

IMPROVEMENT OF INDICATORS OF PROVIDING NATIONAL SECURITY**Karbekov K.S., *Lepikhin O.V., *Matviichuk I.A.***Almaty University
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The development of an effective system for managing the sources of circulating assets formation of machine-building enterprises has a crucial effect on their financial and economic security, which is a component of national security relating to the efficient activities of enterprises and regions. The basic principle by which market-based investment mechanisms operate is to maximize profitability while minimizing uncertainty. Therefore, it is found that it is important not only to be able to accumulate financial resources, but equally important - to find the best ways to allocate them. It is determined that in modern conditions, industrial enterprises independently decide on the choice of sources of attraction of financial resources in order to ensure financial and economic security. It is substantiated that the increase in the cost of energy sources, which are mostly attracted from the outside, has led to an increase in receivables and payables, and a decrease in their solvency and profitability. Such a financial situation discourages potential creditors from investing in the development of machine-building enterprises, where the convertibility of funds is much lower than in the metallurgical industry or trade, and the likelihood of profitability can be problematic.

In order to develop a scientifically substantiated system of formation of circulating assets of the enterprise it is necessary to study the movement of the value of circulating assets, which are subjects to certain laws, the studies make it possible to simulate the real processes of their circulation. A model of the circulation of circulating assets with the purpose of providing financial and economic security at machine-building enterprises, and accordingly national security, is proposed.

УДОСКОНАЛЕННЯ ІНДИКАТОРІВ ЗАБЕЗПЕЧЕННЯ НАЦІОНАЛЬНОЇ БЕЗПЕКИ**Карбеков К.С., *Лепьохін О.В., *Матвійчук І. А.***Університет «Алмати»
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фінансово-економічна безпека, національна безпека, кругообіг оборотних коштів, система формування, оборотні кошти, прибуток, платоспроможність.

Розробка ефективної системи управління джерелами формування оборотних коштів машинобудівних підприємств значною мірою впливає на їхню фінансово-економічну безпеку, яка є складовою національної безпеки, що пов'язано з ефективною діяльністю як підприємств, так і регіонів. Основним принципом, за яким функціонують ринкові механізми інвестування, є максимізація доходності при одночасній мінімізації невизначеності. Тому встановлено, що важливо вміти не лише нагромадити фінансові ресурси, не менш важливо – знайти оптимальні способи їх розміщення. Визначено, що в сучасних умовах промислові підприємства самостійно вирішують питання про вибір джерел залучення фінансових ресурсів для забезпечення фінансово-економічної безпеки. Обґрунтовано, що зростання вартості енергоносіїв, які здебільшого залучаються ззовні, призвело до зростання дебіторської й кредиторської заборгованості, до зниження їх платоспроможності та рентабельності. Такий фінансовий стан відштовхує потенційних кредиторів від вкладення капіталу в розвиток підприємств машинобудівного виробництва, де оборотність грошових коштів суттєво нижча порівняно з металургійною галуззю чи торгівлею, а ймовірність отримання прибутку може бути проблематичною. Для розробки науково обґрунтованої системи формування оборотних коштів підприємства необхідно дослідити рух вартості оборотних коштів, який підпорядкований певним закономірностям, що дає змогу змоделювати реальні процеси їх кругообігу. Запропоновано модель кругообігу оборотних коштів для забезпечення фінансово-економічної безпеки на машинобудівних підприємствах і, відповідно, національної безпеки.

Analysis of recent studies and publications

The current stage of development of the national economy is characterized by the presence of a large number of factors that adversely affect the functioning of the state and the enterprise. Therefore, it is important to create a system of national and financial security management. To ensure effective management of this process, it is important to justify and select indicators to assess the level of financial security of the enterprise with the aim of making effective management decisions. The works of domestic and foreign scientists are devoted to these problematic issues, namely: Deieva N.M. [1], Donetz L.I. [2], Vashchenko N.V. [2], Zhovna O.M. [3], Zagorelska T.Yu. [4], Kamlyk M.I. [5], Kyrychenko O.A. [6], Kim Yu.G. [10], Kozachenko G.V. [7], Kuzmina O.E. [8], Kuznetsova T.V. [9], Lyashenko O.M. [7], Melnyk O.G. [8], Molodetska O.M. [3], Muhammediiarov D.T. [12], Ponomariova V.P. [7], Tkachuk Yu.G. [9].

Objectives of the article

The objective of the research is to develop a model of turnover of circulating assets, which will provide a high level of financial and economic security in industrial enterprises.

The main material of the research

One of the most important problems of effective business development in market conditions is ensuring financial security as a basic component of national security. This problem is particularly acute in the context of entrepreneurial risk.

The essence of an enterprise's economic security lies in the state of its economic system, which can be characterized by a balance and resistance to the negative impact of any threats, its ability to ensure its sustainable and effective development on the basis of its own economic interests. We have set ourselves the task of developing a model of circulating working capital, which will influence the provision of financial and economic security at industrial enterprises.

The construction of such a model should include the following steps:

1. Establishing restrictions for the analysis of the circulation of circulating assets.
2. Calculation of the number of completed circulations of circulating assets for the period.
3. Determination of the amount of production in progress and the released cash for one cycle.
4. Calculation of the value of finished goods and goods shipped during the period.
5. Construction of a model of circulating assets of the enterprise.

Stage 1. Establishment of restrictions for the analysis of the circulation of circulating assets. Accounting uses a different basis to determine the value of production in progress, finished goods and goods shipped, respectively - production and full cost. An objective analysis of parameters of the cost paid in advance can be achieved using a unified valuation base. Therefore, time (days, months) is taken to estimate the circulating assets. The

recalculation in the days of the circulating assets elements and the volume of realization is carried out on the basis of dividing their value by the corresponding one-day expenses.

The calculations take into account that the increase in the costs of production in progress is uniform and the one-day costs are equal to one.

For the construction of the model, the average annual production period and turnover are taken.

2. Justification of model parameters. The model is represented by the following parameters calculated on the basis of financial statements of a typical machine-building enterprise: production cycle (PC = 4 months), duration of the sphere of circulation (SC = 3 months), duration of the study period (SP = 12 months).

3. Calculation of the number of completed circulations of circulating assets for the year. The number of completed cycles is determined by the length of the production cycle and the sphere of circulation, as well as the length of the period during which the turnover of funds takes place. Therefore, their mechanical addition is not possible, because all the circuits are organized taking into account the requirements of continuity of the production process and are limited to a period of one year.

Sales of products are repeated over periods of length in the PC.

4. Determination of the amount of production in progress and the released cash for one cycle. The regularities of the movement of the impaired value of circulating assets indicate that at each certain moment in time it consists of the following elements: the cost of inventories; the cost of production in progress; the cost of finished goods and goods shipped; the value of the released cash.

The above can be written as the following formula:

$$(P_p + P_c) \cdot A_c = VI + VP + BR_c + CFP, \quad (1)$$

where P_p is the production period;

P_c is the period of circulation of circulating assets;

A_c - the amount of circulating assets advance per day;

VI - the value of inventories;

VP - cost of production in progress;

BR_c - balances released from the cash flow;

CFP - cost of finished goods and goods shipped.

The stated equality is also valid for the average values of the given parameters of the circulation of circulating assets.

The sources of advance cost are own and borrowed funds. Then the above equality can be written as follows:

$$OCA + AP + B_1 = VP + BR_c + CFP, \quad (2)$$

where OCA - own working capital;

AP - account payables;

B_1 - bank loans;

BR_c - balances released from the cash flow (average amount);

CFP - cost of finished goods and goods shipped (average amount).

After receipt of the finished product and completion of each cycle, part of the proceeds from the sale is directed

to the purchase of raw materials and the formation of production in progress, to start a new cycle, and the other part is released from circulation in the form of cash balance. This situation is due to the fact that the company cannot advance the proceeds at the same time.

In the model, inventories and production in progress vary from 1 to the duration of the PC during the production cycle. Then its average duration is $(1 + PC) / 2$ (months).

The average amount of funds released is calculated as the arithmetic mean between their maximum and minimum size.

5. Calculation of the value of finished goods and goods shipped during the period. During the circulation period, the products produced during the production period must be sold. That is, the duration of the first such period forms the sum of the balances of finished goods and goods shipped for which funds have not been received yet.

The average value of products in circulation during the year is equal to the turnover of time. The cost of finished goods and goods shipped divided by the volume of sales during this period will show the duration of the sphere of circulation.

6. Construction of a model of the circulation of circulating assets of the enterprise. In the table. 1. There is a simulated situation, which is typical of a machine-building enterprise, whose turnover has always the remains of production inventories, production in progress, unrealized products, periodically the sale of manufactured products.

Thus, the circulating assets during the year will make two complete cycles, which will end with the sales process (May, September). One cycle will be interrupted due to the end of the period. It will be completed next year (January).

Table 1 - Circuit of circulation and circulation of circulating assets of machine-building enterprise.

INDSCATORS	Months											
	1	2	3	4	5	6	7	8	9	10	11	12
1 th circulation	PP	PP	PP	PP	SC	SC	SC	—	—	—	—	—
2 nd circulation	—	—	—	—	PP	PP	PP	PP	SC	SC	SC	—
3 rd circulation	—	—	—	—	—	—	—	—	PP	PP	PP	PP
SR	4	—	—	—	4	—	—	—	4	—	—	—
B	0	3	2	1	0	3	2	1	0	3	2	1
VI + CPP	1	2	3	4	1	2	3	4	1	2	3	4
CFP + VSG	6	2	2	2	6	2	2	2	6	2	2	2

Note. SR - sales revenue; B - balances released from the circulation of funds; VI - the value of inventories; CPP - cost of production in progress; CFP - cost of finished product balances; VSG - the value of the shipped goods, the PP is the production cycle, the SC is the sphere of circulation.

Therefore, it can be argued that the formation and maintenance of an efficient circulating assets cycle at the enterprise requires the observance of the following principles: rationality of the borrowing capital policy (independence); the required sufficiency of the profitability of the circulating assets (profitability); maintenance of liquidity of the circulating assets at the optimum level (liquidity); the required level of circulating assets dynamics (turnover).

Adherence to these principles in the practice of managing machine-building enterprises will allow them to finance and use circulating assets simultaneously and effectively.

It should be noted that certain authors of circulating assets evaluate the following indices as the indicators that characterize the independence of the enterprise (structure of liabilities balance sheet, the ratio of sources of financing inventories of inventory, financial autonomy, the ratio of financial dependence, the ratio of own and borrowed funds, the coefficient of equity [1]. We believe that circulating assets appreciation should be based on the four principles outlined above. Thus, the principle of profitability indicates the ability of an enterprise to finance circulating assets at the expense of its own working capital; the liquidity principle characterizes the ability of an entity to meet its obligations in a timely

manner; the principle of turnover is based on liquidity of circulating assets.

In order to restore the distorted proportions in the cycle of circulating working capital and the effective financing of turnover and circulating funds of enterprises it is proposed to use a classifier of factors, presented in Table 2.

Own working capital plays an important role in financing circulating assets and circulation funds. The minimum value of this indicator should be set at least 10% [11].

The added value and growth of own circulating assets indicates the strengthening of the financial position of the enterprise. However, it is important to estimate its magnitude. In order to determine the value of own circulating assets, the minimum necessary for the company in the current working conditions, it is advisable to refer to the rule of financial management: the least liquid assets must be financed with the expense of own funds. Own working capital characterizes own funds aimed at financing circulating assets and circulation funds, so it is necessary to calculate the amount of own funds that should cover the least liquid working capital. Stocks, production in progress and advances to suppliers can be considered as the least liquid circulating assets.

Table 2 - Classifier of factors of inefficient mechanism of financing of circulating assets and funds of turnover of machine-building enterprises

Factors	Symptoms
1. High level of dependence on loan capital	Availability and growth of loans unpaid on time. Presence and growth of overdue trade payables Increase in accounts payable to suppliers Increasing debt to budgets and extra budgetary funds. Increasing amounts of current bank loans. Presence and growth of losses.
2. Low profitability or loss of activity	Presence and growth of losses Reduction in retained earnings Reduction in the amount of reserve capital Decrease in the value of average current assets balances High growth of receivables for delivered products Growth in inventories Growth of production in progress Growth of finished goods in warehouses Reducing the number of goods shipped Reduction in production and sales
3. Low liquidity	Availability and growth of loans unpaid on time Existence and growth of overdue accounts payable to suppliers and contractors Growth in debt to the budget and extra budgetary funds Existence of overdue receivables Increase in receivables for delivered products Growth in inventories Growth of production in progress
4. Low turnover of working capital	Presence and growth of overdue receivables Increase in receivables for delivered products and services rendered Increase in inventories Growth of production in progress Increase in finished goods balances at warehouses Reduction in production Reducing the number of goods shipped

Comparison of the actual value of own circulating assets with their estimated minimum allowable value makes it

possible to conclude on the sufficiency or lack of own funds aimed at financing working capital, namely:

$$CA - CL - (PI + PP + AS) \begin{cases} > 0 \text{ (sufficiency of own funds)} \\ < 0 \text{ (lack of own funds)} \end{cases} \quad (3)$$

- where CA - circulating assets;
- CL - current liabilities;
- PI - production inventories;
- PP - production in progress;
- AS - advances to suppliers.

Exceeding the actual level of own circulating assets compared to the minimum required level of them will allow the enterprise to withstand higher financial burden in the future, in particular, to make significant investments or to overcome periods of decline in sales volumes. Such a stock of own resources represents a possibility of considerable growth of the borrowed capital, in case of production necessity, which can be

tolerated by the enterprise without loss of financial stability.

According to the researches, the main parameter that determines the value of own working capital is the profitability of enterprises. Increasing profitability is a powerful lever for increasing the company's circulating assets, ensuring the reliability of financing working capital and circulation funds.

Important for the analysis and assessment of the adequacy of circulating assets to finance working capital and circulation funds is the calculation of the current financial needs of the enterprise, which characterize the ability to cover the cost of inventories with accounts payable.

As long as raw materials, finished goods and products are not converted into cash, they themselves require some circulating assets to stay in a certain phase of the operating cycle. Shipped goods but not paid by customers generate receivables that require adequate circulating assets coverage. That is, the fact of the availability of inventories, production in progress, finished goods, as well as receivables of all kinds, indicates the need for an appropriate amount of circulating assets to finance them.

Machine-building enterprises have significant current financial needs, due to the following reasons:

- 1) the presence of significant stocks of finished goods, as well as production in progress;
- 2) the diversion of large amounts into accounts receivable, which is mostly due to the difficulty of sale, the poor credit policy of enterprises.

The optimization of volumes and the ratio of own working capital and current financial needs of enterprises is of great practical importance for improving the indicators of financial and economic security.

It is necessary to increase the amount of own working capital and reduce the current financial needs to reduce the need for borrowed funds in the case of high risk of reducing the financial stability of the enterprise.

The main directions of increase of own circulating assets can be [4]: increase of volume of net profit; optimization of dividend policy; introduction of management accounting; improvement of accounts receivable management; perfect marketing service; high responsibility of the enterprise for formation and preservation of own circulating assets and their purposeful use; timely financing of increase of working capital rate.

Current financial needs can be reduced by: improving inventory management of inventories; reasonable reduction of deferred payments for delivered products; reducing some of the dubious customers; increase of accounts payable without loss of image of the enterprise; reduction of production and sales cycles; acceleration of production and sales.

The enterprise has the opportunity to obtain an excess of current resources in comparison with current needs due to the perfect management of accounts receivable and payables, as well as inventory. But in such a situation there is a great risk of losing control in managing the financial flows of the enterprise. An increase in accounts receivable or adverse changes in the terms of payments to creditors may put the enterprise in a critical state and lead to insolvency.

Thus, the availability of circulating assets is not always a reliable source of funding for working capital and corporate turnover funds. In order to avoid cash shortages, the following condition is required: the amount of own circulating assets exceeds the value of current financial needs. Therefore, cash management must ultimately provides the regulation of own current assets and current financial needs, which depend not only

on tactical but on strategic decisions of financial managers of enterprises.

The mechanism of formation of sources of financing current assets is significantly influenced by the ratio of receivables and payables of the enterprise and the turnover of each of them. If accounts receivable exceeds accounts payable, it may indicate a faster turnover of accounts payable compared to accounts receivable. In this case, over a period of time, debtors' debts are converted into cash at longer time intervals than intervals when an enterprise needs cash to pay off its creditors in a timely manner. Accordingly, there is a shortage of cash in circulation, which necessitates the attraction of additional sources of financing, such as overdue payables or bank loans.

Revenue from the sale of products determines the ability of the company to repay debts to creditors. Accounts receivable are formed as buyers' debts. Therefore, ensuring cash flow timely and full to make payments to creditors is an important task of managing the financial and economic security of industrial enterprises.

Ensuring the economic security of the state is important in the development of the state. In order for the state to develop rapidly and dynamically, it is necessary to approach properly the preparation and development of economic security. It is necessary to clearly and concretely formulate principles and approaches in ensuring state security. Ensuring economic security is one of the most important national priorities of Kazakhstan [12] and Ukraine.

Conclusions

Therefore, in order to ensure national, financial and economic security and effective conditions for the formation of sources of funding for working capital, it is necessary to manage both receivables and accounts payable at the same time. Debts relating should be considered as baseline data for such an assessment to the analysed period. However, debts that are converted to cash in other time periods should be excluded from the balances of receivables and payables. All this allows you to answer the question of whether the conditions of settlement with buyers and suppliers of the company provide cash.

Thus, it is expedient to use the developed model of circulating assets circulation at machine-building enterprises in order to:

- 1) forecasting the duration of production and financial cycles;
- 2) establishing a rational relationship between production and circulation, own and attracted sources of funds;
- 3) determining the need for working capital to advance per unit of time;
- 4) identification of the main factors influencing the duration of individual cycles to increase the turnover of circulating assets;

5) forecasting the volume of sales of products, depending on the possible quantitative ratios of elements of the circulating assets of the enterprise in the planning period;
6) to ensure the national security of the country on the basis of effective use of working capital of enterprises.

The developed model allows to determine the reasons for the violation of proportions in the cycle of circulating assets of the enterprise, in particular, at the stage of its involvement. For this purpose, a classifier of symptoms and causes of their occurrence, which influence on the formation of the process of financing circulating assets of machine-building enterprises, is proposed.

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