Federation

Period	**Rate**
03.02.2013 — 02.03.2014	5,5
03.03.2014 — 27.04.2014	7,0
28.04.2014 — 27.07.2014	7,5
28.07.2014 — 04.11.2014	8,0
05.11.2014 — 11.12.2014	9,5
12.12.2014 — 15.12.2014	10,5
16.12.2014 — 01.02.2015	17,0
02.02.2015 — 15.03.2015	15,0
16.03.2015 — 04.05.2015	14,0
05.05.2015 — 15.06.2015	12,5
16.06.2015 — 02.08.2015	11,5
03.08.2015 — 13.06.2016	11,0
14.06.2016 — 18.09.2016	10,5
19.09.2016 — 26.03.2017	10,0
27.03.2017 — 01.05.2017	9,75
02.05.2017 — 18.06.2017	9,25
19.06.2017 — 17.09.2017	9,0
18.09.2017 — 29.10.2017	8,5
30.10.2017 — 17.12.2017	8,25
18.12.2017 — 11.02.2018	7,75
12.02.2018 — 25.03.2018	7,5
26.03.2018 — 16.09.2018	7,25
17.09.2018 — 16.12.2018	7,5
17.12.2018 – up today	7,75

Source: Official site BoR: [https://www.cbr.ru/eng]

The point is that commercial banks borrowing from the Central Bank increase their reserves, enhancing their ability to extend credits.

The Central Bank has the power to establish and manipulate the discount rate at which commercial banks can borrow from the Central Bank. From the commercial banks' point of view, the discount rate is a cost entailed in acquiring reserves. When the discount rate is decreased, commercial banks are encouraged to obtain additional reserves by borrowing from the Central Bank. Commercial bank lending based on these new reserves will constitute an increase in the money supply.

An increase in the discount rate discourages commercial banks from obtaining additional reserves through borrowing from the central banks. An increase in the discount rate therefore is consistent with the monetary authorities' desire to restrict the supply of money.

If the Central Bank changes interest on loans it grants to commercial banks, commercial banks change interest on their loans. This action influences considerably the supply of money.

Beside three main instruments of the monetary policy, other can be implemented as well. Interest rates on Bank of Russia monetary policy instruments are shown in the table 1.4.

Table 1.4.

Interest Rates on Bank of Russia Monetary Policy Instruments

Instrument	Term	Interest rate
Loans secured by non-marketable assets	from 2 to 549 days	Bank of Russia key rate plus 1.75 pp
Overnight loans; FX swaps (ruble leg); Lombard loans; repos	1 day	Bank of Russia key rate plus 1.00 pp
Loans secured by non-marketable assets		
Auctions to provide loans secured by non-marketable assets	3 months	Bank of Russia key rate plus 0.25 pp
Repo auctions	1 week, from 1 to 6 days	Bank of Russia key rate
Deposit auctions		
Deposit auctions	*1 day*	*Bank of Russia key rate less 1.00 pp*

Source: [https://www.cbr.ru/eng/DKP/instruments_dkp/interest_rates/]

The Federal Reserve (the Fed) in USA uses the following instruments[4]:

Reverse Repos

In 2013, the Fed began to issue *reverse repos* to banks. The Fed "borrows" money from banks overnight. It pays them interest for this "loan." It uses its holdings of U.S. Treasury's as collateral. Like all repurchase agreements, banks don't record it as a loan. The interest it pays will support the fed funds rate as the Fed gradually raises it.

Margin Requirements

On November 12, 2015, the world's central banks agreed to develop margin requirements in lockstep with the Fed. Any financial firm that lends money for investors to buy securities must require a percent, or margin, to be held back as collateral. For example, if a trader wants to borrow $100 for a day, the bank will require him to borrow $105. The extra five bucks is the margin.

Bank lending for securities is a $4.4 trillion market. The margin would apply to loans for repos, stocks, bonds, and other risky securities. It would not apply to loans to purchase Treasury's or other safe securities. They make up two-thirds of the securities lending market.

The Fed has this authority from the 1934 Securities Exchange Act but hasn't used it since the 1970s. The FED is reviving this power to reduce the kind of risk-taking exposed by the 2008 financial crisis. Critics say it may also lessen the number of traders. That would increase price volatility if there aren't enough financial firms to help traders buy and sell in a market crash.

Discount Window

The Fed uses the discount window to lend money to banks at the Fed's discount rate to meet the reserve requirement. The Fed's discount rate is higher than the fed funds rate. Banks usually only use the discount window when they can't get overnight loans from other banks. For that reason, the Fed usually only uses this tool in an emergency. Examples include the Y2K scare, after 9/11, and the Great Recession. The financial crisis timeline details when the fed used this tool[5].

1.5. Types of Monetary Policy: Easy Money and Tight Money

Keeping in mind the objectives of monetary policy such as inflation, unemployment and currency exchange rates, monetary policies can be expansionary (*Easy*) or contractionary (*Tight)*.

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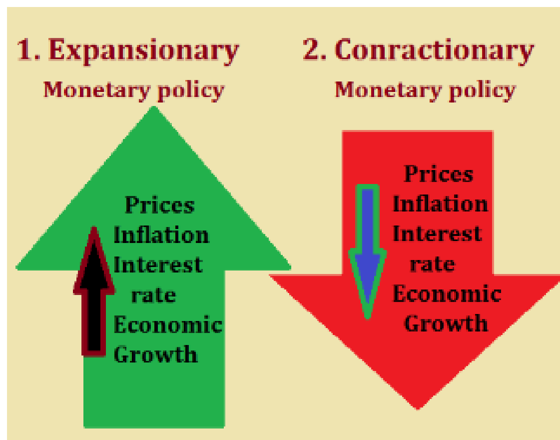
[4] https://www.thebalance.com/federal-reserve-tools-and-how-they-work-3306134

[5] https://www.thebalance.com/federal-reserve-tools-and-how-they-work-3306134



Chat 1. Types of the Monetary Policy

Expansionary Monetary Policy

It is a monetary policy that aims to increase the money supply in the economy by decreasing interest rates, purchasing government securities by central banks, and lowering the reserve requirements for banks. An expansionary policy lowers unemployment and stimulates business activities and consumer spending. The overall goal of the expansionary monetary policy is to fuel economic growth. However, it can also possibly lead to higher inflation.

Contractionary Monetary Policy

The goal of a contractionary monetary policy is to decrease the money supply in the economy. It can be achieved by raising interest rates, selling government bonds, and increasing the reserve requirements for banks. The contractionary policy is utilized when the government wants to control inflation levels[6].

Easy monetary policy is associated with the use of interest rates as an instrument to achieve goals. Suppose the economy is faced with recession and unemployment. The monetary authorities decide an increase in the supply of money is needed to stimulate aggregate demand to help absorb idle resources. To increase the supply of money, the Central Bank must expand the excess reserves of commercial banks. In this case the main steps of the Central Bank are:

[6] https://corporatefinanceinstitute.com/resources/knowledge/economics/monetary-policy/

1. Buy Securities. The Central Bank buys securities in the open market. These bond purchases will be paid for by increases in commercial bank reserves.

2. Reduce Reserve Ratio. The reserve ratio should be reduced, automatically changing required reserves into excess reserves and increasing the size of the monetary multiplier.

3. Lower Discount Rate. The discount rate should be lowered to induce commercial banks to add to their reserves by borrowing from the Central Bank.

This set of policy decisions is called an easy money policy. Its purpose is to make credit cheaply and easily available, to increase aggregate demand and employment. So, the process is as follows. If there is unemployment and recession, the Central Bank buys bonds, lowers reserve ratio or lowers the discount rate. The money supply rises. Interest rate falls and investments increase. Aggregate demand increases too. And as a result, real GDP rises.

Tight monetary policy is associated with the maintenance of a certain level of money supply.

On the other hand, excessive spending is pushing the economy into an inflationary spiral. The Central Bank should attempt to reduce aggregate demand by limiting or contracting the supply of money. The key to this goal lies in reducing the reserves of commercial banks. In this case the main steps of the Central Bank are:

1. Sell Securities. The Central Bank should sell government bonds in the open market to tear down commercial bank reserves.

2. Increase Reserve Ratio. Increasing the reserve ratio will automatically strip commercial banks of excess reserves and decrease the monetary multiplier.

3. Raise Discount Rate. A boost in the discount rate will discourage commercial banks from building up their reserves by borrowing from the Central Bank.

This group of directives is labeled a tight money policy. The objective is to tighten the supply of money to reduce spending and control inflation. So, the process is as follows. If there is inflation, the Central Bank sells bonds, increases reserve ratio or increases the discount rate. The money supply falls. Interest rate rises and investments decrease. Aggregate demand decreases too. And as a result, inflation declines[7].

[7] Macroeconomics: Principles, Problems, and Policies 21st Edition by Campbell R. McConnell, Stanley L. Brue, Sean Masaki Flynn Dr. // The MCGraw-Hill Series: Economics

Questions and Problems on Chapter # 1

1. **З 1 (ПК-6)** On what does the demand for money depend: current income, wealth or permanent income? Or does it directly depend upon neither of them but on the consumption

2. expenditures of households and the output of firms? If so, why is money demand usually specified as a function of income?

3. **З 1 (ОК-2)** How do central banks manage interest rates in your country and one other country of your choice? What consequences for output fluctuations can the central bank expect from targeting interest rates?

4. **З 1 (ПК-6)** What happens to the monetary base and the money supply if the government finances a fiscal deficit by:

(a) selling bonds to the public;

(b) selling bonds to the commercial banks;

(c) selling bonds to the central bank;

(d) selling bonds to foreigners.

5. **З 1 (ПК-6)** Show what happens to the money supply if:

(a) the economy enters a boom and interest rates rise;

(b) the underground economy with illegal holdings of currency is eliminated;

(c) firms give a significant discount for payment in cash rather than credit cards;

(d) credit cards are replaced totally by debit cards;

(e) both credit and debit cards are replaced by smart cards.

6. **З 1 (ОК-2)** Does the central bank have tight control over the money supply?

7. What are the factors that weaken the link between the central bank policies and changes in the money supply?

8. **З 1 (ОК-2)** Historically, what goals were mandated for central banks? Why have the goals pursued in recent years been narrowed to “inflation targeting”?

9. **З 1 (ПК-6)** Can central banks pursue and achieve multiple goals or must they be confined solely to fighting inflation? What goals are embedded in the Taylor rule? Discuss.

10. **З 1 (ОК-2)** What is the lender-of-last-resort function of the central bank in modern economies? What is its justification? Should commercial bank borrowing from the central bank be a privilege or a right? Discuss[8].

MULTIPLE CHOICE TESTS **(У 1 (ПК-6); В 1 (ОК-2))**

1) What is used when the Government controls the money supply?
a) foreign policy
b) laissez-faire policy
c) monetary policy
d) fiscal policy

2) Real interest rates are usually defined as
a) the actual market rates available for households and business.
b) nominal interest rates less the rate of UK inflation.
c) nominal interest rates less the overseas rate.
d) the official cash rate determined by the Bank of England.

3) If the rate of interest on bank loans is 10% and the expected rate of inflation is 3% and the economic growth rate is 4%, then the real rate of interest on bank loans is
a) 13%.
b) 7%
c) 6%
d) 3%

4) What effect will an increase in household saving have on the market for loanable funds?
a) The supply of loanable funds will decrease increasing interest rates.
b) The supply of loanable funds will increase decreasing interest rates.
c) The demand for loanable funds will decrease decreasing interest rates.
d) The demand for loanable funds will increase increasing interest rates.

5) Which of the following could explain a general fall in interest rates?
a) A sudden decrease in consumption and investment spending.
b) A shortage of funds available for lending.
c) A tightening of monetary policy.
d) An increase in the rate of inflation.

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[8] Jagdish Handa. Monetary Economics, 2nd Edition// the Taylor & Francis e-Library, 2008.

6) If you had to choose between holding your wealth as money or as an interest bearing bond, the ________ the interest rate on the bond the _________ money you would hold.

a) higher, more.
b) lower, less.
c) higher, less.
d) none of the above.

7) Which of the following is most likely to be affected by changes in the rate of interest?

a) consumer spending.
b) investment spending.
c) government spending.
d) exports of goods and services.

8) The Fed uses three policy tools to manipulate the money supply: _____, which affect reserves and the monetary base; changes in _____, which affect reserves and the monetary base by influencing the quantity of discount loans; and changes in _____, which affect the money multiplier.

(a) open market operations; the discount rate; margin requirements
(b) open market operations; the discount rate; reserve requirements
(c) the discount rate; open market operations; margin requirements
(d) the discount rate; open market operations; reserve requirements

9) The Fed uses three policy tools to manipulate the money supply: open market operations, which affect the _____; changes in the discount rate, which affect the _____ by influencing the quantity of discount loans; and changes in reserve requirements, which affect the _____.

(a) money multiplier; monetary base; monetary base
(b) monetary base; money multiplier; monetary base
(c) monetary base; monetary base; money multiplier
(d) money multiplier; money multiplier; monetary base

10) The interest rate charged on overnight loans of reserves between banks is the

(a) prime rate.
(b) discount rate.
(c) federal funds rate.
(d) Treasury bill rate.
(e) rediscount rate.

11) The federal funds rate is the

(a) interest rate on overnight loans of reserves between banks.
(b) interest rate on government debt.
(c) interest rate the government pays when borrowing from banks.
(d) all of the above.
(e) both (a) and (c) of the above.

12) It is suggested in the text that the demand for money is not of great importance from the point of view of monetary policy because:

a) The demand for money function is unstable.
b) The supply of money is exogenous
c) The supply of money is endogenous
d) Money has largely been replaced in the economy by credit and debit cards.

13) As the level of interest rates in the economy falls, the demand for money, ceteris paribus:
a) Will fall more or less in line with the change in interest rates
b) Will remain unchanged
c) Increase
d) Could move in either direction depending on other factors

TOPICS OF REPORTS:

1. Definition, objects and aims of Monetary policy.
2. The role of Government in economic development: monetarism (I. Fisher, M.Friedman).
3. Monetary mass structure. Money aggregates. Liquidity
4. The law of money circulation.
5. Emission: definition and governmental control.
6. The structure of the credit and banking system.
7. The role and functions of the Central Bank in the economy
8. The structure and regulation of the financial market.
9. Monetary policy: concept and objectives.
10. Easy money policy and tight money policy.
11. Monetary policy instruments: the discount кate, the reserve ratio, open-market operations.

TASKS:

1. What is the level of reserve ratio, if the Bank's required reserves are $ 25 million. and deposits – $ 200 million.?
2. What is the value of deposits, if the reserve ratio is 12.5%, and the amount of required reserves of the Bank is $ 20 million.?
3. The Bank's actual reserves amount to $ 72 million., and the excess reserves is 4 % of deposits, the reserve ratio is 20%. What is the amount of required reserves?
4. The Bank's actual reserves are $ 30 million., the total amount of current deposits – $ 100 million., the reserve ratio is 10%. What are the Bank's excess reserves?
5. The Bank's deposits amount to 500 thousand dollars. The required reserves are equal to 50 thousand dollars. How will the Bank's lending capacity and the supply of money by the banking system be changed, if the depositor withdraws 20 thousand dollars from the account to buy a new car?
6. The deposits of commercial Bank were increased by 60 thousand dollars. The reserve ratio is 20%. Calculate the credit capacity of the Bank and the banking system as a whole. How has the

total amount of deposits of the entire banking system been changed.

7. The multiplier is equal to 5. The maximum amount of money that the banking system can create is $ 40 million. Calculate the reserves ratio and the amount of loans issued by banks. How will the supply of money in the economy been changed, if the reserve ratio will be increased by 5 percent.

8. Deposits of commercial banks are 3000 million dollars. The amount of required reserves is $ 600 million. If the Central Bank reduces the reserve ratio by 5 percent, how can the money supply be changed? How will the Bank multiplier be changed?

CHAPTER 2. ANTI-INFLATION POLICY

2.1. Inflation: Definition and Types

Inflation is the long term rise in the prices of goods and services caused by the devaluation of currency. Technically, Price Inflation is when prices get higher or it takes more money to buy the same item.

Inflation is often defined in terms of its supposed causes. Inflation exists when money supply exceeds available goods and services. Or inflation is attributed to budget deficit financing. A deficit budget may be financed by the additional money creation. But the situation of monetary expansion or budget deficit may not cause price level to rise. Hence the difficulty of defining 'inflation'.

Inflation may be defined as 'a sustained upward trend in the general level of prices' and not the price of only one or two goods. G. Ackley defined inflation as 'a persistent and appreciable rise in the general level or average of prices'. In other words, inflation is a state of rising prices, but not high prices.

It is not high prices but rising price level that constitute inflation. It constitutes, thus, an overall increase in price level. It can, thus, be viewed as the devaluing of the worth of money. In other words, inflation reduces the purchasing power of money. A unit of money now buys less. Inflation can also be seen as a recurring phenomenon.

While measuring inflation, we take into account a large number of goods and services used by the people of a country and then calculate average increase in the prices of those goods and services over a period of time. A small rise in prices or a sudden rise in prices is not inflation since they may reflect the short-term workings of the market.

It is to be pointed out here that inflation is a state of disequilibrium when there occurs a sustained rise in price level. It is inflation if the prices of most goods go up. Such rate of increases in prices may be both slow and rapid. However, it is difficult to detect whether there is an upward trend in prices and whether this trend is sustained. That is why inflation is difficult to define in an unambiguous sense[9].

There are a lot of criteria for inflation's classification. The most important are considered in the table 2.1.

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[9] http://www.economicsdiscussion.net/inflation/inflation-types-causes-and-effects-with-diagram/6401

Table 2.1.

Taxonomy of Inflation

Criteria of classification	TYPES					
Classification on the basis of inducement	*Currency-induced inflation.* This occurs when supply of money exceeds the available output of goods and services leading to an inflationary increase in prices.	*Credit-induced inflation.* This occurs when prices increase on account of an expansion of credit without increasing the quantity of money.	*Foreign trade-induced inflation.* This occurs when a country experiences a sudden rise in the demand for its exports against the inelastic supply of exports in the domestic market hence increasing the demand and price level at home.	*Scarcity-induced inflation.* This occurs when supply of goods does not increase the account of natural calamities hence increasing the price levels.	*Deficit-induced inflation.* This occurs when a government covers the deficit in its budget through making new money. Tis results to an increase in the purchasing power of the community without a simultaneous increase in production.	*Wage-induced inflation.* This occurs when rising wages increasing the general price levels profit-induced inflation. If the producers due to their monopoly position tend to mark-up their profits margin, it will lead to profit-induced inflation and higher profits raise the cost of production which in turn pushes up the prices.
Classifications on the basis of speed	*Creeping inflation.* Prices rise about 2 percent annually	*Walking inflation.* Prices rise by about 5 percent annually	*Running inflation.* prices rise by about 10 percent annually	*Galloping inflation.* price increase is 10 - 50 percent annually	*Hyper-inflation.* prices increase more 50 percent annually	
Classification on the basis of	*Peace-time inflation.*	*Post-war inflation.* This occurs after the end of	*War-time inflation.* During war time			

time	This is inflation during the normal peace time. It occurs when the government increases expenditure on development projects which normally have longer gestation periods. A gap rises between the generation of money income and the final availability of goods leading to rise in prices.	the war when pent-up demand finds open expression. Heavy taxes which have been imposed during the war are withdrawn during post-war period. As a result the disposable income of the people increases without increase in the output hence increasing the prices	unproductive government expenditure increases and the prices rise because the increase in output does not keep pace with the expansion of expenditure.			
Asset Inflation	*Asset Inflation – Gas.* Gas prices rise each spring in anticipation of the summertime vacation driving season. In fact, you can expect gas prices to rise ten cents per gallon each spring. But political uncertainty in the oil-exporting	*Asset Inflation – Oil.* Crude oil prices hit an all-time high of $143.68 a barrel in July 2008. This was in spite of a decrease in global demand and an increase in supply. Oil prices are determined by commodities traders. That includes both speculators and corporate traders hedging their risks. Traders bid up crude oil	*Asset Inflation – Food.* Food prices soared 6.8 percent in 2008, causing food riots in India and other emerging markets. They spiked again in 2011, rising 4.8 percent. High food costs led to the Arab Spring, according to many	*Asset Inflation – Gold.* An asset bubble occurred when gold priceshit the all-time high of $1,895 an ounce on September 5, 2011. Although many investors might not call this inflation, it sure was. That's because prices rose		

	countries drove gas prices higher in 2011 and 2012.	prices in two situations. First, is if they think there are threats to supply, such as unrest in the Middle East. Second, is if they see an uptick in demand, such as growth in China.	economists. Food riots caused by inflation in this important asset class could reoccur.	without a corresponding shift in gold's supply or demand. Instead, investors ran to gold as a safe haven. They were concerned about the declining dollar. They felt gold protected them from hyperinflation in U.S. goods and services. They were uncertain about global stability.		
Supply – Demand of Money	*Monetary Inflation* is an increase in the money supply which generally results in price inflation.	This acts as a "hidden tax" on the consumers in that country and is the primary cause *of price inflation*				

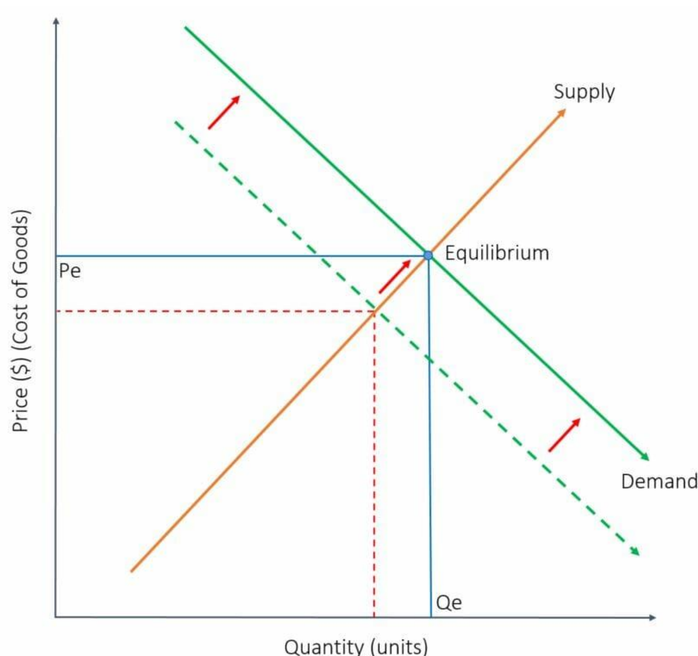
Source: https://www.kenyaplex.com/questions/30952-describe-the-classifications-of-inflation.aspx
https://www.thebalance.com/types-of-inflation-4-different-types-plus-more-3306109

2.2. Economic Mechanism of Inflation

There are two primary mechanisms of inflation: demand-pull and cost-push.

Demand-pull inflation occurs when spending on goods and services drives up prices. If demand is growing faster than supply then this will pull prices up, causing demand-pull inflation. If firms cannot meet the demand, then they will increase their prices. Demand-pull inflation is characterised by shortages, low levels of stocks, long waiting lists and queues. In this situation firms will be eager to produce more as soon as they can. They may invest in extra capacity, but this can take time to come online. In the short term supply is likely to be price inelastic because firms may not be able to recruit staff easily or produce more given the existing equipment. This means that an increase in demand will affect prices more than output. Low taxes and spendthrift government spending are the main causes of demand-pull inflation.

Holding other factors, the same, a rise in consumer demand for goods will lead to an increase in the price of goods (CPI), as shown below (chat 2.):



Chat 2. Mechanism of Demand – Pull Inflation

Consumer demand for goods may increase due to a wide array of factors, such as changes in consumer appetite, long-term scarcity prospects or even an increase in money supply. The opposite is also true; whereby a decrease in consumer demand will result in a lower CPI, and thus deflation[10].

Cost-push inflation is caused by costs increasing. Businesses must acquire raw materials, labor, energy, and capital to operate. If the price of these were to rise, it would reduce the ability

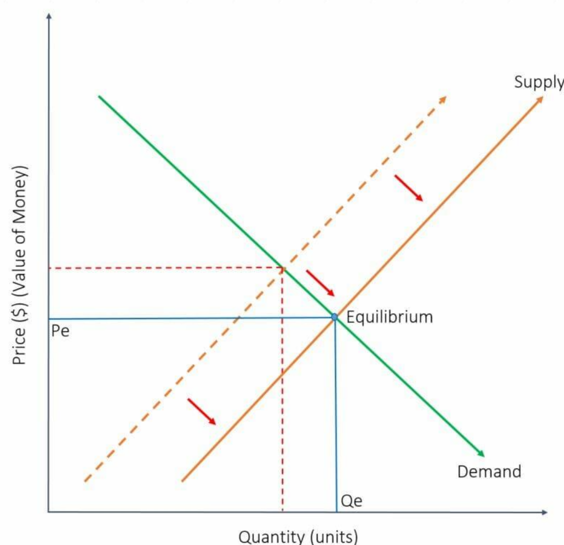
[10] https://corporatefinanceinstitute.com/resources/knowledge/economics/inflation/

of producers to generate output because their unit cost of production had increased, for example, higher wages that are not related to productivity gains, higher import prices or monopoly suppliers pushing up their prices. Faced with higher costs, firms increase their prices to customers to maintain profit margins.

If these increases in production cost are relatively large and pervasive, the effect is to simultaneously create higher inflation, reduce real GDP, and increase the unemployment rate.

According to monetarists, inflation occurs when there is too much money supply in the economy. With more money circulating this leads to more demand in the economy and then higher prices. This is a form of demand-pull inflation that is caused specifically by excess growth of the money supply.

In the long run, money supply affects the purchasing power of a currency as per supply and demand rules. The diagram below illustrates how an increase in the money supply in an economy would affect inflation (chat 3.):



Chat 3. Mechanism of Supply – Pull Inflation

The money supply can increase in a variety of ways, namely if governments print more money or make credit more easily accessible. Lower interest rates may also spur consumer borrowing and lead to an increase in money supply. In the diagram above, we can see that an influx of money in an environment where demand remains the same will result in a devaluation of the currency in question.

The opposite is also true; if governments restrict the money supply and all else remain constant, the currency will begin to appreciate in value[11].

Effects of inflation

1. Decrease in unemployment

[11] https://corporatefinanceinstitute.com/resources/knowledge/economics/inflation/

When the price of goods increase, so will revenues and subsequently, profits for private enterprises. The influx of capital will enable businesses to expand their operations, hereby hiring more employees.

2. Decrease in the real value of debt

As explained above, inflation is associated with a decrease in interest rates. Low interest rates will cause the value of debt and related debt instruments to decrease. It may incentivize consumer spending as consumers may be more inclined to take on more debt during the period. On the other hand, businesses may struggle to sell bonds to finance their operations as bonds would become less attractive investments.

2.3. Indicators of Inflation

- There are several inflation index reports that investors and economists follow:
- Consumer Price Index (CPI) or Paasche Index: This inflation index measures the change in prices regular consumers pay to live their day-to-day lives. We'll talk about it more in depth in a moment.
- Gross Domestic Product Deflator (GDP Deflator) Laspeyres Index: This inflation index measures the rise in costs experienced by end consumers as well as the government or institution providing goods and services to those consumers
- Producer Price Index (PPI): This inflation index measures the change in prices manufacturers and producers experience on materials necessary for conducting their business. The price of steel and aluminum for automobile manufacturers would be tracked by the PPI.
- Employment Cost Index (ECI): This inflation index measures the rising cost of hiring employees in various fields[12].

GDP Deflator or Laspeyres Index:

$$I_p = \frac{\Sigma p_1 q_1}{\Sigma p_0 q_1} \quad (1)$$

CPI or Paasche Index:

$$I_p = \frac{\Sigma p_1 q_0}{\Sigma p_0 q_0} \quad (2)$$

Fisher Index:

$$I_p = \sqrt{\frac{\Sigma p_1 q_1}{\Sigma p_0 q_1} * \frac{\Sigma p_1 q_0}{\Sigma p_0 q_0}} \quad (3)$$

Where:

P_1 – price level in the current period

[12] https://www.thebalance.com/what-is-an-inflation-index-357609

P_0 – price level in the basic period

q_0 – output level in the fix period

q_1 – output level in the current period

2.4. Effects of Inflation

Inflation can cause a number of problems and negative consequences for an economy, such as the following.

- Inflation leads to reduction of real incomes of the population (with uneven growth of nominal incomes) and deterioration of living conditions among representatives of social groups with solid income (pensioners, students, workers of public sector, etc., whose incomes are paid from the state budget).
- Inflation results in loss of savings of the population (the increase of interest rates on deposits, as a rule, does not compensate for the fall in real size of savings) and strengthening the social stratification of society into rich and poor
- Inflation causes reduction of investments in the economy, because it is unprofitable to lend on a long term, and decline in production due to rising costs and rising unemployment.
- If prices are increasing this creates costs for firms because they may have to update their promotional material to reflect the higher prices. For example, this means reprinting brochures, updating price lists and changing vending machines. These are called ‘menu costs’.
- With higher rates of inflation, individuals and firms may have to search more to find the best returns on their savings. This will be necessary to preserve the real rate of return (i.e., the return adjusted for inflation). The costs of searching around are called ‘shoe leather costs’.
- Not all individuals will have the bargaining power to ensure that their own earnings rise at the same rate as prices are increasing. If your wages do not increase as much as prices then, in real terms, you are worse off. Your real income has fallen. The ability of an employee to bargain for higher wages in line with inflation depends on the extent to which they are in demand and/or whether they are well represented by trade unions. Inflation may therefore redistribute real incomes. Some groups may find that their earnings keep pace with inflation; others may not. This means that inflation has redistributive effects.
- Internationally, if the prices of firms in a country are increasing faster than their trading partners then this may make the country’s products uncompetitive compared to those of foreign firms. This may reduce the earnings from exports and increase the spending on imports. This will affect the balance of payments adversely. Domestically, a country may also struggle to compete because imports will be relatively cheaper.

• Inflation may also damage business confidence because of fears about the future impact on costs. This may reduce levels of investment.

• Tax thresholds often do not increase in line with inflation. If employees gain a pay increase to match inflation, then they are not better off in real terms. However, with higher nominal pay individuals may enter a higher tax band and therefore be worse off. This is called fiscal drag. Again, inflation is redistributing income.

2.5. Policies to Reduce Inflation

Most Central Banks target low inflation's level. If inflation rises above this inflation target, there are several economic policies, such as monetary policy to reduce the inflation rate.

Policies to reduce inflation:

1) *Monetary policy – Higher interest rates*. This increases the cost of borrowing and discourages spending. This leads to lower economic growth and lower inflation.
2) *Tight fiscal policy* – Higher income tax and/or lower government spending, will reduce aggregate demand, leading to lower growth and less demand pull inflation
3) *Supply side policies* – These aim to increase long-term competitiveness, e.g. privatization and deregulation may help reduce costs of business, leading to lower inflation[13].

1) *Monetary policy* is the most important tool for maintaining low inflation.

Increased interest rates will help reduce the growth of aggregate demand in the economy. The slower growth will then lead to lower inflation. Higher interest rates reduce consumer spending because:

- Increased interest rates increase the cost of borrowing, discouraging consumers from borrowing and spending.
- Increased interest rates make it more attractive to save money
- Increased interest rates reduce the disposable income of those with mortgages.
- Higher interest rates increased the value of the exchange rate leading to lower exports and more imports.

2) *Supply side policies* aim to increase long term competitiveness and productivity. For example, it was hoped that privatization and deregulation would make firms more productive and competitive. Therefore, in the long run, supply side policies can help reduce inflationary pressures. However, supply side policies work very much in the long term; they cannot be used to reduce sudden increases in the inflation rate. Also, there is no guarantee government supply side policies will be successful in reducing inflation.

[13] https://www.economicshelp.org/blog/42/inflation/economic-policies-to-reduce-inflation/

3) *Fiscal Policy.* This is another demand side policy, similar in effect to monetary policy. Fiscal policy involves the government changing tax and spending levels in order to influence the level of Aggregate Demand. To reduce inflationary pressures the government can increase tax and reduce government spending. This will reduce Aggregate Demand[14].

Questions and Problems on Chapter # 2

1. **З 1 (ПК-6)** The inflation concepts.
2. **З 1 (ОК-2)** Types of inflation: creeping, galloping, hyperinflation.
3. **З 1 (ПК-6)** Inflation indexes: the GDP Deflator and the consumer price index.
4. **З 1 (ПК-6)** The inflation effects.
5. **З 1 (ОК-2)** Anti-inflation policy: the policy of income and expenditures policy.
6. **З 1 (ОК-2)** How is the Inflation Index Updated.
7. **З 1 (ПК-6)** What is an Inflation Index?
8. **З 1 (ПК-6)** Money supply and money stock.
9. **З 1 (ПК-6)** Neutrality of money and of bonds.

MULTIPLE CHOICE TESTS **(У 1 (ПК-6); В 1 (ОК-2))**

1) What is measured by the CPI?
- a) discount rate
- b) unemployment
- c) inflation
- d) GDP

2) What can rise with a decrease in the money supply?
- a) GDP
- b) CPI
- c) unemployment
- d) inflation

3) An increase in (i) the price level and (ii) the rate of inflation:
- a) Both cause the demand for money to fall
- b) Cause the demand for money (i) to fall; (ii) to rise
- c) Cause the demand for money (i) to rise; (ii) to fall
- d) Both cause the demand for money to rise

4) It is the (A) _______ interest rate that matters for spending decisions and the (B) _______ interest rate that is relevant when we look at monetary questions.
- a) (A) interbank, (B) exchange
- b) (A) exchange, (B) interbank
- c) (A) real, (B) nominal

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[14] Ibid

d) (A) nominal, (B) real

5) Who among the following is most benefitted from inflation ?

a) Govt. employee
b) Creditors
c) Savings Bank Account holders
d) Debetors

6) Which of the following groups suffer the most from inflations?

a) Debetors
b) Creditors
c) Business class
d) Govt pensioners

7) Which of the following can be used for checking inflation temporarily?

a) increase in wages
b) decrease in money supply
c) decrease in taxes
d) none of these

8) The best means of savings during inflation is to keep:

a) money
b) government bonds
c) equity
d) time deposits with banks

9) The period of high inflation and low economic growth is termed as:

a) stagnation
b) take-off stage in economy
c) stagflation
d) none of these

10) The cause of inflation is

a) increase in money supply
b) fall in production
c) increase in money supply and fall in production
d) increase in money supply and fall in production

11) An essential attribute of inflation is:

a) fall in production
b) increase in prices
c) absence of black market
d) presence of black market

12) Who among the following are not protected against inflation?

a) salaried class
b) industrial workers
c) pensioners
d) agricultural farmers

13) Stagflation implies a case of:

a) galloping inflation
b) recession plus inflation
c) adverse balance of trade
d) rising wages and employment[15]

TOPICS OF REPORTS

1. The Concept, types of inflation and inflation indexes. The effect of inflation.
2. Anti-inflation policy: the policy of income and expenditures policy.
3. Volatility of the money demand function.
4. Theories of currency substitution.
5. Goals, targets and instruments of ant-inflation policy.
6. Behavioral theories of the money supply.
7. Monetary aggregates versus interest rates as operating targets.

TASKS

1. The Federal statistical authorities of the state have established a standard set of consumer basket (g) consisting of five goods and have compiled data on price movements for them during the reporting period. All data are presented in the table.

Goods	Quantity	Price level in the basic period, rubles	Price level in the current period, rubles
g_1	10	2	4
g_2	8	18	20
g_3	12	9	14
g_4	3	5	3
g_5	6	12	10

CALCULATE:

1. Paasche index

2. Suppose that three goods are produced and consumed in two periods. The table shows the quantity and price (per unit) of each product.

Years	2013		2014	
	Price	Quantity	Price	Quantity

[15] http://micsecompetitivexam.com/2018/08/economics-thirty-inflation-related-multiple-choice-questions/

Books	10	10	15	8
Jeans	27	6	24	7
TV	655	3	425	5

CALCULATE:

2. Laspeyres Index
3. Paasche index
4. Fisher index (2013 – base period).

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b. Additional literature

1) Macroeconomics: Principles, Problems, and Policies 21st Edition by Campbell R. McConnell, Stanley L. Brue, Sean Masaki Flynn Dr. // The MCGraw-Hill Series: Economics

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MONETARY POLICY

ДЕНЕЖНО-КРЕДИТНАЯ ПОЛИТИКА

Учебное пособие

Федеральное государственное автономное
образовательное учреждение высшего образования
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