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The Sense and Support of a Mechanism of Industrial Enterprise Financial Risk Management

ABSTRACT

The author has analyzed the sense and support of a mechanism of industrial enterprise financial risk management, taking into account a dynamically changeable economic environment. The article contains the main approaches to methodical support of financial risk assessment on the basis of quantitative methods. The author has determined that formation of the mechanism of industrial enterprise financial risk management is complicated by a very considerable amount of different forms of risks emerging in the process of daily activities of enterprises and a considerable amount of forms of financial risks.

Moreover, it is worth taking into consideration that there are a significant amount of methods and ways of the assessment of risks, types of organizing functioning of the economic and financial mechanism for risk management at enterprises, and ways of prevention, counteraction, and minimization of risks. Furthermore, financial risk management is complicated by necessity of choice of the most appropriate instruments for assessment of their level and the choice of methods of financial risk management. Under contemporary conditions of a lack of financial resources, issues of computation of precise amounts of industrial enterprise protection from financial risks and prior directions of formation of the financial risk management single mechanism assume great importance. The choice of an appropriate economic and mathematical policy of formation of the financial risk management single mechanism enables to considerably decrease financial risks without great additional expenses.

Hence, the article has substantiated a severe need for development of methods of implementation of the financial and economic mechanism at industrial enterprises under conditions of existence of financial risks in the context of providing effective management. Particularly, some aspects of the financial risk theory are insufficiently examined nowadays; a system of industrial enterprise risk classification is not precisely substantiated; there are significant weaknesses of the quantitative assessment of enterprise financial risks. There is a need to focus on the necessity of mathematical substantiation of the main directions of application and an extent of usage of some instruments of the financial risk management single mechanism. In general, financial risk management for industrial enterprises contains a considerable number of insufficiently researched aspects. Under conditions of the contemporary unstable economic situation, industrial enterprises must use a low-cost and highly efficient system of financial risk management. The above-mentioned reasons have stipulated the preparation of this article.

In addition, this article proposes methodical recommendations regarding decrease of financial risk levels, formation of an industrial enterprise management system with the account of economic risks, directions and mechanisms of industrial enterprise risk-management integration.

Key words: *financial risks, assessment methods, financial risk controlling, industrial enterprises.*

Introduction. At all times the progress and the success of industrial enterprises considerably depended on willingness to assume a risk. It is not random that a manager, who avoids making risky decisions, is a threat for industrial enterprise development, i.e., it is doomed to stagnation.

Specificity of financial risk management is researched in papers of Ukrainian and foreign scientists, such as A. P. Alhin, T. I. Bachkai, P. I. Verchenko, V. V. Vitlinskyi, A. P. Haidutskyi, V. M. Hranaturov, Yu. A. Enuste, M. O. Kyzym, M. H. Lapusta, O. Mergenstern, S. I. Nakonechyi, J. Neumann, R. V. Piskus, N. Yu. Podolchak, A. V. Postiushkov, O. Synkova, S. A. Filin, D. Frei, N. V. Khokhlov, V. A. Chernov, L. H. Sharshukova, O. Shevchuk, O. I. Yastremskyi, etc. Nevertheless, an issue of building the mechanism of industrial enterprise financial risk management is insufficiently examined.

Thus, topicality of the article is stipulated by necessity of development of a problem related to formation of structural elements of the financial and economic mechanism at industrial enterprises under conditions of existence of financial risks in the context of providing effective risk management.

Purpose. Defining a risk or a financial risk in contemporary financial and economic literature is usually based on a utilitarian concept of a risk as well as in a concept determined by legislative norms. Understanding a phenomenon of uncertainty, which is connected to the risk concept by a cause and effect relationship as well as separated and considered independently, is problematic in such a case. J. Neumann states that a risk is a situation, in which managers know possible solutions and objective distribution of probabilities, but they can not predict with sufficient accuracy occurrence of a searched event (Neumann, 2000, 708). In this case uncertainty also contemplates that a manager does not possess information on distribution of probabilities. Mainly, managers apply methodical approaches in calculation of a risk degree in the process of defining a risk. Such an assertion is simply proved, using semantic analysis of risk definitions (research of word meaning). For instance, let us consider some definitions of the risk concept used by the authors. Examination of the definitions confirms a supposition regarding absence of a generally appropriate approach to defining a risk in contemporary domestic and foreign literature.

For example, V. A. Abchuk considers a risk as an activity or an action aimed at “overcoming uncertainty” (Abchuk, 2005, 92). Yu. M. Voropaiev characterizes risks as threats of wastes at an enterprise (Voropaiev, 1995), V. A. Chernov defines a risk as such a situation, in which, in a case of failure, there is a possibility to find oneself in a worse position (Chernov, 2008, 128). In other research M. I. Bakanov and V. A. Chernov define a risk as “inclination of a company for possible financial, economic losses or profits, asset losses, postponement as a result of uncertainty related to a chosen behavior mode”. In a monograph of M. S. Klapkiv “Financial risk insurance” (Klapkiv, 2002, 570) the author researches understanding the financial risk concept. «In the broad sense a financial risk is a risk characterized by probability of wastes of financial resources (monetary funds) in entrepreneurship”. The above-mentioned author notes that this definition of a financial risk is identified with the concept of a commercial (entrepreneurial) risk. The main disadvantage of the above-mentioned definition is identification of concepts being titles of groups within a common classification system. Furthermore, the identification of the concept of financial resources with the concept of monetary funds is a fundamental disadvantage in understanding the sense of enterprise financial resources.

Analysis and systematization of the considered main sources of risk emergence enabled to formulate a respective list of risks, which may be used in the sequel in building a classification of industrial enterprise financial risks.

Consequently, there is a need to emphasize the main disadvantages determined in theoretical comprehension of the risk concept by the scientists: incoherence between approaches to formation of understanding a risk as a category; absence of such an important aspect of conceptual understanding a risk as description of a mechanism of emergence and development of a risk; methodical error regarding risk classification system formation; incoherence between formed risk classification systems and between the systems and understanding risks, on the basis of which the systems are built. The above-mentioned disadvantages considerably complicate qualitative and quantitative assessment of a risk and, respectively, formation of a risk management effective system.

Thus, risks are inalienable phenomena accompanying an industrial enterprise activity in any economic environment, especially under crisis conditions. However, there are many forms of defining risks based on the random character of an event. It is worth mentioning the main approaches to building a categorical apparatus of risks, namely: risks are considered as uncertainty of activity results or an enterprise position because of their randomness; risks are considered as an amount of possible losses in functioning of an enterprise under conditions of insufficient information or an undetermined internal or external environment.

Our next step is to consider a financial risk management system. A system of management of different aspects of an industrial enterprise activity, including financial risks, is such a mechanism of managerial relations, which, first of all, comprises: managerial rules, i.e., the most significant interrelations between managerial system elements, which always recur and provide integrity of the system; functions and methods of management in the context of concrete forms and measures of a purposeful influence of managerial bodies on an object of management; instruments and leverages of this influence, e.g. plans, norms, standards, and forms of material and moral encouragement; an organizational structure, which is an internal structure of a management system representing the main peculiarities of division and cooperation of labor at an industrial company and specificity of performance of certain functions and managerial activity methods; the main technical means of collection, processing, and storage of information in order to enhance managerial staff productivity; managerial staff, e.g. specialists, managers, technical personnel.

A sub-system of financial risk management consists of an object and a body of management. An industrial enterprise, its economic relations to employee and clerical workers, an environment (buyers, suppliers, a budget, etc.), and technological processes and informational flows existing at an enterprise play a role of a management object. A calculated amount of a financial risk level is a managed parameter. Risk management takes into consideration an opportunity of rational influence on them and bringing a risk to an appropriate level. A purpose of a management body is to develop managerial measures regarding decrease of the financial risk level or maintaining it within admissible limits.

Advanced experience of financial risk management contemplates components of this process such as: identification of financial risks; determination of a risk level and a degree of its difficulty; development of financial risk processing methods; risk level decrease and estimation of its consequences in the process of managerial decision-making.

Domestic and foreign scientists propose some schemes of financial risk management. For instance, N. M. Vnukova suggests that a risk management process should be initiated from detection and analysis of factors influencing risks. Thorough analysis of different schemes of financial risk management from the standpoint of understanding management as a complicated system created for collection, analysis, and processing information enables to emphasize the two main stages of management of any financial risk: at the first stage managers provide formation of planning solutions; at the second stage managers provide implementation of these solutions. Let us consider these stages in greater detail.

The first stage encompasses solution of such purposes: detection of risks; determination and analysis of factors of these risks and emphasizing the most significant ones; choice of a method of risk calculation; collection of information needed for this assessment; risk assessment; determination of their admissible levels; choice of methods and instruments of risk level decrease; selection of information being essential for implementation of managerial measures.

The second stage provides solution of such purposes: implementation of a developed solution; observation, controlling, and analysis of results of the solution implementation; whether it is necessarily, managers reconsider and correct managerial influences.

In scientific literature a system of enterprise financial risk management is not comprehensively examined. Especially, there is a lack of thorough researches regarding an organizational structure of risk management, which determined peculiarities of division and cooperation of managerial staff labor in industrial enterprise financial risk management.

Under conditions of the mentioned financial risks, when an external environment is unstable, a territorial structure enables to react to changes more rapidly and effectively. Nevertheless, the mentioned freedom of managerial decision formation causes a problem of coherence between activities of a central branch and regional branches of industrial enterprises. This problem becomes apparent within an organizational structure of risk management because of differences between types of risks, their amounts, and relation to each other.

Usage of matrix structures of financial risk management by industrial enterprises is a compromise between functional specialization and orientation on a certain product type. These structures consist of departments, which hierarchically interact with one another

(vertically) and, simultaneously, enable to solve formulated purposes, to attain concrete figures, to impellent projects belonging to different directions of the hierarchy and to a common management level (horizontal interaction). The previously mentioned peculiarities enable different structural elements to participate in target and purpose formulation and to implement them jointly. Responsibility regarding project implementation and attainment of targets is assumed by a program (project) manager.

A territorial structure of financial risk management of an industrial enterprise is applied by enterprises, which function in different regions and by international organizations particularly. It possesses advantages and disadvantages with account of financial risk factors. Such advantages encompass: taking into consideration specificity of a region, including diversity of existing financial risks; interrelation between risk management and peculiarities of a market; delegation of powers and responsibility to lower levels; giving an opportunity of adequate reaction to regional changes of an environment; support of an appropriate level of preparation of risk managers for the highest management level at different branches. The disadvantages of a territorial structure of financial risk management contain: problems regarding coherence between measures of risk management of central and regional administrative apparatuses; independence in decision-making causes problems of creation of single image, corporate culture, and reputation; additional expanses regarding a management branch of a regional department; duplication of functions by central and regional braches; possibility of weak communications and, respectively, coordination of actions; possibility of paying excessive attention to the value of insignificant local risks by central risk management, which cause additional expanses.

Other structures, i.e., project, program and target, and coordination ones, are temporary created for solution of a certain problem or for complementation of the main organizational structures in order to establish industrial enterprise activity coordination.

Having analyzed the above-mentioned organizational structures, the author should conclude that there is no ideal structure for financial risk management implementation. A universal scheme of building an organizational structure of financial risk management is also absent. Each of the considered management structures has own advantages and disadvantages.

Analysis of industrial enterprise financial risks requires not so much accurate risk assessment, as reliable determination of possible sources and events, which threaten or can threaten to an efficient activity of risk identification and building a system of effective techniques and measures aimed at avoiding and decrease of possible negative consequences. A risk manager should understand managerial process and technology of industrial production, thoroughly know products of an industrial enterprise and external factors, which can influence business processes, have experience of working, namely managerial, and also possess thorough analytical and mathematical knowledge. Moreover, essential qualities of a manager include: wide outlook, stress resistance, an ability to make decisions under conditions of an information insufficient amount. Possessing these qualities, a risk manager is able to prognosticate and model a situation under conditions of financial risks.

The quantitative assessment of financial risks consists of numerical expression of amounts of such risks. The received values characterize probability of risky situation occurrence and their possible consequences. The main purposes at this stage are determination of possible and significant financial risks being objects of management. Their detection and assessment are closely interrelated. Hence, we can't always separate one independent part of a risk analysis general process from another one. Managers should carefully assess effectiveness of methods based on comparison of expanses and a future expected result at the stage of making decisions regarding avoiding and selection and implementation of methods aimed at decrease and increase of a risk degree. The increase of a risk degree is applied with the aim of increase of an expected profit level. The final stage, correction and consideration of managerial measures, indicate that the financial risk analysis process is dynamic and continuous. That is the general scheme of the financial risk analysis process, components of which is determined depending on peculiarities of an industrial enterprise and an environment, in which it functions.

The main techniques of risk decrease include: insurance, receiving certain additional information, risk distribution, limitation, diversification, reservation, and derivatives. It is necessary to indicate methods such as screening a business partner and terms of arranged contracts, business planning, selection of industrial company staff, and organization of commercial secret protection. Indication of one or other methods of prevention and decrease of risks, first of all, depends on identification of financial risks, classification and monitoring in different activity fields, detection of significant risks and neglecting insignificant ones, and application of different methods concerning risk analysis, taking into consideration behavior of business entities. In the process of an industrial enterprise economic activity managers apply widespread instruments of risk minimization such as insurance, renting, barter, leasing, engineering, factoring, and consulting, etc.

The insurance is one of the most widespread and practically universal means of financial risk decrease. The sense of insurance is to transfer risks from an insuree (an industrial enterprise) to an insurer (an insurance organization) at a certain arranged payment (an insurance fee). In terms of occurrence of events (an insurable event) determined by an insurance treaty an insurer on the whole or partially compensates an insuree for losses (an insurable sum). The compensated losses are called a "first risk" and the uncompensated ones are called a "second risk".

A popular method of risk minimization (concerning financial risks) is a method of obtaining the closed currency position, i.e., creation of a situation, in which currency incomings and expenses related to them are in the same currency. However, simultaneous formation of the closed currency position can lead to increase of an industrial enterprise market risk. Thus, it should be related to other methods of risk reduction.

The risk distribution consists of transferring a share of responsibility regarding probability of emergence and an amount of losses to a partner in implementation of a risky project or risky decision-making. This method provides a set of advantages for both parties: a partner possesses more considerable experience in the field of project implementation; possession of sufficient resources for coverage of possible losses; a partner can be in a better position regarding decrease of losses or controlling financial risks. There are many instruments used to implement this method. The most widespread instruments used in the practice are futures, factoring, options, renting, arrangement of delivery, servicing, transportation, storage, and purchase and sale, and leasing, etc. To effectively use this method it is necessary to distinctly determine existing risks and to distribute them among partners of a project, to determine powers and roles of each party, and to develop a distinct staged program of project implementation. Restrictions of this method application encompass: absence of potential partners in the field of project implementation or their discrepancy with aims and

tasks; necessity of abandonment from a particular share of incomes (profits) in favor of other project parties, which lead to increase of risks of unused opportunities; a problem of distribution of roles between partners in the process of project implementation management; absence of an effective mechanism of risk decrease.

The limitation is performed due to formation of a system, which restricts investment, cash, product, and credit flows from below as well as from above. This method is applied in selling goods on an installment plan, financial crediting, and determination of investing sums. To implement the limitation it is necessary to develop a distinct system of limits for different types of financial flows directed towards an environment and prediction of conditions and opportunities of change of given constraints. An advantage of this method is implementation mechanism simplicity and an opportunity of cooperation with a larger amount of partners. Moreover, applying the limitation, an industrial enterprise saves floating assets for execution of plans and tasks and, also, it increases velocity of funds. Disadvantages of this method include decrease of an expected result in the form of profit, incomes, dividends and exclusion of some attractive variants from a set of possible variants.

The reservation consists of formation of different funds of loss compensation, i.e. creation of storage of staff, raw materials, complementary materials, and funds, establishment of additional productive capacities, and formation of new communication channels being uninvolved in production at this moment. This method is sometimes called the self-insurance, because reserve funds are directly created at an industrial enterprise. The main peculiarities of this method application consist of a necessary optimal amount of reserves, which requires minimal expanses for creation and support and, simultaneously, are sufficient for compensation of possible losses.

To improve the system of financial risk management in the field of qualitative analysis there is a need to solve a set of tasks, which comprises specification of financial risk and financial risk management concepts, distinct detection of sources of their origin, and enhancement of financial risk classification. In the field of quantitative analysis a set of tasks consists of detection of existing approaches to the quantitative assessment of financial risks and to propose new ones increasing accuracy of received results. In the field of methods of financial risk degree decrease a set of tasks consists of detection of advantages and disadvantages of existing methods and studying of possibilities of their application under certain conditions.

Risk management contains a system of frameworks and rules, on the basis of which decisions should be made, particularly: it is not expedient to risk more than equity allows; it is always necessary to consider possible consequences of a risk; decisions on project implementation are made only if there are no suppositions; it is not expedient to risk more for the lesser; a project should be rejected if there are suppositions; a view regarding existence of a sole solution is mistakable because there may be more appropriate variants. Consequently, the suggested scheme of a risk management procedure for industrial enterprises (Figure 1) comprises stages such as: organizational context determination; financial risk identification; risk analysis; ranking and assessment of risks; choice of financial risk minimization methods; observation and correction of managerial measures.

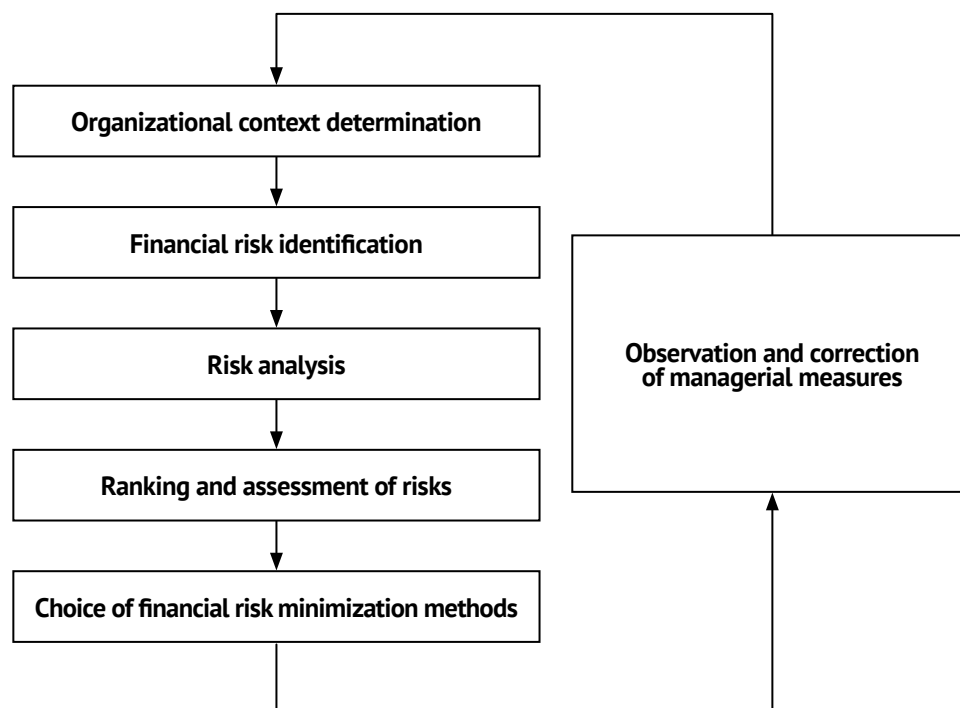


Fig. 1. The Proposed Scheme of a Risk-Management Procedure for Industrial Enterprises

Success of development and implementation of the risk management system for industrial enterprises considerably depends on accuracy of the quantitative calculation of this risk. Choice of effective methods of the risk quantitative calculation enables an industrial enterprise to detect the most significant financial risks and to compute probability of gaining losses and their possible amount. Thus, timely received and distinct results of the quantitative analysis enable to apply more effective methods of financial risk optimization and to provide sustainability of an industrial enterprise economic activity.

Nevertheless, application of the previously developed models of financial risk assessment has some peculiarities related to specific conditions of an enterprise activity. A list of these peculiarities contains: heavy tax burden; informational privacy of industrial

enterprise leading to uncertainty in investing; absence of a developed real estate market, which hinders a mortgage mechanism and, as a result, leads to creditor risk increase compared with an internal entrepreneurial financial risk.

In general, all the methods used to assess a risk level should be divided into such three groups: expert, economic and statistical, and analytical ones.

General approaches to the quantitative analysis of a market consists of calculation of probability and a deviation on the basis of received statistical data concerned with efficiency of an analyzed decision or an economic and financial activity of an industrial company on the whole. Many instruments and approaches are applied within this method. The most frequently used methods are dispersion, variation, and other statistical methods. Choice of a certain instrument in the process of statistical method application depends on a certain analyzed decision, fields of an industrial enterprise activity, available information, and other subjective and objective factors. Application of approximate calculations in the process of uncertainty analysis and the quantitative analysis of a financial risk degree is natural in such situations. Existence of a set of solutions causes complexity of predictions of a possible development direction. An average value (\bar{x}) of a researched random value (consequences of a researched actions, for instance, gaining profit and income) is a generalized quantitative characteristic of an expected result. It is worth mentioning that the dispersion indicates existence of financial risks, but does not determine a direction of deviations (“+” or “-”) from expected values.

To assess financial risks scientists sometimes apply the weighted geometric mean, which is considered as a characteristic of a center of concentration of a searched random value. However, as V. V. Vitlinskyi mentions, that possibility of application of this method is restricted because the logarithmic function in the set of real numbers is determined only for positive random values (Vitlinskyi, 2006).

An advantage of the considered statistical methods is an opportunity to assess all the risks if there is a sufficient sample and relative simplicity of calculations in application of electronic statistical packages. However, a key disadvantage of this method is a necessity of a considerable amount of output data and possible significant expanses in formation of required samples. Moreover, taking into account a fact that information on an industrial enterprise is not always reliable, it is possible to receive analytical data being irrespective to a current situation. The statistical method can't also be used if an industrial enterprise has been performing an economic and financial activity for a short period of time.

Application of the value-at-risk method (VAR) for assessment of credit, market, exchange risks, etc., has become prevalent in developed countries during the last few years. This method is mainly applied in assessment of portfolio risks, risks of different financial instruments (e.g., options, forwards), and bank currency positions. According to its sense the VAR is a statistical method based on distribution of probabilities. Advantages of this method should include: an opportunity of calculation of certain losses at determined probability of occurrence of losses; it also enables to compute risks in different territorial markets, and to analyze general financial risks of a portfolio with a set of different financial instruments.

The VAR method can be applied not only at financial institutes being active participators of a stock market and at banks for opening own currency positions, but also by business entities of an external economic activity conducting foreign currency payments and, as a result, frequently deal with currency risks.

A next widespread financial risk analysis method is the expert one applied in case of insufficient quantity of information required for making managerial decisions or its absence. Implementation of this method is provided on the basis of processing subjective estimations of experienced experts. Specialists involved in the estimation are required to accompany their conclusions with data on probability of emergence of some levels of financial losses. It enables to determine an average value of analytical estimations and to calculate a probability distribution curve. In the domestic analytical practice the Delphi method of expert examination is enough widely applied. The sense of this technique consists of organizing systematical collection of estimations of specially selected experts, economic and statistical processing these estimations, and correction of these analytical estimations on the basis of each cycle of mathematical processing by the specialists. A distinct procedure of exchange of estimations providing the most independent conclusions is used in this process. This method is applied if there is relatively reliable information under conditions of a lack of information. After analytical estimations of a considerable number of specialists are received and mathematically analyzed managers conduct statistical assessment of a researched event.

The method of analogies is applied in case of inappropriateness of other methods of financial risk analytical assessment. Data on a risk of analogical variants of event development are used in the process of application of this method for the financial risk level analysis. Data received in such a way are processed in order to detect consequences of an influence of unfavorable factors of a financial risk on a situation in the past for taking them into account in the process of making new financial decisions. The method of analogies is also applied in case of inappropriateness of other methods of financial risk assessment because of such reasons as absent or restricted informational, financial, and human resources. Data on risks of analogical industrial enterprises, their projects, and tendencies, which occurred in the past and are predicted in the future, are applied as analogies. This database is filled due to different sources of information (consulting firm conclusions, reports of industrial companies, messages in the mass media). It is necessary to take into consideration that external and internal environments of an industrial enterprise is permanently and dynamically changeable. Thus, data of previous periods can be irrelevant.

As can be seen on the basis of the above-mentioned characteristics, all the described methods have both advantages and disadvantages. Consequently, decisions on application of one or another method depends on a set of factors: sources and a type of financial risk; fields of an industrial company activity; quality of available information; required resources, including qualified staff; other peculiarities of an industrial enterprise dealing with this type of a financial risk.

Conclusions and Prospects for Further Research. Financial risks are inalienable elements accompanying an industrial company activity in any economic environment, especially under conditions of a crisis. Nevertheless, there are very many forms of defining a financial risk. The main ones highlight the random character of an event. It is worth mentioning two main approaches to building a categorical apparatus of a financial risk: a financial risk is considered as uncertainty of financial activity results or an industrial enterprise position, which has the random character; other one considers a financial risk as an amount of possible losses in functioning of an industrial enterprise under conditions of uncertainty. Methodical support of the quantitative risk analysis is

formed on the basis of two approaches, namely economic and statistical and financial and analytical ones, at the heart of which the expert methods of analysis are applied. Application of these assessment methods has own disadvantages, which can be overcome in the process of complex assessment of a financial risk level with the use of both mentioned approaches. Nevertheless, such an approach considerably complicates a procedure of analysis and selection of a managerial decision.

There is a need to notice that the solution of the above-mentioned issue of the quantitative assessment of some financial risks with the use of the suggested approach in turn requires solution of a set of scientific and methodical problems. First of all, they comprise: necessity of preliminary calculation of a marginal (minimal) level of a loss amount and/or probability of their emergence (a certain financial risk as well as other risks caused by it, which are lower than this level, are not taken into account); development and application of methods generalizing all negative consequences caused by some financial risks; application of the methods in the process of formation of the financial risk quantitative assessment in general.

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