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THE SIMULATION OF CONTROL THE TURNOVER OF INDUSTRIAL CORPORATIONS WORKING CAPITAL

In the article was investigated the problems of the simulation of control the turnover of working capital of industrial corporations. The author urgency some of economic problems of the management of turnover the working capital of industrial corporations. In the article propoused the method of determining the economic effect of the acceleration of turnover the working capital (or circulating assets) of industrial corporations, described the main stages of acceleration, take into account the factors of efficiency development of corporations in the process of modelling the process of management the turnover of working capital of corporations, formed a descriptive model for cost-effective control the turnover of working capital by the author.

Keywords: control, corporation, industry, simulation, turnover, working capital.

Кудря Я. В. МОДЕЛЮВАННЯ УПРАВЛІННЯ ОБЕРТОВІСТЮ ОБІГОВОГО КАПІТАЛУ ПРОМИСЛОВИХ КОРПОРАЦІЙ

Присвячена дослідженню проблем моделювання управління обертовістю обігового капіталу промислових корпорацій. Автор обгрунтував актуальність проблеми управління обертовістю обігового капіталу промислових корпорацій. У статті запропоновано авторський метод визначення економічного ефекту від прискорення обертовості обігових активів промислових корпорацій. Крім того, автором наведено основні стадії прискорення обертовості обігових засобів промислових корпорацій. У статті враховано систему факторів ефективності розвитку промислових корпорацій в процесі моделювання перебігу управління обертовістю обігових коштів. Автором сформовано описову модель економічно ефективного управління обертовістю обігових засобів промислових корпорацій.

Ключові слова: корпорація, моделювання, обертовість, обіговий капітал, промисловість, управління.

The formulation of the problem. The international economy affects is the efficiency of the corporate activities. The dinmont economic conditions and the variability of the environmental activities of industrial corporations determine the use of industrial corporations sources of the innovation. One of the main economic sources of economic progress is the efficient management of turnover the working capital corporations of industrial corporations.

The analysis of recent researches and publications by problem. Economic resources of management performance the corporate development, particularly in the industry, was investigated by V. Alimov, A. Amosha, A. Asaul, V. Bazilevich, V. Buffett, A. Belorus, E. Blank, T. Burkinskiy, V. Vishnevsky, N. Voynarenko, V. Heyets, A. Gritsenko, A. Danilenko, B. Danylyshyn, M. Kizim, Y. Lysenko, I. Mantsurov, V. Pavlov, C. Purozkov and the other [1-7]. Their applied, theoretical and fundamental developments in the sphers of the identification, the use of different innovations and the economic reserves management effectiveness of the development corporations are very important and significant. But the problems of the management of turnover the working capital of industrial corporations which based on a factors of efficiency development

corporations is not completely solved in [1-7] and is an unsolved part of the problem.

The statement of the task. It's consideration of a factors of efficiency development industrial corporations in the modeling process and obtaining by the economic and mathematical models of organizational and economy providing the cost-effective management of turnover the working capital of corporations.

The recent results of research the problem. In the corporate practice the acceleration of the level of turnover the working capital of industrial corporations is a tool to increase the values of the coefficients of financial strength due to minimization of the size of working capital of corporations. But the minimize the levels of the working capital of industrial corporations involves performing complex manipulations of the system recommended in index of turnover the working capital of corporations with an emphasis on the use of the characteristics of the industrial activities. The calculation of the level of turnover the working capital of industrial corporations we performed with the use of the method of operating its real average nutriv practice values. So these values are characteristic of borrowing in the corporate competition (the author means outstanding, successful corporations to ensure their financial strength).

The economic effect of acceleration the level of turnover the working capital of industrial corporations by reducing the size of their current assets we calculated as equations:

$$\begin{cases} d = \dfrac{e}{f}\left(\dfrac{f}{g} - \dfrac{f}{h}\right) \\ d \in b \\ b = d = \dfrac{e}{f}\left(\dfrac{f}{g} - \dfrac{f}{h}\right) \\ f \leftrightarrow t \\ d \Leftrightarrow a \end{cases}, (1)$$

where a – an array of factors the efficiency development industrial corporations;

b – the coefficient of alertbot of the working capital of industrial corporations;

c – the decrease in the value of working capital of industrial corporations, UAH;

d – the expected decrease in the value of working capital of industrial corporations, UAH;

e – the volume of industrial production for a corporate calendar year, UAH;

f – the average number of days in a corporate calendar year ($f \in t$), days;

g – the real value of the indicator of turnover of the working capital of industrial corporations, revs;

h – the recommended value of the indicator of turnover of the working capital of industrial corporations, revs.

The main stages of the acceleration the level of turnover the working capital of industrial corporations we are interpreted as: in the phase of the directions the cash for organization of operating activities with the stocks of industrial corporations or its development that makes a corporate profit:

to reduce a maintenance costs and the deadweight losses of working capital of industrial corporations;

the optimization of the quantity and the quality of the monetary operations, that connected with receiving at the disposal of current assets, segments or periods of time between supply and manu reserves of working capital of industrial corporations, the norms and the specifications of circulating capital;

its use and the management of modernization the financial support of industrial corporations;

the optimization of the industrial corporations economy mechanisms of the procurement and the storage of the current assets;

in the phase of the manufacture of goods, the rendering of services, the execution of works by industrial corporations:

to improve the distribution and the redistribution of the cost of working capital of industrial corporations;

the optimization of the length and the duration of production cycle of industrial products;

to reduce the technological and production costs of industrial products;

to streamline and to improve the regulation of prepaid expenses of industrial corporations;

in the phase of the transactions to corporate consumers the property rights for the industrial products:

the balance of corporate cash proceeds from the sale of industrial products;

the optimization of the monetary operations, which are related to calculations with the consumers of goods, services, works and the funds equivalents, the stocks of finished industrial products;

to optimize the corporation price policy;

the intensification of the level and expanding the boundaries of implementation the horizon industrial products deliveries;

the improvement and the rationalization of the management of receivables for manufactured goods, rendered services and performed works, the sale of the residues and surpluses of current assets of the industrial corporations;

to improve the regulation of the composition and the structure of sources of the investments, recapitalization working capital etc.

A general idea of the level of efficiency the management of circulating the assets of industrial corporations formed with the participation of the values of the coefficients of turnover the working capital of corporations and the duration of the turnover of working capital. Their vocation is to provide corporate information about the effectiveness of working capital of industrial corporations. The modern economic researches shows that the practical relevance and the importance of the role of such indicators. They end up functional utility the coefficients of turnover the working capital of industrial corporations and the duration of its turnover. But, unfortunately, the indicators do not provide arrays of high-quality corporate information on the general condition of the working capital of industrial corporations.

Getting adequate, special corporate information regarding the level of use and the general working capital of industrial corporations acquired through the use of a coefficient of configuration of circulating assets of corporations. The configuration of circulating assets of industrial corporations is a measure of the change in corporations cash balances on the production of a unit of commercial production from the receipt of factors of production to be credited to the accounts and the balance of cash for the industrial products.

The coefficient of configuration the working capital of industrial corporations by commodity groups is an indicator of the variation of excess cash to manufacture industrial products of particular groups at the time of receipt the factors of production and the realization of goods, works and services in the market. The indicators include the ratio of continuity the total turnover of working capital of industrial corporations.

The sequence of the circulation movement of working capital of the industrial corporations on the cash flows are set, fold and takes place in stages. The content and number of the stages are determined by the parts of the corporate chains, the main components and processes operating activities, such as manufacturing.

The main results of management decisions regarding the production volumes, batches of industrial products of the particular product groups are the periodic and the systematic conversion of working capital of industrial corporations in the process of manufacture of the goods,

provision of the services and performance of works from one to another.

The basic form of the different transformation of working capital of industrial corporations is a cash. For example, the organization of production paid cash. Its used in financial support of the formation of inventories of the industrial corporations. The cash funds from the state of inventories are transferred in the form of corporation unfinished production. Under the influence of the means of production and labour, its objects are made into finished products of the industrial corporations. The receivables for industrial products is the final, last transformation of working capital of industrial corporations.

Therefore, the configuration ratio of working capital of industrial corporations is origin and the constituent elements in a complex. The complexity associated with the synthesis of a pair of relatively independent indicators. The integral part number one is a factor of continuity the full ductility of the whole turnover of working capital of industrial corporations. The second element is a coefficient of the continuity of the whole turnover of working capital of industrial corporations by groups of industrial products. It is a derivative and analogue of the increased ductility of the total turnover of working capital of industrial corporations.

The coefficient of configuration the working capital of industrial corporations is a quality indicator of assessment of the efficiency, the functional and the structural optimization of the economic mechanisms of management the circulating assets. The practical form of integration the factors of the continuity the total turnover of working capital of industrial corporations and by commodity groups of industrial production in structural composition of working capital of corporations look like these equations:

$$\begin{cases} a \\ i = (j, k) \\ j = f(k) \\ k \in k(j) \\ j \to k \\ i = ([j]; [k]; [j,k]) \\ i, j, k \Leftrightarrow a \end{cases} \quad , \qquad (2)$$

accordingly

$$\begin{cases} a \\ j = \sum_{n=4}^{n} (l; m(v); n; s) \\ l, m(v), n, s \end{cases} \qquad (3)$$

so

$$\begin{cases} a \\ k = \dfrac{((o(p)l) + 0,5(o(p) + q)m(v) + (qn) + (rs))}{r}, \\ o(p), q, r, s \Leftrightarrow a \end{cases} \qquad (4)$$

where is i – the coefficient of configuration of the working capital of industrial corporations;

j – the practical form of integration the factors of continuity the total turnover of working capital of industrial corporations;

k – the form of integration the factors of continuity the total turnover industrial corporations working capital by commodity groups of industrial production;

l – the time of accounting the inventories on the corporation balance sheet, days;

m – the time of accounting the corporation work in progress ($m \in v$), days;

n – the time of accounting the finished products in corporate storage, days;

o – the spending cash on a one unit of the industrial production by the particular commodity groups (its and hereafter), the calculation of the cost per unit of thoutput ($o \in p$), UAH;

q – the corporate full cost per unit of output, UAH;

r – the corporate selling price per unit of output, UAH;

s – the corporation receivables for industrial products, UAH.

The conclusions. Thus, the coefficients of integration the factors of continuity the total turnover of working capital of industrial corporations and by commodity groups of industrial production in the economic, mathematical models of the organizational and economic providing the cost-effective management of turnover the working capital of industrial corporations by equations (2 – 4) are the maine quantitative indicators to measure the effectiveness and the implementation of the functional, structural optimization of the economic mechanisms of working capital management of corporations.

At the time of one revolution of the working capital of industrial corporations indicates the practical form of integration the factors of continuity the total turnover of working capital of corporations. The cumulative and summarized the turnover time of circulating of working capital of industrial corporations characterize at corporation by commodity groups of industrial production.

The values of the coefficient of configuration of working capital of industrial corporations, practical form of integration the factors of continuity the total turnover of working capital of corporations and last same by commodity groups of industrial production set the time of the conversion of the current assets of corporations in cash on the payment instruments of the participants, accumulation of corporate securities in the depository banking and financial institutions, the revocation and withdrawal of a funds from the turnover of working capital. Its coefficients depend on the volume of industrial production for a corporate calendar year, the expected decrease in the value of the working capital of industrial corporations and the average number of days in a year.

The prospects of the further research is the study and solution of problems the inventory management of circulating the assets of industrial corporations, receivables for industrial products and particularly in the context of proposed model.

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