MANAGEMENT OF REPRODUCTION OF CURRENT ASSETS OF MACHINE-BUILDING ENTERPRISES OF UKRAINE

Purpose. To determine the specifics of managing reproduction of current assets of machine-building enterprises and to substantiate modern directions of increasing their efficiency.

Methodology. The author uses the following methods: canonical and discriminatory analysis — in developing a conceptual approach to managing the reproduction of current assets of a machine-building enterprise; grouping — while breaking down the production cost of the machine-building enterprise; general and specific ones — in identifying the specifics of the enterprises of the machine-building complex in comparison with other industrial enterprises, as well as in the development of scientific and practical provisions that determine the formation of the resource queue, provided that the income covers (does not cover) the production cost; ranking — when determining the priority of covering costs.

Findings. The specifics of formation and use of current assets of machine-building enterprises is revealed, and based on this, a conceptual approach to managing their reproduction is proposed. The essence of the resource queue method is analyzed, and suggestions on its adaptation to the specifics of heavy engineering enterprises are developed. The resource queue method is shown on the example of railcar manufacturing at Public JSC “Dniprovahonmash”, and the algorithm of the priority of the reproduction of resources under different conditions of cost-revenue ratio from its sale is proposed.

Originality. The resource queue method is improved in the part of the selection of the procedure of minimization of expenses within the limits of relatively stable cost components having the highest ranks of the priority of its coverage.

Practical value. Scientific results can be used by machine-building enterprises for efficient management of current assets in conditions of financial and economic instability.

Keywords: current assets, management of the reproduction of current assets, operational cycle, resource queue, cost, revenue

Introduction. Ukrainian engineering is a multi-sectoral complex, which is of paramount importance for the development of the economy at the national level, as it provides the population with consumer durables, while other industries — with means of production. In essence, it is at the expense of the production of machine-building enterprises that a significant part of the productive forces of the national economy is formed, and their technological and innovation potential in the creation of the final product is determined.

One of the leading components of the machine-building complex of Ukrainian economy is the heavy machinery industry, because it is here that machinery and equipment is manufactured for such important industries of the country as metallurgy, coal, chemical, oil and gas industry, transport. By allocating an active part of the fixed productive assets of the enterprises of these industries, heavy engineering, thus, lays the foundation for their development in the direction of scientific and technological progress and productivity growth. The exceptional importance of heavy machinery in the sectoral structure of the economy and its impact on the rate of economic growth in the country require constant attention to the factors ensuring its effective functioning.

One of these factors is the creation of conditions for the expanded reproduction of assets of machine-building enterprises. Compared to other branches of the machine-building complex, heavy engineering is characterized by high metal content of products, long-life production cycle and, as a rule, low turnover of circulating assets. Moreover, in recent years in Ukraine, under the influence of a combination of economic, political and institutional factors, there have been negative trends in the structure and sources of the formation of current assets of domestic heavy machinery enterprises, which, of course, affects the results of their activities. Therefore, it is relevant to economic science and business practices in Ukraine to study reproduction patterns of current assets of machine-building enterprises as a prerequisite of their effective development and an important component of nation-wide economic growth.

Literature review. Attempts at solving the problems of resource provision of the industrial complex of Ukraine, including machine building, have been made extensively in domestic scientific research. Thus, in particular, Velykyi Yu. V. and Netudykhaty K. L., while analyzing the main tendencies of machine-building enterprises of Ukraine, focus mainly on the dynamics, structure and sources of formation of their current assets, as well as attempt to comprehensively evaluate the effectiveness of their use [1]. Problems of estimating the efficiency of using current assets of domestic enterprises are also raised in works by Lebedeva A. M. [2] and Vaschenko N. V. [3]. In turn, Donin Y. O. offers new theoretical approaches to their classification and outlines the application areas of their use, based on the generalization of modern scientific and methodological approaches to the specifics of the classification of current assets [4].

If we consider the achievements of Ukrainian scientists in this area, among the existing research, the most active in the domestic economic thought is the discussion of issues directly related to the management of current assets of enterprises. Thus, Lysonkova N. M. and Zakharchuk V. Yu. consider the main principles, methods and stages of such management [5]. The ways of increasing the efficiency of management of current assets of enterprises are thoroughly analyzed by Zianko V.V. and Filatova N. M. The authors consider the specific features of managing current assets of the enterprise, analyze the influence of internal and external factors on their level, identify management methods, propose measures for acceleration of the cash assets turnover rate [6]. Specifics of current capital management on the example of the machine-building enterprise are considered in the works by Dehtiar N. A., Deineka O. V. and Chernous T. M., in which the authors substantiate the necessity and importance of effective management of current assets in the conditions of financial instability, analyze the indicators of the composition, structure and efficiency of this process [7]. Filatova N. M. emphasizes that in order to form a reproductive mechanism of current assets, it is necessary to improve the accounting of costs in production, which will allow the manufacturers to carry out a process of simple reproduction of production resources at the expense of cost [8]. Omelchenko L. S. and Piskuliova I. V. point out the main strategies for managing current assets of industrial enterprises, as well as types of policies for the formation and use of such assets [9].
Despite the availability of research on this issue, we cannot talk about solving all existing problems in the management of current assets of enterprises of the machine-building complex. One of the important components of ensuring the sustainable development of such enterprises in Ukraine is the effective reproduction of their current assets in order to create the necessary conditions for the continuity of the production process, as well as its financial and economic efficiency. At the same time, the reproduction of current assets that are advanced in circulation and current assets of economic entities have their own specific features that affect all stages of the functioning of machine-building enterprises and, thus, determines the results of their activities. To take into account this nature of the reproduction process, especially in the conditions of unstable development of the Ukrainian economy, it is often necessary to make non-standard decisions in the process of managing current assets, which requires corresponding theoretical substantiation.

**Purpose.** The aim of the article is to determine the specifics of managing the reproduction of current assets of machine-building enterprises and to substantiate the modern directions of increasing the efficiency of their use.

**Methods.** The methodology and research methods are based on the fundamental provisions of modern economic theory concerning the regularities of the reproduction process, scientific works by domestic and foreign researchers studying economics of enterprise and management. The author of the current research uses the following methods: canonical and discriminatory analysis – in developing a conceptual approach to managing the reproduction of current assets of a machine-building enterprise; grouping – when breaking down production cost; general and special methods – in identifying the specifics of the enterprises of the machine-building complex, as well as in developing the scientific and practical provisions that determine the formation of the resource queue, provided that the income covers (does not cover) the cost of production; ranking – when establishing the priority of covering the costs.

**Results.** The reproduction of the assets of industrial enterprises is a rather complicated process, and especially in the context of crisis and post-crisis periods, when economic agents face a shortage of their own financial resources and have limited access to external sources of funding in those volumes that would ensure continuity and increase the efficiency of their activities. Previous research highlights a number of reasons that cause problems in the process of reproduction of assets of industrial enterprises, namely: irrational structure of working capital, high levels of taxes and rates of bank loan, low level of availability of high-quality working capital, disparity of prices for domestic products in comparison with the import prices, as well as insufficient level of support from the state. Although the above factors are important in the problems of the reproduction of assets of Ukrainian industrial enterprises, one of the key deficiencies, however, is imperfect management.

Experience has shown that most of our enterprises do not have adequate market conditions for the system planning the provision of production activity as the main elements of working capital, do not systematically take measures to improve the use of available working capital, do not apply alternative scenarios for finding new sources of formation and reproduction of working capital, do not improve management policy of working capital components systematically [10]. All of this creates additional problems for enterprises for their effective functioning and achievement of success. While there are not so many opportunities at the disposal of enterprises for influencing the macroeconomic conditions of the reproduction process, still there are lots of opportunities to improve the efficiency of management. Taking into account the fact that current assets are the most mobile element of all assets of the company and the most important component of ensuring the continuity of production cycle and maintaining the necessary level of liquidity and solvency of the enterprise, the application of scientifically grounded strategies for managing their level and dynamics opens up significant opportunities in achieving high end results of activities for each industrial enterprise.

Speaking about the management of current assets of machine-building enterprises, it should be borne in mind that the direct object of management is characterized by certain nature that requires special conceptual approaches to management. According to our deep conviction, such an approach should, firstly, be based on a comprehensive analysis of the current state of formation and use of current assets, as well as the sources of their formation, and secondly, contain certain methodical tools for managing their separate structural elements and, thirdly, provide effective implementation of the goals of enterprise development. Taking all the above into account, we propose a conceptual approach to the management of the reproduction of current assets of machine-building enterprises in the context of strategic development of the industry, which is presented in the form of a flowchart in Fig. 1.

The specifics of this approach is that it is based on the interconnection of strategic goals (strategic aspects of management concept), the formation of scientifically sound methodological approaches to their implementation and the expected results. The proposed approach contains a scientific component, which is a connecting element in shaping the company's strategy and opportunities for obtaining the results of the activity. This component, in its function, is responsible for the scientific substantiation of the strategic and tactical steps that the enterprise must take in managing the reproduction of current assets. Consequently, the direct management process must be preceded by the research stage, the results of which will form a set of methodological developments, which can improve the management of reproduction of current assets of the machine-building enterprise. As the main components of this stage, we propose the use of three interrelated areas of research, namely: generalization of the theory and practice of formation of current assets and determination of their optimal structure, assessment of the efficiency of the use of current assets in the economic activity of the enterprise, analysis of sources of reproduction of current assets of the enterprise, taking into account the specifics of the industry. The result of scientific research is the formation of specific methodological approaches which, if used systematically, will allow the leaders of enterprises to timely adjust financial strategies, in particular, in terms of management of current assets. In our opinion, implementation of such management measures at certain stages will, in our opinion, promote sustainable and profitable development of enterprises (including participation in state sectoral and targeted programs), increase in competitiveness of products, as well as introduction of innovative projects and reduction of material intensity of the production.

In this flowchart of the conceptual approach, the direction of the study “Analysis of the sources of reproduction of current assets of the enterprise taking into account the specifics of the industry” deserves particular attention, as a result of which a methodological approach is created that allows the coordination of the sources of reproduction of current assets with the directions of their rational placement, since in conditions of unstable financial situation and crisis of finished goods sales, machine-building enterprises quite often face situations of search for mechanisms of reimbursement of resources spent during economic activity. Indeed, in recent years, most machine-building enterprises in Ukraine have seen an increase in the duration of operational and financial cycles, which is due to the reduction in sales volumes in the context of the crisis. Among systemic problems are the dubious debts of machine-building enterprises for performed work, the presence of a significant proportion of receivables with a maturity of more than three months, etc. All this reduces the profitability of enterprises and even makes them unprofitable. Under such condi-
The aim is to improve the management of reproduction of current assets of machine-building enterprises in the context of strategic development of the industry.

### Areas of research

- Implementation of target and state sectoral programs
- Sustainable, profitable development of the enterprise
- Increasing the competitiveness of products
- Implementation of innovative projects and reduction of material intensity of products

### Methodological approach

- Generalization of the theory and practice of formation of current assets and determination of their optimal structure
- Estimation of efficiency of using current assets in the economic activity of the enterprise
- Analysis of the sources of reproduction of current assets

### Expected results

- Coordination of sources of reproduction of current assets with the directions of their rational allocation
- Comprehensive evaluation of the management efficiency in the reproduction of current assets
- Stock valuation
- Pricing for manufactured products
- Management of receivables risk

### Fig. 1. Conceptual approach to managing the reproduction of current assets of the machine-building enterprise [11]

... (Diagram with flowchart)

... (Text continued)

...
with their internal staff in order to minimize costs. Thus, it is not the order of attraction of some or other resources that is the subject of management, but work on already defined and relatively stable elements, since without the coverage of them the sense of holding the enterprise as a productive unit in general is lost. In relation to other expenses, management of the reproduction of current assets of a machine-building enterprise is realized according to the classic scenario. Thus, in the resource queue method, which is based on the assessment of the importance of timely implementation of costs in order to prevent the production from stopping and to minimize losses in cases where the revenue is less than the cost of production, a new component appears — cost minimization with relatively stable elements, since without the coverage of them the importance of timely implementation of costs is very important and is characterized by a certain rigidity conditions of the tax legislation, the non-compliance entails a considerable amount of money in terms of penalties for late payment of taxes. This leads to the fact that there is no alternative to the prudence of this particular variant of the reimbursement of resources and leads to the fact that the taxes themselves take the first place in the considered resource queue. The tenth and eleventh elements lie a priori in the second and third stages of the order of reproduction, since they relate to those that determine the very technical and technological possibility of the functioning of the machine-building enterprise. This, as we pointed out earlier, is a specific feature of the industry and predetermines the concentration of management efforts in seeking to optimize the costs of raw materials, purchased semi-finished products and components.

The fourth step of the order of reconstruction is the third element of the cost price Table — salary. According to the economic realities of Ukraine, domestic enterprises often try to solve their questions of remaining in the relevant markets in crisis conditions at the expense of their employees. Despite the fact that under current conditions, the management of enterprises have not so many legal instruments of influence on the level of remuneration available (the requirements of the law on minimum wages, strict sanctions for the lack of official registration of employees, criminal liability for non-payment of wages, etc.), they find the necessary techniques of informal influence. From the practical point of view, this means that in the extreme situation, managers prefer the interests of production, hoping that the preserved technological and process-related components of enterprises will allow them to increase their activity in the post-crisis period. That is why, in Ukrainian realities, salaries of employees of an enterprise are some of the lowest places in the reproduction of current capital resources, which cannot be considered legitimate.

For heavy-industry enterprises, the issue of reducing wage bill costs is very important and is characterized by a certain duality. On the one hand, the company cannot guarantee that...
lowering wages to the minimum will not provoke a high-skilled personnel outflow and will not create a technological barrier to maintenance of functionality. On the other hand, it should solve the problem of cost savings, operating in an industry with high labor intensity and high priority of reproduction of this cost component. In our opinion, the highest result of all existing restrictions in this area can be achieved through the development and implementation of non-standard approaches in personnel management. World experience suggests that taking into account the workers’ behavioral characteristics that haveformed in different countries and regions is a rather promising tool for influencing their attitude to the components of the production process, including the amount of remuneration.

So, the positive results of applying the methods of personnel management in American and Japanese companies are well-known. These methods are based on cross-cultural analysis, in particular methods for measuring cultural differences; in the values by G. Hofstede (Hofstede, 1980, 1994, 2001), social energy by D. Earley (Earley, 1989) and H. Shirakashi (Shirakashi, 1985), the level of personnel turnover; depending on the organizational identification by F. Abrams (Abrams, 1998), and others. Yu. Pylypenko, H. Pylypenko, N. Ltyvynenko and E. Prushkivska in their study [14, 15] obtain interesting results in the field of motivation for work, based on cross-cultural dimensions of mentality and socio-psychological orientations of the Ukrainian population.

In a national survey conducted by G. Hofstede and O. Potemkina, the researchers found that the average Ukrainians' orientation towards remuneration is slight as compared with Europeans, their predominant focus on their own process of work rather than on its outcome. The survey also established psychological inclination to a sense of importance of not just engagement in a certain business, namely work, as well as strongly expressed willingness to sacrifice oneself for the sake of the team, for social goals [16]. What distinguishes this study is its regional perspective. Taking into account the specifics of the concentration of heavy engineering enterprises in the regions of Ukraine, one can identify the specifics of the labor values of the population living there and being potential labor force for the enterprises of the corresponding profile. As it seems, the application of the results of cross-cultural analysis as a component of the resource queue method, implemented in the management of current assets of machine-building enterprises, is quite constructive, since it allows us to find acceptable limits of changing the amount of remuneration.

The next in the resource queue should be, in our opinion, the costs associated with the repair of machinery and fuel, foundry products, spare parts, low value items and wearable items. The lower ranking of the order of recovery of these elements of the cost of production of cars is due to the fact that they relate to those productive resources the absence of which will not stop the production process itself, but will lead to a decrease in the quality and quantity of manufactured products.

Finally, the lowest rank priority is the resources associated with depreciation deductions of capital productive assets. In other equal conditions, at least in the short term, absence of reproduction of these types of resources is not critical to the enterprise. Moreover, thanks to the depreciation fund, it can in some way solve its current problems if it ends up in the red. This is explained by the fact that the main productive assets are transformed into money in parts and gradually, which causes a long time lag of their transformation into its original form.

Thus, in our opinion, the order of compensation of production resources in the combination shown in Figure 2 is most effective in terms of the strategy of self-preservation of production. On the one hand, the resources that stand at the beginning of the queue provide adequate conditions for maintaining production, on the other hand, those that come at the end of the queue mitigate the consequences of negative financial results.

Taking into account the above said, there are following scenarios of management strategy of resource queues for different amounts of enterprise revenue from the sale of their products (positions of variants A, B, C and D in Fig. 2). Position D describes a situation in which the revenue can cover the reproduction of all production resources, except for the depreciation of fixed assets. However, as already noted, the depreciation fund may be used by the company as a source of internal lending, including for covering losses from economic activity. In the case where the revenue from sales corresponds to position C, an enterprise minimizes its losses at the expense of those types of resources which will not stop production, if not renewed on a full scale; however, they can significantly degrade the quality and quantity of manufactured products. It is clear that such minimization has a certain lower limit, since less qualitative products at the same price will use less market demand. Finally, the position of the revenue from variants B and A allows expecting to cover only a part of the production resources in the critical group. From the theoretical and practical points of view, this situation, due to the devastating effects of social and technological factors, will result in suspension of production.

**Conclusions.** In the current conditions of financial and economic instability, the ability of enterprise managers to develop a well-considered strategy for managing resources, including current assets, is of utmost importance. Taking into account the specifics of reproduction of current assets in machine building, the conceptual approach to management in this field should be based on the organic interconnection of research, methodology and practice stages, the implementation of which will contribute to a more sustainable and efficient resource provision of business entities.

One of the managerial approaches to reproduction of current assets is the resource queue method, which, however, requires further elaboration in view of the need to develop adaptive mechanisms for its application in the field of heavy engineering. Taking into account the specifics of technological and economic processes in this sector, the resource queue method should include not only the determination of the priority of reproduction of productive resources in the context of a loss-making activity, but also the procedure for minimizing costs within those relatively stable cost components that have the highest ranks of the priority of its coverage. From the standpoint of the strategy of self-preservation of production, this approach can both provide substantial conditions for the maintenance of production, and mitigate the negative consequences for the enterprise financial losses.

**References.**

Управління відтворенням оборотних активів машинобудівних підприємств України

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Мета. Визначення особливостей управління відтворенням оборотних активів машинобудівних підприємств і обґрунтування сучасних напрямів підвищення ефективності їх використання.

Методика. У роботі використані такі методи: канонічний і дискримінантний аналіз – при розробці концептуального підходу до управління відтворенням оборотних активів машинобудівного підприємства; групування – при використанні складових собівартості продукції машинобудівного підприємства; загального та особливого – при виявленні специфіки діяльності машинобудівного підприємства; розроблено вибірку підприємств машиностроїального комплексу для експертної оцінки. В результаті, було виявлено 12 визначних факторів, що впливають на ефективність використання оборотних активів машинобудівного підприємства.

Результати. Виявлено, що ефективність використання оборотних активів машиностроїального підприємства є результатом багаторядних взаємозв’язків, що впливають на ефективність їх використання. Важливими факторами є витрати на виробництво, рівень прибутку, структура активів і пасивів підприємства, а також вплив суспільно-економічних факторів. В результаті, було виявлено 12 визначних факторів, що впливають на ефективність використання оборотних активів машинобудівного підприємства.

Наукова новизна. Унаслідок дослідження встановлено, що ефективність використання оборотних активів машиностроїального підприємства є результатом багаторядних взаємозв’язків, що впливають на ефективність їх використання.