

**MINISTRY OF EDUCATION AND SCIENCE OF UKRAINE**

**NATIONAL TECHNICAL UNIVERSITY OF UKRAINE  
“KYIV POLYTECHNIC INSTITUTE”**

***FINANCIAL MANAGEMENT***

**BRIEF ABSTRACT OF LECTURES**

**for students of management and marketing faculty**

*field of knowledge 0306 "Management and Administration", specialties:  
7.03060101, 8.03060101 "Management of Organization and Administration",  
8.03060102 "Management of innovative activity",  
7.03060104, 8.030604 "Management of external activity";  
field of knowledge 1801 "Specific categories", specialty  
8.18010012 "Innovation Management"*

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## INTRODUCTION

Credit module "Financial Management" is an integral part of training of specialists and masters in field of knowledge 0306 "Management and Administration", specialties: 8.03060101 "Management of Organization and Administration", 8.03060102 "Management of innovative activity", 7.03060104, 8.03060104 "Management of external activity"; field of knowledge 1801 "Specific categories", specialty 8.18010012 "Innovation Management"; field of knowledge 0305 "Economics and entrepreneurship".

Financial management is the most complicated priority task of the top managerial personnel of any organization in conditions of the market economy. Financial management is the sourcing and distribution of financial resources necessary to ensure effective and efficient activity of the organization. It plays the most important role in the strategic level. Middle managers, and the more low-level, solving the problem of tactical and operational management, are less involved in making financial decisions and are more linked to specific business areas, such as marketing, production. The future of the company depends on how effectively the company managers manage the movement of financial resources and the relationships which result from this movement. Highly qualified specialist must make informed decisions based on thorough analysis of internal and external factors that determine the financial and economic activities of the company and will provide its sustainable economic growth and stable investor interest in it.

**The purpose of the credit module** – to familiarize students with approaches to the management of the system of monetary relations of business entity related to the formation, using and investing of financial resources in the process of production and economic activity.

**Objectives** – to explore the theoretical foundations of finance and investment activities, and the methods and techniques of effective financial management of enterprises. To form a complete system of knowledge of financial relations in the economic process, financial (investment) mechanism and technologies of financial management of the business entity as an integral part of the financial market of the country.

Studying this course students are introduced to financial theory, pass practical tasks and individual tasks, explore the theoretical primary and secondary sources of professional literature, regularly turn to periodicals and online publications, are working on certain topics from a practical and a theoretical point of view when doing creative writing work.

The thrust of the course leads to the formulation and solution of the next tasks:

- introduce to the essence and the theoretical basics of financial management in accordance with modern economic theories;
- teach to properly apply to methodological tools of financial management of enterprises;
- form the ability to use a systematic approach to the management of assets, profits, investments, capital, cash flow and budget of the enterprise;
- develop skills in a comprehensive analysis of the financial condition of the company-contractor;
- provide basic knowledge and skills in methods of evaluation of securities and in the foundations of corporate governance;
- teach students how to evaluate financial and investment risk as well as the basics of financial forecasting and planning;
- introduce to the approaches of the anticrisis financial management of enterprise.

## **LIST OF ABBREVIATIONS**

FM – Financial Management  
DAC – Official International Development Assistance  
CAPM – Capital Asset Pricing Model  
MCC – Marginal Cost of Capital  
WACC – Weighted Average Cost of Capital  
EFL – Effect of Financial Leverage  
AR – Accounts Receivable  
ADA – Advanced Differential Analysis  
EOQ – Economic Order Quantity

## CHAPTER 1. INTRODUCTION TO FM

### Topic 1.1. The role of FM in the system of business management

1. Essence and content of FM
2. Functions and principles of FM
3. Informational sources of FM

#### 1. Essence and content of FM

**FM** - is a holistic system of knowledge about financial relationships in the economic process, financial mechanism, technologies of financial management of company.

**The objective** of FM is to develop and make informed decisions about attraction and effective use of financial resources.

**Financial resources** - a set of funds generated to finance the development of the enterprise in the next period.

**The goal** of FM is to manage the system of monetary relations of business entity related to the formation and division of financial resources in the process of its production and economic activity.

Implementation of the goals and objectives of financial management is carried out through an appropriate mechanism of FM, whose structure is shown in Fig. 1.1.

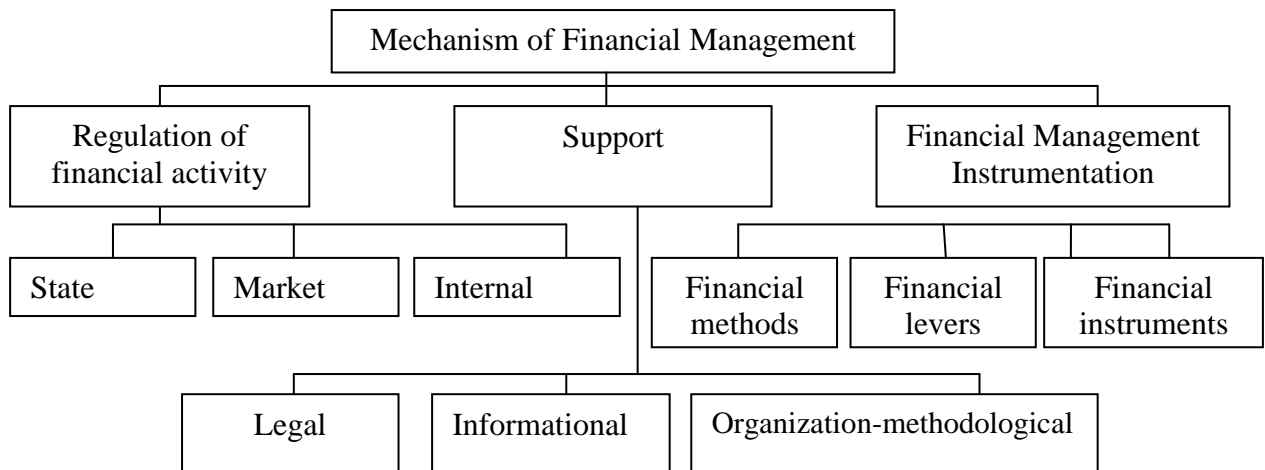


Figure 1.1 – The structure of the mechanism of FM of enterprise

**Financial instrument** are known to be any contractual agreement according to which an increase the assets of one business entity and financial obligations of another are increasing. These financial instruments include: *cash, credit instruments, methods of participation in the share capital, etc.*

**Financial methods** is a way to influence financial relations on the economic process. Their effect is found in the creation and using of funds. There are financial methods as *planning, forecasting, crediting, self-financing, taxation, creation of funds, renting, leasing, factoring, payment system, investments, etc.*

**Financial levers** - a reception of financial method. Include: *production cost, price, revenue, profits, types of credits, interest rates, financial penalties, tax rates, deposits, equity contributions, contributions to the funds, rent, leasing and factoring fees, forms of payment, investment income, discount, rate of dividend payments and so on.*

*FM covers three components: operational management, investment management, FM.*

## 2. Functions and principles of FM

**The object of FM** – a set of conditions for the implementation of monetary circulation, turnover, value, movement of financial resources and financial relations between economic entities and their divisions in the process of economic activity.

**The subject of FM** - a group of people (financial administration as a management unit, the financial manager as a head), which provides purposeful object functioning through various forms of managerial influence.

Functions of the subject of management include planning, forecasting, organizational function, regulation, coordination, stimulation, control.

### Principles of organization of FM

FM is based on three main concepts:

1. The concept of present value – investment of capital for its further growth. That is new received capital has to reimburse the initial investments, to compensate their inflation depreciation and ensure the increase of share capital – profit.

2. The concept of business risk follows from the previous concept, because the objectivity of evaluation of the present value of future income by forecasting data depends on the accuracy of such forecast, the completeness of the information support, qualification of experts.

3. The concept of the cash flows – the development of enterprise policy to attract the financial resources, organization of their movement, keeping them in a state of high-quality.

The basic principles of FM include:

– *planned and systematic character* – planning of material, labor and financial resources to ensure their balance, systematic character in the development of the strategy and tactics of financing for realization of planned activities;

– *target focus* – focus on goals and objectives that company sets at the moment;

– *diversification of investments* in two aspects: firstly, investment of funds in various securities, investment projects; secondly, creating a diversified enterprises engaged in different types of business activities;

– *strategic focus* – focus on long-term strategy of the enterprise development, knowledge and taking into account of strategic guidance of competitors, outstripping financial management of enterprise;

– *variability* – forecasting of the various options for development of the enterprise financial system, searching and justification of the alternative financing solutions.

### Strategy and tactics FM

Strategic FM is forecasting of areas of financial activity in the future, modeling of parameters of financial processes development based on forecasting changes of environmental factors.

**Financial strategy** can be defined as the formation of the system of long-term goals of the enterprise financial activity and selection of the most effective ways to implement them.

Business entities can choose one of three *basic strategies of financial development* based on the achieved level of financial stability:

1. *Strategies to overcome the instability of the financial system of the enterprise*, or a survival strategy, which is used in conditions of economic crisis, instability and inflation, and when indicators of financial and economic activities become a stable tendency to deterioration.

2. *Strategy of support of financial stability or stabilization*, that is used in conditions of unstable sales and profits, mainly in areas with a stable economy.

3. *Strategy of development or sustainable growth*, reflecting the desire of the enterprise to increase sales, increase profitability and improve other indicators of financial condition.

In contrast to the strategic financing, **tactical financial management** is focused on providing compensation for current expenses by earned income, regulation of current payments.

### 3. Informational sources of FM

Information support of financial management process – a set of information resources and methods of their organization, necessary and suitable for the realization of analytical procedures that provide the financial side of the enterprise activity. Its basis is the information base, which consists of 5 blocks (Figure 1.2).

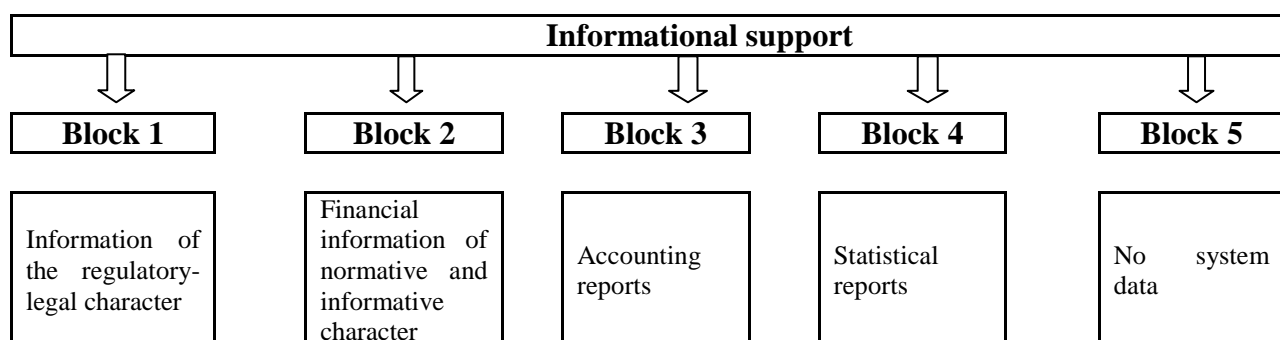


Figure 1.2 - Informational support

The first block – is the laws, regulations and other normative acts, provisions and documents which primarily determine the legal basis for financial institutions, securities market. The documents presented in this block, have legally binding character.

The second block includes regulations of public authorities (Ministry of Finance of Ukraine, National Bank of Ukraine, etc.), international organizations and other financial institutions, containing requirements, recommendations and quantitative standards in the field of finance for market participants. Not all documents in this block are legally binding.

The third block includes accounting reports.

The system of preparation and presentation of statistical data of the financial sector (fourth block) is essential for the formation and development of market relations.

Fifth block (not system data) includes information that is not directly related to financial information, or arising out of any of the information system.

#### Tasks for individual work

1. Prepare an analytical overview of the sources of FM.
2. Analyze the laws and regulations of Ukraine of FM.
3. Analyze the effectiveness of the tax laws in the country.
4. Disclose the various forms of business organization and methods of taxation, characteristics of each.

*Main reading:* 2,4,5

*Additional reading:* 1,5,7,8,13

#### Topic 1.2. Basics of the investment activity of enterprise

1. Economic essence of investments and investment activity.
2. Classification of investments of enterprise.
3. Peculiarities of the real investing and ways of realization of the investment projects.
4. Management of financial investments of the enterprise.

##### 1. Economic essence of investments and investment activity

According to the Law of Ukraine "About investment activity" from 18.09.91 No. 1560-XII, investments are all kinds of property and intellectual values invested in objects of business and other kind of activities, which is resulting into creating of a profit (income) or achieving of a social effect.



Investment activity – a wide range of purposeful project, organizational, economic, financial and administrative operations performing in the interests of effective investing.

The subjects of investment activity are the investors who are classified according to the following features:

1. According to the main thrust of economic activity: individual investor, institutional investor.
2. According to the goals of investing: strategic investor; portfolio investor.
3. According to the focusing on the investment effect investors are divided into the following types: investor focused on current investment income; investor focused on capital gains in the long term; investor focused on non-economic investment effect.
4. According to the investment risks investors are divided as follows: investor is not at risk; investor risk neutral; investor is at risk.
5. According to the residential identity there are domestic and foreign investors.

Investment of enterprise – is investing in all its forms into different objects (instruments) of economic activity of the enterprise for profit, and achieve other economic or non-economic effects, implementation of which is based on market principles and factors connected with time, risk and liquidity.

## **2. Classification of enterprise investments by the major features**

The main feature by which investments are divided into separate forms, the object of investing capital. By this feature, in accordance with foreign economic theory, investments are divided on real and financial.

The real (industrial) investment – is investing in real assets, both tangible and intangible.

Financial investments include investing in various financial assets including the largest proportion of investment in securities.

According to the reproductive direction there are: gross investments, renovation investments, net investments.

*Classification of investments:*

- according to the degree depending on income: derivative and independent;
- according to the investment company: internal and external;
- according to the period for realization: short-term and long-term;
- according to the realization compatibility: independent, interdependent and mutually exclusive;
- according to the level of profitability: high-, medium-profit, small profit, not for profit;
- according to the level of investment risk: risk-free, there is little risk, medium risk, high-risk;
- according to the level of liquidity of the enterprise investments: highly liquid, medium liquid, less liquid, illiquid;
- according to the ownership of invested capital there are private, public and mixed investments;
- according to the nature of the capital use in the investment process there are initial investments, reinvestments and disinvestments.

There are also many other classifications. The most famous divides investments into seven categories:

1. Investments aimed to change the amortized capital goods;
2. Investments for rationalization of production;
3. Investments to expand the production;
4. Investments to modernize the production;
5. Strategic investments;
6. Social investments;
7. Investments that have public value.

### 3. Features of the real investments

Real investment is characterized by a number of features, the main ones are:

1. Real investing is the main form of the economic development strategy of the enterprise.
2. Real investing is in close relationship with the operating activity of the enterprise.
3. Real investments generally provide a higher level of profitability comparing with the financial investments.
4. Realized real investments provide a stable net cash flow to company.
5. Real investments are of high risk of moral senescence.
6. Real investments have a high degree of anti-inflation protection.
7. Real investments are the least liquid.

*Form of real investment:* acquisition of integral property complexes, new construction, reconstruction, modernization, renewal of certain types of equipment, innovative investing in intangible assets, investment of growth of the stocks material (current) assets.

All forms of real investing pass three main stages:

- pre-investment stage, in process of which variants of alternative investment solutions are developing, they are evaluating and some of these variants are taking;
- investment stage, during which taken decision is directly realizing;
- post investment stage, during which control over the achievement of specified parameters of investment decisions during exploitation of the investee is providing.

#### *Characteristics of the investment projects*

The investment project is the main document defining the need for real investing, in which the conventional sequence of chapters express the main characteristics of the project and financial indicators related to its implementation.

Justification of investment projects is subject to certain logical structure that has unified character in most countries with developed market economies:

- brief description of the project (or resume);
- prerequisites and the main idea of the project;
- market analysis and marketing concept;
- raw materials and supplies;
- location, building site and the environment;
- design and technology;
- management organization;
- labor;
- planning of project;
- financial plan and evaluation of efficiency of investments.

In the development of project financing schemes its five main variants are considering: full self-financing, corporatization, credit financing, leasing or selling, mixed (equity) financing.

Managing of the investment project involves:

1. Scheduling of the project. This plan is developing on base of ensuring the following main principles:

- the principle of temporal differentiation of schedule;
- the principle of functional differentiation of schedule;
- the principle of of reserve formation of schedule;
- the principle of planning of responsibility in the distribution of risks.

2. The development of the capital budget. The initial prerequisites for the development of this budget by the real investment project are:

- schedule for implementation of the investment project;
- budget requests to perform certain types of work and the acquisition of raw materials, machinery and equipment, developed by separate functional units of project;
- overall strategy (cheme) of financing of the investment project;

- previous flow graph of investment costs, compiled during the development of a business plan;
  - financial position of the project investors.
3. Building of a system of controlling of the implementation of business investment projects.
  4. Justification and decision making to withdraw of certain investment projects from the investment program of the enterprise.

#### 4. Management of financial investments

The logical result of market reforms in Ukraine is formation of the securities market. Enterprises can make financial investments in the form of investments in the statutory funds of associates, profitable monetary market instruments (deposits in banks) and high liquid securities (Figure 1.3).

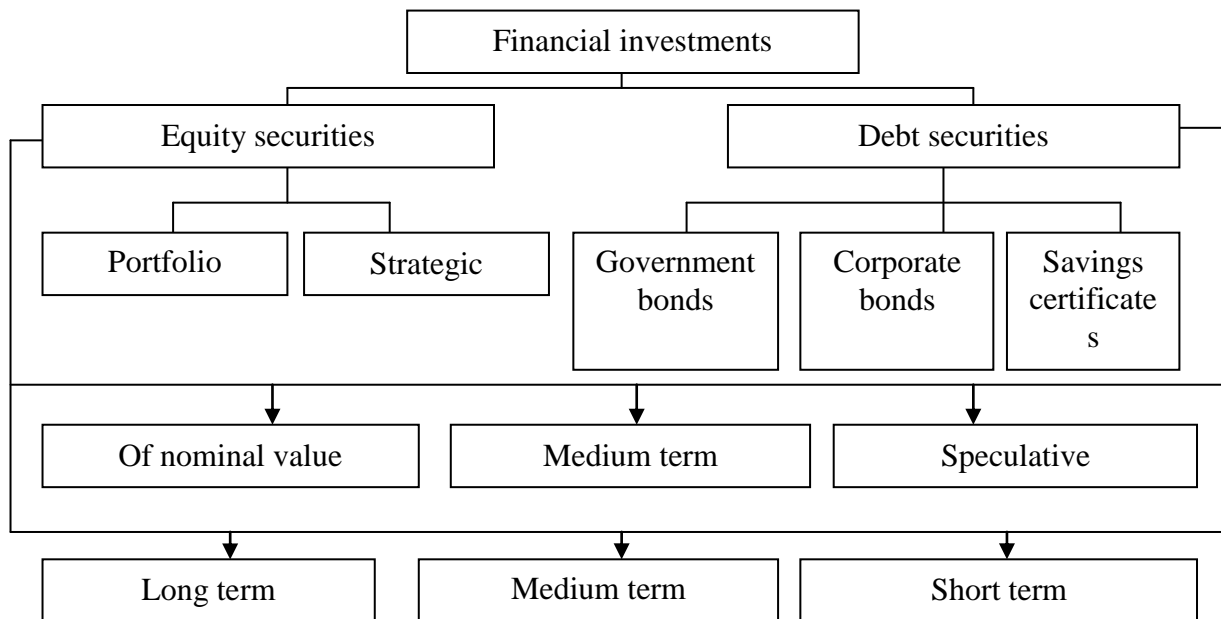


Figure 1.3 - Classification of financial investments

In the process of financial investments management following tasks are solving:

- ensuring of the reliability of investments;
- increasing of return on investment;
- increase in market value of investments;
- providing of liquidity to financial investments.

Main purpose of management of financial investments is to provide an optimal balance between profitability, risk and liquidity of securities in accordance with the type of investment portfolio.

*Investment portfolio* is a collection of instruments selected for investment in accordance with the strategic guidelines of the investor. Classification of types of investment portfolio by various characteristics is shown in Fig. 1.4.

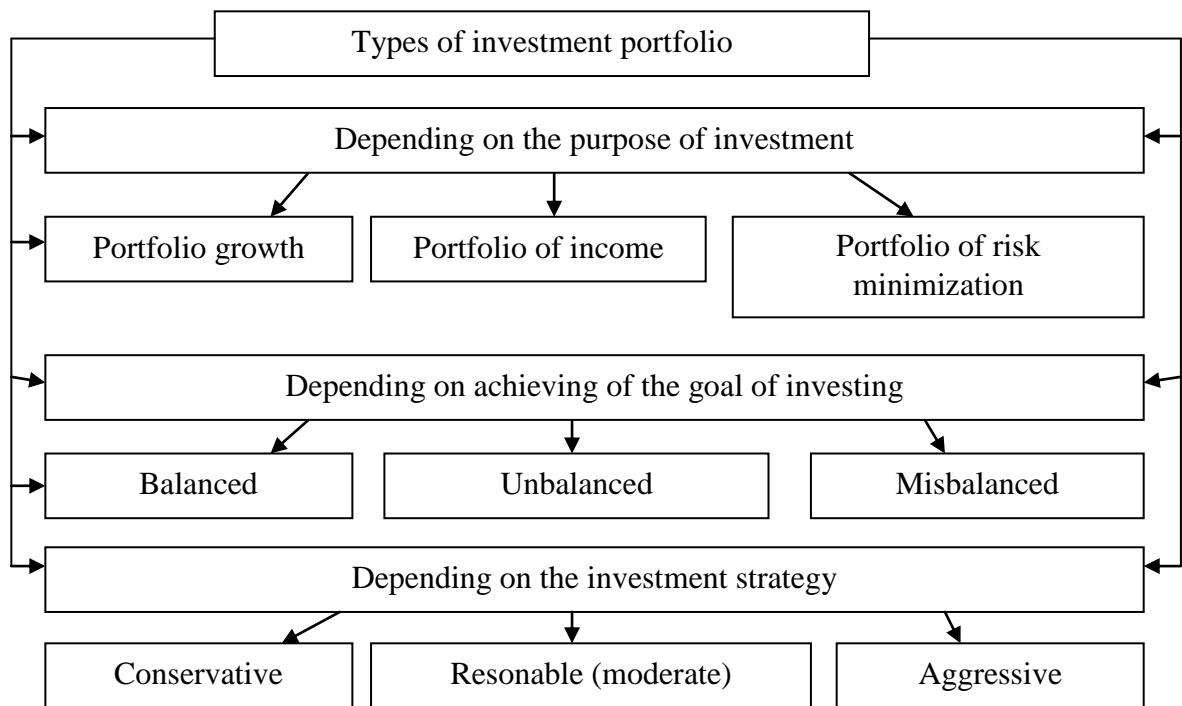


Figure 1.4 - Classification of types of investment portfolios

In international practice of FM in the implementation of the diversification of securities portfolio on terms of their circulation the most widely used are two alternative methods: step method (method of "ladder"), the polar method ("bar" method).

Regardless of the strategy and tactics of the management of the investment portfolio during its formation the basic principles of FM should be followed:

- investment portfolio should meet existing financial resources of enterprises;
- operational securities portfolio management should be based on the principle of availability of its handling;
- tactical investment portfolio management should take into account the strategic targets of the investment policy;
- ability of backward transformation in ready means of payment.

Securities portfolio management is carried out by gradual restructuring of financial assets, which includes:

- save to portfolio the most profitable and liquid securities;
- use of revenues from investment for compensation of current expenses;
- reinvestment of the part of net profit into new securities and real projects.

In order to reduce direct costs and increase current income from securities during periods of cyclical changes of an interest rate on the financial markets it is needed to control the size and composition of the investment portfolio of company in time.

#### **Tasks for individual work**

1. To analyze the legal framework of Ukraine in the sphere of investments.
2. Laws and problems in the functioning of the investment market. Characteristics of the main subjects of the investment market in Ukraine.
3. Features of the intellectual investments.
4. Advantages and disadvantages of rapid analysis of the financial condition of enterprises.

**Main reading: 3,5**

**Additional reading: 15,16,20,22**

## CHAPTER 2. MANAGEMENT OF THE ENTERPRISE FINANCIAL RESOURCES AND ADOPTION OF STRATEGIC FINANCIAL AND INVESTMENT DECISIONS

### Topic 2.1. Management sources of financing of enterprises activity

1. Sources of financing of companies. Purpose of short-term and long-term financing.
2. Sources of external short-term financing of enterprise.
3. Alternative variants of long-term financing of the company.
4. Methods of international business financing.

#### 1. Sources of financing of companies. Purpose of short-term and long-term financing.

Choosing of the optimal structure of the sources of the enterprise financing becomes essential in market relationship. Financing of companies is carried out by using of own and borrowed funds (figure 2.1).

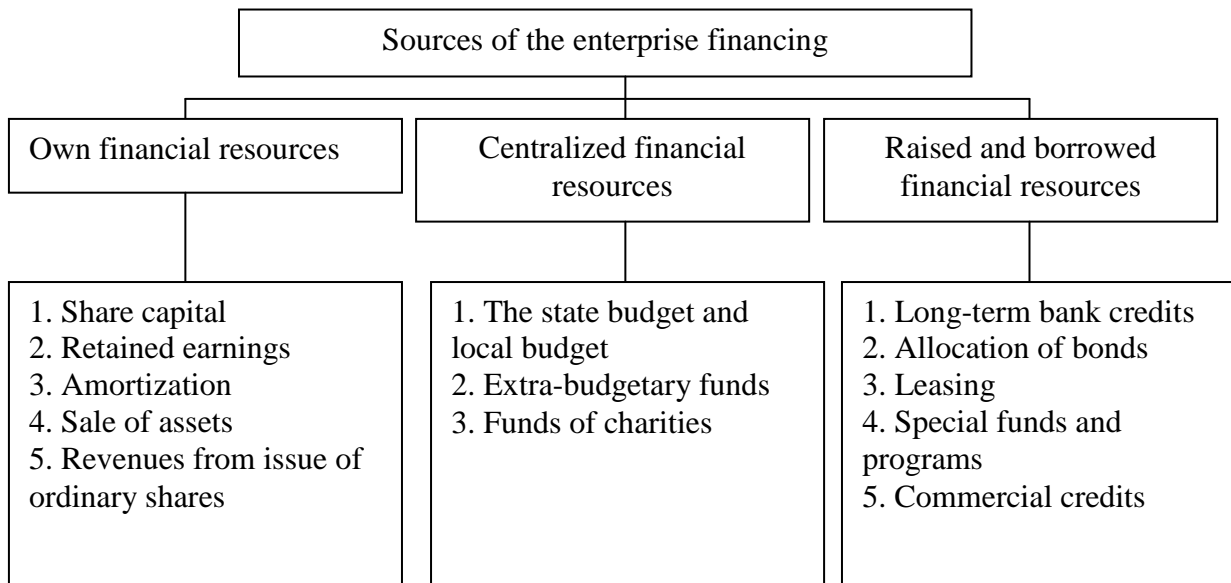


Figure 2.1 – Sources of the enterprise financing

The main components of equity capital are authorized (share) capital, capital reserve, retained earnings. Other components that can correct the equity capital in the direction of increasing or decreasing include additional, unpaid and excluded capital.

Authorized (share) capital - contributions of founders (participants) to the capital of the company to ensure its functioning.

#### Purpose of short-term and long-term financing

Short-term financing is often used for renewal of working capital required to:

- Procurement of raw materials;
- Investments in continuous production (production in progress);
- Investment in finished goods;
- Covering the difference between receivables and payables.

Renewal of working capital is usually carried out through: internal financing, short-term crediting.

Generally, preference is given in this case to the internal sources, because the company can provide the "internal" financing through better disposal of working capital:

1. To decrease receivables:
  - To correct the strategy of customers crediting;
  - To provide daily monitoring of receivables accounts;
  - To start collecting overdue sums.

2. To provide a more lengthy credit from suppliers.
3. To reduce the level of material stock:
  - Make economical purchases of raw materials;
  - Stop production to warehouse.

Long-term financing is required for capital investment:

1. Capital investments needed for growth and development of the company.
2. Continuous development is important for the competitiveness of enterprises. It requires

significant financial resources for:

- Development/acquisition of new technologies,
- Procurement of modern equipment,
- Developing of the new or improving of the existing products,
- Creating of a distribution network,
- Improving of information system and reporting systems to improve management.

The company can provide an internal long-term financing through: retention of earnings, sales or rental of unused assets, sale of loss-making activities, the sale of non-core industries.

## 2. Sources of external short-term financing of enterprise

3. Opportunities of external short-term financing for Ukrainian enterprises include:

- Trade credit (commercial credit);
- tolling;
- banks and short-term financing;
- mutual/barter;
- commercial papers/promissory notes;
- sale or discounting of receivables (factoring);
- short-term operation leasing.

The sources of spontaneous financing of firms include trade credit. Trade credit (accounts payable) - money that company should return to suppliers.

Commercial credits of products or services are provided by the companies-manufacturers to their clients and they means the sale of goods or services under the terms of the agreement, which provides the postponement of the final calculation for a specified period at the interest.

Short-term bank financing can be divided into:

- overdraft facilities (seasonal credit for short-term seasonal needs);
- short-term loans.

1. Overdraft means:

- value depends on the actual amount and overdraft days;
- different rates in different banks;
- benefits include flexibility and ease of renewal/extension;
- disadvantage: only a small number of well-known enterprises can use it.

2. Short-term loans are relatively less flexible than overdrafts at a higher cost. A characteristic feature of financing through loans is the need for financial guarantees or collateral. The forms of collateral may be:

- third party guarantee,
- enterprise inventory;
- real estate;
- personal property;
- securities.

Thus, conditions to provide a short-term credit include sufficient liquidity of the borrower or collateral for a loan by receivables.

Commercial banks are interested in the ability of the borrower to repay the debt and pay interest. Therefore, considering the request of the company for a credit, commercial banks are paying attention to:

- reputation of the company;
- liquidity of assets,
- collateral;
- ratio of amount of the own and borrowed capital. Credits are also provided under the debt obligations.

Debt obligations - security, confirming the bank's obligation to provide a credit and for the borrower - to repay the credit and pay interest at specified deadlines.

There are three basic interest rates of bank credits: rate, it is calculated using simple interest; discount rate; rate, which is calculated by the complex interest.

The cost of the credit (or the real interest rate) using the method of simple interest is calculated by the formula:

$$\text{Real interest rate} = \frac{\text{amount of interest payments}}{\text{credit amount}}$$

If the contract provides the compensating balance, the real interest rate is determined by the formula:

$$\text{Real interest rate} = \frac{\text{nominal interest rate}}{1 - \text{compensating balance}}$$

Commercial banks often require maintaining of a certain amount on the current account of the company-borrower (it is usually 10-20% of the credit amount). This balance is called the *compensating balance*.

Syndicated credit – is a compatible credit of a group of banks.

Rollover credit - a short-term or medium-term credit with vitiate percent, which is fixed every 6/2/12 months according to the current London Interbank interest rate (Libor).

On-call credit - the type of the under term credit, which can be written payable at any time without notice. Used by stockbrokers to perform unexpected operations.

Tolling - the company receives raw materials at zero cost, processes it, and returns the finished product to the owner under appropriate fee.

Offsetting - convenient form of payment (if it is permitted by the government). In case of offsetting two or more parties repay liabilities through supply chain. Although it is non-cash transaction, any acceptance of the goods from the supplier to the delivery of the goods to another party is equivalent to a short credit.

Factoring (selling or discounting of receivables) - a set of services provided by financial intermediaries to the enterprise in order to solve the problems connected to the late repayment of receivables.

### **3. Alternative variants of long-term financing of the company**

The main advantages and disadvantages of different types of external financing are presented in Table. 2.1.

Table 2.1 – The main advantages and disadvantages of different types of external financing

Type of financing	Advantages	Disadvantages
<b>Crediting</b>	<ul style="list-style-type: none"> <li>– No state registration, so this type of financing is easier than issue of shares and bonds.</li> <li>– Cost of raising of funds is relatively low.</li> </ul>	<ul style="list-style-type: none"> <li>– Getting of a long-term credit in large amounts is almost impossible.</li> <li>– Mandatory availability of collateral or other type of support.</li> <li>– Cost for collateral.</li> <li>– Repayments of the main debt and interest payments, unlike dividends, are required by law.</li> <li>– A risk of credit unpaid.</li> </ul>
<b>Equity financing</b>	<ul style="list-style-type: none"> <li>– Lack of liabilities of payment of interest and repayment of borrowed funds.</li> </ul>	<ul style="list-style-type: none"> <li>– The loss of full control over the company.</li> <li>– Requirement of maximum openness and transparency of the company.</li> <li>– Is the most expensive source of financing, because the dividends do not reduce the tax base, and the cost of raising funds is high</li> </ul>
<b>Bonds</b>	<ul style="list-style-type: none"> <li>– Without requirement of additional support.</li> <li>– Formation of the public credit history.</li> <li>– Attraction of significant investment costs.</li> <li>– Long term of the loan.</li> <li>– When large amounts is much lower than credits.</li> </ul>	<ul style="list-style-type: none"> <li>– Necessary openness and transparency of the company.</li> <li>– Is costly for small amounts of financing.</li> <li>– Requires a credit rating.</li> </ul>

### **Leasing - the kind of long-term financing**

long-term lease of assets with the possible repurchase of the property by the lessee on residual value. This is a long-term lease of machinery, equipment, buildings for production purposes. Leasing - is a way of investment financing and activation of marketing, which involves maintaining of ownership of the goods by the landlord. Through leasing, the lessor purchases machinery, equipment, vehicles, industrial facilities, computers and other capital assets and transfers them to the tenant under the agreement for the use of industrial purposes, while retaining ownership of them by the end of the agreement.

As part of a long-term lease there are two forms of leasing: finance and operating. Financial leasing is that during the time of the lease agreement tenant pays the full amount of the depreciation of the leased property to the landlord. Upon completion of this transaction tenant may:

- Return an asset to the landlord;
- Conclude a new contract for the lease;
- Buy the leased asset at its residual value.

The objects of the finance leasing are mostly industrial buildings and structures.

Operating lease is sometimes called service lease - a transfer of property to rent under the agreement, the term of which is shorter than amortization period of property. After the end of validity of the contract object can be returned to the owner or it can be re-leased, but on the less rental fee. With that user is provided by related services, repair and insurance of the leased property.

Direct bilateral leasing - leasing form, which involves ensuring, repair, replacement of leased equipment by leasing company (lessor).

Leaseback - a business transaction of a person or business entity that involves the sale of assets to financial organizations, banks, insurance companies, etc. with simultaneous receipt of them by this person or business entity in the operating or finance lease.



If the lease payments ( $\Pi_n$ ) are paid equally, the amount of the payment is determined by the formula of complex interests:

$$\Pi_n = \frac{C \times P}{1 - \frac{1}{(1+P)^t}}$$

where:  $C$  – amount of lease payments, uah;

$P$  – interest rate based on commission (in fractions of a unit);

$t$  – number of payments.

Also, the value of the lease payments can be calculated by the formula:

$$\Pi_n = \frac{K \times P \times (\Pi_n - \Pi_{3al})}{100} + Ap$$

where:  $K$  – coefficient taking into account the type of equipment, lease term, the number of the lease times, etc. (it is recommended to take 0.5 for initial calculations  $K$ )

$P$  – interest rate (including commission fees);

$\Pi_n$  and  $\Pi_{3al}$  – initial and residual value of the equipment;

$Ap$  – annual amortization payments;

Interests of the object of leasing agreement are calculated as follows:

$$P = \frac{(\Pi_n - Ap) \times 100}{(\Pi_n - \Pi_{3al}) \times K}$$

where:  $\Pi$  – annual leasing payments.

Leasing payments are paid annually, semiannually or quarterly. They can be regressed or fixed. Fixed means uniformity of payments for the entire term of rental term by calendar. Regressed payments in the first year of the lease are higher than the next, keeping the total amount.

#### 4. Methods of international business financing

Sources of short-term financing of international firms are divided into two main groups: internal, external financing sources.

Variety of internal financing is self-financing and intercompany loans. In general, the internal sources of financing of firms are retained earning and amortization redistributed within the firm by using in-house international loans.

External financing of company or its subsidiaries are bank financing (national, foreign and in euro) and receiving of funds through stock market.

##### Intra-short-term financing

Intra-short-term financing is a providing of currency loans to the various business units, and providing of currency loans by the main company to its subsidiaries and vice versa.

These loans are available in the form of:

- Direct international corporate credit;
- Compensatory internal firm credit;
- Parallel internal firm credit.

#### Tasks for individual work.

1. Provide a comparative description of leasing and loans agreements.
2. Analyze leasing market in Ukraine.
3. Which domestic sources of capital are often used by Ukrainian industrial companies?
4. Evaluate market of short-term bank credits.

Main reading: 1, 2, 4, 5, 6

Additional reading: 1, 5, 7 - 9, 14

## Topic 2.2. Formation and distribution of the enterprises profit

1. Content and the objectives of the enterprise profit management.
2. Formation of operational income, management of operational costs.
3. Management of the enterprise operational income.
4. Formation and distribution of net income.
5. Dividend policy of the enterprises.

### 1. Content and the objectives of the enterprise profit management

Profit is the best to reflect the financial result of business activities, it provides financing for production expansion, socio-economic development of the company, it is a source of material expansion for workers and the base for the calculation of indicators of investment attractiveness *на утеукзкшиу*. Profit is the source of income formation of the state budget and in this way coordinates the interests of the state and business structures.

*Profit from ordinary activities before tax* - the total revenue received by company from all activities (operating, investing, financing).

*Margin (gross profit)* is defined as the difference between the net receipts from sales and the cost of production (variable costs).

*Extraordinary income* - the difference between revenues and expenses due to emergencies (natural disasters, fires, industrial accidents, etc.).

*Net income* is the amount remaining in the possession of the company after-tax, extraordinary losses and is subject to redistribution in the areas of use.

Thus, *profit management* - a complex multi-system of transactions, which includes minimum of three subsystems: the formation, distribution, use.

The main objectives of profit management are:

- defining of reserves for increasing of profits through production, investment and financial transactions;
- identification of reserves for increasing of profits by optimizing of the fixed and variable costs, justification of the enterprise accounting policy, pricing policy, tax policy;
- evaluation of profitability of industrial and commercial activities;
- defining of business risk;
- strengthening of the competitive position of the company by increasing of the efficiency of distribution and use of income.

Many factors that must be considered in the management process affect the volume of income. These factors can be divided into two large groups: external, that are independent of the company, and internal into wich company can affect.

### 2. Formation of operational income, management of operational costs

*Operating profit* - a profit from operations of the enterprise, that is from production and sale of goods, services and works.

The main goal of the profit management is optimization of earnings and expenses, identifying of reserves and their mobilization.

Income (loss) from operational activity is calculated in several steps.

- at the first step net income from sales is determined by correction of the income from sales on amount of indirect taxes and other deductions from income;
- at the second step recieved result is corrected on the production cost of saled goods. As a result, gross profit or loss from the sale of products is calculated;
- at the third step, gross profit increases (decreases) on the amount of other operating income (loss), which is received from the sale of other current assets (except of financial investments), operating rent of assets, operating exchange difference and receipt of fines, penalties, etc;
- at the fourth step the profit (loss) from operational activity is defining as the difference between the result of the third step, and size of administrative expenses and marketing costs.

## Operational costs management

Decisive place belongs to cost of production and sales of products among factors influencing the operating profit. Operating expenses include production cost of sales; administrative costs; marketing costs; other operating expenses. Each type of operating costs can be decomposed into economic elements: material costs, wages, labor charges, amortization payments and other operating expenses. Overhead costs of production divided by the composition and method of distribution are shown in Fig. 2.2.

General running costs connected to the the maintenance and servicing of the company appear in the article "Administrative expenses":

- cost of maintaining of the administrative, commercial personnel;
- cost of maintaining of fixed assets of administrative purpose (rent, taxes, insurance, amortization, repair, security, utilities);
- fees for professional services (legal, accounting, health care);
- spendings on research and development.

The article "Marketing expenses":

- on the packaging, rapir of packaging;
- wages and commission of merchants, agents, drivers, workers, warehouse staff, bepartment of dogistics;
- on advertising and marketing;
- trips.

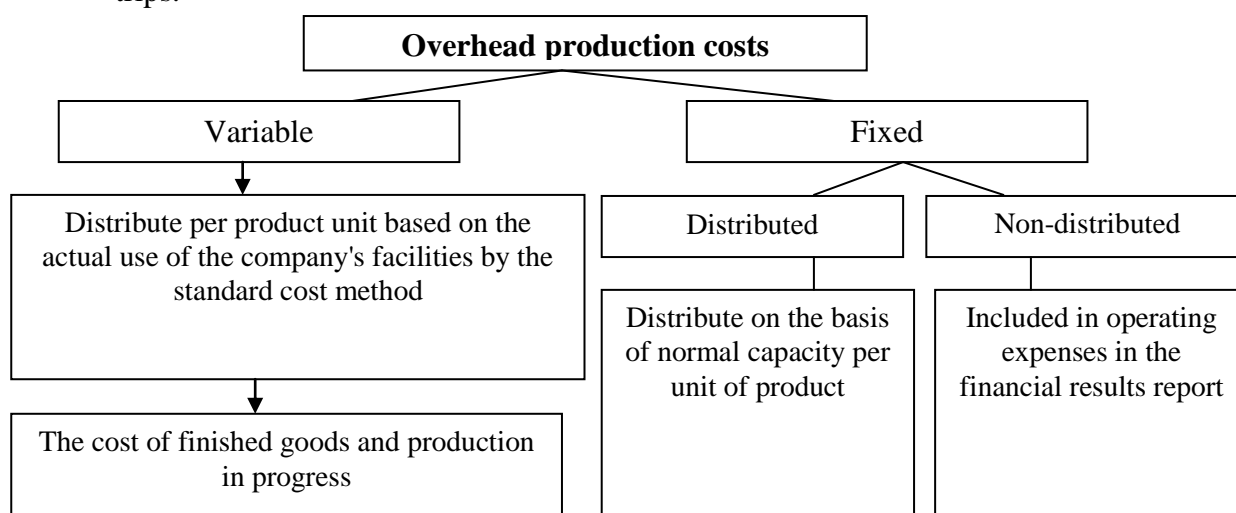


Figure 2.2 - Procedure of distribution of overhead costs

Article "Other operating expenses":

- cost of sales of production stocks;
- questionable (bad) debts;
- costs of depreciation of stocks.

Production cost of sales is determined by the formula:

$$C_{\text{пн}} = \text{З}_{\text{п}} + C_{\text{тп}} - \text{З}_{\text{к}},$$

$C_{\text{пн}}$  – production cost of sales;

$C_{\text{тп}}$  – cost of commercial products;

$\text{З}_{\text{п}}, \text{З}_{\text{к}}$  – cost of finished products on stock at the beginning and at the end of the reporting period.

The cost of commercial products is calculated by the formula:

$$C_{\text{тп}} = \text{З}_{\text{нЗВ}_{\text{п}}} + \text{BB} - \text{З}_{\text{нЗВ}_{\text{к}}},$$

$\text{З}_{\text{нЗВ}_{\text{п}}}, \text{З}_{\text{нЗВ}_{\text{к}}}$  – size of production in progress at the beginning and at the end of the reporting period;

BB – production costs in the reporting period.

Earnings from sales include costs and profits, it is an object of distribution. Thus there are two groups of methods to influence the amount of costs - actual and formal.

If the actual methods are related to the direct impact on the reduction of material costs, labor input, and so wage costs, the formal methods do not affect the natural values of costs but operate only their cost values. They are the domain of financial services of companies. That is, finance manager generates operating income by controlling expenses through the mechanism of evaluation of inventories debited to the cost of sales.

Since inventory is a key element of cost of goods sold there are different inventory evaluation methods: FIFO, LIFO, average cost of sales.

Evaluation of the cost of inventories by FIFO method takes into account the cost of the earliest time of receipt of inventories, including their balances at the beginning of the year, regardless of the cost of sales and the dates of last stocks receipt.

LIFO method means that the calculation of the cost of inventories sold from the stock during the reporting period is based on the set of supplied products at the beginning of the last party that entered the warehouse. So the cost of the most recent purchase of stocks is taking into account. In the context of inflation, this method leads to decreasing of income.

The third method of inventory evaluation involves determining of the weighted average cost of inventories at the beginning of the period and those that were purchased or produced during the period.

Choosing of inventory evaluation methods is defined by accounting policy of the enterprise. It also determines the choosing of amortization calculating methods. The fact is that the traditional for practice of most companies method of uniform rectilinear calculation of amortization is not always justified, especially when the equipment is used with varying intensity over the lifetime or rapidly getting older. Therefore more flexible methods of calculation of amortization were made. Choosing one of them depends on factors such as inflation, the availability of tax benefits, the rate of obsolescence and others. Amounts of amortizations affect the amount of operating income and are subject to control costs.

Cost management covers the analysis and evaluation of operational costs for their items. They are divided into controllable and uncontrollable. Controllable costs include premiums, payments based on participation in profits, travel expenses, entertainment and more. Not all are interested in reducing of them, so to reduce these costs is difficult, but possible.

Uncontrollable costs cover utilities, rental obligations, wages of employees and others. These costs leadership can not change in the short term.

### **3. Management of the enterprise operational income**

Management of the enterprise operational income includes the following components:

- 1) determining the amount of sales that providing break-even operational activity;
- 2) use of operational leverage in justification of the ways to increase profits;
- 3) providing of operational analysis to evaluate the impact of various factors on the amount of profit.

Planning a profit from operating activities is necessary to determine the break-even point, which corresponds to that amount of sales at which revenues from sales are equal to the cost of production and sale of these products. Break-even point can be determined by graphical methods (Figure 2.3).

If the level of sales is lower than the break-even point, to produce this kind of product is unprofitable, loss. Each product unit, sold in an area that is higher than the break-even point, increases the profit.

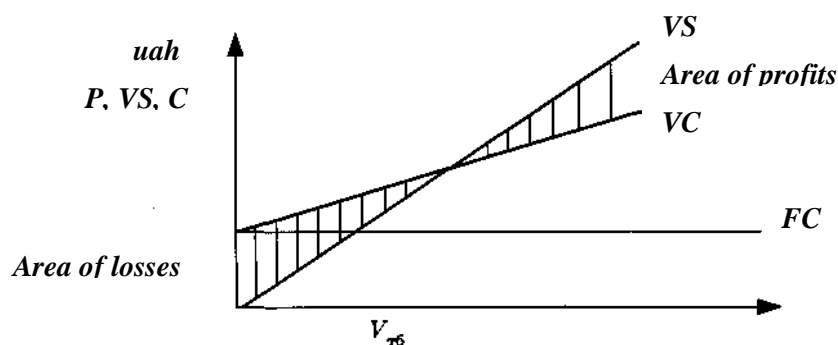


Figure 2.3 - Graph of break-even point formation

where  $FC$  — fixed costs;  $VC$  — variable costs;  $VS$  — volumes of sales;  $V$  — sales in physical units;  $V_{тб}$  — sales in breakeven point;  $P$  — profit.

To determine the break-even point by the analytical method we will make a series of substitutions and introduce the new parameters:  $C$  - cost of production and sales;  $P_i$  - price per unit of product;  $VC_i$  — variable costs per unit of product.

In the breakeven point there is:

$$\begin{aligned} VS &= C, \\ \text{or } V_i P_i &= FC + VC; \\ VC &= VC_i V_i; \\ V_i P_i &= VC_i V_i + FC; \end{aligned}$$

Thus, the break-even point in physical units can be found by the formula:

$$V_i = \frac{FC}{P_i - VC_i}$$

Calculations of break-even volume of sales using this formula are possible for each product separately. If it is necessary to make calculations for the whole enterprise, than the break-even volume of sales is determined using the gross margin.

Gross margin, or the profit margin is calculated as the difference between sales and variable cost volume using the formula:

$$GM = VS - VC,$$

where  $GM$  — gross margin.

Connection of the operating profit and the profit margin can be illustrated using the graph (Figure 2.4).

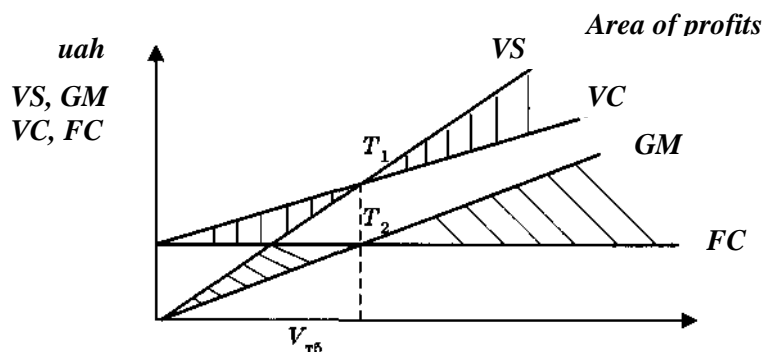


Figure 2.3 - Graph of break-even point formation

Return on fixed costs is achieved at point  $T_2$ , and the company begins to make a profit. All costs are returned at the point  $T_1$  and profits area is arising. And in the first and second cases, profit is the same, because:

$$VS - FC - VC = GM - FC$$

Having a permanent fixture in expenses when sales are growing provides an increase in profits. Thus, the rate of increase (decrease) in income outpaces the increase (decrease) in sales. This effect is called operating leverage or operating lever.

To determine the level of the effect of operating leverage the specified coefficient of potential or effect of operating leverage can be calculated by the formula:

$$K_{e.o.l} = \frac{GM}{P}$$

This coefficient shows how much enterprise profit will increase (decrease) when volume of sales increase (decrease) on the one percent.

The ratio between fixed and variable costs affect the level where is a break-even point and intensity of profit changes depending on changes in sales. To evaluate this affect coefficient of operating leverage ( $K_{01}$ ) is determined by the formula:

$$K_{o.l} = \frac{FC}{FC + VC}$$

The greater the proportion of fixed costs in the cost of production, the more intensive is income changing due to the changes in volume of sales. Operating leverage mechanism allows to adjust the level of fixed costs to increase profits. For each value of the coefficient of operating leverage rate effect of operating leverage can be calculated ( $K_{oe1}$ ) by the formula:

$$K_{e.o.l} = \frac{\Delta P}{\Delta VS}$$

where  $\Delta P$  - the growth rate of operating income,%;  $\Delta VS$  - the rate of growth in sales,%.

The higher the coefficient of operating leverage, the greater the risk of business activity as minor fluctuations in sales caused significant changes in profit margins. In conditions of the economic crisis, decrease in demand on the market it is necessary to optimize the ratio between fixed and variable costs.

#### 4. Formation and distribution of net income

*Net profit* - profit that is held by the company after tax and is a source of the consumption and accumulation funds formation.

Profit or loss of financial operations is defined as the difference between income from equity, other financial income and other income and financial expenses, losses and other expenses.

If the ordinary activities of the company made a profit, it is reduced by the amount of tax. In case of loss tax amount on income is added to the loss.

The financial result from ordinary activities is corrected on the amount of revenues, expenses and taxes of the extraordinary activity. Formation of profit (loss) from financial operations is shown on Fig. 2.7.

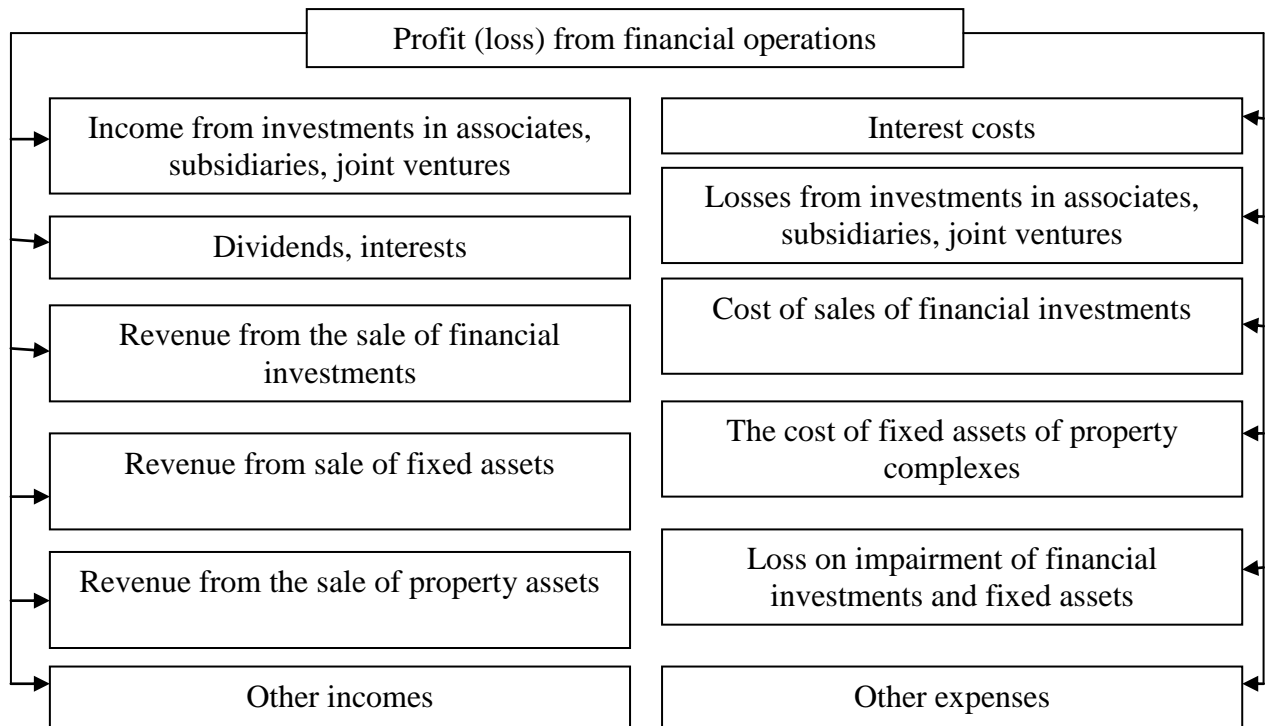


Figure 2.5 - Formation of profit (loss) from financial operations

Net income is needed be distributed according to the goals and objectives that are defined by the enterprise. The mechanism and the proportions of profit distribution largely determine the interests of participants of production process and influence their efficiency.

Proportion of the distribution of net income to consumption and savings has main importance for the future development of the enterprise. Within the consumption fund essential for investment attractiveness of the enterprise is the proportion of its distribution to fund of dividends payment and other funds of consumption.

### 5. Dividend policy of the enterprises

Chosen dividend policy greatly influences the distribution of the profits of enterprises established as joint stock companies, which is a set of principles and methods of payment of dividends in accordance with the objectives of financial and economic activity in a specific period of time.

The purpose of dividend policy is to optimize the proportions of the distribution of net income for current consumption in the form of dividends and industrial development in order to maximize the market value of the company. Accordingly, shareholders' income consists of two parts: consumed and capitalized.

The main parameters that characterize the performance of dividend policy, include:

1. Payout ratio, and dividend yield, describes the proportion of the distribution of net profits (after payment of fixed obligations) to pay dividends and finance investment needs. Fixed payment obligations include payment of principal on the credit by the profits, the repayment of bonds, payment of dividends on privileged shares.

There are two ways to determine the coefficient of dividend payment:

1-way:

$$K_g = \frac{D_a}{NP} \quad 100\%$$

where  $K_g$ — dividend payout ratio;

$D_a$  — current dividend per share paid in cash;

NP — net profit of corporation in per share after payment of fixed obligations.

2-way:

$$K_{\text{э}} = \frac{\text{FDP}}{\text{NP}} 100\%,$$

where FDP — fund of dividend payments without fixed liabilities (or otherwise known as the "weight" of dividends);

NP - net profit of corporation after payment of fixed obligations.

2. Level of shares profitability characterizes the amount of income received by the shareholders at each grivna invested in shares. Determined by the formula

$$LP_a = \frac{D_a}{MP_a} 100\%$$

where  $LD_a$  - level of shares profitability;

$MP_a$  — market price (rate) of share.

3. Joint stock company for evaluation of developed policies define indicators, similar to the  $LD_a$ , according to the results of the total evaluation of all dividend payments and invested equity capital. This indicator is called as rate of return on paid-up capital and is calculated by:

$$CД = \frac{\text{FDP}}{AK_0} 100\%$$

where  $CД$  — rate of return on paid-up capital;  $AK_0$  — paid-up share capital.

4. Coefficient of price and earnings ratio per share ( $K_{\text{ц/д}}$ ) is determined by:

$$K_{\text{ц/д}} = \frac{MP_a}{D_a}$$

*Dividend announcement date* - the day when the decision of joint stock company on the amount of the dividend is taken and publicated, the date of the census and payment of dividends is officially set.

*Ex-dividend date* - shareholders who bought shares before that date are entitled to receive dividends. If the purchase and sale of shares was made after the ex-dividend date, the current dividend is not paid to the new owner. Accordingly, in this day, the market share price falls by the amount of dividends.

*Date of payment* - the day when payments of dividends are made directly to shareholders who are entitled to receive them.

### **Principles of dividend policy**

Developing of an effective dividend policy is based on the use of the following principles:

- balancing of the various interests of shareholders, creditors and of the corporation as an business entity;
- taking into account the effects of inflation on the level of dividend payments to shareholders and the amount of reinvested net profit of enterprise;
- using at least 5% of net profit for the formation of the reserve fund of the corporation until it reaches 25% of the capital fund;
- taking into account differences in the interests of small and large (strategic) investors.

The main factors that determine the specific content of the dividend policy of the company, include:

- stage of the life cycle of an enterprise;
- intensity of investment processes at the enterprise;
- cost of attracting of financial resources from alternative sources and their availability on the financial and monetary markets;
- the level of creditworthiness of the company and its ability to attract additional debt capital;
- financial constraints.



In theory of dividends, depending on the degree of risk for the development of the corporation there are three strategies of forming of a dividend policy: conservative, moderate (compromise), aggressive. Set of methods that can be applied within each strategy are illustrated on the scheme in Fig. 2.6.

The method of residual payments implies that fund of dividends payments is formed according to the residual principle only after investment needs of the enterprise are financed using the net profit.

The method of stable dividend payments ratio is determined by the proportion of the distribution of net income (after the obligatory payments) between the shareholders and the joint stock company, dividend payout ratio is fixed (dividend yield).

The method of stable value of dividends provides setting of a fixed rate of return on paid-up share capital.

The method of constant and variable proportion of dividends provides regular stable low dividends and additional payments in good years.

The method of constant growth of dividends provides setting of the fixed rate of dividend growth.

In addition to these methods of dividend payments to influence the liquidity of the shares and retain their market value within the optimal range firm can use the operations of grinding and consolidation of shares.

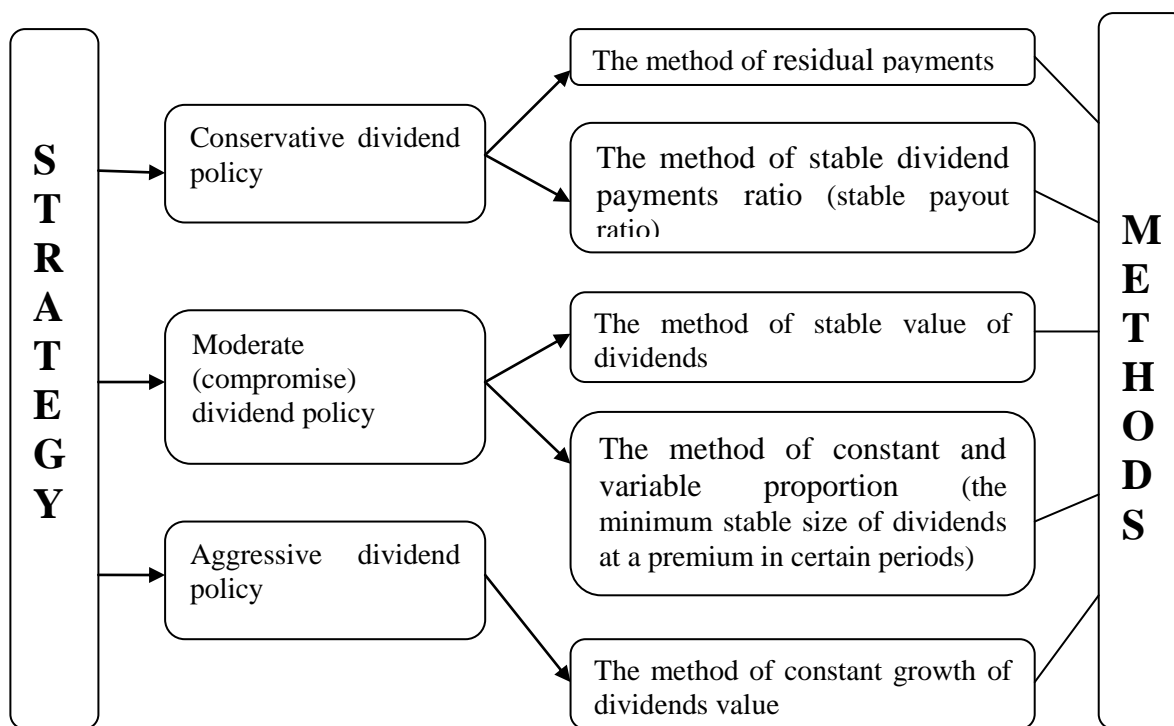


Figure 2.6 – Strategies of dividend policy and methods of dividends payments calculation

Share splits (split) provides issue of additional shares without increasing of the size of the share capital.

Shares consolidation (consolidation) – another of split operation, which means to change some shares on a smaller number of larger denomination according to the selected scale consolidation. Like the previous operation, consolidation does not change the overall size of the equity capital and has more psychological impact on investors.

### Tasks for individual work

1. What is the tax policy of the company and what are its main objectives?

2. Which distribution of income can be considered the best?
3. Measures of optimizing of the pricing policy of Ukrainian enterprises.

**Main reading: 1, 2, 4, 5**

**Additional reading: 1, 5, 7 - 9, 14**

### **Topic 2.3 International mechanisms for the redistribution of financial resources**

1. Market of the international bank credits.
2. Market of international securities

Functioning of the international market mechanism involves the accumulation and redistribution of national in origin of financial resources in the international credit capital market. The structure of the world market of credit capital is represented at fig.2.7.

Official (out of market) mechanism of redistribution of financial resources covers official international financial assistance to the development countries, the movement of official currency reserves, flows of external debt financing. That movement of financial resources between the borrower and the lender is regulated by international financial institutions of global and regional levels.

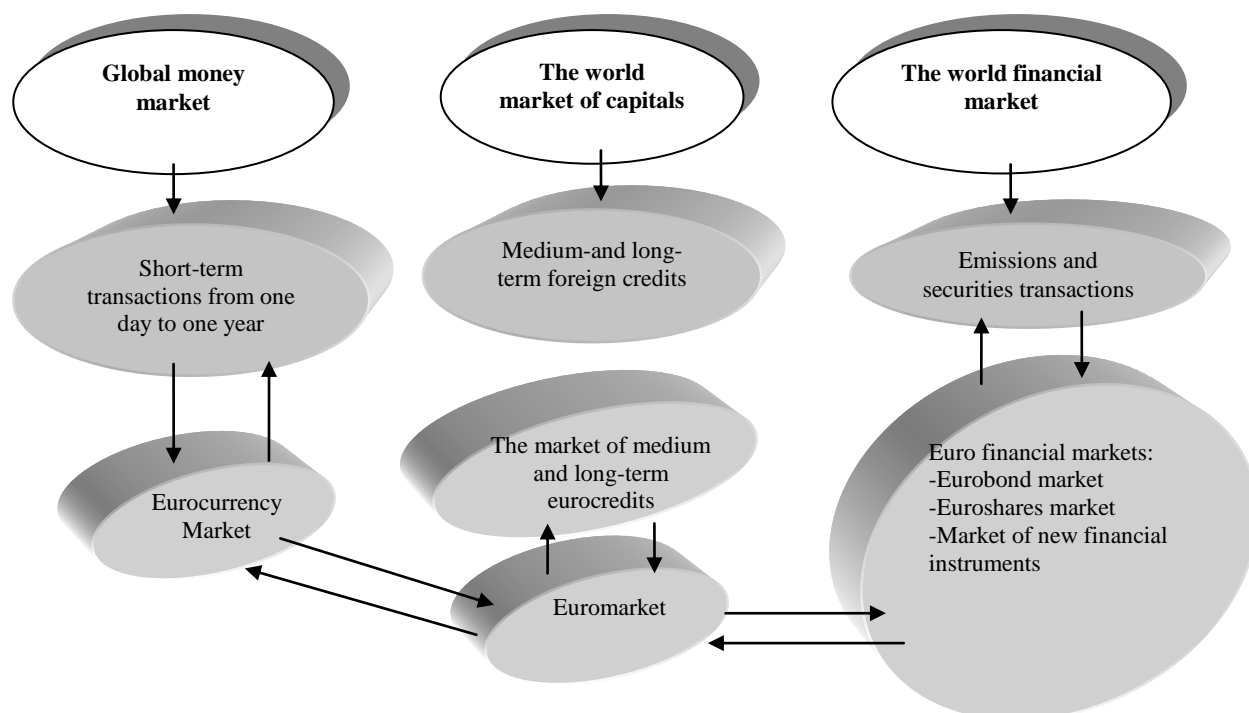


Figure 2.7 - The structure of the global credit capital market

#### **1. Market of the international bank credits**

Euro currency - money received by the bank as a deposit in the currency or money borrowed by the bank to some of its customers in a currency different from the official currency of the location of the bank.

Euro credits (international syndicated credits) are short-term or medium-term bank credits in the euro-currency provided on the base of floating (rollover) interest rates outside the country in whose currency the credit is open.

Euro credits are characterized by specific features, which are described in the table. 2.2.

Table 2.2 - Characteristics of euro credits

<b>Items</b>	<b>Characteristics</b>
Credits amount	100 to 500 million \$
Period	from 1 to 12 years
Interest rate	Regularly reviewed, calculation is based on the interest rate (LIBOR, PIBOR, SIBOR, "Prime rate") plus the difference (spread)
Fees	Fees for management, fees for participation, fees for credit servicing
Currency	USD, JPY, GBP, Euro
Access to funds	Quick
The right to early repayment	In case of fees payment

### **The procedure of syndication**

The basis for determining of the interest rates of syndicated credit is international interest rates (LIBOR, an abbreviation of the London Interbank Official Rate, or the London interbank offered rate for deposits; SIBOR - Singapore offered rate for interbank deposits, U.S. "primerate"). These rates add value of spread, which depends on the creditworthiness of the borrower and ranges from 0.50 to 2.50%.

## **2. Market of international securities**

To securities traded on the international market of medium-and long-term capital include the international bonds, euro shares and other from them financial instruments, which are called financial derivatives. Consider these financial instruments more.

Euro shares - are shares that are issued by international financial institutions and allocated simultaneously on different markets.

Euro shares are selling on the European markets and quoting in the some off-shore centers (mainly in London and in Luxembourg and Singapore). International banking syndicates make sales for the euro.

### **International bonds**

International bond market is one of the largest sources of medium-and long-term capital in the international sphere. The term "international bonds" combines the two types of bonds: euro and foreign bonds.

#### **The procedure for the selling of foreign issued bonds**

Sales of foreign issued bonds are made by using underwriting, guaranteed replacement. This process begins with the fact that the borrower with the bank manager considers the sale of issued bonds with a maximum gain analyzing all of the details of issue: period of repayment, coupon income, the possibility of early repayment, the premium provided by prior withdrawal, repayment terms.

Eurobonds, unlike foreign bonds, are allocated simultaneously on several markets by multinational syndicates and currency of issue is foreign to most investors who buy them. That is a bond that is sold in another country, but not in the country in whose currency it is denominated.

Eurobond market provides relatively greater international mobility of capital, as it provides an opportunity to attract a wide range of borrowers and investors. Accelerating diversification of financial assets Eurobonds help investors rapidly build portfolios at a minimized risk.

#### **The procedure for the sales of Eurobonds**

Eurobond market has no specific geographical location, and their sale is carried out simultaneously in different countries. Eurobond market is virtually unregulated and multicurrency.

Eurobonds income depends on the internal market rates percent of the countries in which currency Eurobonds are denominated.

Foreign investor buying Eurobonds, hoping for appreciation of the currency in which the

bond is denominated. But increasing of interest rates in the country of this currency (interest rate risk of changes in rates) leads to a decrease in the value of bonds. Relatively short period of repayment is one way to minimize interest rate risk.

Eurobond replacement relative to international is considerably riskier event. Allocation of foreign securities is accompanied only with risk of higher interest rates on the local capital market. Multifactor of Eurobonds replacement risk causes higher than on the foreign bond markets, level of gross profits of underwriters, sometimes - 2 times.

Currency of euro bonds denomination is an important factor that affects the future income of the investor. Choosing currency of the bonds, investor must take into account two main factors: interest rates and expected changes in exchange rates during the rotation of the bonds, which will determine the future value of issue.

The main differences between Euro credits and Eurobonds:

- Value.
- Period.
- Amount.
- Flexibility of the loan.

### **Eurobonds with fixed rate**

Eurobonds with fixed-rate include traditional bonds; bonds convertible into shares; bonds with warrants or subscription certificate; multicurrency.

Eurobonds with floating rate (Floatingrate Notes). This type of bonds is covering bonds "mini-max", Flip-Flop, bonds with regulated rate, bonds with a fixed upper limit, bonds with currency option. At the international bond markets besides the above pointed there are zero coupon bonds and bonds guaranteed by mortgage.

## **Topic 2.4. International official mechanism of the redistribution of financial resources**

1. Kinds of official international development assistance (DAC)
2. Characteristics of international financial institutions
3. Official external debt. Mechanism of debt restructuring.

### **1. Kinds of official international development assistance (DAC)**

The official international development assistance is provided to the countries-recipients from official foreign donors. The direct representatives of the recipient country are: the government of this country, the government authorized executive body, central and export-import banks, banks - government agents to attract and use foreign credits, legal entities - residents of the country.

Official foreign donors are international financial institutions, governments of some countries and their associations, authorized government agencies.

From the funds borrowed on market conditions, financial assistance is different by the so-called "grant-element" - index of benefits. The grant element is calculated by the formula:

$$E_{gr} = \left( 1 - \sum_{i=1}^t \frac{B_i}{A(1+a)^i} \right) 100,$$

$E_{gr}$  – grant element;

$B_i$  – actual repayment of debt;

$A$  – loans amount;

$a$  – interest rates of commercial banks (as a rule it is taken at 10%);

$t$  - period of loans.

DAC provided to the recipient countries from the world economic community can be: bilateral, multilateral and collective.

### **2. Characteristics of international financial institutions**

International financial institutions - is an extensive network of international monetary and financial institutions.

The general objectives of the international financial institutions activity are:

- stabilization of the world economy and international finance by combining the efforts of the international community;
- implementation of interstate exchange currency, credit and financial regulation;
- development and coordination of strategies and tactics of the international currency and credit and financial policies.

International organizations provide credits to countries-members needed them, develop the principles of operation of the global monetary system, assist in solving international economic and financial problems.

The international financial institutions of world class include, first of all, a specialized UN institutions - the International Monetary Fund, the World Bank Group.

#### **Instruments of the official international development assistance**

The official international development assistance is carried out using the following instruments:

- credits for realization of the projects of economic development of the country;
- export credits;
- grants to support reform actions of the government of the recipient country;
- non-credit instruments of the official international assistance.

Money given for projects of economic development of the country, are called "project aid". Export credits (commodity assistance), grants, emergency aid of governments and countries belong to the non-credit project assistance.

Each project of the economy development of the country consists of three parts:

- obligations between governments and donors, according with international legal standards and applicable national legislation of the country;
- economic part containing developed by the government in cooperation with donor development program for certain sectors of the economy, the mechanism for its implementation, and monitoring;
- improvements in preparation and implementation of projects.

#### **Classification of projects of economic development of countries-members of MFI**

Projects of the economies development of countries-members of MFI are divided into four classes:

- A. Projects of macroeconomic stabilization of the economy (system projects).
- B. Projects of structural transformations in the specific sectors (areas) of the economy (structural projects).
- C. The investment projects.
- D. Technical assistance projects.

#### **Out of project assistance**

The instruments of out of project assistance are:

- commodity aid (export credits);
- grants to support the reform actions of government;
- non-credit instruments.

#### **Essence and indicators of external debt**

Financial resources received on commercial terms and in the form of financial assistance are paid, resulting in the formation of foreign debt.

External debt - is the country's total liabilities to external creditors on unpaid foreign loans and unpaid interests.

Liabilities are classified according to various criteria:

- according to the methodology of the World Bank, they can be long-term with payment period of over one year and short-term within a year;
- according to the type of borrower external debt is divided on government, guaranteed by

the State and private;

- according to the type of lender: official and private. In turn, the official debt obligations include both obligations to international organizations and bilateral. Private debt obligations cover debts to commercial banks, bonds and other debt.

Long-term debt obligations consist of government debt, debt guaranteed by the State and private non-guaranteed debt.

State (official) external debt (public debt) - is the sum of the obligations of central and local government bodies to external creditors for unpaid loans and interests. Public debt occurs when foreign creditors are governments of other countries, central banks, government import-export banks, government agencies, and international financial institutions and regional development banks.

If payment of public debt is held after this year, this debt is capital. Current state foreign debt is paid during the current year.

Debt guaranteed by the state - a debt of private economic agents (firms, banks and companies), guarantee of the payment of which is the state.

Private non-guaranteed debt – is the debt of private economic agents, the payment of which is not guaranteed by the state. Private debt arises when private agents receive external resources in the form of bank and other loans, raise funds through replacement of debt securities on the international financial markets.

### **Tasks for individual work.**

1. Analyze Ukraine's cooperation with international financial institutions.
2. Evaluate the level of risk of foreign investments in Ukraine.
3. Ukraine's cooperation with international financial institutions.
4. Define the activities of the Paris and London Club of creditors.
5. Evaluate external debt of Ukraine.
6. Activities of the regional development banks.
7. Bonds of external loans of Ukraine and Eurobonds of Ukraine, their level of profitability.
8. Analyze the current investment climate in Ukraine.

**Main reading: 1, 2**

**Additional reading: 11, 12, 24**

## **Topic 2.5. The role of stock markets in attracting of financial capital of the enterprise.**

### **Dividend policy of companies**

1. Essence and types of financial markets.
2. Hypotheses of efficiency of the financial market
3. Key indicators of the world financial markets

### **1. Essence and types of financial markets**

Financial markets carry out almost all the same functions as their commodity counterpart: provide participants with the necessary information about supply and demand for resources and form a market price for these resources. The implementation of these functions allows financial markets to create choices for consumers, facilitate risk management, influence on management of companies.

Depending on the duration of the resources provided there are markets of long-term and short-term capital.

#### Short-term capital markets.

Typically, these are money markets with transactions for up to 1 year. Money markets are divided into credit and currency markets.

On credit markets banks and enterprises can get a short term loan. Companies usually are credited in commercial banks. Most banks attract short-term capital on market of interbank loans.

Offered rate of London interbank market (LIBOR) is generally accepted in the world benchmark price for this kind of loans. Typically, this rate is the starting point in determining of the price of credit received by enterprise in a commercial bank.

To the money markets can be classified as transactions for buying and selling short-term financial instruments - bills, treasury bills and bonds and so on. Typically, in this way capital of government and big banks is attracting, to businesses they serve as instruments of short-term investments. The best known instrument of this kind is 3 and 6-month U.S. treasury bills.

On the foreign exchange market large batches of foreign currency are buying and selling. Direct participants in such markets are banks that have this kind of license of central bank. Every day, central banks set official rates of national currencies. On the currency markets courses "spot" and "forward" are defined. Spot rate reflects the price of the currency for immediate sale. Forward rates show its expected value at 1, 3 months and after 1 year passed.

#### Long-term capital markets

Long-term capital markets can be divided into banking and stock. In the banking market the company can get a long-term loan. Investment banks (such as Morgan Stanley and Merrill Lynch) provide businesses help in replacement of long-term securities and advising on their long-term investment and financing. Basic operations of such banks are carried out by them on the stock markets, but not in the field of direct lending.

The stock market is the main source of long-term capital for enterprise.

Classification of the stock markets

1. Kinds of capital that is involved:

- equity market;
- long-term debt capital market;
- market of hybrid instruments.

2. According to the content of transactions made in the market:

- primary stock market;
- secondary stock market.

3. According to the way of trade:

- organized;
- disorganized (over the counter).

4. Depending on the characteristics of instruments traded on the market:

- major securities;
- derivatives of securities.

Present classification is not exhaustive and indisputable. For example, it is often when the stock market means trading only shares of corporations, considering the bond markets or derivatives as independent forms of trade.

Accumulating vast amounts of information from various sources, the market should quickly work with it to transform many primary numbers and letters in a small number – the share price. Market's ability to perform the following conversion of information is its *efficiency*.

## **2. Hypotheses of efficiency of the financial market**

Financial markets can be presented as an information system, to the input of which enters data of enterprise financial reporting, newspapers, information of rating agencies and a host of other information of the macro-and microeconomic nature, political news, reports of natural disaster and so on. As a result of processing this information "material" within the system, it becomes a "finished product" - the prices of financial instruments traded on the market. Data on market prices come out of information systems. The effectiveness of such a system is characterized by its ability to adequate perception of the maximum possible amount of incoming data and rapid processing, which is the transformation of all of this information into a new value of market prices. Changes in exchange rates of securities – is almost the only possible form of market reaction on incoming information to it.

It is believed that the market has a weak measure of efficiency if prices of instruments

traded on it reflect only the information contained in the dynamics of previous years quotes quotes. If current market prices reflected all publicly available (public) information, the market has an average degree of efficiency. In this case, it becomes impossible to obtain over profit from the possession of such information. It is believed that the average effective have the most famous in the world organized stock markets: NYSE, London Stock Exchange and so on. Strong measure of efficiency means that current market prices reflect not only the public, but also private information, so it is impossible to "make money", having before it even top-secret information, such as the planned reorganization of any company.

### **3. Key indicators of the world financial markets**

Financial market is not only deal with large amounts of diverse data, but it is also the largest supplier of the most important financial and economic information. Of course, the main information "commodity" of market is a stock quotes, information on bond prices, exchange rates, interest rates. Daily business publications (newspapers: English Financial Times, U.S. The Wall Street Journal, TV and radio programs, Internet websites) regularly bring users to this information. Enormous value has the general information about the market in general, getting of which you can to quickly evaluate the nature of the major trends that prevail at the moment. Various summary (composite) stock indexes that are regularly published in the financial press provide this information to the market participants.

The most famous in the world of business activity index is a Dow Jones Industrial Average (DJIA), the average Dow Jones index is calculated on shares of 30 industrial companies, which are listed on the NYSE. Composition of this index consists of shares of major American companies such as IBM, General Electric and others called "blue chips». In essence, it represents the arithmetic average weighted price of the shares at the time of exchange closing.

The bond markets have significant characteristics, a large part of the securities are selling on the unorganized market (over the counter). Another factor is the specific characteristic of the "goods" – debt capital. Sooner or later, the original amount of the loan must be paid back to the lender. So that credit ratings published by independent rating agencies play very important role on the bond market. The first such ranking was published in 1909 in the United States. Its author was John Moody, who used the method of evaluating of the creditworthiness of companies, developed in the company Dunand Bradstreet. At this time, John Moody rating agency is a part of the company Dunand Bradstreet. Credit ratings of this agency are called as Moody's Investors Service (abbreviated Moody's). They are considered to be one of the most authoritative sources of relevant information in the world. The main competitor of Moody's rating is the above-mentioned company Standard and Poor's - its generally accepted designation S&P.

#### **Tasks for individual work.**

1. Evaluate alternatives for short-term and long-term financing on example of some company.
2. Activities of international investment banks and funds.
3. Aims and examples of American and global depositary using.
4. Activities of mutual investments funds.
5. What components include Ukrainian stock market. Its key indicators.
6. Explain advantages and disadvantages of forward and futures contracts. How it possible using the forward and futures contracts to minimize currency fluctuations and how to use futures contracts to reduce the foreign exchange risk.

**Main reading: 2, 3, 5, 6**

**Additional reading: 5, 9, 16, 19, 21, 23, 24**

#### **Topic 2.6. Management of investment risks**

1. Risk and its types.



2. Risk in the context of securities portfolio. Quantitative measurement of risk.
3. Capital Asset Pricing Model (CAPM). The concept of "beta".
4. Relation between risk and rates of return.

### 1. Risk and its types

The main purpose of management – maximizing of wealth of owners, defined as an increase in the nominal equity, and growth in the market capitalization of the business. Thus, the most important criterion is the level of profitability of the project. However, a higher expected return is associated with a higher risk of its failure to obtain or risk of loss of capital invested. Therefore, analyzing any investment project financier must first evaluate the level of risk associated with it and then determine whether return on the project, which is planned is enough to compensate this risk.

The investor usually does not hold only one type of securities. It is safer to have a set of several financial instruments issued by different issuers: the so-called investments portfolio. The diversification of the investment portfolio is the most obvious and simple way to minimize risk.

### 2. Risk in the context of securities portfolio. Quantitative measurement of risk

The expected rate of return - the rate of return that an investor wants to get, the average amount of the probability of distribution of possible outcomes (expectation) of profit  $k_i$  with probability  $p_i$ :

$$\hat{k} = \sum k_i p_i$$

In statistics, a quantitative measure of the degree of distribution (deviation) of variable values around its average value (expectation) is a measure of dispersion  $\sigma^2$ .

$$\sigma^2 = \sum_{i=1}^n (k_i - \hat{k}_i)^2 p_i,$$

where  $k_i$  – possible rate of return.

The square root of the dispersion is called the mean square or standard deviation  $\sigma$  - statistical index of variability complex of observations, which shows how much the actual cost will differ from the expected.

$$\sigma = \sqrt{\sum_{i=1}^n (k_i - \hat{k}_i)^2 p_i}.$$

This index is used in financial management for quantitative measurement of the risk of the planned investment. The greater the deviation of the expected value of investment profitability around their arithmetic average the higher is the risk associated with this investment. The actual return value can be either much higher or much lower than its average.

Where you can get only the approximate value of return find the approximate value  $\sigma$ —S.

$$S = \sqrt{\frac{\sum_{t=1}^n (k_t - \bar{k}_{avg})^2}{n-1}},$$

where  $k_t$  – final profit of the period t,

$\bar{k}_{avg}$  – average profit over the past year of n years.

The practical value of this approach lies not only in the application of statistical formulas, but in recognizing the need to multivariate planning and investment decisions. Any expected results of those decisions can only be of possible character. Financier need not only apply the formula for calculating the return on investment, but also quantify the probability of a particular outcome. At a minimum, you should plan at least three scenarios: optimistic, pessimistic and most likely. Complete probability of all these options should be equal to 1.

The coefficient of variation CV - a standardized measure of risk per unit of return on invested capital. Determined by the ratio of the standard deviation to the value of the expected return on invested capital. That shows the risk per unit of return on invested capital and is used when the investment options differ on the percentage of standard deviation, and the percentage of

expected profit.

### **The risk in a portfolio context**

The expected return on the portfolio: percentage average of expected return on assets included in the portfolio.

The expected return on the portfolio  $\hat{k}_p$  — specific average value of expected return on individual funds that make up the securities portfolio. These values indicate the parts of the portfolio invested in each asset:

$$\hat{k}_p = w_1 * \hat{k}_1 + w_2 * \hat{k}_2 \dots = \sum_{i=1}^n w_i * \hat{k}_i ,$$

$\hat{k}_i$  — expected returns on individual securities;  $w_i$ , — specific values;  $n$  — number of packets of securities included in the portfolio.

### **The risk of a portfolio of securities portfolios**

The expected return on the portfolio – is not just specific average ratio of expected profits to individual assets included in the portfolio. The risk degree of the portfolio  $\sigma_p$ , as a rule, is not the average value of the specific standard deviations of the individual assets included in the portfolio. Its degree of risk is lower. In fact, even theoretically possible to combine two types of investments with quite high, considering their standard deviation, personal risk degrees, and form a relatively risk-free portfolio of  $\sigma_p = 0$ .

Separately, each share packet includes a fairly large degree of risk, but when they are combined into a portfolio W M, risk completely increases (packets of securities are named so because they resemble these letters on graphics). The reason that by combining of two risk packets portfolio without risk comes in result is that changes of their profits are in the opposite direction; when profits W are increasing, returns M fall, and vice versa. The tendency of two variables to simultaneously change is called correlation. This tendency is measured by the coefficient of correlation  $r$

The correlation coefficient  $r$  - a measure of the correlations degree of two variables.

### **3. Capital Asset Pricing Model (CAPM). The concept of "beta"**

CAPM model - a model that is based on the assumption that the required rate of return on any securities equal to the risk free rate of return plus a risk premium. It reflects only the risk that remains after diversification.

#### **The concept of "beta"**

Trend of securities fluctuate with the market is indicated by the beta coefficient, which is a measure of instability conditions for rate securities with respect to the total market. Beta - the main element of Capital Asset Pricing Model. The beta coefficient « $\beta$ »: indicator of relative volatility in share prices - of the covariance of the share relative to the rest of market.

Securities of medium risk are those that tend to rise or fall simultaneously with the development of the total market. This tendency is measured by indices such as the Standard End Pur 500, stock index of Dow Jones, index of the New York Stock Exchange. Such shares, by definition, will have  $\beta = 1,0$ . This beta indicates that in general, when prices rise by 10% this course of share also increase by the same amount, but if market prices fall by 10 percent, the share price also decrease. The portfolio, which contains shares with  $\beta = 1,0$ , will vary synchronously with the change in the average indicators of market and their risk will be the same.

When  $\beta = 0,5$  instability of securities is 2 times lower than instability of the market. They are only half responding to changing of market conditions and portfolio, which includes the following securities will have the risk twice smaller than portfolio that contains the securities with  $\beta = 1,0$ . On the other hand, if  $\beta = 2$  instability of securities is 2 times greater of instability of average securities. Thus, a portfolio composed of such shares will have double risk compared to the average portfolio. The cost of this portfolio in the short term may rise or fall by half.

If the action with  $\beta$ -coefficient greater than 1,0, belong to portfolio with  $\beta = 1,0$ , than last indicator, and, consequently, the risk of the portfolio are increasing. Conversely, if the shares with  $\beta$ -coefficient less than 1,0, are included in the portfolio,  $\beta$ -coefficient of wich is equal to 1,0, the beta of the portfolio and its risk are decreasing. Thus, because of that the coefficient turns to be measure of the contribution of individual shares in the portfolio risk, in theory, it corrects risk degree of securities.

Portfolio risk analysis procedure is part of the CAPM model.

#### **Beta coefficients of portfolios**

Portfolio composed of securities with low  $\beta$ -factor, will have a low  $\beta$ - coefficient because  $\beta$ -coefficient of portfolio is the average value of the specific beta of all individual securities it contains:

$$\beta_p = w_1\beta_1 + w_2\beta_2 + \dots + w_n\beta_n = \sum w_i \beta_i ,$$

where  $\beta_p$  – beta coefficient of the portfolio, which is characterized by instability of portfolio securities compared to the market;

$w_i$  – part of the portfolio securities invested in securities  $i$ ;

$\beta_i$  – beta coefficient of securities  $i$ .

#### **4. Relation between risk and rates of return**

As according to the theory of Capital Asset Pricing Model beta coefficient is a measure of the risks specific to the securities it is necessary to determine the relations between risk and profit: what rate of return on the securities will require the investor to compensate for the expected risk with specific beta coefficient. First, define the following terms:

$k_i^{\wedge}$  – the expected rate of return on the  $i$  securities;

$k_i$  – required rate of return on the  $i$  securities;

$k_{RF}$  – risk-free rate of return. In this context, this rate of profit is measured by long-term treasury bonds;

$\beta_i$  – beta-coefficient of  $i$  securities;

$k_M$  – required rate of return on the portfolio, composed of all the securities of market and called the "market portfolio".

Market risk premium,  $RP_M$ : additional risk-free profit rate needed to compensate the decision-average risk to the investor. It depends on the degree of non-admission of risk that in average effect the actions of investor.

$$RP_M = k_M - k_{RF},$$

Risk premium on securities

$$RP_i = (RP_M)\beta_i,$$

$$RP_i = (k_M - k_{RF})\beta_i = RP_M\beta_i,$$

where  $RP_i$  - risk premium of  $i$  securities. Risk premium of certain securities may be more, less or equal to the premium on average securities  $RP_M$ , depending on the value of their beta: more, less or equal to 1.0.

Thus, the required profit on any investment can be expressed as follows:

$$\textit{The required profit} = \textit{risk-free profit} + \textit{risk premium}$$

Taking into account the above, we can conclude that the required profit on securities can be expressed:

$$k_i = k_{RF} + (k_M - k_{RF}) \beta_i = k_{RF} + (RP_M) \beta_i,$$

#### **Tasks for individual work**

1. Define the following terms: business risk, financial risk, total risk, price risk; coefficient of variation; diversification; market premium for risk; probability; effective portfolio of assets and limit effectiveness; principle of dominance.

2. How can you use the concepts and methods of diversification in financial management?

3. Types of investment portfolios. Using of the concept of "beta" in different types of investment projects.

4. Risk in a global context.

**Main reading 1-6**

**Additional reading: 1, 5, 8, 13, 16, 18**

## **CHAPTER 3. FINANCIAL PLANNING AND FORECASTING OF THE EFFECTIVE ENTERPRISE ACTIVITY**

### **Topic 3.1. Management of the cost and capital structure of the enterprise**

1. Evaluation of capital involved from different sources.
2. Weighted average cost of capital and the ways of its reduction.
3. Management of the capital structure.

Capital structure - the ratio of different sources, own and borrowed funds in the liabilities of the company. Financial capital structure - the ratio of own and borrowed capital.

Capital structure can be determined by two factors:

$$1. \quad K_s = \frac{\text{Obligations}}{\text{Total capital}}$$

$$2. \quad K_e = \frac{\text{Equity capital}}{\text{Total capital}}$$

Thus the enterprise should support a certain balance between debt and equity capital.

$$K_s + K_e = 1$$

Cost of capital - is the cost of capital raising, is the amount of money that enterprise should regularly pay the owners of capital (creditors and investors) with the amount of the raised capital, that is the average amount the company is willing to pay for raising of capital from various sources.<sup>38</sup>

Management of capital - is the management structure and cost of funding sources (liabilities) in order to increase return on equity and the ability of the enterprise to pay revenue to creditors and co-owners (shareholders) of the company.

Therefore, the task of financial management - to ensure reduction in the cost of capital for the firm choosing profitable options for its attracting.

Price of equity - the sum of dividends per share for share capital or profits paid by share contributions and related expenses..

### **1. Evaluation of the cost of equity capital attracting**

1. Due to evaluation of the profit remaining at the company. Defined in three steps:
  - estimated size of net profit (balance profit - taxes);
  - which part of the profit will be directed to the development of production (net income - reserve funds - the cost of consumption);
  - indicator of cost of equity capital attracting:

$$BK_{\text{вЛ}} = \frac{\text{profit remaining at the disposal of the enterprise}}{\text{value of equity capital}} \times 100\%$$

The cost of equity capital shows the rate of return on capital..

2. The cost of capital from the issuance of shares:

- privileged

*value of the component of privileged shares:*

$$k_{ps} = D_{ps} / P_0 (1 - E)$$

- ordinary shares

*for shares with stable growth:*

$$k_e = \frac{D_1}{P_0(1-E)} + g,$$

where E – percent of the cost of production and distribution, which arose as a result of issue of ordinary shares. Thus  $P_0(1-E)$  – net price per share received by the company.

The rate of return appointed to ordinary shares of the company to shareholders. Profits of the firm after payment of taxes belong to its shareholders:

$$k_s = (D_1/P_0) + g$$

3. Due to other internal sources:

$$\text{Value of other in. s.} = \frac{\text{Value of raised capital}}{\text{Amount of raised capital}}$$

## 1.2. Evaluation of the cost of the raised equity capital

1. Due to credits of bank, is also carried out gradually:

- based on monetary market conjuncture interest rate is forecasting at which bank credit can be taken;
- amount of tax payments savings is determining (the amount of taxable income reduces on amount of interests paid to the bank);
- the cost of credit is calculating.

$$\begin{aligned} \text{The cost of equity component of debt after tax payments} &= \\ &= \text{interest rate} - \text{tax savings} = k_d - k_d T = k_d(1-T), \end{aligned}$$

where  $k_d$  - cyма the amount of interest of the bank for a credit, T - marginal tax rate.

2. Due to the issuance of bonds.

$$k_B = \frac{INT \times (1-T)}{M(1-E)},$$

where INT – annual value of coupon rewards, E - percentage of expenses for emission of bonds.

3. Due to other external sources. *Defined as the ratio of the cost of their attraction to value of capital, which is involved.*

## 2. The weighted average cost of capital and ways to reduce it.

To calculate the weighted average cost of capital (WACC) use target proportions of debt, privileged and ordinary shares.

$$C3BK(WACC) = \frac{CBK_{\text{дл}} \cdot \text{Пум.вaзyK}_{\text{дл}} + CBK_{\text{ноз}} \cdot \text{Пум.вaзyK}_{\text{ноз}}}{100},$$

Based on these data, we determine WACC:

$$WACC = w_d k_d(1-T) + w_{ps} k_{ps} + w_e k_e + w_B k_B,$$

where  $w_d, w_{ps}, w_{ce}$  – this is the weight for debt, privileged shares and share capital.

Definition of investment projects limits is possible using weighted MCC and internal rate of return.

Marginal Cost of Capital (MCC) –value of the last monetary unit of new capital, which firm increases.

Once a company gets more and more amounts of capital during this period of time, value of the component of equity capital, privileged shares, debt begins to grow. When this happens, the average value of each monetary unit begins to increase.

Break point (BP) - the sum of money of new capital that the firm can get before WACC is starting to increase.

Capitalization of income is one of the methods of valuation of the company value. Value of the enterprise could be calculated forecasting the average annual net cash flow (net income + depreciation), and then capitalizing it, using as a discount rate, the weighted average cost of capital.

Thus:

- the greater the cash flow caused by the activity of the enterprise, and a lower cost of capital, the greater the value of the enterprise;

- if the cost of financing increases, then the value of the enterprise decreases;

- with decreasing of the cost of financing enterprise value increases.

Following methods can be used to reduce the average cost of capital:

- reduce dividends, or temporarily suspend their payments;

- pay dividends in shares;

- attract additional payables in accordance with the supply agreements (if it does not threaten to significantly reduce of indicators of liquidity of the enterprise);

- obtain credits on favorable term sunder priority investment programs (state innovation funds, various international funds and organizations).

### 3. Management of capital structure

The optimal capital structure - the ratio of own and borrowed capital, which provides the maximum return on equity sufficient financial stability with minimal risk.

*Financial leverage* measures the effect of which is to increase the return on equity by increasing the proportion of borrowed capital to its total.

Effect of Financial Leverage (EFL) arises from the difference between the return on assets (economic profitability) and "price" of the borrowed capital (average interest rate). EFL includes two main components:

- differential, which takes into account taxation and describes the difference between economic profitability and interest rate for the credit. Differential if it is positive, promotes financial profitability of the enterprise, but to a certain limit:

$$E\Phi B = \frac{1 - \text{tax rate}}{\quad} * (R_{ек} - CB) ПВ$$

- the level arm (ПВ) describes the amount of the borrowed capital by one of its own. ПВ growth leads to an increase in the cost of borrowed capital, reduce of financial stability, increase of financial risk and increase of the probability of bankruptcy. In this case EFL retroactive effect.

$$\left. \begin{aligned} D &= (1 - \text{tax rate}) * (R_{ЕК} - CB) \\ ПВ &= \frac{\text{debt capital}}{\text{equity capital}} \end{aligned} \right\}$$

Profitability of used capital (economic profitability)

$$R_{екА} = R_{екБ} = \frac{ДВПП}{A} * 100\%$$

де  $R_{ек}$  – економічна рентабельність, ДВПП - доходи підприємств до виплати податків і процентних платежів, А – активи підприємства.

Рентабельність власного капіталу підприємства (рентабельність фінансова)

$$R_{финБ} = \frac{NP}{EqC} * 100\%$$

where  $R_{\phi_{IH}}$  - financial profitability, NP – net profit, EqC – equity capital.  
The effect of financial leverage can be measured by an index:

$$\text{Index of financial leverage} = \frac{\text{Profitability of equity capital}}{\text{Profitability of all funds}}$$

Following factors are determining in planning of capital structure for a financial manager:

1. Structure of Assets
2. Operating leverage value.
3. Stability of sales
4. Profitability of enterprise.
5. Factor of taxation.
6. Market conditions.
7. Decisions of management.

To evaluate the efficiency of the enterprise production activity are used:

1. index of industrial leverage:

$$(L_{sup}) = \frac{CQ}{\Delta BIII}$$

where C - specific profit margin per unit, Q - number of production units

2. indicator of financial leverage:

$$(L_{\phi_{IH}}) = \frac{\text{rate of change of net profit (\%)}}{\text{rate of change of } \Delta BIII}$$

3. index of industrial and financial leverage

$$L_{prod\,fin} = L_{prod} \times L_{fin}$$

Analysis of the formula shows that the differential is the difference between the weighted average cost of own and debt capital. Lever arm can be displaced similarly as considered above.

Thus:

- cost of capital is considered in financial management on the one hand, as the interest rate that the company must pay to investors who invest in the company, on the other - as required rate of return that the company should receive to cover the cost of capital;
- each financing source has its own value (price). Involving capital from various sources (issue of shares, bonds, bank credits, etc.), financial managers must ensure reduction of the weighted average cost of capital, that is the average wage for all financing sources;
- attraction of debt capital within reasonable limits can cause the effect of financial leverage (lever), which is shown in the growth of return on equity. Indicators of financial leverage is the ratio of long-term debt capital to the equity capital;
- task of a financial manager - to support an optimal capital structure to use financial leverage effect and do not increase the risk of bankruptcy of the enterprise.

#### **Task for individual work.**

1. To consider the concept of break point on the graph of marginal cost of capital..
2. To analyze the capital structure on an example of a particular company and determine its value.
3. To investigate the modern approaches to the management of the enterprise capital value.

**Main reading: 1-6**

**Additional reading: 1, 5-10, 14, 21**

### **Topic 3.2. Financial Planning**

1. Economic essence of budgeting.
2. Kinds of budgets of enterprises and sequence of their preparation.
3. Management of the budget process at the enterprise.
4. Budgetary control.

#### **1. Economic essence of budgeting**

According to modern interpretations, budget - a quantitative expression of a plan, instrument of control and coordination of its implementation. Budget becomes a part of management control system, as actual results are compared with planned to take the necessary measures.

Budgeting process and control over their implementation is called - budgeting. The main characteristics of budgeting are: short-term (to one year); internal orientation; high level specification; close relationship with the control and analysis of deviations.

Classification of functions proposed by German experts in controlling A. Tsyundom and P. Horvachem:

- 1) function of regulation of financial competencies (determining the need for financial resources needed to achieve the goals by individual departments of the enterprise);
- 2) function of forecasting (future operations of enterprise find their financial expression in budgets);
- 3) function of coordination (available and mobilized financial resources should be aimed at achieving the goals set in the development strategy of the company);
- 4) function of motivation (implementation of budget indicators is the criterion for the efficiency of activity of the individuals, structural enterprises, etc.).

#### **2. Kinds of budgets of enterprises and sequence of their preparation**

Budgets can be composed: for the enterprise in general; to business units.

The budgets of units are leading down into a fixed (consolidated) budget.

The main budget - a financial and quantitative view of the production plans of all business units needed to achieve the goals. The main budget consists of operating and financial budgets.

Operating budget - a set of budgets of costs and incomes, providing budgeting of profit.

Operational budgets include budgets of: sales; production; direct material costs; direct cost of labor; production overheads; stocks at the end of the reporting period; production cost of finished goods; cost of sales; cost for sales; administrative costs; profits.

Financial budget - a set of budgets, reflecting the planned costs and financial condition of enterprise.



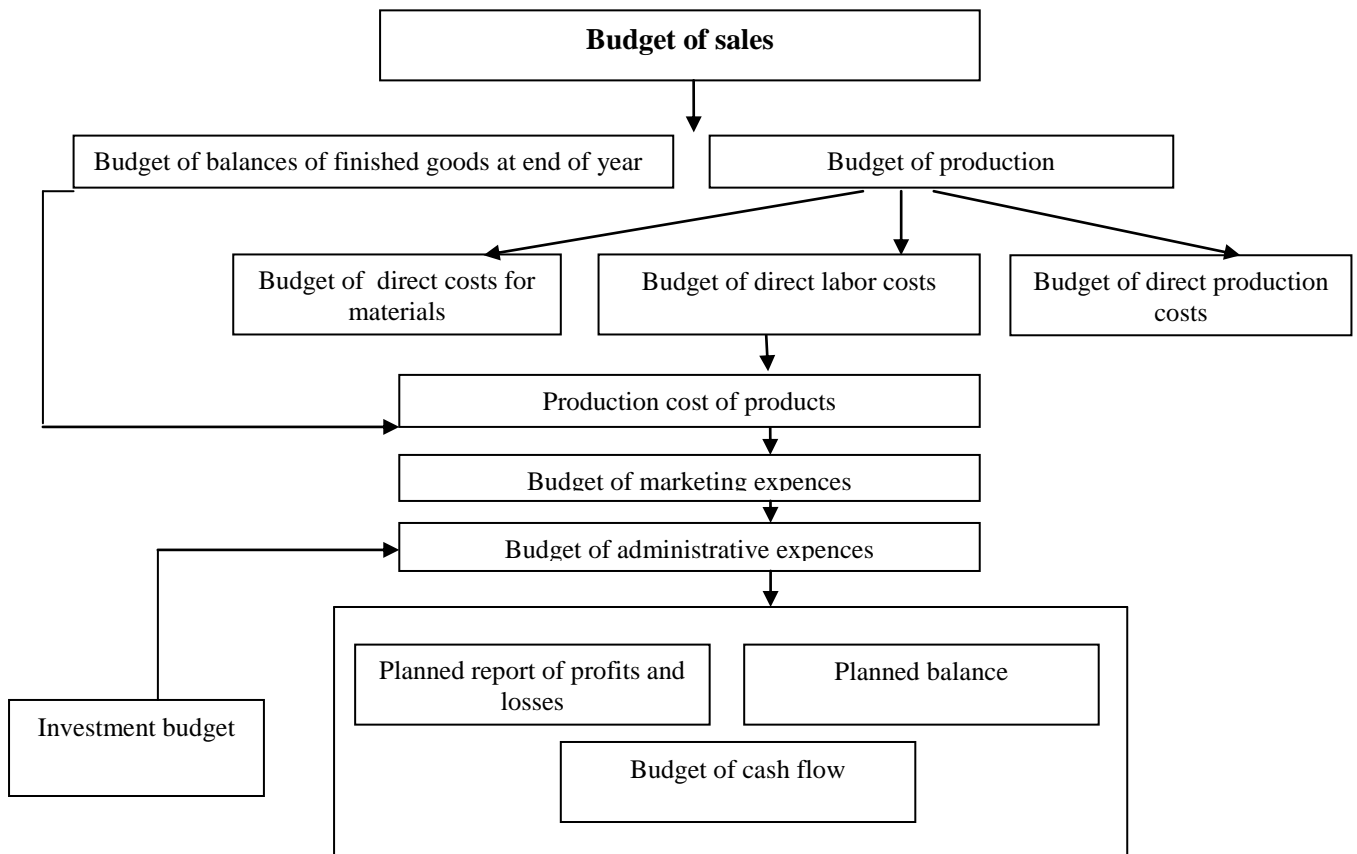


Figure 3.1 - Scheme of enterprise budgeting

There are two ways of budgeting: through growth and "from scratch".

Budgeting through growth - is budgeting based on actual results achieved in the previous period. In this approach, the actual indicators of the previous period are corrected on the basis of price and tax policy, and other data.

Budgeting "from scratch" - a method in which each time it is necessary to make justification of planned costs spending as if the activity is carried out for the first time. Such benefits of budgeting require each center of budgeting to identify problems and their solutions on the planning stage. This method is much more expensive and requires considerable expenditure of time and money.

Budgeting is normally carried out in the following way:

1. review of the basic policies by the persons responsible for budgeting;
2. determination of the main limiting factors;
3. justification and formation of budget for segments;
4. budgeting;
5. budget discussions with senior management;
6. coordination and analysis of discussed budgets;
7. approval of budgets.

*Budget of sales.* This budget is made on the basis of sales forecasts.

Sales forecast - a prediction of future sales volumes of products or services.

*Budget of production* - production program, which determines the range and volume of the planned production on budget period:

*The volume of production = sales of finished goods at the beginning of the period - the balance of finished goods at the end of the period*

*Budget of use of materials* - a planning document that identifies the number and range of materials required for the production program for budget period.

*Budget of purchase of materials* - a planning document that contains a calculation of the amount of material that should be purchased for the budget period:

*The volume of purchase of materials = production demand in material + stock materials - initial stock of materials at end of year*

Production demand in materials is determined by the budget of using of materials.

*Budget of direct labor costs* - a planning document, which shows the cost of labor required to produce goods or services for the budget period. This budget is based on the production budget and the technological standards of work per unit of output and wage rates of workers of appropriate qualifications.

*Budget of direct production costs* - a planning document that reflects the overhead costs associated with the production of goods (services) budget period. This budget is based on the production program, signed agreements (lease, service, etc.) and the relevant payments (amortization). The amount of variable production overhead costs in each quarter is based on the rate of distribution.

*Budget of cost of manufactured products* - planning document, which provides the calculation of production costs that it expected to make for budget period.

*Budget of cost of sales* - planning document that contains the calculation of production costs, which will be realized in budget period.

*Budget of overheads (general and administrative)* - planning documents that reflect the expected costs of managing and servicing of the company.

*Budget of costs and sales* - planning document, which provides ongoing changes associated with sales in the budget period.

*Budget income report* - pro forma of financial statements drawn up before the start of the reporting period, which reflects the financial results of activity, which is expected.

*Budget of funds* - a planning document that reflects future payments and receipts. Based on operating budgets. As not all revenues and expenses related to cash flow, so you need to determine the amount of income and expenses having cash nature. To do this, first of all, you should exclude amortization, because they do not need to be paid.

*Budget balance* - a pro-forma of financial statements, which contains information about future state of the enterprise, which is expected as a result of planned operations.

*Expected income statement* - a form of financial statements prepared at the beginning of the reporting period, which reflects the financial results of planned operations.

*Expected balance* is a form of financial statements, including information about future state of the enterprise, which is expected as a result of planned operations.

Preparation of expected balance is required by the company for various reason:

- can illustrate some unfavorable financial problems to solve which leadership does not planned;
- serve as a precision instrument for monitoring of the remaining budget for the future of the company;
- helps management make evaluation of various coefficients and indicators;
- допомагає helps to identify prospective financing sources and take into account the important fact that could affect the functioning of the enterprise during the зДФТТУВ period.

### **3. Management of the budget process at the enterprise**

Expected balance is based on the balance at the beginning of the budget year, budget of operating costs and budget of funds. Scheme of assembly of consolidated (primary) budget of enterprise starts with lower-level management.

Budget Committee manage the budget process - agency that operates continuously and is engaged in the detailed review of strategic industrial and financial plans, makes recommendations, and solve conflict and quickly make corrections into the enterprise activity. It usually consists of top-level executives who form an advisory group, to the activity of which may also be involved and external consultants who may be involved in such activities.

Example of management of the budget process for visual enterprise is shown on the cheme (Fig. 3.2).

Budget Committee as the main body ensures the following functions: fiscal policy choosing, study of budgetary indicators, prepared by the heads of departments, review of budget indicators (if necessary) and approval, analysis of offered budgets and preparation of recommendations.

Budgets can be static and flexible. Static budgets are for the same level of production (output or sales).

At the end of the reporting period it is necessary to make reports on budget execution (at the departments and in a whole company), which is the basis for the realization of budgetary control. Actual indicators are compared with the planned in reports, deviations from budget are calculated and explanations to them are made.

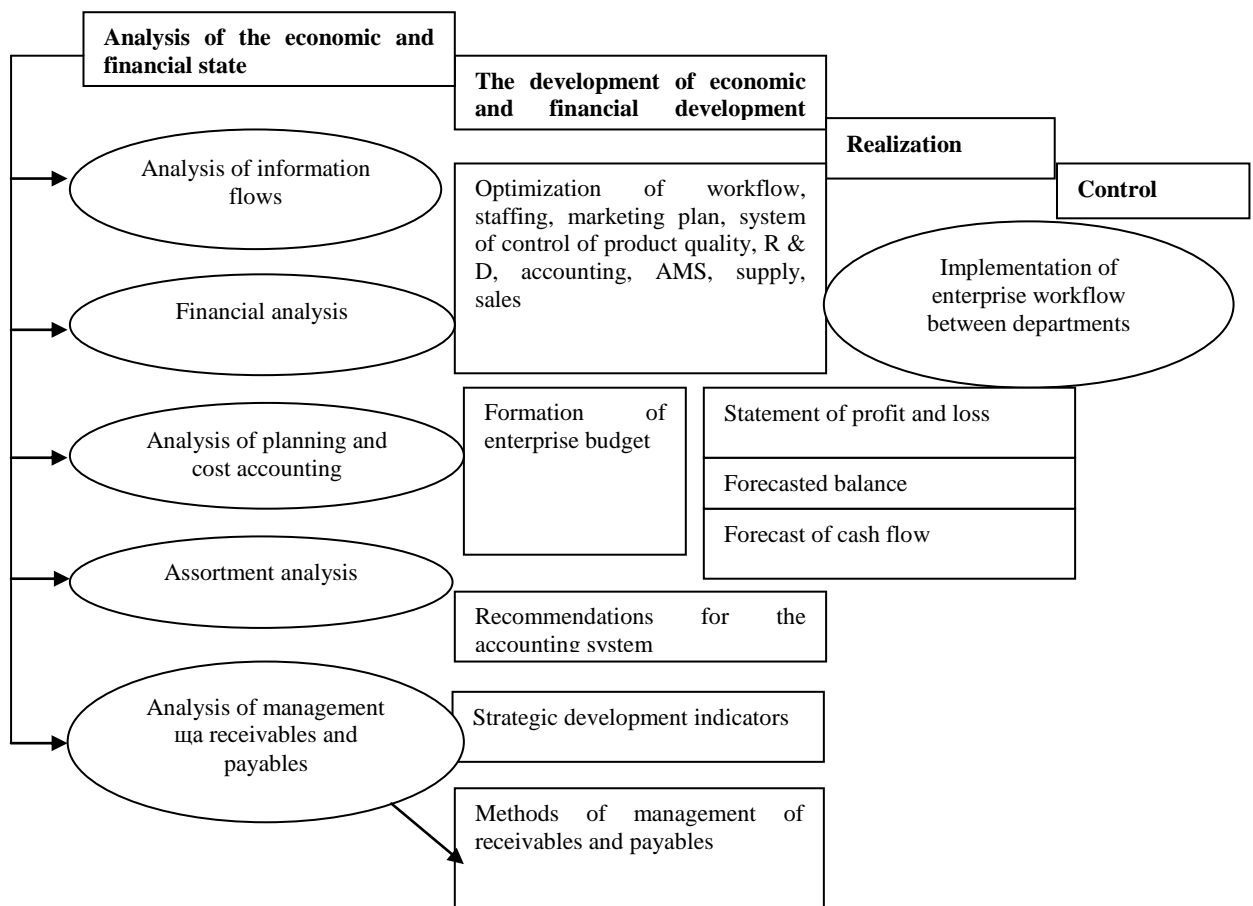


Figure 3.2 - Example of budgeting management

#### 4. Budgetary control

Budgetary control is the ratio of actual results to budget, analyzing the causes of deviations and making appropriate adjustments.

Analysis of deviations is a process of systematic comparison of budget (standard) and actual indicators and explanation of deviations causes and is carried out using the scheme (Figure 3.3).

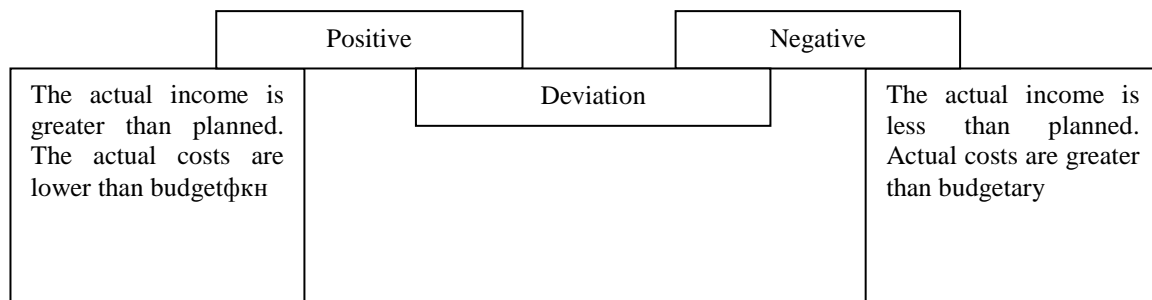


Figure 3.3 - Scheme of analysis by deviations

There are several reasons why deviations are occurred, they are divided into external, independent of enterprise activity, and internal, dependent on the enterprise:

1. external reasons: economic, social, legal and political changes; changes in competition; changes of conditions of supply.
2. internal reasons: changes of management methods; inefficient use of resources; poor budgeting.

So budgeting provides periodic operations planning of enterprise, enables to predict future problems and determine the best way to achieve strategic goals.

Qualified budgeting and use of all of its possibilities is based on the use of computer technology.

#### **Tasks for individuak work**

1. The main stages of the process of financial planning of modern Ukrainian enterprise.
2. Describe the software used in financial planning.
3. Which use of economic and mathematical models in the strategic financial planning?

**Main reading: 1-5**

**Additional reading: 7-10, 13, 14**

### **Topic 3.3. Management of assets of enterprise**

1. Goals and objectives of management of current assets.
2. Management of enterprise cash.
3. Receivables management.
4. Management of inventory.

#### **1. Goals and objectives of management of current assets.**

Management of working capital is associated with various forms use of current assets and current liabilities.

Current assets - is cash, securities that are certainly on demand, can be realized on the market. Current assets have term of return on the accounts of the company for 1 year.

Current liabilities form short firm resources (liabilities to persons who have provided them). Period of performance is 1 year. They include bills and receipts payable and interest on loans.

Difference between current assets and current liabilities is working capital of the firm or net current capital.

Enterprise uses current exchange resources for the expected payments, providing the

necessary liquidity, profitability, sales promotion and support of the production process. Funds replaced in these current international monetary assets are generating foreign exchange flows between the firm and outside for her financial and economic environment.

Table 3.4 - Structure of the working capital of the company

Current assets	Current liabilities
Money	Money
Inventory	Accounts for payment
Accounts for payment	Taxes
Short-term investments	Current payments of long-term debt
Other current assets	Other current liabilities

Structure of working capital - is the proportion of resource distribution between different elements of current assets, reflecting the specificity of the operating cycle. Shows how much of current assets are financed by equity and long-term loans, and which - through debt, including short-term bank loans.

Size and structure of working capital may reflect the duration and characteristics of the financial cycle and other factors.

Operating cycle - the time interval during which the current assets of the company makes a complete turn from the purchase of inventories for activities to receipt of funds generated from the sale of these products.

The financial cycle - the time interval during which working capital make one-time turn.

The production cycle begins with the moment of receipt of materials on the warehouse of company, ends at the time of delivery of products made of these materials to the buyer.

The financial cycle begins with the moment of payment to suppliers of identified materials (repayment of debt), ends at the time of receiving money from customers for goods shipped (payment of receivables). To evaluate the cycle time the turnover rates are used (rotation period in days) (rys.3.5).

One of the levers of financial management is decreasing of the financial cycle.

Reducing of the duration of the financial cycle (period of turnover of working capital), saving a balance between debtors and creditors accounts can serve as one of the criteria for financial management of the company.

The duration of the operating cycle is calculated as the sum of the duration of the production cycle and the period of turnover of receivables.

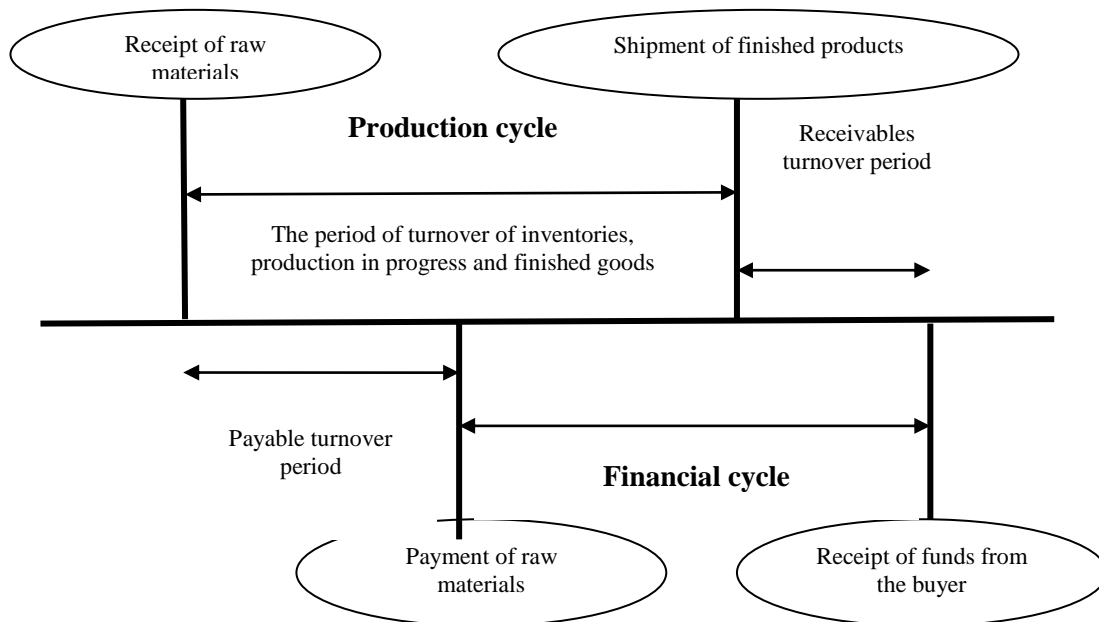


Figure 3.4 – Relations between production and financial cycle

Ways to reduce financial cycle depends on the turnover period of its components:

$$\text{Financial cycle} = \text{production cycle} + \text{turnover period receivables} - \text{turnover period payable} \pm \text{turnover period of advances}$$

The last term in the formula for the duration of the financial cycle should be understood as follows: "plus" is taken for granted advances; "minus" - for advances received.

Reducing of production cycle requires reducing of inventory turnover period, reducing of turnover period of production in progress, reducing of the period of turnover of finished products.

Acceleration of the turnover can occur at all stages of the cycle:

- on the stage of formation of inventories;
- on the stage of realization products.

Increasing of turnover of working capital allows to increase production and sales without additional financial resources. The relations between: the level of working capital and profit shown in Fig. 3.5.

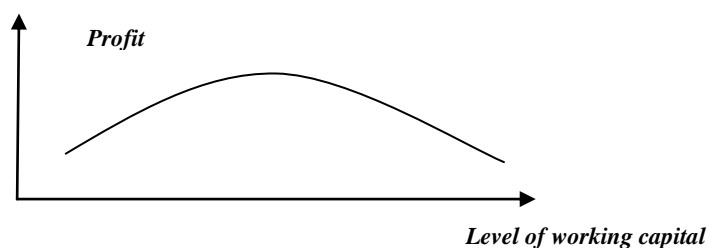


Figure 3.5 - The relations between the level of working capital and profit

There are three main areas of work related to working capital, which allow you to realize the goals of international short-term placement of funds: credit management; inventory management; cash management.

## 2. Management of enterprise cash (cash budgeting, cash budget, cash budget)

### 1. Cash budgeting or budgeting

Formation of cash budget is associated with the preparation of quarterly plans of receipt and use of funds. Cash budgets make it possible to predict the need for additional financing, and thus create a lag time to find the missing funds by the company managers.

Based on a plan of the receipt and use of funds management company may engage in the latest to achieve their goals.

2. Management of cash (cash management)

For this are determined reserves of money on the accounts and in cash depending on the forecast of cash receipts during the period (and the accuracy of the forecast), which is planned, period of debt repayment and new lending opportunities. Required amount of cash:

$$X = F(T)/C + i(C)/2,$$

where X - required cash reserve; F - fixed costs of transactions (transaction costs associated with the conversion of the part of insurance reserve of liquid securities in cash); T - amount of cash required for the period planned or annual cash requirements; i - interest rate on securities that are easily implemented; C - current balance of cash.

3. Optimal amount of cash (formula of W. Baumolya):

$$K = \sqrt{\frac{2FT}{i}}$$

4. Average balance of cash on hand:  $Y = K/2$ .

Model of Baumol - economic model that determines the optimal amount of cash on hand (cash balance) using the most economical concept of order quantity (EOQ). Management of cash balances means to determine some optimal level of average cash balance for enterprise that allows on the one hand, to maintain the solvency of the enterprise up to the mark, and on the other - to profit from the investment of temporarily free funds.

Baumol model enables analytically express relations between cash and costs of their maintenance (see Figure 3.6).

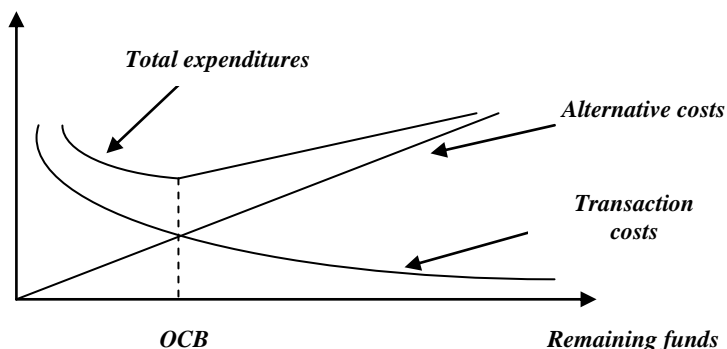


Figure 3.6 - The optimal cash balance determining

The average cash balance on the account is half the optimal balance if the company admits the minimum balance equal to zero, and  $(OCB + MB) / 2$ , if the company maintains a minimum balance (MB) on the account at some level. Fluctuations in cash balance according to the model of the account by the model of Baumol (Figure 3.7) is determined by the interval of  $\{MB, OCB + MB\}$ . Decreasing of balance to a minimum level of MB sells of liquid securities in the amount OCB and replenishment of funds are made. Funds are spending until the balance reaches the minimum value again and their regular replenishment is made.

Except of positive moment of saving of an insurance reserve in the form of liquid securities – receipt of income from their possession, purchase and sale of securities is accompanied by transaction costs that reduce the overall level of income from investments in securities. Loss of profits from holding of insurance reserve in cash (costs associated with that cash are immobilized and not profitable) defines the so-called alternative cost of maintaining of the balance of funds. Latest are compared with the cost of storage of inventory.

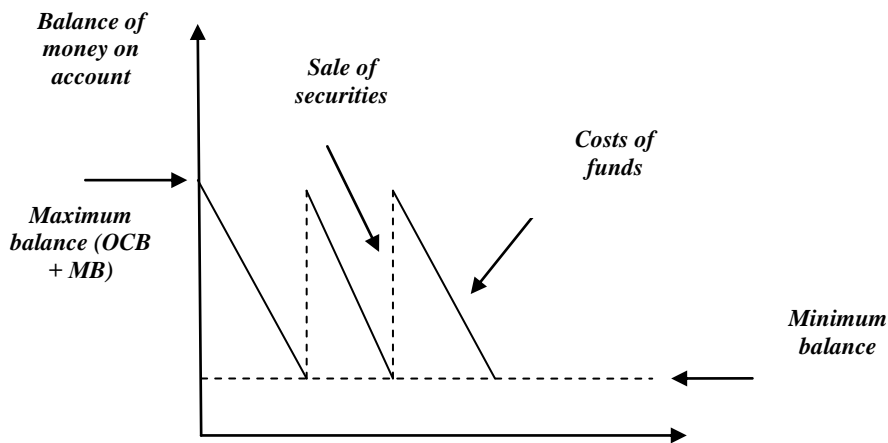


Figure 3.7 - Cash flow according to the model of Baumol

However, in practice more common is Miller-Orr model, according to which the following factors are calculated:

1. Optimal amount of cash:

$$Z = \sqrt{\frac{3F * \sigma^2}{4i}}$$

where  $\sigma$  – deviation of the daily net capital violation.

2. The optimal upper limit cash:

$$D = 3Z$$

3. The average balance of cash:

$$Y = (Z + D)/3$$

Miller-Orr model is more acceptable from the practical point of view, because takes into account unforeseen fluctuations in cash balance on the account, which is typical for companies that can not accurately predict the level of daily income and expenses.

The model determines the interval between the upper and lower limits of balance fluctuations  $I$ , minimizing the total cost of maintaining of the funds on the account:

$$I = 3 \left( \frac{3B_T \times \sigma^2}{4B_a} \right)^{\frac{1}{3}}$$

where  $B_T$  — transaction costs;  $\sigma$  — standard deviation of the one-day net cash flow;  $B_a$ — opportunity cost as a percentage to the amount of money per day.

The average value of the remaining (C3) and cusps which determines the level against which the account balance can increase and decrease within certain limits, determined by the following expressions:

$$P = I/3 + MB;$$

$$C3 = (4P-M3):3,$$

MB — minimum account balance.

Fluctuations in cash balance that meets the Miller-Orr model is shown in Fig. 3.8. Every day, as a result of business transactions balance on the account changes.



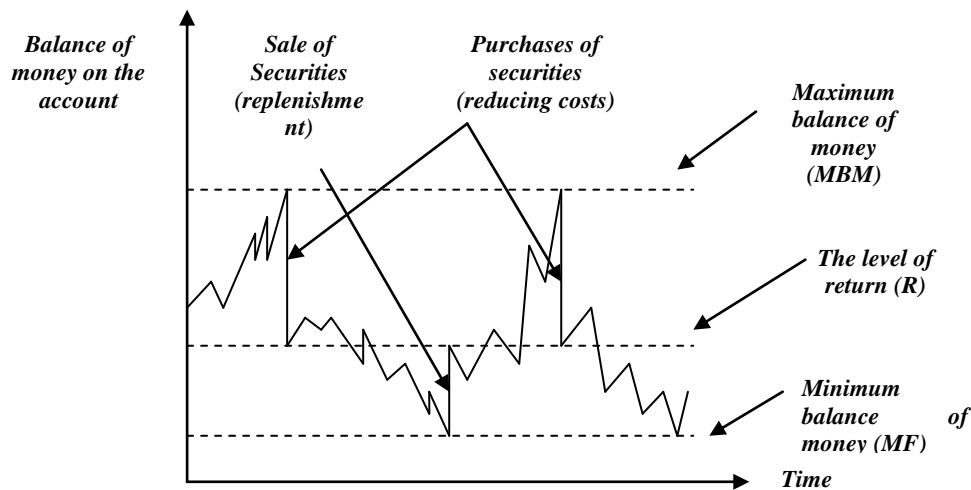


Figure 3.8 - Cash flow according to the Miller-Orr model

Consequently, fluctuations in account balance is random until it reaches a maximum or minimum level. Upon reaching the upper or lower limits of fluctuations (determined as interval I), the account balance returns to the level of P through the purchase or sale of securities.

Using these indicators model cash flow is generated. Its correction by comparing of planned and actual indicators makes the planning of planning process of required cash reserve controlled and simple.

If a firm in the short term could face problems of insufficiency of funds, it can choose two ways to solve them according to what is preferable for the company: to try to accelerate cash inflows or delay payment of liabilities.

Key concepts of cash management:

- the main goal in the management and control of cash transactions;
- operating balance;
- prudent balance;
- cash budget;
- methods of management and control of cash transactions;
- costs of placing loans;
- earnings from the placement of loans;
- net accommodation of loan.

### 3. Receivables management (credit management)

Credit Management involves determining the total value of the credit for all customers, which the company can afford. Value of the alleged capacity of implementation determines the best average collection period of receivables. Optimally, this value should not exceed the average delay in paying suppliers invoices.

Accounts receivable - a component of working capital, which is a requirement for physical or legal persons to pay for goods and services. Increase in receivables means the withdrawal of funds from circulation, which in turn requires additional financing.

Accounts receivable divided into urgent and overdue hopeless.

Size of receivables is determined by internal and external factors.

External factors: status of settlements in the country, the effectiveness of the monetary policy, central bank's inflation rate, type of product, the market and its degree of saturation.

Internal factors: the company's credit policy, professionalism of financial manager, dealing with accounts receivable, the types of calculations and state control over them.

The main task of receivables managing:

1. Promote sales growth through the provision of commercial loans and thereby increase profits;
2. Increase competitiveness by deferred payments;
3. Evaluating of the risk of insolvency of the buyer;
4. The calculation of predicted size allowance for doubtful debts.

The algorithm of accounts receivable management has the following components:

- 1) financial analysis of the organization of the supplier;
- 2) development of credit policy;
- 3) The decision to grant credit, insurance of receivables;
- 4) a change in credit policy of the organization;
- 5) control of shipping products, billing and sending it to the buyer, assembly debtors filing;
- 6) monitor the financial condition of the obligor;
- 7) decision-making on the use of factoring or forfeiting;
- 8) when there is default on the debt or its part repayment establishment of operational communications with the debtor in terms of recognition of the debt;
- 
- 10) bankruptcy proceedings;
- 11) compensation for losses from bad debt fund.

Then receivable turnover (R) is analyzing, using specific coefficients. Accounting balance and income statement are using to calculate these coefficients.

$$\text{receivable turnover} = BP/\bar{\Delta}3cp,$$

BP - earnings from the sale;  $\bar{\Delta}3cp$  - average receivables.

The faster is turnover of receivables, the less the risk of default. The higher the ratio, the more aggressive is policy of collecting of payments:

$$\text{repayment period of receivables} = 360 \text{ days} / \text{receivable turnover}$$

The more time of repayment of receivables, the higher is the risk of default.

Analysis of receivables suggests the effectiveness of monetary policy, conducted by an organization to identify its disadvantages and take them into account when developing new credit policy.

### **Credit policy**

Credit policy: a set of solutions, which include loan terms, standards, creditworthiness, debt collection procedure and proposed discounts.

Credit policy, in turn, consists of four variables:

1. Crediting period - average period of repayment of receivables in days, which can be calculated according to the prior period the industry average. You can get this figure by similar organizations or calculate it by the organization to the supplier. Initial data for calculation of the average period of repayment of receivables is revenue from sales on credit; average accounts receivable; duration of the analyzed period in days.
2. Standards creditworthiness based on the performance of the minimum degree of financial stability required the customer to get a loan and the amount of credit provided to a particular client.
3. Policy of collecting of credits of companies, measured by the degree of persistence in the gradual recovery of payments.
4. Any discounts offered by more urgent payments based on their size and timing.

### **Standards for creditworthiness**

Creditworthiness standards: standards that ensures the minimum degree of financial stability, a firm should demonstrate to buy goods on credit.

Rankings borrowers on their ability to pay. Despite the fact that most loan decisions are subjective, many companies use to evaluate the reliability of solvency a complex statistical method (CSM).

### **Advanced Differential Analysis (ADA)**

It is very similar with a complex regression analysis in essence, where the dependent variable is the probability of default, and the independent variable - factors related to financial stability and the ability of the company to repay the loan. The system ADA provides "computed" reliability of solvency, which is at the core of values of variables that are very important to distinguish between potentially good and potentially bad clients. The advantage of borrowers rating of ADA is that the reliability of solvency is expressed by one numerical indicator rather than a subjective evaluation of various factors. This is especially useful for large companies who have to evaluate a large number of customers from different habitats.

### **System "5C"**

Five criteria starting from English letter "C" and so called "five C of credit", five factors used to evaluate credit risk: reputation (character), opportunities (capacity), equity (capital), collateral and conditions.

Sources of solvency information. There are two main sources of getting of solvency information. First - credit associations, organizations that integrate the company on a territorial basis. The second external source of information is the credit-information agencies that collect data on the creditworthiness of the company and sell them to all comers.

Above it was found that the receivables - is actually a loan to the buyer. It is therefore advisable to use credit analysis technique that is used by commercial banks to their potential borrowers.

The analysis of the financial condition of the counterparty should be made in the following order:

- ranking customers by class, determine if a buyer enters a group of leading contractors using ABC - analysis;
- the analysis of reliability and public reporting of counterparty;
- calculation of the creditworthiness with taking decision.

Evaluation of the financial condition of the borrower is also carried out in stages:

Stage 1 - calculation of the indicators that characterize the financial position of the buyer;

Stage 2 - evaluation and generalization of indicators and determining of reliability class of buyer.

To evaluate the financial condition of the borrower-legal entity supplier should consider the following key economic indicators of its activity:

- solvency (rapid rates (K1), current (K2) and total (K3) liquidity);
- financial stability (factor of mobility of equity, and equity ratio of (C4) funds);
- sales volume;
- turnover on accounts;
- structure and dynamics of receivables, payables;
- cost of production;
- profit and loss;
- profitability (K5);
- nature of the collection of receivables in the past.

An important additional factors that must be considered in ascertaining of the financial condition, is cash flow analysis of the borrower.

You must also take into account subjective factors, characterized by the following indicators:

- market position of the counterparty and its dependence on the structural and cyclical changes in the economy and industry;
- availability of government contracts and government support of the obligor;
- effectiveness of management of contractor;
- professional leadership and its business reputation;
- other information.

Depending on the values of the coefficients K1-K5 are divided into three categories in the table. 3.2.

Often the vendor of buyers who are late paying bills, applying policies collection, which includes discounts offered for paying bills at an earlier time. Loyal customers pay for goods on credit, the terms of which are dependent on many factors. In economically developed countries, one of the most common type is the scheme «d / k net n», which means that:

- buyer gets a discount of d% if payment received for goods k-days from the start of the crediting period (for example, from the receipt or shipment);
- in case of non-payment within n days of required amount the buyer will be forced to pay a penalty in addition, the magnitude of which varies depending on time of payment.

Table 3.2 - Classification of financial indicators (K1-K5)

<b>coefficient</b>	<b>1 category</b>	<b>2 category</b>	<b>3 category</b>
K <sub>1</sub>	0,2 and higher	0,15-0,2	less 0,15
K <sub>2</sub>	0,8 and higher	0,5-0,8	less 0,5
K <sub>3</sub>	2,0 and higher	1,0-2,0	less 1,0
K <sub>4</sub>	1,0 and higher	0,7-1,0	less 0,7
K <sub>4</sub> trading	0,6 and higher	0,4-0,6	less 0,4
K <sub>5</sub>	15% and higher	less 15%	unprofitable

### **Financial planning of enterprise working capital**

In general, the presence of all the above information includes financial plan, which aims to finance the working capital needs of the company's in most affordable way. Management of two major items of current liabilities ("payment accounts" and "short term loan") constitutes the bulk of the work in this direction.

To minimize these costs, companies often resort to a system of multilateral netting through a central depository.

Netting - a procedure in which multinational companies have resorted to reducing the cost of hedging operational risk. This method is based on saldo of incoming and outgoing currency of the company. Mutual indemnification obligations with similar terms between two or more partners.

This creates a central depository in major international financial centers, stable working and having tax benefits if necessary. This depository collected reports of all cash flows from different departments of the company, who then netted and is only final deal on transfer payments. At the same time reduced the costs associated with different rates.

When managing accounts receivable and accounts payable manager must find the optimal balance between cost accounts payable as financial transaction for the buyer and supplier increase sales by using accounts receivable.

### **4. Managing of inventory**

One of the most important tasks of a financial manager is to manage the logistical supplies (LS).

The essence of management of inventory within a single country is reduced to a buildup of these stocks until the marginal cost of an additional party content inventory will not exceed the declining marginal benefits from this additional party.

To calculate the optimal size of a stock of goods in the warehouse, and assembly time orders using models based on these indicators:

1. During an average sales volume of the product of its stock is calculated as follows:

$$X = Q/2,$$

Q — amount of goods ordered (in units) unchanged during the period under consideration.

2. Optimal order size:

$$Y = \sqrt{\frac{2SO}{C}},$$

S — the total value of consumption goods for a certain period; O - The cost of the order - a constant that does not depend on the size of the order, C - costs.

3. Reserve of inventory (or group) in stock for unexpected orders. This ratio is expressed as a percentage of the average stock, and its value depends on the characteristics of the firm.

To reduce the costs of such measures are used:

- previous purchase;
- transfer pricing;
- creation of free trade zones

One of the objectives of working capital management is to ensure the profitability of short-term investments of the company. It is achieved by increasing adjusted for the risk-free return on temporary short-term funds that are invested in money market instruments of international.

The choice of the optimal solution of short-term investments is complicated for the following reasons:

- 1) the amount of cash is not always the same amount of financial instruments offered by the market.
- 2) the anticipated timing of placement instruments may not coincide with the period within which the manager has available capital.

Free cash flow of the company can be placed in:

- treasury bills and notes, which are issued by central governments and federal agencies;
- certificates of deposits of commercial banks, which take place for up to 90 days;
- bankers' acceptances;
- commercial short-term securities, that are issued by large corporations.

The cost of receiving and placing orders or orders for the organization. Operating expenditures are proportional to the average inventory as, bank lending, insurance claims or costs of storage is always determined by the size of reserves (Figure 3.9).

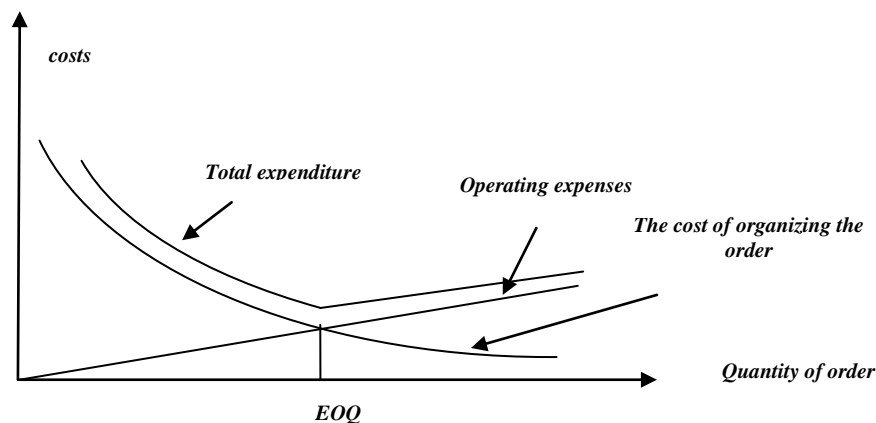


Figure 3.9 - Determining of the most economical order size (EOQ)

This indicates the existence of some optimal amount of company inventory and therefore the optimal size of the order in which the cost of maintaining inventory will be minimal. The main task of the financial manager in the management of inventory is to analyze the volume and structure of inventories and the sources of their formation and the subsequent formation of the volume and structure of stocks that would provide.

Baumol and Miller-Orr models enable to solve the main task of inventory control, and are also successfully used to optimize cash management of enterprise.

Baumolya model, based on assumptions about accurately forecast sales, uniform flow of orders and even their implementation makes it possible to express analytically the relationship between the amount of reserves (order) and the cost of their maintenance. Differentiation of this relationship the most economical and optimal order quantity (EOQ), in which the cost of maintaining of inventories will be minimal can be determined:

$$EOQ = \sqrt{(2PB_3 / B_c * U_3)},$$

where P — annual volume of sales in units of production;  $B_3$  — costs of organizing of the order;  $B_o$  — operating costs of maintaining of inventories, as a percentage to the amount of reserves;  $U_3$  — purchase price per unit of output.

Miller-Orr model, sometimes called improved Baumol model determines the optimal amount of inventory and point of order on the basis of stock reserve level S, the cost of the inventory maintenance and dispersion of remaining of inventories in stock (Figure 3.10).

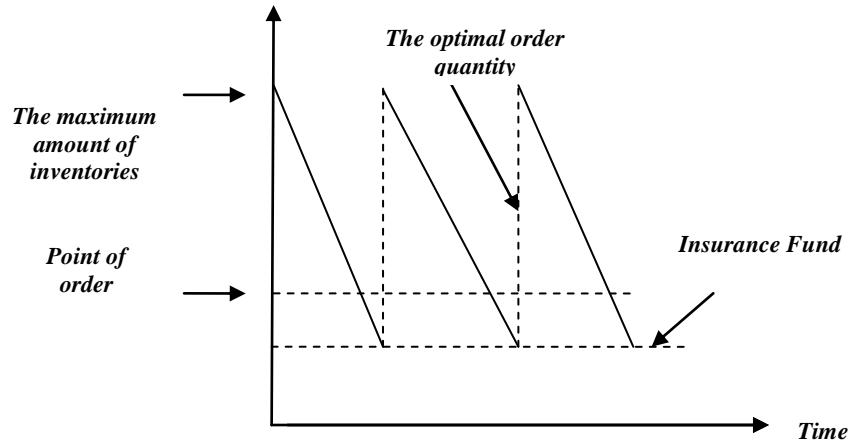


Figure 3.10 - State of inventory on stock

Procedure of minimizing of the cost of the inventory on the basis of possible deviations remaining reserves from some expected value to determine the interval between the upper and lower limits, fluctuations remaining inventory in stock, and that the optimal order quantity and inventory level of P, corresponding to the point of order:

$$I = 3 \left( \frac{3B_3 \times \sigma^2}{4B_o} \right)^{\frac{1}{3}}$$

$$I = \frac{I}{3} + C,$$

$B_3$  — the costs of organizing the order;  $B_o$  — Operating expenses for the maintenance of stocks as percentage of the amount of reserves;  $\sigma$  — standard deviation of the remaining inventory in stock; C — safety stock.

Miller-Orr Models and Baumolya, although have a great practical importance, can only be used as a guide in the management of inventory in an uncertain market.

### Tasks for individual work

1. Methods of management and control of cash transactions: cash flow acceleration synchronization process proceeds, the definition of the required and optimal supply of cash.
2. Describe the system of marketable securities and cash.
3. Effective implementation of monetary policy and the use of standards creditworthiness.

**Main reading 1-6**

**Additional Reading: 7-10, 13, 14, 21**

## Reading

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