



ALFRED NOBEL UNIVERSITY,  
DNIPROPETROVSK

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# MONEY

# AND

# CREDIT

## for non-financial specialties

Personal Study Book



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# **MONEY AND CREDIT**

## **(FOR NON-FINANCIAL SPECIALTIES)**

**PERSONAL STUDY BOOK**

**Edited by the Doctor of science (Economics),  
Professor *Svitlana Kuznetsova***

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*Reviewer:*

*V. Momot, Doctor of science (Economics), Professor.*

Навчальний посібник «Гроші та кредит (для нефінансових спеціальностей)» спрямовано на формування практичних навичок з теорії грошей та кредиту, засвоєння закономірностей їх функціонування та розвитку.

Навчальний посібник побудовано відповідно до програми навчальної дисципліни «Гроші та кредит», він містить 9 практичних занять та 1 індивідуальне завдання як елементи індивідуальної самостійної роботи. Кожне практичне заняття включає теоретичний матеріал з теми, питання для обговорення, тести, практичні завдання та приклади їх розв'язання, контрольні питання та завдання для самостійного контролю.

Використання в навчальному процесі посібника «Гроші та кредит (для нефінансових спеціальностей)» буде сприяти опануванню та ефективному застосуванню набутих знань та професійних компетенцій у сфері грошового обігу та кредиту.

Для студентів програми «Міжнародний менеджмент», валідованої Університетом Уельсу.

The Personal study book «Money and Credit (for non-financial specialties)» is aimed at fostering practical skills in the theory of money and credit, for assimilation of patterns of their functioning and development.

The Personal study book is built according to the program of course «Money and Credit» and consists of 9 workshops and 1 individual task as elements of individual independent work. Each practice session includes theoretical material on the theme, questions for discussion, tests, practical exercises and examples of their solution, review questions and tasks for self-control.

Educational use of the Personal study book «Money and Credit (for non-financial specialties)» will contribute to the learning and the effective use of the knowledge and professional competences acquired in the field of money circulation and credit relations.

For the students of International management program validated by University of Wales.

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## ***PREFACE***

The discipline «Money and Credit» is a normative discipline of knowledge area 0305 «Economics and entrepreneurship» of educational qualification level «The Bachelor».

Purpose of the discipline «Money and Credit» is to explore the theoretical and methodological principles, organizational and legal mechanism of money and credit segment of economic relations functioning in market economy. Study the course allows acquiring knowledge and skills about monetary and banking system as the central components of the money market infrastructure.

The task of the discipline «Money and Credit» is to clarify the nature, functions and role of money and credit, the mechanism of functioning of the monetary system in a market economy, laws of the foreign exchange market and currency system, money market, learn the role, the specific and the practice of using monetary policy of the central bank's, activities of commercial banks and non-bank financial institutions to monetary servicing of businesses and people in Ukraine.

In the personal study book all themes are revealed in accordance with curriculum of course «Money and Credit». In the workshop the nature and essence of money, monetary circulation and money supply, money market, foreign exchange market and currency system, financial system, inflation and monetary reform, the basic theory of money, credit in a market economy, financial intermediaries money market, central banks, commercial banks, international financial institutions are discussed.

As a result of studying the course, students should be familiar with: the nature, function and role of money and credit in a market economy, institutional formation, that operate within the monetary and foreign exchange markets, money, banking and monetary system, operation mechanism of the monetary system in a market economy, the structure of currency and its quantitative characteristics, objectives, types and instruments of monetary policy, the nature and structure of the banking system, international monetary and credit institutions and forms of cooperation with Ukraine.

As a result of study the course, students must obtain following practical skills: conduct cashless payments, analyze the current inflation figures and forecast annual inflation rate, foreign exchange transactions and analyze their impact on the economy, expect monetary aggregates, analyze monetary policy; analyze the activities

of banks and non-bank financial institutions on monetary services for businesses and people in Ukraine.

Program course «Money and Credit» drew up according to educational and vocational training programs Bachelor specialty «International Economics».

The course «Money and Credit» is structured in content, logic of teaching and form and, therefore, consists of two logically related modules:

module 1. «Money and monetary systems»,

module 2. «Loan and banks».

Structure of the handbook promotes efficient operation both teachers and students in the classroom for the study of the subject «Money and Credit» by matching curriculum and developed content.

The personal study book includes 9 workshops and individual tasks as part of individual self-study of students. Each practice session includes discussion questions, tests, practical exercises and examples of their solution, review questions and tasks for self-fulfillment.

The personal study book «Money and Credit» developed by the Department of International Finance and Banking, Alfred Nobel University, Dnepropetrovsk, under the supervision of the head of department, Doctor of Economic S.A. Kuznetsova. Authors of the personal study book: *Svitlana Kuznetsova*, Doctor of science (Economics), Professor, *Zoya Pestovska*, Senior Lecturer, *Olga Yevtushenko*, Senior Lecturer.

Educational use of the personal study book «Money and Credit (for non-financial specialties)» will contribute to the learning and the effective use of the knowledge and professional competences acquired in the field of money and credit.

# THEMATIC PLAN OF DISCIPLINE «MONEY AND CREDIT»

## *Content module 1. Money and monetary systems*

### **Theme 1. Nature and essence of money**

The origin of the money. The necessity and nature of money. Functions of money. Forms of money and their evolution.

### **Theme 2. Money turnover and money supply**

The concept and structure of money turnover. Model of aggregate money turnover and cash flows. The mass of money in circulation. Monetary aggregates. Velocity of money. Monetization of the economy. Law of cash flow.

### **Theme 3. Money market**

The essence and peculiarities of the money market functioning. Institutional money market model. Structure and kinds of money market. General characteristics of financial instruments. Demand for money. Money supply. Equilibrium in the money market and loan interest.

### **Theme 4. Money system**

The concept and elements of the money system. Main types of money systems and their evolution. Credit and paper money system. The money system of Ukraine.

### **Theme 5. Foreign exchange market and foreign exchange system**

Concept and types of currency. Currency system. Exchange rate. Foreign exchange market: the nature and the functioning. Currency policy and its instruments. Balance of payments and official reserves. General characteristics and structure of the foreign exchange market. Quotes of currencies. Transactions in foreign exchange market.

### **Theme 6. Inflation and monetary reforms**

The theoretical concept of inflation. Essence and types of inflation. Causes and forms of inflation. Methods of regulating inflation. Essence and classification of monetary reforms. Models of monetary reform. Monetary Reform in Ukraine (1996).

### **Theme 7. Basic theories of money**

Development trends in the theory of money. The classical quantity theory of money, its basic tenets. Neoclassical version of the quantity theory of money. John Keynes contribution to the development of the quantity theory of money. Modern monetarism as an alternative direction of the quantity theory. Modern keynesian-monetarist synthesis in the theory of money. Monetary policy of Ukraine in the world of modern monetarist theories.

## ***Content module 2. Loan and Banks***

### **Theme 8. Credit in the market economy**

The essence of the loan. Theories of the loan. The functions and role of credit. Loan interest.

### **Theme 9. Financial intermediaries of money market**

The essence and purpose of financial intermediation. Banks as leading actors of financial intermediation. Functions of banks. The concept of the banking system. The formation and development of the Ukrainian banking system. Non-banking financial and credit institutions, their distinct from the banks, the economic purpose, types, functions and role.

### **Theme 10. Central banks**

Origin and organization of the central bank. The functions of the central bank. Establishment and operation features of the National Bank of Ukraine.

### **Theme 11. Commercial banks**

The concept, purpose and types of commercial banks. Basic of organization and management of a commercial bank. Characterization of banking operations. The stability of banks and the mechanism of its maintenance.

### **Theme 12. International financial institutions**

International Monetary Fund (IMF) in the monetary relations. The World Bank and its component institutions. Regional international monetary and financial institutions.



*Approximate structure of credit scoring subjects*

№	Theme	Number of hours				
		Total	Lectures	Practical exercises	Independent work	Private lessons
<b>Content module 1. Money and monetary systems</b>						
1	Nature and essence of money	10	2	1	6	1
2	Money turnover and money supply	12	4	1	6	1
3	Money market	13	4	1	6	2
4	Money system	13	4	1	6	2
5	Foreign exchange market and foreign exchange system	11	4	2	6	1
6	Inflation and monetary reforms	14	2	2	7	1
7	Basic theories of money	12	2	2	7	1
<b>Content module 2. Loan and Banks</b>						
8	Credit in the market economy	14	4	2	7	1
9	Financial intermediaries of money market	11	2	1	7	1
10	Central banks	11	2	1	7	1
11	Commercial banks	12	2	2	7	1
12	International financial institutions	11	2	1	7	1
	<b>Total</b>	<b>144</b>	<b>34</b>	<b>17</b>	<b>79</b>	<b>14</b>

# Workshop 1

## NATURE AND ESSENCE OF MONEY. MONEY TURNOVER AND MONEY SUPPLY

### Key terms and concepts

**Money is:**

1. good of goods that is directly exchanged to all other commodities;
2. generic equivalent for other goods, which is a means of expressing the value of the goods;
3. specific product that serves as a general equivalent.

**Concept of the origin of money:**

1. **rationalist** – money arose as a result of certain rational agreement between people over the need for a specific instrument for service sphere of commodity circulation and improve its functioning;
2. **evolution** – money was allocated of the general mass of commodities as a result of commodity production and exchange.

**Functions of money:**

1. **Measure of value** – a function in which money provides expression and measurement of cost of goods, giving it the shape of price.
2. **Medium of exchange** – a function in which money is the intermediary in the exchange of goods and ensures their treatment.
3. **Medium of payment** – a function in which money servicing debt repayment between the subjects of economic relations arising in the process of expanded reproduction.
4. **Medium of accumulation** – a function in which money accumulates value in its general abstract form in the process of expanded reproduction.
5. **Global money** – a function in which money serves movement of the value in international economic relations and ensures the implementation of relations between the countries.

**Money turnover** is a process of continuous movement of money between the subjects of economic relations in social reproduction.

**Cash flow** is a set of payments that cater to individual stage of the process of expanded reproduction.

**Money supply** is an aggregate cash reserves in all its forms, which are available to the subjects of money circulation at some point.

**Monetary aggregate** is a specific indicator of money supply that characterizes a specific set of elements based on their liquidity.

### Calculation of monetary aggregates:

1.  $M_0$  displays the mass of cash, which is outside the banking system, that is in the hands of individuals and legal entities cash office. Cash at bank offices is not included.

2.  $M_1 = M_0 +$  bank deposits that can be used by owners immediately without warning; it means stocks on current accounts and savings accounts on demand.

3.  $M_2 = M_1 +$  money in all types of term deposits, funds for capital investment accounts and other special accounts.

4.  $M_3 = M_2 +$  funds invested in securities and certificates.

**Velocity of money** is the frequency of the transition of money from one entity to another with service of process of selling goods and services over time.

The formula of the **money turnover law** designed by **K. Marx**:

$$AM = \frac{\sum P - FC + PC - IP}{V}, \quad (1.1)$$

where  $AM$  – the amount of money required for circulation of goods within a certain time;

$\sum P$  – the sum of the prices of goods that shall be sold for a certain period of time, for example, one year;

$V$  – velocity of the monetary unit per year;

$FC$  – the sum of the prices of goods sold on credit with pay for them outside of a certain period;

$PC$  – the sum of the prices of goods were sold on credit before and which came maturity;

$IP$  – payments that are interrepaid.

The formula of the **money turnover law** designed by **I. Fisher** (equation of exchange):

$$M \cdot V = P \cdot Q, \quad (1.2)$$

where  $M$  (money) is the average amount of money in circulation in society during the year;

$V$  (velocity) is the average number of circulation of money in exchange for their benefit;

$P$  (price) is the average selling price of each individual goods purchased in a given society;

$Q$  (quantity) is the total amount of goods (real domestic product).

### Index of monetization of the economy:

$$Km = \frac{M_0}{GDP} \cdot 100, \quad (1.3)$$

where  $Km$  – coefficient of monetization;

$M_0$  – monetary aggregate;  
 $GDP$  – Gross Domestic Product.

The increase in this index indicates the enhancement of mobility of the economy, which is achieved by increasing degree of variability in the behavior of economic agents.

**Money-credit multiplier** is the process of creating bank money in lending by banks their clients through free reserves received by a bank from the outside.

**Free reserve** is a set of commercial banks resources in certain moment available to the bank and it can be used for active operations.

**Calculation of money supply, considering the money multiplier:**

**Money multiplier** is the factor that determined by the method of separation of 100 on the rate of mandatory reserves.

$$MS = r \cdot MB, \quad (1.4)$$

where  $MS$  – the money supply;  
 $r$  – the money multiplier;  
 $MB$  – the monetary base.

$$m = \frac{1}{RMR} \cdot 100, \quad (1.5)$$

where  $m$  – the money multiplier;  
 $RMR$  – the rate of mandatory reserves.

More precisely, the money multiplier is calculated as:

$$m = \frac{1 + K_q}{K_p + K_q}, \quad (1.6)$$

where  $m$  – the money multiplier;  
 $K_q$  – is the ratio of cash (M0) to deposits;  
 $K_p$  – the rate of effective reserving, which is defined as the ratio of reserves to deposits.

The multiplier calculated this way, multiplied by the monetary base gives us the value of money.

**Credit multiplier effect:**

$$\Delta M = E \cdot m = E \cdot \frac{1}{RMR} \cdot 100, \quad (1.7)$$

where  $\Delta M$  – the maximum number of new credit money;  
 $E$  – excess reserves;  
 $m$  – the money multiplier;  
 $RMR$  – the rate of mandatory reserves.

## *Issues for discussion*

1. The origin of the money.
2. The essence of money. Forms of money and their evolution.
3. Value of money.
4. Functions of money.
5. The concept of money turnover as the movement of money.
6. The cash flows. The structure of cash flow.
7. Mass of money that serves the circulation of money, its composition and the factors that determine the change in it.
8. The law of money needed to turn, its essence, the requirements and the consequences of violating the requirements.
9. The mechanism of replenishment of money in circulation.
10. Modern means of payment that serve the circulation of money.

## **Practical tasks**

**Task 1.1.** Link properties of money to their characteristic. To do this, put the number according to letter.

<b>Properties of money</b>	<b>Characteristics of money properties</b>
1. portability	A. The money should have long term existence in the form in which they were issued
2. easy divisibility	B. Money should not lose its properties during treatment
3. durability	C. Money should for a long period keep the same purchasing power
4. homogeneity	D. As a medium of exchange money should be convenient to transportation and circulation
5. identification	E. As a medium of circulation money should be comfortable in the payments for purchased goods
6. total certainty	F. Money has to be easily and quickly identifiable in the circulation
7. stability	G. Money is legal means of payment in the country

**Task 1.2.** Link forms and types of money. Put the number according to letter.

<b>Forms of money</b>	<b>Types of money</b>
1. Full money	A. Metal Ingots
	B. Check
	C. Bilon coin
	D. Gold coin

Forms of money	Types of money
2. Deficient money	E. Banknote
	F. Traditional deposits
	G. Electronic deposits
	H. Bill

**Task 1.3.** Link a function of money to their characteristics. To do this, put the number according to letter.

The function of money	Characteristic
1. measure of value	A. function in which money serves the movement of value in international economic relations and ensure the implementation of the relationship between countries
2. medium of exchange	B. function in which money serves debt repayment between various subjects of economic relations
3. medium of payment	C. function in which money provide expression and measurement of value of goods, giving it a shape of price
4. medium of accumulation	D. function in which money acts as intermediary in the exchange of goods and ensure their treatment
5. global money	E. function in which money serves accumulation of value in its general abstract form

**Task 1.4.** Link monetary aggregates to their characteristics. To do this, put the number according to letter.

Monetary aggregates	Characteristics
1. $M_0$	A. Cash outside banks, demand deposits and time deposits
2. $M_1$	B. Cash outside banks, demand deposits, time deposits and deposits funds in trust operations
3. $M_2$	C. Cash outside banks and demand deposits
4. $M_3$	D. Cash outside banks

### Task 1.5

#### Multiple choice questions.

1. What form of value is characterized by the fact that one commodity which acts as a universal equivalent releases from the total weight of goods:

- a) simple;

- b) complete;
- c) general;
- d) money.

**2. For what form of money value of money was determined by the value of goods that serves as money:**

- a) full money;
- b) defective money;
- c) commodity money.

**3. A function by which money serves a variety of debt repayment between subjects of economic relations:**

- a) measure of value;
- b) medium of exchange;
- c) medium of payment;
- d) medium of accumulation;
- e) world money.

**4. What is the name of the set of resources that are currently available to the bank and can be used for active operations?**

- a) cash flow;
- b) currency;
- c) velocity of money;
- d) free allowance.

**5. What is the name of the part of money turnover which reflects certain payments linked to formation and use of financial resources of the state, etc.?**

- a) cash flow;
- b) currency;
- c) velocity of money;
- d) free allowance.

**6. What is the name of the set of cash in any of their form, which is available to economic agents at the moment?**

- a) money multiplier;
- b) monetary aggregate;
- c) monetary base;
- d) money supply.

**7. What is the name of the ratio between the initial money creation and the final increase in the money supply as a result of that issue?**

- a) money multiplier;

- b) monetary aggregate;
- c) monetary base;
- d) money supply.

**8. How the process of new bank deposits creating in the bank lending to clients through free allowance received by the bank from the outside is called?**

- a) money multiplier;
- b) monetary aggregate;
- c) monetary base;
- d) monetary multiplier.

**9. If objectively necessary supply of money in circulation is greater than the actual mass of money in circulation so there is:**

- a) required weight of money;
- b) extra money;
- c) lack of money.

**10. What is the velocity of money, if the amount of GDP is 20 billion, monetary aggregate M3 is 10 billion?**

- a) 0.5;
- b) 2;
- c) 4;
- d) 200.

### **Task 1.6**

**Output.** Identify aggregates  $M_0$ ,  $M_1$ ,  $M_2$ ,  $M_3$  with the following data:

- 1) Check deposits – 3.7 billion UAH.
- 2) Savings deposits – 4.8 billion UAH.
- 3) The money in circulation – 16.6 billion UAH;
- 4) Term deposits – 4.0 billion UAH.
- 5) Certificates of deposit – 7.2 billion UAH.
- 6) Demand deposits – 5.2 billion UAH.
- 7) Investment certificates – 3.5 billion UAH.
- 8) State loan bonds – 2.0 billion.

**The order of solutions:**

$M_0$  = money in circulation:

$M_0$  = 16,6 billion UAH.

$M_1$  =  $M_0$  + check deposits + demand deposits:

$M_1$  = 16,6 + 3,7 + 5,2 = 25,5 billion UAH.



$M_2 = M_1 + \text{savings deposits} + \text{term deposits}$ :

$$M_2 = 25,5 + 4,0 + 4,8 = 34,3 \text{ billion UAH.}$$

$M_3 = M_2 + \text{certificates of deposit} + \text{investment certificates} + \text{state loan bonds}$ :

$$M_3 = 34,3 + 7,2 + 3,5 + 2 = 47 \text{ billion UAH.}$$

*Answer:*  $M_0 = 16,6$  billion UAH,  $M_1 = 25,5$  billion UAH,  $M_2 = 34,3$  billion UAH,  $M_3 = 47$  billion UAH.

### Task 1.7

**Output.** If the circulation is 7.0 million, the sum of prices of goods sold on credit is 6 million, the amount of payments on debt is 10 million, the sum of prices of goods and services is 22 million, and the amount of mutual payments is 4 million, what is the velocity of money?

How will the reduction in the amount of prices of goods and services to 18 million influence on the rate of money supply, *ceteris paribus*?

**The order of solutions:**

The formula of the money turnover law designed by K. Marx is:

$$AM = \frac{\sum P - FC + PC - IP}{V}. \quad (1.8)$$

Then the velocity of money is calculated:

$$V = \frac{\sum P - FC + PC - IP}{AM}. \quad (1.9)$$

$$\text{So, } V = \frac{22 - 6 + 10 - 4}{7} = 3,14 \text{ turnover.}$$

As the sum of prices of goods and services reduced to 18 million, then velocity of money in circulation is reduced:

$$V = \frac{18 - 6 + 10 - 4}{7} = 2,57 \text{ turnover.}$$

*Answer:* The velocity of money is 3.14 turns, while reducing the amount of prices of goods and services to 18 million – decreased to 2.57 turns.

### Task 1.8

**Output.** In the national economy the velocity of money is 4. Real domestic product is 1500 bln. Define the money supply in circulation and nominal national product, if it is known that in the year prices rose by 5%.

**The order of solutions:**

The formula of the money turnover law designed by I. Fisher is:

$$M \cdot V = P \cdot Q. \quad (1.10)$$

Thus, the money supply in circulation is calculated:

$$M = \frac{P \cdot Q}{V}. \quad (1.11)$$

$$M = \frac{1500 \cdot 1,05}{4} = 393,75 \text{ bln UAH}.$$

Average price level can be expressed by the ratio of nominal GDP to real one:

$$P = \frac{GDP_{nominal}}{GDP_{real}}. \quad (1.12)$$

From this formula it follows that nominal GDP can be calculated as real GDP multiplied by the price level:

$$GDP_{nominal} = GDP_{real} \cdot P. \quad (1.13)$$

$$GDP_{nominal} = 1500 \times 1,05 = 1575 \text{ bln UAH}.$$

*Answer:* The money supply in circulation is 393.75 billion, nominal GDP is 1575 billion.

### ***Questions for self-control***

1. Describe the main stages in the development of forms of value.
2. Define economic category «money».
3. Describe the basic concepts of money.
4. Describe the main stages of development money.
5. Describe the functions of money.
6. Define money turnover.
7. What is a «cash flow»?
8. What features of the circulation of money are at the macro and micro level?
9. Give the definition of «money supply», «monetary aggregate», «monetary base».
10. How many monetary aggregates are determined by the National Bank of Ukraine? Give them a description.
11. What is the velocity of money?
12. How the velocity of money is determined?
13. What factors affect the velocity of money?

14. What is the essence of the law of money circulation?  
 15. What is the emission? What are the differences between primary and secondary emission of money?  
 16. What is the monetary multiplier? Explain the mechanism of its action.

### Tasks for self-control

**Task 1.9.** Link a modern means of payment to their characteristics. To do this, put the number according to letter.

Concept	Characteristics
1. Deficient money	A. Deficient signs of value that do not have the material expression and exist only in the form of certain amounts in bank accounts
2. Credit money	B. Promissory note of emission bank
3. Deposit money	C. Deficient signs of value which arise and operate in turn based on credit relations
4. Cash	D. Change coin with a small amount, which are minted not of precious metal
5. Electronic money	E. Money (signs of value), which is not made of precious metal (the nominal value exceeds the real)
6. Banknote	F. Written bond that gives its owner (drawer) indisputable right to demand from the debtor (the drawer acceptor) of the payment amount it after the deadline
7. Check	G. Deficient signs of value in the form of banknotes and coin of different denomination used by economic agents as a means of circulation and payment
8. Bill	H. Written order to the bank account of the owner of this payment to a person specified therein sums of money
9. «Quasi money»	I. Variety deposit money, which means that the transfer of cash in the accounts in banks is carried out automatically using a computer for immediate disposal owners of current accounts
10. Bilon coin	J. Specific monetary form in which monetary essence is considerably weakened and deviates from accepted standards

**Task 1.10.** Define aggregates  $M_0$ ,  $M_1$ ,  $M_2$ ,  $M_3$  in the following data (in bln.):

- Check deposits 3.8  
 Money in circulation 16.7  
 Time deposits 4.3

State loan bonds	1.5
Demand deposits	6.2
Certificates of deposit	3.9
Savings deposits	5.1
Investment Certificates	3.7

**Task 1.11.** Determine the amount of money needed for circulation if the sum of the prices of goods and services is 220 billion UAH, the sum of the prices of goods sold on credit is 12 billion UAH; payment for loans is 4 billion UAH, velocity of monetary unit is 2.4 months.

**Task 1.12.** Determine the amount of money required as a medium of exchange for the year, knowing that the sum of the prices of the sold goods (services, works) is 3,500 billion. The sum of the prices of goods (services, works), which sold within one year of deferred payment, payment term which does not come is 30 billion. The amount of payments on long-term liabilities, the terms of which were followed by is 182 billion. The sum of mutual payments during the reporting period is 400 billion. The average amount of money turns per year is 10.

**Task 1.13.** Determine the indicator of the monetary base and its share in the total money supply in the following data on money market situation in the country:

- Cash – 8,600 bln.;
- Mandatory reserves of commercial banks at the central bank – 2200 billion.;
- Deposits of commercial banks' correspondent accounts in the central bank – 5100 bln.;
- Deposits in current accounts, deposits on demand – 10100 bln.;
- Certificates of deposit – 20 billion.

## Workshop 2

# MONEY MARKET. MONEY SYSTEM

### Key terms and concepts

**Money market** is a special market sector in which the buying and selling of money as a specific product acts, demand, supply and price for this product are generated.

**Sale of money** takes the form of transferring the money to the contractors by the owners for temporary use in exchange for financial instruments that give them the opportunity to keep ownership of the money, to restore the right of disposal and receive interest income.

**Purchase money** is a form of obtaining market players at their disposal a sum of money in exchange for financial instruments.

**Financial instruments** are liabilities of buyers to sellers of money laundering.

**The monetary system** is a form of currency in the country established by national laws.

**Elements of the monetary system:** the name of the currency, the scale of prices, types of banknotes which have the status of legal tender, regulation of non-cash payments, cash circulation regulation, regulation of the exchange rate regime and operations with currency values, regulation of bank regime process, public bodies that regulate the monetary and enforcement of existing legislation.

**Bimetallism** is a monetary system in which the universal equivalent legislated by the two metals – gold and silver, coins of these metals were minted and circulated on equal footing, in circulation there are coins of both these metals.

**Monometalizm** is a monetary system in which the universal equivalent takes one metal: gold (gold monometalizm) or silver (silver monometalizm), while coins in circulation function and signs of value in fractional monetary metal.

**Systems of paper-credit turnover** are monetary systems in which the circulation is served by banknotes and coins (paper or metal) that have no intrinsic value.

**Monetary policy** is a set of interrelated coordinated to achieve pre-defined social goals measures for the regulation of money turnover, which make the state through a central bank.

**Monetization of the budget deficit** is to find funds sufficient to cover the (funding) the excess of budget expenditure over budget revenues.

## *Issues for discussion*

1. The essence of the money market.
2. Institutional money market model.
3. The economic structure of the money market.
4. The essence of the monetary system, its purpose and place in the economic system.
5. The main types of monetary systems and their evolution.
6. National monetary system of Ukraine.
7. State regulation of money circulation.
8. Monetary policy, its objectives, types and tools.
9. Monetization of the budget deficit and GDP.

## **Practical tasks**

**Task 2.1.** Link concepts with their characteristics. To do this, put the number according to letter.

<b>Concepts</b>	<b>Characteristics</b>
1. Foreign Exchange Market	A. Percentage, set as payment for transactions undertaken by the bank
2. Indirect funding	B. Percentage, set as payment for loans granted by the central bank to commercial banks
3. Interbank interest	C. Interest rate at which supply and demand in the money market reach equilibrium
4. Money Market	D. Form obtain market players at their disposal a sum of money in exchange for financial instruments
5. Direct funding	E. The percentage of loans issued by a commercial bank to another
6. The rate of equilibrium	F. Move money between market players through financial intermediaries
7. Margin	G. Interest rate payable by the borrower for the use of bank loan
8. Discount Rate	H. Segment of the money market, which covers the relationship between economic actors about the purchase and sale of foreign currency on the basis of supply and demand
9. Loan interest	I. Move money in market channels directly from the owners to borrowers
10. Bank Rate	J. The difference between the loan rate and the deposit rate, which is the bank's profit
11. Purchase of money	K. Market sectors in which the buying and selling of money as a specific product formed demand, supply and price of money

**Task 2.2.** Link classification features of money market structuring to segments of the money market. To do this, put the number according to letter. One figure corresponds to a few letters.

<b>Classification features of money market structuring</b>	<b>Segments of the money market</b>
1. By economic destination of the resources	A. Bank loans market
	B. Foreign exchange market
	C. Nonbank financial institutions services market
2. By institutional characteristics	D. Capital market
	E. Securities market
3. By type of financial instruments	F. Stock market
	G. Loan commitments market
	H. Money market

**Task 2.3.** Link financial instruments to their types. To do this, put the number according to letter. One figure corresponds to a few letters.

<b>Types of financial instruments</b>	<b>Financial instruments</b>
1. Non-debt financial instruments	A. Shares
	B. Savings Certificates
	C. Credit Agreement
2. Debt financial instruments	D. Insurance Agreement
	E. Bonds
	F. Notes
	G. Derivatives

**Task 2.4.** Separate factors of influence the demand for money into factors of direct and inverse action. To do this, put the number according to letter. One figure corresponds to a few letters.

<b>Factors of influence the demand for money</b>	
1. Factors of direct action	A. Rate of income
	B. The volume of goods and services
	C. The amount of wealth
2. Factors of inverse action	D. Inflation
	E. The average level of prices
	F. Expected changes in market conditions

**Task 2.5.** Link units of monetary system to their characteristics. To do this, put the number according to letter.

<b>Units of monetary system</b>	<b>Characteristics</b>
1. Currency	A. Exchange value that is materialized in a certain type of universal equivalent and provides a stable turnover and tender. It is determined by the relevant laws of the country
2. Scale of prices	B. Organization of money turnover requires state supervision and control of banks
3. Types of monetary unit	C. Determination of the areas of cash and non-cash payments, the mode of use of money in bank accounts, payment types and payment procedure
4. Regulation of cash and non-cash turnover	D. The currency represents the cost of the total weight of the goods and services are traded
5. Exchange rate	E. Is established by the legislation of the country, taking into account social, economic and historical patterns of development and is used to measure the prices of goods and services
6. Public institutions that regulate the monetary	E. The ratio between currencies of different countries, which is used to exchange during currency transactions. Acts as the price of the currency of one country's currency expressed in another country's one

**Task 2.6.** Link concepts with their characteristics. To do this, put the number according letter.

<b>Concepts</b>	<b>Characteristics</b>
1. The monetary system	A. Change in the purchases and sales of government securities by Central Bank
2. Monetary unit	B. Finding sufficient funds to cover the (funding) the excess of expenditure over budget revenues
3. Metal circulation systems	C. Monetary system in which monetary regulation is done by the use of economic methods to influence the money supply
4. Systems of paper-credit circulation	D. Cash system in which state intervention in the regulation of monetary relations in the country is minimal, resulting in full currency convertibility and market mechanisms regulating the foreign exchange market
5. Market-based monetary system	E. Central Bank sets for all banks rate of compulsory deposit of funds in correspondent accounts with no right to use them without paying for them %
6. Non-market monetary system	F. Monetary System, which provides for the use of foreign exchange restrictions due to the isolation of the national economy from the global



Table

Concepts	Characteristics
7. Open monetary system	G. Monetary system in which circulation serving banknotes which do not have intrinsic value
8. Closed monetary system	H. The form of currency in the country, which is defined by national laws
9. National monetary system	I. Monetary system in which circulating coins are valuable, performing all the functions of money, and money are inferior to freely exchange the metal
10. Open market policy	J. Central Bank sets the interest rate of the loans it provides to commercial banks in order of refinancing
11. The policy of mandatory reserves	K. Proof of money in circulation to a level sufficient for the successful implementation of the total volume of produced goods and services and repayment of debts
12. Accounting policies	L. Imposed by form of currency in the country is enshrined in national legislation
13. Monetization of the budget deficit	M. Cash system, which are characterized by certain restrictions on the free functioning of the money (stamps, cards), and regulation of money circulation is carried out by administrative methods
14. Monetization of GDP	N. Set the legislation of the country based on socio-economic and historical patterns of development and serves to measure the prices of goods and services

**Task 2.7.** Link classification attributes to corresponding types of monetary systems. To do this, put the number according letter. One figure corresponds to a few letters.

Classification attributes	Types of monetary systems
1. Depending on the form in which money function	A. Open monetary system
	B. Non-market
2. The nature of the economic system	C. Systems of metallic circulation
	D. Closed
3. The nature of regulation of monetary relation	E. Market
	F. Systems of paper and credit circulation

**Task 2.8.** Link components of the economic policies to their characteristics. To do this, put the number according letter.

Concept	Characteristics
1. Structural policy	A. Measures to ensure social equality and security of all members of society, by a partial redistribution of income
2. Competition policy	B. The regulatory influence of the state on the ratio of aggregate demand and aggregate supply in the markets

Concept	Characteristics
3. Social policy	C. Providing subsidies or other incentives to energize the development of backward regions or specific industries or sectors of production
4. Conjuncture policy	D. Measures antitrust nature free pricing, market access for all business entities

### Task 2.9

#### Multiple choice questions.

**1. What is the name of the segment of the money market, which makes the accumulation of savings and placing them into profitable assets?**

- a) money market;
- b) capital market;
- c) market for bank loans;
- d) NFCI services market;
- e) market of loan obligations.

**2. By institutional features of money market is divided into:**

- a) money market and capital market;
- b) market for bank loans, NFCI services market, stock market;
- c) market of loan commitments, foreign exchange market, stock market.

**3. Which of the factors influence the demand for money refers to the factors of direct action?**

- a) rate of return;
- b) inflation;
- c) amount of wealth;
- d) the expected changes in market conditions.

**4. Which of the factors influence the demand for money refers to factors of inverse action?**

- a) amount of goods and services;
- b) inflation;
- c) average price;
- d) amount of wealth.

**5. What is the name of liability of money buyers to sellers?**

- a) direct funding;

- b) indirect funding;
- c) financial instrument;
- d) fiscal agent.

**6. What is the name of the need for economic actors in a certain amount of money?**

- a) money market;
- b) sale money;
- c) purchase money;
- d) demand for money;
- e) money supply.

**7. Proof of money in circulation to a level sufficient for the successful implementation of the total volume of produced goods and services and repayment of debts – is:**

- a) monetary policy;
- b) policy of open market;
- c) monetization of GDP;
- d) monetization of the budget deficit.

**8. Element of the monetary system, which is set by the country, taking into account social, economic and historical patterns of development and serves to measure the prices of goods and services – is:**

- a) currency;
- b) scale of prices;
- c) exchange rate;
- d) species and types of banknotes.

**9. What are the specific measures and actions of the Central Bank, aimed at changing the volume of money and the interest rate?**

- a) monetary policy;
- b) instruments of monetary policy;
- c) objectives of monetary policy.

**10. How will the monetization of GDP change if GDP grows more quickly than monetary aggregate M3?**

- a) increase;
- b) decrease;
- c) not change.

### Task 2.10

**Output.** Suppose that the value of money demand ( $MD$ , bln) depends on the measurement of GDP (bln) and the interest rate ( $I$ , %), as follows:

$$MD = 0,4 \cdot GDP - 2i.$$

Determine demand for money and determine whether equilibrium in the money market preserved if the money supply ( $MS$ ) is 30 billion, GDP is 115 billion, interest rate is 7%. Determine the velocity of monetary unit and equilibrium interest rate.

**The order of solutions:**

Due to the task, the demand for money is:

$$MD = 0,4 \cdot 115 \text{ billion} - 2 \cdot 7\% = 32 \text{ billion}.$$

Equilibrium in the money market means that the money supply ( $MS$ ) is equal to money demand ( $MD$ ). In our case:  $MS < MD$  ( $MS = 30$  billion,  $MD = 32$  bln).

From the money demand equation express the equilibrium interest rate:

$$i = \frac{0,4 \cdot GDP - MD}{2}. \quad (2.1)$$

Equilibrium in the money market have remained under the condition that the money supply ( $MS$ ) is equal to money demand ( $MD$ ) and is 30 billion. So:

$$i = \frac{0,4 \cdot 115 - 30}{2} = 8\%$$

To produce GDP of 115 billion per year, the money supply 30 billion should make 3.83 turns  $\left(\frac{115 \text{ bln}}{30 \text{ bln}}\right)$ , hence the velocity of currency is equal to 3.83 turnovers per year.

*Answer:* The level of demand for money is equal to 32 billion. Equilibrium interest rate – 8%, and the velocity of currency – 3.83 turnovers per year.

### Task 2.11

**Output.** Additional emission of National Bank of Ukraine is 7 billion. Required reserve rate is 10%. What additional amount of money can create a banking system?

**The order of solutions:**

Additional amount of money the banking system can create calculated using the credit multiplier effect:

$$\Delta M = E \cdot m = E \cdot \frac{1}{RRR} \times 100. \quad (2.2)$$

$$\Delta M = 7 \cdot \frac{1}{10} \cdot 100 = 70 \text{ bln UAH.}$$

*Answer:* The banking system can create an additional 70 billion.

**Questions for self-control**

1. What is money market?
2. Describe the objects and subjects of the money market.
3. Describe non-debt financial instruments.
4. Describe the debt financial instrument.
5. Identify the specific characteristics of the money market.
6. Describe the mechanism of buying and selling of money in the sector of direct and indirect financing.
7. Determine the structure of the money market by economic purpose resources.
8. Describe the structure of the money market by institutional characteristics.
9. Analyze the structure of the money market by type of financial instrument.
10. What is the demand for money? What is the purpose of accumulation of money and motives of money demand?
11. Describe the factors influencing the demand for money.
12. What is the money supply?
13. Consider the mechanism of influence factors on the supply of money.

**Tasks for self-control**

**Task 2.12.** Suppose that the value of money demand ( $MD$ , bln) depends on the measurement of GDP (bln) and the interest rate ( $i$ , %), as follows:

$$MD = 0,35 \cdot GDP - 1.4 i.$$

Determine the magnitude of the demand for money and whether equilibrium in the money market preserved if the money supply ( $MS$ ) is 120 billion, GDP – 380 billion, interest rate, and – 14%. Determine the velocity of monetary unit.

**Task 2.13.** Additional emission is the National Bank of Ukraine is 10 billion. Required reserve rate is 6%. What additional amount of money can create a banking system?

## Workshop 3

# INFLATION AND MONETARY REFORMS

### Key terms and concepts

**Inflation** is the process of money devaluation and a general rise in prices of goods and services as a result of excessive emissions and overflow channels money supply, which was not equipped with economic benefits.

#### Classification of inflation

For forms of manifestation	price inflation
	inflation of savings
	depreciation
Depending on the average annual growth rate (increase) prices	creeping: the growth of money in circulation to 5-10% per year
	moderate: prices by 5-20% per year
	galloping: prices by 20-50% and sometimes 100% per year
	hyperinflation: prices by more than 100% per year
Depending on the reasons that lead to inflationary processes	superhyperinflation: prices up to 1000% per year or more
	inflation of demand: the presence of a large amount of money for a small number of goods
	inflation of costs of production (growth of wage costs)

Measurements of inflation:

- The rate of inflation;
- Consumer Price Index (CPI);
- Price index for capital goods (producer price) (PPI);
- Price index of GDP (GDP deflator);
- «Rule-70».

**The inflation rate (R)** is defined as the rate of growth of prices:

$$P = \frac{P_1 - P_0}{P_0}, \quad (3.1)$$

where  $P_1$  – the average price this year;  
 $P_0$  – the average price level in the base year.

**Consumer Price Index (CPI) (Laspeyres index)** is determined by the formula:

$$I_L = \frac{\sum_{i=1}^n P_i^1 \cdot Q_i^0}{\sum_{i=1}^n P_i^0 \cdot Q_i^0}, \quad (3.2)$$

where  $P_i^0$  and  $P_i^1$  – price level of i-th benefits under the baseline (0) and current (1) year, respectively;

$Q_i^0$  – amount of i-th good accordance in the base period.

**GDP deflator (Paasche index)** is given by:

$$I_P = \frac{\sum_{i=1}^n P_i^1 \cdot Q_i^1}{\sum_{i=1}^n P_i^0 \cdot Q_i^1}, \quad (3.3)$$

where  $Q_i^1$  – amount of i-th good consumed in the current period.

Or by the formula:

$$D_{GDP} = \frac{GDP_{nominal}}{GDP_{real}}. \quad (3.4)$$

**Fisher index** is given by:

$$I_F = \sqrt{I_L \cdot I_P}, \quad (3.5)$$

where  $I_F$  – Fisher index,

$I_L$  – Laspeyres index,

$I_P$  – Paasche index.

Inflation rate shows the percentage for the current year (months) higher than the previous price.

«**Rule-70**».

To determine the number of forecast years using the annual inflation rate can double the price, use «rule-70.»

$$N = 70 / TI, \quad (3.6)$$

where  $N$  – number of years required to double the price level;

$TI$  – inflation rate.

Monetary reform is full or partial conversion of the monetary system that is provided by the state with a view to streamlining and adjusting money turnover.

Anti-inflationary policy – a set of measures of state regulation of the economy to combat inflation. It includes **Deflationary policy** and **Incomes policy**.

### Methods of monetary reform:

**Nullification** – state announces depreciated paper banknotes as invalid.

**Devaluation** – state formally reduces the metal content and the rate (or all year) national currency against foreign currencies or international units of account.

**Revaluation** – state formally increases the metal content and the rate (or all year) national currency against foreign currencies or international units of account.

**Denomination** – consolidation currency without changing its name, which is carried out to ensure the circulation of money and provide greater usefulness of money.

### Types (models) of currency reform in the way of carrying out

Formal type	Partial reforms
Confiscation type («shock»)	Not confiscation reform
Parallel (conservative) type	One moment reform

### *Issues for discussion*

1. The essence of the monetary system.
2. The main types of monetary systems and their evolution.
3. National monetary system of Ukraine.
4. State regulation of money circulation.
5. Monetary policy, its objectives, the types and tools.
6. Monetization of the budget deficit and GDP.
7. Nature, types and patterns of inflation.
8. The causes of inflation.
9. Economic and social consequences of inflation.
10. State regulation of inflation.

### Practical tasks

**Task 3.1.** Link inflation causes with their effects. To do this, put the number according the letter.

Causes of inflation	Effects of inflation
1. External	A. Reduction of revenues from foreign trade
	B. Deformation of economy



<b>Causes of inflation</b>	<b>Effects of inflation</b>
2. Internal	C. The negative foreign trade balance
	D. Monopoly position of large manufacturers and their price dictate
	E. Exorbitant taxes or interest rates
	F. State monopoly on monetary emission
	G. Growth in world prices
	H. Monopoly of trade unions in the labor market and their ability to influence wages

**Task 3.2.** Link types of inflation depending on the nature of the inflationary process to their characteristic. To put the number at the appropriate letter.

<b>Types of inflation</b>	<b>Characteristic</b>
1. Creeping inflation	A. It is the annual growth rate of prices by 10-15%, and sometimes up to 100%
2. Galloping inflation	B. Characteristic abrupt price increases of over 100% per year and increase their giving up wages and destroying welfare, covering even provided with strata
3. Hyperinflation	C. The rise in prices that exceed the rate of 50% per month
4. Superhiper inflation	D. Characteristic feature smooth annual price increase with in 10%.

**Task 3.3.** Link types of inflation to their characteristic. To do this, put the number according the letter.

<b>Types of inflation</b>	<b>Characteristic</b>
1. Balanced inflation	A. Determined by the change in prices of various commodities to each other in dramatic proportions
2. Unbalanced inflation	B. Occurs within individual countries
3. Expected inflation	C. Expected growth in inflation
4. Unexpected inflation	D. Covers a group of countries or entire regions
5. Inflation of demand	E. Inflation is caused by increases in prices influenced the growth of production costs
6. Local inflation	F. Do not projected growth of inflation
7. Inflation of costs	G. Inflation price increases under the influence of aggregate demand
8. World inflation	H. Determined by proportional change in the prices of various goods

**Task 3.4.** Link economic and social impact of inflation to their characteristics. To put the number at the appropriate letter.

Effects of inflation	Characteristic
1. Social	A. Reduction of income in those sectors of the population living at the expense of budget funds
	B. Decrease in the production of goods and services, and enhance the economic development of disproportionality
	C. Reduction of effective demand
	D. Uncontrolled printing of money
	E. Decrease in income pensioners
	F. Reduce the real value of government revenue
	G. Decrease in income persons who live off social security benefits (disabled )
	H. Aggravation of social contradictions in society
	I. The decline in investment, reduce new investment, the decline of scientific and technological progress, deregulation of the banking system (decrease in deposits and more expensive bank loans )
	J. The decline in living standards of people with fixed incomes
2. Economic	K. Reduction of inter-farm lending
	L. Distribution barter
	M. Impairment of savings
	N. The devaluation of the national currency
	O. Uncertainty workers for employment ;
	P. Uncertainty about business prospects for their economic situation
	Q. Disorganization of foreign economic relations, deter foreign capital inflows, worsening balance of payments

**Task 3.5**

**Multiple choice questions.**

**1. By reducing the inflation rate to 5% per month inflation will be:**

- a) creeping;
- b) galloping;
- c) hyperinflation.

**2. Revaluation is:**

- a) depreciation of the national currency against foreign currencies;
- b) increase the rate of national currency against foreign currencies;
- c) consolidation of the national currency without changing its name.

**3. Nullification is:**

- a) state announces depreciated paper banknotes as invalid;
- b) special anti-inflation and stabilization efforts in the country, with the retirement of the currency;
- c) consolidation of the national currency without changing its name.

**4. What are the methods most often used to measure inflation?**

- a) price index of consumer goods, price index of GDP;
- b) price index of consumer goods, the price index for capital goods, price index of GDP;
- c) price index for capital goods, price index for GDP.

**5. What is the name of the index that characterizes the change in time of the general price level of all goods and services that are sold to end consumers?**

- a) price index for capital goods;
- b) consumer price index;
- c) GDP deflator.

**6. Creeping inflation has this description:**

- a) annual rate of price increases of 10-15%, sometimes up to 100%;
- b) price increasing is over 100% per year and increases their separation from the wages and welfare of destruction;
- c) price increase more than 50% per month;
- d) annual price increase within 10%.

**7. What is the name of the situation in economy, characterized by a general stagnation of production and high unemployment rates and a simultaneous increase in prices and other characteristics of the inflationary process?**

- a) hyperinflation;
- b) galloping inflation;
- c) stagflation;
- d) superhiperinflation.

**8. What is the name of measure on state regulation of the economy, which is aimed at fighting inflation?**

- a) monetary reform;
- b) deflationary policies;
- c) policy costs.

**9. What are the monetary reforms according to depth of reform measures?**

- a) structural and partial type;
- b) formal and parallel type;
- c) parallel and partial type.

**10. What are the monetary reforms in character of exchanging old money for new ones?**

- a) confiscation and non-confiscation;
- b) one-moment and denomination;
- c) partial and parallel type.

**11. The kind of reform, involving the introduction into circulation of the new currency, and the restructuring of the economy, public finance, banking and monetary system?**

- a) formal;
- b) partial type;
- c) structural.

**12. What is the name of reform by which changes in inventories of money, income and prices for all economic actors performed on a single ratio?**

- a) confiscation;
- b) non-confiscation;
- c) denomination.

### Task 3.6

**Output.** Calculate basic and chain inflation index for the current year (monthly) if the cost of the consumer basket has changed so: last year December – 530 UAH, January – 540 UAH, February – 550 UAH, March – 540 UAH, April – 630 UAH, May – 600 UAH, June – 590 UAH, July – 600 UAH, August – 680 UAH, September – 710 UAH, October – 730 UAH, November – 730 UAH, December – 740 UAH.

What will be the basic inflation rate in annual terms?

**The order of solutions:**

The calculation of basic and chain inflation rates is given in Table 3.1.

*Table 3.1*

**Basic and chain inflation indices, units.**

№	Month names	Inflation indices, units	
		Basic	Chain
1	January	$540 / 530 = 1,02$	$540 / 530 = 1,02$
2	February	$550 / 530 = 1,038$	$550 / 540 = 1,02$

Table 3.1

№	Month names	Inflation indices, units	
		Basic	Chain
3	March	540 / 530 = 1,02	540 / 550 = 0,98
4	April	630 / 530 = 1,19	630 / 540 = 1,17
5	May	600 / 530 = 1,13	600 / 590 = 1,02
6	June	590 / 530 = 1,11	590 / 600 = 0,98
7	July	600 / 530 = 1,13	600 / 590 = 1,02
8	August	670 / 530 = 1,26	680 / 600 = 1,13
9	September	710 / 530 = 1,34	710 / 680 = 1,04
10	October	730 / 530 = 1,38	730 / 710 = 1,03
11	November	730 / 530 = 1,38	730 / 730 = 1,00
12	December	740 / 530 = 1,396	740 / 730 = 1,01

*Answer:* In annual terms basic inflation rate is 1,396.

### Task 3.7

**Output.** Determine the expected rate of price inflation of current year, if last year the average money supply in circulation amounted to 760 bln, whereby it is made of 1.5 turns, the physical volume of GDP was 900 billion units.

During the current year, the money supply increased by 65%, its turnover fell by 0.2 turns, the physical volume of GDP increased by 13%.

#### The order of solutions:

The rise in prices is a result of violations of the money circulation law in the direction of excess of the actual amount of money over objectively necessary one:

$$M_f > M_n$$

Based on equation of I. Fisher:

$$M_n = \frac{P \cdot Q}{V}. \quad (3.7)$$

If the equilibrium is disturbed as a result of weaker growth in the money supply growth rate of GDP, rising prices for its recovery.

Rate of inflation is calculated by the formula:

$$TI = \left[ \frac{P_1}{P_0} - 1 \right] \cdot 100\%, \quad (3.8)$$

where  $P_1$  – price level of the current period;

$P_0$  – price level of the base period.

From the equation of I. Fisher we find the average price of the reporting and baseline (pre) years:

$$P_0 = \frac{M_0 \cdot V_0}{Q_0} = \frac{760 \cdot 1,5}{900} = 1,26.$$

$$P_1 = \frac{M_1 \cdot V_1}{Q_1} = \frac{(760 + 760 \cdot 0,65) \cdot (1,5 - 0,2)}{900 + 900 \cdot 0,13} = 1,61.$$

$$TI = \left[ \frac{1,61}{1,26} - 1 \right] \cdot 100\% = 27,78\%.$$

*Answer:* The expected rate of price inflation is 27.78%.

### Task 3.8

**Output.** Calculate the inflation rate when compared with last year, the money supply increased by 35%, the velocity of money has slowed by 21%, and the growth of GDP volume was 8%.

**The order of solutions:**

We accept the previous year indicators for the unit, then:

$$M_1 = 1 + \frac{35\%}{100\%} = 1,35;$$

$$V_1 = 1 - \frac{21\%}{100\%} = 0,79;$$

$$Q_1 = 1 + \frac{8\%}{100\%} = 1,08.$$

From the equation of I. Fisher we find the average price of the current year:

$$P_1 = \frac{M_1 \cdot V_1}{Q_1} = \frac{1,35 \cdot 0,79}{1,08} = 0,99.$$

$$TI = \left[ \frac{0,99}{1} - 1 \right] \cdot 100\% = -1\%.$$

*Answer:* The inflation rate was -1%.

### Task 3.9

**Output.** Calculate inflation rate in the second year under the following conditions:

Nominal GDP in the first year – 1200 ths, in the second – 1400 ths. Real GDP in the first year – 1100 ths, in the second – 1,200 thousand.

**The order of solutions:**

The level of the price index is calculated as:

$$I = \frac{GDP_{nominal}}{GDP_{real}}. \quad (3.9)$$

The price index in the first year is:  $I_1 = \frac{1200}{1100} = 1,09$ .

The price index in the second year is:  $I_2 = \frac{1400}{1200} = 1,17$ .

Inflation rate is:  $I_p = \frac{I_2 - I_1}{I_1} \cdot 100\% = \frac{1,17 - 1,09}{1,09} \cdot 100\% = 7,3\%$ .

*Answer:* The rate of inflation in the second year was 7,3%.

### ***Questions for self-control***

1. What is the monetary system?
2. Describe the elements of the monetary system.
3. What types of monetary systems can be distinguished according to the form in which money function?
4. What types of monetary systems can be distinguished by the nature of the economic system?
5. What types of monetary systems can be distinguished by the nature of exchange relations?
6. Describe the components of economic policy.
7. Describe the objects of monetary policy.
8. Identify the subjects of monetary policy.
9. What are the goals of monetary policy?
10. Describe the instruments of monetary policy.
11. Describe ways to mobilize funds for the monetization of the budget deficit.
12. What is monetization of GDP?
13. What are the main causes of inflation?
14. Describe the types of inflation on different criteria classification.
15. Define the purpose and form of anti-inflationary policy.
16. What are the main effects of inflation?

### **Tasks for self-control**

**Task 3.10.** Determine inflation rate, if the money supply compared to last year increased by 75%, the velocity of money has increased by 15% and increase of commodity mass was 20%.

**Task 3.11.** Table 3.2 shows the price indices for years. Calculate the inflation rate of each year. Using the «rule – 70», indicate the number of years required to double the price level.

*Table 3.2*

**The calculation of the inflation rate based on the price index**

Year	Price index	Inflation rate,%
2006	100,0	?
2007	108,2	?
2008	112,3	?
2009	110,3	?
2010	111,6	?
2011	116,6	?

**Task 3.12.** Determine the expected rate of price inflation of current year, if last year the average mass of money in circulation amounted to 548 bln, whereby it is made of 2,7 treatments, the physical volume of GDP was 791 billion units.

During the year, the money supply increased by 43%, its turnover fell by 0.31 turns, the physical volume of GDP compared with the previous year increased by 11,11%.

**Task 3.13.** The average consumer in the total cost to meet their needs spends 60% on the purchase of food, 20% – for other goods and 20% for services. It is known that in the year food prices fell by 5%, the prices of other commodities increased by 10% and prices of services rose by 30%. Calculate the inflation rate for the average consumer.

**Task 3.14.** Calculate the price index for the current year and the value of real GDP, if the value of nominal GDP is 550 billion, the consumer basket is: food – 10 units, manufactured goods – 15 units, books – 3 units, medicines – 3 units. Prices for conventional unit of current components of the consumer basket in current and base year respectively are: foods – 25 and 27 UAH, manufactured goods – 15 and 16 UAH, books – 6 and 8 UAH, medicine – 12 and 8 UAH. Make a conclusion about the change in the purchasing power of money.



## Workshop 4

# FOREIGN EXCHANGE MARKET AND FOREIGN EXCHANGE SYSTEM

### Key terms and concepts

**Foreign exchange market** (forex) is a market for the sale and purchase of foreign currency for the national currency. In the currency market there is traded foreign currency of some countries (the U.S. dollar, British pound sterling, Japanese yen, etc.) or collective currency (euro, SDR), different media of payment (checks, bills, certificates) and securities (stocks, bonds) that are denominated in foreign currencies.

**The objects of currency market** are currency values.

**The subjects of currency market** are any economic agents (individuals and legal entities, residents and non-residents) and intermediaries (banks, brokerage houses, foreign exchange).

**Classification of the foreign exchange market:**

1. by the nature of the transactions – market of conversion operations, market of deposit and lending operations;
2. by territorial location – the European, North American, Asian, and other;
3. by conversion operations: market of futures, market of forwards, market of options and other markets;
4. by the form of currency that is traded – the market of non-cash operations, the market of cash operations.

**Types of currency transactions: cash and time.**

**Spot** is cash transaction carried out on a short term basis. Implementation period is less than 48 hours. This time is necessary to participants of agreements to verify the documents and to deliver currency. The rate at which this operation is performed is called the spot rate.

**Forward** is time transaction in which the participants agree on the purchase and sale of foreign currency on a specified date at the rate specified in the forward agreement. These agreements are mandatory for execution. Forward currency rate differs from spot rate, which usually becomes basis for concluding forward agreements. In this case, the forward rate can be both higher than the spot rate (in this case we are talking about selling at a premium) or below – when it comes to selling currencies at a discount.

**The international monetary system** is a fixed by contracts organization of international monetary relations. This system evolved historically, and the purpose of its creation was to ensure payment transactions between the countries and functioning of the international monetary instruments.

Organization of the international monetary system based on specific mechanisms that ensure its operation and, in particular:

- The establishment of some form of international means of payment (gold, the currency of some countries, the International Monetary items such as SDR, EURO);
- Formation of mechanism for establishing and maintaining foreign currency exchange rates;
- Determine the rules of payments between subjects of international economic relations;
- Developing of mechanism of balancing the volume of trade, the ratio of exports and imports;
- Formation of mechanism of balance of international payments;
- The establishment and functioning of the international monetary and financial institutions like the International Monetary Fund (IMF) and International Bank for Reconstruction and Development (IBRD).

#### **Stages of development of the global monetary system**

Stage	Period	Name	Content
The first stage	End of 19 cen. – 1980-th.	Gold Standard (Paris monetary system)	Currency of some countries were freely exchanged for gold Countries set the gold content of its currency, which remained unchanged It was supported strict correlation between the stock of gold in the country and the domestic money supply
The second stage	1944-1975	Bretton Woods monetary system	Establishment of the International Monetary Fund (IMF) Each country – a member of the IMF established the gold content of its currency that determines the nominal exchange parity and the exchange rate Each country – a member of the IMF was obliged to adhere to constant exchange rate The role of currency reserves was played by gold and the U.S. dollar
The third stage	1976-1997	Jamaica monetary system	Cancel the function of gold as a measure of value and the basis of the calculation of exchange rates Giving states the choice of exchange rate regime

Stage	Period	Name	Content
			Attaching to exchange national currencies – the leaders (the U.S. dollar, German mark, Japanese yen, etc.). Introduction of standard SDR («Special Drawing Rights») Establishment of new international currency – the euro

### *Issues for discussion*

1. Essence and types of monetary reform.
2. Features of the currency reform in Ukraine.
3. Determine the nature of the term «currency».
4. Consider the nature of exchange rates.
5. How are exchange rates calculated?
6. What types of currency markets do you know?
7. What currency transactions do you know?
8. What are the stages of development of the world monetary system?
9. What is the essence of the policy of the National Bank?

### **Practical tasks**

**Task 4.1.** Link kinds of monetary reform to their characteristics. To put the number at the appropriate letter.

<b>Kinds of monetary reform</b>	<b>Characteristics</b>
1. Denomination	A. Official reducing the power of the national currency against foreign currencies
2. Nullification	B. The exchange of old banknotes with new ones produced in a certain proportion (consolidation of currency unit) with a simultaneous recalculation in the same proportion of all monetary indicators
3. Devaluation	C. Official increasing the power of the national currency against foreign currencies
4. Revaluation	D. The old banknotes declared void and removed from circulation, and in turn produced new ones

**Task 4.2.** Amend the table.

Stage	Period	Name	Content
The first stage	End of 19 cen. – 1980-th.		Currency of some countries were freely exchanged for gold Countries set the gold content of its currency, which remained unchanged It was supported strict correlation between the stock of gold in the country and the domestic money supply
The second stage	1944-1975	Bretton Woods monetary system	
The third stage		Jamaica monetary system	

**Task 4.3**

**Multiple choice questions.**

**1. Currency – is:**

- a) gold;
- b) silver;
- c) monetary unit;
- d) currency used in the functions of world money.

**2. What types of currencies are depending on the issuer of currency?**

- a) national;
- b) foreign;
- c) collective;
- d) correct are a), b), c);
- e) correct are a), b).

**3. What are the types of exchange rates depending on usage?**

- a) full convertible;
- b) partially convertible;
- c) non-convertible;
- d) correct are a), b);
- e) correct are a), b), c).

**4. If currency conversion is allowed only for non-residents, it is called:**

- a) external;
- b) internal;
- c) current;
- d) capital.

**5. The price of the currency in the foreign exchange market is:**

- a) convertibility;
- b) exchange rate;
- c) parity;
- d) cross-course.

**6. What is the name of the course that is influenced by supply and demand?**

- a) market rate;
- b) official rate;
- c) freely floating exchange rate;
- d) managed floating exchange rate.

**7. If the course of foreign currency unit is denominated in the national currency – it is:**

- a) indirect quotation;
- b) direct quotation;
- c) reverse quotation.

**8. What is the name of reduction of exchange rate of the national currency against foreign currency?**

- a) revaluation;
- b) conversion;
- c) devaluation;
- d) denomination.

**9. Value by which a currency is exchanged for another one is:**

- a) exchange rate;
- b) fixing;
- c) cross-rate;
- d) foreign exchange parity.

**10. Conversion operations are:**

a) trade of foreign currency on the conditions of supply within the next business day after the transaction at the rate agreed at the time of signing;

b) trade of foreign currency which is conditional, resulting in involved deposits in foreign currency by banks in the provision of loans in foreign currency;

c) trade of foreign currency in the traditional manner, mainly on equivalent bases by exchanging different currencies.

#### **Task 4.4**

**Output.** Determine what will be the course of the Canadian dollar to the Japanese yen, assuming the following ratios of these rates with the U.S. dollar:

$$USD / CAD = 1,56 / 1,58;$$

$$USD / JPY = 107,34 / 107,40.$$

#### **The order of solutions:**

In this case, the U.S. dollar is the base quotes for both currencies. That is, for the calculation of the cross-rate we should split dollar exchange rates.

For buying rate (bid rate) we should divide currency buying rate quoted on the selling rate basis quotes.

For selling rate (ask or offer rate) we should divide selling rate quotes for buying rate base quotes.

$$\begin{aligned} Bid \text{ CAD/JPY} &= bid \text{ USD/JPY} / offer \text{ USD/CAD} = 107,34/1,58 = \\ &= 67,94, \end{aligned}$$

$$\begin{aligned} Offer \text{ CAD/JPY} &= offer \text{ USD/JPY} / bid \text{ USD/CAD} = 107,40/1,56 = \\ &= 68,84 \end{aligned}$$

$$Answer: CAD / JPY = 67,94 / 68,84.$$

#### **Task 4.5**

**Output.** Determine what will be the Swiss franc exchange rate to the Hryvnia, assuming the following ratios of these rates with the U.S. dollar:

$$SFR / USD = 1,58 / 1,61;$$

$$USD / UAH = 5,42 / 5,44.$$

#### **The order of solutions:**

The U.S. dollar is the base quotes only for one currency, we must multiply the dollar exchange rates.

For buying rate multiply buying rate of dollar exchange rates.

For selling rate y selling rate of dollar exchange rates.

$$\begin{aligned} Bid \text{ SFR/UAH} &= bid \text{ SFR/USD} \cdot bid \text{ USD/UAH} = 1,58 \cdot 5,42 = \\ &= 8,56, \end{aligned}$$

$$\begin{aligned} Offer \text{ SFR/UAH} &= offer \text{ SFR/UAH} \cdot offer \text{ SFR/UAH} = 1,61 \cdot 5,44 = \\ &= 8,76. \end{aligned}$$

$$Answer: SFR/UAH = 8,56 / 8,76.$$

#### **Task 4.6**

Output. Determine what will be the course of the British pound to the Australian dollar, assuming the following ratios of these rates with the U.S. dollar:

$$GBP / USD = 1,58 / 1,59;$$

$$AUD / USD = 0,75 / 0,76.$$

#### **The order of solutions:**

In this case, the U.S. dollar is the quote currency for both currencies. To find them to cross-rate to divide the dollar exchange rates.

For buying rate we should divide buying rate of the base currency for currency selling rate quotes.

For selling rate of exchange sales to divide the base currency buying rate of exchange quoted.

$$\text{Bid } GBP/AUD = \text{bid } GBP/USD / \text{offer } AUD/USD = 1,58 / 0,76 = 2,08.$$

$$\text{Offer } GBP/AUD = \text{offer } GBP/USD / \text{bid } AUD/USD = 1,59 / 0,75 = 2,12.$$

$$\text{Answer: } GBP/AUD = 2,08 / 2,12.$$

### ***Questions for self-control***

1. Define the concept of «currency».
2. What are the types of currencies?
3. Describe the factors that affect the exchange rate.
4. What are the types of currency exchange rates?
5. What is Forex Quotes?
6. Define the convertibility of currencies.
7. What is the foreign exchange market?
8. What are the operations that are carried out in the forex market?
9. Describe the nature and purpose of payments.
10. What are the foreign exchange reserves?
11. Is it legitimate to equate the currency as a function of world money?
12. What are the main components of the monetary system?
13. What are the stages of the evolution of monetary systems?

### **Tasks for self-control**

**Task 4.7.** Determine what will be rate of the euro against the Swiss franc, judging from the average ratios of the U.S. dollar:

$$1 \text{ USD} = 1.5125 \text{ EUR};$$

1 USD = 1,3140 SFR.

**Task 4.8.** Determine what will be the course of the British pound to the Japanese yen, assuming the following ratios of these rates with the U.S. dollar:

$$GBP / USD = 1,58 / 1,59;$$

$$USD / JPY = 107,54 / 107,60.$$

**Task 4.9.** Determine what will be the course of British pound sterling to the Swiss franc, assuming the following ratios of these rates with the U.S. dollar:

$$GBP / USD = 1,82 / 1,84;$$

$$SFR / USD = 3,11 / 3,13.$$

**Task 4.10.** How much Hungarian Forint would be given for 456 USD if the official exchange rate as of 25.09.2013 is 160 Hungarian Forint for 33.88 Indian rupees, 1000 Indian rupees is equal to 68.76 UAH.

**Task 4.11.** For export contract the firm has foreign exchange earnings in the amount of 15400 British pounds. However, it must pay a supplier of raw materials for import contracts \$ 12000, but in Russian rubles.

What is the financial performance of the company in UAH after the two contracts knowing that:

$$1 \text{ RUR} = 0,19 \text{ UAH}, 1 \text{ USD} = 8,1 \text{ UAH}, 1 \text{ USD} = 1,35 \text{ EUR}.$$



## Workshop 5

# BASIC THEORIES OF MONEY

### Key terms and concepts

**Metalistic theory of money:** money circulation is identified with the commodity exchange, gold and silver are money by their nature.

**Nominalistic theory of money:** the denial of the commodity nature of money and identify them as symbols that lack intrinsic value. For all varieties of nominalism the same flaws are characterized: ignoring of commodity origin of money, the rejection of their most important functions, the identification of the scale of money prices and perfect unit of account.

**Quantity theory of money:** prices of commodities are determined by the volume of means of payment in circulation.

**Cambridge version of the quantity theory of money:** the amount of money is equal to the amount of cash people and businesses that is represented by the formula:

$$M = \kappa \cdot P \cdot Q, \quad (5.1)$$

where  $M$  – amount of money, amount of monetary units that make up the money in a cash balance of economic life;

$P$  – average price per unit of output;

$Q$  – the total value of production in physical terms, for a period;

$\kappa$  – savings coefficient («Cambridge», «Marshall's coefficient»), which defines the relationship between nominal income and that share of the money that is cash balances (part of the annual income that the subjects remain in liquid form). It is the opposite value of the index (V) I. Fisher,  $k = 1 / V$ ; ( $k \cdot P_M V$ ) – the demand for money.

**J. Keynes as a representative of the quantity theory of money:** money is an object of state regulation of the economy, as well as a direct tool of such regulation. J. Keynes developed the concept of regulated pricing and controlled inflation. Implementation of mechanism of interest and investment significantly stretched chain connection between the mass of money and prices, the increase in the money supply without inflation effects (policy of cheap money).

Modern monetarism from the end of 1970th defines the content of economic policy of leading countries. If Keynesianism sought to search for tools to combat unemployment, the monetarism emerged as an attempt to overcome the effects of inflation. Representatives: Chicago School economists led by Milton Friedman. He proposed

rule to apply mechanical growth of the money supply annually an average of 4% (M) covering the likely 3% (GDP) growth of real product and 1% (V) reduction in velocity. In a joint paper «*A Monetary History of the United States, 1867-1960*» M. Friedman and A. Schwartz demonstrated that nominal GDP is closely related to the money supply. GDP dynamics, and hence the price one, follows the dynamics of the mass of money in circulation.

### Theories of money and their essence

Theory of money	Essence			
Evolutionary theory of money	Money is a product of historical development, which has the commodity form. The development of commodity production (market) makes it necessary in the general medium of exchange. At different times in different people in such means were a variety of products: livestock, fur, grain, jewelry, gold as a special commodity, commodity equivalent			
Rationalist theory of money	Consider money as a result of an agreement between people. As the complexity of relations of exchange entities sought and agreed on the most convenient way, able to serve the market economy. At some stage this role to carry precious metals and their substitutes – paper money			
State theory of money	In the state money is a product of law order. As legal tender money is established by law			
Functional theory of money	Explains the need for money: by lack of synchronization of receipts and payments; by minimization of costs in the system of market exchange; as a bridge between the present and the future			
Metalistic theory	Money (silver, gold) is inherently money. This theory is equated money with precious metals, attributing to them the properties to be money from nature	Bimetallism (money – silver and gold)		
		Monometallic (money – gold)	gold coin standard; gold bullion standard; gold exchange standard	
Nominalistic theory	Breaks the connection to gold. Money is nominal currency, a symbol that has no intrinsic value			
Quantitative Theory (David Hume, D. Montarini, Jean Bodin, John Locke)	The cost of money is conditioned by their number in the market depends on the amount of commodity prices and the volume of money. It considers money in terms of their exchange proportions in the exchange for goods	Transactional option (J. Fisher)		
		Cambridge version (the theory of cash balances) (A. Marshall, A. Pigou, D. Robertson)	Keynesian theory – increasing the money supply in circulation and credit resources helps to revitalize the economy, rising incomes and employment	Neo-Keynesian, Post-Keynesian views

## *Issues for discussion*

1. Describe the classical quantity theory of money, and specify its basic tenets.
2. Consider the differences in views on money of followers of quantity theory of money and the labor theory of value.
3. State the meaning of the neoclassical version of the quantity theory of money. «Transactional option» and «Cambridge version.»
4. Describe the nature of the contribution to the development of J. Keynes the quantity theory of money.
5. Describe the nature of the contribution to the development of M. Friedman monetary policy based on neoclassical version of the quantity theory.

## **Practical tasks**

**Task 5.1.** Fill in the missing places.

1. \_\_\_\_\_ – sale of package of its own shares by a particular group of businesses and individuals.
2. \_\_\_\_\_ – credit and financial policy, which allows for containment loans and high interest rates on loans.
3. \_\_\_\_\_ – monetary and financial policy of keeping interest rates low, which is conducted in order to stimulate economic activity by reducing the cost of loans and investments.
4. \_\_\_\_\_ – a way of expanding of aggregate demand through the application of government regulations. Typically, this is done by the excess of government expenditures over revenues, resulting in the creation of the budget deficit.
5. \_\_\_\_\_ – a modern school of economists that originated from the evolution of the quantity theory of money on the decisive influence of money in the general price level, the amount of spending in the economy, cyclical flow of critical fluctuations and other disturbances of reproduction.
6. \_\_\_\_\_ – theory, according to which depreciation is caused by expansion of the money supply and overflow channels of circulation overweight fee.
7. \_\_\_\_\_ – sale of securities to banks to finance government deficits.
8. \_\_\_\_\_ – a set of inputs in the form of long-term cost of capital for the purchase of capital goods in order to generate business income, profits and interest.

9. \_\_\_\_\_ – the cost of acquisition of fixed assets.  
 10. \_\_\_\_\_ – operation or agreement, accompanied by mutual concessions.

**Task 5.2.** Link theories of money to key aspects. To put the number at the appropriate letter.

<b>Versions</b>	<b>Key aspects</b>
1. The concept of the quantity theory of Fisher	A. Dynamics of cash flows is seen at the macroeconomic level
	B. Allowance of psychological reaction entity's use of cash
	C. Money should not lose its properties during circulation
2. Cambridge version	D. Focusing on the accumulation of money motif specific to individual members of the production
	E. The central problem is the demand for money
	F. Methodological basis of the equation of exchange – money as a medium of exchange
	G. Transaction equation refers only to money supply
	H. The emphasis is on objective principles of money
	I. Money is not only a medium of exchange, but also the a medium of saving and accumulation

**Task 5.3.** Link postulates of the classical quantity theory of money with their characteristics. To put the number at the appropriate letter.

<b>Name of postulates</b>	<b>Characteristic</b>
1. Causality	A. Prices vary in proportion to changes in the quantity of money
2. Proportionality	B. In case of money quantity change in the same proportion as change of prices of all goods and relative prices remain unchanged
3. Homogeneity	B. Changes in prices is determined by the change in the quantity of money

**Task 5.4.** Link approaches to the study of the theory of money and their main destinations. To put the number at the appropriate letter.

<b>Theory of money</b>	<b>The main directions</b>
1. Abstract theory	A. The modern monetarism
	B. Nominalistic theory

Theory of money	The main directions
	C. Keynesian concept
	D. Marxist theory
2. Monetarist theory	E. Neoclassical quantity theory
	F. State Theory
	G. Keynesian-monetarist synthesis
	H. Functional Theory
	I. The classical quantity theory
	J. Metalistic theory

**Task 5.5.** Link evolution of the quantity theory in the works of prominent economists to their main ideas. To put the number at the appropriate letter.

Author	The main idea
1. Jean Bodin	A. Recognized dependence on the number of commodity prices inferior money, and as full – believed that their circulation can only be certain objectively due amount for the extra automatically withdrawn from the treasure, and with the shortage of money mass increases due Treasure and prices remain unchanged
2. John Locke	B. Put forward and substantiated the principle that: doubling the quantity of money leads to a doubling of the absolute level of all prices expressed in monetary terms, but does not affect the relationship of the exchange ratios of certain goods
3. David Hume	C. First price increases linked to the increased amount of gold and silver
4. Adam Smith, David Ricardo	D. He believed that the decisive factor which regulates and determines the value of gold and silver, is the number
5. Marx	E. Laid the foundations of the labor theory of value and substantiated objective, the commodity nature of money, but the money just saw a technical intermediary in the exchange of goods, are underestimating their function as a measure of value and means of accumulation

### Task 5.6

#### Multiple choice questions.

**1. Theory, which states money as abstract counting unit identifies monetary circulation of commodity exchange prices vary proportionately with the change the amount of money in circulation are all the money value of money is determined in the exchange, is called the theory:**

- a) the cost of labor;
- b) marginalism;

- c) the quantity;
- d) nominalistic.

**2. The essence of the nominalistic theory of money is:**

- a) denying the value of nature of money;
- b) money is a technical medium of exchange;
- c) money has a supporting role of credit and determines the proportion of exchange;
- d) money as symbols that lack intrinsic value;
- e) in the identification of the monetary commodity exchange.

**3. According to Fischer equation, the amount of money needed to provide outstanding products and services:**

- a) is directly proportional to the nominal output (GNP) and inversely proportional to the velocity of money;
- b) is directly proportional to the velocity of money and inversely proportional to the nominal output (GDP);
- c) no proper proportions.

**4. If the supply of money required for circulation is 1 million, the number of goods sold – 100 thousand, the average price of goods – 50 UAH, the average turns of money is:**

- a) 5 turns / year;
- b) 2.5 turns / year;
- c) 1.5 turns / year.

**5. How many turnovers will make monetary unit per year, knowing that GDP for 2 years was the same and together totaled 800 billion, and the average balance of money in circulation for the year is 120 billion respectively:**

- a) 6.6 turns / year;
- b) 1.6 turns / year;
- c) 3.3 turns / year?

**6. Monetarist concept of inflation says:**

- a) the purchasing power of money and prices of goods are set on the market;
- b) the ratio between the available money supply and nominal value of the goods and services directly proportional to inflation;
- c) the need to maintain inflation in moderate amounts, since it leads to the rise of industrial production.

**7. Formula  $M \cdot V = P \cdot Q$  entitled:**

- a) «Cambridge equation»;
- b) «Friedman equation»;
- c) «equation of exchange».

**8. What is the name of credit and financial policy, allowing containment loans and high interest rates on loans?**

- a) «scarce» money;
- b) «expensive» money;
- c) «cheap» money.

**9. What is the motive of holding money arising from convenience of using them as a means of payment?**

- a) motive of prudence;
- b) transactional motive;
- c) speculative motive.

**10. What is the motive of holding money, which arises from the desire to avoid capital losses during the expected increasing of the rate percent of the loan?**

- a) speculative motive;
- b) motive of prudence;
- c) transactions motive.

### **Task 5.7**

Output. Determine the average level of prices, knowing that the necessary amount of money to service the money turnover is 390 billion. Commodity supply in the country is 880 billion. Natural and legal persons permanently stored in the form of cash balances 40% of their nominal income.

#### **The order of solutions:**

The formula of the circulation of money which considers the savings (developed by the Cambridge School) has the form:

$$M = k \cdot P \cdot Q. \quad (5.1)$$

Average prices are calculated:

$$P = \frac{M}{k \cdot Q}. \quad (5.2)$$

Average price level in the country is:  $P = \frac{390}{0,4 \cdot 880} = 1,11$ .

This means that the country's inflation rate is 11%.

*Answer:* The average price level is 111%.

### Task 5.8

**Output.** Determine the change in nominal GDP, if the velocity of money circulation is 1.84 and remains unchanged, and the money supply will increase from 259 to 391 billion.

#### The order of solutions:

GDP calculated on the basis of I. Fisher equation:

$$M \cdot V = P \cdot Q, \quad (5.3)$$

where  $M$  – money supply, UAH;

$V$  – velocity of money circulation, turns;

$P$  – average price level, UAHH / conv. units;

$Q$  – physical volume of GDP, conv. units.

So,  $P \cdot Q = GDP$ ,  $GDP = M \cdot V$ .

The relationship between money supply and nominal GDP is directly proportional. We calculate nominal GDP before and after growth of the money supply:

$$GDP_1 = 259 \cdot 1,84 = 476,56 \text{ (bln UAH);}$$

$$GDP_2 = 391 \cdot 1,84 = 719,44 \text{ (bln UAH).}$$

The growth of nominal GDP under the influence of money supply growth was:

$$719,44 - 476,56 = 242,88 \text{ (bln UAH).}$$

*Answer:*  $GDP = 242,88$  bln UAH.

### Task 5.9

**Output.** 1. Calculate the amount of new credit resources for first 7 banks that use the funds deposits, provided that 2.2 million UAH are located in commercial bank.

2. Calculate the maximum possible increase in the money supply if the required reserve rate is 12%.

#### The order of solutions:

Implementation transactions of individual banks in the monetary market for profit through lending to its customers makes the overall growth of the money supply and creates a chain reaction, which covers other banks and thus in the banking system there are more and more loans and deposits. Based on the fact that the mandatory reserve rate is 12%, draw up a table of credit for the first 7 banks that use the money from these savings accounts to carry out lending and deposit operations, creating new bank money (Table 5.1).



Table 5.1

## Credit resources of banks

Bank	Funds for new deposit accounts (general reserve), million	Funds on correspondent accounts (obligatory reserve), million	New credit resources (free reserves), million
Bank № 1	2,200	$2,200 \cdot 12\% = 0,264$	$2,200 - 0,264 = 1,936$
Bank № 2	1,936	$1,936 \cdot 12\% = 0,232$	$1,936 - 0,232 = 1,704$
Bank № 3	1,704	$1,704 \cdot 12\% = 0,205$	$1,704 - 0,205 = 1,499$
Bank № 4	1,499	$1,499 \cdot 12\% = 0,180$	$1,499 - 0,180 = 1,319$
Bank № 5	1,319	$1,319 \cdot 12\% = 0,158$	$1,319 - 0,158 = 1,161$
Bank № 6	1,161	$1,161 \cdot 12\% = 0,139$	$1,161 - 0,139 = 1,022$
Bank № 7	1,022	$1,022 \cdot 12\% = 0,123$	$1,022 - 0,123 = 0,899$
Total			9,54

The maximum increase in the money supply is calculated through monetary-credit multiplier:

$$\Delta M = \Delta R \cdot m, \quad (5.4)$$

where  $\Delta R$  – growth of reserves, causing the process monetary-credit multiplier;

$m$  – monetary-credit multiplier.

$$m = \frac{1}{0,12} = 8,334;$$

$$\Delta M = 2,2 \cdot 8,334 = 18,335 \text{ mln UAH.}$$

*Answer:*

- 1) amount of new credit resources is 9540000 UAH;
- 2) maximum possible increase in the money supply is 18335000 UAH.

### Task 5.10

**Output.** If the rate of required reserves is 13%, then what is the monetary-credit multiplier?

**The order of solutions:**

The value of the monetary-credit multiplier is given by formula:

$$m = \frac{1}{r} = \frac{1}{0,13} = 7,69.$$

This means that one hryvnia of banking system reserves increasing can create 7.69 hryvnias.

*Answer:* the value of the money multiplier at a rate of required reserves at 13% is 7.69.

### Task 5.11

Output. Calculate the maximum possible level and real monetary-credit multiplier for the following data: the required rate is 11%, the cash outside banks is 111 billion UAH, bank reserves are 120 billion UAH, total deposits of the banking system are 480 billion UAH.

#### The order of solutions:

Maximum level of monetary-credit multiplier is estimated based on the calculation of the multiplier based on the rules of reserve requirements that established by the NBU:

$$m = \frac{1}{r} = \frac{1}{0,11} = 9,09.$$

This means that 1 hryvnia of banking system reserves increasing can create 9.09 UAH.

The real level of monetary-credit multiplier is estimated based on the calculation of the multiplier by comparing the amount of cash and deposits of the banking system to the amount of cash and bank reserves:

$$m = \frac{M_0 + D}{M_0 + R}, \quad (5.5)$$

where  $M_0$  – cash outside banks;

$D$  – the value of funds raised by banks on deposits;

$R$  – bank reserves.

$$m = \frac{111 + 480}{111 + 120} = 2.56.$$

This means that one hryvnia of banking system reserves increasing actually created 2.56 UAH.

*Answer:* – maximum level of monetary-credit multiplier – 9.09 UAH,

– real level monetary-credit multiplier – 2.56 UAH.

### *Questions for self-control*

1. Compare Fisher's exchange equation and Cambridge equation.
2. What are the similarities and differences in Keynes and Friedman analysis of money?
3. What are the main features of the early metalistic theory of money?
4. What are the provisions and disadvantages nominalistic theory of money?

## Tasks for self-control

**Task 5.12.** Determine the amount of money needed as a medium of exchange under the following conditions: the sum of the prices of goods sold is 580 bln UAH, the sum of the prices of goods sold on deferred payment is 120 bln UAH, the amount of payments on long-term debt, the terms of which is occurred, is 110 bln UAH; sum of mutual payments is 30 bln UAH, the average speed of the monetary units per year is 5.

**Task 5.13.** In economics the velocity of money is equal to 4.5. Real domestic product is 1800 billion. Define the money supply in circulation and nominal domestic product, knowing that in a year prices rose by 25%.

**Task 5.14.** Determine the change in nominal GDP, if the velocity of money is 1.84 turns and remains constant, and the money supply will increase from 300 to 431 billion.

**Task 5.15.** If the rate of required reserves is 15%, what is the monetary-credit multiplier?

**Task 5.16.** 1. Calculate the amount of new credit resources for first 8 banks that use cash deposits, posted in commercial banks for \$ 3.5 million. 2. Calculate the maximum possible increase in money supply in circulation if the required reserve rate is 16%. Please make calculations in the table 5.2.

Table 5.2

**Credit resources of banks**

Bank	Funds for new deposit accounts (general reserve), million	Funds on correspondent accounts (obligatory reserve), million	New credit resources (free reserves), million

## Workshop 6

# CREDIT IN THE MARKET ECONOMY

### Key terms and concepts

**Credit** is a set of economic relations that arise between the lender and the borrower about the transfer of value (money or property) on the loan in terms of repayment, urgency (maturity) and payment. These conditions are the main principles of organization and operation of credit.

**Subjects of credit:** people, government and business entities. Each one can be both a lender and a borrower. However, in a highly developed market economy creditor first of all is population, and the borrower usually is government and business entities.

**Object of credit** is everything that has a cost, but the main and most common object of credit relations is money as being of value.

#### **Principles of credit relationships:**

1. **Repayment** of loan means that the financial resources that were taken must be repaid.

2. **Urgency** indicates that the loan should always be limited beyond which the credit relationship is terminated because the borrower loses the right to continue to use the resources.

3. **Paying** realized that the use of lent resources necessary to pay a certain amount (percentage). This principle encourages the borrower to the most effective use of credit.

**Loan capital** is a money capital yielding a profit as a percentage.

#### **Sources of loan capital:**

- Temporarily free money capital that is released during its cycle;
- Rentier capital, i.e. those who are due to transfer their capital to loan;

- Cash savings, which they put in a credit institution;

- resources of the state, insurance companies, pension funds and other organizations which are located in credit institutions or securities.

**The movement of loan capital** is characterized by the fact that this capital brings a profit as a percentage to its owner.

**Percentage** – charges of the borrower to the lender for any money at his disposal, or wealth, favor pay-per-use value of loan capital, that is, its ability to generate income. In this regard, interest rates are irrational form of capital.

**The rate of interest** – the ratio of the amount of money paid as a percentage, the amount of money committed in loans is calculated for the period, but most of the year. The annual rate of interest ( $N_n$ ) can be defined as follows:

$$N_n = \frac{\text{amount of interest per year}}{\text{credit sum}} \cdot 100. \quad (6.1)$$

**The market rate of interest** is the norm, consisting of capital market at a particular time. It reflects the general state of the market and the expectations of credit relationships participants

**The average rate of interest** reflects the average rate of interest at relatively large intervals of time and enables you to identify long-term trends of change in the situation on the capital market and changes in the economy as a whole.

**Factors affected the rate of interest on loans**

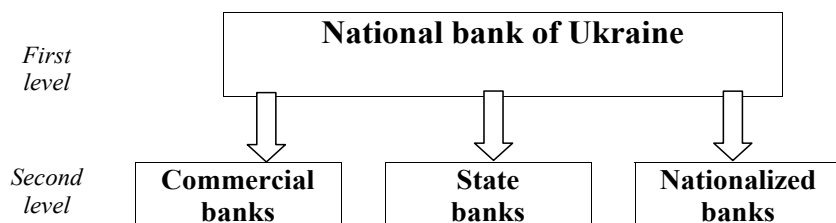
<b>Factors</b>	<b>Characterization</b>
General dimensions and dynamics of financial savings of population	This factor affects the resource base of credit institutions and creates the conditions for a reduction or increase in interest rates on loans
The economy situation	Primarily driven by the pace of industrial and agricultural production. The dynamics of these changes determines the demand for capital and thus significantly affect the rate of interest
Market conditions and the nature of market fluctuations	This factor determines the general parameters change in rate of interest, as market conditions significantly affect the production, and through him, and the demand for loan capital
Inflation and government and the central bank policy to ensure the stability of the national currency	Inflation not only directly affects the rate of interest, but also changes (notably with significant inflationary processes) the ratio between short-term and long-term loans. With a significant increase in the inflation rate for long-term loans increases, this very form of the loan is reduced, and in some circumstances may even disappear
Direct state influence on the interest rate	This factor is especially characteristic for countries with poorly developed market economies, as well as for the countries in transition from planned to market economies and are not very sophisticated system of market relations
Status of international capital markets and the degree of integration of the country in this market	The availability of credit to the world's capital market creates competition in the domestic credit market and directly affects the rate of interest

## Credit Functions

Function of credit	Essence of the credit function
Redistributive	Follows from the nature and role of credit relations, the implementation of this function are redistributed as cash and commodity resources, speed and intensity redistribution cost for a loan is determined by its accessibility and the level of interest on loans
Substitution of money in circulation	Associated with anticipation property loan, that is, its ability to stay ahead in time to the process of accumulation of commodities and cash, loan creates money for non-cash circulation, instruments of loan are bills of exchange, checks and credit cards – are beginning to replace real money in treatment; credit circulation contributes to cost savings by replacing part of the monetary credit facilities outstanding
Stimulating	Content of credit, expressed as a formula: «Buy Now (commodity money), pay later» encourages efficient use of received loan to earnings for not just repay the loan, but also to receive income, credit relationships – especially property relations: the use of and repayment of the loan the borrower meets their possessions and values, from the lender stimulating factor is the lending rate
Control	In the lending process is carried out mutual control (both lender and borrower) the use and repayment of the loan, the lender has the ability to control both the object of the loan, and the activities of the borrower, the borrower is unable to monitor the activities of the lender, it only controls the object of credit relations

**Credit system** is a set of relations in the process of accumulation of temporary surplus funds of the state, businesses and people, and their use in terms of urgency, the return and payment. However, in practice the credit system defines more narrowly associating it with a system of financial institutions.

### The banking system of Ukraine



## *Issues for discussion*

1. Define the credit.
2. What is the nature of the loan?
3. What is loan capital and loan interest?
4. What are the functions and forms of credit?
5. What is a credit system?
6. Describe the mechanism of construction of credit system of the country.
7. Identify the features of the credit system of Ukraine.
8. What is the role of credit in the economy?

## **Practical tasks**

**Task 6.1.** Analyze the structure and dynamics of bank lending economy of Ukraine (table 6.1).

*Table 6.1*

Loans granted by deposit-taking corporations (excluding National Bank of Ukraine) to resident sectors					
Period	Total	Including			
		Other financial corporations	General government	Non- financial corporations	Other resident sectors (households)
1	2	3	6	9	12
Outstanding amounts at end of period, in millions of hryvnias					
2005	143 423	1 663	5	106 078	35 677
2006	245 230	2 689	4	160 503	82 034
2007	426 867	5 932	4	260 476	160 455
2008	734 022	9 789	12	443 665	280 556
2009	723 295	14 014	5 755	462 215	241 311
2010	732 823	13 430	8 817	500 961	209 615
2011	801 809	16 441	8 532	575 545	201 291
2012					
November	824 212	16 940	7 747	610 528	188 996
December	815 142	16 229	5 803	605 425	187 685
2013					
November	887 611	19 548	5 621	669 621	192 821
Annual growth rates,%					
2005	61,9	97,5	-87,2	48,2	121,0

Table 6.1

Loans granted by deposit-taking corporations (excluding National Bank of Ukraine) to resident sectors					
Period	Total	Including			
		Other financial corporations	General government	Non-financial corporations	Other resident sectors (households)
1	2	3	6	9	12
2006	71,0	61,7	-11,5	51,3	129,9
2007	74,1	120,6	-10,8	62,3	95,6
2008	72,0	65,0	203,5	70,3	74,8
2009	-1,5	43,2	...	4,2	-14,0
2010	1,3	-4,2	53,2	8,4	-13,1
2011	9,4	22,4	-3,2	14,9	-4,0
2012					
November	2,8	11,3	-9,0	6,4	-7,6
December	1,7	-1,3	-32,0	5,2	-6,8
2013					
November	7,7	15,4	-27,4	9,7	2,0

**Task 6.2.** Analyze the data and determine which bank and for how long is most profitable to take credit (table 6.2).

Table 6.2

Name of Bank	%, 1 month		%, 3 month		%, 6 month		%, per year	
	UAH	USD	UAH	USD	UAH	USD	UAH	USD
PryvatBank	14.8	2.10	15.30	7.60	19.10	7.70	20.00	8.10
Ukreximbank	14.2	2.00	15.10	7.53	19.12	7.54	20.04	8.15
Sberbank	14.00	2.00	15.00	7.50	19.00	7.50	20.00	8.00

### Task 6.3

#### Multiple choice questions.

#### 1. Credit relations are:

- voluntary and unequal;
- involuntary and unequal;
- involuntary and equal;
- voluntary and equal.

#### 2. The term of long-term loan is:

- up to one year;
- up to five years;



- c) more than five years;
- d) up to three years.

**3. Credit has three functions such as:**

- a) issuing, controlling, means of accumulation;
- b) control, redistributive, means of payment;
- c) redistributive, saving, control;
- d) redistributive, emission, control.

**4. There are principles of loan:**

- a) the purpose of the loan;
- b) timeframes and return;
- c) the payment of a fee;
- d) differentiation.

**5. Commercial loans can be described as:**

- a) loans of commodities sellers to buyers in the form of deferred payment for goods sold;
- b) the credit provided in the national currency of individuals – residents of Ukraine for the purchase of consumer durables and services;
- c) loan given secured by real estate;
- d) such is the state where the borrower and lenders are individuals and legal entities.

**6. What is the loan that is given without collateral – only under obligation to repay, usually the most reliable borrowers?**

- a) the acceptance of credit;
- b) blank credit;
- c) aval credit;
- d) pawnshop loan.

**7. Type of account, which provides that in addition to the current bank account can open the client loan account from which paid the settlement documents:**

- a) overdraft;
- b) advance;
- c) aval credit;
- d) overnight.

**8. The decision to grant a loan the bank accepts separately for each on the basis of documents submitted by the borrower are:**

- a) one-time credit;

- b) permanent loan;
- c) guarantee the loan.

**9. The source of the payment of interest on the loan is:**

- a) grants the state budget;
- b) loan capital;
- c) income of the borrower;
- d) profit lender.

**10. What are the values on which contracts are executed?**

- a) subjects of credit relations;
- b) creditors;
- c) borrowers;
- d) facilities of credit relations.

**Task 6.4**

**Output.** Determine the amount of interest and the accumulation of debt if the loan is 500 thousand, term is 3 years, the interest is simple rate 20%.

**The order of solutions:**

Accrued amount is determined by the formula:

$$S = P + I = P \cdot (1 + n \cdot i), \quad (6.2)$$

$$I = P \cdot n \cdot i, \quad (6.3)$$

where  $S$  – accrued amount of debt (deposit);

$P$  – initial amount of debt (deposit);

$I$  – interest over the life of the loan (deposit);

$n$  – term of loan (deposit);

$i$  – rate of accumulation.

So the amount of interest on the debt is:  $I = 500 \cdot 3 \cdot 0,2 = 300$  thousand UAH.

Then the amount of accumulated debt will be:  $S = 500 + 300 = 800$  thousand UAH.

*Answer:* The amount of interest is 300 thousand UAH. Total debt together with interest is 800 thousand UAH.

**Task 6.5**

**Output.** The loan of 100 thousand UAH is granted on January 25 to October 10 at 17% per annum. How much should a debtor pay at the end of the year? Define:

- 1) the exact percentages of the exact number of loan days;
- 2) ordinary interest with the exact number of loan days;

3) the ordinary interest with the approximate number of loan days.

**The order of solutions:**

Since the rate is fixed in the contract in the calculation of the year, than if term of loan is least then one year it is necessary to determine what proportion of the annual percent is paid to the lender, so the amount of extension is given by formula:

$$S = P \cdot (1 + t/k \cdot i), \quad (6.4)$$

where  $S$  – accrued amount of debt (deposit);

$P$  – initial amount of debt (deposit);

$t$  – number of days of the loan (deposit);

$k$  – number of days of in the year, or time base;

$i$  – rate of accumulation.

When calculating simple interest:

$k = 360$  days (12 months and 30 days) – the ordinary interest;

$k = 365$  (366) days – the exact percentage.

The number of loan days also possible to be measured the approximate and exact way.

Approximate number of loan days is determined by the condition that any month is 30 days.

The exact number of loan days is determined by counting the number of days between the date of issuance of the loan and the date of payment. Date of issue and payment of loans recognized as one day.

So from January 25 to October 10 the exact number of days is 258, approximate is 255.

1) Calculation of debt in percentage of the exact number of loan days:

$$S = 100\,000 \cdot (1 + 258 / 365 \cdot 0,17) = 112\,016.44 \text{ UAH.}$$

2) Calculation of the debt in regular percentage of exact number of days the loan:

$$S = 100\,000 \cdot (1 + 258 / 360 \cdot 0,17) = 112\,183.33 \text{ UAH.}$$

3) Calculate of the debt in percentage of regular approximate number of loan days:

$$S = 100\,000 \cdot (1 + 255 / 360 \cdot 0,17) = 112\,041.67 \text{ UAH.}$$

*Answer:*

1) the amount of the debt at the exact percentage of the exact number of days the loan is 112 016.44 UAH.

2) the amount of the debt under normal percentage of exact number of days the loan is 112 183.33 UAH.

3) debt in percentage of regular approximate number of days the loan is 112 041.67 UAH.

### Task 6.6

**Output.** How much money do we need to make a bank deposit at 17.5% per year to 6 years to get 10000 USD for the following conditions:

- 1) accrual of interest is the scheme of simple interest annually;
- 2) accrual of interest is the scheme of compound interest annually;
- 3) accrual of interest is the scheme of compound interest quarterly?

**The order of solutions:**

1) if the interest accrual occurs by the scheme of simple interest per year, the initial deposit amount is calculated using the formula:

$$P = S / (1 + n \cdot i). \quad (6.5)$$

So the initial deposit amount is:  $P = 10000 / (1 + 6 \cdot 0,175) = 4878,05$  UAH.

2) if the interest accrual occurs by the scheme of compound interest annually, the initial deposit amount is calculated using the formula:

$$P = S / (1 + i)^n, \quad (6.6)$$

where  $S$  – accrued amount of debt (deposit);

$P$  – initial amount of debt (deposit);

$n$  – term of loan (deposit);

$i$  – rate of accumulation.

So the initial deposit amount is:  $P = 10000 / (1 + 0,175)^6 = 3802,28$  UAH.

3) if the interest accrual occurs by the scheme of compound interest quarterly, the initial deposit amount is calculated using the formula:

$$P = S / (1 + i/m)^{n \cdot m}, \quad (6.7)$$

where  $S$  – accrued amount of debt (deposit);

$P$  – initial amount of debt (deposit);

$n$  – term of loan (deposit);

$i$  – rate of accumulation;

$m$  – the number of interest period.

So the initial deposit amount is calculated as follows:

$$P = 10000 / (1 + 0,175/4)^{6 \cdot 4} = 3578,36 \text{ UAH.}$$

*Answer:* 1) 4878,05 UAH; 2) 3802,28 UAH; 3) 3578,36 UAH.

### *Questions for self-control*

1. The essence of the concept of «bank loan».

2. Methods of calculating interest on loans.
3. What are the functions of the loan.
4. Describe the concept of «credit system».
5. Factors influencing lending rate.

### **Tasks for self-control**

**Task 6.7.** On bank deposit in the amount of 6000 UAH is charged 15%. What will be the amount of deposit at 4 years, if the interest is calculated by compound interest scheme:

- 1) per year;
- 2) every six months;
- 3) quarterly;
- 4) per month?

**Task 6.8.** How much you need to put on deposit within 3 months to get income of 6800 UAH with an annual interest rate of 22%?

**Task 6.9.** The loan of 35 thousand is granted on December 15 until July 27 at 15% per annum. How much should a debtor pay at the end of the year? Define:

- 1) the exact percentages of the exact number of days the loan;
- 2) the ordinary interest with the exact number of days the loan;
- 3) the ordinary interest on loans approximate number of days.

**Task 6.10. Fill in the missing spaces.**

1. \_\_\_\_\_ – economic relations between corporations and individuals, and the state over the loan in cash or in commodity on the basis return, maturity, payment.
2. \_\_\_\_\_ – money capital which shall borrow and gives its owner the income from loan interest.
3. \_\_\_\_\_ – the subject of credit relations, which provides credit to another business entity for temporary use.
4. \_\_\_\_\_ – participants in the loan agreement: the lender and the borrower.
5. \_\_\_\_\_ – the subject of the loan agreement, received on loan to loan.
6. \_\_\_\_\_ – the ability to repay the loan in the event of the grant. It is one of the main conditions of the loan.
7. \_\_\_\_\_ – tangible and intangible assets which in the case of loan default the lender can use to compensate for their losses.

8. \_\_\_\_\_ – type of loan that serves the movement of loan capital in international economic relations.

9. \_\_\_\_\_ – economic relations arising on a loan secured by real property.

10. \_\_\_\_\_ – the consent of the bank guarantee payment of his client on the bill.

11. \_\_\_\_\_ – type of loan in which one of the subjects of the credit relationship is the state.

12. \_\_\_\_\_ – type of loan which is given in money or goods to the population of financial and credit institutions and non-financial organizations (companies) to purchase durable goods.

13. \_\_\_\_\_ – interest rate, the amount of which may change during the term of the agreement.

14. \_\_\_\_\_ – credit provided for the formation of fixed assets.

15. \_\_\_\_\_ – credit provided for replenishment of current assets.

**Task 6.11.** Link types of loans according to their characteristics. To do this, put the number according the letter.

Types of loans	Characteristics
1. Commercial	A. is provided by banks usually in the form of money, banks can act not only as lenders, but so as borrowers
2. Bank	B. is provided a commodity producer to another in the form of sale of goods for payment (with deferred payment) and are usually issued a promissory note
3. State	C. provides loan capital of some other countries for temporary use on the basis return, maturity, payment
4. International	D. is provided by firms and individuals to the state (represented by central and local government), traditional form of this credit is the issue of state loans

**Task 6.12.** The Bank has the following information, the UAH:

	I option	II option	III option
1. The amount of loan	120	140	180
2. The term of loan, days	20	25	30
3. The annual rate is a simple percent	40	35	30

Define:

- the amount of interest;
- the total amount of bank debt.

**Task 6.13.** The Bank has the following information, ths UAH:

	I option	II option	III option
1. The amount of long-term loan	1600	1800	2500
2. The term of the loan, years	3	4	5
3. The annual interest rate	10	15	20

Define:

- a) the value of compound interest (period is 1 year);
- b) the total amount of debt.

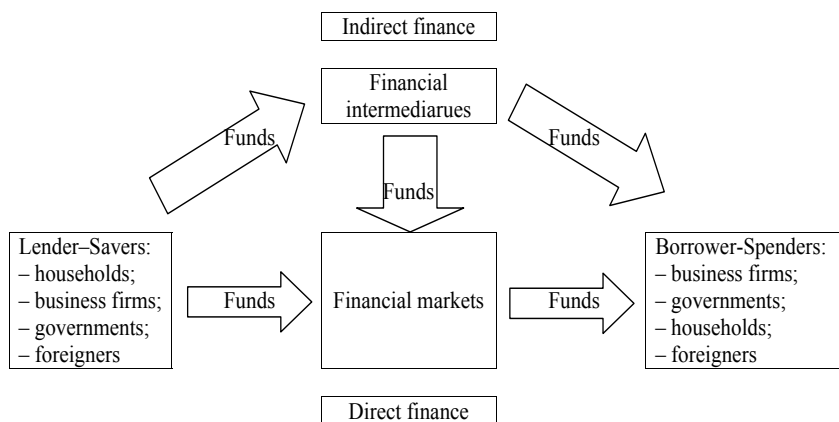
# Workshop 7

## FINANCIAL INTERMEDIARIES OF MONEY MARKET. CENTRAL BANKS

### Key terms and concepts

**Financial intermediation** is the work of the accumulation of capital of free cash and placing it among borrowers.

General view of the relationship between basic subjects of the money market and financial intermediaries can be represented as follows:



In Ukrainian literature the most common is the division of financial intermediaries into two groups:

- banks;
- non-bank financial and credit institutions, which are sometimes also called specialized financial and credit institutions, or parabanks.

In American literature financial intermediaries are divided into three groups:

- depository institutions;
- contractual savings institutions;
- investment intermediaries.

Non-bank financial intermediaries divided into insurance companies, investment institutions, credit unions, pension funds, leasing companies, factoring companies.

**Central Bank** is emission-cash center of the country, which oversees the banking system and is responsible for the conduct of



monetary policy in the country to ensure sustainable non-inflationary economic development.

**The main objective of the central bank** is maintaining the stability of the national monetary unit, professional supervision and coordination of the banking system.

### Functions of central banks

Functions	Components of functions
Regulatory	Management of aggregate monetary circulation
	Regulation of the monetary sphere
	Regulation of supply and demand for credit
Control	Control over operation of credit and banking system
	Foreign exchange control
Serving	Organization of payment and settlement relations of commercial banks
	Lending to banks and government
	Performance of the central bank as a financial agent of the government
Additional	Management of state debt
	Analytical investigations and conducting statistical database
	Production of banknotes

National Bank of Ukraine (NBU) is the first level of the banking system. It was established in 1991 according to the Law of Ukraine «On Banks and Banking Activity» (1991, 2001), and acts according to the Law «On the National Bank of Ukraine» (1999).

**Functions of the National Bank of Ukraine:**

- Money emission and organization of their circulation;
- Lender to commercial banks;
- Organization of settlements between banks;
- Servicing the public debt;
- Transactions in the government securities market and the foreign exchange market;
- Issuing licenses to commercial banks for banking transactions and foreign exchange transactions;
- Monitoring the activities of commercial banks.
- Guides the development of modern electronic banking technologies, creates, coordinates and controls the electronic means of payment;
- Analyzing and forecasting the balance of payments;
- Provides currency regulation and currency control, determines the order of payments in foreign currency;

- Ensure the accumulation and storage of reserves and operations with them;
- Organize the collection and transportation of banknotes and other valuables.

**Monetary policy of the NBU** is a set of measures aimed at changing the money supply, amount of credits, interest rates and other indicators of monetary circulation and capital market.

**The objective of monetary policy:** economic growth, full employment, price stability, sustainable balance of payments.

**The task of monetary policy:** improving the structure of money supply, expansion of cashless payments, interest rate regulation, ensuring the growth of foreign exchange reserves of the central bank (NBU), ensures economic levels of the exchange rate of the national currency (hryvnia).

#### Types of monetary policy

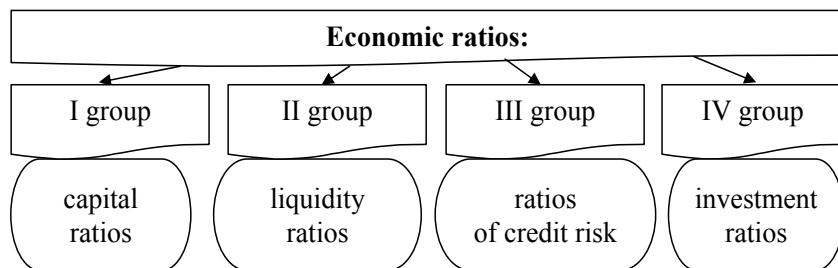
Type of monetary policy	Characteristic
Total (comprehensive)	Covers all banking institutions of level II
Selective (optional)	Covers certain credit institutions, their branches or certain types of banking operations
Restriction (policy of «expensive» money, constraint)	Is done by the government and the central bank to reduce the money supply, various smoothing fluctuations of the economic cycle; fight inflation Limit the amount of credit transactions Raising interest rates Reducing the rate of growth of the money supply
Expansionary (policy of «cheap» money, stimulating)	Aims to stimulate credit issue (base expansion in bank lending) to overcome the decline in production, revival of business activity investments Expansion of lending operations decline in interest rates total increase in the money supply

Instruments of monetary regulation divided by:

- direct targets of influence (money supply, interest rate, exchange rate, velocity of money);
- nature of the parameters that are set in the control (quantitative – bank lending capacity, quality – the cost of bank loans);
- terms of exposure (short term – tactical, long-term – strategic);
- form of influence (direct, indirect).

<b>Instruments of monetary policy</b>	
Indirect effects (regulations, corrective, regulatory)	Direct impact (administrative)
<ul style="list-style-type: none"> <li>– open market operations;</li> <li>– regulation the rate of required reserves;</li> <li>– regulation of the discount rate;</li> <li>– refinancing of commercial banks;</li> <li>– regulation of the currency.</li> </ul>	<ul style="list-style-type: none"> <li>– establishment of direct restrictions on emission-cash transactions;</li> <li>– direct restrictions on lending NBU to commercial banks;</li> <li>– restriction or ban on direct lending by the central bank the needs of budget;</li> <li>– direct allocation of credit provided by the NBU refinancing procedure between priority sectors.</li> </ul>

According to the **Law of Ukraine «On Banks and Banking»** to protect our clients and ensure financial stability NBU sets for all commercial banks **the economic ratios**. The procedure for the calculation of economic norms is governed by the **Regulations on the procedure for regulation of banks in Ukraine**, approved by the National Bank of Ukraine № 368 from 28.08.2001.



#### Method of calculation of economic ratios for banks in Ukraine

Ratio	Method of calculation	Normative value
Capital ratios		
<b>Regulatory capital R1</b>	The sum of the primary and secondary capital net book value of such assets: stocks and other securities with variable income held for sale and investment, investment in capital to banks in the amount of 10% or more of the share capital and subsidiaries, funds invested in other banks in subordinated debt	At least 120 million UAH B a n k ' s r e g u l a t o r y c a p i t a l m a y n o t b e l e s s t h a n i t s s h a r e c a p i t a l

Table

Ratio	Method of calculation	Normative value
<b>Regulatory capital adequacy (sufficiency) ratio</b> R2	R2 reflects the bank's ability to timely and fully pay for its obligations arising from trade, loan or other transaction of monetary nature.  <i>Regulative capital / Total assets and off-balance sheet instruments, weighted by the degree of credit risk and reduced the amount of provisions for active operations and the amount of collateral unconditional commitment or cash covered in a security of property rights</i>	<b>no less than 10 percent</b>
<b>Regulatory capital / Total assets ratio</b> R3	R3 reflects the amount of regulatory capital required for the implementation of the bank's active operations.  <i>Regulative capital / Total bank assets, reduced by the amount of provisions</i>	<b>no less than 9 percent</b>
<b>Regulatory capital / liabilities ratio</b> R3-1	R3-1 reflects the ratio of regulatory capital to bank liabilities  <i>Regulative capital / Bank liabilities</i>	<b>no less than 10 percent</b>
<b>Liquidity ratios</b>		
<b>Quick liquidity ratio</b> R4	R4 establishes the minimum required amount of liquid assets to ensure compliance with current liabilities within one trading day.  <i>Highly liquid assets (the amount of cash on hand and in correspondent accounts) / Current liabilities of bank</i>	<b>no less than 20 percent</b>
<b>Current liquidity ratio</b> R5	R5 establishes the minimum required amount of bank assets to ensure compliance with the current total liabilities within one calendar month.  <i>Bank's assets with residual maturity up to 31 days (including) / Liabilities repayable within 31 days (including)</i>	<b>no less than 40 percent</b>
<b>Short-term liquidity ratio</b> R6	R6 sets the minimum amount of assets required for the performance of its liabilities within one year.  <i>Liquid assets with residual maturity up to one year / Liabilities repayable within one year</i>	<b>no less than 60 percent</b>

Table

Ratio	Method of calculation	Normative value
<b>Ratios of credit risk</b>		
<b>Maximum credit risk exposure per single counterparty / Regulatory capital R7</b>	R7 is set to limit the credit risk arising from failure to comply with certain counterparties of their obligations.  <i>Sum of all the bank's claims and any off-balance sheet liabilities issued by the bank regarding this contractor / Regulative capital</i>	<b>no more than 25 percent</b>
<b>Total large credit risk exposure / Regulatory capital R8</b>	R8 is set to limit the concentration of credit risk on individual counterparties or groups of connected counterparties.  <i>Sum of all large loans to bank on all counterparties or groups of connected counterparties, including all off-balance sheet liabilities granted by banks to those counterparties / Regulative capital</i>	<b>no more than 800% of Regulatory capital)</b> If R8 exceeds this value, the requirements for R2 is automatically increased
<b>Maximum credit exposure to single insider / Share Capital R9</b>	R9 is set to limit the risk arising from the transactions with insiders, which may result in direct and indirect impact on the bank. This effect leads to the fact that the bank conducts transactions with insiders on terms not always profitable for the bank.  <i>Sum of all insider liabilities (or group of related insiders) to the bank and all the off balance sheet commitments granted by banks to those of insiders / Authorized capital</i>	<b>no more than 5 percent</b>
<b>Maximum aggregate credit exposure to all insiders / Share Capital R10</b>	R10 is set to limit the total amount of all the risks of insider because excessive amount leads to concentration risk and threatens the preservation of regulatory capital.  <i>Total debt liabilities of all insiders to the bank and 100% of the off-balance sheet liabilities granted by banks in respect of all insiders / Authorized capital</i>	<b>no more than 30 percent</b>
<b>Ratios of investment</b>		
<b>Investment in securities issued by single entity R11</b>	R11 is set to limit the risk associated with investing in shares, stocks, shares and investment certificates of a separate legal entity.  <i>Amount of money invested in the acquisition of shares (shares) and investment certificates separately for each institution / Regulative capital</i>	<b>no more than 15 percent</b>

Table

Ratio	Method of calculation	Normative value
<b>Total investment in securities / Reg. Capital R12</b>	R12 is set to limit the risk associated with the implementation of bank investment. R12 describes the use of the bank's capital for the acquisition of shares (stocks / shares) any legal entity.  <i>Amount of money invested in the acquisition of shares (shares) investment certificates and any legal entity / Regulative capital</i>	<b>no more than 60 percent</b>

The calculation of economic ratios for banks is based on the daily balance. Reporting is evidence of compliance with economic ratios that are designed:

- a) daily settlements: R1, R7, R8, R9, R10, R4;
- b) weighted average formula (monthly): R3, R11, R12;
- c) as of the 1st, 11th and 21st of each month: R2, R5, R6.

**Risk ratios of commercial bank assets (%) are divided into 5 groups:**

0 – funds on correspondent accounts with the NBU, banknotes and coins on hand, precious metals;

10 – loans to the central government;

20 – loans to local governments, debt securities central government and local authorities;

50 – demand deposits with other banks, time deposits placed with other banks;

100 – transactions in securities, loans to customers of the bank, prolonged, overdue and doubtful debts, debtors, fixed assets and inventories.

**The credit risk** that the bank took over one counterparty or group of related counterparties **is considered high** if the sum of all the bank's requirements for this counterparty or group of related counterparties and all the off balance sheet commitments given by the bank regarding this counterparty or group of related counterparties constitutes 10% or more regulatory capital.

**Insiders** – people who are able to exercise direct or indirect impact on the bank could cause serious problems, because in these cases the determination of the solvency of the counterparty is not always carried out objectively, for example, owners of qualifying holding, management of the bank, internal audit staff, members audit committee, the institution in which the bank owns substantial participation.

## *Issues for discussion*

1. Define the financial intermediaries.
2. What types of financial intermediaries do you know?
3. What are the functions and role of banks?
4. Classification of non-bank financial institutions.
5. The functions of the central bank.
6. The monetary policy of the central bank – the nature, aims, objectives and instruments of monetary regulation.
7. National Bank of Ukraine: its objectives, functions and history of development.

## **Practical tasks**

### **Task 7.1**

#### **Multiple choice questions.**

- 1. The financial intermediaries in Ukraine include:**
  - a) enterprises;
  - b) construction companies;
  - c) pawnshops;
  - d) the National Bank.
  
- 2. What is the name of the entity that needs and can get on loan funds in terms of repayment, maturity, payment?**
  - a) financial intermediary;
  - b) creditor;
  - c) borrower.
  
- 3. How do you call a person who provides temporary free funds to use funds under the terms of repayment, maturity, payment?**
  - a) financial intermediary;
  - b) creditor;
  - c) borrower.
  
- 4. What is the name of a financial intermediary that performs operations with the purchase or sale of securities in its own name and for its own account?**
  - a) Broker;
  - b) underwriter;
  - c) dealer.

**5. Organizational set of different types of banks in their relationship, which exists in a particular country at a particular historical period:**

- a) parabanks;
- b) the credit system;
- c) the banking system;
- d) bank merger.

**6. Rate of required reserves:**

- a) is introduced as a means to protect against a run of deposits;
- b) is the average volume of money needed to meet the needs of the population;
- c) is not used;
- d) is introduced primarily as a means of restricting the money supply.

**7. Which of the following factors affect the discount rate:**

- a) need to increase the money supply in the country;
- b) structure of funds of commercial banks;
- c) inflation;
- d) all the above-mentioned.

**8. If the National Bank will raise interest rates, how the growth rate of the money supply changes:**

- a) fall;
- b) increase;
- c) remains unchanged;
- d) there is no relationship between the discount rate and growth rate of the money supply.

**9. Central bank intervention in the foreign exchange market to influence the exchange rate through purchases and sales of foreign currency – is:**

- a) fixation rate;
- b) depreciation;
- c) revaluation;
- d) intervention.

**10. If the central bank issues bonds of state loan, then the money supply:**

- a) increase;
- b) remains unchanged;
- c) fall;



d) can not be answered because there is no relationship between output state loan bonds and money supply.

### Task 7.2

**Output.** In the fund annually receives funds 10000 UAH for 7 years, which are charged 15%. Determine the amount of money in the fund at the end of the term.

#### The order of solutions:

Determine the enlargement of an annuity:

$$S_{n,i} = \frac{(1+i)^n - 1}{i}, \quad (7.1)$$

where  $S_{n,i}$  – the enlargement annuity coefficient;

$i$  – interest rate;

$n$  – number of intervals of interest accrual.

$$\text{So, } S_{n,i} = \frac{(1+i)^n - 1}{i} = \frac{1,15^7 - 1}{0,15} = 11,066799 \text{ UAH.}$$

Determine the amount of money in the fund for future value of an annuity by the formula:

$$S = R \cdot S_{n,i} \quad (7.2)$$

where  $S$  – future value of an annuity;

$R$  – sum of payment for annuity;

$S_{n,i}$  – the enlargement annuity coefficient.

$$S = 10000 \cdot 11,0667,99 = 110667,99 \text{ UAH.}$$

*Answer:* The amount of money in the fund at the end of the year will be 11066,799 UAH.

### Task 7.3. Fill in the missing spaces.

1. \_\_\_\_\_ – central bank intervention in the foreign exchange market to influence the exchange rate through the purchase and sale of foreign currency.

2. \_\_\_\_\_ – an international reserve asset created by the IMF to supplement existing international reserve assets, which is a «basket» of five currencies, whose composition is reviewed every five years and the value is determined daily.

3. \_\_\_\_\_ – Ukraine reserves in the balance sheet of the National Bank of Ukraine, which include assets recognized by the international community as international and designated for international settlements.

4. \_\_\_\_\_ – a market in which the operations on purchase and sale of securities between persons who are not the primary lenders and

borrowers, and when the funds from the sale of securities in this market come in favor of the holder of the securities, rather than their issuer.

5. \_\_\_\_\_ – expressed as a percentage fee that is set by the National Bank of Ukraine for the refinancing of commercial banks by buying bills before maturity on them and deducted from the nominal amount of the bill.

6. \_\_\_\_\_ – the release into circulation of money in cash and non-cash forms.

7. \_\_\_\_\_ – deposits of commercial banks at the central bank, the amount of which is established by law in a certain ratio to the resources mobilized.

8. \_\_\_\_\_ – function of Central Bank is to provide loans to commercial banks, the settlement between them, maintaining their cash reserves and control of banks.

9. \_\_\_\_\_ – due to accounting calculations performed by a financial institution on behalf of the funds and other banking institution on the basis of a correspondent agreement.

10. \_\_\_\_\_ – a set of measures in the field of money and credit, aimed at regulating the growth, curb inflation and ensure stability of the Ukraine, providing employment and equalization payments.

11. \_\_\_\_\_ – securities transactions based on an agreement between the National Bank and commercial bank of the sale-purchase of government securities for a specified period with a commitment to reverse the sale-purchase of a specified period or at the request of a party at a predetermined price.

12. \_\_\_\_\_ – a system of measures of monetary policy aimed at reducing the money supply.

13. \_\_\_\_\_ – a system of measures of monetary policy aimed at increasing the money supply.

**Task 7.4.** Distribute functions of the National Bank of Ukraine between the four main functions of central banks.

The main functions of CB	The functions of the National Bank of Ukraine
1. The implementation of monetary policy	A. Monopoly issue of the national currency of Ukraine and organize its circulation
	B. Determines the system, order and payment forms, including among banks
	C. The lender of last resort for banks, arrange refinancing system

<b>The main functions of CB</b>	<b>The functions of the National Bank of Ukraine</b>
2. The function of cash emission and organization of money circulation	D. Organize collection and transportation of banknotes and coins and other valuables, issues licenses for collection and transportation of banknotes and coins and other valuables
	E. Represent Ukraine at other central banks, international banks and other credit institutions where cooperation takes place between the central banks
3. The «banker of the government»	F. According to the NBU Council developed the Basic Monetary policy, determines and conducts monetary policy
	G. Sets the rules of conducting banking transactions, accounting and reporting, data, money and property security
4. The «bank of banks»	H. Delivers State Register of Banks, licensing banking operations in certain cases
	I. Implement the national policy on the protection of state secrets in the system of the National Bank
	J. Analyzes the state of monetary, financial, pricing and currency relations

**Task 7.5.** Link types of policy of the National Bank of Ukraine to their characteristics. To put the number at the appropriate letter.

<b>NBU policy</b>	<b>Characteristic</b>
1. Monetary Policy	A. The tool of monetary policy, which is the ability to influence the volume of money in circulation through the purchase and sale of government securities
2. Open market policy	B. The system of measures of the monetary policy aimed at reducing the money supply (reduction in loans, higher interest rates on loans, increasing the rate of required reserves)
3. The policy of «expensive money»	C. The policy of regulating the exchange rate by buying and selling foreign currency
4. The policy of «cheap money»	D. Tool of monetary policy, which provides for the manipulation of interest rates, which establishes their central bank on loans to influence the money supply in circulation
5. The policy of mandatory reserves	E. A set of activities in the field of money and credit, aimed at regulating the growth, containment of inflation and ensure stability of the Ukraine, providing employment and align the balance of payments
6. Discount monetary policy	F. Instruments of monetary policy, which provides for changes in the rate of compulsory reserves for commercial banks to influence the money supply in circulation
7. Deviz currency policy	G. The system of measures of the monetary policy aimed at increasing the money supply. Realized through lower interest rates and expansion of credit, decrease of required reserve

NBU policy	Characteristic
8. Interest rate policy	H. Decrease or increase the NBU interest rates on loans in order to regulate the supply and demand for loan capital
9. Credit policy	I. Tool of monetary policy, which provides for the manipulation of the volume of loans provided by commercial banks to the central banks and governments to influence the money supply in circulation

### Task 7.6

**Output.** 1. Determine the amount of money needed for circulation without inflation by the following data:

- The sum of the prices of goods and services (GDP) is 949.9 billion UAH;
- The sum of the prices of goods and services sold on a deferred payment is 30% of sales of goods and services;
- Amount of payments on the obligations, payment term which has come is 120 billion UAH;
- The amount of payments that are mutually repaid is 15% of total sales of goods and services;
- Average number of circulation of money (M2) for the year is 1.8.

2. How will change the money supply if its turnover increases by 2 turns?

3. How will the change the money supply if mutual transfer of debt is not carried out?

#### The order of solutions:

1. To determine the amount of money required for circulation without inflation, use the formula:

$$AM = \frac{\sum P - FC + PC - IP}{V} \quad (7.3)$$

$$M_{n1} = \frac{949.9 - 0.3 \cdot 949.9 + 120 - 0.15 \cdot 949.9}{1.8} = 356.91 \text{ (bln UAH).}$$

2. If the turnover of the money supply will increase by 2 turns, then:

$$M_{n2} = \frac{949.9 - 0.3 \cdot 949.9 + 120 - 0.15 \cdot 949.9}{1.8 + 2} = 169.06 \text{ (bln UAH).}$$

As a result of acceleration of the rotation of the money supply need for it to provide circulation without inflation decreases the value of such:

$$356,91 - 169,06 = 187,85 \text{ (bln UAH).}$$

3. Unless held mutual transfer of debt, then:

$$M_{n3} = \frac{949.9 - 0.3 \cdot 949.9 + 120}{1.8} = 436.07 \text{ (bln UAH)}.$$

If terminated enrollment of mutual debts, the need for money for without inflation circulation increases to the following values:

$$436,07 - 356,91 = 79,16 \text{ bln UAH.}$$

*Answer:*  $M_{n1} = 356,91$  bln UAH;  $M_{n2} = 169,06$  bln UAH;  $M_{n3} = 436,07$  bln UAH.

### Task 7.7

**Output.** Deposit in amount of 10000 UAH is placed in the commercial bank. How will influence the increasing of required reserves from 11 to 14% the size of the credit for the first 5 commercial banks using funds of the deposit, as well as the size of the money supply?

#### The order of solutions:

Calculation of banks credit resources is hold in the table 7.1.

Table 7.1

#### Making banks credit resources

Bank	New deposits (general reserves)		Funds in NBU (obligatory reserve)		New credits (free reserves)	
	11%	14%	11%	14%	11%	14%
Bank № 1	10000,0	10000,0	1100,0	1400,0	8900,0	8600,0
Bank № 2	8900,0	8600,0	979,0	1204,0	7921,0	7396,0
Bank № 3	7921,0	7396,0	871,3	1035,4	7049,7	6360,6
Bank № 4	7049,9	6360,6	775,5	890,5	6274,2	5470,1
Bank № 5	6274,2	5470,1	690,2	765,8	5584,0	4704,3
Total					35728,9	32531,0

Relationship between the rate of required reserves and the size of the money supply shown through monetary multiplier:  $m = \frac{1}{0.11} = 9.09$ ;  $\Delta M_1 = 10000 \cdot 9.09 = 90909$  (UAH).

$$m = \frac{1}{0.14} = 7.14; \Delta M_1 = 10000 \cdot 7.14 = 71400 \text{ (UAH).}$$

*Answer:* – increasing of required reserves from 11 to 14% would reduce credit resources of the first 5 commercial banks using funds of the deposit at  $35\,728.9 - 32\,531.0 = 3197,9$  UAH;

– possible increase in the money supply will lower by  $90\,909 - 71\,400 = 19\,509$  UAH.

### Task 7.8

**Output.** National Bank has decided to increase the money supply for 330 billion. How much should increase the monetary base, provided that the deposit coefficient is 0.3, and the reserve ratio is 15%.

**The order of solutions:**

Calculate the monetary base multiplier:

$$M = \frac{cr + 1}{cr + rr} = \frac{0.3 + 1}{0.3 + 0.15} = 2.89.$$

Determine on which value should be increased monetary base if the money supply will be increased to 330 billion UAH provided that the money multiplier ( $M$ ) = 2.89.

$$MB = \frac{M^S}{M} = \frac{330}{2.89} = 114.2 \text{ billion UAH.}$$

*Answer:* The monetary base should be increased by 114 billion.

### Task 7.9

**Output.** General reserves ( $R$ ) of commercial banks are 580 bln UAH, deposits ( $D$ ) is 2550 bln UAH. Rate of required reserves ( $Rr$ ) is 20%. How can credit money supply change if the bank decides to use its excess reserves for lending?

**The order of solutions:**

Obligatory reserves are equal to:  $R \cdot r = 2550 \cdot 0.2 = 510$  bln UAH.

Excess reserves are equal to:  $Re = R - R \cdot r = 580 - 510 = 70$  bln UAH.

Proposal of credit money will increase by:

$$\Delta M^S = Re \cdot \frac{1}{Rr} = 70 \cdot \frac{1}{0.2} = 350 \text{ bln UAH.}$$

*Answer:* The money supply through the money multiplier will increase by 350 bln UAH.

### *Questions for self-control*

1. What are the functions of central banks?
2. What is monetary policy?
3. The goals of monetary policy.
4. Describe the instruments of monetary policy.

## Tasks for self-control

**Task 7.10.** Investment fund annually receives 145000 UAH for 17 years, and they are charged 21% per annum. Determine the amount of money in the fund at the end of the term.

**Task 7.11.** Investment fund annually receives 500000 UAH for 10 years, and they are charged 19% per annum. Determine the amount of money in the fund at the end of the term.

**Task 7.12.** 1. Determine the amount of money needed for circulation without inflation by the following data:

– The sum of the prices of goods and services (GDP) is 890 billion UAH;

– The sum of the prices of goods and services sold on a deferred payment is 23% of sales of goods and services;

– Amount of payments on the obligations, payment term which has come is 134 billion UAH;

– The amount of payments that are mutually repaid is 19% of total sales of goods and services;

– Average number of circulation of money ( $M_2$ ) for the year is 6.

2. How will change the money supply if its turnover increases by 2 turns?

3. How will the change the money supply if mutual transfer of debt is not carried out?

**Task 7.13.** Deposit in the amount of 27 000 UAH is placed in the commercial bank. How will increase of required reserves from 10 to 15% influence the size of the credit for the first 8 commercial banks, using funds of the deposit, as well as the size of the money supply.

**Task 7.14.** National Bank has decided to increase the money supply by 220 billion. How much should increase the monetary base, provided that the deposit rate is 0.2, and the reserve ratio is 12%.

**Task 7.15.** Analyze and compare how banks in Ukraine perform economic ratios in 2012 and 2013 in table 7.2 and 7.3.

Table 7.2

## Implementation of economic ratios by the banking system as a whole in 2013, %

№	Ratio	As of											
		01.01	01.02	01.03	01.04	01.05	01.06	01.07	01.08	01.09	01.10	01.11	01.12
1	R1 Regulatory capital (UAH million)	178908.9	181244.8	179197.8	182504.7	183538.9	187259.1	184492.7	185207.5	186046	189787.3	191317	192916
2	R2 Regulatory capital adequacy (sufficiency) ratio (no less than 10 percent)	18.06	17.91	17.77	18.20	18.09	18.51	17.99	17.95	17.88	17.92	17.87	17.55
3	R3 Regulatory capital / Total assets ratio (no less than 9 percent)	14.89	14.31	14.01	14.11	14.14	14.11	14.01	13.89	13.74	13.87	13.92	13.85
4	R3-1 Regulatory capital / liabilities ratio (no less than 10 percent)		18.28	17.94	18.02	17.96	17.88	17.71	17.51	17.24	17.41	17.42	17.30
5	R4 Quick liquidity ratio (no less than 20 percent)	69.26	65.49	59.02	56.89	55.19	55.48	55.97	53.17	57.19	56.27	56.09	50.85
6	R5 Current liquidity ratio (no less than 40 percent)	79.09	89.05	85.92	91.49	87.54	88.69	88.64	87.36	89.58	87.95	86.95	85.81



№	Ratio	As of											
		01.01	01.02	01.03	01.04	01.05	01.06	01.07	01.08	01.09	01.10	01.11	01.12
7	R6 Short-term liquidity ratio (no less than 60 percent)	90.28	93.16	92.95	93.07	90.75	90.34	90.28	89.50	88.97	88.27	87.53	86.96
8	R7 Maximum credit risk exposure per single counterparty / Regulatory capital (no more than 25 percent)	22.10	22.69	22.31	22.29	22.38	22.57	22.46	22.58	22.70	22.63	22.57	22.49
9	R8 Total large credit risk exposure / Regulatory capital (no more than 800% of Regulatory capital)	172.91	171.11	175.78	176.15	176.15	168.87	179.42	183.85	183.60	185.71	183.71	190.58
10	R9 Maximum credit exposure to single insider / Share Capital (no more than 5 percent)	0.37	0.40	0.39	0.40	0.39	0.35	0.32	0.31	0.34	0.40	0.35	0.40

Table 7.2

№	Ratio	As of											
		01.01	01.02	01.03	01.04	01.05	01.06	01.07	01.08	01.09	01.10	01.11	01.12
11	<b>R10</b> Maximum aggregate credit exposure to all insiders / Share Capital (no more than 30 percent)	2.41	2.25	2.11	2.09	2.14	2.09	1.93	1.90	1.75	1.70	1.61	1.82
12	<b>R11</b> Investment in securities issued by single entity (no more than 15 percent)	0.09	0.08	0.09	0.08	0.08	0.08	0.07	0.06	0.06	0.05	0.04	0.04
13	<b>R12</b> Total investment in securities / Reg. Capital (no more than 60 percent)	3.48	3.57	3.55	3.53	3.54	3.50	3.39	3.41	3.40	3.38	3.32	3.26

Implementation of economic ratios by the banking system as a whole in 2012, %

№	Normative	As of											
		01.01	01.02	01.03	01.04	01.05	01.06	01.07	01.08	01.09	01.10	01.11	01.12
1	R1 Regulatory capital (UAH million)	178454	171118	171179	172317	172412	172506	174643	176507	177292	178287	179078.5	177991.9
2	R2 Regulatory capital adequacy(sufficiency) ratio (no less than 10 percent)	18.90	18.23	18.01	17.88	17.83	17.93	17.98	18.29	18.26	18.24	18.28	18.09
3	R3 Regulatory capital / Total assets ratio (no more than 9 percent)	14.96	14.73	14.67	14.51	14.58	14.56	14.58	14.64	14.70	14.86	14.96	14.95
4	R4 Quick liquidity ratio (no less than 20 percent)	58.48	55.63	57.97	54.25	53.22	53.39	52.75	55.24	57.47	57.88	57.89	57.38
5	R5 Current liquidity ratio (no less than 40 percent)	70.53	69.59	69.88	72.88	74.80	73.54	70.75	83.49	80.67	78.39	83.41	84.30
6	R6 Short-term liquidity ratio (no less than 60 percent)	94.73	93.54	93.63	93.14	93.94	94.05	94.46	92.81	91.04	90.41	90.13	90.37
7	R7 Maximum credit risk exposure per single counterparty / Regulatory capital (no more than 25 percent)	20.76	21.97	22.28	22.50	22.38	22.00	22.24	22.24	22.43	22.61	22.41	22.31
8	R8 Total large credit risk exposure / Regulatory capital (no more than 800% of Regulatory capital)	164.46	169.57	168.56	177.94	180.17	176.39	178.68	168.31	165.25	169.95	171.46	174.69

Table 7.3

№	Normative	As of											
		01.01	01.02	01.03	01.04	01.05	01.06	01.07	01.08	01.09	01.10	01.11	01.12
9	<b>R9</b> Maximum credit exposure to single insider / Share Capital (no more than 5 percent)	0.57	0.70	0.69	0.56	0.53	0.56	0.45	0.47	0.46	0.36	0.36	0.37
10	<b>R10</b> Maximum aggregate credit exposure to all insiders / Share Capital (no more than 30 percent)	2.51	2.74	2.80	2.74	2.73	2.69	2.99	2.49	2.64	2.54	2.49	2.24
11	<b>R11</b> Investment in securities issued by single entity (no more than 15 percent)	0.06	0.07	0.07	0.06	0.09	0.09	0.10	0.10	0.12	0.10	0.10	0.09
12	<b>R12</b> Total investment in securities / Reg. Capital (no more than 60 percent)	3.24	3.31	3.33	3.24	3.09	3.08	3.11	3.06	3.13	3.27	3.32	3.35

## Workshop 8

# COMMERCIAL BANKS

### Key terms and concepts

**Commercial banks** are multibusiness credit institutions engaged in financial transactions and services related to customer service in all sectors of economy.

#### Classification of banks

Classification of banks	
By Ownership	State Joint stock Cooperative Private Mixed
By Legal Form	Private shareholders of the company Public Joint Stock Company
By Area Of Destination	International Nationwide Regional Interregional – serving several regions
By Nationality	National Foreign
By Functions And Nature Of Activities	Universal Specialty – investment, savings and development banks, mortgage, innovative
By The Size Of Assets	Small Average Great Major

Bank acquires the status of a specialized (specialized savings) if more than 50% of its assets (or liabilities) are assets (or liabilities) of the same type.

#### Kinds of interbank unions

Interbank unions		
Banking Corporation	Banking holding group	Financial holding group
A legal entity (bank), the founders and shareholders of which can be extremely banks.	This banking association, which includes only banks.	Should consist mostly or solely for providers of financial services, and among them must be at least one bank and the parent company must be a financial institution.

Interbank unions		
Banking Corporation	Banking holding group	Financial holding group
The banking corporation created to concentration of capital banks – members of the corporation, improve their overall liquidity and solvency, as well as coordination and supervision of their activities	Parent bank banking holding group must belong to at least 50% of the share (share) capital or votes of each of the other group members that are its subsidiaries	The parent company has owned more than 50% of the share (share) capital of each member of the financial holding group

In order to protect and represent the interests of its members, the development of interregional and international relations , providing research and information exchange and professional interests, development of recommendations on banking, banks have the right to form non-profit associations (associations).

Bank unions (associations) must not engage in banking or business activities and can not be created for profit. Bank association is a contractual association of banks and bank has no right to interfere in the activities of banks-members of the association (union).

### Types of interbank unions

Interbank unions			
Associative commercial type		Corporate type	
Consortia	Cartels	Concerns	Trusts
Temporary union contract basis several banks for sharing of credit or guarantee operations. Main objective: to increase the concentration of operations resources, risk sharing, which makes it possible to limit the losses for each member of the consortium in the event of non-payment borrowers	Association of large banks, which is based on an agreement on the division of spheres of activity (coordination and implementation of a uniform policy in setting interest rates and dividend payments, credit terms)	Monopoly union joint-stock banks, where a large bank (the main joint-stock company) owns a controlling interest in a legally independent banks (subsidiary corporations), thereby effectively establishing financial control over their activities	Monopoly bank merger that formed association by banks that are part of it. Recent lose legal, commercial independence and are subject to a single governing body. Based on mutual ownership

### **Functions of banks:**

- Mobilization of temporarily free funds and converting them into capital;
- Lending to enterprises, government and the public;
- Provision of credit facilities outstanding (credit money);
- Settlements and payments in the economy;
- Emissive constituent activities;
- Counseling, provision of economic and financial information.

**Banking transactions** – a transaction aimed at solving problems of banks (tasks that reflect banking and usually associated with the movement of specific goods – money): raising funds and investing them in loans, securities, service, financing lending to and investments.

According to the Law of Ukraine «On banks and banking activity» under a banking license banks may perform the following banking operations:

- Acceptance of deposits (deposits) from businesses and individuals;
- Opening and maintaining current accounts and correspondent banks, including the transfer of funds from these accounts by using payment instruments and transfer money to them;
- Allocation of funds in its own name, on its own terms and at their own risk;
- Currency transactions;
- Issuance of equity securities;
- Purchase and sale of securities on behalf of clients;
- Transactions in the securities market on its behalf (including underwriting);
- Provision of guarantees, warranties and other obligations of third parties that provide their implementation in cash;
- The acquisition or disposition of the claim to meet the obligations in cash for goods delivered or services rendered, assuming the risk of such claims and receipt of payments (factoring);
- Custody services and renting of safes for storing valuables and documents;
- Issue, purchase, sale and service checks, promissory notes and other payment instruments;
- Issuing bank cards and transactions using these cards;
- Consultancy and information services.

### Classification of banking operations

Banking operations		
Passive	Active	Commission, brokerage services
operations by which bank resources are formed	operations conducted by placing funds for profit	bank actions aimed at meeting customer needs
Formation of resources at their own expense: – Formation of share capital; – Formation of reserve capital; – Undistributed profits	Credit operations: – Commercial and industrial loan; – Loan secured by real estate; – Loan to authorities; – Loan to individuals; – Loan against securities	Payment operations: – Collection; – Letters of credit; – Transferable; – Acceptance
		Cash operations
Formation of resources through borrowed funds: – Formation of deposits; – Maintenance of current accounts; – Overdraft accounts; – Correspondent accounts	Stock transactions: – Issue of equity securities; – REPO operations; – Loans granting against securities; – Operations in the securities market on its own behalf	Factoring
		Warranty and guarantee
		Trust
Capital formation at the expense of the issued capital: bond loans; bank promissory notes	Investment transactions	Consultancy and information services
	Leasing operations	Organization of buying and selling securities on behalf of clients

The bank's ability to generate equity capital for growth and overcoming economic difficulties is determined by return on assets (ROA) and return on equity (ROE), which is calculated by the formula:

$$ROA = \frac{NP}{A} \cdot 100, \quad (8.1)$$

where  $NP$  – bank net profit (after tax),  
 $A$  – the average value of assets.

$$ROE = \frac{NP}{K} \cdot 100. \quad (8.2)$$

where  $NP$  – bank net profit (after tax),  
 $K$  – bank's own capital.

If  $ROE$  is much higher than  $ROA$ , it shows a slight amount of equity capital in total capital.



Balancing between profitability and risk, i.e. searching for the optimal ratio, is one of the most important and difficult tasks of stable and efficient bank's activity.

### *Issues for discussion*

1. Classification of commercial banks.
2. Passive banking operations.
3. Active banking operations.
4. The essence of a commission and intermediary banking operations.
5. Key performance of banks analysis.

### **Practical tasks**

**Task 8.1.** Fill in the missing places.

1. \_\_\_\_\_ – placed and used bank funds grouped by their economic value in the process of reproduction.
2. \_\_\_\_\_ – bank's ability to quickly and lossless convert its assets into cash.
3. \_\_\_\_\_ – set of tools that are available to the bank and used it to carry out credit and other active operations.
4. \_\_\_\_\_ – threat of losses caused by the specifics of banking. Divided into credit, interest, currency risks, risks of securities transactions, risks of abuse and more.
5. \_\_\_\_\_ – money in cash or in non-cash, in the currency of Ukraine or foreign currency placed by customers on their personal accounts on a contract basis for a specified period or without specifying a period (on demand) and payable to the investor in accordance with the laws of Ukraine and with the contract.
6. \_\_\_\_\_ – transactions of commercial banks' trust units with funds or property and perform other services in the interests of, on behalf of and at the expense of their clients.
7. \_\_\_\_\_ – residual value of the bank's assets after deducting all of its liabilities.
8. \_\_\_\_\_ – the bank, the main purpose of which is to increase the market value of the share capital and profit for its further development and to its shareholders through taking deposits and granting loans and a variety of services to its clients.

9. \_\_\_\_\_ – system of measures to manage the process of credit from commercial banks, covering the main stages of monetary relations at the micro level to involve loans and lines of their choice indicative allocation in accordance with the bank's goals.

10. \_\_\_\_\_ – bank's resources (owned and borrowed), reduced by investments in its fixed assets, intangible assets, to associated or affiliated companies.

11. \_\_\_\_\_ – collection of all loans granted by the bank at the moment.

12. \_\_\_\_\_ – risk of non-payment by the borrower to the lender of principal and interest on the loan.

13. \_\_\_\_\_ – collection of all loans granted by the bank and purchased securities.

14. \_\_\_\_\_ – loan conditions presence of a legal or natural person for the ability to return it.

15. \_\_\_\_\_ – income of the bank, which it received as a result of the difference between the rates of sale and purchase of foreign currency, securities, interest rates on loans issued and received.

16. \_\_\_\_\_ – one of the two parts of the balance sheet (right side), which reflects the source of the bank.

17. \_\_\_\_\_ – legal or natural person who receives money for temporary use on condition of repayment, maturity and usually with interest payments.

18. \_\_\_\_\_ – active and passive operations of the bank at which it purchases the customer the right to collect its receivables for a fee set by the agreement signed between them.

**Task 8.2.** Link classification attributes with types of banks. To do this, put the letter next to the corresponding number. One letter corresponds to a few figures.

Classification features	Types of commercial banks
A. By ownership	1. State
	2. Private Joint Stock Companies
	3. Small
B. For legal form	4. Without of branch
	5. Private
	6. Universal
C. By the size of the capital	7. Regional
	8. National
	9. Cooperative

Classification features	Types of commercial banks
D. For branch network	10. National
	11. Major
	12. Interregional
E. For the range of transactions	13. Few branches
	14. Public Joint Stock Companies
	15. Foreign
F. For the territoriality	16. Nationwide
	17. Great
	18. Specialty
G. For belonging to the country	19. Shared
	20. Collective
	21. Many branches
	22. Medium-sized

**Task 8.3.** Link kinds of commercial banks with their characteristics. To do this, put the number at the letter.

Types of commercial banks	Characteristic
1. State Bank	A. Bank, which specializes in the portfolio and real investment on a commission basis or at their own expense, by conducting securities transactions (issue, placement, acquisition) and long-term financing of investment projects of establishment
2. Investment Bank	B. Specialized Bank, whose main operations are financing of innovative activities for the full innovation cycle «science-technology-production» or its individual phases, or stages, in order to accelerate the pace of scientific progress
3. Innovative Bank	C. Bank, which is jointly owned by its members, may make cash management services, to provide loans, accept deposits and provide to their customers other services within the license
4. Mortgage Bank	D. Bank, 100% of the fund of which is publicly owned
5. Co-operative Bank	E. Specialized commercial bank, which offers home loans, sells them to other investors, serves repayment mortgages

**Task 8.4.** Link kinds of resources of commercial banks with their components. To put the number at the appropriate letter.

Types of commercial bank' resources	Resources of commercial banks
1. Own resources of commercial banks	A. Authorized capital
	B. Demand Deposits
	C. Issue of bonds
	D. Bank bills
2. Involved resources of commercial banks	E. Reserve Fund
	F. Loans from Central Bank
	G. Term deposits
	H. Undistributed profit of past years
	I. Interbank loans
3. Borrowed resources of commercial banks	J. Certificates of deposit
	K. Reserves for insurance of banking risks
	L. Savings Certificates
	M. Special funds generated from profits

**Task 8.5.** Link profitability and financial sustainability indicators of commercial banks to their characteristics. To put the number at the appropriate letter.

Indicators of bank	Characteristic
1. Interest margin	A. Ratio of net income to total assets of the bank
2. Solvency	B. Ratio of the funds on correspondent accounts and in terms of current liabilities
3. Profitability of bank assets	C. Ratio of net income to shareholders' equity
4. Capital adequacy ratio	D. Shows how well the bank acts as an intermediary money market
5. Index of instant liquidity	E. Ratio of total debt on loans, interbank loans and discounted bills borrower and 100% of the off-balance sheet commitments given to the borrower at the bank's capital
6. Profitability of equity	F. Value of amounts of liquid assets and liabilities, by taking into account the requirements and obligations repayable within 30 days
7. Index of current liquidity	G. The relationship between capital and assets of the bank, summarized on the basis of their risk
8. The maximum risk per borrower	I. Ratio of capital to total assets, reduced by the amount of bank reserves

**Task 8.6.** Link kinds of debt on loans provided by commercial banks to their customers according to return risk groups to their characteristics. To put the number at the appropriate letter.

Types of debt on loans, depending on the risk of default	Characteristic
1. Standard credits	A. Unsecured loans with overdue repayment period from 30 to 60 days and insufficiently secured loans with overdue repayment period from 60 to 180 days, and provided with loans with overdue repayment period of over 180 days
2. Substandard loans	B. Unsecured loans with overdue repayment period from 60 to 180 days and not provided with loans with overdue repayment period of over 180 days
3. Doubtful credits	C. Extended loans for more than two times, or with the general terms extended which exceed 60 days, provided with loans with overdue repayment period to 60 days and not provided with loans with overdue repayment period up to 30 days
4. Unsecured loans	D. Loans (regardless of the type of collateral), payment terms are not came promptly and in full the principal debt is paid off, and extended in due course (but no more than a two times) loans with a total period not exceeding six extended months
5. Hopeless credits	E. Unsecured loans with overdue up to 30 days and are provided with sufficient delay repayment period from 30 to 60 days, and loans with overdue repayment period from 60 to 180 days

**Task 8.7**

**Multiple choice questions.**

1. What percentage of the authorized fund legally permitted to businesses and individuals in the creation of commercial banks:

- a) no more than 50%;
- b) not more than 35%;
- c) no more than 33%?

**2. In its activities, the commercial banks should be guided by:**

- a) self-regulation based on market mechanisms;
- b) principles of commercial calculation and reliability;
- c) requirements for banking regulation and supervision;
- d) indicated in a), b) are true;
- e) indicated in a), b), c) are true.

**3. The ratio of regulatory capital to total assets weighted by the coefficients on the degree of risk that characterizes the capital adequacy of the bank to conduct active operations in view of the risks:**

- a) capital ratio;
- b) capital adequacy ratio;
- c) standard of credit risk;
- d) liquidity ratios.

**4. The ratio of the amount of funds on correspondent accounts and in cash to current liabilities is:**

- a) liquidity ratio;
- b) solvency ratio;
- c) immediate liquidity;
- d) capital adequacy ratio.

**5. Passive transactions of the bank – are:**

- a) operations related to the deployment of available cash resources to generate income;
- b) operations to involve financial resources available to businesses and the public;
- c) transactions involving the transfer of control values;
- d) indicated in a), b), c) are true.

**6. Active transactions of the bank – are:**

- a) deduction of income to supplement the statutory fund of the bank;
- b) obtaining interbank loans;
- c) REPO operations;
- d) operations related to the deployment of available cash resources to generate income.

**7. A set of money that is available to the bank and used to carry out credit and other active operations:**

- a) bank's resources;
- b) bank's assets;
- c) capital of the bank;
- d) deposit portfolio.

**8. The residual value of the bank's assets after deducting all of its liabilities is:**

- a) bank's resources;
- b) bank's liabilities;
- c) capital of the bank;

d) loan portfolio.

**9. Acquires the status of a specialized bank if its assets are assets of the same type in the amount of:**

- a) 25% – 50%;
- b) less than 50%;
- c) more than 50%;
- d) 100%.

**10. Who carries out the state registration of commercial banks?**

- a) Ministry of Finance of Ukraine;
- b) National Bank of Ukraine;
- c) Cabinet of Ministers of Ukraine;
- d) indicated in a), b) are true.

**11. The least stable resources of commercial bank are:**

- a) term deposits;
- b) demand deposits;
- c) term deposits with the notice of withdrawal;
- d) short-term loans.

**12. Active and passive funds, allowing temporary debit balance, i.e. over-the client's own funds by the bank:**

- a) current account with an overdraft facility;
- b) deposit account;
- c) current account funds;
- d) credit account.

### Task 8.8

**Output.** The regulative capital of a commercial bank is 7100 thousand, including fixed assets – 4900 thousand, the bank's assets and the related risk factors listed in Table 8.1. Does the bank adhere to NBU regulations regarding capital adequacy (R2 and R3 ratios)? How will the expansion of the bank due to an increase in lending operations of business entities by 10% in the level of capital adequacy?

*Table 8.1*

**The bank's assets**

№	Name of asset	Amount, ths UAH	Risk coefficient, %	Assets weighted by risk, ths UAH
1	2	3	4	5
1	Cash	80	0	0

Table 8.1

№	Name of asset	Amount, ths UAH	Risk coefficient, %	Assets weighted by risk, ths UAH
1	2	3	4	5
2	Bank metals	17	0	0
3	Funds on correspondent accounts in the NBU	260	0	0
4	Debt securities issued by central authorities, refinanced by the NBU	20 200	0	0
5	Funds allocated in banks with investment class rating	30	20	6
6	Demand deposits in banks that do not belong to investment class	3600	50	1800
7	Loans to central authority	4200	10	420
8	Loans to economic entities	45 200	100	45 200
9	Loans to individuals	11 300	100	11 300
10	Tangible and intangible assets	5900	100	5900
11	Liabilities for guarantees (acceptances, aval)	4400	100	4400
12	Loan commitments	2900	50	1450
	Total	98 087	-	70 476

**The order of solutions:**

The calculation of the bank's assets, weighted according to the degree of credit risk, is presented in Table 1 column 5.

Calculate ratio of capital adequacy (solvency)  $R_2$  as follows:

$$R_2 = \text{regulative capital} / \text{total assets and off-balance sheet instruments, weighted by the degree of credit risk.} \quad (8.3)$$

$$R_2 = (7100 : 70476) \cdot 100 = 10,074\%.$$

Calculate the ratio of regulatory capital to total assets  $R_3$  as follows:

$$R_3 = \text{regulative capital} / \text{total assets of the bank, reduced by the amount of reserves.} \quad (8.4)$$

$$R_3 = (4900 : 98087) \cdot 100 = 4,996\%.$$

Thus, the bank partially follows the established by National Bank ratios:  $R_2$  is 10,074% (standard value is 10%),  $R_3$  is 4.996% (standard value is not less than 9%).



If the bank plans to expand lending to business entities by 10%, the volume of loans increases by the amount of 4520 thousand ( $45200 \cdot 0.1 = 4520$ ).

At the same value will increase total assets weighted by risk, since these loans have a risk factor of 100%.

So bank regulations under such conditions will be:

$$R2I = (7100 : 74996) \cdot 100 = 9,467\%;$$

$$R3I = (4900 : 102607) \cdot 100 = 4,776\%.$$

*Answer:* The calculated value of the  $R2$  and  $R3$  is less than standard value, so bank is faced the task to extent capital to the size that will allow fulfilling the mandatory requirements. Management of the bank should analyze all possible sources to replenish capital and choose the cheapest and safest of them using appropriate methods of management.

### Task 8.9

**Output.** Calculate the risk of the loan portfolio ( $RLP$ ) if the calculated value of the reserve for substandard debt ( $RES$ ) (amount of money that with high probability the bank couldn't receive) is 25 million UAH, the loan portfolio ( $LP$ ) is 150 million UAH.

**The order of solutions:**

The risk of loan portfolio is calculated by the following formula:

$$RLP = RES \cdot 100 / LP, \quad (8.5)$$

$$RLP = 25 \cdot 100 / 150 = 16,67\%$$

*Answer:* The risk of the loan portfolio is 16,67%.

### Task 8.10

**Output.** Calculate the cost of payment documents processing ( $CPDP$ ) if transaction costs ( $TC$ ) are 15 000 UAH, other income ( $OI$ ) is 10 000 UAH, planned profit ( $PP$ ) is 5 000 UAH, amount of processed documents ( $PD$ ) is 40 000 units.

**The order of solutions:**

The price of payment documents processing is calculated by the formula:

$$CPDP = (TC - OI + PP) / PD, \quad (8.6)$$

$$CPDP = (15000 - 10000 + 5000) / 40000 = 10000 / 40000 = 0,25 \text{ UAH.}$$

*Answer:* The price of payment documents processing is 0,25 UAH.

### Task 8.11

**Output.** Bank's regulative capital is 130 million UAH. The firm «Meganom» has the debt on long-term loan of 10 million UAH, on overdraft of 5 million UAH, also on this firm the bank granted guarantee on loan in another bank for 15 million UAH. Has the ratio of maximum credit risk to a single counterparty ( $R7$ ) performed?

#### The order of solutions:

Ratio of maximum credit risk to a single counterparty ( $R7$ ) is given by:

$$R7 = \text{sum of all bank's claims and all off-balance obligations issued by bank about the contractor} / \text{regulative capital.} \quad (8.7)$$

Standard value of  $R7$  is no more than 25%.

$$R7 = (10 + 5 + 15) / 130 = 23,08\%$$

23,08% < 25%, therefore, the bank takes the ratio  $R7$ .

*Answer:*  $H7$  is 23.08%, the bank takes the ratio.

### Task 8.12

**Output.** Bank's regulative capital is 250 bln UAH. Information about the borrowers is given in Table 8.2. Is ratio of large credit risks  $R8$  performed?

Table 8.2

The borrowers of the bank and the amount of their credits

№	Borrower	Amount of credit, mln UAH
1	«Karadag» Ltd.	20
2	PJSC «Hoba-Tepe»	25
3	JSC «Alchak»	30
4	«Uzun-Syrt» Ltd.	15
5	JSC «Kyik-Atlama»	10
6	PJSC «Kyzyltash»	135
7	«Ak-Kaya» Ltd.	100
8	«Otuzka» Ltd.	25

The order of solutions:

Ratio of large credit risks  $R8$  is calculated by formula:

$$R8 = \text{sum of all large loans granted by bank} / \text{regulative capital.} \quad (8.8)$$

Standard value of  $R8$  is no more than 8 times of regulatory capital.

So, in our case  $R8$  must be no more than  $250 \cdot 8 = 2000$  bln UAH.

Credit risk which the bank took over one counterparty or group of related counterparties is considered high if the sum of all the bank's claims to this counterparty or group of related counterparties and all

the off-balance commitments given by the bank about this counterparty or group of related counterparties is 10% or more of regulative capital.

So, in this case large credit risks should be greater than or equal to  $250 \cdot 0.10 = 25$  bln UAH, and them are the risks of borrowers №№ 2, 3, 6, 7 and 8 (Table 2).

$$R8 = (25 + 30 + 135 + 100 + 25) / 250 = 315 / 250 = 1,26.$$

*Answer:* R8 exceeds regulative capital at 1.26 times, so the bank adheres the ratio.

### Task 8.13

**Output.** How much money do we need to put on a 6-month deposit to get 1000 UAH at maturity term, if simple interest rate is 20% per annum?

**The order of solutions:**

To find the present value of deposit of the simple interest rate we use the formula:

$$P = S / (1 + i \cdot n). \quad (8.9)$$

Since the interest rate is annual and the term of the deposit agreement is 6 months, in our case, n is equal to 6/12 or S, and after substituting of data the formula takes the following form:

$$P = 1000 / (1 + 0,2 \cdot 0,5) = 909 \text{ UAH.}$$

*Answer:* we must put on deposit 909 UAH.

### Task 8.14

**Output.** Identify and analyze the quick liquidity ratio of the bank with the following data (UAH):

- Bank guarantees for up to 1 month – 80 mln.
- Demand liabilities of the bank – 260 mln.
- Accounts payable to customers – 40 mln.
- Liabilities for up to 1 month -50 mln.
- Bank accounts in the NBU – 170 mln.
- Cash – 60 mln.
- Loans with maturity up to 1 month – 220 mln.

**The order of solutions:**

Quick liquidity ratio of the bank ( $R_{ql}$ ) is defined as the ratio of short-term assets ( $STA$ ) to short-term liabilities ( $STL$ ):

$$R_{ql} = \frac{STA}{STL}. \quad (8.10)$$

Short-term liabilities include: demand obligations of a bank, the obligation for up to 1 month, payables to customers, bank guarantees and sureties for up to 1 month.

The bank's assets that should be considered when analyzing quick liquidity: cash, including foreign currency, bank account in the NBU, loans with maturity up to 1 month and resources invested in securities.

Quick liquidity ratio of the bank is as follows:

$$R_{QL} = \frac{60 + 170 + 220}{260 + 50 + 40 + 80} = \frac{450}{430} = 1,05.$$

Quick liquidity ratio of the bank with a value of 1.05 means that the amount of the bank's liabilities, which are taken by the bank on demand or on a short term (1 month), exceed the bank's assets that can instantly or within 1 month be transformed for cash.

*Answer:* The quick liquidity ratio of the bank is 1.05.

### *Review Questions*

1. General characteristics of commercial banks.
2. Classification of commercial banks.
3. Operations of commercial banks and their characteristics.
4. Non-banking financial and credit institutions, their purpose and types.
5. Mechanism to ensure the stability of the banking system.

### **Tasks for self-control**

**Task 8.15.** The regulative capital of a commercial bank is 9100 thousand, including fixed assets 6900 thousand, the bank's assets and the related risk factors listed in Table 8.3. Does the bank adhere to NBU regulations regarding capital adequacy (R2 and R3 ratios)? How will the expansion of the bank due to an increase in lending operations of business entities by 11% in the level of capital adequacy?

*Table 8.3*

**The bank's assets**

№	Name of asset	Amount, ths UAH	Risk coefficient, %	Assets weighted by risk, ths UAH
1	2	3	4	5
1	Cash	90	0	?
2	Bank metals	17	0	?
3	Funds on correspondent accounts in the NBU	260	0	?

Table 8.3

№	Name of asset	Amount, ths UAH	Risk coefficient, %	Assets weighted by risk, ths UAH
1	2	3	4	5
4	Debt securities issued by central authorities, refinanced by the NBU	25 200	0	?
5	Funds allocated in banks with investment class rating	30	20	?
6	Demand deposits in banks that do not belong to investment class	3600	50	?
7	Loans to central authority	6200	10	?
8	Loans to economic entities	45 200	100	?
9	Loans to individuals	11 300	100	?
10	Tangible and intangible assets	5900	100	?
11	Liabilities for guarantees (acceptances, aval)	4400	100	?
12	Loan commitments	2900	50	?
	Total	?	-	?

**Task 8.16.** Calculate the risk of the loan portfolio (RLP) if the calculated value of the reserve for substandard debt (RES) (amount of money that with high probability the bank couldn't receive) is 35 million UAH, the loan portfolio (LP) is 200 million UAH.

**Task 8.17.** Calculate the cost of payment documents processing (CPDP) if transaction costs (TC) are 20 000 UAH, other income (OI) is 15 000 UAH, planned profit (PP) is 10 000 UAH, amount of processed documents (PD) is 45 000 units.

**Task 8.18.** Bank's regulative capital is 150 million UAH. The firm «Kafa» has the debt on long-term loan of 25 million UAH, on overdraft of 10 million UAH, also on this firm the bank granted guarantee on loan in another bank for 45 million UAH. Has the ratio of maximum credit risk to a single counterparty (R7) performed?

**Task 8.19.** Bank's regulative capital is 210 million UAH. Information about the borrowers is given in Table 8.4. Is ratio of large credit risks R8 performed?

**The borrowers of the bank and the amount of their credits**

№	Borrower	Amount of credit, mln UAH
1	«Karagach» Ltd.	215
2	PJSC «Giaour-Bach»	55
3	JSC «Karaul-Oba»	80
4	«Voloshin» Ltd.	18
5	JSC «Kyik-Atlama»	19
6	PJSC «Demerdgy»	145
7	«Hoba-Tepe» Ltd.	105
8	«Wuchang-Su» Ltd.	30

**Task 8.20.** How much money do we need to put on a 6-month deposit to get 2000 UAH at maturity term, if simple interest rate is 14% per annum?

**Task 8.21.** Identify and analyze the quick liquidity ratio of the bank with the following data (UAH):

- Bank guarantees for up to 1 month – 100 mln.
- Demand liabilities of the bank – 290 mln.
- Accounts payable to customers – 70 mln.
- Liabilities for up to 1 month -80 mln.
- Bank accounts in the NBU – 200 mln.
- Cash – 30 mln.
- Loans with maturity up to 1 month – 250 mln.

**Task 8.22.** Bank charges 25% per annum for a loan of 4.5 million. For the second year, the bank sets an additional margin of 2%, and for each subsequent years – 3%. Agreement term is 4 years. Determine the total amount of loan and the bank's income.

**Task 8.23.** 180 days after signing the agreement the debtor has paid 380 thousand UAH. Credit is granted under 22% per annum. What is the initial amount of the debt, provided that the time base is 365 days?

**Task 8.24.** The loan of 250 thousand UAH is granted for the period from 20.02 to 5.10 at 9% per annum, a leap year. The time base is 360 days. Determine the size of the payments which must be settled at the usual charge interest on the exact number of loan days.

## Workshop 9

# INTERNATIONAL FINANCIAL INSTITUTIONS

### Key terms and concepts

**International financial institutions** – financial institutions that may have a relationship with both government and business entities of different countries.

**International and regional monetary and credit institutions** – institutions which are created on the basis of agreements between states. Most important of them are International Monetary Fund (IMF) and International Bank for Reconstruction and Development (IBRD).

**The International Monetary Fund** was created to regulate currency exchange relations between the member states. IMF must play a dual role: on the one hand, to monitor the performance of its members defined rules of conduct in the area of monetary and financial relations, and on the other hand – to provide resources to finance deficits of balances of payments to countries in need. In granting loans IMF sets some political and economic conditions to debtor countries, which are embodied in the programs of economic restructuring. This procedure is called **the principle of conditionality**.

**The main objectives of the IMF:**

- promote international monetary cooperation and currency stabilization,
- establishment of a multilateral system of payments and settlements,
- maintaining the balance of payments of states – members of the Fund,
- adoption of measures aimed at regulating exchange rates;
- increasing of currencies convertibility;
- provide short-term loans to countries – members of the Fund to cover temporary deficits of their balance of payments, the elimination of foreign exchange restrictions, organization of advice on financial and monetary issues.

**The World Bank** is a group of related organizations, so often **the World Bank Group** is talked about. It includes: the International Bank for Reconstruction and Development, the International Development Association, the International Finance Corporation, the Multilateral Investment Guarantee Agency, and the International Centre for settlement of investment disputes.

World Bank loan is quite attractive source of external financing. World Bank classifies Ukraine as third category of countries (by average income). For such countries loans maturity 17 years with a grace period of 5 years during which only interest is paid.

**European Bank for Reconstruction and Development (EBRD)** is a regional international bank that began operations in 1991, the Bank was created with a special purpose – to facilitate the transition to an open economy, market-oriented, and the development of private entrepreneurship in Central and Eastern Europe and countries of the former Soviet republics.

The main feature of the EBRD, which distinguishes it from other development banks, is the support it private entrepreneurship. This position turns the essence of the EBRD, which states that at least 60% of the total funding of the Bank should be directed to the private sector.

**Functions of the EBRD** prioritize its activities:

- facilitate transition the to the market economy and impact assessment of the projects in transition countries;
- support of private business initiatives;
- encourage co-financing of projects and involve foreign direct investment in the private and public sectors;
- mobilize domestic and foreign capital;
- assistance in other institutions' activity.

### *Issues for discussion*

1. Define the International Monetary Fund.
2. What is the essence of the IMF's activity in Ukraine?
3. What are the functions of the World Bank?
4. Prospects of Ukraine on cooperation with the International Investment Bank.

### **Practical tasks**

#### **Task 9.1**

##### **Multiple choice questions.**

**1. What are the institutions that are based on international agreements to regulate the monetary and financial relations ?**

- a) international monetary and credit institutions;
- b) regional monetary and credit institutions;



- c) the World Bank;
- d) the European System of Central Banks.

**2. What are institutions designed to promote economic cooperation and integration of the developing region-specific?**

- a) international monetary and credit institutions;
- b) regional monetary and credit institutions;
- c) the World Bank;
- d) the European System of Central Banks.

**3. How a regional international bank, founded in 1958 with the aim of long-term lending for poorly developed regions, the implementation of joint projects of the participating countries, is called?**

- a) the World Bank;
- b) the European Bank for Reconstruction and Development;
- c) the European Investment Bank;
- d) the Bank for International Settlements.

**4. How the first international bank that was established in 1930 as an international bank of central banks, is called?**

- a) the World Bank;
- b) the European Bank for Reconstruction and Development;
- c) the European Investment Bank;
- d) the Bank for International Settlements.

**5. How a regional international bank, founded in 1990 to facilitate the implementation of reforms in the countries that have chosen the path of market economy, is called?**

- a) the World Bank;
- b) the European Bank for Reconstruction and Development;
- c) the European Investment Bank;
- d) the Bank for International Settlements.

**6. Direct funding Among the financial instruments of EBRD:**

- a) loans;
- b) investments;
- c) co-financing;
- d) credit prices.

**7. International monetary and financial system is:**

- a) the system that operates independently and maintains an international movement of goods and factors of production;

- b) the international movement of factors of production and goods and a set of tools;
- c) enshrined in international agreements form of monetary and financial relations that operate independently or serve the international movement of goods and factors of production;
- d) the system of any country.

**8. The main tasks of the European System of Central Banks:**

- a) development and implementation of monetary policy;
- b) conducting of political operations;
- c) control of the banks;
- d) loans to the public.

**9. The governing bodies of the IMF:**

- a) the Board of Governors, Directorate, Secretariat;
- b) the International Development Association;
- c) only the Directorate and the Secretariat;
- d) population.

**10. International Finance Corporation, established in 1956, is part of the World Bank and has the feature of the operation:**

- a) financial and organizational dependence on the World Bank;
- b) financial and organizational independence;
- c) financial and organizational dependence on the World Bank;
- d) financial and organizational dependence on the EBRD.

**Task 9.2. Identify the true and the false position.**

1. Internationalization of International Economic Relations enhances the instability of domestic financial markets.

2. Ukraine is a member of the International Monetary Fund and the International Bank for Reconstruction and Development, International Finance Corporation, International Development Association and the Multilateral Investment Guarantee Agency.

3. International Bank provides loans only on a short term basis and only to finance specific investment programs.

4. Purpose of MIGA is to encourage direct investment in developing countries.

5. IBRD provides loans only when efficient investments and guaranteed by the government.

6. To help the least developed countries the International Development Association is organized, which gives interest-free short-term loans guaranteed by the government.

7. European Bank for Reconstruction and Development has no right to conclude international agreements of an economic nature.

8. As a commercial institution of the European Bank for Reconstruction and Development provides loans at market rates, taking into account the risks based on LIBOR.

9. International Investment Bank is a powerful global monetary institution designated to provide medium and long term loans.

10. The Asian Development Bank is a regional monetary institution.

**Task 9.3.** Analyze data given in Table 9.1.

*Table 9.1*

**Ranking of countries for the years 2011–2012\***

Country	Year	Taxation			International Trade			
		Payouts (number)	Time (hours)	Total tax rate (% of profit)	Time to import (days)	Value of imports (US \$ per container)	Time for export (days)	Value of exports (US \$ per container)
Azerbaijan	2011	18	306	40,9	26	3 480	29	3 420
Azerbaijan	2012	18	225	40	26	3 405	29	3 345
Belarus	2011	82	798	80,5	30	2 115	15	1 772
Belarus	2012	18	654	62,3	30	2 615	15	2 210
Bulgaria	2011	15	616	28	18	1 586	22	1 526
Bulgaria	2012	15	500	27,2	17	1 586	20	1 526
Georgia	2011	30	387	15,3	11	1 316	10	1 329
Georgia	2012	5	387	16,5	11	1 715	10	1 355
Cyprus	2011	29	149	22,3	5	955	7	815
Cyprus	2012	29	149	22	5	1 010	7	865
Lithuania	2011	11	175	45,1	10	980	10	870
Lithuania	2012	11	175	43,1	9	980	9	870
The Russian Federation	2011	8	320	46,5	23	2 545	24	2 460
The Russian Federation	2012	7	290	46,9	23	2 495	24	2 410
Romania	2011	113	222	43,5	13	1 175	13	1 275
Romania	2012	113	222	43,1	13	1 495	13	1 485
Turkey	2011	11	226	43,3	14	1 063	13	990

*Table 9.1*

Country	Year	Taxation			International Trade			
		Payouts (number)	Time (hours)	Total tax rate (% of profit)	Time to import (days)	Value of imports (US \$ per container)	Time for export (days)	Value of exports (US \$ per container)
Turkey	2012	11	226	40	14	1 063	13	990
Ukraine	2011	135	657	55,5	33	1 880	30	1 560
Ukraine	2012	135	657	57,1	33	455	30	1 865

\*According to the World Bank.

## INDIVIDUAL TASK

Individual work is a form of learning in which the necessary knowledge and skills possessed by the student himself with methodological guidance of the teacher. It is designed to develop skills of independent work in academic, scientific, professional sectors, as well as for self-solving problems, finding constructive solutions.

Individual work of students is provided by all educational and methodological tools needed to study a particular discipline or a particular theme: textbooks, manuals, lecture notes, teaching and laboratory equipment, computer technology and more.

Students are also encouraged to self preparation of relevant scientific literature and periodicals.

The main functions of individual work are: cognitive, independent, predictive, corrective, educative.

Individual work of students has to provide:

- Systemness of knowledge and learning tools;
- Knowledge of mental processes;
- Mobility and critical thinking;
- Knowledge of data processing means;
- Capability to creative work.

Forms of individual work for students are different and are determined by work study program, depending on the purpose, objectives and content of the discipline, specific of profession, and in particular:

- elaboration of theoretical foundations of listened lectures;
- study of selected topics or issues provided for self-study;
- homework;
- preparation for practical classes;
- preparing for the module control works and other forms of current control;
- systematization of learned material before writing modules;
- individual tasks (preparation of presentations on given issues, preparation of critical essays on articles of foreign and domestic authors, search (selection) and review of the literature on a given issues, analytical review of scientific publications).

The purpose of individual work is mastering the full study program and progressive development of independence as character traits that play a role in shaping the modern model of highly qualified specialists.

The individual work involves control during practical classes and during the module control works. The maximum number of

points is determined by technological card of discipline «Money and Credit» for evaluating the performance at practical classes on relevant themes.

Each student must prepare **two** independent individual tasks in a presentation. Themes of presentations and deadlines are approved by teacher at the first practice.

Each presentation students represent and defend at the practice.

**Guidelines of the presentation:**

1. The volume is 10-12 slides;
2. Each slide must be numbered;
3. Tables, figures, diagrams should be numbered and include their name;
4. The slide should contain a brief description of the points of presentation's structure;
5. All slides must have the same pattern and be easy to understand;
6. Text size is 28-32 pins;
7. High-quality images;
8. Placement of text on the slide only if necessary). It is desirable to reflect the content of the theme in the form of diagrams, figures, tables, images.

**List of themes**

**№ 1 «Characteristics of the deposit market»**

1. The level of competition between banks.
2. Meeting the demand of customers.
3. Comparative characteristics of conditions of taking deposits by five selected banks.

**№ 2 «Characteristics of the credit market»**

1. The level of competition between banks.
2. Meeting the demand of customers.
3. Comparative characteristics of conditions of granting loans by five selected banks.

**№ 3 «The analysis of the emission of cash in Ukraine»**

1. The essence and function of emissions.
2. Dynamics of cash emission in Ukraine during last 3 years.
3. The analysis of monetary aggregates.

**№ 4 «Intermediate bank operations and prospects of their development»**

1. The essence of intermediate bank operations.
2. Kinds, brief description and prospects of intermediate bank operations.
3. Comparative characteristics of intermediate bank operations of five selected banks.

**№ 5 «Characteristic of money system of foreign country»** (Russia, China, U.S., UK, Germany, Japan, Mexico, Brazil, India, Australia, Egypt, Spain, France, Netherlands, etc.)

1. Structure and features of money system.
2. History of creation.
3. Analysis of monetary policy in critical and stable conditions.

**№ 6 «Characteristic of Central bank of foreign country»**

1. Dynamics of discount rate and reserve ratio, domestic bonds and treasury bonds.
2. Dependence of average rates of commercial banks on credit and deposit operations of the monetary policy.
3. Value of cash and non-cash circulation, comparison with other countries.

**Approximate structure of presentation:**

1. Title slide (theme, lecturer, developer of the presentation, the name of discipline, the name of the department);
2. The list of issues to be considered;
3. Materials that reveal the essence of the presentation;
4. Conclusions (1 slide);
5. The list of references with numbered pages;
6. Last slide should contain the text «Thank you», also contacts, e-mail.

**Approximate sources of information:**

Textbooks «Money and Credit», financial institutions, analytical articles in periodicals, websites <http://minfin.com.ua>, <http://bank.gov.ua>.

### **Evaluation criteria**

Individual work is evaluated on the following criteria:

- The degree of compliance with title and breadth of the theme;
- The degree of compliance with design work (volume, design of title page, figures, tables, references, bibliography, etc.) and creative approach to the presentation of the material;
- The timely execution and protection of the work;
- The level of defense of the work.

## **APPROXIMATE LIST FOR TOTAL CONTROL OF KNOWLEDGE**

1. The nature of money. Forms of value.
2. The essence of money and credit. Functions of money.
3. Types of money market financial instruments.
4. Monetary circulation. Law of cash flow.
5. The essence and purpose of financial intermediation in the money market.
6. Money supply. Velocity of money.
7. The concept of the monetary system.
8. Elements of the monetary system.
9. Types of banknotes.
10. Determination of the money market.
11. Metalistic and nominalistic theories of money.
12. Forms and methods of money turnover stabilizing.
13. Quantity theory of money. The modern monetarism.
14. Non-cash circulation: conditions, principles of organization and forms.
15. Factors of influencing the demand for money. Factors of influencing the money supply.
16. The essence of inflation. Types of inflation.
17. State regulation of inflation.
18. Forms and methods of anti-inflation policy.
19. The world monetary system and its evolution.
20. Balance of international payments.
21. International monetary organizations.
22. The values and convertibility of currencies. Exchange rate.
23. Currency regulation: the nature and necessity. Mechanism of regulation of the exchange rate.
24. Regional international monetary and financial institutions.
25. Classification of inflation. The causes of inflation.
26. The components of the NBU system. The functions of the National Bank.
27. Bretton Woods monetary system.
28. Jamaica monetary system.
29. Essence, functions and types of credit.
30. Non-banking financial and credit institutions, their distinct from the banks, the economic purpose, types, functions and role.
31. The functions and operations of the central bank.
32. Active operations of commercial banks.



33. Passive operation of commercial banks.
34. Tools of monetary policy.
35. The stability of the banking system and the mechanism of its maintenance.
36. International Monetary Fund (IMF). General characteristics of the cooperation programs of the IMF and Ukraine.
37. A typical organizational structure of universal commercial bank. Classification of commercial banks based on a range of transactions.
38. Resources of commercial banks.
39. Key elements of the national and world monetary systems.
40. Nature and types of monetary reform.

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**ГРОШІ ТА КРЕДИТ**  
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The Personal study book «Money and Credit (for non-financial specialties)» is aimed at fostering practical skills in the theory of money and credit, for assimilation of patterns of their functioning and development.

The Personal study book is built according to the program of course «Money and Credit» and consists of 9 workshops and 1 individual task as elements of individual independent work. Each practice session includes theoretical material on the theme, questions for discussion, tests, practical exercises and examples of their solution, review questions and tasks for self-control.

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