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## MANAGEMENT OF THE COUNTERPARTY RISK OF AN INDUSTRIAL ENTERPRISE

**Problem Statement.** The normal functioning and future development of an industrial enterprise is largely predetermined by the actions and reactions of its counterparties. They are an important premise and have a vital role in its timely implementation and successful realization of both its production and sales activity. Any violation of the contract terms by the counterparties and negative change in their behaviour may lead to risk situations or circumstances, some of which to one degree or another have a strong influence on market positions, company reputation and public image, competitiveness of product portfolio and the enterprise as a whole, its money flows and financial results.

This inevitably necessitates placing an emphasis on creating and maintaining a clear idea regarding counterparty risk management, which will enable the enterprise to precisely reveal the reasons that have led to its appearance and to correctly define the risk profile of the company's counterparties, conduct a scientifically grounded analysis and draw a real and objective evaluation, on the basis of which the enterprise has to develop and apply specific mechanisms for prevention and efficient counteraction.

**Analysis of Researches and Publications.** The specific aspects of the counterparty risk and its effective management are a scientific field, which is increasingly attracting the interest of scientists and researchers, as well as specialists from the practice. This problem is an object of attention and is covered in the scientific works of a number of authors, like: G. Bustad, E. Bayer, J. Fraser, B. Simkins, N. Beier, H. Harreis, T. Poppensieker, D. Sojka, M. Thaten, H. Stein, A. Shapkin, V. Shapkin, D. Shelagin, D. Sokolov, A. Barchukov, V. Granaturov, R. Gabrovski, T. Nenov, P. Pavlov, S. Tonev, etc.

**The purpose** of this article is to highlight the specific peculiarities of the counterparty risk and to justify the possibility of its management, thus limiting and reducing the unfavourable consequences and risk exposure of the industrial enterprise.

**Presentation of the Main Material.** The modern industrial enterprise in the process of organisation and implementation of its economic activity creates direct and indirect relationships with certain counterparties (clients, suppliers, consigners, distributors (wholesalers and retailers, functional intermediaries) and other individual and/or legal entities) and on this basis enters into contractual relations. The establishment and maintenance of complicated relationships and the strong de-

pendency of the performance and efficiency of business processes in the enterprise on their actions create many prerequisites and conditions for the occurrence of the *counterparty risk*. Actually this is a *specific risk for the industrial enterprise that results from the non-performance of the contractual obligations by the counterparties, thus raising the degree of its risk exposure*. It characterises the probability of not realising the planned goals and priorities of the enterprise as a result of the non-compliance of the contract terms by the disloyal company counterparties.

Counterparty risk, as an element of the aggregate (overall) risk of the enterprise, possesses a number of *peculiarities*, the most important of which are [4, p. 54; 6, p. 103; 7, p. 9]:

- *economic nature* – counterparty risk is a complicated economic category, directly connected to the realization (implementation) of certain activities, functions and processes that influence the normal functioning and future development of the industrial enterprise;

- *objective phenomenon* – it can occur independently of the purposeful actions of the enterprise, due to a change in the counterparty's behaviour according to the contract;

- *probable (stochastic) phenomenon* – it is the result of the interaction and relationship of different counterparties, because of which the predictions and identification of the regularity of occurrence is impossible;

- *complicated phenomenon* – that is a risk with a different frequency of manifestation and size of the consequences, which practically makes it difficult to predetermine the damage (losses) or the income (profit);

- *variable phenomenon* – the counterparty risk changes with time (according to the continuation of the contract) as well as under the influence of a number of objective and subjective factors that are in constant dynamics;

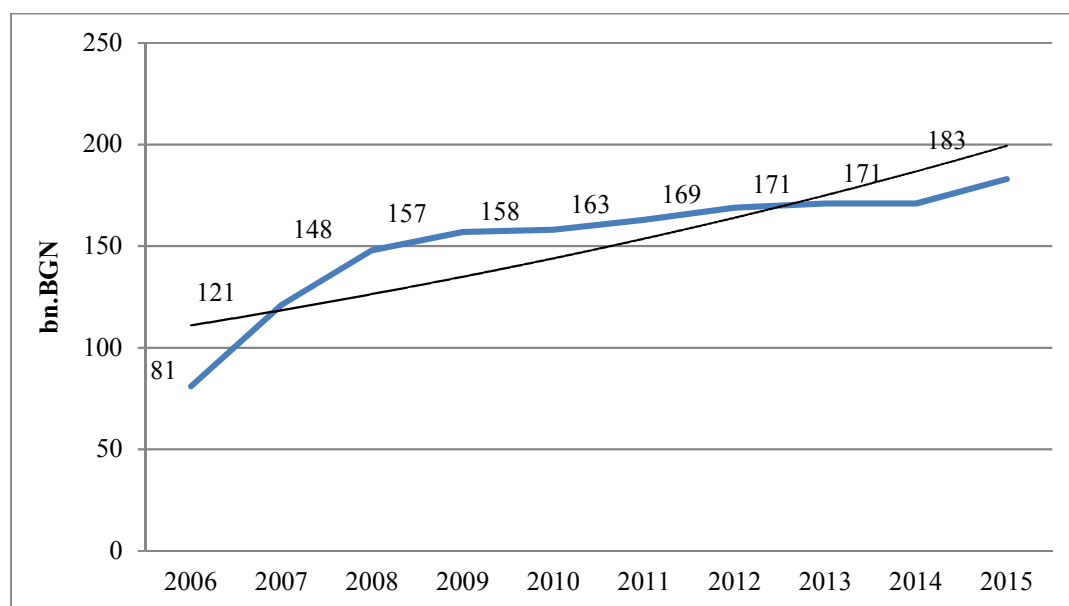
- *subjective nature* – it is a result of human actions and largely depends on the knowledge, skills, competences of the parties to the contract.

Counterparty risk as a distinct type of risk generates a number of difficulties, some of which to one degree or another strongly influence the functioning, development, survival of the industrial unit. It creates a chain reaction that inevitably leads to lack of working capital for sustaining the current production activity and the timely coverage of costs related to production and its

realisation. To a great extent all this reflects on the production activity of the enterprise and on the impossibility to provide enough funds to pay its obligations.

For example over the period 2006 – 2015 the enterprises' obligations from the non-financial sector in

Bulgaria, due to incorrect actions and bad practices on the company's counterparties' side are threateningly rising (see Fig. 1). Especially significant is the increase in 2007 by 49.4% and in 2008 by 22.3% compared to the previous year.



**Fig. 1. Obligations of the enterprises from the non-financial sector of economy in Bulgaria over the period 2006 - 2015<sup>1</sup> [5, p. 6]**

<sup>1</sup> Information for 2015 is preliminary and unofficial.

Although during the next seven years there is a positive trend of decreasing the rate at which the indebtedness changes, its level is constantly increasing and it is expected that this trend will continue in the future. In 2015 corporate indebtedness more than doubled compared to 2006. For the analysed period the absolute average annual growth of the common indebtedness of the enterprises from the non-financial sector is positive (11.33 billion BGN), the average annual rate of the

growth (medium geometric) is 9.48% and the average annual rate of the growth (medium-exponential) – 6.80% (see Table 1). All this shows an exceptionally high level of deficiency of financial assets and at the same time a low level of liquidity and solvency, which can furthermore lead to worsening of the whole image of the economic unit in the view of their loyal or future counterparties.

*Table 1*

**Obligations of the enterprises from the non-financial sector of the economy of Bulgaria for the period 2006 - 2015**

Year	Absolute values (bn. BGN)	Absolute increase (bn. BGN)	Rate of growth (%)	Rate of increase (%)	Log	t	t <sup>2</sup>	
2006	81	-	-	-	4.394449	1	1	4.394449
2007	121	40	149.4	49.4	4.795791	2	4	9.591581
2008	148	27	122.3	22.3	4.997212	3	9	14.991637
2009	157	9	106.1	6.1	5.056246	4	16	20.224983
2010	158	1	100.6	0.6	5.062595	5	25	25.312975
2011	163	5	103.2	3.2	5.093750	6	36	30.562501
2012	169	6	103.7	3.7	5.129899	7	49	35.909291
2013	171	2	101.2	1.2	5.141664	8	64	41.133308
2014	174	3	101.8	1.8	5.159055	9	81	46.431498
2015	183	9	105.2	5.2	5.209486	10	100	52.094862
					50.040147	55	385	280.647085

\* The information is calculated at chain basis.

The consequences for the industrial enterprise from the counterparty risk can be direct as well as indirect, which indicates exceptional importance of the constant search for opportunities and methods for its management which includes purposeful activities for identification, analysis, estimation, restriction, monitoring and controlling the risk. At the same time, this is a risk that has a bidirectional impact on the interests of both the enterprise and its counterparties, which practically requires the development and application of a thorough, specific and adequate program for counterparty risk management that determines the approach, elements of the management and the resources that have to be provided by the economic unit.

Business practice has proved that better knowledge on the specific peculiarities and economic consequences from the counterparty risk helps the *development and application of a more adequate and grounded management method* that will ensure the ability of the enterprise to timely react in case of unfavourable, risk situations occurring and to use adequate tools for counteraction against them.

It has to be taken into consideration that counterparty risk management is a complicated and multifunctional process that includes the implementation of certain purposeful actions and functions (see Fig. 2) that guarantee its complete, exact and fast prognosis, analysis, evaluation, control and restriction [8, p. 40].

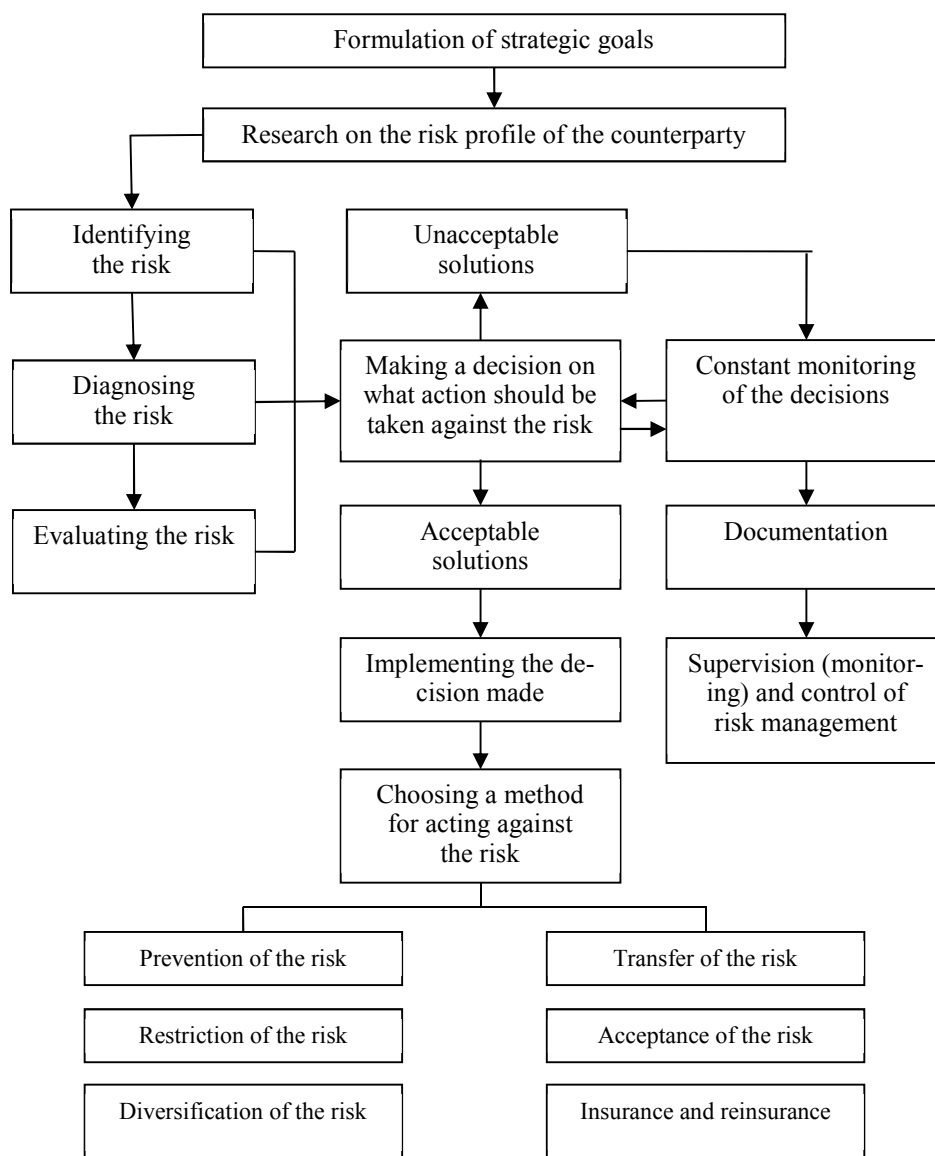


Fig. 2. The process of counterparty risk management [1, p. 18; 2, p. 24]

Precisely via it, it is intended to simultaneously discover the circumstances and reasons for the emergence of the risk and the correct determination of the com-

pany's counterparties' risk profile, conducting thorough and multilateral analyses and preparation of a real and objective evaluation. On the basis of all these actions

one can develop and implement specific mechanisms for the prevention and effective counteraction and restriction of the negative consequences (losses) and to maintain them in a relatively low degree of threat.

Actually despite the established counterparty risk management models (classic, integral, holistic, total), every industrial enterprise has to apply the individual approach principle taking into account its potential abilities and available resources (material, labour, financial, informative) as well as the specific peculiarities and parameters of the counterparty risk.

The proper and rational management of the counterparty risk is a key factor for the industrial enterprise because it strongly influences the increase in the level of manageability of the negative conditions and the improvement of quality of the managerial decisions made. At the same time creating a clear idea for management enables the early establishment of the potential reasons for non-performance of the contractual obligations of the company's counterparties, an accurate identification of their risk profile, a fast realisation of successful preventive actions and insurance of maximum security of the enterprise.

The modern industrial enterprise very carefully formulates the *strategic goals* related to counterparty risk management. It mainly gravitates towards timely discovering the weaknesses of the company's counterparties and the correct determination of their risk profile, as well as towards precise performing of scientifically grounded analyses and preparing an objective and real evaluation on the basis of which specific mechanisms are developed for prevention and effective counteraction to the risk circumstances and their consequences. This way the economic unit outlines the guidelines more clearly, focuses its efforts and determines the priorities and vision on reduction, restriction and removal (elimination) of the counterparty risk.

It should be taken into consideration that the establishment of the *counterparties' risk profile* is a difficult and prolonged process. Precisely via it the separate individuals and/or organisations that are directly or indirectly in certain relationships with the industrial enterprise are identified, diagnosed and evaluated.

On the basis of *identification* the possible sources of the counterparty risk and its varied influence on the enterprise's activity are determined. This is a process by which the existing or potential risk situations linked with the company's counterparties are discovered and described. The modern industrial enterprise uses separately or in combination different traditional and specific techniques and methods which increase the possibility of performing an accurate and objective identification of the risk counterparties (see Table 2). Mainly with the help of this method the enterprise collects, processes, systematises, analyses and evaluates information

about the risk, resulting from the actions and behaviour of the company's counterparties which the enterprise works and has certain relationships with. In particular the factors that form the risk situation, its scope, the rate of amendment, specific sources and dangers, the reasons for their emergence and the possible consequences are tracked.

The degree of identification of the risk counterparties is fundamental for the correct and precise *diagnosis* that is linked with logical consistent procedures and actions for studying and analysing the risk circumstances. Normally it aims to analyse the company's counterparties' behaviour and then to establish the "narrow places" that lead to the increase of risk situations.

One of the frequently used methods for diagnosis of the company's counterparties in the industrial enterprise's practice is the *method for analysing the sensitivity* (see Fig. 3)<sup>1</sup>. It helps the research of the risk profile of a specific counterparty, as it thoroughly analyses the key risks from its activity or inactivity and based on this the corresponding mitigation measures are indicated while being documented and coordinated with the main interested parties in the enterprise.

At the same time this method allows for a hierarchical structure to be created, in which the company's counterparties can be conditionally separated into:

- *First level counterparties* – these are low risk counterparties, whose behaviour and actions are fairly predictable on the basis of thorough and exact analysis and evaluations or previous experience; they can lead to damage and losses which need reasonably moderate prevention measures or are minimal for the enterprise;

- *Second level counterparties* – they are characterised by risk behaviour and actions, the results of which are unacceptable or unexpected for the enterprise and which can directly or indirectly lead to bigger financial losses or large expenses in order to overcome them;

- *Third level counterparties* – they are high risk counterparties; their behaviour and activity can hardly be predicted and can lead to fatal consequences for the enterprise or inflict serious financial losses.

This way the enterprise can determine the company's counterparties of a higher risk class and implement pre-emptive measures and restrictions that lead to the removal or reduction of their negative influence.

After accurately identifying the company's counterparties' risk profile, the enterprise should develop a *security strategy (program)* via which the enterprise will ensure its maximum protection. Timely making and realizing specific decisions linked to the performing of immediate actions for restriction of the unfavourable consequences from the occurrence of the counterparty risk is also necessary. When making a decision for impacting on the counterparty risk the following *alternative options* are possible:

<sup>1</sup> A risk that is connected to the providers of the enterprise is shown in this example.

Techniques and methods for identifying the counterparty risk of the industrial enterprise

Techniques	Key characteristics	Traditional methods	Key characteristics	Specific methods	Key characteristics
Brainstorming	This is a group technique for determination of the specific problems as well as acquaintance with and description of the counterparty risk	Method of analogy	On the basis of this method the causal links for the emergence of two similar (identical) counterparty risks but in different time periods are sought	"Check-list" method	This is a list in which the more essential and typical risk situations in the counterparty's behaviour are registered and mistakes made in previous periods are considered and judged
Questionnaires	Questionnaires are one of the most common tools for collecting primary information on the counterparty risk. They are a flexible tool that allows some of the cardinal dangers and problems as well as the reasons for their emergence to be pinpointed	Comparison method	This method allows for the changes in the parameters of the counterparty risk to be evaluated and for the trend and perspective for its development to be outlined. It also allows a certain risk situation to be compared with a similar one	"What if...?" method	With this method the specification of the dangers is more detailed and the nature and the level of damage are stated
Case Studies	With the help of different business analyses the influence of different factors that cause the counterparty risk is identified	"Delphi" method	This method is based on the choice of a certain circle of specialists that have to express their opinion independently and to make a prognosis for the counterparty risk	"FTA – Fault Tree Analysis" method	With this method the causal links between accidental events with different frequency and different stages are estimated. These links help identify the counterparty risk
Benchmarking	This is a process that identifies the problem areas through comparing with the leading enterprises in the specific sector	Scenario method	This is a method for identifying the counterparty risk by creating and using different scenarios for the future. Different scenarios which pinpoint the possibilities for change in the counterparty's behaviour under the influence of different (external and internal) factors are developed	"ETA – Event Tree Analysis" method	It contributes to the making of a hierarchical structure of different levels of danger in the company's counterparty's behaviour which are systemised and registered in a way that allows their easy identification, qualitative characterisation and correct estimation
Seminars (trainings)	Through the organization of and participation in discussions, practical trainings and seminars new possibilities for identifying the counterparty risk are disclosed				

- using funds for counteraction against the risk in conditions of uncertainty but in a known risk situation;
- using funds for an unknown risk situation but in the presence of sufficient information for an accurate evaluation of its consequences;
- taking measures in an unknown risk situation but with the possibility of evaluating the results from the possible countermeasures that were used;
- taking measures whose value does not allow the enterprise to risk their own capital;
- spending funds when there is a possibility for receiving positive results.

Despite the different alternatives, the enterprise's choice should mostly be based on the possibilities provided for predicting the threats and reduction (restriction) of the company's losses (damage). In particular the modern industrial enterprise strives to apply a certain system of specific mechanisms for prevention and effective counteraction against the counterparty risk, namely:

- consulting specific experts and specialists (i.e. lawyers) – the involvement of experts and specialists that will provide all the possible preventative measures for avoidance of the emergence of the counterparty risk



is mandatory. They will be able to ensure maximum protection of the enterprise, clear communication and policy in negotiations for the conclusion of new transactions and preparation of reliable contracts, containing specific terms, steps and actions;

– *developing and concluding secure and quality contracts* – mainly they have to be consistent with the

respective counterparty's status and prepared by means of appropriate impact tools according to its capabilities, containing clauses which ensure maximum protection, and using every opportunity given by the Bulgarian legislation to protect the enterprise from future complications;

Risk description	Probability score	Impact description	Impact score	Risk rating	Mitigating action(s)	Action owner(s)	Target completion date
Capacity issues due to fewer suppliers	2	Failure to supply if capacity estimates are inaccurate	4	8	<ul style="list-style-type: none"> <li>▪ Supplier audits in advance of switching suppliers</li> <li>▪ Improved forecast accuracy</li> </ul>		
Term			Description				
Risk description			Details the nature of the risk and why it might occur				
Probability score			1-2 (Green), 3 (Amber), 4-5 (Red)				
Impact description			Details the nature of the impact, if the risk occurs (e.g. Failure to supply product)				
Impact score			1-2 (Green), 3 (Amber), 4-5 (Red)				
Risk score			Probability score x Impact score				
Mitigating action(s)			List of actions to help mitigate the risk, either through				
Action owner(s)			Who is responsible to complete the mitigating actions				
Target completion date			When the mitigation action(s) will be completed by				

**Fig. 3. Model of the method for sensitivity analysis [3]**

– *conducting research on the potential counterparties in advance* – the implementation of detailed research on the potential counterparties' activity, financial position, image and reputation, the gathering of complete and accurate information about persons connected to the specific counterparty and to its possibility for future collateral in certain risk circumstances is mandatory;

– *development and enforcement of collateral in case of violation of the contractual relations* – in modern conditions the provision of collateral for defined amounts/goods is more than mandatory, as well as the prediction of certain terms for its timely redemption;

– *creation of a workgroup for effective management of the counterparty risk* – the creation of a workgroup of professionals which will observe the company's counterparties' condition and the probability of obtaining the respective receivables from them is necessary. They must carry out checks on the overall financial position of the respective counterparty, prepare an ana-

lysis on its indebtedness, presence of overdue receivables and conclude on the degree of risk of making a specific deal with it;

– *termination of the contracts with high risk counterparties* – this is an extreme measure but it is mandatory in the presence of counterparties' actions, which lead to negative and unsolvable risks or to avoid ones for which it is known in advance that cause risks of an unacceptable level or are not a subject of treatment.

**Conclusion.** The implementation of adequate and effective counterparty risk management gives the industrial enterprise the chance to cope with the great number of challenges and dangers related to non-performance of the contractual obligations by its counterparty. Actually, the enterprise will be able to limit the difficulties more accurately and swiftly, eliminate the weaknesses in its activities and implement policies ensuring that the company will achieve better results and demonstrate a more flexible and competitive business behavioural model.

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#### **Иванова З. С. Управління ризиком контрагента промислового підприємства**

Сучасне промислове підприємство має надзвичайно складні економічні відносини зі своїми контрагентами. З іншого боку, невизначені і динамічні відносини і взаємозв'язки, а також багатогранна місія і цілі компанії, безсумнівно, породжують прояв ризику контрагента. Це ризик, який може суттєво вплинути на стан і продуктивність його промислової структури, її конкурентоспроможність і ефективність на ринку. Здатність підприємства розробляти і застосовувати адекватний і надійний метод управління ризиками контрагента стає життєво важливим фактором його нормального функціонування і майбутнього розвитку. Мета цієї статті – виявити деякі специфічні особливості ризику контрагента та обґрунтувати можливості його управління, що може призвести до обмеження та зменшення несприятливих наслідків і схильності до ризику промислового підприємства.

*Ключові слова:* ризик контрагента, промислове підприємство, управління ризиками контрагента, контрагент ризику, ситуація з ризиком, схильність до ризику.

#### **Иванова З. С. Управление риском контрагента промышленного предприятия**

Современное промышленное предприятие имеет чрезвычайно сложные экономические отношения со своими контрагентами. С другой стороны, неопределенные и динамичные отношения и взаимосвязи, с одной стороны, и многогранная миссия и цели компании, несомненно, порождают проявление риска контрагента. Это риск, который может существенно повлиять на состояние и производительность его промышленной структуры, ее конкурентоспособность и эффективность на рынке. Способность предприятия разрабатывать и применять адекватный и надежный метод управления рисками контрагента становится жизненно важным фактором его нормального функционирования и будущего развития. Цель этой статьи – выявить некоторые специфические особенности риска контрагента и обосновать возможности его управления, что может привести к ограничению и уменьшению неблагоприятных последствий и подверженности риску промышленного предприятия.

*Ключевые слова:* риск контрагента, промышленное предприятие, управление рисками контрагента, контрагент риска, ситуация с риском, подверженность риску.

#### **Ivanova Z. Management of the counterparty risk of an industrial enterprise**

The modern industrial enterprise has extremely complicated economic relationships with its counterparties. The insecure and dynamic relationships and interrelations, on the one hand, and the multifaceted company mission and goals, on the other hand, undoubtedly generate the manifestation of the counterparty risk. This is a risk that can significantly influence the state and performance of an industrial structure, its competitiveness and market efficiency. The ability of the enterprise to develop and apply an adequate and reliable method of counterparty risk management becomes a vital factor for its normal functioning and future development. The purpose of this article is to pinpoint some of the specific peculiarities of the counterparty risk and to justify the opportunities of its management, which can then lead to limiting and reducing the unfavourable consequences and risk exposure of the industrial enterprise.

*Keywords:* counterparty risk, industrial enterprise, counterparty risk management, risk counterparties, risk circumstances, risk exposure.

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