

## RISK ASSESSMENT IN LEASING ACTIVITY

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**Abstract.** Leasing business in Russia originates from "Leasing (Finance Lease)" Federal law adoption. In the article up-to-date leasing industry development features are considered, the main difficulties in strengthening of a financial position of leasing companies are designated, risk sources for lessors as well as for the parties interested in more effective work of the companies are defined. Also necessity of risk assessment for leasing companies is considered, the risks arising at various stages of the leasing transaction are singled out, some leasing activity risk assessment methods application peculiarities are analyzed and necessity of system approach application to leasing activity risk assessment is considered. A long-term trend of leasing development is increase in number of such transactions. Key characteristics for assessment of leasing contracts efficiency are the recoverability of loans, lack of expensive actions for overdue loans return, contracts dynamics in separate leasing companies.

**Keywords:** Leasing (Finance Lease), Federal law adoption, assessment methods application

### 1 Introduction

Leasing activity is a specific type of investment activities on property acquisition and its transfer to leasing under the contract of leasing. Main types of leasing are financial and operational leasing. By financial leasing one should understand leasing with full payback of leased objects, with the long term of the contract and the involving property right transition to the lessee. Operational leasing is in a greater degree the transfer of an object of property to temporary possession and usage, assuming return of property after contract term. Now financial leasing prevails. The leased asset is the property of the lessor or the bank that finances this transaction (Kovalyov, 2017; Chugunov & Alentsina 2015; Adamov & Penchukova 2014; Asyaeva et al 2016).

Russian leasing companies depend on subsidies and banking institutions. The external analysis of financial solvency of the leasing companies still remains inefficient that Russian accounting standards don't allow to see a real financial position of the leasing companies, besides, in comparison with the foreign leasing companies, at the Russian companies the award for risk is higher (Hromtsova & Panenko 2014). In the present risks of leasing activity are considered only at an evaluation stage of the possibility of non-receipt of leasing payments though risks can arise practically at each stage of the leasing transaction and finally lead to the unprofitable transaction or will threaten the conclusion of the transaction. Risk assessment problem, in particular leasing activity, is the difficulty of assessment mathematical apparatus which has not been put into practice of the companies yet. An integrated approach to risk assessment in leasing activity which will include a possibility of risk assessment at various stages of activity is necessary (Iravani et al, 2015).

### 2 Methods

When conducting the research training and scientific materials on the research problem, periodic literature and also data of the rating and analytical agencies were used. Economic aspects of risk category in domestic economic literature are considered in the works of I.R. Balabanov, M.S. Bakanov, Yu.N. Voropayev, P.G. Grabovy, M.V. Lapusta, N.B. Ermasova, R.M. Kachalov, L.E. Skripko, etc. In foreign economic literature the problem of economic risk is developed in a more detail, and it is historically explainable: studying of economic risk has long-term history in developed economies. In the thesis J.M. Keynes, F. Knight, T.L. Barton, M. Krui's works, etc. were used. Works of such authors as were devoted to issues of development of the leasing industry: V.V. Kovalyov, N.A. Batayeva, L.K. Ulybina, O.A. Okorokova and others. The leasing risk was investigated by domestic scientists such as: V.D. Gazman, V. Shabashev, T. Filosofova, E.

Kiselyova, A. Gerasimovich, A. Martynov, V.G. Shibakov, R.Ya. Zaripov, M.S. Mishina, etc.

The following work methods were used in the research: monographic, methods of the analysis and synthesis, general scientific induction and deduction and others.

Methodological bases of work are the theory of risk, the theory of the economic analysis, the theory of corporate finance and management and also the concept of a system of the balanced indicators.

### 3 Results And Discussion

In many countries leasing became one of powerful components of investment policy, the conventional catalyst for modernization of production base, a key method of innovative activity financing (Zeynalov, 2017). The state subsidizing of trucks sales and realization of pent-up demand led to increase in number of leasing transactions and, as a result, growth of the segment of SME by 52% (Zeynalov, 2017).

The leasing credit is followed by need of studying of leasing risk which is presented by risk of failure to pay and/or decrease in leasing payment under the contract of leasing crediting. In this case the leasing payment acts as a random variable; absolute and relative level of leasing risk will calculate taking into account change of leasing payments on the credit (Saenko, 2011).

The arrears share in the loan portfolio at the independent leasing companies makes about 1.1%, at the companies connected with banks – 3.7% (Moiseyev & Morgunova 2017).

The following private risks are peculiar to leasing operations: marketing risk, price risk, risk of death or damage of an object of the leasing credit and risk of moral obsolescence of an object of the leasing credit. Separately it is necessary to specify directly credit risk of the lessor (Kord et al., 2017).

In leasing activity risks arise at various stages of the leasing transaction. Features of emergence of risks at each stage of the conclusion of leasing transactions are reflected in table 1.

Table 1. Risks inherent in consecutive stages of the leasing transaction

No.	Stage of the leasing transaction	Emerging risk
1	The lessee chooses the property and the seller of the property (the lessor chooses the seller)	The risk of changes in the price of goods, reputational risk, operational risk
2	Conclusion of a contract between the lessor and the lessee	The risk of changes in the price of goods, rep. risk, operational risk, legal risk, credit risk, strategic risk
3	Purchase of property by the lessor from the seller of the property and transfer of property to the lessee under a lease agreement	The risk of changes in the price of goods, reputation. Risk, operational risk, legal risk, credit risk, strategic liquidity risk
4	The lessor mobilizes financial resources for the purchase of a leasing object	The risk of changes in the price of goods, rep. risk, operational risk, legal risk, credit risk, strategic risk, liquidity risk, regulatory risk
5	Leasing object insurance	Also as in line 4

There are enough methods of risk assessment, but not all of them can be identical to be applied successfully at risk assessment of leasing activity. Characteristic of some methods of leasing activity assessment is presented in table 2.

Table 2. Advantages and shortcomings of some methods of risk assessment for separate risks of the leasing companies

Risk assessment method / types of risks which are estimated by the method	Advantages of the method	Method shortcomings
The structured interviews and brainstorming / Risk of the change in price of an item; reputation risk, operational risk, legal risk, credit risk, strategic risk, risk of liquidity, regulatory risk	<p>a) Advantages of the structured interview:</p> <ul style="list-style-type: none"> <li>- structured interviews allow to analyze a problem.</li> <li>- Exchange of information "in private" can let consider a problem in all its aspects.</li> </ul> <p>b) Advantages of brainstorming are:</p> <ul style="list-style-type: none"> <li>- development of independent way of thinking of participants which helps with identification of new types of risk to find new solutions;</li> <li>- involvement of the key involved parties and, therefore, exchange process improvement information;</li> <li>- speed and ease of application of the method.</li> </ul>	<p>a) Shortcomings of structures. interview:</p> <ul style="list-style-type: none"> <li>- the structured interview demands big expenses of time of the interviewer for receiving and processing various and numerous opinions on a problem.</li> <li>- The method allows bias and unwillingness to discuss a problem in group.</li> </ul> <p>b) Brain storm method shortcomings are the following:</p> <ul style="list-style-type: none"> <li>- The lack of skills and knowledge of participants of discussion for effective generation of the ideas is possible.</li> <li>- It is difficult to check comprehensiveness of discussion and to confirm, that all dangers and types of risk are identified.</li> <li>- Some participants having the valuable ideas, can not prove while others dominate at discussion.</li> </ul>
Business Impact Analysis (BIA) / The risk of changes in the price of the goods; reputation risk, operational risk, legal risk, credit risk, strategic risk, liquidity risk, regulatory risk	<p>The advantages of the BIA method are:</p> <ul style="list-style-type: none"> <li>- providing insight into critical processes to achieve established goals;</li> <li>- ability to assess the required resources;</li> <li>- possibility of revising the production process to increase the sustainability of the organization</li> </ul>	<p>The disadvantages of the method are the following:</p> <p>a) There may be insufficient competence of survey participants, interviews or meetings;</p> <p>b) The dynamics of work in a group can influence the entire analysis of the functioning of a critical process;</p> <p>c) Simplified or super-optimistic estimates of recovery requirements are possible.</p>
Causal analysis / The risk of changes	The advantages of the method	Disadvantages of the method:

in the price of the goods; reputation risk, operational risk, legal risk, credit risk, strategic risk, liquidity risk, regulatory risk	<p>are:</p> <ul style="list-style-type: none"> <li>- involvement of competent experts in the work of the group;</li> <li>- the use of structured analysis;</li> <li>- consideration of all possible assumptions and hypotheses;</li> <li>- graphical display of results in an easy-to-read form;</li> <li>- etc.</li> </ul>	<ul style="list-style-type: none"> <li>- A group of experts may not have the necessary competence;</li> <li>- to develop recommendations, the method should be applied only as part of the root cause analysis;</li> <li>- the method is intended for brainstorming, but not self-analysis;</li> <li>- separation of causal factors into main categories at the beginning of the analysis.</li> </ul>
Failure Types and Effects Analysis (FMEA) and Failure Species and Effects Analysis (FMECA) / Operational risk, legal, risk, credit risk, strategic risk, liquidity risk, regulatory risk	<p>The advantages of the FMEA / FMECA method are as follows:</p> <ul style="list-style-type: none"> <li>- The method is applicable to the types of failures associated with personnel errors, malfunction of hardware and software systems and processes.</li> <li>- The method allows to identify the types of component failures, the causes of these failures and their consequences. for the system and present them in a user-friendly form.</li> <li>- Allows you to avoid costly equipment modifications with technical service through identification and troubleshooting early in the design phase.</li> </ul>	<ul style="list-style-type: none"> <li>- The FMEA / FMECA method can only be used to identify individual failures, not their combinations.</li> <li>- Without adequate control and special focus, research can be time consuming and expensive.</li> <li>- The application of the FMEA / FMECA method can be time-consuming for complex multi-level systems.</li> </ul>
Modeling by Monte Carlo method / Risk of the change in price of an item; operational risk, credit risk, strategic risk, risk of liquidity.	<p>Advantages of a method:</p> <ul style="list-style-type: none"> <li>- The method can be adapted to any distribution of input data.</li> <li>- Models are rather simple for work and can be expanded.</li> <li>- The method allows to consider influences and interrelations, including such conditional dependences.</li> </ul>	<p>Method shortcomings:</p> <ul style="list-style-type: none"> <li>- Accuracy of decisions depends on the number of iterations which can be executed.</li> <li>- Big and difficult models can present difficulties for specialists in modeling and complicate involvement of interested persons. The method can not adequately model events with</li> </ul>

	<ul style="list-style-type: none"> <li>- Models are clear, interrelation between entrances and exits – transparent.</li> <li>- The method allows to reach the required accuracy of results.</li> <li>- The software of a method is available and inexpensive.</li> </ul>	very high or very low probability of emergence that limits its application in risk analysis.
<p>Bayesian analysis / Risk of the change in price of an item; operational risk, credit risk, strategic risk, risk of liquidity.</p>	<p>Advantages of a method is the following:</p> <ul style="list-style-type: none"> <li>- For use of a method knowledge of prior information is enough.</li> <li>- The output statements are easy for understanding.</li> <li>- Application of a method is based on Bayes formula</li> </ul>	<p>Shortcomings of a method is the following:</p> <ul style="list-style-type: none"> <li>- Definition of all interactions in Bayes' networks for complex systems is not always feasible.</li> </ul>

The analysis of methods of risk assessment in leasing activity in terms of possible application in practical activities of the companies is presented in table 3.

Table 3. Selection of methods of risk assessment for the leasing company

Group of methods of assessment of risk	Risk assessment methods	Level of uncertainty of assessment	Degree of complexity of application	Opportunity of received data	Integr. method assessment
Observation methods	Check sheets	Low - 3	Low - 2	No - 1	5
	Preliminary analysis of dangers	High - 1	Average - 2	Net- 1	4
Auxiliary methods	Structured interview and brainstorming	Low - 3	Low-2	No - 1	6
	Delfi method	Average - 2	Average - 2	There is no-1	5
	Structures	Average-	Average	There is no-1	5

	analysis of the scenarios "What if?" (SWIFT)	2	-2	There is no-1	
Analysis of scenarios	Analysis of the prime cause	Low-3	Average -2	No - 1	6
	Analysis of scenarios	High - 1	Average - 2	No - 1	4
	Analysis of impact on business	Average - 2	Average - 2	No - 1	5
	Cause and effect analysis	Low - 3	Average - 2	Yes - 2	7
Functional analysis	Analysis of types and consequences of refusals (FMEA) and analysis of criticality of types and consequences of refusals (FMECA)	Average - 2	Average - 2	Yes - 2	6
	Analysis of the latent defects (analysis of parasitic chains)	Average- 2	Average - 2	No - 1	5
	Research of danger and working capacity (HAZOP)	High-1	High-1	No - 1	3
	Analysis "tie bow"	High - 1	Average -2	Yes - 2	5
Statistical methods	Modeling by Monte Carlo method	Low-3	High - 1	Yes - 2	6
	Bayesian analysis	Low-3	High-1	Yes - 2	6

4 Summary

Within the research in terms of application in leasing activity according to criteria: level of uncertainty of assessment, degree of complexity of application, a possibility of obtaining quantitative data are chosen the following methods:

- 1) The structured interview and brainstorming – 6 points;
- 2) The analysis of the prime cause – 6 points;
- 3) The cause and effect analysis – 7 points. (It is the structured method of identification of the possible reasons of an undesirable event or a problem. This method allows to group possible causal factors in the generalized categories so that it was possible to investigate all possible hypotheses. Application of this method allows to identify the actual reasons.);
- 4) The analysis of types and consequences of refusals (FMEA) and the analysis of criticality of types and consequences of refusals (FMECA) – 6 points;
- 5) The Markov analysis – 6 points;
- 6) Modeling by Monte Carlo method – 6 points;
- 7) The Bayesian analysis – 6 points.

The presented methods of risk assessment were chosen as the most acceptable for more detailed risk assessment taking into account branch specifics of leasing activity. The first three methods of risk assessment, from six specified in table 3 (gathered the highest assessment in terms of applied efficiency) can be applied as practical activities. Methods of the strategic analysis (including the applied strategic analysis within

PROGRAM STATUS WORD methodology – the systems of the balanced indicators), a case-study method, a method of expediency of expenses, group of analytical methods (the analysis of sensitivity, a method of the analysis of scenarios). There is an interrelation between the chosen methods: the analysis of sensitivity allows to establish interrelations between separate events quantitatively, however the analysis of scenarios allows to see interrelation between groups of indicators that it is necessary for full creation of a system of the balanced indicators.

## 5 Conclusions

Leasing activity is accompanied by different types of risks. And not only identification of risks and ability to estimate possible risks is complexity. The complexity represents lack of system approach and complexity in risk assessment of leasing activity. Within risk assessment of leasing activity it is necessary to analyze risk not only as risk of non-receipt of possible leasing payment, it is necessary to consider risks of leasing activity at all stages of the leasing transaction. As the direction of the solution of problems there can be an application of cyclic approach to risk management on the basis of the administrative technology known as the system of the balanced indicators. The concept of a system of the balanced indicators as the general conceptual scheme will allow to carry out the cause and effect analysis and the assessment, and also to form the possible directions of overcoming risk situations

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