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**IMPROVING DIRECTIONS OF THE METHOD  
OF ANALYSIS OF INDUSTRIAL RESERVES**

The article considers methodology of analysis of inventories, which will allow organizations to increase the efficiency of economic activities on the basis of revealing of intraindustrial reserves.

To increase the efficiency use of production resources in the enterprise need to analyze the trends of these indicators, plan performance on their level, to calculate the influence of factors on their growth, count the indicators characterizing the work of the enterprise, the cost of commodity production, profit and profitability.

Currently, much attention is paid to the analysis of inventories, as the information obtained as a result of this analysis is necessary to find ways to improve the efficiency of the enterprise. The information obtained during the analysis of material and production stocks allows to reveal in due time need for material and production stocks, and also to calculate efficiency of their use and many other indicators.

Material and production stocks are a necessary element of functioning of any enterprise therefore results of economic activity of the organization depend on the correct accounting and the analysis of material and production stocks.

The article discusses the importance of economic analysis, inventories in the enterprises. Studied various methods to analyze stocks, summarizes the steps of the analysis of inventories.

**Key words:** inventory, economic analysis, method of analysis of inventories.

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**Өндірістік қорларды талдау әдістемесін жетілдіру бағыттары**

Мақалада өндіріс ішіндегі резервтерді анықтау негізінде кәсіпорындардың шаруашылық қызметі тиімділігін жоғарылатуға мүмкіндік беретін материалды-өндірістік қорларды талдау әдістемесі қарастырылған.

Өндірістік қорларды пайдалану тиімділігін жоғарылату үшін көрсеткіштер өзгерісінің тенденциясын талдау, олардың өсу факторларына әсерін есептеу, кәсіпорын қызметін сипаттайтын көрсеткіштерін есептеу, тауарлық өнімнің өзіндік құнын, пайда мен рентабельділігін анықтау қажет.

Қазіргі уақытта материалдық өндірістік қорларға аса көңіл аударылуда, себебі осы талдау нәтижесі бойынша алынған ақпараттар кәсіпорын қызметінің тиімділігін жоғарылату жолдарын іздестіру үшін қажетті болып табылады. Материалдық өндірістік қорларды талдау жолымен алынған ақпараттар материалдық өндірістік қорларға дер кезінде қажеттілікті анықтауға мүмкіндік береді, сонымен қатар оларды тиімді пайдалану жолдарын есептеуге көмектеседі.

Материалдық-өндірістік қорлар кез келген кәсіпорынның қызмет етуіне қажетті, сондықтан материалдық өндірістік қорлардың дұрыс есебі мен талдауынан кәсіпорынның шаруашылық қызметі нәтижесі байланысты болады.

Мақалада кәсіпорын қызметіндегі материалдық-өндірістік қорларды экономикалық талдаудың мәнінде қарастырылған. Қорларды талдаудың әртүрлі әдістемелері зерттелген, материалдық техникалық қорларға талдау жүргізу сатылары жинақталған.

**Түйін сөздер:** материалдық-өндірістік қорлар, экономикалық талдау, материалдық-өндірістік қорларды талдау әдістемесі.

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### Направления совершенствования методики анализа производственных запасов

В статье рассматривается методика анализа материально-производственных запасов, которая позволит организациям увеличить эффективность хозяйственной деятельности на основе выявления внутрипроизводственных резервов.

Для повышения эффективности использования производственных запасов на предприятии нужно анализировать тенденции изменения данных показателей, выполнение плана по их уровню, рассчитывать влияние факторов на их прирост, рассчитывать показатели, характеризующие работу предприятия, себестоимость товарной продукции, прибыль и рентабельность.

В настоящее время большое внимание уделяется анализу материально-производственных запасов, так как информация, полученная в результате этого анализа, является необходимой для поиска путей повышения эффективности деятельности предприятия. Информация, полученная в ходе анализа материально-производственных запасов, позволяет выявить своевременно потребность в материально-производственных запасах, а также рассчитать эффективность их использования и многие другие показатели.

Материально-производственные запасы являются необходимым элементом функционирования любого предприятия, поэтому от правильного учета и анализа материально-производственных запасов зависят результаты хозяйственной деятельности организации.

В статье рассмотрено значение экономического анализа материально-производственных запасов в деятельности предприятий. Изучены различные методики анализа запасов, обобщены этапы проведения анализа материально-производственных запасов.

**Ключевые слова:** материально-производственные запасы, экономический анализ, методика анализа материально-производственных запасов.

## Introduction

Currently, much attention is paid to economic analysis, not only from internal management structures that want to know the financial and economic state of their enterprise, but also from investors who plan to cooperate with a commercial organization. In the world, there are many different methods of analyzing, including on inventories, there is a constant improvement of them, which positively affects the analyst as a whole. Virtually all methods of conducting economic analysis have both their pros and cons. In modern conditions, it is important to analyze inventories, since managers receive the necessary information and the opportunity to improve the performance of the

commercial organization (Bakanov M.I. 2007: 2). In our opinion, inventories analysis is mainly focused on internal users, but it can be used by external users of information. The use of analytical information on inventories makes it possible to identify in a timely manner the need for inventories, to calculate the effectiveness of their use, to analyze the inventory turnover, etc. With the help of economic analysis, the essence of economic processes in the movement of inventories is comprehended, an assessment of economic situations with inventories is realized, reserves are determined to reduce the cost of material values and, thus, decisions are made to make managerial decisions (Barilenko V.I. 2009:3). Summarizing and analytically processing accounting information on inventories, economic

analysis scientifically justifies decisions, acting as a link between accounting and audit. Professor K.Sh. Dyusembaev emphasizes that in carrying out analytical procedures, a considerable amount of information is needed, since the process of detecting atypical behavior of indicators, as well as the algorithm for evaluating the continuity hypothesis and the effectiveness of doing business, requires not only a scrupulous study of the business situation in the organization, but also an understanding of the economic situation in the country, industry, region, market (Dyusembaev K.Sh. 2009:6). Inventories represent the main type of assets of organizations engaged in production of goods, trade, and provision of services. Therefore, results of the organization's economic activities largely depend not only on the proper accounting of inventories, but also on the correct conduct of economic analysis. As practice shows, the losses that an organization may incur due to irrational, unreasonable inventory management can be significant. If there is a situation when the organization does not have enough inventory, it can lead to a disruption in the rhythm of production, changes in the deadlines for the performance of work under contracts, growth in production costs, and reduction in profit (Bernstein L.A. 2003:4), (Waller 2014: 24).

### Material and Methods

V.G. Kogdenko suggests using the following methods in developing a methodology for economic analysis in the management system of a commercial organization: a comparison method; horizontal analysis; vertical analysis; limit analysis; balance method; ratio method; factor analysis method; expert evaluation method; logical control; situational analysis method (Kogdenko V.G. 2008:12). In our opinion, the methodology of analysis in general and the methodology for analyzing inventories in particular is a comprehensive study of methods, techniques, factors, tools with the aim of finding ways to improve its efficiency in commercial organizations. When starting to analyze inventories, it is necessary to set a goal and develop a number of tasks. So D.A. Endovitsky notes that the analysis of the composition, structure and dynamics of the inventories is aimed at solving the following practical problems: 1) Determination of the main trends in inventories' size and composition change; 2) Identification of the main causes of these changes; 3) Identification of reserves to improve the efficiency of economic activities related to inventories (Endovitsky D.A. 2009: 7).

Jacques Richard points out that in the context of traditional financial analysis, inventories analysis consists in determining how much inventories meet the minimum standards for supply chain management and batch production. Excess of inventories norms is estimated from the point of view of inventory management. With excess inventory, the financial analyst will identify the cost of the necessary capital to finance them; the cost of the premises they use; costs for their reception and management (Voitolovsky N.V. 2011:20) (Whitin T.M. 1995: 21).

In our study, we adhere to the same point of view. Rational utilization of material resources helps to reduce the cost of production, which is a factor in the growth of profitability and profit. According to Professor Dyusembayev K.Sh., due to the current economic situation in Kazakhstan, many kazakh enterprises will be forced to switch to logistics management methods in the near future. At the stage of introduction of logistics management method, further normative management method will be required. Normative method is an effective management of inventories, supply, production, marketing processes, etc. Normalization method allows to concentrate not only on increasing the speed of processes, but also on their efficiency, enabling to obtain a quantitative measurement of efficiency, productivity, and process reliability (Muller 2003:15), (A.I. Alekseev 2011:1). Normalization of material resources is the first step to the organization of material flow management. Purpose of management is to reduce the level of inventories at the enterprise by cleanup in the organization of production and improving the system of material and technical supply (Shah N.H. 2014: 18), (Zipkin, P.H 2000: 25). This task can be solved by implementing operational control over the actual state of inventories. Considering the issues related to optimization of costs and expenses, Berdnikova T.B. believes that the utilization efficiency of material resources can be determined on the basis of two approaches. The first approach is based on determining the utilization effectiveness of material resources. Within the framework of this approach, such concepts as material intensity and material return are used. Material intensity is measured by the ratio of cost of material resources to volume of production (Ginzburg A.I. 2008: 7), (Chirkova M.B., 2014:30). Material return, is an indicator that reverse material intensity, and shows how much output falls on each ruble of invested material resources (Dontsova L.V. 2008: 4). Savitskaya G.V. also emphasizes that the most important for the analysis

of inventories is the material return index or the inverse indicator – material intensity.

### Literature review

A critical analysis of the English-language research papers in the field of research allowed the author to identify that the terms «performance», «productivity», «profitability», «efficiency», «effectiveness», which are among the most important categories of the economy, are not concretized and are often used as synonyms.

Economic activity of the economic unit is further considered by the author in the form of a system of «Input – Process – Output» type, where the input is sum of costs incurred or resources used to obtain the effect, and output is the effect achieved in result of activity.

An indicator that takes into account all input resources can be called a general performance indicator (total productivity) (see Craig, Harris (1973), Grossman (1993), Sumanth (1994)).

In the author's opinion, in the above definitions of the production factors using efficiency, we are not talking about performance indicators (in this case, on particular performance indicators), but about the inverse indicators, since an increase in the values of such indicators as capital intensity, labor intensity, material intensity, effectiveness, and not its growth.

Thus, productivity is related, on the one hand, to availability and utilization of resources and, on the other hand, to the effect. In spite of the fact that concept of productivity is primarily connected with physical phenomena, which are the effect of production process, productivity can be measured both in natural and in value units (Tangen 2005, 38). In some cases, productivity is expressed in mixed units, for example, results – in value, and costs – in natural units. According to B. Gold (Gold, B. 1980) it is impossible to measure «physical efficiency» of production process (or another economic process), since there is no general physical indicator that would generalize all the inputs of the production process expressed in natural units. (Tangen 2005, 38) Concept of productivity is closely related to profitability. Profitability in its most general form is ratio of profit indicators to a particular resource of the company. Or according to U. Mereste (2003b): «Profitability is ratio of profit to costs incurred to receive it.»

To analyze performance, enterprises should use both performance indicators and profitability indicators. So and in no other way it is possible to reliably ascertain the factors that influence the

profit generation. Efficiency and effectiveness are the most misleading notions of the Russian-speaking reader. The problem lies in the fact that in the Russian language, term effectiveness has the same two meanings, which in the English language are represented by two words «efficiency» and «effectiveness». You can say: «improve production efficiency,» meaning a reduction in costs (efficiency). You can say: «increase the effectiveness of sales,» meaning an increase in the result (effectiveness). According to D. Sink and T. Tuttle (Sink, Tuttle 1989, 175), effectiveness can be defined as «doing the right things», while efficiency should be defined as «doing something right». Efficiency is defined as the minimum level of resources that is theoretically required for a particular activity within a system, compared to how much resources were actually used. Thus, efficiency is an indicator that is inverted to the indicator «production factor utilization ratio».

### Results and discussion

By improving the methodology for analyzing inventories, it is advisable to use the sources classification of material resources. So, Barilenko V.I. distinguishes between internal (own) and external sources of material resources. Internal sources include the saving of materials as a result of the introduction of scientific achievements, utilization of secondary raw materials, the own production of materials and semi-finished products, and the reduction of raw material waste. External sources include the flow of material resources from suppliers in accordance with concluded contracts (Kachkovsky S.V. 2012: 10). There are different methods for analyzing inventories. Thus, the study found that inventories analysis includes: assessment of the current state, structure analysis or their vertical and horizontal analysis; inventories turnover analysis in general and by elements (Krupp 1994: 13); inventory elements dynamics mutual correspondence analysis; functional or factor analysis of raw materials and materials, finished products, work in progress, goods, goods shipped, the choice of raw materials suppliers; analysis of the influence of management factors of the inventories elements on their total value and on the provision of own capital; inventories needs analysis Berdnikova T.B. Analysis and diagnostics of the financial and operating activities of the enterprise: inventories, inventories utilization efficiency analysis, etc. A number of scientific analysts suggest analyzing inventories in several stages:

1) Procurement analysis and examination of suppliers; 2) Inventories turnover analysis. G.V. Savitskaya (Savitskaya G.V. 2008: 17) 1) Analysis of provision of the enterprise with material resources; 2) Analysis of material resources utilization; 3) Analysis of profit on tenge of material costs.

Author Stages of proposed techniques for inventories analysis Yu.P. Markin 1) Comparative method of analysis of raw materials and materials utilization; 2) Economic and mathematical methods in analysis of utilization of raw materials; 3) Raw materials and materials utilization effectiveness analysis; 4) Identification of reserves to improve utilization efficiency of raw materials. N.V. Voitlovsky, A.P. Kalinina, I.I. Mazurova 1) Inventories availability analysis; 2) Analysis of utilization effectiveness of material resources; 3) Analysis of the efficiency of inventory management and costs. V.A. Chernov 1) Analysis of the state of commodity stocks; 2) Analysis of the efficiency of commodity stocks; 3) Factor analysis of commodity stocks; 4) Operational and comparative analysis of commodity stocks; 5) Simulation analysis of the operational movement of goods. Determination of optimal procurement; 6) Simulation analysis of management of commercial processes in conditions of uncertainty N.S. Plaskova

1) Establish the enterprise's need for working capital; 2) Determine the composition, structure and dynamics of current assets; 3) Justify the optimal choice of financing sources of current assets (Liou Y.C., 2006: 14); 4) Calculate the influence of the state and speed of turnover of current assets on liquidity and profitability level; 5) Assess the utilization efficiency of working capital. Analysis of inventories should be systemic, since deviation from the system approach threatens with errors, shortcomings in making managerial decisions (Zhumabekova G.Zh. 2017: 24), (Tronin Y.N., 2013:21).

Also, we should not forget about the liquidity of assets. Since inventories are classified as current assets, they can be divided in terms of liquidity into: – illiquid assets (work in process); – liquid assets (raw materials, materials, etc.). (Kadyrov F.N. 2008: 10), (Wallin, 2006: 22).

Thus, having studied different points of view of development of methods for analyzing inventories, it can be stated that they are mainly reduced to the following tasks: 1) assessment of dynamics and structure of inventories state (Khanra S 2010: 13);

2) evaluation of inventories turnover; 3) assessment of mutual correspondence of dynamics of inventories elements; 4) factor analysis of stocks of finished products, commodity products, raw materials and work in progress; 5) analysis of suppliers, schemes of supply of raw materials and materials, goods; 6) assessment of influence of the inventory elements management factors at different stages of the commercial organization's economic life by their total size and the equity ratio, etc. (Plaskova N.S., 2010: 17).

The study of modern methods of analyzing inventories of commercial organizations made it possible to draw the following conclusions: the study of theoretical aspects of stock analysis will later develop a specific methodology for analyzing inventories to provide management personnel. Structural-logical scheme of inventories analysis (Utebayev B.S. 2015: 19).

Stage One Assessment of the current state of stocks. Enlarged analysis. Stage Two Structuring of analysis objects.

Stage three Analysis of stocks by the nomenclative elements of the selected groups.

Stage four Rationale for analysis results (Chechevitsyna L.N., 2014:29).

Stage five Making management decisions to optimize the state of the company's reserves with information necessary for making rational decisions and will contribute to increasing the efficiency of inventories receipt and utilization (Alaei S., 2014:1).

Effectiveness of organization's management of reserves is expressed in maintaining them to the extent that it fully ensures the normal operation of the organization while not freezing excess capital in them (Haire, 1996: 8).

## Conclusion

Thus, it can be concluded that when analyzing inventories, it is necessary to take into account the characteristic features of this asset. Studying the features of inventories will allow to determine the main similarities and differences between them and to determine the possibilities of interaction of analysts. Proposed and reviewed method of analyzing inventories will allow each enterprise to increase efficiency of economic activity on the basis of identifying in-house reserves and developing recommendations for their implementation. The main reserve for improving efficiency of economic activity is the reduction in illiquid stocks volume.

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