



**GENERAL FACTORS AND ITS ELEMENTS AFFECTING
PARTICIPANTS OF EXTERNAL ECONOMIC ACTIVITY ON
RISK LEVELS, ALGORITHM BASED ON THREE SIGMA RULE
OF RISK DETERMINATION
(IN THE EXAMPLE OF UZBEKISTAN)**

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ABSTRACT	KEYWORDS
In the article, the reasons for the introduction of the "Risk Management" system to the customs authorities, the necessary elements that ensure the operation of the "Risk Management" system and their characteristics, the factors affecting the risk and their importance. Processes of collecting and processing information necessary to identify risks and determine their levels, identify and analyze risks, develop and apply risk management measures, summarize the results of the measures used, and prepare proposals. At the same time, mathematical algorithms specially developed by the author aimed at automatically determining the risk and its levels of understating or overstating the invoice value of imported goods presented by the participants of foreign economic activity for customs clearance are described.	risk, elements of risk management system, risk management system, factors influencing risk level, potential risk, low risk level, medium risk level, high risk level, average value, root mean square value, three sigma rule, mathematical algorithm, normal range, data collection, data processing, risk identification, risk analysis, risk management, risk minimization measures, application of minimization measures.

INTRODUCTION

The development of economic integration processes of Uzbekistan with the countries of the world, the increase in the volume of foreign trade, the renewal of the structural structure of goods and the attraction of foreign investments are related to the development of foreign trade relations of Uzbekistan with distant and near foreign countries.

In recent years, the development of foreign trade during the implementation of the policy of forming an open economy in the Republic helps the emergence of new goods in the domestic market of Uzbekistan.

The emergence of new goods and new supply chains, the characteristics of goods, prices, terms of delivery and payment, and other information lead to an increase in the amount of information required for customs purposes.

At the same time, globalization processes demand acceleration of international trade of goods. International practice requires the need to speed up customs operations and customs control using a risk management system to speed up the movement of goods within international trade chains. Permanent work that involves the development and implementation of measures to prevent risks and reduce them as much as possible, evaluate their effectiveness, as well as control over the execution of customs operations, continuous updating, analysis and revision of the information available in the customs authorities - recognized as risk management [1].

LITERATURE ANALYSIS AND METHODS

Improperly organized risk management practice leads to the appearance of new risks of customs violations in the Republic and creates the need to accelerate the implementation of customs control and the risk of wrong decisions by customs officials. The existing contradictions between the quality and speed of decision-making threaten the economic security of Uzbekistan. Therefore, customs authorities should perform both fiscal and law enforcement and regulatory tasks and introduce proposals for improving customs legislation.

In this regard, in accordance with the roadmap for the development of customs authorities of the Republic of Uzbekistan in 2018-2021, the customs service is carrying out consistent reforms in the field of optimizing customs operations by introducing modern information technologies and innovative management methods. One of them was the introduction of the "Risk Management" system on a trial basis from December 1, 2017, and from March 1, 2018 [2].

The use of the "Risk Management" system in customs authorities is an important means of detection and prevention of customs offenses and crimes. "Risk management" system is a modern method of customs administration based on selected customs control principles. The system improves the quality of the decisions made and the efficiency of using the forces and means at the disposal of the customs authorities.

Today, improving the mechanisms of using the "Risk Management" system is an important strategic task of customs authorities in all countries of the world, and to solve it, a comprehensive assessment of scientific, methodological, statistical, information-technical and regulatory-legal support is necessary [3].

At the meeting of the Commission of the World Customs Organization on the Facilitation and Development of International Trade held in Brussels on March 7-9, 2017, the Secretary General of the World Customs Organization, Kunio Mikuriya, emphasized that the "Risk Management" system is the basis for the application of modern customs control, and on the prevention of law violations in the customs authorities. development of analytical activities related to risk identification is a priority task of the World Customs Organization, he emphasized the need to use modern information technologies based on intuitive risk assessment systems to solve it.

As subjects of regulation of foreign economic activity, the activities of customs authorities are directly related to high-risk areas. Risks in customs activities are complex in nature and require a scientific and practical approach. Risk management in relation to customs activities means the implementation of an effective unified policy for detection, assessment and prevention of violations of customs legislation. It is the customs authorities that control the observance of customs legislation, control the revenue of customs duties on the state budget, ensure the economic security of the country in combating counterfeit or dangerous products, goods that are prohibited from being imported into the territory of

the country, prevent capital from leaving the country and the illegal removal of strategically important goods.

Thus, there is a need to maintain a balance of interests, since it is necessary to accelerate the observance of all customs formalities, but not to allow a weakening of control. Therefore, the best idea today to increase the efficiency of Customs Administration, one of the important directions of state economic policy, is the use of the "risk management" system.

In general, a risk management system is used in customs authorities to identify goods and vehicles, documents and persons subject to customs control, to determine the forms and level of customs control applied to such goods, vehicles, documents and persons [4].

ANALYSIS AND RESULTS

As any system consists of a set of elements that make up it, the "risk management" system is made up of 4 elements[5]. Including:

- data collection and processing;
- risk identification and analysis;
- development and application of risk management measures;
- summing up the result of the applied measures and preparing proposals.

These elements ensure the normal operation of the system, dressing up a continuous whole process, which is in constant motion and updating. When the movement of any element in the system in the process stops, the system stops working efficiently. Therefore, the elements require constant movement and updating.

Data collection and processing: This element provides for the collection and processing of all information from various sources, including other information, about goods and vehicles being transported through the customs borders of the Republic of Uzbekistan.

It is also the procedure for collecting and processing information, actions aimed at analyzing, accounting, systematization and storage of information on objects of customs control. Information processing for analysis purposes - includes accounting, systematization, modification and storage.

Information is collected in customs bodies on the basis of information in the documents provided to them, information in the unified automated information systems of the state Customs Committee, as well as information received by foreign customs services and from other bodies and organizations of the state.

Information received at Customs is registered and summarized.

Aborot is transferred to the format and type of software tools of customs authorities and is grouped and systematized according to the required parameter and norms.

In order to ensure the possibility of risk assessment, the information received must be kept unchanged. The procedure for storing information is established by customs authorities in accordance with the content, format of information, as well as the type of submission and formalization.

The most important factor that determines the validity and effectiveness of management decisions in the development and implementation of measures to prevent and minimize risks is the completeness, speed (timely) and reliability of information.

Customs authorities must have complete, reliable and up-to-date sources of information and, based on this information, assess the risks that may otherwise indirectly interfere with the development of external trade.

The information resources of the state Customs Committee are used as the main source of information to identify potential risks and prevent them.

In the collection, generalization and analysis of Information, special attention should be paid to their systematicity and completeness, the basis of several independent sources of information, as well as to the technology of information collection and the frequency of their updating, filling databases with new information.

In order to identify risks in customs authorities, the following information takes the main place [6]:

- Requirements of the legislation of the Republic of Uzbekistan;
- Comparative statistics on goods and vehicles carried through the customs borders of the Republic of Uzbekistan, including the internal and counterparty state data of Uzbekistan with Uzbekistan;
- Data on the potential of economic production of a counterparty state with Uzbekistan;
- information from law enforcement and control bodies, including customs authorities of foreign countries;
- results of operational-search activities of customs authorities and special statistics on violations of customs legislation;
- information on crimes and violations committed in the field of customs business;
- Information on the activities of persons carrying out actions of legal importance with goods under customs control on their behalf in accordance with the civil and (or) customs legislation of the Republic of Uzbekistan;
- preliminary information on customs brokers, declarants, owners of customs warehouses, carriers and customs officers and goods and vehicles;
- information on the results of the implementation of customs operations and the application of measures to minimize risks;
- information on payment relations on foreign trade operas;
- information in customs, commercial, transport (cargo surveillance documents) and other documents.

Risk identification and analysis:

In order to determine the occurrence of risks and its consequences, the collected and processed data of customs services from customs authorities, other control bodies from the same sentence and foreign countries on goods are analyzed.

In the analysis and assessment of risks, the management of base data, the creation of fast (including visual) algorithms for data analysis, as well as information and software of the unified automated information system of the Customs Committee are used.

For the analysis and assessment of risks, mathematical, statistical and quantitative methods of risk assessment (methods of targeted risk analysis) are used, developed by the customs authority.

As a result of grouping methods of targeted risk analysis and creating algorithms, the risk assessment process can be automated.

The result of the identified risk assessment is the development of a risk profile, the basis for the decision on the need to apply risk minimization measures.

The types of risks are classified by the Customs Committee based on offenses and crimes committed in most cases by participants in foreign economic activities without complying with the requirements of the law documents.

The development and approval of the risk profile in the mandatory procedure at the time when the risk is identified by the customs authorities should be decided on the application of measures to minimize the risk [7].

The main areas of risk analysis include:

- set of conditions and factors affecting risks;
- customs operations in the implementation of which there is an excess of the occurrence of Customs offenses;
- criteria and parameters characterizing risks (number of actions, types of goods, buyer of goods, etc.);
- risk indicators (marginal quantitative: indicators that determine the need to apply measures to prevent or minimize risks);
- assessment of the amount of damage that can occur in case of danger;
- other analysis objects.

Development and application of risk management measures:

When developing and implementing risk management measures, the following must be taken into account:

- forecasting the results and determining the possible consequences of the origin;
- analysis of measures to prevent or minimize risks and their results;
- selection of acceptable measures provided for by current legislation;
- determination of measures to minimize risks, as well as the procedure for their application;
- development and approval of risk profiles.

Risk profiles are developed by customs authorities in order to identify the object of customs control on the basis of risk indicators and apply measures to minimize risk in relation to them.

Risk profiles are classified by the Customs Committee, according to their validity and territory, the methods used in assessing risks, as well as the methods of transmission and application.

On the basis of risk indicators, objects of customs control are selected.

The selection of objects of customs control is carried out by customs authorities independently based on risk indicators or using the software tools of the unified automated information system of the Customs Committee.

The use of automated methods for applying risk minimization measures in accordance with approved risk profiles is carried out by the participants of foreign economic activity by electronically presenting information about goods and vehicles carried out through the customs border in the manner prescribed by law [8].

Summing up the result of the applied measures and preparing proposals:

Risk management cannot be done without a "feedback" system.

Because, the measures taken to minimize risks can give different results or affect different aspects of customs activities (fiscal, law enforcement and customs control procedures). In particular:

- to stop the illegal import of goods through the customs border;
- to the effectiveness of customs control;
- to the full collection of customs duties;
- to the acceleration of turnover;
- to the costs associated with customs control of customs authorities and persons carrying goods;

- changes in the time of customs clearance.

Customs authorities use electronic methods of information transmission, storage and processing, including information systems and Information Technology, in the management and assessment of risk, as well as in the categorization of participants in foreign economic activity.

When the concept of risk is derived from the tariff given, that is, the risk is the degree of probability that the customs legislation will not be followed, and there are always certain factors that contribute to the emergence of the risk or how dangerous it is [8].

The presence of several of these factors at the same time, or the magnitude of the sphere of influence of one factor, determines how significant or opposite the level of risk is. Below are listed the main factors affecting the occurrence and level of risk in customs activities.

If the risk has been identified and there is a large limitation of non-compliance with customs legislation, it will be necessary to apply measures to minimize the risk that is economically more effective, that is, one or more appropriate forms of customs control.

In this case, the costs incurred by the customs authority for the implementation of customs control, including time costs, are interconnected with the possible economic damage.

Thus, the costs incurred received less than the economic or other damage incurred is one of the indicators that the risk management system is functioning effectively.

Exposure to risk is carried out by officials of customs authorities through the direct use of measures to minimize the risk provided for by law.

Customs authorities categorize participants in foreign economic activity in order to distinguish between risks and their corresponding impact [9].

It provides for the categorization of participants in foreign economic activity, the identification of objects of customs control with risk indicators in the process of carrying out customs operations, as well as the use of information collected by the level of risk of participants in foreign economic activity as a result of the application of measures to minimize risk.

In order to classify the risk, the activities of all participants in foreign economic activity are analyzed, and the level of risk is grouped according to the following categories [10]:

- low level risk group;
- intermediate risk group;
- high level risk group.

Classification of foreign economic activity participants into risk categories Information on the activities of foreign economic activity participants under the jurisdiction of customs authorities, the results of customs operations and customs control of goods and vehicles, including documents and information provided independently by foreign economic activity participants and the Unified Customs Committee is carried out on the basis of comprehensive analysis of information in the automated information system.

To do this, special mathematical algorithms are developed that are aimed at identifying risks, with the help of which risks are automatically determined.

Developed by us, the proposed mathematical algorithm is aimed at determining the degree of risk that imported goods are incorrectly presented with the value of the invoice provided to customs authorities. To do this, the invoice value of each imported good in a certain period range in the existing database must be distributed according to the law of normal distribution. That is, the values are logarithmized

according to base e so that they can be transferred from simple values to normal values ($\log_e x$; x – the value of these goods; $e \approx 2.71$).

Then the average value of the normal values that are characteristic is determined using the formula ($\bar{x}$) [11] [13] [14] [16].

$$\bar{x} = \frac{1}{n} \sum_{i=1}^n x_i = \frac{1}{n} (x_1 + \dots + x_n)$$

Here:

n – the number of batches of imported goods in the range of a certain period;

$x_1, x_2, \dots, x_n$ – values of each batch of goods imported in a certain period range;

$\bar{x}$ – average value of batch values of imported goods in a certain period range.

Then the mean quadratic deviation of the party values of imported goods in a given period range is found by the formula [12] [13] [14] [16].

$$S = \sqrt{\frac{1}{n} \sum_{i=1}^n (x_i - \bar{x})^2}$$

Here:

x_i – value of the i -commodity batch in the database;

$\bar{x}$ – average value of batch values of imported goods in a certain period range;

n – the number of batches of imported goods in the range of a certain period.

Then, based on the "empirical" or "three sigma" rule, the diapause of the normal values of the goods is determined [15] [16]. In this:

- 68.2% of the commodity values in the database are within one standard deviation of the mean "+" or "-" ($\bar{x} - \sigma$; $\bar{x} + \sigma$);

- 95.4% of the commodity values in the database are within two standard deviations of the mean "+" or "-" ($\bar{x} - 2\sigma$; $\bar{x} + 2\sigma$);

- 99.7% of the commodity values in the database lie within the two standard deviations of the mean "+" or "-" ($\bar{x} - 3\sigma$; $\bar{x} + 3\sigma$).

This means that if the values of the new imported goods are located outside the range of 3 standard deviations, the values in question are considered an unusual value for us, that is, a risk.

The value of normally distributed goods lies in the range (-3σ ; $+3\sigma$) with an excess of 0.9973.

68% of all values are located within 1 standard deviation of the average value.

95% of all values are located within 2 standard deviations of the average value.

99.7% of all values are located within 3 standard deviations of the average value.

From the above, it is determined that the invoice value of imported goods is presented to customs authorities at a value lower or greater than its actual price. This in turn leads to the correct collection of customs duties levied on the state budget.

When assessing and controlling the results of the application of measures to minimize risks, violations committed by customs authorities, as well as participants in foreign economic activity, when following the norms provided for by law are taken into account [17].

DISCUSSION

Thus, the use of the "Risk Management" system solves the problem of optimal use of available resources for the effective performance of the duties assigned to the customs authority.

The use of the "Risk Management" system is an important part of the process of improving the customs

administration, coordinating the fiscal, regulatory and law enforcement activities of the customs authorities and increasing their efficiency.

The purpose of the risk management system is to establish a balance between the interests of law-abiding participants of foreign economic activity and the need for customs control.

Currently, the selection and application of customs control forms is carried out by officials of customs authorities based on the information in the "Risk Management" system. Constant changes in the external environment require constant monitoring of danger zones. Therefore, issues related to improving the use of the "Risk Management" system should be included in the permanent agenda of customs authorities.

LITERATURE USED

1. Kh. Ruzmetov, specifics and significance of the classification of risks in the "risk management system" of customs authorities / Kh. Ruzmetov // Customs Bulletin of Uzbekistan. – 2020. №1.
2. National database of legislative data. - 13.04.2018 y., 07/18/3665/1071-issue.
3. "On the development of measures for the application of the risk management system and the approval of the strategy and tactics of their implementation": Order of the SCC in 2018.
4. Kh. Ruzmetov Risk management system: as the main means of Customs Control and clearance in the customs authorities of the Republic of Uzbekistan / Kh. Ruzmetov // Customs Bulletin of Uzbekistan. – 2019. №2.
5. Kh. Ruzmetov The reasons for the introduction of the "risk management" system into the practice of customs authorities, the necessary elements for the functioning of the system and their features / Kh. Ruzmetov // Customs Bulletin of Uzbekistan. – 2021. №1.
6. "Concept of risk management system of customs authorities of the Republic of Uzbekistan": Order of the SCC in 2018.
7. "On the development of measures for the application of the risk management system and the approval of the strategy and tactics of their implementation": Order of the SCC in 2018.
8. "On the development of measures for the application of the risk management system and the approval of the strategy and tactics of their implementation": Order of the SCC in 2018.
9. Kh. Ruzmetov Improving management efficiency through the risk management system in the customs authorities of the Republic of Uzbekistan / Kh. Ruzmetov // Theoretical and methodological aspects of improving the statistical analysis of the development of the digital economy. Collection of materials of the international scientific and practical conference. - Tashkent. May 27, 2022.
10. Kh. Ruzmetov The trend of the introduction of the risk management system in the customs authorities of the Republic of Uzbekistan and its results today / Kh. Ruzmetov // Customs Bulletin of Uzbekistan. – 2020. №2.
11. Gmurman.V.E. Probability theory and Mathematical Statistics / Gmurman.V.E. – 1977.
12. Rasulov.A.S. Probability theory and Mathematical Statistics / A.S.Rasulov, G.M.Ragimova, H.K.Sarimsakova. – 2006.
13. Kolemaev V.A. Probability theory and mathematical statistics / Kolemaev V.A. 1991.
14. Buldyk G.M. Probability theory and mathematical statistics / Buldyk G.M. – Kyiv, 1989.
15. Y. U. Soatov Higher mathematics / Y. U. Soatov – The second volume. 1994.
16. Sirozhiddinov.S.X. Probability theory and Mathematical Statistics / Sirozhiddinov.S.X., M.M.Mamatov. – 1980.
17. Customs Code of the Republic of Uzbekistan: adopted on January 20, 2016. - Chapter 29.