**Introduction**

Leasing operations are present on the capital markets for more than 50 years and nowadays they are the most popular and requested type of operations. The global leasing service market is approximately estimated as $350 billion [19]. Despite the tough economic environment in 2014–2015, leasing is still a highly demandable operation in Russia. For the past 5 years the amount of conducted leasing deals reached 6000 billion roubles and since 2016 the significant growth of the leasing deals amount becomes evident: in 2016 the growth rate figured up to 36 % and in 2017 – 48 % [22]. Ural federal district is found on the 3d place in the leasing business, behind Moscow and St. Petersburg. Therefore, leasing operations appear to be a topical issue today.

The purpose of this work is to develop methodological basis for the analysis of lease financing receivables and payables.

To achieve this aim the authors used the already existing approaches to leasing operations analysis. They have developed indicators for evaluating the state and dynamics of changes in the amount of leasing payments debt, and also indicators of profitability and turnover rate of receivables and payables.

1. **Theoretical framework for the analysis of accounts receivable and payable**

A prospective and retrospective analysis of leasing operations was previously considered by the authors in various sources [2, 16], but the focus was mainly on assessing the effectiveness of the use of the leasing mechanism in the acquisition of property and analysis of the subject of the financial lease agreement: the return on assets, turnover, and profitability of leasing property. At the same time, besides leasing property, at the conclusion of the leasing contract there is also a debt: for the lessor – debt receivable; for the lessee – the debt payable. Therefore, it is necessary to consider the analysis of lease financing receivables and payables in order to develop the methodological basis for leasing operations.

After careful analysis of the methods of leasing operations analysis which are presented in domestic and international sources (textbooks, monographs, periodicals and scientific publications) authors got the following results: leasing operations efficiency is presented as a prospective analysis or analysis of leased property in the available sources, the analysis of the leasing payment debt is not disclosed at all there. Therefore it is decided to conduct the analysis of ordinary receivables and payables.

In the works [4, 8, 20, 21] analysis of the effectiveness of leasing operations is a comparative analysis of discounted cash flows arising in connection with the implementation of a leasing transaction and when buying property under a loan agreement. Therefore, this analysis is conducted with the aim of selecting the optimal source of financing for the investment project and does not allow analyzing the leasing payment debt.

The source [7] provides «a system of economic indicators for the analysis of leasing operations», which includes:

1) the renewal rate by leasing;
2) the renewal rate of fixed assets by leasing;
3) the coefficient of disposal of leased property;
4) the coefficient of shift and leasing of property.

The presented analysis of leasing operations can be carried out (as the author himself notes [7]) in case the leased property is on the balance of the lessee. The disadvantage of the presented «system» is that the au-
An analysis of the debt on a leasing payment should be considered from the position of the subject of the leasing transaction, since the lessor has a receivable, and the lessee has a payable debt. Taking as a basis the structure of debt analysis at the source [14], we will present the methodological basis for the analysis of a leasing payment debt, which is carried out in three stages.

The purpose of the analysis of lessor’s leasing payment debt is to assess the receivables’ state, dynamics of changes, and repayment period.

Stage I. An estimation of the share of debt in balance sheet total and an estimation the dynamics of its change. Usually a leasing agreement is concluded for a long period; therefore, accounts receivable are mostly long-term. However, cases of short-term transactions and the transfer of debt from long-term to short-term are not excluded.

For convenience in calculating and evaluating the structure and dynamics of the change in the receivables, we use Table 1.

The indicators calculated in Table 1 provide an overview of the existence and changes of the lease financing receivables in the period under consideration. As can be seen from the table, the most part of the organization's funds – 62 % at the beginning of the year and 71 % and the end of the year – is diverted into the accounts receivable of the lessor.

For the year, the total amount of lease financing receivables was increased by 14.9 %. In general, the debt is long-term – 78.2 % at the beginning of the year and 81.6 % at the end of the year. During the period in question, the share of long-term debt increased significantly – by 20 %. A substantial share of long-term debt means that leasing contracts are mostly concluded for a long term and the subject of the leasing agreement is recorded on the balance sheet of the lessee.

### Table 1

<table>
<thead>
<tr>
<th>Index</th>
<th>Start of the year</th>
<th>End of the year</th>
<th>Change</th>
<th>growth rate</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>value, thousand</td>
<td>balance sheet tot.</td>
<td>value, thousand</td>
<td>balance sheet tot.</td>
</tr>
<tr>
<td></td>
<td>rubles</td>
<td>share, %</td>
<td>rubles</td>
<td>share, %</td>
</tr>
<tr>
<td>I.</td>
<td>lease financing</td>
<td>37 740</td>
<td>43 380</td>
<td>5 640</td>
</tr>
<tr>
<td></td>
<td>receivables,</td>
<td>62,0</td>
<td>71,0</td>
<td></td>
</tr>
<tr>
<td></td>
<td>including</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>long-term</td>
<td>29 500</td>
<td>78,2</td>
<td>81,6</td>
<td>5 900</td>
</tr>
<tr>
<td>short-term</td>
<td>8 240</td>
<td>21,8</td>
<td>18,4</td>
<td>–260</td>
</tr>
<tr>
<td>II.</td>
<td>Balance sheet</td>
<td>60 800</td>
<td>61 080</td>
<td>280</td>
</tr>
<tr>
<td></td>
<td>total</td>
<td>100,0</td>
<td>100,0</td>
<td></td>
</tr>
</tbody>
</table>

**NB:**
1. the table is calculated as follows:
   3 = 2.I / 2.II * 100;
   5 = 4.I / 4.II * 100;
   6 = 4 – 2;
   7 = 5 – 3;
   8 = 6 / 2 * 100;
2. the share of lease financing receivables is calculated from the balance sheet total. Shares of long-term and short-term debts are calculated from the amount of lease financing receivables.
Short-term leasing payment debts are 21.8 % and 18.4 %, respectively, during the period in question the share of short-term debt was decreased by 3.2 %. The presence of short-term receivables may indicate that the lessee has short-term leases and (or) as of the reporting date, the accrued current lease payments are not paid off.

Thus, the size and structure of the receivables of an economic entity testifies to the specific nature of the leasing activity and is believed to be acceptable.

Stage II. Determining the profitability of receivables.

Profitability means «efficiency», «cost-effectiveness», «viability» [11]. Usually, this indicator is determined by the ratio of the total amount of profit to the average amount for the analyzed period, the cost of only the studied resource, ignoring the fact that this profit is obtained through the use of other resources [15]. «It seems only plausible to correlate the part of the profit, acquired (conditionally or unconditionally) through utilizing the resource under consideration with the cost of the resource, and not the whole profit. Therefore, the profit (income) could be divided between different kinds of resources according to the part they took in its acquisition, which is justified by their expenditure in the cost estimate» [15]. In other words, the profitability of a particular asset or the source of its acquisition shows the amount of income in percent that this resource brings to the organization.

The profitability of an individual asset is equal to the ratio of the share of profit corresponding to the degree of participation of the analyzed asset in its acquisition, to the average value of this asset for the analyzed period [13].

Accordingly, the indicator of profitability of lease financing receivables, formed by the method of proportional-cost division of the degree in which the resources take part in profit-making, is determined by the formula

\[ P_R = \frac{PR_{lecur}}{R_{av}}, \quad (1) \]

where \( PR_R \) is the profitability of lease financing receivables; \( P \) is the amount of profit from sales received by the enterprise for the period under study; \( R_{lecur} \) is the amount of current VAT exclusive lease financing receivables; \( C_{tot} \) – total resources spent on profit-making; \( R_{av} \) – average value of VAT exclusive lease financing receivables.

Stage III. Identification of the lease financing receivables turnover period. Accounts receivable commits a turnover as it is repaid, so the value of its turnover is the amount of its repayment.

The lease financing receivables turnover period \( (PT_R) \) is determined by the formula

\[ PT_R = \frac{AB_{R1}}{PS_{R1}}, \quad (2) \]

where \( AB_{R1} \) is an average balance of lease financing receivables;

\( PS_{R1} \) – the amount of settled lease financing receivables over a year (the sum of charged and settled lease payments).

The period of the accounts receivable turnover shows how much time in years the debt will be repaid in the amount of average balances.

Let's consider an example of calculation of lease financing receivables profitability and turnover. For example, the profit for the reporting period was 8,800 thousand roubles, the amount of current VAT excluded lease financing receivables amounted to 9,850 thousand roubles, the amount of repaid lease payments for the year is 12,200 thousand roubles, the total cost of resources to receive profit amounted to 39,060 thousand roubles, the average value of VAT excluded accounts receivable – 40,560 thousand roubles.

Define the profitability of accounts receivable under the formula 1:

\[ P_R = \frac{PR_{lecur}}{R_{av}} = \frac{8800}{40560} = 5 \% . \]

Define the period of turnover of accounts receivable under the formula 2:

\[ PT_R = \frac{AB_{R1}}{PS_{R1}} = \frac{40560}{12200} = 3.3 \text{ years}. \]

Thus, the profitability of lease financing receivables accounted for 5 %, and the turnover period was 3.3 years. Accordingly, accounts receivable in the amount of the average balance will be repaid in 3 years and 4 months.

The purpose of the analysis of the lease payment debt from the lessee is to assess the state, dynamics of changes and the length of repayment of accounts payable. The analysis is carried out in three stages.

Stage I. Calculation and estimation of the share of accounts payable as a result of the balance sheet, as well as the dynamics of its change. By analogy with accounts receivable, the calculation and evaluation of the structure and dynamics of changes in accounts payable is given in Table 2.

The calculated indicators provide an overview of the change in accounts payable for the period under study, as well as its significance for the organization. As can be seen from Table 2, the share of accounts payable as a result of the balance sheet is not significant and is 15.2 % at the beginning of the year and 11.6 % and end of the year.

During the reporting period, the total share of leasing payment debt as a result of the balance decreased by 3.6 %. At the beginning and the end of the year, almost all debts are long-term 98 % and 97.3 %, respectively. This indicates that the leasing agreements are concluded for a long time. The presence of short-term accounts payable (2 % and 2.7 % at the beginning and end of the year, respectively) indicates that the lessee has accrued but not repaid current lease payments at the reporting date. For the year, the amount of leasing payment debt is decreased by 20 %.
Stage II. Determining the profitability of accounts payable.

Having set the task of determining the profitability of accounts payable, it is necessary to answer the question, is there a fee for using it? The answer to this question will influence the procedure for determining profitability [14]. On the one hand, all accounts payable, if not sanctioned not subjected to fines, is considered «free». On the other hand, taking into account the specifics of leasing relations, leasing payment debt can be attributed to «paid» as well because the leasing agreement, as well as the loan agreement, is urgent, refundable and payable.

However, there is a significant difference in the calculation of interest on the loan and fees on the leasing. Interest on the loan is accrued by the means of other expenses and in accounting are reflected separately from the principal amount of the loan obligations (paragraph 7 and 4 of Russian Accounting Regulations 15/2008 «Accounting for borrowing costs and loans»). Remuneration under a leasing agreement is already included in the value of the contract and is not separately recorded in the lessee's account. At the same time, the accounting treatment of leasing payments depends on the terms of the leasing agreement:

a) if the property is reflected in the balance sheet of the enterprise, the entire amount of leasing payments will be reflected in the balance sheet with a gradual decrease in its amount as the debt is paid under the leasing agreement;

b) if the property is reflected on off-balance accounts, then the balance sheet will only reflect the current debt on the leasing payment from the moment of its accrual to the moment of its repayment.

Consequently, if no sanctions and fines were imposed on the payables under consideration on the leasing payment during the analyzed period, then this debt is considered «free».

The indicator of profitability of lease financing payables, formed by the method of proportional-cost division of the degree in which the resources take part in profit-making, is determined by the formula

\[ P_{C1} = \frac{P \times CI}{BC} = \frac{P \times CI}{BC^2}, \]  

(3)

where \( P_{C1} \) is the profitability of lease financing payables;

\( P \) is the the amount of profit from sales received by the enterprise for the period under study;

\( CI \) – average value of lease financing payables sum;

\( BC \) – average balance total for the period under consideration.

Stage III. Identification of the lease financing payables turnover period. Accounts payable commits a turnover as it is repaid, so the value of its turnover is the amount of its repayment.

The lease financing payables turnover period \((PT_{R})\) is determined by the formula

\[ PT_{C1} = \frac{AB_{C1}}{P_{5C1}}, \]  

(4)

where \( AB_{C1} \) – is an average balance of lease financing payables; \( P_{5C1} \) is the amount of settled lease financing payables over a year (the sum of settled lease payments).

The period of turnover of accounts payable shows how much time in years this debt will be repaid in the amount of average balances.

Let's consider an example of calculation of lease financing payables profitability and turnover. Let's assume that the profit from sales for the reporting period was 3 500 thousand roubles, the amount of repaid receivables for the year was 1,000 thousand roubles, the remaining data are presented in Table 2.

<table>
<thead>
<tr>
<th>Index</th>
<th>Start of the year</th>
<th>End of the year</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>value, thousand roubles</td>
<td>balance sheet tot. share, %</td>
<td>value, thousand roubles</td>
</tr>
<tr>
<td>1</td>
<td>Lease financing payables, including</td>
<td>5 000</td>
<td>15,2</td>
</tr>
<tr>
<td></td>
<td>long-term</td>
<td>4 900</td>
<td>98,0</td>
</tr>
<tr>
<td></td>
<td>short-term</td>
<td>100</td>
<td>2,0</td>
</tr>
<tr>
<td>II. Balance sheet total</td>
<td>33 000</td>
<td>100,0</td>
<td>34 500</td>
</tr>
</tbody>
</table>

NB: 1) the table is calculated as follows:

\[ 3 = \frac{2.I}{2.II} \times 100; \quad 5 = \frac{4.I}{4.II} \times 100; \]

\[ 6 = 4 - 2; \quad 7 = 5 - 3; \]

\[ 8 = \frac{6}{2} \times 100; \]

2) the share of lease financing payables is calculated from the balance sheet total. Shares of long-term and short-term debts are calculated from the amount of lease financing payables.
Define the profitability of accounts payable under the formula 3:
\[ P_{cl} = \frac{P \times C_l}{BC^2} = \frac{3500 \times \frac{5000 + 4000}{2}}{\left(\frac{3300 + 3450}{2}\right)^2} = 1.4\%. \]

Define the period of turnover of accounts payable under the formula 4:
\[ PT_{cll} = \frac{AB_{cl1}}{P_{cll}} = \frac{5000 + 4000}{2} = 4.5\text{ years}. \]

Thus, the profitability of lease financing payables for the period under study was 1.4%, and the turnover period was 4.5 years. Consequently, accounts payable in the amount of the average balance will be repaid in 4 years and 6 months.

**Conclusion**

The effectiveness of using a leasing contract for the acquisition of fixed assets is now proven. This can be seen in the analysis of statistical data on the market of leasing services. However, the economic literature does not pay sufficient attention to the analysis of leasing operations, which include the analysis of the subject of the leasing contract and arisen debts.

The authors proposed methodological bases for the analysis of lease financing receivables and payables. The presented analysis allows to estimate a condition and dynamics of debts change, to calculate its profitability and turnover period.

To assess the share of debt as a result of the balance sheet, as well as the dynamics of its change, a table is proposed that makes it convenient to calculate the required indicators and visualize them. The indicator of profitability of lease financing receivables and payables is formed by the method of proportional-cost division of the degree of participation of assets and their sources in making a profit. When determining the period of debt turnover, the amount of repaid lease payments is taken as turnover.

The indicators of efficiency of leased property in the source [16] were considered earlier by the authors, as well as the methodological basis of the analysis of lease financing payables presented in this paper, will allow the economic entity to evaluate the efficiency of leasing operations in a complex.

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Методология исследования дебиторской и кредиторской задолженности по лизинговому финансированию

И.Н. Дмитриева, А.Ф. Черненко
Южно-Уральский государственный университет, г. Челябинск, Россия

Методы анализа финансового лизинга, представленные в различных источниках, выявляют только эффективность использования предмета лизинга. При этом доступные источники не учитывают задолженности, который также возникает при заключении договора лизинга. В связи с этим в статье представлены методологические основы анализа дебиторской и кредиторской задолженности по лизинговому финансированию, которые включают: оценку доли задолженности в общем балансе и оценку динамики ее изменения; определение доходности и оборачиваемости долга. Показатель доходности заемного лизингового финансирования формируется методом пропорционально-стоимостного деления степени участия ресурсов (капитала) в получении прибыли, что позволяет определить доходность конкретных активов и их источников. Сумму лизинговых платежей, полученных лизингодателем, предлагает принимать в качестве оборота при определении срока оборота дебиторской задолженности. Сумму лизинговых платежей, уплаченных лизингополучателем, предлагает принимать в качестве оборота при определении срока оборота кредиторской задолженности.

Ключевые слова: финансовый лизинг, эффективность лизинга, дебиторская задолженность, кредиторская задолженность, рентабельность, оборачиваемость.

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Дмитриева Ирина Николаевна, кандидат экономических наук, доцент кафедры бухгалтерского учета, анализа и аудита, Южно-Уральский государственный университет (г. Челябинск), indmit82@mail.ru
Черненко Алексей Федорович, доктор экономических наук, профессор кафедры бухгалтерского учета, анализа и аудита, Южно-Уральский государственный университет (г. Челябинск), 2052@bk.ru

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