

# ANALYTICAL PROVISION OF COMPUTATIONAL OPERATIONS AND DIRECTIONS FOR THEIR IMPROVEMENT

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**Abstract.** *The purpose* of the article is the method of analysis of settlements with debtors and creditors and determination of directions for their improvement. *Methodology.* In the process of solving the tasks of scientific research, general and special methods of research were applied: descriptive-analytical method, systematic approach, method of analysis and synthesis, method of systematization, method of comparison, method of scientific generalization. *Results.* It has been proved that the anti-crisis management system should provide a proper approach to the enterprise's debts, for their effective management, ensure the optimal ratio of receivables and payables, prevent their overdue occurrence, systematically monitor payments. The current state of enterprise settlements is characterized by an unsatisfactory level of payment discipline of subjects of economic activity and requires strengthening of their control both by state authorities in the sphere of economic policy implementation and by enterprises themselves. It was determined that the main source of information is regulatory acts, accounting data and the main stages of analysis of accounting transactions. The analysis of the company's receivables allows to estimate the possible amount of income that can be received in the form of fines, penalties and fines from the debtors who are in arrears. Characteristics of qualitative changes of liabilities in the structure of the company's liabilities can be obtained using horizontal and vertical analysis of the balance sheet. Horizontal analysis allows to compare indicators of liabilities for different periods. The necessity of analyzing the dynamics of the accounting operations of a business entity is covered. The existence of overdue receivables, especially bad debts, which are classified as doubtful debts, as well as an unjustified increase in receivables in general, adversely affects the financial position of the Company and leads to a shortage of financial resources. Bad debts are eliminated by writing them off against the company's losses as receivables for which the statute of limitations has expired. Special attention should be paid to the date of incurrence of the payable debt, the term of its repayment, the time of delay in the return of the debt, the reasons for its incurrence. *Practical implications.* It is possible to accelerate the repayment of receivables by getting acquainted with the financial condition of buyers and gaining confidence in their further solvency, timely execution of settlement documents, granting discounts to buyers for shortening the terms of payment of invoices, introducing penalties for late payments, releasing goods to buyers on prepayment terms, etc. In order to effectively manage the liabilities of Trans-Market, LLC, it is necessary to monitor the ratio of receivables and payables, to monitor the status of payments for overdue receivables, to timely identify unacceptable types of liabilities, which primarily include overdue debts to suppliers, payments to the budget, etc. *Value/originality.* A comprehensive analysis of receivables and payables in the enterprise management system is optimal. It makes it possible to assess the real state of the company's receivables and payables, to identify "bottlenecks" in the management of this type of debt, and to develop measures aimed at reducing or recovering overdue or doubtful receivables.

**Key words:** analysis, calculations, accounts receivable, accounts payable, comprehensive assessment.

**JEL Classification:** H21, G12, P 34, F63, R13

## 1. Introduction

The prolonged state of economic decline in Ukraine, caused by crisis phenomena of a purely economic nature, political instability, and

shortcomings in the legal and judicial systems, led to a deterioration of solvency and payment discipline in the fulfillment of obligations to product suppliers.

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The combination of factors of action and inaction in the country's economy creates a threat of transition from the crisis stage to chronic bankruptcy and poverty, which is accompanied by a sharp decrease in motivation for highly productive work and delays in payment of current obligations, including wages. These factors have a systemic impact and threaten the financial security of enterprises.

The process of ensuring the efficiency of any organization requires constant attention and effective actions of the management. Currently, the system of sustainable development of economic relations is facing new threats caused by COVID-19 and full-scale war. Business structures are forced to find new tools for solving urgent problems in order to avoid socio-economic threats and reduce the risk of capital loss. To this end, the management of enterprises must search for effective tools of activity management in order to reduce the risks of influence of adverse factors of the external environment, which in today's conditions increases the relevance of effective use of financial instruments, one of which is settlement operations.

## **2. Analytical provision of settlements with debtors**

The financial and economic sphere determines the functioning and is connected with the settlement system, which mediates the financial and economic activity. Calculations by their nature are characterized by a constantly active, dynamic nature and require managerial influences, which are produced in the structure of financial management on the basis of processing a large amount of various economic information, while the main role in the general population is given to analytical provision.

Domestic scientists have studied the system of analytical support of the enterprise in the conditions of anti-crisis management. The authors proved that the anti-crisis management system should provide a proper approach to the enterprise's debt, for its effective management, ensure the optimal ratio of receivables and payables, prevent their overdue occurrence, systematically monitor payments. Scientists have detailed the procedure of organizing the analysis of the enterprise's debt and have highlighted a set of indicators for evaluating its effectiveness. (Mulyk, Tomchuk, Fedoryshyna, 2019)

Receivables management is an important task of modern business, therefore determining its size, composition, structure and dynamics, as well as identifying the impact of changes in settlement operations on the financial condition of the enterprise is the main goal of its analysis. Due to unfavorable business conditions, its objective value plays an important role in ensuring the liquidity and financial stability of the enterprise. (Tomchuk, Sydorenko, 2019)

It should be noted that the effective management of receivables directly depends not only on their quantitative analysis, but also on their qualitative analysis, which provides a clear understanding of what type of products (goods, works, services) have the largest amount. In addition, an effective management system of a business entity requires identification of threats and risks, determination of the share of receivables in the total amount of current assets of the enterprise, their average value and distribution by maturity.

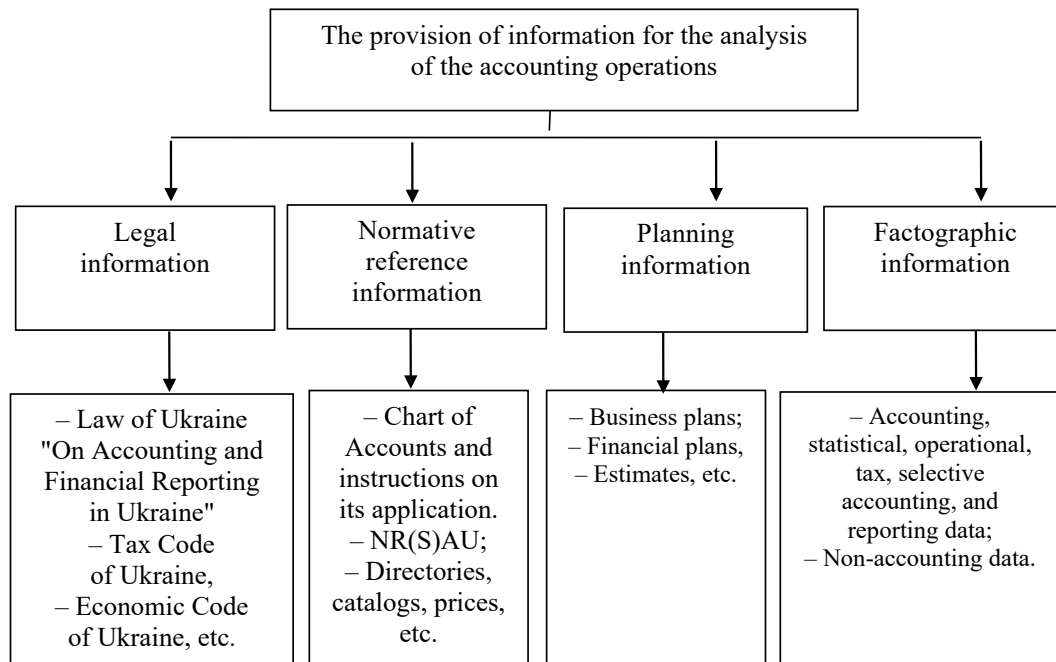
The current state of business accounting is characterized by an unsatisfactory level of payment discipline of subjects of economic activity and requires strengthening of their control both by state authorities in the sphere of economic policy implementation and by the enterprises themselves. The main source of information are regulatory and legal acts, accounting data (Figure 1).

The ability to correctly apply various regulatory and legal acts, which sometimes conflict with each other, helps to organize accounting at the appropriate level, as well as to conduct a timely analysis of receivables. Such measures contribute to increasing the efficiency of management decisions in the company.

At present, information resources are considered as an inseparable unit with computer systems, which ensure the collection of information, its registration, storage, rapid transmission and transformation.

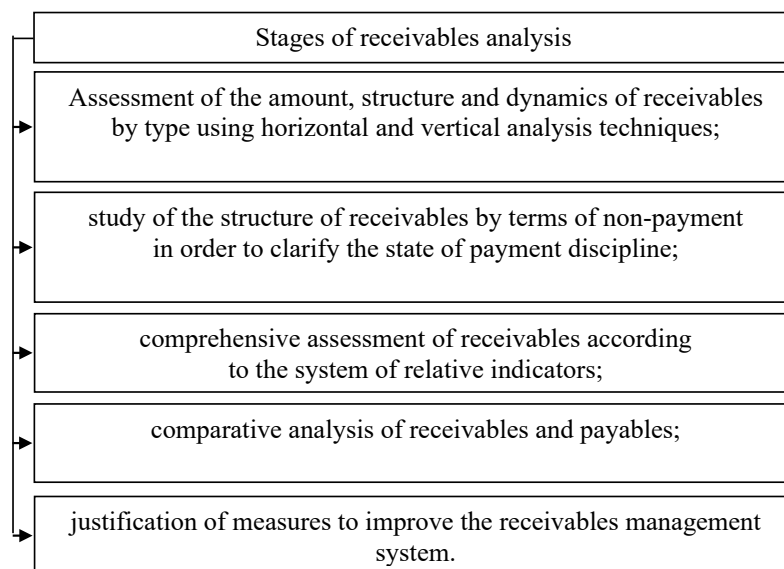
In the course of this research, the stages of the receivables analysis process were identified (Figure 2).

Non-payment of receivables by the counterparty results in a reduction of working capital, a decrease in the dynamics of cash flows, an increase in the risk of losses, and an increase in the time resources of accounting personnel. In addition, the amount of receivables



**Figure 1. Information for the analysis of accounting operations**

Source: generalized and formed by the author (Luchko, Zhukevich, Farion, 2016)



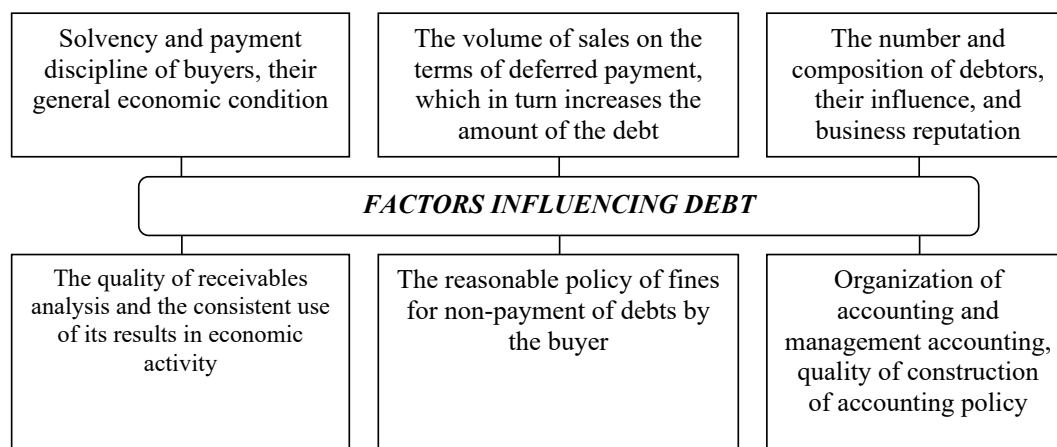
**Figure 2. Stages of receivables analysis**

Source: generalized and formed by the author (Tiutiunnyk, Dorohan-Pysarenko, Tiutiunnyk, 2016)

of the company is influenced by both internal and external factors (Figure 3), the identification of which is the result of its qualitative analysis.

Consider the content of the above stages of analysis. An increase or decrease in receivables has a significant impact on the turnover of current assets and, therefore, on the financial position of

the company. Its value depends on the volume of sales of products (goods, works, services), terms of settlements with buyers (advance payment, subsequent payment), term of payment, payment discipline of buyers, organization of control over the status of settlements with debtors, claims work in the enterprise, etc.



**Figure 3. Factors affecting the composition, structure, and volume of the company's receivables**

Source: generalized and formed by the author (Bulat, 2020; Kruchak, 2016)

A sharp increase in receivables and their share in current assets may indicate either an increase in the volume of sales or an ineffective credit policy of the company with regard to its customers, their insolvency. A decrease in receivables is considered positive if it is the result of a shortening of their repayment period. If the decrease in receivables is associated with a decrease in the volume of product sales, it indicates a decrease in the level of business activity of the company. Therefore, an increase in receivables is not always evaluated negatively, and a decrease – positively (Tomchuk, 2021).

In the case of an increase in the total amount of receivables during the period under review, the measures taken by the company's management to collect the receivables are evaluated (completeness and timeliness of work on receivables). In the case of a decrease, it is clarified how this debt was repaid: with money,

by mutual settlement or by write-off (at the same time, the reasons for the write-off are indicated). (Tomchuk, 2021)

Assessment of the structure and dynamics of settlement operations is carried out using a methodical comparative method.

The analysis of the company's receivables allows to estimate the possible amount of income that can be received in the form of fines, penalties or fines from debtors who have delayed payment. In the process of analysis it is necessary to study, first of all, the dynamics of the receivables of the business entity. (Stepanenko, Dubovyk, 2022)

The analysis of receivables of Trans-Market, LLC shows that in 2021, in comparison with 2019, receivables will increase by 14611 thousand UAH or by 63.65% due to the increase in receivables for goods, works and services – by 5763 thousand UAH and according

Table 1

**Analysis of the composition and structure of Trans-market LLC's receivables for the years 2019–2021**

Indicators	2019		2020		2021		Deviation, (+, -)	Growth rate, %
	thousand UAH	%	thousand UAH	%	thousand UAH	%		
1	2	3	4	5	6	7	8	9
Accounts receivable for:								
– goods, works, and services	8670	37,77	10713	30,62	14433	38,42	5763	166,47
– issued advances	-	-	8	0,02	221	0,59	221	-
– with a budget	1029	4,48	10	0,03	16	0,04	- 1013	1,55
– from internal calculations	-	-	24226	69,26	22876	60,89	22876	-
Other current receivables	13256	57,75	25	0,07	20	0,06	- 13236	0,15
Total	22955	100	34982	100	37566	100	14611	163,65

Source: calculated by the author according to the company studied

to internal calculations – by 22876 thousand UAH. A significant decrease in receivables is observed in relation to settlements with the budget – by 1013 thousand UAH and other short-term receivables – by 13236 thousand UAH.

In the structure of receivables, the specific weight of receivables in 2020 and 2021 from internal calculations prevails and is 69.26% and 60.89%, respectively. And other current receivables for 2019 is 57,75%. More serious changes in the structure of receivables of Trans-Market, LLC took place in 2019. Thus, the specific weight of receivables for products, goods, works and services is 37,77%, and the specific weight of other current receivables is 57,75%. This shows that the debt for products, goods, works and services has been repaid, and in 2021 this company has observed a slight increase in receivables for products in the structure, which is 38.42%, which is caused by the expansion of activities and increase in the number of buyers.

Receivables are divided into:

- debts for which the payment deadline has not been reached;
- debts not paid within the specified period;
- debts for which the statute of limitations has expired. (Shkol'nik, 2016)

According to Form No. 5 "Notes to the financial statements", the composition, structure and dynamics of receivables for goods, works, services and other short-term receivables are studied for the following periods: up to 12 months, from 12 to 18 months, from 18 to 36 months. The indicators are compared in terms of dynamics, and the reasons for the increase in the length of time that funds remain in receivables are clarified (for example, inefficient settlement system, bankruptcy buyers, etc.).

On the basis of the information provided in Form 5 "Notes to the financial statements", analyze the structure and dynamics of short-term receivables according to the terms of default (Table 2).

These tables show that in the structure of receivables "Trans-Market, LLC" has the entire share of debts due up to 12 months by the end of 2021. In comparison with the base year, the debt up to 12 months increased by 34,7% and is fully repaid. In the structure of receivables by non-payment terms, debts for goods, works and services continue to dominate – 99,8% in 2020 and 99,9% in 2021.

During the analysis of overdue receivables, the stages are determined at which the largest amount of these receivables has arisen; it is found

Table 2  
**Analysis of current receivables by delinquency**

Indicators	Total	including non-repayment terms		
		up to 12 months	from 12 to 18 months	from 18 to 36 months
2020 year				
Accounts receivable for goods, works, services, thousand UAH	10713	10713	-	-
Share, %	99,8	99,8	-	-
Other current receivables, thousand UAH	25	25	-	-
Fraction, %	0,2	0,2	-	-
Total, thousand UAH	10738	10738	-	-
Fraction, %	100	100	-	-
2021 year				
Accounts receivable for goods, works, services, thousand UAH	14443	14443	-	-
Fraction, %	99,9	99,9	-	-
Other current receivables, thousand UAH	20	20	-	-
Fraction, %	0,1	0,1	-	-
Total, thousand UAH	14463	14463	-	-
Fraction, %	100	100	-	-
2021 in % to 2020	134,7	134,7	-	-

Source: calculated by the author according to the company studied



out which of the types of receivables are the most overdue; bad receivables (missing primary documents, debtor enterprises liquidated and excluded from the Unified State Register of Enterprises and Organizations of Ukraine, etc.) and receivables due to write-off in connection with the expiration of the statute of limitations.

The existence of overdue receivables, especially bad debts, classified as doubtful debts, as well as unjustified growth of receivables in general, negatively affects the financial position of the company and leads to a shortage of financial resources. Bad debts are repaid by writing them off against the Company's losses as receivables for which the statute of limitations has expired.

It is important to comprehensively evaluate receivables according to the system of relative indicators (Table 3).

A complex criterion of liquidity and quality of receivables is their turnover, which can be measured by the number of turnovers and the speed of turnover in days. The turnover rate of receivables indicates the number of turnovers per calendar year. The receivables turnover period is the average number of days it takes for receivables to be returned to the company.

The ratio of receivables to tangible assets and the ratio of current receivables to current assets

indicate the extent to which tangible assets and current assets are built up at the expense of debts owed to the company.

The improvement of the state of settlement and payment relations is indicated by the fact that the ratio of current receivables to current liabilities approaches the value of 1. Another important sign of the improvement of the financial condition of the enterprise is a decrease in the dynamics of the indicator, which characterizes the ratio of receivables to net income from the sale of products (goods, works, services).

According to the methodology presented in Table 3, the dynamics of the indicators of comprehensive evaluation of receivables are calculated and analyzed (Table 4).

The data of the complex evaluation of receivables show negative dynamics. Thus, the turnover ratio of receivables decreased from 6,361 in 2019 to 5.395 in the reporting period (by 0.966 points), and the duration of a turnover of receivables – on the contrary – increased by 10 days. This dynamic is explained by the increase in the average annual value of receivables (by 23872 thousand UAH) in connection with the growth of the net profit from the sale of products (goods, works, services) (by 114907 thousand UAH).

Table 3

**Indicators for the comprehensive assessment of receivables**

Indicator	Calculation procedure based on the data of forms No. 1, 2 (rows, columns)
1. Accounts receivable turnover ratio	<u>F. № 2: 2000</u> F. № 1: $(1040, \text{the sum of } 1125 \text{ per } 1155^1, \text{ column } 3+ + 1040, \text{ the sum of } 1125 \text{ per } 1155^1, \text{ column } 4) \div 2$
2. Duration of a turnover (average return period) of receivables, days	$360 \div \text{accounts receivable turnover ratio}$
Share of receivables in property, %	<u>F. № 1: <math>(1040, \text{ the sum from } 1125 \text{ to } 1155^1) \times 100</math></u> F. № 1: 1300
Share of current receivables in current assets, %	<u>F. № 1: <math>(\text{the sum from } 1125 \text{ to } 1155^1) \times 100</math></u> F. № 1: 1195
Ratio of current receivables and current payables	<u>F. № 1: the sum from 1125 to 1155<sup>1</sup></u> F. № 1: the sum from 1610 to 1650 <sup>2</sup>
The ratio of receivables to net income from the sale of products (goods, works, services), %	F. № 1: $((1040, \text{ the sum from } 1125 \text{ to } 1155^1, \text{ column } 3 + 1040, \text{ the sum from } 1125 \text{ to } 1155^1, \text{ column } 4) \div 2) \times 100$ F. № 2: 2000

<sup>1</sup> Excluding the row 1136.

<sup>2</sup> Excluding the row 1621. Including additional articles: rows 1635, 1640, 1645, 1650

Source: created by the author based on research results

Table 4

**Comprehensive assessment of receivables according to the system of relative indicators**

№	Indicators	2019	2020	2021	Deviation, (+,-)
<i>Initial information, thousand UAH</i>					
1	Net income from the sale of products (goods, works, services)	80805	141517	195712	114907
2	Average annual receivables	12702	28968,5	36274	23872
3	Average annual amount of current receivables	5168	9691,5	12573	7405
4	Average annual amount of current liabilities	4078	2319	3860,5	- 217,5
5	Average annual property value	21338,5	47014,5	58328,5	36990
6	Annual average value of current assets	21196,5	46604	57760,5	36564
<i>Indicators of comprehensive assessment of receivables</i>					
7	Accounts receivable turnover ratio (item 1÷item 2)	6,361	4,885	5,395	- 0,966
8	Duration of one turnover (average return period) of receivables, days (360÷ item 7)	56,595	73,695	66,728	10,133
9	Share of receivables in property, % (item 2÷ item 5×100)	59,526	61,616	62,189	2,663
10	Share of current receivables in current assets, % (item 3÷ item 6×100)	24,381	20,795	21,767	- 2,614
11	Ratio of current receivables and current payables (item 3÷ item 4)	1,267	4,179	3,257	1,99
12	The ratio of receivables to net income from the sale of products (goods, works, services), % (item 2÷ item 1×100)	0,157	0,205	1,383	1,226

Source: calculated by the author according to the studied company

The share of receivables in fixed assets increased by 2,663%, and the share of short-term receivables in current assets decreased by 2,614%. The indicator characterizing the ratio of receivables to net income from the sale of products (goods, works, services) increased by 1,226%, which is a sign of deterioration in the state of settlements with debtors.

As a result of the increase in the average annual value of short-term receivables (by 7405 thousand UAH) compared to the decrease in the average annual value of short-term payables (by 217,5 thousand UAH), the ratio of short-term receivables to short-term payables increased by 1,99 points (at the optimal level of about 1). If in the base year by UAH 1 current liabilities amounted to UAH 1.27 of current receivables, then in the report – 3.26 hryvnia. Therefore, for Trans-Market, LLC and in the future the questions of improvement of the state of settlement and payment relations remain relevant.

After conducting research, it is believed that it is possible to accelerate the repayment of receivables through:

- become familiar with the financial condition of the buyers and gain confidence in their continued solvency;
- timely execution of settlement documents;
- provision of discounts to buyers for the shortening of payment terms on invoices;

- introduction of fines for late payments;
- release of goods to buyers on prepayment terms, etc.

### 3. Analytical preparation of settlements with creditors

A significant part of the sources of capital formation of the enterprise is made up of borrowed funds, including accounts payable. Therefore, along with receivables, it is necessary to analyze current liabilities, their composition, structure and dynamics, and then conduct a comparative analysis with current receivables (Tiutiunnyk, Dorohan-Pysarenko, Tiutiunnyk, 2016)

According to the author, the analysis of settlement operations should meet the following requirements:

- to provide a systematic approach (the object of research – computational operations – should be considered as a complex dynamic system consisting of many elements that are somehow connected both with each other and with the external environment);
- prompt (immediately upon receipt of reports or other important data containing information on settlement operations, with the aim of promptly preventing their negative impact on the financial position of the Company);

- systematic (it should be carried out on a continuous basis, since the settlement operations are highly time-dependent and their structure and the degree of overdue messages can change significantly even within a short period of time);
- observe the principle of priority (factors influencing the object of research (computational operations) should be considered in the order of intensity of their influence on such an object);
- be objective (reliably reflect the results of the company's work);
- be effective (effectively influence the results of the activity of Trans-Market, LLC);
- efficient (the results of the analysis of accounting operations must justify the cost of their implementation);
- expressive (its results should be clear and accessible to external and internal users).

A.M. Savchenko and I.R. Korotaeva emphasize that the source of the analysis of liabilities is the balance sheet (financial statement). At the same time, in the process of analyzing the balance sheet, analytical accounting data are also examined, in which the information is more extensive. (Savchenko, Korotaeva, 2019)

As O. Sharapa notes, the analysis of liabilities allows the company to determine changes in the size of the enterprise's liabilities in comparison with the beginning of the reporting period or another basis of comparison; calculate the

optimal ratio of receivables to liabilities; determine and assess the risk of liabilities, their impact on the financial position of the enterprise, to determine the acceptable level of this risk and measures to reduce it; to find a rational relationship between the amount of liabilities and the volume of sales, to determine the feasibility of increasing the sale of products, goods and services on credit, to determine the limits of discounts in order to accelerate the payment of invoices; to forecast the state of the Company's debt obligations during the current year, which will make it possible to improve the financial results of its activity. (Sharapa, 2016)

Methods of analyzing accounts payable according to various scholars are shown in Table 5.

When analyzing the liabilities of Trans-Market, LLC, the main indicators for assessing their condition and quality are used, the characteristics of which are presented in Table 6.

The following are the main directions of accounts payable analysis:

- analysis of the composition and dynamics of accounts payable indicators;
- analysis of the structure of payables;
- comparative analysis of the company's receivables and payables.

Characteristics of qualitative changes of liabilities in the structure of the company's liabilities can be obtained using horizontal and vertical analysis of the balance sheet. Horizontal

Table 5

**Scientific approaches to the methodology of accounts payable analysis**

Scientist	Methodology for analyzing accounts payable
1	2
Volovych O.B.	It is recommended to use the methods of grouping and vertical analysis. Debts are divided into groups according to certain criteria, depending primarily on the purpose of the analysis. First of all, a typological grouping is carried out, and then a structural one, where the specific weight of each group in the total amount of the company's debts is calculated.
Miahkykh I.M.	Application of the method of calculation and analysis. On the basis of the data on receivables and payables and the factors influencing them, the dependency of the indicators of the shares of receivables and payables is determined.
Konon B.	Use of horizontal, vertical, trend analysis and financial ratios method. A number of solvency and liquidity ratios are used to analyze the company's ability to repay its current liabilities.
Popovych O.V., Solovei K. V.	Development of an organizational and methodological model for the analysis of accounts payable. Determination of the composition and structure of the company's accounts payable, analysis of deviations and trends in changes in accounts payable items over a number of years.
Paianok T. M.	The model calculates liabilities using econometric methods, namely regression analysis and time series analysis. At the micro level, it predicts its impact on the company's production stocks and the results of its activities with the help of the STATGRAPHICS application.

Source: generated by the author based on (Volovych, 2013; Miahkykh, 2013; Konon, 2012; Popovych, Solovei, 2016; Paianok, Lagovskyi, 2019)



Table 6

**Characteristics of analytical indicators of the state and quality of accounts payable**

Indicators	Calculation	Characteristic	Normative value
1	2	3	4
Accounts Payable Turnover Ratio	Ratio of cost of goods sold to average accounts payable.	An indicator of business activity that shows the number of sales made by accounts payable during the year.	Its growth means an increase in the speed of payment of debts by the enterprise, a decrease – an increase in purchases on credit.
Coverage ratio	The ratio of average accounts payable to net sales (revenue).	It characterizes the amount of liabilities per one hryvnia of turnover from the purchase of raw materials and materials.	A decrease of this indicator in dynamics is positive.
Payable debt repayment period	Relationship between period length and accounts payable turnover ratio.	The value of the ratio indicates the period during which the company uses the funds of its suppliers and contractors.	A decrease of this indicator in dynamics is positive.
Average income from product sales per employee	Ratio of net sales revenue to the average number of employees.	The indicator characterizes what share of sales income falls on an employee of the enterprise.	There is no single normative value. Its increase in dynamics is positive.
The ratio of receivables and payables	Relation of receivables and payables.	This indicator characterizes the quality of the company's commercial lending policy and takes into account the impact of receivables and payables on liquidity and solvency.	The optimal value of the indicator is a value close to one. In this case, the company can credit its customers at the expense of suppliers.

Source: generated by the author based on (Savchenko, Korotaeva, 2019)

Table 7

**Analysis of the composition and structure of the liabilities of Trans-Market, LLC for the years 2019–2021**

Indicators	2019		2020		2021		Deviation, (+, -)	Growth rate, %
	thousand UAH	%	thousand UAH	%	thousand UAH	%		
1	2	3	4	5	6	7	8	9
Current accounts payable for:								
– goods, works, services	1496	19,78	3142	64,15	4579	95,24	3083	306,08
– calculations with the budget	94	1,24	33	0,67	-	-	- 94	-
– insurance calculations	20	0,26	35	0,71	-	-	- 20	-
– payroll calculations	82	1,09	138	2,82	141	2,93	59	171,95
- for advances received	-	-	14	0,28	40	0,84	40	-
– from internal calculations	-	-	1534	31,32	-	-	-	-
Other current commitments	5869	77,63	2	0,05	48	0,99	- 5821	0,82
Total	7561	100	4898	100	4808	100	- 2753	63,59

Source: calculated by the author according to the studied company

analysis allows to compare indicators of liabilities for different periods. Such an analysis is presented in Table 7.

The analysis of the state of liabilities of Trans-Market, LLC for the years 2019–2021 shows a decrease in the total amount of liabilities by 2753 thousand UAH, or in percentage by

36,41% due to the decrease in other current liabilities by 5821 thousand UAH and the absence of settlements with the budget and insurance in the year 2021.

Analyzing the structure of payables, it can be seen that in 2019, the specific weight of payables for goods, works and services was 19.78%,

Table 8

**Accounts payable health and quality indicators**

Indicators	2019	2020	2021	Deviation, (+,-)
1. Turnover ratio of creditor debt	49,436	46,624	39,552	- 9,884
2. Coverage ratio	0,050	0,016	0,019	- 0,031
3. Payable debt repayment period, days	7,282	7,721	9,102	1,82
4. Average income from product sales per employee, thousand UAH	2126,4	2721,5	3558,4	1432
5. The ratio of receivables and payables	1,267	4,179	3,257	1,99

Source: calculated by the author according to the company studied

and already in 2020 and 2021, the growth of this indicator is observed and amounts to 95.24%, i.e., in 2021, compared to 2019, the specific weight of payables has increased by 306.08 points. As a rule, the main reason for changes in the structure of liabilities is non-payment.

Special attention should be paid to the date of incurrance of liabilities, the term of their repayment, the time of delay in the repayment of liabilities and the reasons for their incurrance (Analytical support of managing enterprise's accounts payable, 2016, Tomchuk). However, it can be argued that the increase in obligations to suppliers and contractors, as well as for wages and insurance, is a negative phenomenon. This may indicate that the company did not have enough funds to repay these obligations on time. Regarding all other indicators, there is a tendency to decrease at the end of the year, which is a positive phenomenon.

The quantitative and qualitative state of the liabilities is characterized by indicators for which the calculation methodology is described in Table 6. The dynamics of changes in these indicators are shown in Table 8.

These tables show that at the end of 2021, the turnover ratio of accounts payable decreased by 9,884 points due to an increase in purchases on credit.

The quality of accounts payable is also positively characterized by a decrease in the coverage ratio by 0.031 points and an increase in the average income from accounts payable by 0.031 points.

Sales of products per employee increased by 1432 thousand UAH. The increase of the payment term by 1,82 days negatively characterizes the quality of the payables.

In the course of the analysis, it is advisable to compare the amounts of receivables and payables. As a result, it can be revealed:

- increase or decrease in receivables;
- increase or decrease in accounts payable.

The coverage of receivables by payables is positively evaluated. The results of such an analysis may indicate that:

- an increase or decrease in receivables and payables could have an adverse effect on the Company's financial condition;
- a decrease in accounts receivable may result from a deterioration in customer relationships,

Table 9

**Comparative analysis of receivables and payables of Trans-Market, LLC for the year 2021**

Calculations	Receivables	Payables	Excess of indebtedness	
			receivables	payables
Debt according to calculations:				
- for goods, works and services	14433	4579	9854	-
- with a budget	16	-	16	-
- from insurance	-	-	-	-
- from wages	-	141	-	141
- according to issued / received advances	221	40	181	-
- from internal calculations	22876	-	22876	-
Other current debt	20	48	-	28
Total	37566	4808	32927	169

Source: calculated by the author according to the company studied

i.e., a decrease in the number of customers purchasing products;

– an increase in accounts receivable over accounts payable may result from the insolvency of buyers.

The increase in the ratio of receivables to liabilities by 1.99 points also negatively characterizes the quality of liabilities and indicates interest-free loans to other companies, which is the cause of the financial difficulties of Trans-Market, LLC.

Some excess of payables over receivables will have a positive effect on the company's financial position. At the same time, the company must repay its debts regardless of the state of receivables. According to analysts, if payables exceed receivables, the company is using funds rationally, i.e., it is temporarily attracting more funds to sales than it is withdrawing from sales. Accountants believe that the company is obliged to repay its liabilities regardless of the state of its receivables.

Therefore, when analyzing receivables and payables, it is necessary to study the causes of each type of debt, taking into account the specific production situation of the company. (Kruchak, 2016)

A comparative analysis of receivables and payables is presented in Table 9.

Comparative analysis of receivables and payables of Trans-Market, LLC for 2021 showed that the total excess of receivables over payables amounts to 32927 thousand UAH and indicates a violation of payment discipline of buyers and in the future may lead to the need to attract expensive bank credits and loans to ensure the current production and economic activity of the enterprise.

Short-term receivables exceeded short-term liabilities for such items as goods, works and services by 9854 thousand UAH; according to budget calculations – by 16 thousand UAH; for issued advances – by 181 thousand UAH; according to internal calculations – by 22876 thousand UAH.

Trade payables exceeded trade receivables for the following items: wages – by 141 thousand UAH. Other current liabilities exceeded other current receivables by 28 thousand UAH.

Therefore, the excess of receivables over current liabilities is not positive for Trans-Market, LLC because it is obligated to pay its

creditors whether or not it receives receivables from its debtors.

When analyzing the state of current settlements with creditors, it is necessary to take into account that it is impossible to pay off receivables, except by offsetting. In addition, accounts payable are not a normal source of coverage of receivables, as mutual lending is prohibited by law.

In order to improve the state of settlements with creditors, it is important to observe settlement and payment discipline, to develop, on the basis of accounting and analytical information, such managerial influences that contribute to optimizing the volume and structure of debts, to preventing the emergence of unjustified debts, and to accelerating the turnover of funds invested in settlements.

Therefore, it is necessary to effectively manage the liabilities of Trans-Market, LLC:

- monitor the ratio of receivables and payables;
- monitor the status of payments for overdue debts, and identify in a timely manner unacceptable types of payables, which primarily include overdue debts to suppliers, payments to the budget, etc.

#### **4. Directions for improving analytical support for billing operations**

Payment and settlement relations with business entities require an effective system of analysis in the company. It provides management with reliable and timely information on the state of settlement operations, the presence of "weak points" and possible ways to eliminate them. (Horbachova, Lahai, 2010)

The need to improve the analysis of payment operations is confirmed by the increase in the share of receivables in the assets of companies.

One of the main indicators that characterize the state of receivables is the receivables turnover ratio, which shows its share in sales, but does not reflect the intensity of cash flow. (Tiutiunnyk, Dorohan-Pysarenko, Tiutiunnyk, 2016) Therefore, for a more detailed description of the state of receivables of the enterprise, M.K. Tereshchenko suggests to introduce the coefficient of intensity of movement of receivables (Tereshchenko, 2014):

$$CI_{mr} = \frac{MR(0-3)}{MR(3-12)}, CI_{mr} \geq 0, \text{ increment}$$

where  $CI_{mr}$  – coefficient of the intensity of the movement of receivables;

$MR(0-3)$  – progressive circulation of funds; (a sample of receivables from buyers and customers for the period from 0 to 3 months. The sample can be a shorter period, depending on the production volume: the smaller the production volume of the enterprise, the shorter the period it can afford to invest in receivables), UAH;

$MR(3-12)$  – regressive circulation of funds (a sample of receivables from buyers and customers for the period from 3 to 12 months), UAH.

The proposed indicator characterizes the intensity of turnover of receivables from buyers and customers, and also reflects the actual state of the enterprise: the higher the ratio of  $CI_{mr}$ , the faster the turnover of cash and the more efficient the operation of the enterprise.

M.K. Tereshchenko suggests introducing a demand factor for the company's products as the second indicator, which relatively reflects the actual state of the company:

$$C_d = \frac{SP_t}{VP_t}, C_d \leq 1, C_d \rightarrow 1,$$

where  $C_d$  – coefficient of demand for manufactured products;

$SP_t$  – sold products for the time period  $t$ , UAH;

$VP_t$  – the total volume of production during the time period  $t$ , UAH.

At the optimal operation of the enterprise, the coefficient of demand for the manufactured products should be one, but, as a rule, part of the products cannot be sold and remain in the enterprise's warehouse. Therefore, the smaller the value of the  $C_d$  indicator, the more products remained that were not sold and, accordingly, not in demand on the market.

The advantages of the proposed indicators lie in the simplicity of their calculation because the components of the formulas are one of the main economic indicators of the enterprise's work, which in absolute form clearly reflect the actual financial state, and the calculation of their result is the relative financial state of the enterprise's work. (Tereshchenko, 2014)

The methods of receivables management are diverse, so L.A. Kostyrko. distinguishes the following categories (Kostyrko, 2015):

Table 10

**Parameters of balancing the credit policy of the company by means of analysis**

Parameters	Characteristic
To whom to sell goods (works, services) on credit (process of implementation on the terms of subsequent payment)	Development of customer evaluation standards
Conditions for granting a commercial loan	Dependence of the cost of goods (works, services) on the volume of sales, terms of payment, fulfillment of other tasks assigned to the buyer
Volume of commodity commercial credit	Parameters for determining the product credit limit
Sanctions	Description of punitive measures for non-payment of debt
Penalty	The procedure for repayment of overdue receivables

Source: prepared by the author on the basis of (Stepanenko, Dubovyk, 2022)

Table 11

**Monitoring of debtors**

Debtors	Amount of debt, thousand UAH	Maturity period								Total, thousand UAH	Specific weight, %
		January		February		...		January			
		thousand UAH	%	thousand UAH	%	thousand UAH	%	thousand UAH	%		
1	2	3	4	5	6	7	8	9	10	11	12
1.											
...											
Other debtors											
Total, thousand UAH											
Specific weight, %											

Source: prepared by the author on the basis of (Riznyk)



- 1) economic measures for the analysis of receivables – continuous analysis and monitoring of the status of settlements, delays in payments by contractors and identification of the reasons, assessment of existing debts, monitoring of the financial status of counterparties;
- 2) legal actions – control over the availability of necessary payment documents (invoices, bills), as well as changes in the terms of contracts with clients;
- 3) organizational and management methods – monitoring information on the fulfillment of contract terms by counterparties;
- 4) general security measures are designed to prevent threats to the Company's operations.

O.I. Stepanenko and M.F. Dubovyk suggest to prevent the growth of receivables and to create a system of evaluation of debtors on the basis of their reliability, solvency and the level of risk of non-payment of debts, to create a reserve for doubtful debts, to use factoring. A well-designed receivables management policy will allow to increase the volume of sales of products (goods, works, services), establish long-term business relationships, maximize profits, while maintaining the liquidity and solvency of the company, reducing the level of operational risk and increasing financial security. (Stepanenko, Dubovyk, 2022)

According to the authors, credit policy affects the process of debtor management, so the financial manager should form it at the optimal level, at which profitability and liquidity will be equal. At the same time, it is worth finding a balance point between liberal and strict methods of promoting the repayment of receivables (Table 10).

Continuing the topic of improving the analysis of receivables, I.V. Riznyk draws attention to the scheme of regular monitoring of debtors by types of products, the amount of debt and repayment terms, which will allow timely control of the terms of repayment of obligations and easily determine overdue obligations, the period of detention and use (Table 11). (Riznyk)

The author believes that this will help to assess the quality of receivables.

The specificity of the manifestations and consequences of the presence of receivables as part of the assets of the enterprises under study leads the author to propose the method of

receivables analysis developed by O.M. Kiyashko (Kiyashko, 2013), which is methodically and informatively related to the need to provide the enterprise with current assets, namely cash (Figure 4).

Yu.M. Tyutyunnyk, L.O. Dovgan-Pysarenko and S.V. Tyutyunnik propose to use the method of analysis of current liabilities, which consists in studying their structure, turnover, degree of solvency and liquidity of the enterprise. These indicators are calculated on the basis of financial reporting data, taking into account such factors as income, operating expenses, and current assets of the enterprise. Such an analysis is carried out in order to determine the level of solvency of the company. (Tiutiunnyk, Dorohan-Pysarenko, Tiutiunnyk, 2016)

In addition, a feature of the proposed method is the inclusion of a system of methods: estimation of the maximum amount of receivables taking into account their liquidity, the duration of the operating cycle, as well as a modified method of analysis of the increase of receivables, which gives it a finished, holistic view. Concentration of the ways of recovery of receivables in the specified analysis mechanism, as well as the proposals of constant monitoring, provide the concept of importance in the use.

The proposed method can also be used to improve the analysis of accounts payable.

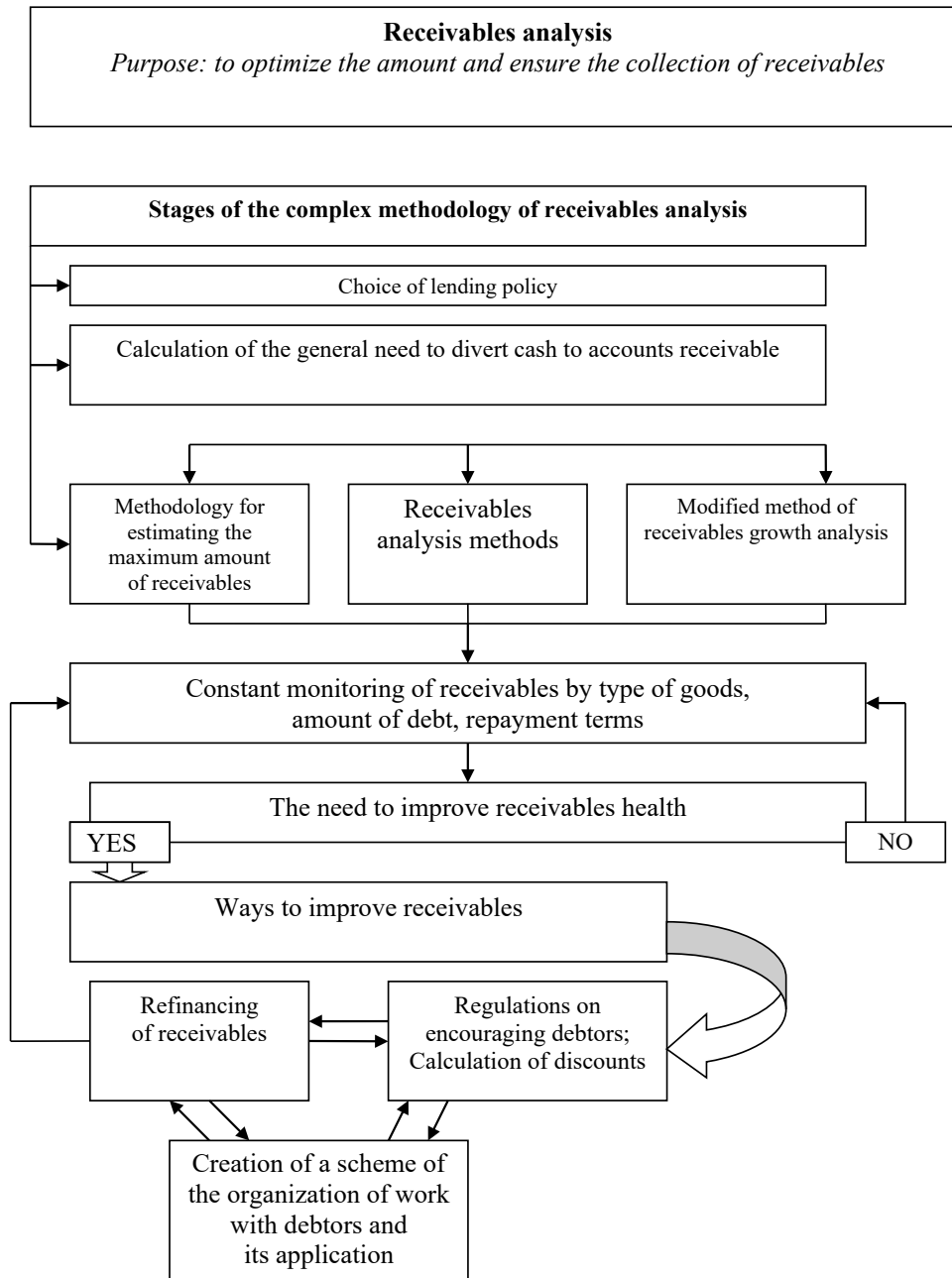
Accounts payable have a significant share in the formation of sources of financing. In the conditions of martial law, companies very often carry out their current activities at the expense of accounts payable.

Therefore, L.B. Bodenchuk and S.M. Kulikov offer a model of accounts payable management (Figure 5). (Bodenchuk, Kulikova, 2020)

From the point of view of the author of this article, according to the methodological principles of accounts payable analysis, the following blocks of analytical tasks should be considered as a priority:

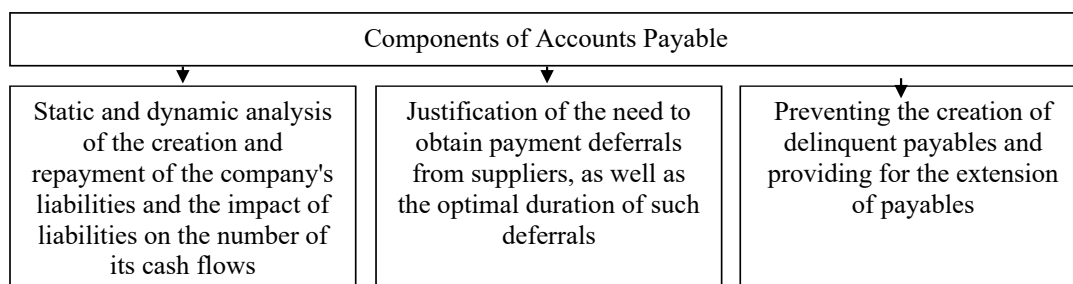
- assessment of the ability to fulfill one's obligations in the future;
- optimal ratio of receivables and payables;
- assessment of the risk of accounts payable, its impact on the financial condition of the enterprise, establishment of the permissible level of this risk and measures to reduce it;
- forecasting the state of debt obligations of farms within the current year, which will allow





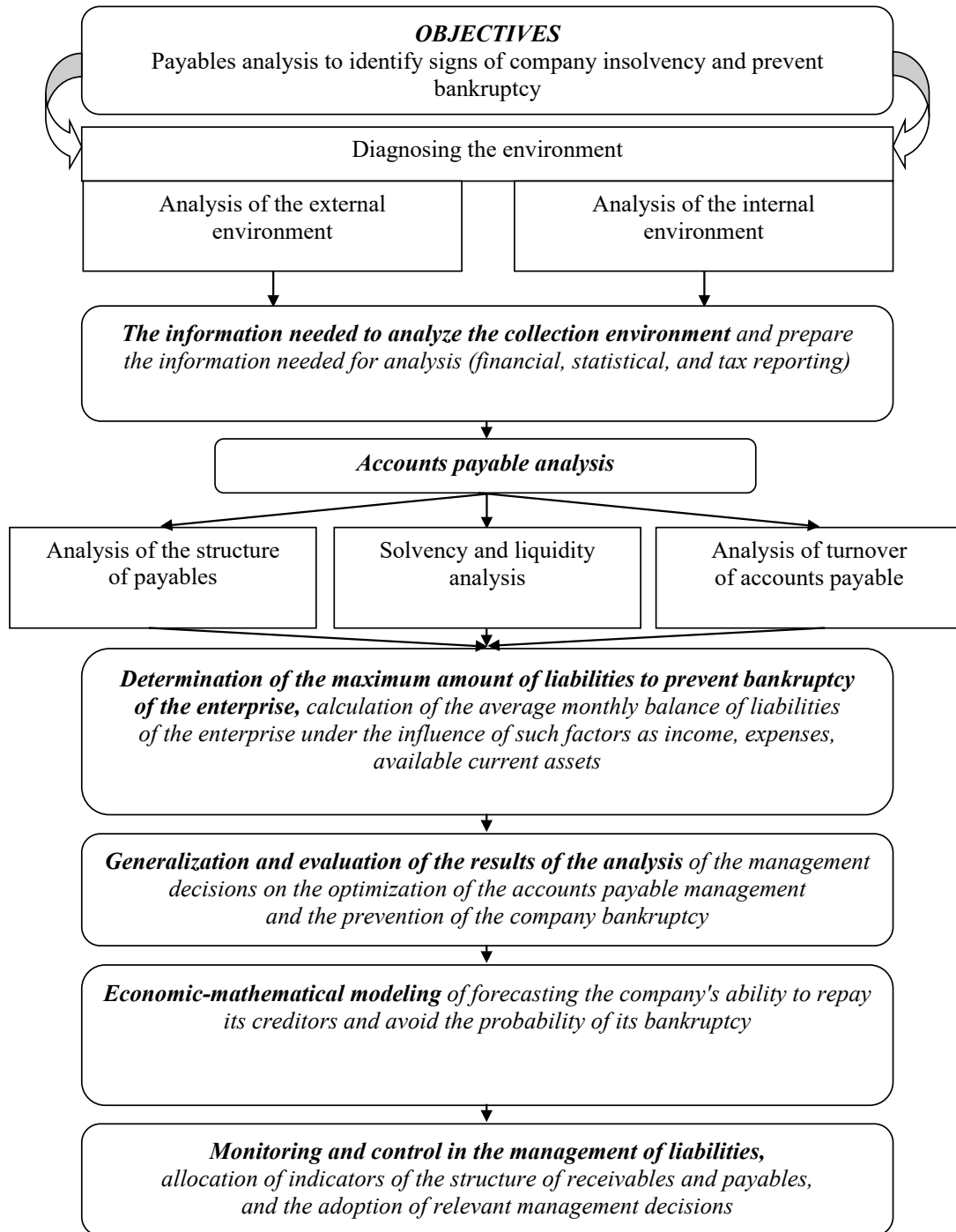
**Figure 4. Scheme of the methodology of complex analysis of receivables**

Source: prepared by the author on the basis of (Kiyashko, 2013)



**Figure 5. Accounts payable management model**

Source: created by the author based on (Bodenchuk, Kulikova, 2020)



**Figure 6. Methodology of complex analysis of accounts payable**

Source: proposed by the author

to improve the financial results of their activities.

Structuring of the method of analysis of settlements with debtors and creditors according to the time criterion depends on analytical studies in the system of operational, retrospective and prospective analysis in the enterprise management system. The feature

of application of operational analysis is determination of probable changes in the future in the case of debts and assessment of the legality of such transactions, monitoring of financial indicators of the analysis of receivables and payables.

The author of this article believes that it is advisable to improve the analysis of the

company's liabilities by classifying them by maturity: up to three months; three to six months; more than six months. (Tomchuk, 2016)

To improve the analysis of accounts payable, O. Sharapa also suggests monitoring and analyzing the state of settlements. (Sharapa, 2016) The author notes that systematic analysis of the company's payables is particularly important for a manufacturing and trading company in order to effectively manage its working capital and prevent crisis situations.

Having processed the research of scientists, author believe that in order to identify signs of insolvency of the company and prevent its bankruptcy, it is necessary to use a special method of complex analysis of liabilities (Figure 6).

The result of the retrospective and prospective analysis of settlements with debtors and creditors provides space for making strategic management decisions, which allows to determine the reasons for the change in the financial condition of the object under study and to reveal the future values of the main financial indicators regarding the further development of the enterprise.

### 3. Conclusions

The most important role in the efficiency of the economic activity of Trans-Market, LLC is played by the analysis of settlement operations in the conditions of full-scale war. Solvency, financial condition of the company and attractiveness of investment largely depend on the state of these calculations.

In order to effectively manage the activities of Trans-Market, LLC, it is not enough to carry out only quantitative analysis of indicators of

assessment of the current state and strategically important prospects of asset management. It is necessary to carry out qualitative analysis, the main task of which is to identify the types of products that generate the largest receivables or payables for goods, works and services, as well as to determine the most important customers (consumers, intermediaries, suppliers) of the enterprise.

Structuring of the method of analysis of settlements with debtors and creditors according to the time criterion depends on analytical studies in the system of operational, retrospective and prospective analysis in the enterprise management system. The feature of the application of the operational analysis is the determination of the probable future changes in the case of debts and the assessment of the legality of such transactions.

In order to achieve sustainable development of Trans-Market, LLC it is necessary to implement permanent monitoring of receivables and payables. At the same time, it is necessary to implement a clear organization of receivables management by highlighting the main concepts and procedures of the management system itself.

Increasing the efficiency of the analysis of settlements with debtors and creditors can be achieved under the condition of the analytical methodology of the integrated approach, the main task of which was to identify the signs of insolvency of the enterprise and to prevent its bankruptcy. For this purpose, a step-by-step analysis is proposed, which allows to determine the state of settlements and to select measures of debt management.

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