

METHODOLOGICAL APPROACHES TO DEVELOP BUDGET MODELS IN THE SYSTEM OF MANAGEMENT ACCOUNTING

Abdusalomova Nodira Bakhodirovna*

Abstract. This article is devoted to the consideration of “budgeting” concept. Having studied the definition of “budgeting” provided by various researchers-economists, the author has developed her own definition of this concept. In addition, on the basis of the research carried out, this article provide the proposals of the author to the chart of formulating budget indicator by “sales budget”, interrelations of the budget of the first and second level when replenishing “revenue part of the budget”, subsequence of formulating the master budget, budgeting model based on the structure of management accounting objects at the metallurgical industry, as well as structure of the budgeting objects.

Key words: budget, mater budget, budgeting, budget of cash flows, overhead budget, production budget, expenditure budget, revenue budget, payment budget, revenue and expenditure budget, cash flow receipts budget, sales budget, profit budget.

Introduction. Currently under conditions of further liberalization of the economy, modern markets are characterized by intensity, globalization, and efficiency. This fact reflects the increasing role of financial planning and budgeting. Using a reasonably-developed budgeting system it is possible to forecast changes in market conditions, as well as plan and arrange financial results of the business. Budgeting is an important stage in the development of a systematic economic management system which facilitates optimization of financial flows and raises competitiveness.

Many economists have provided various definitions to the term “budgeting”. Theoretical and practical aspects of budgeting have been comprehensively studied by foreign scientists.

However, there is still no precise definition of the “budgeting” concept elaborated by scientists-economists. In our opinion, with the aim of determining the essence of budgeting, it is advisable to analyze “budget” as its key element.

* **Doctoral student of “Accounting” department of Tashkent State University of Economics, Philosophy Doctor (PhD) on Economics**

First of all, it is necessary to analyze the budget from the economic, legal, organizational and material aspects (Figure 1).

Literature review. The analysis of the definitions provided by domestic and foreign authors enabled to make a conclusion that the term “budget” is derived from the term “plan”. From this point of view there are close relations between budgeting and the outcome of planning of financial-economic activities.

In this regard, when interpreting the term “budgeting” it is possible to distinguish two approaches.

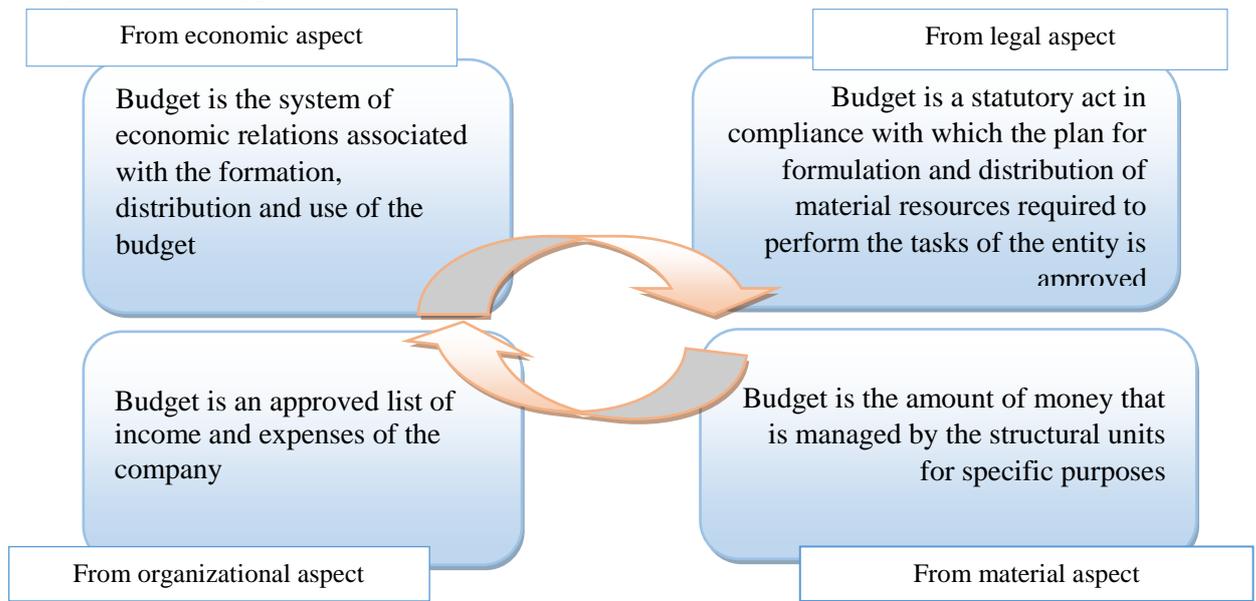


Figure 1. Analysis of the essence of “budget” concept

First, budgeting is basically based on financial planning, and financial resources are considered as an object of budgeting.

Objects and methodological aspects of budgeting are more comprehensively interpreted in the second direction. On the basis of this direction, not only financial resources but also all spheres of financial and economic activities of the company are covered as an object of budgeting. The table below provides the definitions given by economist scholars for the concept “budgeting” (Table 1).

Table 1

Analysis of the definitions provided by economists-scientists to the concept “budgeting”

Authors	Definitions of “budgeting”
A.Ye. Dmitriyev	Budgeting is a company management system through a set of interconnected budgets
I.V. Zakharov	Budgeting is the process of constant formulation and execution of budgets
V.B. Ivashkevich	Budgeting the system of organization-based corporate governance and short-term planning and development of budgets, activities within the planning stage of the budget process, budgeting and adoption procedures, one of the components of the financial management system, designed for optimal allocation of resources of an economic entity over time
V.P. Savchuk	Budgeting is the process of planning future operations of the entity documented by the budget system

Ye.N. Kharitonova	Budgeting is the process of planning future business activities by establishing performance goals and putting them into a formal plan. In other words, budgeting is the process of making financial goals for a company and creating a plan to achieve those goals
V.Ye. Khutskiy	Budgeting implies financial planning, income and expense control technology, project financial analysis and resource management
N.D. Shimshirt	Budgeting is a management tool for resource allocation (planning) which is determined by the monetary and natural indicators to achieve strategic business goals. In addition, the budgeting can be presented as an expediency of using the company's assets at the company, the quality of the sources used, and the process of pre-determined (supervision) analysis
K.V. Schiborsch	Budgeting is the process of developing, supervising and managing budgets in line with the objectives of the entity
T.P. Karpova	Budgeting is a "method of managing the activities of the enterprise and its subdivisions"
A.A.Abduganiyev	Budgeting, as a management method, requires the planning of activities of the company and its divisions, generalizing all the proposals of the community, working out of budget projects, drafting of options and design of changes
B.A.Khasanov	Budgeting is the planning for a certain period of financial and economic activities of an company

Discussion and analysis. From our point of view, budgeting is such a management technology that is determined by the fact how it complies with governance of the company, its modern requirements, and its level of compliance with the managerial decision-making. Budgeting was created to ensure proper execution of payments on taxes, wages, contracts, and other similar compulsory payments. Budgeting represents the tool for providing management system with resources. It includes development, execution, management, analysis, and correction of budgets of the responsibility bureaus. Currently budgeting is significantly expanded and represents a strategic character as well.

Based on the results of the research, the definition proposed in this article, unlike the existing definitions, is expressed as part of providing budgeting management accounting with resources:

- the provision of management accounting with resources is represented as the process of management accounting, tools and methods. As a process, it means the sequence of actions that are well-determine in the field of quality, quantitative monitoring, identification and processing of information for the implementation of strategic, tactical and operational objectives of the company. Management accounting implies economic tools that enable duly implementation of accounting policies in terms of methodological aspects of the rules and procedures for accounting. The method of the management accounting represents a certain structure of the methods reflecting the objects of management accounting in the information system;

- in terms of budget planning, budgeting is considered as the technology of formulation, execution, monitoring, analysis, oversight and regulation of the budgets by responsibility centres;

- the continuous process of budgeting is carried out in a series of continuous steps through a planned mechanism.

The relationship between management and budgeting is determined by the formation of the overall structure of accounting objects in the formulation of the budget. To achieve this aim, it is required to solve the following tasks:

- timely, complete and reliable reflection of the information when managing indicators of basic performance illustrating expenditures, revenues, financial results and invest projects of companies;
- providing reliable information on deviations of the approved budget by the results of the budget period;
- developing the data on the deviations detected at the level of the responsible officials;
- creating conditions and opportunities to develop internal reporting and to improve the prime cost and cost management system.

With the aim of solving these issues, the planning process should incorporate all indicators of the financial-economic process: revenue, expenses, financial indicators and their residuals, expenses centers and responsibility centers. The existence of plans for all the economic activities based on the estimate cost and determined standards, in turn, will enable to formulate the budget of the company in terms of preparing a project report on its financial performance in the future. It is impossible to fully manage the production activity without compiling the budgets as the information on actual changes is required for such a management. As a compound part of the aim of this research, we propose the model that illustrates the relations between budgeting and management accounting based on the structure of the management report presented in the first section.

Accounting management can not be implemented without applying the budgeting process. Moreover, budgeting cannot be developed without the use of systematic technology of management and accounting objects. The mutual relations between management accounting and budgeting can be presented as a financial plan of production and sale of certain goods (works, services) reflecting planned revenues, expenditures and financial results with the account of preliminary and operating expenses. Herewith, first of all, it is planned to allocate certain amounts of expenses at the local level within each management function (responsibility centers). This concept of the budget requires the use of budgeting objects to be applied in the planning of certain organizational structures.

On reliance upon the proposed peculiarities, the budget process should be based on creating the same structure as the management structure for budgeting and reflecting the accounting data. The opinions of different authors about the nature of budgeting often describe only the features of the budgeting process.

As a result, the processes of compiling operational budgets can be perceived as a process of accountancy planning. Operational budgets (including financial and investment budgets) represent plans for future accounting reports (report drafts). This is the main advantage of budgeting. In this case, in the systematic planning at the microlevel, the objects of calculations play a crucial role in management. This

approach to budgeting is considered to be a significant link associated with the formation of a management accounting system on the basis of the principle of “expenses-production volume-profit” which ensures the interconnection of the expense with the relevant revenues. In the accounting system such a relation is provided by accounts and double-entry book-keeping, and can be continued with calculations for multiple accounting objects. This aspect is also applied to expense centres and the places where expenses are occurred. At several stages, when planning production process, enterprises often use the principle of “expenses-production volume-profit principle”.

Basing on the researches conducted, we have provided the overall budget formulation system on the principle of “expenses-production volume-profit principle” (Figure 2).

Enterprises with multistage production often challenge various barriers to price and product profitability. Metallurgical industry is also considered to be such an industry which faces the same problems. In this case there is a necessity to create a budgeting model for production management. Herewith it is recommended to modify the procedure for planning revenues, expenses and outcome: first of all, to calculate revenues by approximate volumes of sales and total amount of orders planned for concluding contracts; second, on the basis of the determined procedure it is recommended to calculate profit, followed by the calculation of direct and indirect costs of enterprises. If we accept the objects of management accounting on the basis of the technology of the management accounting system, in this case the budgeting model should be developed on the basis of the same indicators: budget of the expenses centre, budget of the responsibility centre.

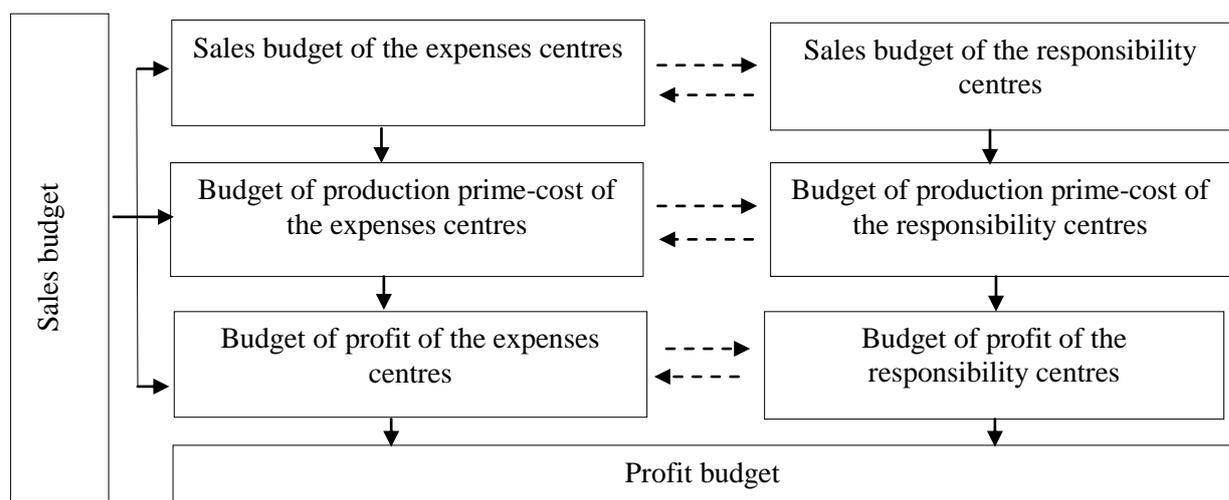


Figure 2. Structure of the budgeting objects¹

Table 2 proposes the budgeting model based on the structure of the management accounting objects. As it is obvious from the data provided in the table, the places

¹ Developed on the basis of the author's proposals

where expenses are occurred start from the sales budget, thus it is advisable to separate it into its structural elements: sales budget of the expenses centres, sales budget of the responsibility centres. Herein all the budgets specified in items 1.1, 1.2, 1.3 will be interconnected with each other.

Table 3

Budgeting model based on the structure of the management accounting objects at the enterprises of metallurgical industry²

№	Budget items	Budget period				By a year
		1 quarter	2 quarter	3 quarter	4 quarter	
	Revenue budget					
1.	Total revenues, including					
1.1.	Revenues generated from places where expenses occur					
1.2.	Revenues of the expenses centre					
1.3.	Revenues of the responsibility centre					
	Profit budget					
2.	Total profit, including					
2.1.	Profit generated from places where expenses occur					
2.2.	Profit of the expenses centre					
2.3.	Profit of the responsibility centre					
	Expenses budget					
3.	Total expenses, including					
3.1.	Expenses generated from places where expenses occur					
3.2.	Expenses of the expenses centre					
3.3.	Expenses of the responsibility centre					

Further the budgeting model becomes similar by its structure by three types of the budget models and is spanned by the profit budget (2.1, 2.2, 2.3 items). The difference between revenues and profit represents targeted expenses of the enterprise, thus it is required to introduce all the objects (3.1, 3.2, 3.3) of the reproduction process.

At the enterprises operating at the metallurgical industry, the departments engaged in planning volumes of sales plan their activities according to the budgeting model based on the structure of management accounting objects and this, in turn, serves as a basis for expenses centre as well. Moreover, sales profitability is also represented as separate indicators. According to the author's opinion, this model can also be used by responsibility centres for calculating planned volumes of sales.

² Developed on the basis of the author's proposals

As the research conducted illustrates, with the aim of ensuring efficient management of the budgeting process, the author proposes the consequence of management technologies interconnected with each other and based on the budgets, which are not just restricted by the planning framework.

In this regard, at the first stage the budgeting objects are developed in line with the management accounting objects. The similarity of the budget and accounting models is considered to be a compulsory condition for the budgeting technology. First of all, sales budget and revenue budgets are developed. This constitutes the basis for budgetary process commencement. At the majority of metallurgical enterprises the production programme is accepted as the basic plan. However, the issue of sales of the production manufactured is regarded as the responsibility of only the sales department. It should be noted that cash budget and balance draft are developed at the final stage. Operational and financial budgets are compiled between the first and the final stages.

These budgets are considered to be the first stage of the budgeting process. Herewith functional indicators are interconnected with the budget indicators. For example, "Revenues and expenses budget" represents the precise structure of the budget revenues and expenses related therewith, "Personnel budget" represents the structure of the wage fund and the number of employees by categories at the enterprises, and "Logistics budget" represents the structure of expenses spent on performing and the use of logistics services.

The budget formulation is mainly based on analytical indicators of the budgeting system. The formulation of these budgets is considered to be the aim of the second stage of the budgeting technology. The need for the budgets of the second level requires distribution of the responsibility by the indicators of one type during one period of time between several subdivisions of the enterprise when formulating the budgets of the first level. In this regard each structural subdivision must be responsible for the development of the list of the budget indicators and ensuring it transparency and reliability. The responsibility for the generalization and classification of data is assigned to the subdivision responsible for the formulation of the primary budget. The second-level budgets can contain the information that is required to simultaneously replenish several primary budgets.

In addition, each form of the second-level budget can on a direct basis reveal certain indicators or a group of indicators incorporated in terms of production type, budgeting process of any subdivision, as well as the groups being functionally interconnected with management accounting objects. According to these forms, the set of indicators which differ due to the budget items, has been proposed.

At the third stage it is recommended to share the functional responsibility of the structural subdivisions for formulating budget indicators.

Moreover, the third stage implying the direct interconnection of the methods of management accounting and budgeting includes the regulation of its technology. In our opinion, the objectivity and transparency of the plans are ensured due to the execution of the budget indicators and constitute the basis for the budgeting technology.

The fourth stage includes the technology regulating budget forms and relies upon the procedural regulations determined with the account of the budgetary standards of each enterprise. In this regard the fourth stage includes the following aspects:

- classification of the economic essence of the indicators of the budget forms;
- classification of the information sources for replenishing the budget;
- analytical classification of the indicators provided in the budget forms;
- chart of formulating budget indicators in the forms of the first-level budget;
- mutual interconnection of the budget of the first and second levels.

Based on the above statements, when specifying budget forms and their analytical peculiarities and implementing three preliminary measures none problem or challenge can occur, however, it is crucially important to implement two last measures. In this regard all forms of the budget can be presented in the form of chart illustrating complicated mutual impact. According to the research results, the interconnection of the budget forms is proposed in Figure 3 which is required to be revealed in the standards of the internal budgeting of the enterprise.

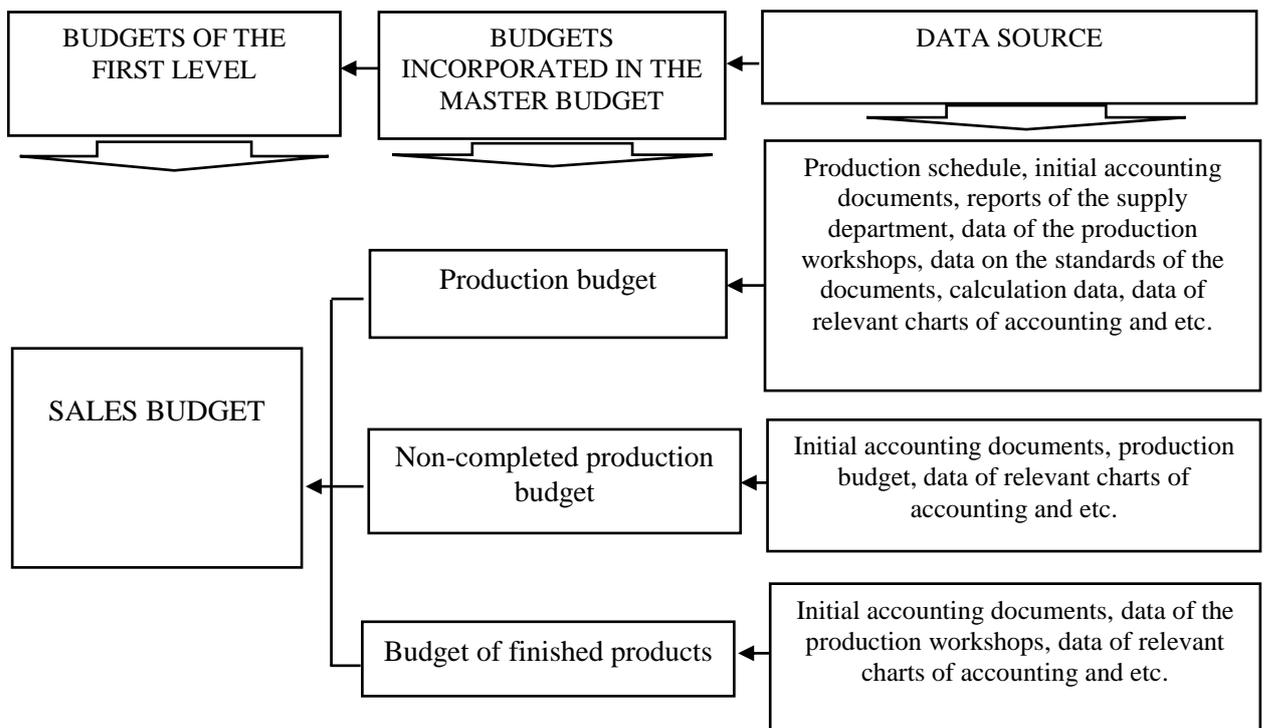


Figure 3. Chart of developing budget indicators by the “Sales budget”³

The fifth, final stage of the budgeting technology consists of the procedure of complementing the forms of budget with the reporting data on the basis of the data contained in the accounting registry. In this regard the forms of the budget should entirely comply with the first-level budget. Otherwise, the budget-accounting model breaks down and it can become complicated to assess and analyze deviations of the actual indicators from the planned indicators.

³ Developed on the basis of the author’s proposals

With the aim of ensuring practical application, the economic essence of the lines of the first indicators (synthetic indicators) and the second indicators (analytical indicators) should be mutually interrelated. When complementing the “Revenues budget”, the mutual interrelation of the data on the budget forms of the first and the second levels is proposed in Table 4.

Table 4

Mutual interrelation of the budget forms of the first and second levels of the when complementing “Revenues budget”⁴

№ of the 1-st level form	Name of line of the 1-st level form	Forms included in the second level		Notes
		Form title	Number of line	
01	Manufacturing of goods (works, service) from metal	“Budget of the proceeds from the sales of products” within the cooperation framework	01.1.	x
		“Budget from proceeds from research and development, as well as experimental construction developments”	01.2.	x
02	Procurement production	“Budget of the proceeds from the sales of products” within the cooperation framework	02.1.	x
		“Budget from proceeds from research and development, as well as experimental construction developments”	02.2.	x
03	Offering tolling services	“Budget from proceeds generated from offering services by domestic tolling”	03.1.	x
		“Budget from proceeds generated from offering services by import tolling”	03.2.	x
...	Others	x	x	Filled in according to the budget instructions

Conclusion. In conclusion we can say, approach to the budgeting methodology as the technology for comprehensive development, is distinguished by its organization on the basis of the mutual interrelation with management accounting objects. The budgeting technology proposed on the basis of the management accounting and budget objects is aimed at determining deviations of actual indicators from the planned indicators. At the enterprise of the metallurgical industry the strategy of implementing the internal control over the budget execution will enable to determine the reasons for non-execution of the budget, ensure the entirety and transparency of the data on the budget, as well as to raise

⁴ Developed on the basis of the author’s proposals

the overall efficiency of the budgeting process and to make relevant modifications with the account of changes in the external environment.

In addition to the options considered within the proposed chart to formulate the master budget on the basis of the stages for enterprises at the metallurgical industry it is also recommended to take into account organizational structure of the enterprises and relations between its subdivisions. At the metallurgical enterprise the budget of proceeds and payments is considered to the central and basic budget in the structure of the master budget. The budget of monetary funds does not provide any opportunity to implement operational internal control to the full extent. This fact, in turn, will result in creating obstacles for urgent decision-making at metallurgical enterprises regarding their financial – economic performance. Table 4 given below provides more precise sequence of the master budget formulation at the metallurgical industry. This table illustrates basic relations between information sources and heads of structural subdivisions of the master budget. Herewith each structural unit of the enterprise makes contribution to the overall financial outcome in the form of the revenue or expense. Division of revenues and expenses is determined on the basis of the activity type and its responsibility.

Table 4**Sequence of the master budget formulation⁵**

Indicators	Performers	Initial data required for processing	Information source
1	2	3	4
1. Sales budget			
Sales budget	Accounting, production (production workshops)	Targeted indicators: by the product type, sales price, volume of sales (in physical units)	Director general and deputy directors
2. Budget of proceeds of monetary funds			
Proceeds budget	Sales department, accounting	Data on the accounts payable and receivable, sales budget, dispatch of goods budget	Accounting, production units (production workshops), sales department
3. Overhead budget			
Overhead budget	Accounting and sales department	Application of buyers and customers, data on the accounts receivable	Sales department, accounting
4. Production budget			

⁵ Developed on the basis of the author's proposals

1. Production programmes developed in a physical unit or a monetary unit	Accounting, production units (production workshops)	Indicators on excessive finished goods or semi-finished goods; planning reserves of the finished goods at the beginning and at the end of the period; planned prime-cost of manufacturing the approved product	Sales department, production department, overhead department, targeted indicators
2. Finished goods in monetary units	Accounting, production units (production workshops)	Production budget in the physical unit; planned prime-cost of manufacturing the approved product.	Sales manager, dispatch of goods budget, accounting (planned or standard calculation)
5. Expense budget			
1. Budget of variable expenses	All responsibility centres	Approved planned prime-cost of manufacturing finished goods or semi-finished goods	Accounting
2. Budget of constant expenses	All responsibility centres	Expense standards by the responsibility standards	Accounting
6. Payments budget			
Payments budget	All responsibility centres by payment items	Approved planned prime-cost of manufacturing finished goods or semi-finished goods; Expense standards by the responsibility standards	All responsibility centres
7. Budget of revenue and expense			
Budget of revenue and expense	Accounting	Sales budget, expense budget	All structural subdivisions
8. Budget of monetary funds			
Budget of monetary funds	Accounting	Budget of incoming and outgoing monetary funds; residual of the monetary funds planned for the beginning and the end of the budget period	All structural subdivisions

Financial indicators are determined as a result of formulated budgets and its execution is supervised within the competence of each responsibility centre and enterprise. In our opinion, with the aim of performing budget oversight, formulation of the budget items and their stage-by-stage implementation the following measure should be undertaken:

- complete list of economic operations is compiled;
- classification of the budget items on the basis of the list is determined and the details required for accounting these operations is taken into consideration. Execution of indicators of operational budget indicators is determined for each responsibility centre;

- revenues and expenses items of the budget are determined (profit and loss).

As a conclusion it should be noted that submission of final data in the single unified form will not only create conveniences for the management, but also providing complete reflection of the results of measures undertaken in the budgeting process, due to various reasons demonstrates deviations of budget indicators and enables the heads of metallurgical enterprises to manage without adding additional data on the budget of proceeds and payments.

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