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Summary of Lectures

on the discipline «Macroeconomics»

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Summary of Lectures

Topic 1.1. Macroeconomics as a science

1) The evolution of views and philosophy of macroeconomics.
2) The concept of leaks and injections,

Literature: [1], [2], [3], [4], [5], [6], [7].

1. The philosophy of macroeconomics is understood as a set of principles, methods and components that ensure the construction of the most efficient and stable economy.

In macroeconomics, there are 3 main philosophies:

Classic. The origins of classical philosophy can be found in Adam Smith, Ricardo, Petty and others. This view is also called liberalism. Smith saw economics as a way to understand and explain the causes of the wealth of individual nations. He considered the source of the country's wealth to be the correct division of labor between industries and the accumulation of capital. Representatives of this trend believed that harmony and balance in any economy occurs independently under the influence of changing prices, which themselves determine the optimal mode of operation of the system. Interference by public authorities is unnecessary and even harmful. The classical school believed that private property was the only and most effective. A significant contribution to these views was made by Malthus, who studied and established the relationship between the growth rate of national production and the growth rate of the country's population. The Great Depression of 1929-33 did not confirm the key provisions of classical theory: the country's economy did not cope with the crisis on its own, showing an inability to self-regulate: it needed government intervention;

Keynesian theory of the organization of an efficient economy is associated with the name of its founder, who formulated new visions in macroeconomics. The theory soon found its application in practice and in economic development programs. Keynes assumed that private property was very efficient and that the whole economy should be largely based on it, but he also noted that in some areas and industries there should be state property. Keynes recognized two forms of ownership and called such an economy mixed. Another key point of Keynes is that the economy is not self-regulating. According to him, there is no automatic mechanism that would ensure full employment, rational use of resources and the absence of economic crises. Therefore, any economy needs government intervention. These ideas found their recognition for many years (over 50), but in the 70s of the 20th century. Keynes's recommendations to regulate and stimulate aggregate demand in the country did not work. State intervention has led to the emergence of such an economic phenomenon as stagflation (simultaneous decline in national production in the country and inflation);

Marxist. According to Marx, private property is unjustified and inefficient because it leads to injustice in society, chaos and economic crises. A market economy will give way to a communist one based entirely on state ownership. Marx's theory was declared unviable.

Macroeconomics as a discipline began to be taught in universities in the second half of the 20th century. and is the result of a long evolution of economic views. Today, new areas of macroeconomics are developing, which tend to the most effective mechanism of management - a market economy. On many key issues of macroeconomic issues, even today there is no single economic view, there are still discussions.

The first theoretical concept in macroeconomics was mercantilism (the wealth of nations accumulates through the development of the country's trade, if exports prevail over imports).

The second theoretical school in macroeconomics is considered to be the school of physiocrats (the country's wealth depends on the development of agriculture and the availability of minerals and natural resources).

The third theoretical school is classical (the country's wealth depends on increasing the volume of national production, the accumulation of precious metals).

2) **The concept of "withdrawal" (leakage) and "injection"**

In the open full model of circular flows, the influence of the public sector and the foreign sector leads to an imbalance of the two-sector model (households - firms), because from the flow of "income - expenses" are "withdrawals" in the form of savings, tax payments and imports.

"Withdrawal" - any use of household income not to purchase products made in the country.

At the same time, additional funds in the form of "injections" are attracted to the "income - expenditure" flow, namely: Investments, government expenditures and exports.

"Injections" - any addition to the consumer costs of products manufactured in the country.

Our scheme, of course, is simplified. The fact is that in the analysis of foreign economic relations, we took into account only product markets. Meanwhile, each country's resource markets are also linked to the rest of the world. Ukraine, for example, imports and exports mineral resources. There are also international labor flows. A significant part of Ukraine's labor force works abroad, which increases the total income of certain countries.

Questions for self-control

1. Discover the contribution of the classical school
2. Explain Keynes's contribution to the development of modern macroeconomic provisions
3. Explain the impact of Marxist philosophy on modern macroeconomics.
4. Explain the concepts of "withdrawal" and "injection"

Topic 1.2. GDP and other key macroeconomic indicators

1) GDP and other indicators of the system of national accounts
2) Price indices.

Literature: [1], [2], [3], [4], [5], [6], [7].

To ensure international comparisons of the level of development of countries, it is necessary to apply a single approach to the calculation of macroeconomic indicators. To do this, all countries use the same international calculation methodology (standard) – **the system of national accounts.**

The System of National Accounts (SNA) is the internationally agreed standard set of recommendations on how to compile measures of economic activity. The SNA describes a coherent, consistent and integrated set of macroeconomic accounts in the context of a set of internationally agreed concepts, definitions, classifications and accounting rules.

The System of National Accounts 1993 (SNA) has been prepared under the joint responsibility of the United Nations, the International Monetary Fund, the Commission of the European Communities, the OECD and the World Bank.

In addition, the SNA provides an overview of economic processes, recording how production is distributed among consumers, businesses, government and foreign nations. It shows how income originating in production, modified by taxes and transfers, flows to these groups and how they allocate these flows to consumption, saving and investment. Consequently, the national accounts are one of the building blocks of macroeconomic statistics forming a basis for economic analysis and policy formulation.

The SNA is intended for use by all countries,
having been designed to accommodate
the needs of countries at different stages of
economic development.

SNA is intended for:

- monitoring the development of the economy at different levels of aggregation: at the level of individual economic entities (institutional units), at the level of groups of such units (institutional sectors), or at the level of the economy as a whole,
- macroeconomic analysis in order to make decisions and develop macroeconomic policies,
- ensuring comparability of key indicators of different countries.

Economic flows reflect the creation, transformation, exchange, transfer or extinction of economic value; they involve changes in the volume, composition, or value of an institutional unit's assets and liabilities.

Economic stock is the result of previous operations and other economic flows, which is embodied in the available assets of a particular unit, sector or economy as a whole at a certain point in time. For example, gold as a reserve asset.

The purpose of the SNA is the registration (accounting) of economic flows and stocks through the application of a unified set of accounting rules.

S*tock and flow*

A *stock* is measured at one specific time, and represents a quantity existing at that point in time, which may have accumulated in the past. A *flow* is measured over an interval of time. Therefore, a flow would be measured *per unit of time* (say a year). Flow is analogous to speed in this sense.

Basic methodological principles of the SNA

- The principle of economic cycle
- The principle of economic equilibrium
- The principle of productive activity
- The principle of excluding double counting

The principle of economic cycle

In the process of reproduction, the economy is in a constant cycle, which is a continuous stream of transformations of costs into income.

Productive is any activity that brings income to its subjects, regardless of the field of activity in material (industry, agriculture, construction, etc.) and intangible (transport, communications, education, culture, health) etc.) production. Therefore, GDP includes the results of activities in both material production and services.

The calculations are based on the identity: total costs = total revenues, so the value of the product produced by the whole economy can be estimated both in terms of revenues and costs.

When calculating the results of national production, the cost of the final product (final cost) is taken into account. The cost of the intermediate product consumed in the process of creating the final product (intermediate consumption) *is not taken into account.*

An institutional unit may be defined as an economic entity that is capable, in its own right, of owning assets, incurring liabilities and engaging in economic activities and in transactions with other entities.

Institutional units such as residents and non-residents are considered in the system of national accounts.

Resident is an institutional unit that has a centre of economic interest in the economic territory of a country (or a grouping like the European Union (EU) or the euro area).

Non-resident is institutional unit that centre of economic interest is not in the economic territory of a country.

The resident institutional units are grouped into five mutually exclusive sectors:

- non-financial corporations;
- financial corporations;
- general government;
- non-profit institutions serving households;
- households

• Gross domestic product

Gross domestic product or GDP is a measure of the size and health of a country's economy over a period of time (usually one quarter or one year). It is also used to compare the size of different economies at a different point in time.

Gross domestic product: economic content and calculation methods

Gross domestic product (GDP), *total market value of the goods and services produced by a country's economy during a specified period of time.* It includes all final goods and services

those that are produced by the economic agents located in that country regardless of their ownership and that are not resold in any form.

It is used throughout the world as the main measure of output and economic activity.

The calculation of a country's GDP encompasses all private and public consumption, government outlays, investments, additions to private stocks, paid-in construction costs, and the foreign balance of trade. (Exports are added to the value and imports are subtracted).

Of all the components that make up a country's GDP, the foreign balance of trade is especially important. The GDP of a country tends to increase when the total value of goods and services that domestic producers sell to foreign countries exceeds the total value of foreign goods and services that domestic consumers buy. When this situation occurs, a country is said to have a trade surplus. If the opposite situation occurs—if the amount that domestic consumers spend on foreign products is greater than the total sum of what domestic producers are able to sell to foreign consumers—it is called a trade deficit. In this situation, the GDP of a country tends to decrease.

GDP can be determined via three primary methods. All three methods should output the same figure when correctly calculated. These three approaches are often termed

- the expenditure approach,
- the production approach,
- the income approach.

In economics, the final users of goods and services are divided into three main groups: households, businesses, and the government.

Gross domestic product (GDP) is calculated by adding the expenditures made by those three groups of users.

Accordingly, GDP is defined by the following formula:

GDP = Consumption + Investment + Government Spending + Net Exports

or more succinctly as

GDP = C + I + G + NX

where

consumption (C) represents private-consumption expenditures by households and nonprofit organizations,

investment (I) denotes business expenditures by businesses and home purchases by households,

government spending (G) denotes expenditures on goods and services by the government,

net exports (NX) represents a nation's exports minus its imports.

Consumption refers to private consumption expenditures or consumer spending. Consumers spend money to acquire goods and services, such as groceries and haircuts. Consumer spending is the biggest component of GDP, accounting for more than two-thirds of GDP. Consumer confidence, therefore, has a very significant influence on economic growth.

Investment refers to private domestic investment or capital expenditures. Businesses spend money to invest in their business activities. For example, a business may buy machinery. Business investment is a critical component of GDP since it increases the productive capacity of an economy and boosts employment levels.

Government spending represents government consumption expenditure and gross investment. Governments spend money on equipment, infrastructure, and payroll. Government spending may become more important relative to other components of a country's GDP when consumer spending and business investment both decline sharply. (This may occur in the wake of a recession, for example.)

The net exports formula subtracts total exports from total imports (**NX = Exports − Imports**). The goods and services that an economy makes that are exported to other countries, less the imports that are purchased by domestic consumers, represent a country's net exports. All expenditures by companies located in a given country, even if they are foreign companies, are included in this calculation.

The production approach is essentially the reverse of the expenditure approach. Instead of measuring the input costs that contribute to economic activity, the production approach estimates the total value of economic output and deducts the cost of intermediate goods that are consumed in the process (like those of materials and services).

GDP is calculated as the sum of gross value added (GVA) created by all resident institutional units in all sectors of the economy + net taxes on products (Tp):

GDP = *Σ(Vpr* -Vic) + (ATp -Subp)

or

Y = Σ GVA + Tp

GVA *- gross value added of industries;*

Vpr *- production volume of industries;*

Vic *- volume of intermediate consumption (material costs) of industries;*

ATp *- aggregate taxes on product;*

Subp *- subsidies on products;*

Tp *- net taxes on products.*

- **GVA** is the output of the country less the intermediate consumption, which is the difference between gross output and net output.
- **Intermediate consumption** consists of the value of the goods and services consumed as inputs by a process of production, excluding fixed assets whose consumption is recorded as consumption of fixed capital.
- **Aggregate taxes** (ATp) are taxes on product to the state or local budgets paid for the consumption of goods and services (VAT, excise duties, customs duties, etc.).
- **Subsidies on products** (Subp) are expenditures from state and local budgets to enterprises to cover their current losses, improve the financial situation.
- **Net taxes on products** (Tp) reflect the amount of taxes on products minus the amount of subsidies provided for products.

The income approach to calculating gross domestic product (GDP) states that all economic expenditures should equal the total income generated by the production of all economic goods and services.

The income approach represents a kind of middle ground between the two other approaches to calculating GDP. *The income approach calculates the income earned by all the factors of production in an economy, including*

- the wages paid to labor,
- the rent earned by land,
- the interest on capital ,
- corporate profits.

GDP is the sum of domestic primary incomes generated by economic entities of the country for the year:

GDP = *W + p + i + r + Ts + D*

GDP = ***GVA = W + GPr + Tpr/im***

W - wages of employees;

p - profit of enterprises and corporations;

i - interest on capital

r - rent

Ts - sales taxes

D - depreciation of fixed capital

GPr – total capital gains

Tpr/im - net taxes on production and imports

GDP=Total National Income + Sales Taxes + Depreciation

where:

Total National Income = Sum of all wages, rent, interest, and profits.

Sales Taxes = Consumer taxes imposed by the government on the sales of goods and services.

Depreciation = Cost allocated to a tangible asset over its useful life.

**Depreciation* is an accounting method of allocating the cost of a tangible or physical asset over its useful life or life expectancy. Depreciation represents how much of an asset's value has been used up.

The system of national accounts provides for the use of the following macroeconomic indicators that characterize the results of economic activity of the country, in particular Ukraine.

- Output
- Gross national income
- Gross national disposable income
- Net domestic product
- Output

The total market value of all goods and services produced by all enterprises in all sectors of the economy for a certain period of time, ie for one year (quarter, month).

Output = Gross value added + Intermediate consumption

Gross national income

Gross National Income (GNI) is the total amount of money earned by a nation's people and businesses. It is used to measure and track a nation's wealth from year to year. The number includes the nation's gross domestic product (GDP) plus the income it receives from overseas sources.

GNI = GDP + Nif

Nif – net income received from overseas sources

Nif = foreign income paid to resident employees + foreign income paid to residential property owners and investors + net taxes minus subsidies on production and imports.

Gross national income

GNI *calculates the total income earned by a nation's people and businesses, including investment income, regardless of where it was earned.* It also covers money received from abroad such as foreign investment and economic development aid.

Gross national disposable income

Gross national disposable income *is the sum of the gross disposable incomes of the institutional sectors.*

Gross national disposable income = gross national income (at market prices) **–** current transfers (current taxes on income, wealth etc., social contributions, social benefits and other current transfers) payable to non-resident units **+** current transfers receivable by resident units from the rest of the world.

Gross National Disposable Income measures the income available to the nation for final consumption and gross saving.

GNDI = SN + CN

SN - national savings;

CN - final consumption at the level of the national economy.

Net domestic product

Net domestic product (NDP) is an annual measure of the economic output of a nation that is calculated by subtracting depreciation from gross domestic product (GDP).

NDP = GDP – D

*D - depreciation (or consumption of fixed capital)**.***

Nominal and real GDP

The nominal GDP is the value of all the final goods and services that an economy produced during a given year. It is calculated by using the prices that are current in the year in which the output is produced. In economics, a nominal value is expressed in monetary terms.

The real GDP is the total value of all of the final goods and services that an economy produces during a given year, accounting for inflation. It is calculated using the prices of a

selected base year. To calculate Real GDP, you must determine how much GDP has been changed by inflation since the base year. In economics, real value is not influenced by changes in price, it is only impacted by changes in quantity. Real values measure the purchasing power net of any price changes over time. The real GDP determines the purchasing power net of price changes for a given year.

In other words, real GDP is nominal GDP adjusted for inflation. If prices change from one period to the next but actual output does not, real GDP would be remain the same. Real GDP reflects changes in real production. If there is no inflation or deflation, nominal GDP will be the same as real GDP.

Comparing Real and Nominal GDP

- Nominal value changes due to shifts in quantity and price.
- Real value is not influenced by changes in price, it is only impacted by changes in quantity.
- Real values measure the purchasing power net of any price changes over time.

In addition to GDP, the SNA makes it possible to calculate other equally possible indicators.

- Gross national product is the market value of final goods and services produced during the year, using factors of production owned by residents of the country.

GNP = GDP + H + B

B = Payments of non-residents of the country, transferred abroad, but received in the geographical territory of the country

H = Income from abroad of the country from its residents working abroad.

Net domestic product is the country's GDP adjusted for depreciation.

GDP-GDP- (Amount) Depreciation.

National income is all the income earned during the year by the owners of resources that are residents of the country, regardless of where these resources are used.

ND = GNP-depreciation-indirect taxes

5) Price indices

The dynamics of the general price level is determined in the macroeconomics with the help of special indicators - price indices. There are three main types of price indices:

1) Laspeyres Index

2) Paasche index

3) Fisher's index

Each of these indices measures the price variable in the economy but according to different approaches to their calculation.

1) The Laspeyres price index reflects the change in prices, if the structure of production and consumption in the economy has not changed. It is calculated:

Ir = Sum p1 * q0 / sum P0 * q0

p1 - the price of a certain type of product in the current year.

P0 - the price of a certain type of product in the previous year.

Laspeyres price index calculated for a constant set of goods and services (consumer basket) is called the consumer price index

2) The Paasche price index makes it possible to calculate the change in prices, but the weights for this are the volume of production and consumption of the estimated year. It is calculated:

Ir = sum P1 * q1 / sum P0 * q1

q1 - the volume of consumption or production of a particular product in the current year. This index is calculated for a set of goods and services included in the calculation of the country's GDP is called the GDP deflator.

Both of the above indices have their inaccuracies in the calculation. Therefore, there is a third price index - the Fisher Index.

3) Fisher's index allows you to correct the inaccuracies of both indices (Laspeyres, Paasche). It is calculated:

IrF = V Irl * Ipp

Price indices make it possible to calculate real GDP.

Real GDP = Nominal GDP / price index.

Questions for self-control

1. What is the system of national accounts (SNA)
2. How to calculate gross output
3. Explain the methods of calculating GDP, explain the differences in use
4. Describe the nominal and real GDP
5. Explain the basic methodological principles of the system of national accounts
6. Describe the price indices
7. Disclose the method of calculating the consumer price index

Topic 1.3. Cyclic oscillations. Unemployment and inflation

1) Economic (business) cycles and their phases. Potential GDP.
2) Unemployment methods of definition and measurement.
3) Types of unemployment, analysis of the factors that determine them.
4) Calculation of changes in GDP under the influence of deviations of unemployment from the natural level.
5) Economic and social consequences of unemployment. Oaken's laws.
6) Inflation as a macroeconomic phenomenon. Types and causes of inflation.

Literature: [1], [2], [3], [4], [5], [6], [7].

The labor market, also known as the job market, refers to the supply of and demand for labor, in which employees provide the supply and employers provide the demand. It is a major component of any economy and is intricately linked to markets for capital, goods, and services.

The labor market is the place where the supply and the demand for jobs meet with the workers or labor providing the services that employers demand.

The labor market is formed as a result of interaction:

- labor demand (LD), a manifestation of which is the number of jobs,
- supply of labor (LS), which shows the presence of people of different specialties and qualifications who want to work,
- and the establishment of an equilibrium market price - wages (W).
- **According to Ukrainian statistics,**
- the employed also include people who worked at least one hour during the week (in a personal farm - at least 30 hours), regardless of whether it was a permanent, temporary, seasonal, casual or other work.

Unemployed

People aged 15-70 are both registered and not registered with the state employment service, which simultaneously meet three conditions:

1) did not have a job (profitable occupation);
2) during the last four weeks they were looking for a job or trying to organize their own business;
3) within two weeks they were ready to start work, ie to start working for a salary as an employee or at their own company.

The economically inactive (passive) population are people aged 15-70 who cannot be classified as "employed" or "unemployed".

They are:

1) *pupils and students,*
2) *pensioners;*
3) *people employed in the household, raising children and caring for the sick;*
4) *people who have despaired of finding work;*
5) *other person who do not have the need for employment,*

6) *people who are looking for a job but are not ready to start it in the near future.*

Labor market indicators

- **Employment rate (%)**

$$emp = \frac{Emp}{Po} \text{ X } 100\%$$

emp - employment rate (in%),

Emp - the number of employees,

Po - the adult population aged 15-70 years.

Labor market indicators

Labor force participation rate (%)

The labor force participation rate is ***a measure of an economy's active workforce****.*

$$k = \frac{L}{Po} \text{ X } 100\%$$

k - level of participation in the labor force (in%),

L - labor force,

Po - the adult population aged 15-70 years.

Labor market indicators

Unemployment rate

This indicator is measured in numbers of unemployed people as a percentage of the labor force and it is seasonally adjusted.

$$u = \frac{U}{L} \text{ X } 100\%$$

u – unemployment rate (in%);

U – number of unemployed;

L – number of labor force.

Full and part time employment

Full employment is characterized by the state of equilibrium in the labor market: ***Ld = Ls***

- ✓ actual unemployment is equal to natural
- ✓ all available labor resources are used,-
- ✓ actual real GDP reaches potential level: **Y =Y p**

Part-time employment is characterized by the lack of equilibrium in the labor market (demand is less than supply):Ld <Ls

- ✓ actual unemployment is more than natural
- ✓ cyclical unemployment appears
- ✓ actual GDP is less than potential GDP:**Y <Y p**

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- ✓ cyclical unemployment appears
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Types of unemployment

- Natural,
- Frictional,
- Structural,
- Cyclical.

Natural unemployment

Natural unemployment, or the natural rate of unemployment, *is the minimum unemployment rate resulting from real or voluntary economic forces.*

Natural unemployment *reflects the number of people that are unemployed due to the structure of the labor force, such as those replaced by technology or those who lack certain skills to gain employment.*

Natural unemployment

Natural unemployment is an indicator of the state of full employment and does not provide for state intervention in the functioning of the labor market.

According to Milton Friedman:

Un = Ufr + Ustr

Un – Natural unemployment

Ufr – Frictional unemployment

Ustr – Structural unemployment

Frictional unemployment

Frictional unemployment is the result of voluntary employment transitions within an economy. Frictional unemployment naturally occurs, even in a growing, stable economy. Workers choosing to leave their jobs in search of new ones and workers entering the workforce for the first time constitute frictional unemployment. It does not include workers who remain in their current job until finding a new one.

Frictional unemployment

Frictional unemployment is always present in the economy. It is part of natural unemployment, which is the minimum unemployment rate in an economy due to movement of labor. Natural unemployment also reflects the number of workers who are involuntarily unemployed, whether due to a lack of skill or replacement by technology.

Structural unemployment

Structural unemployment *is a longer-lasting form of unemployment caused by fundamental shifts in an economy and exacerbated by factors such as technology, competition, and government policy.* Structural unemployment occurs because workers lack the necessary job skills or live too far from regions where jobs are available and cannot move closer. Jobs are available, but there is a serious mismatch between what companies need and what workers can offer.

The poverty trap

The poverty trap is a situation where poor people cannot get a job because they do not have the necessary qualifications, which requires a financial investment.

Poverty trap can be broken by planned investments in the economy and providing people the means to earn and be employed. A series of poverty alleviation programs can be enforced to raise individuals out of poverty by providing monetary aid for a period of time.

Structural unemployment

Structural unemployment is caused by forces other than the business cycle. This means that structural unemployment can last for decades and may need radical change to redress the situation. If structural unemployment is not addressed, it can increase the unemployment rate long after a recession is over and increase the natural rate of unemployment.

Cyclical unemployment

Economists describe cyclical unemployment as the result of businesses not having enough demand for labor to employ all those who are looking for work at that point within the business cycle. When demand for a product and service declines, there can be a corresponding reduction in supply production to compensate. As the supply levels are reduced, fewer employees are required to meet the lower standard of production volume. Those workers who are no longer needed will be released by the company, resulting in their unemployment.

Potential GDP and GDP (output) gap in cyclical unemployment

- **Potential GDP (Yp)** - the amount of real GDP that can be produced by the country's economy with full use of available productive resources.

- This situation is possible in conditions of full employment, when the actual unemployment rate U = the natural unemployment rate Un, and cyclical unemployment Uc is absent.
- Thus, the existence of unemployment only at the natural level allows the economy to produce potential GDP.

Potential GDP and GDP (output) gap in cyclical unemployment

Under conditions of cyclical unemployment, actual GDP differs from potential GDP. The GDP (output) gap in cyclical unemployment is the amount of potential GDP that was not generated as a result of cyclical unemployment. Its value reflects the gap between actual and potential GDP in the context of cyclical unemployment.

Potential GDP $\frac{Y}{100-\Delta y}$ **and GDP (output) gap in cyclical unemployment**

The GDP gap is calculated by the difference between the volume of potential and actual GDP:

ΔY = Yp – Y

ΔY - GDP (output) gap in cyclical unemployment;

Y - actual real GDP;

Yp - potential GDP.

Okun's Law

When it comes to studying the economy, growth and jobs are two primary factors economists must consider. There is a clear relationship between the two, and many economists have framed the discussion by trying to study the relationship between economic growth and unemployment levels. Economist Arthur Okun first started tackling the discussion in the 1960s, and his research on the subject has since become known as Okun's law.

Okun's Law

For every 1% fall in unemployment in an economy, the Gross Domestic Product (GDP) will rise by 2%.

his means that unemployment is inversely proportional to the GDP of a country.

Okun's Law

β *is the Okun coefficient, which shows the sensitivity of the output gap (actual GDP <potential GDP) to the excess of the actual unemployment rate above its natural level by 1%.*

Yp = 100%

Yp - potential GDP;

Y - actual real GDP;

Δy - the percentage of lag of actual real GDP from potential GDP, or the gap in GDP in%;

(100-Δy) is the share (percentage) of actual real GDP in potential GDP.

Okun's Law

This law is known for its simplicity and accuracy. However, a lot of doubts have been raised on this law as it does not hold fit in every state for every economy. To make it clear, in an economy that is industrialized and has strong labor markets, the percentage change in GDP will have less effect on the unemployment rate.

Inflation an increase in the overall level of prices in the economy.

Inflation is the rate at which the value of a currency is falling and, consequently, the general level of prices for goods and services is rising.

Inflation refers to the rise in the prices of most goods and services of daily or common use, such as food, clothing, housing etc.

Inflation is the decline of purchasing power of a given currency over time. A quantitative estimate of the rate at which the decline in purchasing power occurs can be reflected in the increase of an average price level of a basket of selected goods and services in an economy over some period of time.

The rise in the general level of prices means that a unit of currency effectively buys less than it did in prior periods.

Inflation rate

Inflation rate the percentage change in the price index from the preceding period.

$$P_{t=} \frac{Y_{tn}}{Y_t} \times 100\%$$

Pt - inflation index (prices) of the current year;
Ytn- nominal GDP of the current year;
Yt - real GDP of the current year.

Inflation rate

Inflation growth rate (based on the inflation index of the base year, taken as 100%) - shows the growth rate of prices in the economy relative to the base year:

$$\pi t = Pt - 100$$

Inflation growth rate (based on price indices of the current and previous period):

$$\pi t = \frac{P_t - P_{t-1}}{P_{t-1}} \times 100$$

πt - inflation rate of the current year,
Pt - current year price index;
Pt-1 - previous year's price index.

Types of inflation

There are different types of inflations like

- *Creeping Inflation,*
- *Galloping Inflation,*
- *Hyperinflation,*
- *Stagflation,*
- *Deflation.*

Types of inflation

Creeping Inflation: This is also known as mild inflation or moderate inflation. This type of inflation occurs when the price level persistently rises over a period of time at a mild rate. *When the rate of inflation is less than 10 per cent annually it is considered to be a moderate inflation.*

Types of inflation

Galloping Inflation: If mild inflation is not checked and if it is uncontrollable, it may assume the character of galloping inflation. *Inflation in the double or triple digit range of 20, 100 or 200 percent a year is called galloping inflation .*

Types of inflation

Hyperinflation: It is a stage of very high rate of inflation (a million or even a trillion percent per year).

Hyperinflation is measured in terms of exponential daily increases prices that can approach 5% to 10% a day or exceeds 50% for a period of a month.

Hyperinflation occurs when the prices go out of control and the monetary authorities are unable to impose any check on it. Germany had witnessed hyperinflation in 1920's, Ukraine in 1990's.

Types of inflation

Stagflation: It is an economic situation in which inflation and economic stagnation or recession occur simultaneously and remain unchecked for a period of time. Stagflation was witnessed by developed countries in 1970s, when world oil prices rose dramatically.

Types of inflation

Deflation: Deflation is the reverse of inflation. It refers to a sustained decline in the price level of goods and services. It occurs when the annual inflation rate falls below zero percent (a negative inflation rate), resulting in an increase in the real value of money. Japan suffered from deflation for almost a decade in 1990s.

Types of inflation

The gradually rising prices associated with inflation can be caused in two main ways:

- **cost-push inflation**
- **demand-pull inflation.**

Both are associated with the principles of supply and demand.

cost-push inflation

Economists describe **cost-push inflation** as a condition when the supply of goods or services is limited in some way but demand remains the same, pushing up prices. The increased price of labor or raw materials, for example, leads to decreased supply of these goods. While demand remains constant, the prices of commodities increase causing a rise in the overall price level.

cost-push inflation

The overall price level increases due to higher costs of production which reflects in terms of increased prices of goods and commodities which primarily use these inputs. This is essentially inflation triggered by less supply.

cost-push inflation

The main internal reason:

- rising prices for intermediate goods,
- reducing resource productivity,
- outpacing wage growth compared to labor productivity,
- increase in taxes,
- price increases by monopoly enterprises,
- state regulation of prices, which may restrain their reduction in the interests of producers of certain products.

cost-push inflation

The main external reason:

- if the prices of imported goods rise, then at the same time with the goods the country imports cost inflation.

Demand-Pull

Demand-pull inflation is the upward pressure on prices that follows a shortage in supply, a condition that economists describe as "too many dollars chasing too few goods."

Demand-Pull

There are five causes for demand-pull inflation:

- **A growing economy**: When consumers feel confident, they spend more and take on more debt. This leads to a steady increase in demand, which means higher prices.
- **Increasing export demand**: A sudden rise in exports forces an undervaluation of the currencies involved.
- **Government spending**: When the government spends more freely, prices go up.
- **Inflation expectations**: Companies may increase their prices in expectation of inflation in the near future.
- **More money in the system**: An expansion of the money supply with too few goods to buy makes prices increase.

Inflation expectations can cause inflation:

If economic agents expect prices to rise or forecast unfavorable economic conditions in the future, they can make decisions that will cause inflation. Example,

- consumers buy goods in stock,
- employees may demand an increase in wages in advance,
- companies set higher prices in advance in supply agreements,
- banks raise interest rates on loans in advance, etc.

The main socio-economic consequences of high inflation

1. **Decrease in real incomes:**

- if the growth rate of nominal incomes is lower than inflation,
- if people receive a fixed income (employees of budgetary institutions, retirees and other persons living on social assistance), which leads to a decrease in motivation to work.

The main socio-economic consequences of high inflation

2. lowered financial asset values:

- under the influence of inflation decreases the real value of financial assets with a fixed nominal value (savings accounts, bonds, etc.),
- despite the fact that almost all financial assets generate income in the form of interest, their real value decreases if the inflation rate exceeds the nominal interest rate.

The main socio-economic consequences of high inflation

3. Violation of relations between lenders and borrowers:

- borrowers (debtors) benefit from inflation, and lenders (creditors) lose, because in conditions of inflation, the borrower receives money at one purchasing power, and returns at a lower.

The main socio-economic consequences of high inflation

4. Decreased motivation to invest:

- investment funds are invested for a long period, during which inflation may increase significantly,
- if in a few years inflation rises more than the projected level, the return on investment actually decreases.

The main socio-economic consequences of high inflation

5. Income redistribution between the private sector and the state:

- Inflation reduces the purchasing power of money, so households incur certain losses, which for the state is an inflation tax.

Anti-inflationary measures of the state

Adaptive approach

control over wages and prices:

- agreement with trade unions on a limited salary increase,
- adoption of laws regulating the growth of wages and prices, etc.,
- income indexation
- the transfer of household income in the direction of their increase (salaries, social benefits, etc.) in accordance with rising prices.

Radical approach

- tools of fiscal and monetary policy

I. **Adaptive approach**

- when the state acts quite passively, goes by adapting to the situation.

II. Radical approach

- when the state acts actively, using radical measures.

Inflation and unemployment

Low levels of unemployment correspond with higher inflation, while high unemployment corresponds with lower inflation and even deflation.

From a logical standpoint, this relationship makes sense. When unemployment is low, more consumers have income to purchase goods. Demand for goods rises, and when demand rises, prices follow. During periods of high unemployment, customers purchase fewer goods, which puts downward pressure on prices and reduces inflation.

Phillips curve

Thus, according to economic theory,
as unemployment rates fall, the rate
of inflation rises. This has been formalized according to what is known as ***"the Phillips Curve."***

The Phillips curve is an economic concept developed by A. W. Phillips stating that inflation and unemployment have a stable and relationship.

Phillips curve

The concept behind the Phillips curve states the change in unemployment within an economy has a predictable effect on price inflation. The inverse relationship between unemployment and inflation is depicted as a downward sloping, concave curve, with inflation on the Y-axis and unemployment on the X-axis.

Increasing inflation decreases unemployment, and vice versa. Alternatively, a focus on decreasing unemployment also increases inflation, and vice versa.

Topic 1.4. Aggregate demand and aggregate supply

1) Equilibrium in the commodity market and the IS curve
2) Non-price factors of aggregate demand
3) Non-price factors of aggregate supply

Literature: [1], [2], [3], [4], [5], [6], [7].

1. Equilibrium in the commodity market and the IS curve

Equilibrium in the market of goods and paid services in a closed model of the economy, which does not take into account the activities of the state is achieved when the supply of savings is equal to investment demand.

S (Y) = I (r)

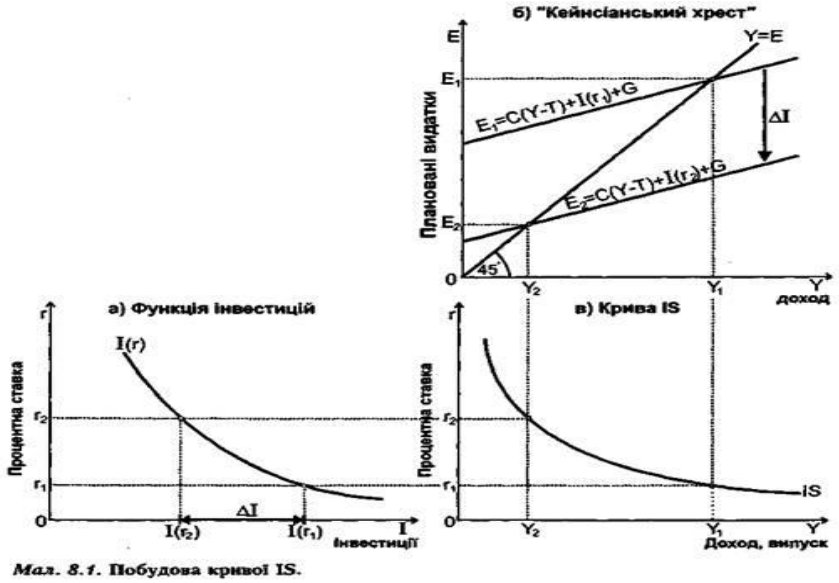
The IS curve reflects the relationship between the interest rate and the level of income that arises when the equilibrium in the commodity market.

We use the investment demand function and the Keynesian cross chart to determine how equilibrium income changes when interest rates change.

Thus, the IS curve is a graphical interpretation of the relationship between interest rates and income levels, which appears as a result of the interaction of the investment function and the "Keynesian cross". At a given interest rate, each point of the IS curve corresponds to a certain level of income.

The IS curve indicates the following relationship: a higher level of income means an increase in the supply of borrowed funds, which, in turn, leads to a lower equilibrium interest rate. Due to this, the curve has a negative slope.

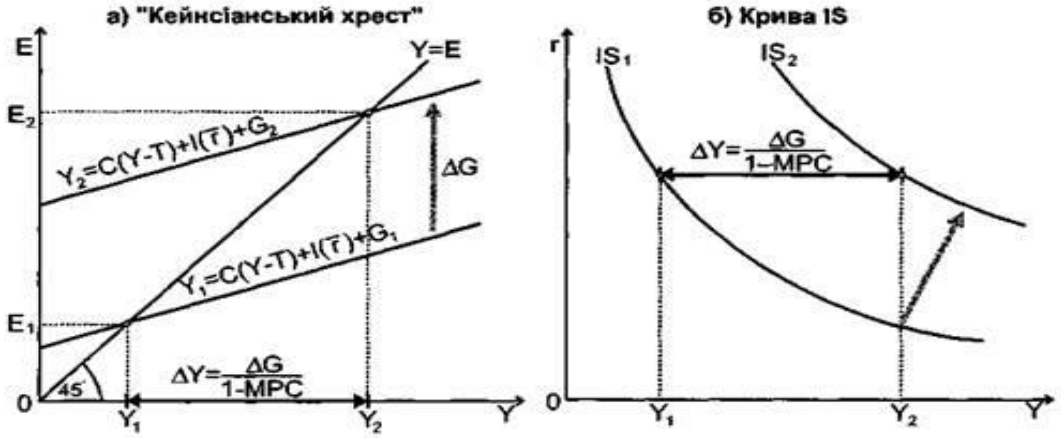
Above the IS line are the combinations of interest rate (i) and national income (U) that correspond to the excess of supply over market demand (ie there is a surplus of goods), below the line - those that correspond to the deficit of goods.



Мал. 8.1. **Побудова кривої IS.**

The IS curve is based on certain assumptions and, in particular, assumes that the expected revenue used, government spending and taxes are fixed. But a change in government spending or the level of taxes affects the volume of demand for goods and services in the economy, resulting in a change in income levels. An increase in public procurement or a decrease in taxes increase

aggregate demand in the economy and shift the planned expenditure curve upward. As a result, at any given interest rate, a higher equilibrium level of income is established. In the graphical interpretation, the reduction of taxes (T) and the increase of government expenditures (G) move the IS curve to the right up. Similarly, a decrease in G and an increase in T shift the IS curve from left to down. Therefore, T and G are exogenous variables that determine the position of the IS



Мал. 8.2. Зсув кривої IS.

curve .

Conditions of equilibrium of the commodity market in the *open model* of economy taking into account *activity of the state*:

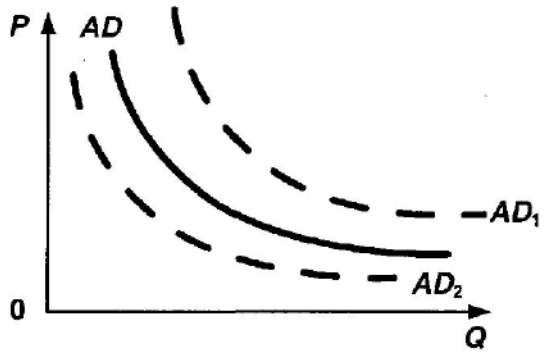
$$I = S - \Delta ZB - G,$$

Where I- investments; S -savings; ΔZ*B* - foreign trade balance;
C –state expences.

Questions for self-control

1.Discover the essence of the model model "IS"
2.Describe the features of the graphical construction of the model "IS"
3. Explain the use of the model "IS"

2) Non-price factors that determine aggregate demand:
1. Changes in consumer spending:
a) the welfare of the population;
b) consumer expectations;
c) consumer debt;
d) taxes.
2. Changes in investment costs:
a) interest rates, the change of which is caused, for example,
changes in the money supply in the country, not changes in prices;
b) expected return on investment;
c) taxes on enterprises;
d) production technology;
e) excess capacity.
3. Changes in net export costs:
a) national income in foreign countries;
b) exchange rates.
4. Changes in government spending.
Under the action of non-price factors, the aggregate demand curve (AD) (Figure 3.8) moves:
a) right up, when demand increases (AD -> AD1);
b) left down; when demand decreases (AD - »AD2).

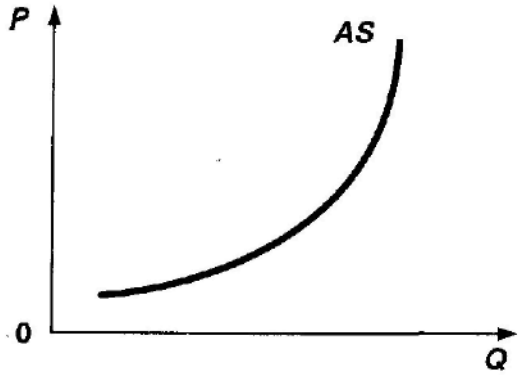


Графік . Вплив нецінових факторів на кривуAD

To understand the dynamics and structure of national production in the country should first understand the causes and consequences of changes in the structure of aggregate demand. Stimulating aggregate demand is a major cause of macroeconomic crises.

3)TOTAL OFFER (AS) is the volume of goods and services that firms are willing to produce and sell during the year at each price level (and other fixed conditions).

The aggregate supply curve (AS) shows the volume of real national production for each possible price level under constant other conditions (Figure



3.9).

Schedule. **Short-run** aggregate supply curve AS

where P is the price level;

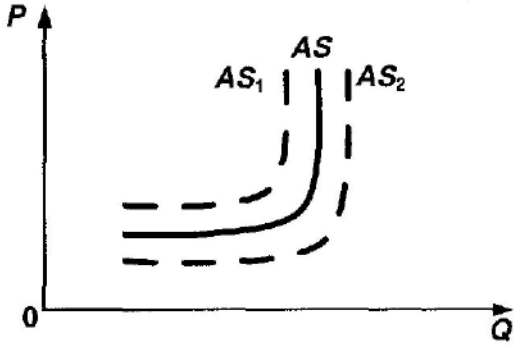
Q - real output; AS - aggregate supply curve.

The aggregate supply curve (AS) reflects the dynamics of production costs per unit of output due to changes in the price level.

Under the action of non-price factors, the aggregate supply curve (Figure 3.11) moves:

a) left up, when the aggregate supply is reduced as a result of increasing production costs (AS -> AS1);

b) right down when aggregate supply increases (AS2)



Graph 2. Impact on aggregate supply (AS) of non-price factors

Non-price factors include such factors that increase or decrease the cost per unit of output, regardless of production. Non-price factors are divided into:

1) Real

2) Nominal

The real non-price factors are:

1) The amount of resources used in production, and the effect of their use

2) Integration of the country into the world economy and participation in the international division of labor

3) Additional capital expenditures associated with the expansion of entrepreneurial activity

Nominal non-price factors are valid only in the short term:

1) The level of prices for resources

2) The number and amount of taxes introduced in the country

3) The structure of markets for services and goods, the level of their monopolization

4) Expected future price level by manufacturers and suppliers

Questions for self-control

1) Explain the concept of aggregate demand and the factors that affect it.

2) Explain the concept of aggregate supply and the factors that affect it.

3) Explain the concept of equilibrium of aggregate supply and demand in the short and long term

1. Ratchet effect

In the real economy there is another extremely important factor that complicates the situation on the classical and intermediate segments. The fact is that many prices for goods and resources are inflexible to decline. Some economists see this property as a ratchet effect (ratchet is a mechanism that allows the wheel to turn only forward). The effect of such a mechanism is shown in Figure 8.6.

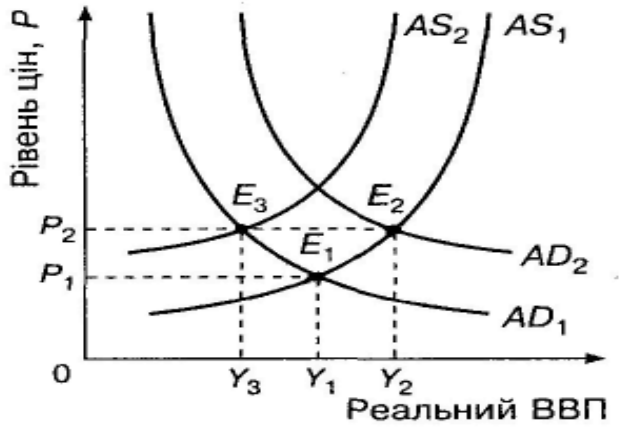


Рис. 8.6

Ефект храповика

When aggregate demand expands from AD1 to AD2d, the equilibrium shifts from point E1 to E2. However, prices do not fall as easily as they rise. Therefore, if aggregate demand decreases from AD2 to AD1, the economy will not return to its original equilibrium state at point E1. A new, higher level of P2 prices is likely to remain, and a reduction in aggregate demand will move the economy to equilibrium at the EU point.).

In the long run, the equilibrium of aggregate demand and supply is reached at the point of intersection of the vertical curve AS and the downward curve AD (Fig. 8.7).

2. Disturbances (shocks) of the offer. This phenomenon occurs under conditions of a sudden change in production costs, which sharply shifts the aggregate supply curve.

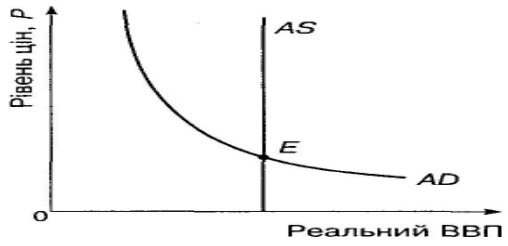


Рис. 8.7

Рівновага сукупного попиту й сукупної пропозиції в довгостроковому періоді

Distortion of supply, which is understood as a sharp and unexpected shift up the short-run AC curve, has the effect of rising prices and is accompanied by a decline in national production (Real GDP). In general, the distortion of supply leads to a deterioration in the conditions for achieving the main objectives of macroeconomic policy.

Questions for self-control

1) Describe the consequences of stimulating aggregate demand
2) Describe the consequences of the rapid rise in prices for basic resources

Topic 1.5. Keynesian model of macroeconomic equilibrium

1) Keynesian consumption function. Consumption research tools.
2) Investment function, public procurement and taxes.
3) Equilibrium in commodity and financial markets.
4) Keynesian Cross Model. Autonomous cost multiplier.
5) Recession and inflation gaps.
6) Equilibrium in commodity and financial markets.

Literature: [1], [2], [3], [4], [5], [6], [7].

Expenditure multiplier and its effect.

Increase in any component of autonomous spending, namely autonomous spending, consumption, government spending, investment spending, and in the case of an open economy - and net exports

$$\Delta A = \Delta(a+I+G+NX),$$

leads to a much greater increase in total income In due to the multiplier effect.

The autonomous expenditure multiplier is defined as the ratio of the change in the equilibrium volume of GDP to the change in a certain component of autonomous expenditures:

$$\mu = \frac{\Delta Y}{\Delta A},$$

where μ — autonomous cost multiplier; ΔY — change in equilibrium GDP;

ΔA - зміна автономних витрат, незалежних від динаміки Y.

The cost multiplier shows how many times the total increase (decrease) in total income ΔY ΔA. exceeds the initial increase (reduction) of autonomous costs

It is important that a single change in any component of autonomous expenditures generates a multiple change in GDP. If, for example, autonomous consumption increases by a certain amount, it leads to an increase in total costs and income Y by the same amount, which, in turn, causes a re-increase in consumption (because income has increased), but already by

magnitude $MPC \cdot \Delta C$. Then the total costs and income increase again in size $MPC \cdot \Delta C$.

well then again, according to the scheme of the cycle "income - expenses".

Therefore, the cost multiplier can be shown through the marginal propensity to consume

as: $\mu = \frac{1}{1 - MPC}$.

Since the marginal propensity to save MPS = 1-MPC, we obtain:

$$\mu = \frac{1}{MPS}.$$

If the planned costs will take into account the impact of income taxes (ie T = tY), the cost multiplier will be determined by the following formula:

$$\mu = \frac{1}{1 - MPC \cdot (1 - t)},$$

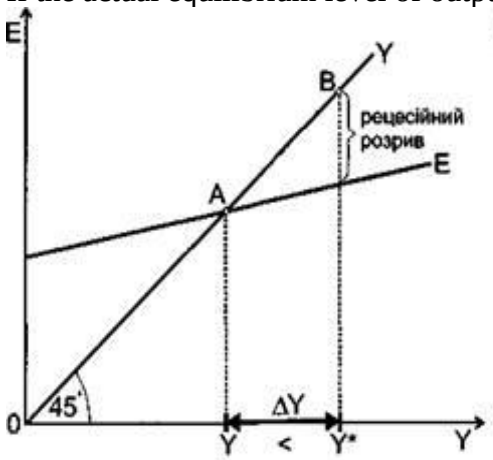
where t — marginal tax rate.

2. Inflation and recession gaps.

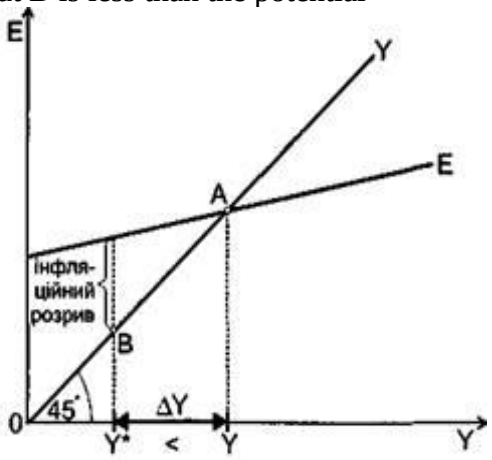
Fluctuations in the equilibrium level of output around the potential lead to so-called recessionary and inflationary gaps.

Recession gap is the amount by which aggregate demand (aggregate expenditures) must increase in order to raise the equilibrium level of GDP to the non-inflationary level of full employment.

If the actual equilibrium level of output B is less than the potential



Мал. 5.8. **Рецесійний розрив.**



Мал. 5.9. **Інфляційний розрив.**

Y^* (pic. 5.8), this means that aggregate demand is inefficient, ie aggregate costs are insufficient to ensure full employment of resources, although the equilibrium AD = AS is reached. Insufficient aggregate demand has a depressive effect on the economy.

In order to overcome the recession gap and ensure full employment of resources, it is necessary to stimulate aggregate demand and move the equilibrium from point A to point B. The increase in aggregate equilibrium income ΔY equals:

$$\Delta Y = \text{величина рецесійного розриву} \times \text{величина мультиплікатора автономних витрат}$$

Inflation gap is the amount by which aggregate demand (aggregate expenditures) must decline in order to reduce the equilibrium level of GDP to the non-inflationary level of full employment.

If the actual equilibrium level of output Y exceeds the potential

Y^*, this indicates that the total costs are too high (Fig. 5.9). Excess aggregate demand leads to an inflationary boom in the economy: the price level rises because firms cannot expand production adequately to growing aggregate demand because all resources are already occupied.

Bridging the inflation gap is possible by curbing aggregate demand and "moving" the equilibrium from point A to point B (full employment of resources). At the same time reduction of equilibrium total income ΔY equals:

$$\Delta Y = -\text{величина інфляційного розриву} \times \text{величина мультиплікатора автономних витрат}$$

When using the Keynesian cross model, it is worth remembering:

if government spending and tax revenues increase by the same amount, then the equilibrium level of production increases by the same amount. In this case, we are talking about a balanced budget multiplier, which is always equal to one:

$$\mu_{G=T} = 1;$$

the multiplier effect of tax cuts is weaker than the increase in government spending, which is due to algebraic

$$\mu_G = \frac{1}{1-MPC} > \frac{MPC}{1-MPC} = \mu_T.$$

This is a consequence of the stronger impact of government spending on income and consumption compared to changes in taxes. This difference is decisive in the choice of fiscal policy instruments (see topic 6).

Questions for self-control

1. Explain the differences in the main provisions of classical and Keynesian theory of macroeconomic equilibrium.

2. Graph the model of the "Keynesian cross"

3. Explain the effect of the cost multiplier

4. Explain how to determine the growth of total equilibrium income to overcome the recession gap

5. Explain the provisions of the investment accelerator model

1) Equilibrium in the market of goods and services: supply and demand for products produced by the economy.

As you know, in a closed economy, the demand for the product is presented in the form of consumption, investment and public procurement. Consumption (C) depends on the income used (Y-T), investment (I) is determined by the real interest rate (d), and public procurement and taxes are exogenous variables of fiscal policy.

Let us now supplement the analysis of demand for goods and services by considering the proposal, accepting the assumption that the volume of output is determined by the available factors of production and production function:

$$Y = F(\bar{K}, \bar{L}) = \bar{Y}.$$

Combining the equations that describe the demand and supply of goods and services, we obtain:

Since $Y-C(Y-T)+I(r)+G.$ the level of government spending (G) and the amount of tax revenue (T) depend on the economic policy of the government and are exogenous variables, and the volume of production (U) is stable under conditions of constant production function and constant factors of production, we write: $\bar{Y} = C(\bar{Y}-\bar{T})+I(r)+\bar{G},$

that is, the supply of the product is equal to the demand for the product, and it, in turn, is determined by the sum of C, I and G.

It is now clear why the real interest rate "g" plays a decisive role in balancing the commodity market: it must change in such a way as to ensure equality between demand for goods and their supply. The higher the interest rate r, the lower the investment I will be and, accordingly, the lower the demand for C + I + G goods and services. If the interest rate is too high, investment will be very low, and then the supply of goods will exceed the demand for them - the commodity market will go into a state of imbalance.

5) Equilibrium in financial markets

The interest rate is both the price of borrowing and the income from savings. We will be able to better understand its role when we look at financial markets.

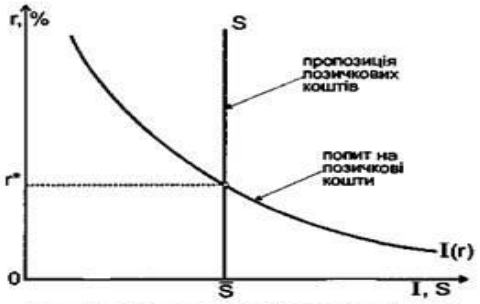
Rewrite the basic macroeconomic identity in the form of:

$$Y-C-G=I.$$

The left side of this identity (Y-C-G) is the part of output that remained after consumer and government demand met. It is called national savings and is affected S_N therefore $S_N=Y-C-G,$ or $S_N=I.$

In this form, the basic macroeconomic identity states that national savings are equal to domestic investments, ie the flows of funds that enter and flow from the financial markets must balance each other.

We can divide national savings into two parts to distinguish private savings (Sp) from government savings (S_G):



Мал. 5.3. **Рівновага на фінансових ринках.**

We will remind, $S_N=S_P+S_G=I.$ that **private** (Sp) savings are determined by the difference between the income used and consumer $S_P=Y-T-C,$ costs:

and government savings (Sg) is the difference between net tax revenues and government procurement of goods and services:

So, in the end we get: $S_G=T-G.$

$$(Y-T-C)+(T-G)=I.$$

What is the role of interest rates in balancing financial markets?

Let's rewrite the basic macroeconomic identity for a closed economy in the form of: $Y-C(Y-T)-G=I(r).$

Let us fix G and T within the framework of this economic policy, and let us fix Y with the available factors of production and production function:

$$\bar{Y}-C(\bar{Y}-\bar{T})-\bar{G}=I(r), \text{ або: } S=I(r).$$

The left part of the above identity states that national savings depend on income (U) and economic policy variables G and T, ie $S_N=f(Y,G,T).$ If Y, G and T remain unchanged, national savings will also remain unchanged.

The right part of the identity shows that the investment is a function of the interest rate: $I=f(r).$

In pic. 5.3 gives a graphical representation of savings and investments as functions of interest rates. The savings chart (S) is a vertical line, because in this model the savings do not depend on the interest rate. The investment schedule (I) is sloping downwards, as there is an inverse relationship between interest rates and investment demand.

The interest rate is changed in such a way as to guarantee equality between demand (I) and supply (S) of borrowed funds. $(r^*$ — equilibrium interest rate). If it is very low, the investment demand will exceed the supply of savings (I> S), resulting in a gradual increase in its level to equilibrium. On the contrary, if "r" very high, the supply of borrowed funds will exceed the demand for them (3> G), and the interest rate will be reduced.

Only at the equilibrium interest rate will the savings be equal to the investment and the supply of borrowed funds will be equal to the demand for them.

Questions for self-control

1. Describe the features of the formation of the investment function,
2. Give an analytical model of equilibrium in commodity markets.
3. Give an analytical model of equilibrium in financial markets.

Topic 2.1. Monetary policy

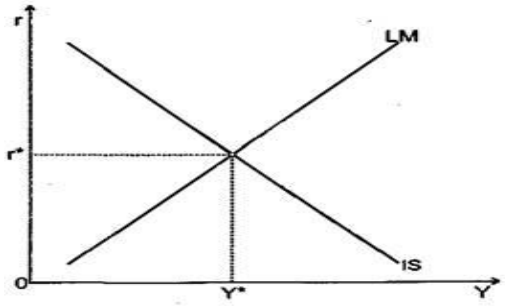
1) Equilibrium in the "IS-LM" model
2) Monetary policy instruments
3) Rules for the application of various levers of monetary regulation
4) The impact of monetary policy on the level of national production. The policy of "cheap" and "expensive" money.

Literature: [1], [2], [3], [4], [5], [6], [7].

Equilibrium in the IS-LM model

The IS curve determines all possible types of income (Y) and interest rate (d) ratios that correspond to the equilibrium in the commodity market, but does not show at which combination B and r the commodity market will be stabilized.

Similarly, the LM curve for any given M and P does not show which combination of Y will actually ensure the equilibrium of the money market. But if we combine the curves IS and LM within one model (Fig. 8.8), we see that for given M and P there is only one combination of Y and g, which simultaneously ensures the establishment of equilibrium in the markets of goods and money, namely - Y * and g *. Thus, the equilibrium in the economy is determined by the IS and LM curves taken together**.**



Мал. 8.8. **Рівновага у моделі IS-LM.**

The IS-LM model is studied in the short run, when the economy is not in a state of full employment of resources, the price level (P) is fixed, and the interest rate (d) and income (Y) change. Since P = const, the nominal and real values of all model variables coincide. The point of intersection of the curves IS and LM - the equilibrium point A - determines the income Y = Y * and the interest rate r = r *, which ensure the balance of both commodity and money markets at given values of exogenous model variables.

The IS-LM model is used to analyze the impact of short-term changes in macroeconomic policy on the equilibrium level of income in the economy. With the help of the IS-LM model, it is possible to show how external variable models (government expenditures, money supply, taxes, etc.) determine its internal variables (primarily interest rate and income). The model also provides an opportunity to demonstrate how shocks caused by changes in commodity and money markets affect the economic system.

Monetary policy instruments differ in the following respects:

1) By objects of influence - a) instruments to stimulate credit issuance (credit expansion)

b) - instruments to curb credit issuance (credit restriction) The money supply is regulated by the central bank through instruments of direct and indirect influence.

Direct instruments of monetary policy include: credit limits for individual banks; direct regulation of interest rates; limits on the amount or value of loans granted to individual industries. Indirect instruments of money supply regulation include: operations on the open securities market;

change in the discount interest rate; change in requirements for the level of required reserves of depository institutions. Direct instruments of monetary policy are traditionally used in developing countries, instruments of indirect regulation are used primarily in industrialized countries.

There is a significant difference between direct and indirect regulatory instruments. Direct impact instruments are effective only in the short term as a means of preventing excessive credit issuance. Their use is associated with expenditures in the allocation of resources: reducing competition between banks, distorting the structure of their loan portfolios, reducing the intermediary role of banks in the economic system and so on. The effectiveness of the use of indirect regulatory instruments is associated with the development of the money market, their use allows the bank I am free to distribute loans according to the market situation. There is also a direct relationship between public debt management policy (including the nature of financing the state budget deficit) and the use of indirect monetary regulation tools. The Central Bank's operations on the open securities market are possible only if the public debt is financed by issuing government securities.

In pursuing monetary policy, the central bank cannot exercise full direct control over the money supply because it contains deposits that are not part of the central bank's balance sheet. Indirect monetary policy instruments adjust the size of the money supply by affecting either the monetary base or the monetary multiplier.

Open market operations are the purchase by the central bank of government securities in the financial markets and their sale to commercial banks, firms and individuals, aimed at changing the size or structure of reserves of commercial banks and, thus, to regulate the money supply. The central bank's open market operations directly affect the size of the monetary base, as they change the amount of bank reserves. The purchase of securities increases the money supply by increasing the reserves of commercial banks. Additionally created bank reserves are the basis for further credit multiplication of money, and therefore determine the expansion of the money supply. The sale of securities removes liquidity from the economy. If the purchase or sale of securities is carried out with the non-banking sector, then changes in the money supply occur directly by changing the amount of deposit money.

Rules for the application of various levers of monetary regulation

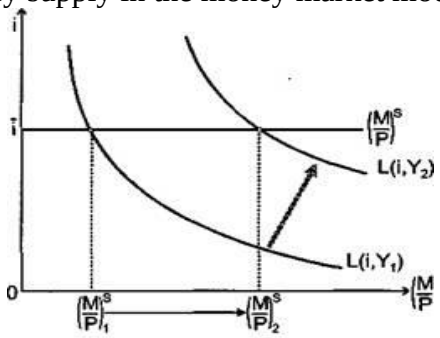
For monetary policy to be effective, it must be closely aligned with both fiscal and foreign economic policies, including monetary policy. It is, in fact, the need to apply a holistic internally balanced system of monetary and monetary policy measures. Monetary stabilization measures cannot be effective if the optimal allowable (no more than 3-4% of GDP) deficit of the state budget and the negative balance of payments are exceeded.

The implementation of regulatory measures should take into account the ambiguous response of money circulation to various monetary policy instruments and the conservatism of the monetary sphere, which is determined by the presence of forces in its structure, which, acting in opposite directions, slow down the response. Yes, a tough issuance policy is offset by a change in the velocity of money. Therefore, the policy of balancing monetary aggregates must take into account this fact. It should be focused on the velocity of the currency. A similar situation may arise with the use of other monetary policy instruments. Conservatism of the monetary sphere makes it unacceptable to apply sharp adjustments to the dynamics of monetary aggregates. The effect of "shock" monetary policy measures can only be temporary. The success they achieve usually does not guarantee long-term positive results.

When planning the main parameters of monetary policy and determining its effectiveness, it is necessary to take into account the effect of delay: the presence of a gap in the time dimension between the application of regulatory measures and the corresponding response to these actions in the monetary sphere and the economic system as a whole. There are studies that show a change in the dynamics of money supply affects the dynamics of prices and the real volume of GNP with an interval of 3 to 12 months. This suggests that stabilization measures must be based on accurate economic forecasts, which must be not only timely but also impartial.

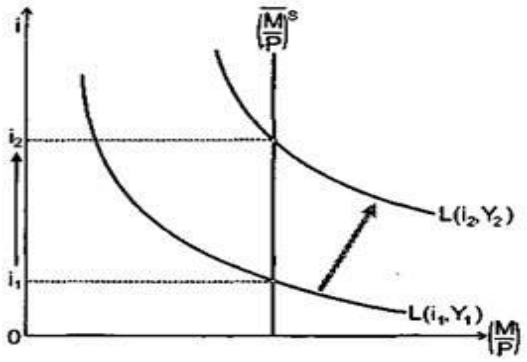
The impact of monetary policy on the level of national production. The policy of "cheap" and "expensive" money.

Consider the money market model in the short term. According to this model, the slope of the money supply curve depends on monetary policy options. Flexible monetary policy is a central bank policy in which the intermediate goal is to fix or maintain interest rates at a certain level. The money supply in the money market model in this case is characterized by a horizontal curve



Мал. 7.8. Гнучка грошово-кредитна політика.

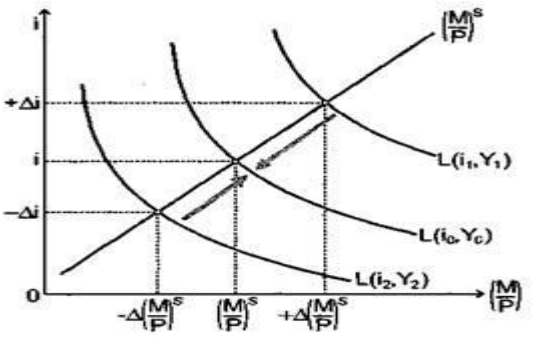
Under a flexible monetary policy, an increase in the demand for money is accompanied by an increase in the money supply. Conversely, a reduction in the demand for money leads to a reduction in the money supply, as the central bank regulates the money supply in such a way as to maintain a nominal interest rate at a fixedlevel.



Мал. 7.9. Жорстка грошово-кредитна політика.

Tight monetary policy is aimed at fixing or maintaining a stable amount of money supply in the economy. In the money market model, it corresponds to the vertical money supply curve (Fig. 7.9). Under a tight monetary policy, an increase in demand for money leads to an increase in interest rates, and a decrease in demand for money causes a fall in interest rates because the central bank supports * money supply at a certain level.

The intermediate type of monetary policy corresponds to the sloping curve of money supply: when the demand for money changes, the money supply changes, but to an extent insufficient to maintain interest rates at a fixed level. That is, the growth of demand for money is accompanied by an increase in both money supply and interest rates (pic. 7.10).



Мал. 7.10. Проміжний тип грошово-кредитної політики.

The central bank can change (vary) the slope of the supply curve through the use of monetary policy instruments.

The choice of monetary policy options depends on the reasons for changes in demand for money.

If the growth of demand for money is primarily due to inflationary growth of prices, then the best will be a tight monetary policy, which restrains the growth of money supply.

If the change in the demand for money is caused by an unstable velocity of money, then to stabilize the money market, the money supply must change inversely to changes in the velocity of money. In this case, the best type of policy is a flexible monetary policy.

A policy aimed at limiting the money supply to reduce aggregate spending and curb inflationary pressures in the economy is called a restraint policy, or expensive money policy. Incentive, or cheap money policy, is a policy aimed at increasing the money supply to stimulate aggregate spending and employment.

Questions for self-control

1. Provide an expanded classification of monetary policy instruments
2. Explain the difference between direct and indirect monetary policy instruments
3. Describe the essence of open market operations
4. Explain the need to adjust the amount of required bank reserves
5. Discover the essence of the model model "IS-LM"
6. Describe the features of the graphical construction of the model "IS-LM"
7. Explain the use of the model "IS-LM"
8. Explain the effect of delay
9. Explain the conservatism of the monetary sphere
10. Uncover the tools of tight monetary policy
11. Explain the tools of flexible monetary policy
12. Explain the instruments of intermediate monetary policy

Topic 2.2. Fiscal policy

1. Budget and budget deficit, sources of its coverage
2. Stages of public debt management
3. Debt crisis and ways to overcome it

Literature: [1], [2], [3], [4], [5], [6], [7].

1. Budget and budget deficit, sources of its coverage

The budget is a financial plan of public authorities, which contains summary information on revenues, expenditures and balances for a certain period.

For the purposes of fiscal policy, the following types of budget are distinguished:

1) Full employment budget (Structural budget) is a budget that contains information on actual expenditures in the economy, and revenues are calculated based on the assumption that the amount of tax revenue is received under full employment.

2) The actual budget is a budget that contains financial information about actual expenditures and actual revenues, based on the size of the actual, national production.

3) Cyclical budget - a budget that reflects the impact of the business cycle phase (decline or rise) on the amount of revenues and expenditures of the budget. There is a difference between actual and structural budgets.

Under the budget deficit is understood the amount of excess of total expenditures over total budget revenues.

Budget surplus is the amount of excess of total budget revenues over total expenditures.

There are several types of budget deficit:

1) Structural deficit - is the excess of actual expenditures over budget revenues received under conditions of full employment in the economy

2) The actual deficit is the excess of actual expenditures over actual revenues

3) Cyclical deficit is the difference between actual and structural deficits

4) Internal deficit - is the excess of expenditures on domestic needs over revenues from domestic sources

5) External deficit is the excess of payments abroad over income received from abroad. This type of deficit arises due to financial irregularities in the country's balance of payments

6) Primary deficit is the difference between the total deficit and the interest paid on the amount of public debt

7) The total budget deficit is the sum of internal and external deficits

The following sources are used to finance the budget deficit:

1) Non-inflationary sources

- Internal, external borrowings of the government
- Transfer payments from the external sector
- Accumulated surplus budget funds in previous periods
- Raising tax rates

2) Inflation sources

- Borrowing by the country's government from the country's central bank in exchange for government debt obligations
- Budget monetization is the process of borrowing money by the country's government by issuing.

For the assessment and analysis of external public debt use indicators of the absolute amount of debt and relative indicators (SSum of debt per capita, the ratio of external debt to real GDP). The increase in the country's debt is due to the frequency of borrowing, the average interest rate on debt, and the payment of existing debts.

External debt management includes the following stages:

1) Search for the necessary resources

2) Their target location

3) Full repayment of debt

The government of the country taking new credit obligations must:

1) Assess the solvency of the country

2) Check repayment schedules for previous debts

3) Write a scheme for repayment of new debt

The debt crisis is an economic situation characterized by the government's inability to repay its external debts.

The main methods of changing the amount of foreign debt:

1) Debt restructuring

2) Debt capitalization is the write-off of public debt in exchange for permission for foreign economic agents to buy domestic important economic facilities at a much lower than market price.

3) Conversion - is the repayment of existing debts by taking new loans on other terms.

Questions for self-control

1. Explain the concept of budget
2. Describe the types of budgets for fiscal policy purposes
3. Explain the concepts of budget deficit and surplus
4. Discover the types of budget deficit of the state
5. Describe the sources of financing the budget deficit
6. Describe the stages of public debt management
7. Explain the concept of debt crisis
8. Explain the main methods of changing the amount of foreign debt

Topic 2.3. Balance of payments

1) Content and structure of the balance of payments.
2) Display of transactions on the current account, capital account and financial account.
3) Balancing operations. Balance of payments regulation.

Literature: [1], [2], [3], [4], [5], [6], [7].

1. The impact of economic policy on the balance of payments

Problems of the balance of payments arose in the 18th century, when international trade led to a significant movement of gold between countries traders. It was at that time that the first attempts at state regulation of the balance were made through various mechanisms. To date, there are several theories that contain recommendations on how to properly balance balance of payments accounts in the long run:

1) Theory of automatic self-regulation of the balance of payments (Ricardo, Hume) - this theory existed from the late 18th century to early 20th. The essence of these views comes down to the fact that the balance does not require any state regulation, and the economy itself will restore both negative and positive balance. In particular, the inflow of gold from trade in the country gives a surplus and as a result increases its quantity in turnover, then there is an increase in prices and there is a need to stimulate imports into the country. Thus, the surplus in subsequent periods automatically disappears. The opposite situation is observed in a country with a negative balance. The outflow of gold from the country leads to falling prices and stimulating exports. As a result, the negative balance automatically disappears.

2) Keynes's theory of balance of payments regulation - according to his views, it is necessary to regulate the balance, as the open economy has a very large number of non-economic factors that affect the balance sheet. And if it is not regulated, there will be a systematic accumulation of either negative or positive balance.

3) The theory of internal and external equilibrium (Harod, Mendel) - the authors of the theory believed that the country's economy should achieve internal equilibrium (Stable prices and stable employment). As a result, the balance of payments will be settled

4) Instrumental-targeted method of balance of payments regulation (Mead, Tinberg) - theorists calculated econometric models that allow to describe the causal relationships, and thus establish ways to influence the causes. Representatives of this theory did not foresee the regulation of the final balance, but on the contrary sought the main reasons that led to this result. This method is difficult to use because modern national economies are open and the balance sheet is affected by a significant number of both economic and non-economic factors. It is almost impossible to take them all into account.

5) Theory of regulatory regulation (Miller) - the essence of this theory is to prevent the emergence of both negative and positive balances. This is achieved by combining government regulation in three main areas:

- state regulation of employment

- Regulation of economic relations by the external sector

6) The theory of international balance of payments regulation - is actively used in the IMF at present. This theory combined the foundations of Keynesianism, neo-Keynesianism, monetarism. It involves the application of the principle of symmetrical regulation of the balance of payments - that is, the negative balance of one country is the result of a positive balance of one or more other countries. Accordingly, it is impossible to balance the balance by regulating only one country in the global economy. All this requires intergovernmental regulation by the relevant IMF bodies. The IMF has developed criteria for imbalances, methods of mutual regulation and sanctions for violations or refusals to comply with international regulatory agreements. Such regulation and constant control is carried out by the IMF with quarterly analysis of macroeconomic indicators.

Questions for self-control

1. Explain the basic principles of the theory of automatic self-regulation of the balance of payments.
2. Explain the main provisions of Keynes's theory of balance of payments regulation
3. Discover the main provisions of the theory of internal and external equilibrium (Harod, Mendel)

Explain the main provisions of the instrumental-targeted method of balance of payments regulation (Mead, Tinberg)

Topic 2.4. Economic growth

1) The concept and content of macroeconomic policy of economic growth.
2) The essence, factors and types of economic growth. Indicators of macroeconomic growth. Harod-Domar macroeconomic growth model.
3) Neoclassical model of economic growth: capital accumulation (R. Solow model).
4) Growth according to the "golden rule".
5) Problems of economic growth in different groups of countries: dynamics of economic growth, comparative analysis.

Literature: [1], [2], [3], [4], [5], [6], [7].

1. Models of economic growth

There are several models for depicting and understanding the nature and sequence of economic growth in macroeconomics. The most widespread neoclassical model of economic growth, developed by economist Solow in the 50-60s of the 20th century, for which he received the Nobel Prize. This model is based on three key supply factors:

1) The number of jobs involved

2) The amount of capital and scientific and technological progress

According to the scientist, these three components fully determine and affect the level of GDP in the country. For this model, the indicator of capital accumulation is important - its increase and the form of tools in the economy.

To determine the impact of the amount of capital accumulated in the national economy on the volume of national production, Solow's model in the first stage of the analysis assumes that two other factors - the number of employees remains unchanged and scientific and technological progress does not exist. For this Solow model, the supply of goods in the national economy shows the real volume of output at any given time, and the demand function shows the distribution of products by areas of its use.

The proposal is described by the function.

$Y = F (K, L)$

Since the model has the above limitations, the production function has a constant effect of scale and the factor of employment (L) is excluded.

$Y / L = F (K / L * 1)$

Y / L - Labor productivity in the economy

K / L * 1 - Capital adequacy - is how many units of fixed assets per employee employed in production

For convenience in the model, labor productivity is indicated (in-small), and capital adequacy (in-small).

The general view of the Solow model for one factor (Capital) is as follows:

y = f (k)

For this function there is a graphical representation of the impact of capital adequacy on productivity - Production function of one employee.

Initially, the function is ascending, but its growth rate is gradually decreasing, which indicates a decrease in productivity from each additional unit of borrowed capital. This increase is called the marginal product of capital (MPK) = f (K). This function is characterized by a declining marginal product.

Solow's model lacks the external sector and the public sector, so the demand function consists of only two elements. Y = C + I. If (S) the level of savings in the economy, then for this model the consumption function will look like C = (1-S) * Y. Substituting the consumption function into the demand function, we have the form Y = (1-S) * y + i. According to this formula, investments depend on the savings rate of households and the level of their income. The level of savings shows what part of the country's real GDP goes to expand capital and productive capacity of the economy.

To study the impact of capital on the volume of national production and, accordingly, on the rate of economic growth, it is necessary to study the impact of individual factors on capital adequacy.

Such factors are:

1) Investments

2) Depreciation

3) Number of employees

Investment per employee is a function of capital and the propensity to save. Graphically, we can show how the propensity to save distributes production between consumption and investment.

Investments increase capital, but there is another opposite factor that leads to a decrease in capital - its wear and tear. The rate of depreciation and amortization of any object is denoted by (h). Amounts of accrued depreciation (h * k). Capital gains are estimated (In Notebook 3). In equilibrium, two factors try to equalize in size. As a result, the equality i = h * k arises. The amount of capital for which this equality is met is called the stationary amount of capital. the depreciation function is an ascending straight line (In Notebook 2).

To determine the impact of the amount of savings on the stationary amount of capital and, accordingly, the volume of national production was established dependence:

The more the economy saves rather than consumes, the greater the rate of economic growth the country will achieve given the constant population growth and scientific and technological progress. Savings play a key role in the pace of economic development, but if they turn into investments.

There are many options for stationary capital, but the amount that provides maximum consumption is called the optimal amount of capital. There is a golden rule of optimization: MRC = h.

Economic growth in many parts of the world is achieved not only by accumulated capital, but has a significant impact on the population of the country. There are two views on how numbers affect economic growth:

1) Traditional - the founder is Malthus. The essence of the approach is that the larger the population in the country, the lower the level of personal income, the lower the economic growth.

2) Modern - The essence of the approach is that it is not the population that affects economic development, but economic development determines population growth.

The relationship between the demographic situation in the country and its economic development has been scientifically established. There are four stages of economic development:

1) Traditional to industrial societies - High mortality and high birth rates and no eq. growth.

2) Early economic development - low rates of economic growth give the development of medicine, reduced mortality, and the birth rate is still high

3) Economic development - economic growth is 2-3% and mortality and birth rates are reduced, the population is reduced

4) Mature society - economic growth is slowing down to 0.5%, living standards and quality of life are high, mortality and birth rates are low, and the population is stabilizing.

The rate of population growth depends on the stage of economic growth and is denoted by (n). Given the impact not only of capital but also of the population in the country on real GDP, Salou's model has been improved (In Notebook 5).

At the end of the 20th century, in addition to capital and population, the economic growth of developed countries was significantly influenced by scientific and technological progress. Its rate of development exceeded the existing rate several times. In macroeconomics, the rate of scientific and technological progress is indicated by (g). Accordingly, economists at the end of the 20th century had to take into account such an influential factor as STP (Scientific and Technological Progress). This was reflected by improving Solow's model and introducing a new variable - the growth rate of STP.

1. Comparative analysis of monetary, fiscal and foreign economic policy with floating and fixed exchange rates.

Consider a situation where the government tries to stimulate domestic production (aggregate demand) by expanding public procurement or reducing taxes, ie pursues an incentive (expansionist) fiscal policy. Such measures will affect the commodity market, the balance on it will be established at the highest level of interest rates (IS * shifts to the right up). Recall that in a closed economy, this would lead to higher interest rates and growth of total income in the country. In a small open economy with a flexible exchange rate, as we see in Fig. 13.3, stimulating fiscal policy gives the opposite expected results: it does not lead to an increase in income (production). Why? The fact is that raising the national interest rate in an open economy stimulates the inflow of foreign capital and a corresponding increase in the supply of foreign currency and demand for domestic currency. The exchange rate rises, which, in turn, reduces the possibilities of ex¬

port and nullifies the effect of expanding demand for goods and services in the domestic market. As a result, we will not have the expected growth of total revenues - only their internal structure changes: the share of G increases, and the share of NX decreases.

Now let's see how monetary policy "works" for similar ones

conditions. Let's take again stimulative measures - monetary expansion.

Suppose the national bank wants to intensify production through

reduction of the reserve allocation ratio (see topic 7 on instruments

monetary policy), ie increases the money supply. Because we price

considered unchanged in the short term, this corresponds to an increase

The amount of real money in the economy is shifting to the right.

The growth of the money supply leads to an increase in income and a decrease in ob¬

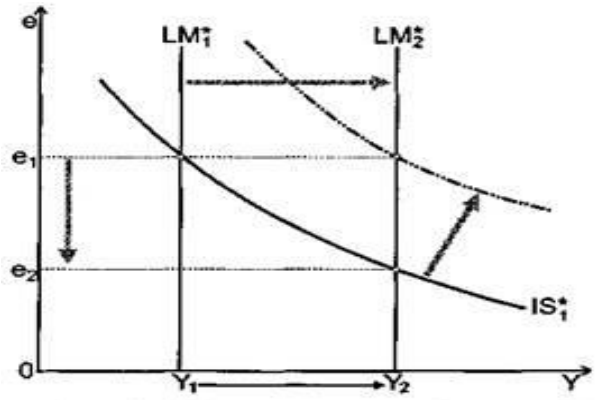
exchange rate (Fig. 13.4). Although the consequences of such expansion are similar to the consequences

monetary stimulation of a closed economy, the mechanism of this policy

differs in the open economy. Yes, in a closed economy increase

money supply lowers the interest rate and thus stimulates domestic investment, which leads to increased income. The country has an open economy, provided

absolute mobility of capital, the interest rate is equal to the world, and as soon as the increase in money supply will lead to its fall, it will cause not so much an increase in investment, as the outflow of capital abroad and the depreciation of the domestic currency. At the same time, such a "devaluation" of the domestic currency contributes to the expansion of exports and limits the opportunities for imports, which ultimately improves the state of the trade balance and increases aggregate demand and income.



Мал. 13.4. **Наслідки грошової експансії за режиму гнучкого обмінного курсу.**

Thus, the impact of monetary policy on the development of a small open economy is carried out primarily through changes in exchange rates and balance of payments. Knowing the mechanisms of fiscal and monetary policies in an open economy with very flexible exchange rates and the consequences of using stimulus or restraint instruments, the Mandela-Fleming model can predict the results of a particular combination of policies.

Recall, for example, domestic economic policy in the United States in the beginning 80's.

Combining tight (restrictive) monetary policy (as the head of the Federal Reserve tried to curb inflation in the late 1980s) with fiscal expansion

$(T\downarrow, G\uparrow)$, caused by Reagan's efforts to deliver on his campaign promises, according to the Mandela-Fleming model, was to lead to a rise in the dollar's exchange rate and

worsen the balance of payments. And although this model is designed to analyze a small economy, the results of the calculations were justified: in three years (1979-1982) the dollar rose 1.5 times against the German mark and about 1.2 times against the yen. The competitiveness of some sectors of the US economy has been undermined, and the relative decline in the price of imported goods and services has led to a significant trade deficit.

balance, and eventually payment as well. For the first time, the country found itself in a situation of double deficit (simultaneous state budget deficit and balance of payments), from which it could not get out for a long time. Echoes of this problem are still being debated by US economists and politicians.

When setting a fixed exchange rate in the country, the central bank buys and sells foreign currency at a predetermined price. and other foreign currency that needs to be saved and accumulated through previously conducted foreign trade and foreign exchange transactions.

The only purpose of monetary policy in establishing a fixed exchange rate regime is to maintain it at this level. That is, in other words, the main task of the central (national) bank is to regulate the money supply, which would keep the equilibrium market exchange rate at the official level. If the central bank is able to provide! completely free currency exchange, it happens automatically. As the sad experience of 1993 shows, all sorts of "informal" restrictions promote currency speculation and can upset the equilibrium of the market and the economic situation.

Consideration of the mechanism of interaction of money supply and exchange rates, "behavior" of different instruments and measures of macroeconomic policy under different exchange rates, analysis of real situations and examples of economic development of different countries allow us to make some generalizations and conclusions:

1. The nature of the functioning of the economy, the mechanism of action and consequences of economic policy in an open economy differ significantly from the closed one.

2. The equilibrium of a small open economy under conditions of absolute mobility of capital is studied using the Mandela-Fleming model - a modification of the IS-LM model for these

conditions. The model explains short-term fluctuations in income and exchange rate levels under the assumption of price volatility.

3. According to this model, the consequences of any macroeconomic policy in a small open economy depend on the exchange rate system established in the country — fixed or completely free navigation.

4. Under the conditions of free floating of the exchange rate, only the monetary policy leads to the expected consequences, the influence of the stimulating budget and tax policy is nullified by the growth of the national currency exchange rate.

5. At a fixed exchange rate, income is affected by fiscal policy, and the mechanism of monetary policy does not work, because changes in the money supply are subject to the task of maintaining the national currency at the declared level. To obtain the positive effects of monetary expansion, it must be supplemented by devaluation measures.

6. The Mandela-Fleming model confirms that foreign trade restrictions are justified in terms of income growth and current account balance only at a fixed exchange rate and only in the short term.

Which course to choose if each of them has its own strengths and weaknesses in terms of macroeconomic policy implications? This issue is the subject of heated debate among economists and politicians. Previously, most economists supported the establishment of flexible exchange rates. However, in recent years, many of them have begun to speak out again in favor of a return to a fixed exchange rate. Moreover, both supporters of flexible courses and defenders of fixed ones have their own strong arguments "for" and "against" both courses. First of all, let's try to summarize all the arguments.

Advantages of floating courses

1. Monetary autonomy. The main argument in favor of flexible exchange rates is that they provide an opportunity to use monetary policy instruments to influence the economy. It is impossible to focus only on maintaining the exchange rate (fixed mode), this is just one of the indicators. The country may face other problems - stabilization of employment, prices - that require the application of monetary policy measures. And it is flexible exchange rates that make it possible.

2. "Automatic" stabilizer. Flexible exchange rates facilitate the impact of external shocks - free change of exchange rates acts as automatic stabilizers. Proponents of free (as well as regulated) navigation claim that these courses have experienced shocks that would break the fixed course. In particular, the decline in agricultural production 1971-1974 pp. Rising oil prices in 1973-1974 and 1979-1980 pp., Stagflation 1974-1976 and 1979-1980 pp. caused serious imbalances in international trade and finance in the world. Flexible exchange rates have facilitated the process of adapting to these changes internationally, and the system of fixed exchange rates has been under undue pressure.

3. Prevents "errors" in setting the exchange rate. In fact, with the introduction of the fixed exchange rate regime, the question immediately arises at what level to fix it, to which currency (or basket of currencies) to bind. These decisions are subjective and can cause errors. Flexible courses eliminate these problems.

4. The mechanism of "appreciation" of currencies hinders the introduction of large-scale trade restrictions and, consequently, does not hinder international trade. Disadvantages:

1. May have strong fluctuations. Internal shocks can cause strong exchange rate fluctuations, which, in turn, fuels inflation / expectations and contributes to frequent increases in wages, etc. Exchange rate fluctuations provoke currency speculation - a destabilizing factor in economic development and international economic relations.

2. Uncertainty can negatively affect trade and investment. After abandoning the Bretton Woods system, fluctuations in both real and nominal exchange rates turned out to be much larger than expected. Uncertainty about the level of the exchange rate complicates the calculation of the efficiency of trade operations, analysis of investment projects and, according to opponents of free circulation of currencies, may adversely affect the state of international trade and investment.

3. Does not contribute to the observance of monetary discipline. The use of a completely free-floating regime "frees the hands" of the bodies that control monetary and financial circulation, and may inadvertently indulge in the abuse of monetary policy instruments, including the excessive expansion of domestic credit and so on.

4, "The Illusion of Autonomy" Monetary Policy. In fact, countries are reluctant to acknowledge the existence of global interdependence. For example, some countries (especially large ones) take measures of domestic economic policy that lead to negative consequences for other countries. In such a situation, it is possible to speak about the autonomy of economic policy only conditionally. In fact, such autonomy does not exist in the modern world, it is an illusion.

The advantages and disadvantages of establishing a fixed exchange rate system in the country are, in fact, a mirror image of the positive and negative features of a flexible exchange rate, so we will only briefly list these features.

Advantages:

1. Introduces an element of stability into the system of international settlements.

2. Better than flexible exchange rates, withstands internal shocks and prevents economic imbalances.

3. It allows to prevent unjustified expansion of the monetary base and thus "disciplines" the bodies that control money circulation in the economy.

4. Budget and tax and foreign trade have good consequences

policy.

Disadvantages:

1. Monetary policy does not work because it is "tied" to the need to maintain the officially announced level of the exchange rate. This inhibits the ability of monetary instruments to regulate employment and prices.

2. The need to "protect" a fixed exchange rate leads to a reduction in trade through the introduction of tariffs and other restrictions. It is the fact that protectionist measures have good short-term consequences under the fixed exchange rate regime that can provoke restrictions on international trade, which generally hampers the country's technological and economic development.

3. Requires significant foreign exchange reserves.

After all, it is not necessary to make the final choice between a fixed and a flexible course. Depending on the economic situation, the state of the balance of payments, the country can choose the course that best suits the specific conditions, objectives and problems. Periods of a fixed course may change to periods of free swimming. During the period of exchange rate fixation, a country may revise and change its level if maintaining such a rate contradicts the achievement of other economic goals. If the exchange rate is flexible, then all the same in the decision-making process on reducing or expanding the country's money supply, as a rule, provide some marginal possibilities of fluctuations, setting it at some informally desired level, and so on. In addition, there is a general agreement that central banks should buy or sell foreign currency to smooth out speculative exchange rate fluctuations, ie "manage" short-term speculative changes in their countries' exchange rates. Thus, we can only conditionally say about the existence of completely fixed or completely flexible courses. The system, which emerged and developed after the collapse of the Bretton Woods system, can be described as regulated navigation. The purpose of the introduction of regulated harmonization of exchange rates was precisely to create a currency system that would embody the best features of both the fixed exchange rate system and the system of completely free navigation. It is in this direction that scientific economic thought is now working.

Questions for self-control

1. Describe how numbers affect economic growth:
2. Discover economic development
3. Disclose the factors influencing capital adequacy
4. Discover the benefits of floating courses

5. Discover the tools of the impact of monetary policy on the development of a small open economy
6. Explain the advantages and disadvantages of establishing a fixed exchange rate system in the country

List of recommended reading

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