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## **RELATIONSHIP BETWEEN CONFLICT MANAGEMENT STRATEGIES AND ECONOMIC GROWTH OF ORGANISATION**

**Abstract.** Conflicts are considered to be the most unpredictable issues in organisations. It is mainly associated with the opposing of ideas and actions which results in causing a hostile state among the members that affects the performance of the organization. Hence, it is imperative for the organization to develop conflict management strategies for avoiding conflicts that can support in its growth. The aim of the following study is to evaluate the relationship between the conflict management strategies and economic growth of the organisation. The research design that is selected for the following study is triangulation method where the researcher attempts to explain the association between the conflicting management strategies and economic growth through interview, questionnaire survey and literature. As per the questionnaire survey, 85 professionals has completely provided with the data. In this manner, the correlation technique is performed in which it was identified that the conflict management and economic growth has significant and positive association. Moreover, the types of strategies that are associated with the economic growth comprises of accommodation, collective bargaining, compromising and confrontation whereas avoidance is found to have insignificant association with economic growth. Moreover, the factors responsible for the conflicts are

poor communication and information gap. The adverse effect of not resolving conflict is that it leads to demotivation of employees and lower productivity.

**Key words:** Conflicts; economic growth; conflict management; conflict resolution; conflict management strategies; project management; workplace; productivity; growth.

### **Introduction**

Conflicts are considered to be the most unpredictable issues that are faced in organisations among the people are working as a group. It is imperative for the managers to spend their working time for dealing with the conflicts and fallouts among the people. The term conflict is defined as a form of disagreement, argument, and discord among the individuals within group which is either unacceptable or resisted. Conflict is mainly associated with the opposing of ideas and actions which results in causing a hostile state (McKibben, 2017, p. 100); (Caputo, Marzi, Pellegrini, & Rialti, 2018, p. 519). Several types of conflicts exist in organization which comprises of interpersonal, intrapersonal, intra-group and intergroup conflicts.

Unable to solve the conflicts would negatively affect the performance of the organisation. Hence, it is imperative for the organisation to develop conflict management strategies for avoiding conflicts or quickly dealing with conflicts. There are several types of approaches that are available to the management which consists of avoidance, collaboration, accommodation, compromise and confrontation. The management is required to adopt suitable approach for dealing with the conflicts (Madalinaa, 2016, p. 807). The conflicts faced in the organisations are considered to be problematic for the economic growth due to influencing on the productivity and survivability of the organisation. The rationale behind the reduction of productivity is due to increasing frustration and stress level caused by conflicts that often causes employees to leave the firm. Hence, most of the skilled employees leave the organisation which in result causes decline to the overall productivity. Conflicts in organisation also lead towards mental health concerns for the employees where they usually become frustrated and often tend to avoid meeting or engaging with other members. This results in causing adverse effect to the economic growth of the organisation which lowers its productivity and its survivability in the industry (Isa A. A., 2015, p. 54). In the competitive environment, every organisation is aimed towards achieving competitive advantage and economic growth through establishing decent environment at the workplace. The improvement to the workplace contributes to the improvement of job performance where it leads to enhancing the economic growth of the organisation (Das, 2015, p. 09).

### **Background**

The term conflict management is referred to the procedure of minimizing the negative influence caused by the conflicts in the organisation while also emphasizing in enhancing the positive aspects. Conflict management skills and strategies are critically required in the organisations as the internal fighting and misunderstanding between the members of the organisations results in causing disruptions on the normal activities. The conflict in the organisation leads to delay to the projects while

also leading to failure of the project (Maiti & Choi, 2018, p. 1). Conflicts in the organisations are becoming highly complex in nature due to the presence of diverse and multifunctional teams along with the uniqueness and complex nature of the project. Conflicts are inevitable in the organisation where it has excessive negative influence on the entire industry. There are mainly two types of conflicts that are involved within the project which comprises of internal conflicts and interface conflicts. Internal conflicts usually arise among the members inside the organisations whereas interfaced conflicts are usually occurred due to the conflicts among the outside stakeholders (Alazemi, Mohiuddin, & Al-Juboori, 2019, p. 59). Hence, the following research is mainly conducted to evaluate the association between the conflict management strategies and economic growth of the organisation. The rationale behind conducting the study is due to no particular studies that are mainly conducted for investigating the association between conflict management and economic growth of organisation. Organisation often tend to lose their competitive edge mainly due unresolved conflicts as it leads to turnover of employees along with adversely affecting their mental health which overall reduces their performance and productivity. In the competitive environment, it is imperative for organisation to have effective conflict management strategies that would support the firms in gaining the competitive edge among its competitors while also contributing towards their growth (Das, 2015, p. 9); (Isa, 2015, p. 54). Hence, the following study is mainly conducted to investigate the association between the conflict management strategies and economic growth.

### **Problem Statement**

Organisations are identified to play a vital role in the social economic development and national economy of the country and organisation (Iyiola & Rjoub, 2020, p. 1). Similarly, the development of economy for developed and developing countries is highly dependent upon the growth of the organisation where its expansion contributes to the improvement of the economy. There are several participants that are involved in the project which comprises of owners, project

managers, contractors, site engineers and others. These participants are required to interact among themselves for the effort in managing information, schedules and resources (Iyiola & Rjoub, 2020, p. 1). Thus, the failure of the projects or its completion on its poor quality can significantly affect the economic growth. The major problem that contributes to the failure of organisation is the conflict that is caused by the increasing complexities and fast-tracking projects. It is critical for the conflicts to be resolved immediately by developing conflict management strategies. Lack of conflict management strategies can result in causing delay in the schedule, delivering poor quality project or even lawsuit measures for resolving conflicts which causes loss of both money and time (Soni, Pandey, & Agrawal, 2017, p. 40). Moreover, the disruptions caused by the conflicts in organisations are also highly visible among the stakeholders in which it results in causing significant damage to the reputation of the company (Maiti & Choi, 2018, p. 1). Hence, the following study is mainly reflected to the development of conflict strategies that contributes to the economic growth of the organisation

#### **Rationale behind the selection of topic**

The rationale behind the selection of the topic is due to the organisation is considered to play a major role the social economic development along with the economic development. Organisation produces highly visible output that stimulates sizeable economy growth for both country and industry (Durdyev & Ismail, 2012, p. 60). However, the major concern for organisation is the failure of delivering the project in the identified schedule or compromising its quality. The most common rationale behind the failure is the conflicts that are usually occurred among the internal and external stakeholders. Hence, the development of conflict strategies is imminent as it plays an important role on resolving conflicts which can save both money and time (Soni, Pandey, & Agrawal, 2017, p. 40). Conflicts are identified to have destructive or constructive on performance as it normally leads to destructive effects. Conflicts are considered to cause obstacle in the collaboration along with straining the association between owner and contractors. Moreover, conflicts among the

members also leads to ineffective communication and overruns on costs and time (Wu, Wang, & Chang, 2018, p. 59). Therefore, the following research is mainly conducted to evaluate the relationship between the conflict management strategies and economic growth of the organisation

#### **Analysis of recent articles and publications**

There are several influential factors that are associated with the conflicts which consist of higher cost of project, delay in project, loss on profits, declining productivity, and damaging relationship in business and dispute among team (Aalazemi & Mohiuddin, 2019, p. 59). Thus, the conflict management strategies in the organisation are critically required for solving the issues of conflict which can support in avoiding the consequences. A study was mainly conducted to determine the factors responsible for causing conflict, consequences of conflict and methods for managing conflict particularly in the Kuwait International Airport Cargo City. Thus, the study was conducted through questionnaire survey that was distributed to the 163 participants where the results has revealed that the cause of conflict in the organisation is due to inadequate communication and contradicting guidance and instruction by the management. The effects of conflict in the organisation are that it leads to the delay in projects, reduced productivity and ineffective communication. The solutions as highlighted by the participants is that the collaboration and compromising style is critically required (Aalazemi & Mohiuddin, 2019, p. 59). Similarly, another related study conducted by Akhtar, Khan and Akhtar (2020) was mainly emphasized in identifying the major component that are leading to conflict along with determining the association between the conflict management strategies and organisational performance particular in the banking sector. The data has been collected through administering questionnaire survey which has been distributed to 100 respondents with the SPSS tool is applied for analysing data. The results revealed that the cause of the conflict in organisation were communication and ineffective collaboration. Moreover, it was also identified that the relationship conflict management

strategies and organisational performance were found to have positive association (Akhtar, Khan, & Akhtar, 2020, p. 1). Current study mainly seeks to investigate the conflict management strategies

association with the economic growth. Hence, empirical evidence has been investigated regarding the strategies influence on the growth of organisation for further determining their influence.

Table 1

**Definition and empirical evidence of conflict management strategies**

Strategies	Definition	Influence	Sources
Collective Bargaining	Establishment of negotiation and discussion on matters of mutual concern to employers	Resolving existing and projected disputes in the organisation Collective bargaining helps in resolving issues such as wages, layoffs, promotions and others	(Takupiwa & Shelfa, 2019, p. 1) (Olotuah & Olotuah, 2016, p. 512) (Momanyi & Juma, 2016, p. 130)
Accommodation	It involves in minimizing or suppressing the differences for achieving personal goal	Managing conflicts for short term	(Momanyi & Juma, 2016, p. 130)
Compromising	Management openly listening and understanding issues and problems of parties for resolving conflict	Reducing turnover of the employees	(Nissa, Nawaz, Jhatial, & Halepota, 2018, p. 187) (Momanyi & Juma, 2016, p. 130)
Confronting	Expressing anger and views of the conflict	Highly insulting and ending relationship	(Momanyi & Juma, 2016, p. 130) (Mangundjaya & Putri, 2018, p. 114)
Avoidance	Avoidance or withdrawing reflects on avoiding from conflicting situations	Leads to higher uncertainty in conflicts	(Momanyi & Juma, 2016, p. 130) (Mangundjaya & Putri, 2018, p. 114)

Conflicts tend to make the employees to be less satisfied and less productive in their jobs. Several strategies are available to the organisation for handling conflicts which consist of collaboration, avoidance and mindfulness. Avoidance mainly involves in withdrawing or sidestepping from conflicts whereas collaboration is an open exchange between both parties for reaching a mutual understanding. Mindfulness is reflected to self-regulated attention on present moment experience along with accepting attitude. Results of a study have revealed that mindfulness is an effective constructive conflict management process which enables in increasing collaboration (Kay & Skarlickib, 2020, p. 8). There are several methods available for the management of conflicts where it is crucial for the organisation to implementing the effective strategies. The choices available to the management comprises of accommodating, obliging, competitive, compromising and avoidance (Momanyi & Juma, 2016, p. 130).

### Aim and Objectives

The aim of the following study is to evaluate the relationship between the conflict management strategies and economic growth of the organisation. In the manner of achieving the purpose of the study, the objectives are designed for providing a guiding hand to the researcher for completing the study in an effective way. The following are the objectives that are designed for the study:

- To evaluate the effects of conflicts on organisation which causes adverse effect on the growth
- To understand the importance of conflict management strategies while also determining the factors for handling conflict
- To evaluate the association between conflict management strategies and economic growth of the organisation
- To determine effective conflict management strategies for solving conflict issues in the organisation

### Research Questions

In the perspective of the objectives, the research questions for the following study are also devised which are aimed to be answered in the following study. The research questions are categorized into mainly two sections which consist of main and sub-research question. The main research question is the following:

Q1. "What is the association between the conflict management strategies and economic growth in an organisation?"

The following are the sub-research questions for the following study:

Q2. What are the factors that lead to conflicts in organisation?

Q3. What are the strategies for solving conflicts in organisation?

Q4. Does conflict affect the performance and productivity of an organisation?

### Methodology/Material

#### Research Strategy

The research strategy is aimed towards providing a plan for executing and monitoring the study. There are several types of research designs that are available for the research that can aid in completion of the study. With respect to the

following study, the research strategy selected is qualitative interview and quantitative survey. The qualitative interview allows the researcher in gaining access to rich information regarding the importance of conflict management strategies from the perspective of management that leads the organisation to economic growth. The qualitative interview has been conducted through developing semi-structured questionnaire mainly aimed towards distributing it to the management of organisation. On the other hand, quantitative survey is distributed among participants where their responses are analysed through incorporating statistical tools for measuring validity of the responses along with revealing findings of the study

### Hypothesis

The main hypothesis that examines the correlation between economic growth and conflict management strategies are provided below:

H0: Conflict management strategies do not have a significant association with the economic growth of an organisation

H1: Conflict management strategies have a significant and positive association with the economic growth of an organisation

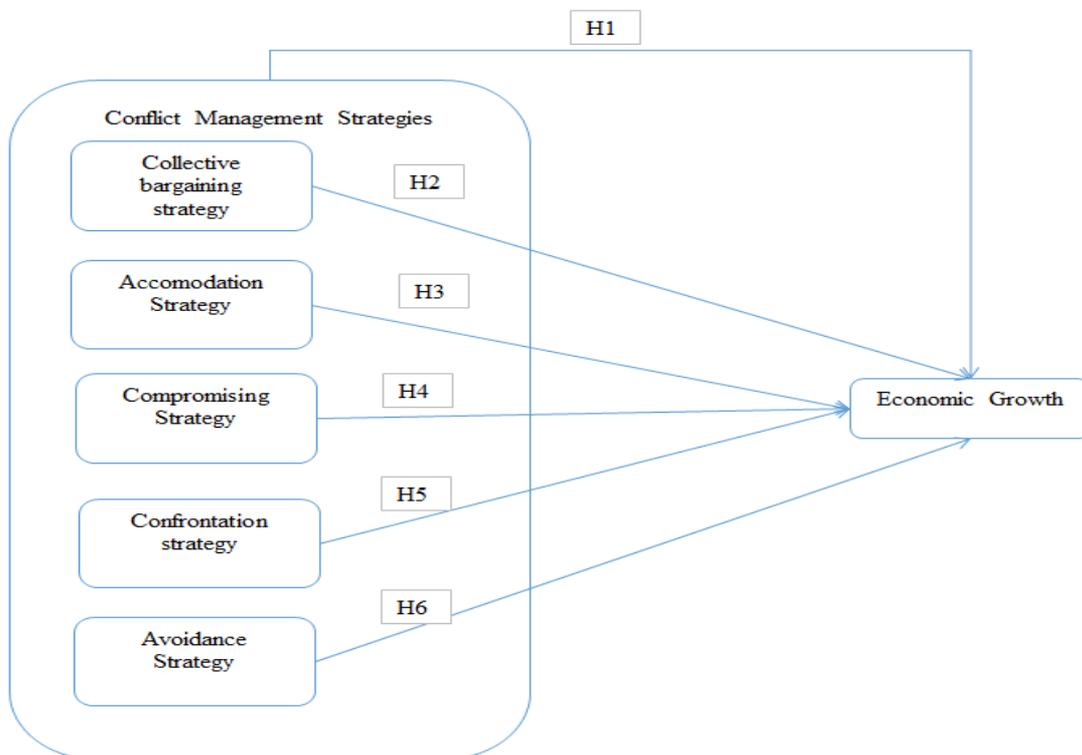


Fig. 1. Hypotheses Model

Moreover, the hypotheses pertaining to the association of different types of conflict management strategies with the economic growth are provided below:

H2: There is a significant association between the economic growth and collective bargaining strategy

H3: There is a significant association between the economic growth and accommodation strategy

H4: There is a significant association between the economic growth and compromising strategy

H5: There is an important association between confrontation and economic growth strategy

H6: There is an important association between avoidance and economic growth strategy

### Research Design

The methodology is considered to be an important portion of the research as it mainly illuminates the methods that are applicable with the study along with providing its justification for its suitability (Mohajan, 2018, p. 23). The first component is to identify the nature of the study which comprises of mainly three types that are qualitative, quantitative and mixed. The qualitative research design is reflected to subjective view of the study where the researcher attempts to draw data from the insights and opinion of the individual. The quantitative research design pertains with the analysis of the collected data through statistical techniques. Triangulation method on the other hand is the utilization of both qualitative and quantitative methods (Almalki, 2016, p. 288). Triangulation option is considered as a useful and effective tool for conducting study as more than one method is adopted for verifying the results that leads towards enhancing the quality of study (Gibson, 2017); (Turner, Cardinal, & Burton, 2017, p. 243). The research design that is selected for the following study is triangulation method where the researcher attempts to explain the association between the conflicting management strategies and economic growth through both objectives and subjective view. In general terms, the association between the two has been observed through facts along with the insights and opinion of the human.

### Data Collection and Analysis

With respect to collection of data, there are two sources available for the collection of data which are primary and secondary. Secondary data is referred to the data that is already available to the research whereas the primary data is referred to the gathering of newly data due to unavailability or out-dated data. In this manner, the following research has collected data through primary sources. The instrument used for the collection of new data is through questionnaire survey and interview.

The determination for the sample size for the closed-ended questionnaire survey has been conducted through the following equation which consist of the following

$$n = \frac{Z^2 * (p) * (1 - p)}{C^2}$$

With respect to the above equation, the component 'n' denotes the sample size,  $Z^2$  reflects on the z-value or confidence level,  $p$  is identified as the population while  $C^2$  is reflected to the confidence interval

$$n = \frac{1.96^2 * 100^2 * (1 - 100)}{4^2}$$
$$n = 86$$

Thus, the sample size that is selected for the questionnaire survey is 86 that have been distributed to the professionals through email. The total number of professional that has provided with the complete survey is 125. The questionnaire survey has been designed on the basis of demographics, general questions and conflict management related statements through the Likert scale. The total number of respondents that has completed filled the questionnaire consist of 85 participants. With respect to qualitative analysis, the sample size selected for interview is 5 participants. The targeted respondents for the questionnaire survey are the employees whereas the participants for interview are the management company. The technique of evaluating the data from the questionnaire survey is through statistical techniques.

### Data presentation and analysis

With respect to the analysis of the data, the statistical techniques are applied on the dataset that has been obtained through the questionnaire

survey. The first important tool that is applied on the data is a set of reliability and validity techniques which consist of factor loading, Cronbach's alpha, composite reliability and average variance extracted. The purpose behind applying the tools is to measure the reliability and validity of the data. The other techniques that are also incorporated in the study consist of correlation analysis which is mainly conducted for evaluating the association of the variable. The last tool is the regression analysis technique which is aimed towards the evaluation of cause-effect relationship.

**Results and Findings**

**Reliability and Validity Testing**

According to (Munir, 2018, p. 775); (Rivière, Widad, & Speyer, 2018, p. 339), it is imperative for the researcher to measure the reliability and validity of the constructs of the variables. Hence, the confirmatory factor analysis has been conducted along with the other reliability measures which comprises of Cronbach's alpha, composite reliability and average variance extracted. The results of the validity and reliability measures are provided in Table 2.

*Table 2*

**Reliability and Convergent Validity**

	Item	Factor Loading	Cronbach's Alpha	Composite Reliability	Average Variance Extracted (AVE)
Accommodation	ACC1	0.911	0.907	0.942	0.843
	ACC2	0.937			
	ACC3	0.906			
Avoidance	AVD1	0.805	0.803	0.871	0.694
	AVD2	0.91			
	AVD3	0.779			
Collective Bargaining	CB1	0.889	0.863	0.916	0.785
	CB2	0.899			
	CB3	0.87			
Compromise	COM1	0.922	0.88	0.926	0.806
	COM2	0.929			
	COM3	0.84			
Confrontation	CON1	0.939	0.88	0.943	0.893
	CON2	0.95			
Economic Growth	EG1	0.894	0.885	0.929	0.813
	EG2	0.925			
	EG3	0.885			

As per the table 2, there are mainly six variables that are involved in the study which consist of accommodation, avoidance, collective bargaining, compromise, confrontation and economic growth. The second column 'item' is reflected to the constructs of the variables that represents the statements in the questionnaire survey. Moving towards the tests, the first test that is applied on the dataset is factor loading in which according to (Bhutta, Kausar, & Rehman, 2019, p. 57); (Khoshmaram, Zarafshani, & Alibaygi, 2017, p. 395),

it is mainly used for predicting the relationship of the variables which denotes the absolute contribution of the constructs on the variables. The threshold for determining that the constructs has significantly contributed to the variable is 0.6; hence, the constructs value must be 0.6 or above. As per the results in table 2, the factor loading value of the constructs is above 0.6; hence, the items have made significant contribution to the variables. The next tool for measuring the validity is Cronbach's alpha where study of (Kurhan, et al.,

2018, p. 811); (Zinan & Sai, 2017, p. 53) has indicated that it is mainly used for measuring the internal consistency of the responses. The higher the consistency in Cronbach's alpha represents better reliability of the data. The threshold for Cronbach's Alpha is 0.6 or above in which from the results it is identified that Cronbach's alpha value is above 0.6 for each variable. Hence, this shows internal consistency of the variables which

leads to providing reliable results. Composite reliability is the third test which is similar to Cronbach's alpha that measures the internal consistency of the variables in which its threshold is 0.5 (Padilla & Divers, 2016, p. 436); (Teh, Lai, & Cheng, 2018, p. 6). The results of composite reliability as shown in table 2 have values above 0.5 which thus indicates that the data is reliable.

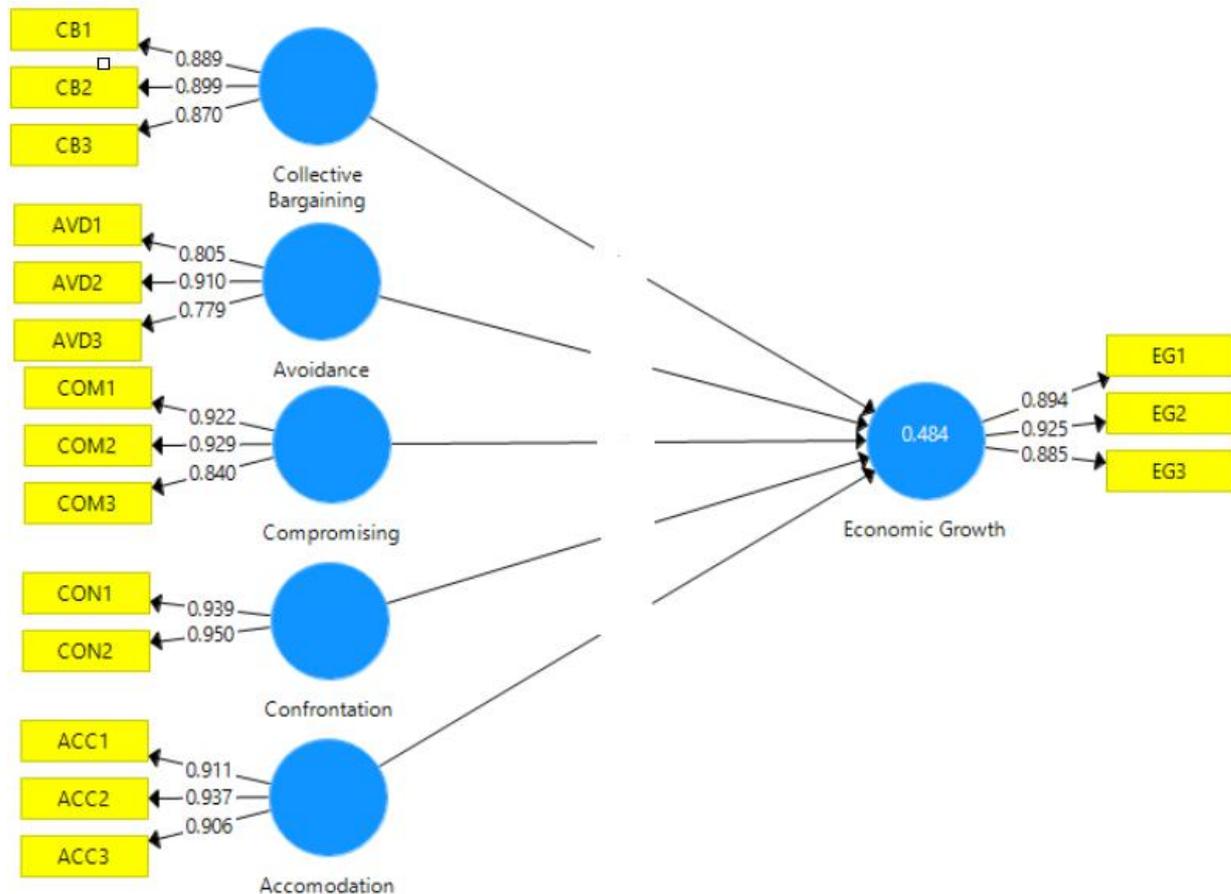


Fig. 2. Confirmatory Factor Analysis

### Correlation Analysis Hypothesis testing H1

Table 3 is associated with evaluating the association between conflict management and economic growth where the Pearson's correlation technique is applied on the data set for testing hypothesis 1.

As per the results in Table 3, it has been identified that conflict management and economic growth has significant association with each other as the p-value is computed as 0.000 and is below 0.10 significance value. Moreover, the correlation coefficient is computed as 0.563 which indicates

that the association between conflict management and economic growth is moderately positive. Hence, this leads to the acceptance of H1 and rejection of H0.

### Hypothesis testing H2 to H6

Table 4 below investigates the association between the economic growth and the different types of conflict management strategies that are available to the project management. The correlation test also supports in investigating the Hypotheses (H2 till H6).

*Table 3*

**Correlation between conflict management and economic growth**

Correlations	Conflict Management Strategies	Economic Growth
Conflict Management Strategies	1	0.563***
		0.000
Economic Growth	0.563***	1
	0.000	

\*\*\* Significance at 1 %; \*\* Significance at 5 %; Significance at 10 %

*Table 4*

**Correlation between strategies and economic growth**

	Accommodation	Avoidance	Collective Bargaining	Compromising	Confrontation	Economic Growth
Accommodation	1					
Avoidance	0.228	1				
	0.15					
Collective Bargaining	0.55	0.516	1			
	0.000	0.001				
Compromising	0.402	0.455	0.643	1	0.313	0.48
	0.001	0.002	0.000			
Confrontation	0.417	0.318	0.379	0.313	1	0.434
	0.000	0.035	0	0.001		
Economic Growth	0.55***	0.126	0.547***	0.48***	0.434***	1
	0.000	0.411	0.000	0.000	0.000	

\*\*\* Significance at 1 %; \*\* Significance at 5 %; Significance at 10 %

While reflecting to the results, economic growth of the organisation has been found to have significant association with accommodation, collective bargaining, compromising and confrontation. This is identified due to the p-value is computed as 0.000 which is below 0.10 threshold. On the other hand, economic growth is found to have insignificant association with avoidance strategy as the p-value is computed as 0.411. The correlation of economic growth with accommodation, collective bargaining, compromising and confrontation has been found moderately positive. Hence, in this manner, the H6 is rejected whereas H2, H3, H4 and H5 are accepted.

**Regression Analysis**

The regression analysis results are provided in table 5 in which it was mainly aimed

towards determining the most effective conflict management strategies for the economic growth of the organisation. The Path coefficient analysis has been performed, which is a type of regression that is commonly conducted in SmartPLS. The effects of economic growth have been evaluated through the conflict management strategies which consist of accommodation, avoidance, collective bargaining, compromising and confrontation.

The first important aspect that is assessed in the regression analysis is the p-value or the significant value. The p-value of all the variables is computed below 0.10; hence, all of the conflict management strategies have significant effect on the economic growth. Moreover, it was identified from the coefficient value that accommodation (0.252), avoidance (-0.271), collective bargaining

(0.316) and compromising (0.228) has positive effect to the economic growth whereas confrontation (0.223) has negative effect on the economic growth. The rationale behind avoidance having a positive effect to the economic growth as it was hypothesized to have adverse effect; however, due to the coefficient having negative value clearly shows that it has positive effect on economic growth. Hence, it can be determined from the regression analysis that accommodation, avoidance,

collective bargaining and compromising has positive effect to the economic growth whereas confrontation has negative effect on the economic growth.

The above table reflects on the model summary through evaluating the coefficient of determination or R-square. The value of R-square is computed as 0.484 which means that the variation of economic growth is predicted or explained by 48.4 % by the experimental variables.

Table 5

**Path coefficient regression**

	Coefficient	T-value	P-Values	Effect
Accommodation	0.252*	1.886	0.059	Positive
Avoidance	-0.271**	2.399	0.017	Positive
Collective Bargaining	0.316**	2.289	0.022	Positive
Compromising	0.228*	1.824	0.068	Positive
Confrontation	0.223*	1.793	0.073	Negative

\*\*\* Significance at 1 %; \*\* Significance at 5 %; \* Significance at 10 %

Table 6

**Model Summary**

	R Square	R Square Adjusted
Economic Growth	0.484	0.452

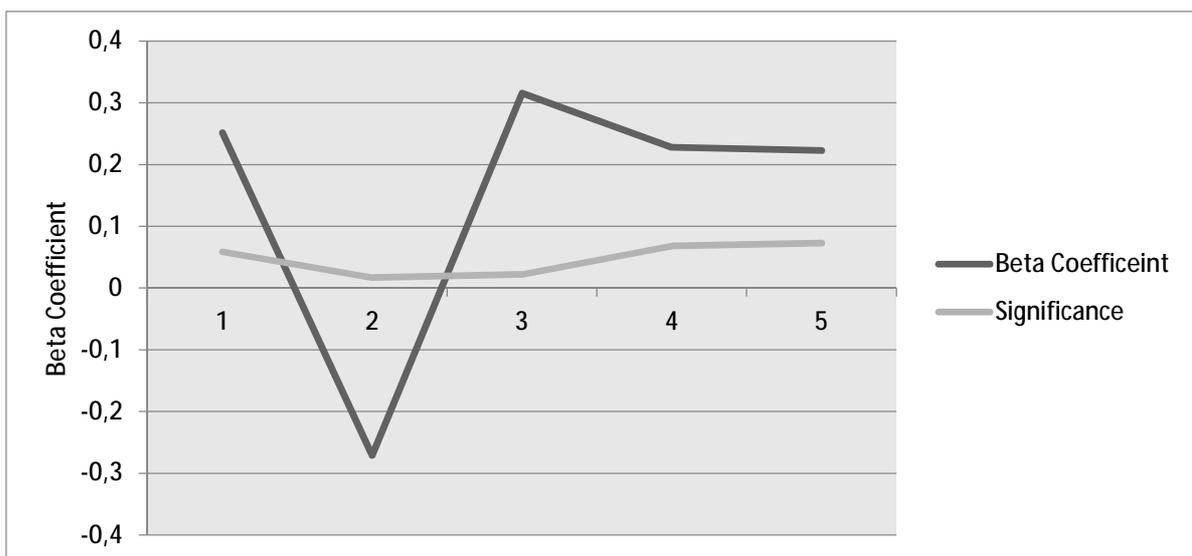


Fig. 3. Regression Graph

Fig. 4 reflects on the fishbone diagram that has been designed with the support on the responses of the interviews in which several important

themes were developed for determining the causes and conflicts that are faced in organisation along with its measuring its impact. The diagram is

*Relationship between conflict management strategies and economic growth of organisation*

mainly used for the management in identifying the reasons for imperfection, defects and failures. As per the diagram, it was revealed that the major factors that are responsible in causing conflicts are inefficient communication and different values among the members of organisation. These two major factors further lead to causing conflict where the type of

conflict that is commonly faced is interpersonal conflict or disagreement. As a result of these conflicts, it unfavourably effects the growth of organisation where it leads to demotivation of staff members while also reducing the overall productivity. As a result of these factors, it overall leads to lowering the economic growth of the organisation.

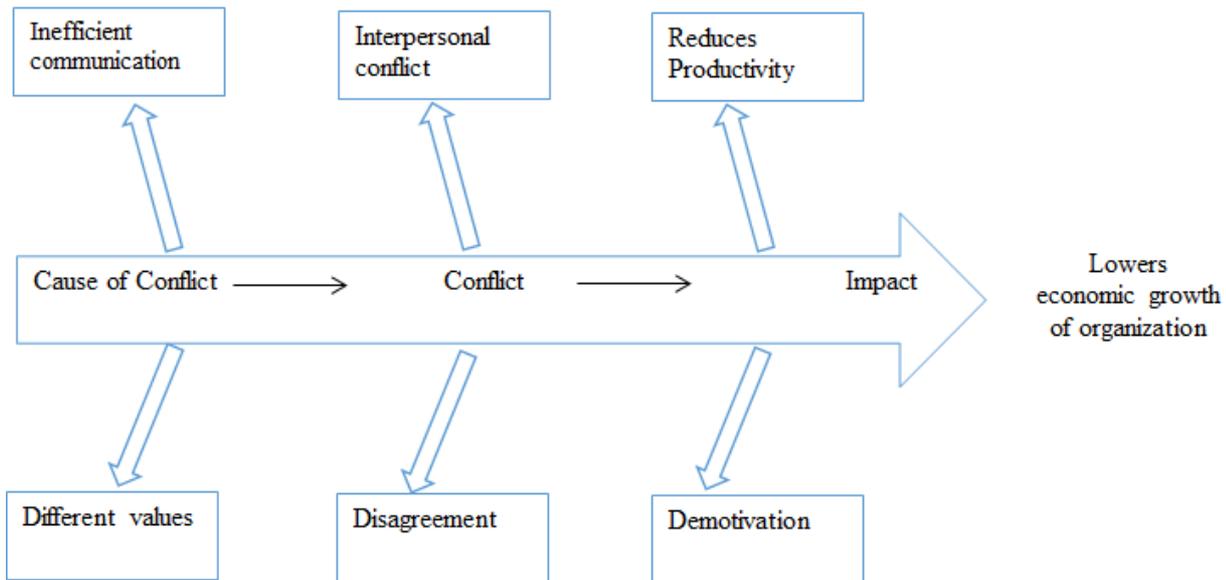


Fig. 4. Fishbone diagram

Table 7

**Hypotheses Testing**

	Significance Value	Acceptance or Rejection
H1: Conflict management strategies have a significant and positive association with the economic growth of an organisation	Coefficient = 0.563, p-value = 0.00	Accepted
H2: There is a significant association between the economic growth and collective bargaining	Coefficient = 0.547, p-value = 0.00	Accepted
H3: There is a significant association between the economic growth and accommodation	Coefficient = 0.55, p-value = 0.00	Accepted
H4: There is a significant association between the economic growth and compromising	Coefficient = 0.48, p-value = 0.00	Accepted
H5: There is an important association between confrontation and economic growth	Coefficient = 0.434, p-value = 0.00	Accepted
H6: There is an important association between avoidance and economic growth	Coefficient = 0.126, p-value = 0.411	Rejection

**Analysis**

The study incorporates the triangulation method for determining the correlation between the conflict management strategies and economic

growth of an organisation. The questionnaire survey has been distributed among 85 respondents particularly the employees of an organisation. The first tool that is incorporated in the analysis is the

testing of reliability and validity of the responses. Several reliability testing tools are applied on the data which comprises of factor loading, Cronbach's Alpha and composite reliability. The results of the reliability and validity testing has revealing that the responses on the questionnaire are internally consistent which indicates that it is reliable and valid; thus, the other statistical techniques are applicable on the dataset. The second tool that is highly important for the study is the correlation analysis which was mainly utilized for assessing the conflict management strategies association with the economic growth. Moreover, the correlation technique is also applied on the identified strategies of conflict management individually for assessing their relationship with economic growth. The results of correlation analysis have indicated that the conflict management strategies have a positive and moderate level of association with economic growth. Furthermore, the strategies that are found to have significant and positive association are accommodation, collective bargaining, compromising and confrontation strategies. Avoidance was found to have insignificant correlation with the economic growth. Lastly, the regression analysis has been conducted for evaluating the effect of the strategies on the economic growth. The results as per table 5 has indicated that all the strategies i.e. accommodation, avoidance, collective bargaining, compromising and confrontation has significant effect on economic growth. The hypotheses of confrontation and avoidance were established on the basis of causing adverse effect on economic growth whereas accommodation, avoidance and collective bargaining were established with respect to positive effect. The results revealed that accommodation, avoidance and collective bargaining had significant and positive influence over the economic growth of an organisation whereas confrontation has been indicated to have negative influence. In term of Avoidance, its coefficient has been computed in negative which rejects the hypothesis and thus shows that it has positive influence on economic growth.

### **Discussion**

The fundamental aim of the study is to investigate the relationship between conflict management strategies and economic growth of

an organisation. The triangulation method is conducted for revealing the findings of the study where both qualitative and quantitative methods are adopted in the following research. The results from the quantitative analysis have indicated that the conflict management strategies have a positive association on the economic growth of the companies. Similarly, it was also revealed that the causes of conflicts among the employees are poor communication, lack of soft skills and misunderstanding among the employees (Deep, Mohd, & Hussain, 2016). The first objective was related to evaluating the effects of conflicts on organisation that leads to negative effect towards their growth. The most common conflicts that are faced in the organisation consist of interpersonal conflicts where the factors that are responsible for leading to the conflict comprise of information gap and inefficient communication. If left unresolved can result in causing reduction to the productivity which thus adversely affecting the economic growth of the organisation. Due to unresolved conflicts in organisation, many of the employees are observed to face mental health problems that either lead to demotivation towards their work or can even result in causing turnover. This causes the company to lose their competitive edge amongst the competitors while also losing their greatest asset (Das, 2015, p. 09). In addition, conflicts leads to several other internal problems that negatively influences on the organisation. The internal problems consist of delays in project, declining productivity, and loss on profits, higher cost and damaging relationship in business (Alazemi, Mohiuddin, & Al-Juboori, 2019, p. 59). The second objective pertained with understanding the importance of conflict management strategies where it was identified that the conflict management skills and strategies are crucially required by the organisation for handling he disputes and arguments among the employees along with saving time and money. It also lead to presenting strategies for avoiding destructive effects of conflicts that can lead to damaging the relationship of the employees (Soni, Pandey, & Agrawal, 2017, p. 42). The last to objectives of the study pertained with determining the correlations between conflict management strategies and economic growth. This was referred to conducting the study where the researcher has

gathered data through questionnaire and applying the statistical tools for evaluating the association among the both. With respect to the correlation analysis, it was determined that the conflict management strategies and economic growth has positive correlation with each other. Furthermore, it was also determined that the most effective conflict management strategies that contributes to the economic growth of organisation are collective bargaining, accommodation, compromising and confrontation.

### **Conclusion**

Conflicts in organisations are highly common where it has been significantly increasing due to the complex nature of the project in the current environment. If unsolved, the conflict in an organisation can lead to disastrous effect which can cause delays in the project, high cost, lower productivity and damaging relationship. Hence, it is vital for the organisation to have conflict management strategies which can support in handling the conflicts and further avoiding the consequences. The following research is aimed to evaluate the association between the conflict management strategies and economic growth of the organisation. The rationale behind the topic selection is due to conflicts leading to a destructive effect on the performance.

The statistical techniques are performed in the questionnaire survey where the validity and reliability testing is conducting which revealed that the data is valid and reliable. In this manner, the correlation technique is performed in which it was identified that conflict management and economic growth has a significant and positive association. Thus, this indicates that organisations that have developed strong conflict management strategies are able to enhance their overall economic growth in the organisation. Moreover, the types of strategies that are associated with the economic growth comprise of accommodation, collective bargaining, compromising and confrontation whereas avoidance is found to have an insignificant association with economic growth. In addition, the fishbone diagram has revealed that the types of conflicts that are commonly faced among the employees consist of interpersonal conflicts and disagreement. The factors responsible for the

conflicts are poor communication and information gap. The adverse effect of not resolving conflict is that it leads to demotivation of employees and lower productivity. Thus, the main contribution of the study is that it assists the organisation in developing conflict management strategies which can support its economic growth. With respect to the results, it is imperative for the management of organisations to utilize accommodation, collective bargaining and compromising strategies that can lead in establishing a decent environment in the workplace that results in the improvement of job performance. Hence, the leader/management should openly listen to its employees while also minimize the differences in the achievement of goals.

### **Recommendation**

The following study was mainly aimed towards the investigation of the association between conflict management and economic growth where it was revealed that the strategies such as accommodation, collective bargaining and compromising are found to have a significant association. However, the following study did not mainly investigate the factors of conflict that particularly causes a negative influence on economic growth. Thus, it is recommended for future researchers to investigate the factors of conflict that are responsible for causing a negative effect on economic growth.

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## CLUSTER AS AN OBJECT OF RESEARCH IN THE INSTITUTIONAL ECONOMY AND ACCOUNTING: SQUARE PLATES

**Abstract.** A critical analysis of globalization processes in the economy is considered and conducted, with an emphasis on the factors of increasing competition. It is established that due to the development of scientific and technological progress of new approaches to socio-economic development requires the formulation of a new type of institutional environment. It is argued that an important tool for increasing the competitiveness of the economy are the processes of adaptive clustering. It is noted that in the Ukrainian national economy this approach has not become widespread and it is proved that an important component of inhibiting these processes is the lack of proper information base. It is proved that under such conditions an important role in information support belongs to the accounting system. The hypothesis of the study is the assumption that the creation of an accounting and information system in the management of cluster associations should be based on an institutional approach. From this conceptual approach, a study of the current state of accounting in the cluster, taking into account institutional theory. The purpose of the article is to clarify the disposition of accounting as a socio-economic institution and the formation of a cluster as a systemic institution. The existence of a slightly different nature of the interaction of these institutions is established, in which the role of the accounting information system is considered differently, in which it is considered in understanding the information network of the enterprise, and thus differs from the “traditional” interaction “accounting – enterprise”. The study identifies the main reasons for the need to use the provisions of institutional theory to address the problems of accounting in the cluster. Based on the study, we propose to consider pre-grouping these concepts (institutional theory, accounting, cluster) and divide them into separate planes: the impact of institutional

theory on the development of accounting, cluster from the standpoint of institutional theory, institutional interaction between accounting and cluster.

**Key words:** accounting, institutional theory, information network of communications, integrated structures, cluster.

### Introduction

Given the process of preparation of Ukraine for accession to the European Union, the issues of increasing the competitiveness of the national economy are becoming relevant. The Global Competitiveness Report 2019 [17], published by the World Economic Forum as part of the System Initiative for Shaping Future Economic Progress, provides a ranking of countries according to the Global Competitiveness Index. According to the study, Ukraine ranked 85th among 141 countries and deteriorated its position compared to the previous period by four positions.

One of the means of bringing the Ukrainian economy on an innovative path of development and overcoming disparities in the development of regions is the creation of research, innovation and production clusters. It should be noted that the cluster approach in Ukraine began to be introduced relatively recently and has not yet become widespread, due to the lack of appropriate regulations, clustering strategy of the national economy and the proper information base. Under such conditions, there is a need to form a system of accounting for the cluster, which would provide information to economic agents in particular and the state in general in the context of the economic globalization.

### The analysis of research and problem statement

Problematic issues of accounting in the cluster are devoted to the works of Govda V. V., Degaltseva Zh. V., Osmonova A. A., Pilipenko A. A., Pronyaeva L. I., Fedotenkova O. A., Yukhimenko-Nazaruk I. A. etc. Accounting scientists mentioned above considered the general approaches to building an accounting system in integrated associations, while some institutional aspects in the cluster were ignored were not taken into consideration.

Based on this, we believe that the creation of an accounting and information system in the management of cluster associations should be carried out taking into account the institutional approach. "It is believed that this approach will allow to build a balance between theoretical concepts and practical constructions, which can be achieved by taking into account the role of economic institutions in the transformation of the accounting system" [14, p. 86]. "Institutional theory, allows to raise research to a high theoretical level through the use of scientific institutionalists on one side and allows to bring research in the field

of accounting closer to the level of accounting practice on the other" [15, p. 36].

**The purpose of the article** is to substantiate the role and importance of the institutional environment in the development of accounting in the cluster.

**The methodological basis** of the study is a set of fundamental provisions of institutionalism, scientific concepts of leading foreign and domestic experts in accounting. Methods of induction and deduction, analysis and synthesis, theoretical generalization and comparison are used in the study of theoretical aspects of institutional principles of accounting. Bibliographic and bibliometric analysis provided the identification of the most pressing issues of cluster research in institutional economics.

### Research results.

We suggest hereby to consider the study of the current state of business accounting in the cluster, taking into account the institutional theory after grouping these concepts and dividing them into separate planes (Fig. 1).

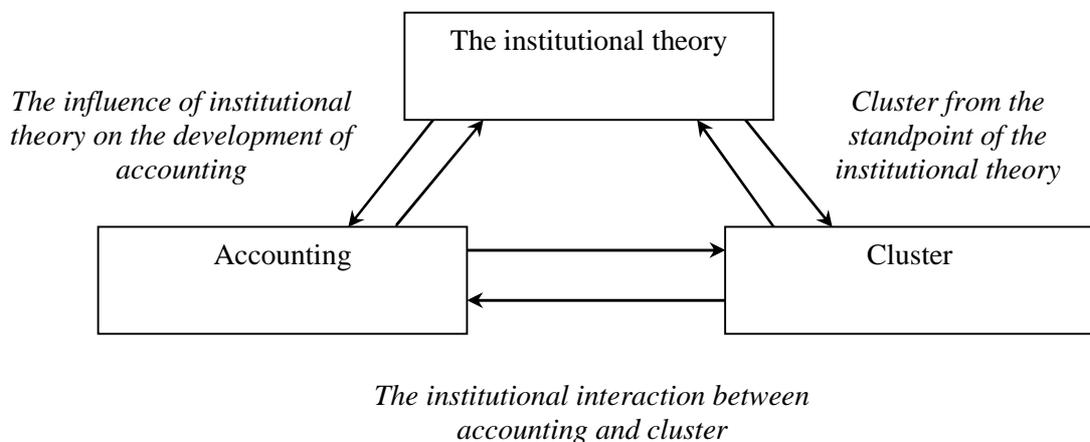


Fig. 1. Cluster as an object of study in institutional economics and accounting: planes of intersection

Source: developed by the author

1. *The influence of institutional theory on the development of accounting.* Ukrainian scientists as Vysochan O. S., Golov S. F., Zhuk V. M., Kantsurov O. O., Kireitsev G. G., Legenchuk S. F., Metelitsa V. M., Petruk O. M., Semenishena N. V., Sadovska I. B., Slozko T. M., Yaremko I. Y. etc. paid attention to the issue of considering the development of accounting through the application

of the provisions of institutional theory. In recent years, there were defended doctoral theses in Ukraine by Kantsurov O. O. "Institutional principles of accounting development" (2015), Metelitsa V. M. "Development of the accounting profession in the agricultural sector of the economy: theory, methodology, practice" (2016), Sadovska I. B. "Development of theory, methodology and practice

of management accounting: institutional-engineering aspects” (2018), which are devoted to the study of accounting on the basis of institutionalism, which indicates the relevance of its use in the context of globalization and transformation of the domestic economy.

The foundations of the domestic institutional theory of accounting were laid by V. M. Zhuk, who suggests that “the institute of accounting is a crucial component of the economy, formed both by informal institutions “in the minds” of accountants and users of accounting information, as well as by a formal feature of the “written rules of the game”. This issue is implemented in specific organizations at the micro-, macro- and meso-levels, in order to understand and manage the socio-economic environment” [8, p. 17].

Petruk O. M. considers accounting as a social and economic institution that not only manages the activities of economic entities (enterprises, banks, investment funds) regardless of their nationality, but is also used by the state as an element of regulation and satisfaction of public interests [13, p. 144].

Kantsurov O. O. remarks that “Accounting is an integrated type of socio-economic activity and the only object of the knowledge that can be represented in research by the process of creation of economic information, information system, science and socio-economic institute [10, p. 360].

It should be emphasized that despite the numerous insights, the approaches to the basic provisions remain incomplete, and the statements about the recognition of accounting as a socio-economic institution are debatable. The development of the institutional concept of accounting is at an early stage, but the conclusions obtained on its basis indicate the prospect of further solutions [18, p. 251].

Thus, Legenchuk S. F. suggests that since the institutional theory cannot be falsified (i.e. cannot be refuted), is rather a certain tool that allows to achieve certain goals by providing models of its development, than a purely accounting theory [12, p. 205]. This opinion is also held by Vysochan O. S., who postulates “the institutional approach to solving problems related to modernization of accounting, is another attempt to maintain distance from its traditional perception

as means of registration of the consequences of economic events and processes by expanding the purpose, subject and method. However, the problem of its application still remains as follows: while designing on the accounting plane, it rather answers the question “Why?”, but not always the question “How?” [2, p. 160].

In our view, a difference of opinions indicates that the institutional research on accounting in Ukraine is in the process of forming its paradigm, and scientists have not yet reached a final agreement on the application of the basic concepts, niche and importance of institutional theory as one of the basic foundations of the accounting.

*2. Cluster from the standpoint of institutional theory.* Today, the institutional nature of the cluster comes to the fore, as evidenced by a number of scientific papers in which it is considered as “unification, or rather new institutions of the economic system, which began to appear under the influence of institutional changes in the economy, formation new elements of the institutional environment, the development of global competition” [7, p. 122]; “a hybrid form of institutional agreement or an institution with many partially selective limited symmetric exchanges, the proportions of which are regulated by a price mechanism mediated by the creation of precautionary measures (guarantees) that minimize the risk of opportunistic behavior of economic entities and the environment” [1, p. 250]; “Market organizational and structural institution, which has a broader notion, because in addition to production and technological features it concentrates social, economic, institutional and cultural-mental parameters which give this formation a high potential for mobility, stability and high competitiveness” [4, c. 14]; “institution of development”, a set of public and private structures that form horizontal and vertical economic and organizational ties that determine the rules and principles of interaction (mechanism) on the scale of these structures” [11, p. 1042].

One of the founders of institutional theory D. North states that “institutions are the rules of the game in society or, more precisely, man-made restrictions which manage human interaction in a certain direction... In real life, they take the form of legal norms, traditions, informal rules, cultural stereotypes” [16, p. 11].

Accordingly, we can assume that the cluster is a modern institution that combines a system of formalized and informal relations between its members and the external environment and is characterized by certain institutional features and characteristics: ideology (increasing the competitiveness of the region, promoting economic and social development); social roles and statuses (the company-leader and the companies-members of the cluster); utilitarian features (voluntary association of enterprises, higher education institutions and local authorities); cultural symbols (brand, trademark); oral and written codes of conduct (regulations, contracts (agreement) for joint activities).

Thus, all this gives reason to consider the cluster as a modern social system and the institution of a market economy, which determines economic development and promotes competitiveness. The importance of today's clusters is determined primarily by their unique institutional environment. A cluster is a system object which is characterized by a certain set of features, properties, performed functions, which allows us to consider it righteous as an institution.

Vojnarenko M.P. notes that the cluster as an institutional category has several features unique to it, which at the same time allow to identify it as an institutional concept. The identification of these features requires consideration of the following important provisions: manifested through the interaction of human capital; realizes its potential through the use of the advantages of organizational resources; is a component of the regional innovation system [3, p. 126].

3. *Institutional interaction between accounting and cluster.* There is a slightly different nature of interaction between accounting as a socio-economic institution and a cluster as a systemic institution, whereas the latter is considered in the context of the set of enterprises which create a network, and thus differs from the "common" interaction "accounting – enterprise". This form of interaction has led to the presenting and application in the scientific literature of the concept of inter-organizational accounting, which is described in detail in the publications of the author [5, 6].

Thus, the formation and effective use of accounting information in the management system

of cluster associations can be realized applying institutional approach. The main reasons which necessitate applying the concepts of institutional theory in order to solve the problems of accounting in the cluster could be reduced to the following:

1. Existence of the interdisciplinary connections. Institutionalism is a modern trend of economic theory, which takes as a basis for analysis not only economic problems, but also associates them with social, political, ethical and legal issues. Therefore, consideration of the cluster from the standpoint of institutional theory allows a comprehensive study of it from an economic, psychological, sociological, legal and other points of view. The defining features of the cluster as a socio-economic phenomenon are the presence of institutions (institute of cooperation, institute of competition and partnership, institute of communications, institute of coordination), establishing partnerships between participating companies, institutional forms of contracts (agreements), dimensional and technological distribution of the organization, informal regulations and culture.

2. Use of economic theories and concepts. After having investigated the issues of the institutional theory of accounting, Zhuk V. M. mentioned: "The lack of research into the impact of changes in the institutional environment on the formation of accounting theory, its new paradigms and concepts, gives reasons for recognized scientists to state the isolation of accounting science in their internal problems" [9, p. 141].

In our opinion, the spreading and use of the concepts of economic theory (institutionalism (T. Veblen, J. Commons, W. Mitchell); the theory of transaction costs, property rights and contract economics (R. Coase); the theory of industrial clusters (M. Porter); the theory of regional clusters (M. Enright), the theory of economic development (J. Schumpeter and others) influenced the development of accounting in the cluster by determining the substantive characteristics of the institutional accounting environment.

3. The emergence of new objects and the need for their accounting. The presence of an institutional approach is remarkable in the theory of accounting, as evidenced by the emergence of new objects (social and human capital, transaction costs, costs of innovation). These objects are not

fully reflected in the accounting system, and therefore there is an objective need to create new approaches to their organization and methodology. In this case, institutional theory can explain the dynamics of the accounting process.

### Conclusions

Thus, the study suggests that the certain concepts of accounting in the cluster were formed under the constant influence of economic theory. The application of methodological tools of institutional theory in solving accounting problems in the cluster will explain its current state and prospects for development from the standpoint of interaction of institutions. The use of institutional theory will solve the problems of theoretical and methodological nature of accounting by expanding the boundaries to the level of inter-organizational cluster management. The value of institutional theory is based on its ability to explain the current state and prospects of the accounting system from the standpoint of interaction between economic agents and individual public institutions (groups, associations), which is regulated by formal and informal norms and rules in order to improve cluster efficiency.

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## METHODOLOGICAL ASPECTS OF ACCOUNTING OF WARRANTY PROVISION IN ACCORDANCE WITH INTERNATIONAL FINANCIAL REPORTING STANDARDS

**Abstract.** In order to ensure that warranty repair and maintenance costs are included evenly in accordance with National Accounting Standards and International Financial Reporting Standards, entities are entitled to create provisions under warranty. Creation of such provisions allows to adjust the income and expenses for warranty repair and maintenance and to reasonably distribute expenses between the reporting periods, which helps to optimize the tax burden. The purpose of the article is to review the methodological aspects of accounting of warranty provisions in accordance with International Financial Reporting Standards. The achievement of the stated goal necessitated the following tasks: to disclose the nature and conditions of recognition of provisions for warranty in accordance with international accounting standards; to present the methodology for accounting in the accounting and tax accounting and financial statements of the provision for warranty in accordance with IFRS; to propose methods of calculating the warranty provisions to determine their main advantages and disadvantages. The main general scientific methods of research were the analysis (for conducting the research of the main essential characteristics of the research object and peculiarities of its functioning in the context of the topic of scientific

work). Analogy method, dialectical method and systematic approach were used to reflect the methodological approach to accounting and to show in the financial statements the provisions for warranty. Comparison method was used for evaluating the techniques for calculating warranty provision for entities that prepare IFRS financial statements.

**Key words:** provisions, warranty, IFRS, warranty period, accounting policy.

### Introduction

The issue of compliance with warranty obligations, accounting for the costs of their implementation, as well as the creation of appropriate provisions becomes particularly important in today's conditions when the quality of products is one of the main competitive advantages in the market.

So, most business entities, both manufacturers and sellers, have an obligation to correct defects in goods related to their poor quality if they are found to be in the consumer's warranty period. For such entities, provisions under warranty is associated with appropriate warranty costs, the magnitude of

which varies greatly depending on the occurrence of the event – the fact of detection of a defect (breakdown, defect) of the product.

In order to ensure that warranty repair and maintenance costs are included evenly in accordance with National Accounting Standards and International Financial Reporting Standards, entities are entitled to create provisions for warranty. Creation of such guarantees allows to adjust the income and expenses for warranty repair and maintenance and to reasonably distribute expenses between the reporting periods, which help to optimize the tax burden.

The questions of the essence of warranty provision, the problems of expediency of creation at the enterprises, methods of calculation of various types of provision at the enterprises, recording on the accounts, disclosure of information in the financial statements, taxation of operations on the accrual and use of the provision of warranty have been investigated by such scientists as N. Voskalo [1], S. Demyanenko [2], N. Dzyubo [3], T. Zatoka [4], O. Panchenko [5], A. Sviridenko [6], Y. Slivka [7], L. Chizhevskaya [8] and others.

Despite considerable experience, the issues of accounting of provision of warranty according to International Financial Reporting Standards, including accounting policies, documentation, reporting, features of various techniques for calculating of provisions, remain unexplored.

The purpose of the study is to review the methodological aspects of accounting of warranty provision under the International Financial Reporting Standards.

### **Recognition of Warranty Provisions**

According to § 10 of IAS 37 “Provisions, Contingent Liabilities and Contingent Assets” provision is a liability of indefinite duration or amount [9]. The liability of the entity arises from past events, and its repayment is expected to result in the disposal of resources embodying economic benefits.

The main difference between provision and other types of liabilities is the uncertainty of the timing of the costs under which the provision is created and their amounts, while:

- in the case of trade payables, there is an obligation to pay the delivered goods within the terms stipulated by the contract and according to the provided invoices;

- there is an obligation to pay for a delivered product or service that has been received but not paid, has not been billed, or has not been formally agreed by the supplier. However, the uncertainty about the amount and timing of accruals is much less than in the case of provision.

For example, IAS 37 “Provisions, Contingent Liabilities and Contingent Assets” [9] stipulates that a so-called factual or constructive obligation may be the cause of a provision under warranty in addition to the legal obligation (obligation arising from legislative and regulatory acts).

A constructive obligation is an obligation that results from the actions of an entity when:

- the entity has informed the other parties that it will assume some responsibility in accordance with the procedure established by its past practice, published policies, or a sufficiently specific current statement;

- as a consequence, the entity has created a reasonable expectation from other parties that it will fulfill these obligations (paragraph 10 of IAS 37) [9].

An example of such a constructive obligation is the public acceptance of the warranty repair and replacement policy within a specified period after the goods have been sold.

Provision is recognized when three criteria are simultaneously fulfilled (§ 14 IAS 37):

- the entity has an obligation (legal or constructive) arising from a past event;

- it is likely that the fulfillment of this obligation will require the disposal of resources containing economic benefits;

- the amount of the liability can be estimated reliably.

Accordingly, recognition of warranty provision requires not only an existing obligation, but also a high (over 50 %) probability of disposing of resources embodying economic benefits to fulfill that obligation. Otherwise, the contingent liability will again be disclosed in the notes (§23, 86 IAS 37).

Also, to recognize provision, one must be able to reliably estimate the estimated future outflow of resources to fulfill the obligation. On the one hand, the definition of provision indicates an uncertainty in the amount of the liability, and on the other hand, IAS 37 requires recognition of provision only when it is possible to estimate it reliably. Therefore, in order to recognize the provision, the business needs to understand what

expenses it will take to meet its existing obligations. IAS 37 also provides appropriate guidance on the assessment of provision, in particular in §§ 36-47. According to § 36, the amount recognized as provision should be the best estimate of the expenses required to settle an existing liability at the end of the reporting period. This best estimate is the amount that an entity would reasonably pay to settle a liability or transfer it to a third party at the end of the reporting period (§ 37 IAS 37).

The seller's warranty can be recognized as a provision if all three of these criteria are met (Fig. 1). If at least one of these criteria is not met, then the provision of warranty is not recognized.

Therefore, if an entity that sells goods assumes a guarantee (legal or factual) and in the future has to

incur warranty costs, the entity is required to recognize the provision in accordance with IFRS.

The purpose of the provision for warranty in terms of accounting – compliance with the principle of prudence. Its essence is that the assets and income of the enterprise should not be overstated, and liabilities and expenses – low.

Therefore, if it is known that in the future an entity should bear the costs of performing its warranty obligations, it is necessary to recognize such costs in the accounting period when the undertaking has assumed the guarantee obligations. That is not to wait the actual implementation of costs. This procedure will ensure the accuracy of accounting and financial statements of the company.

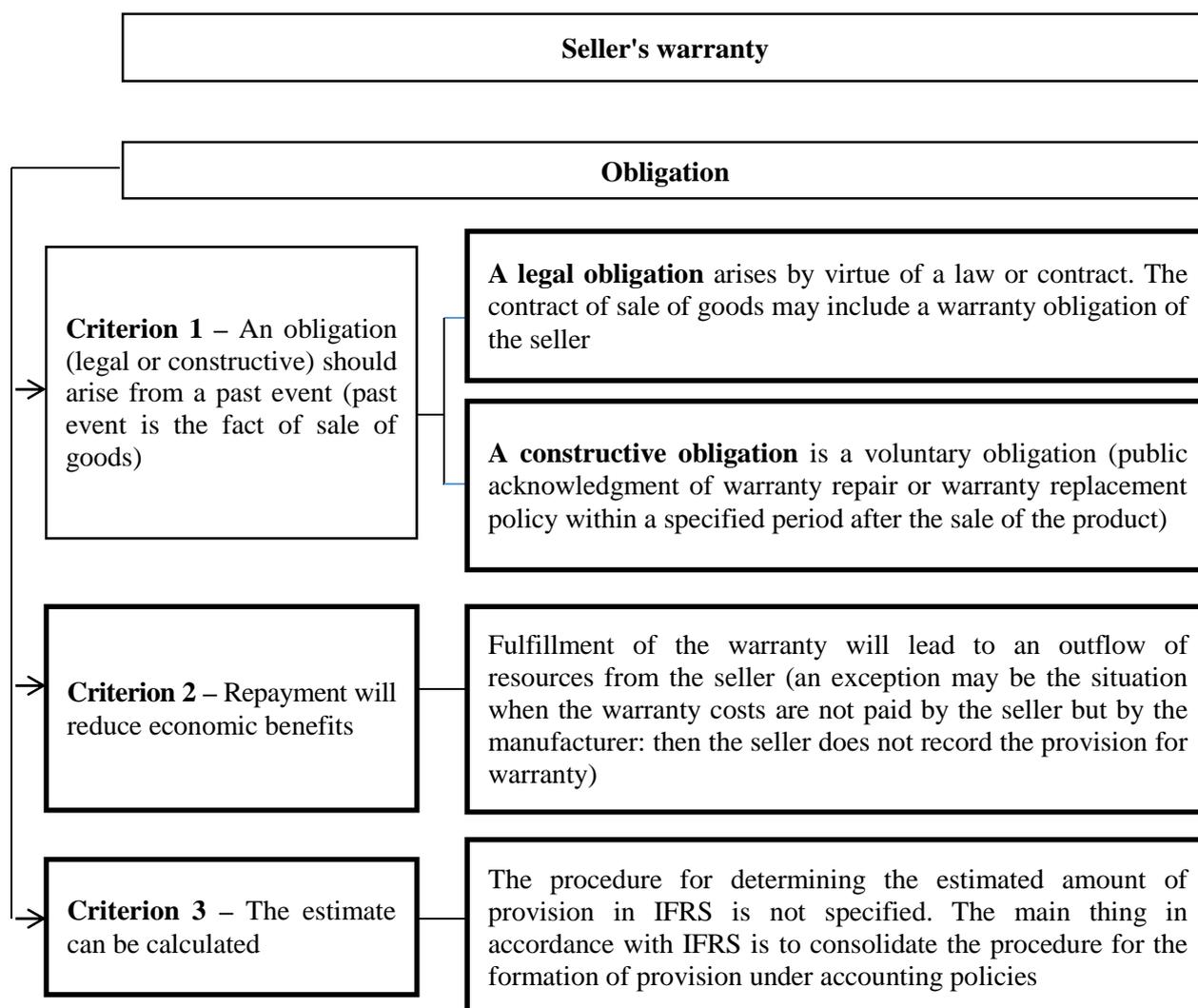


Fig. 1. Criteria for recognizing the seller's warranty as provision under warranty

Source: created by the author.

The fact that the provision is calculated in advance, makes it possible to lay the planned amount of warranty costs in the price of products (goods). In this way, the entity receives reimbursement of the warranty costs “little by little” from each buyer and prevents losses [10].

Thus, there are three definite advantages to the recognition of provision, namely:

- this will allow the seller to evenly distribute the amount of warranty costs over time and put them into the price of the product;
- in the Balance, users will be able to see the estimated amount in the future of the entity's warranty costs for the goods sold;
- the statement of profit or loss will show users a more realistic amount of profit for the current period, given that some of the products sold may still have to incur warranty costs in the future.

#### **Recording of Warranty Provision in the Accounting and Reporting**

One of the peculiarities of accounting when recording operations in the performance of warranty obligations is the creation by the suppliers of goods of provision to recover the following (future) operating costs for the performance of warranty obligations.

IFRS does not oblige entities to develop any document that describes the accounting policies used.

However, developing such a document may protect the accountant from the claims of the head or owner of the entity; may be useful for audits of control entities; will be appropriate in disclosing accounting policies in the financial statements.

Therefore, in the accounting policy for accounting for warranty provision, the following should be recorded:

- Details of the future costs under which the provision is created. It should be kept in mind that warranty provision should be used only for the costs for which it was incurred (§ 61 IAS 37). For example, a provision set up for warranty TV repair cannot be used to cover the warranty costs of repairing mobile phones;
- directly the method of calculation of provision (for different products may differ – at the discretion of the entity);
- the frequency of accrual and review of the provision balance (at least once a year), the procedure for adjusting the security balance as a result of its review.

The amount of warranty provision is recognized as the cost of selling the period in which it was created.

Accounting of costs associated with the formation of warranty provision (Table 1).

During the reporting period, warranty costs are recorded against the balance of previously created provision. If such a balance is not sufficient, then the warranty costs in the amount of excess direct are included in the expenses of the period.

The provision for warranties should be reviewed at each reporting date (IFRS has a reporting period of one year) and, if necessary, adjusted for the same accounting entries that created the security (with the sign “+” in the direction of increase, with the sign “-” in the direction of decrease).

*Table 1*

#### **Accounting of costs associated with the formation of warranty provision in accordance with IFRS**

Contents of the business operation	Corresponding Accounts	
	Debit	Credit
Displaying the accrual of warranty provision	“Warranty costs”	“Warranty provision”
Spare parts for warranty repairs have been written off	“Warranty provision”	“Inventory”
Wages for employees performing warranty repairs have been calculated	“Warranty provision”	“Accounts payable”
Refunds to the payroll for employees performing warranty repairs are recorded	“Warranty provision”	“Social security contributions payable”
Accounts payable to third parties are recorded	“Warranty provision”	“Accounts payable”

*Source: created by the author.*

With the adoption of IFRS 15 “Revenue from Contracts with Customers”, another aspect of warranties provision has emerged.

Guarantees in connection with the sale of products (goods, works, services) may be provided by the terms of the contract, the law, the normal practice of conducting business of the entity.

The nature of warranty obligations in different industries and contracts may be significantly different. IFRS 15 “Revenue from Contracts with Customers” considers two types of guarantees [11]:

1) guarantees that reassure the customer that the product concerned will function as intended by the parties to the agreed specifications (so-called assurance-type warranties);

2) guarantees that provide the provision of a particular service in addition to assurance that the products meet the agreed specifications (so-called service-type warranties or extended warranties).

Thus, the assurance-type warranties are designed to protect the buyer from defects in the product. That is, in essence, they provide a guarantee of quality.

Assurance-type warranties do not imply the provision of additional service to the client. That is, such guarantees do not give rise to a separate performance obligation.

Costs incurred in connection with warranty repair or replacement of products are additional costs for the goods / services already promised to the customer. Such guarantees are accounted for in accordance with IAS 37 “Provisions, Contingent Liabilities and Contingent Assets” as provision for warranty repairs. But provided that the client does not have the opportunity to buy them separately. The estimated costs are recorded as a guarantee (provision) at the time the product is handed over to the customer by the company.

Under IFRS 15, an entity provides a service-type warranty if:

1) the customer has the opportunity to purchase the warranty separately. For example, because the guarantee or its price is negotiated separately (§ B29);

2) the warranty or part thereof provides for the provision of the service to the customer in

addition to the assurance that the products meet the agreed specifications (§ B32).

Such a guarantee is a separate service, as the company promises to provide it to the customer in addition to the product whose functionality is described in the contract. Accounts for the promised warranty service as a performance obligation. Therefore, part of the transaction price is allocated to such an additional service.

If an undertaking promises both an assurance-type warranties and a service-type warranties but cannot reasonably account for them separately, then these guarantees are accounted together as the only performance obligation.

The algorithm for determining the type of guarantee is presented in Fig. 2.

In order to identify whether the customer (buyer) is able to purchase the warranty separately, the following factors must be considered:

1) Is a warranty required by law? If the company is required by law to provide a guarantee, then this is a normal guarantee – an assurance-type warranties. It does not have a separate obligation to comply, as such legal requirements generally exist to protect customers from the risk of purchasing defective products;

2) the length of the warranty period. The longer the warranty period, the more likely that the promised guarantee is the service-type warranties;

3) the nature of the tasks that the company promises to perform. If a business needs to complete certain tasks to assure that the products meet the agreed specifications, then they are likely not to cause compliance obligations. That is a guarantee-assurance [12]. Supporting L. Chizhevskaya’s opinion, this approach will allow to identify all the factors that influence the decision to recognize revenue [8].

With regard to tax accounting, for payers of income tax, whose annual income for the last tax year exceeded UAH 20 million, clause 139.1 of Article 139 of the Tax Code of Ukraine provides for adjustments of provision to recover the following (future) expenses, including guarantees [13].

These adjustments should be made as shown in Fig. 3.

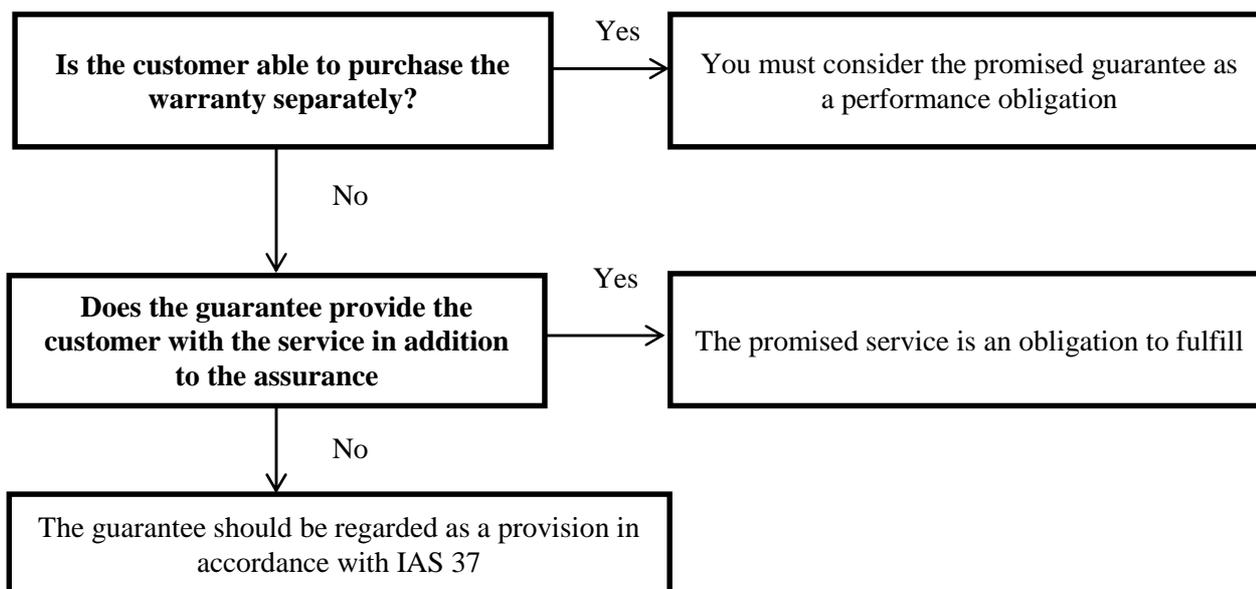


Fig. 2. Identification of the type of guarantee in accordance with IFRS 15 “Revenue from Contracts with Customers”

Source: [11].

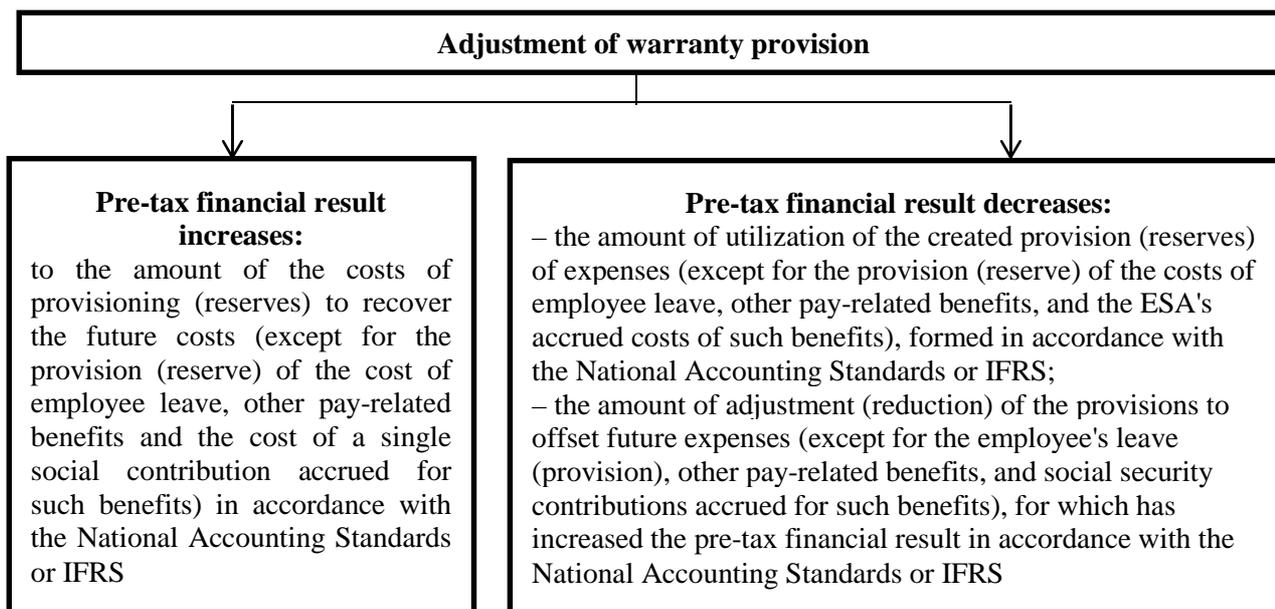


Fig. 3. Adjustment of warranty provisions in taxation

Source: [12].

The calculation of the amount of warranties provision obligations should be made by accounting. But if the provision for a certain period is fixed and approved in accounting policy or other regulatory documents, then the accounting information may not be issued.

In the Balance Sheet, the warranties provision balance should be recorded in current and/or long-

term liabilities, depending on how long the entity provides guarantees: up to or over one year. In the income statement, warranty costs are included in sales expenses.

#### Methods of Calculation of Provision for Warranty

The procedure of calculation of warranties provision in IAS 37 is not defined, so the method

of calculation, the company develops independently and prescribes it in accounting policy. Different methods are used to avoid uncertainty in the calculation of the amount that should be recognized as a liability.

In international practice, there are six techniques for calculating underwriting under IFRS.

Conditionally, the methodology can be divided into two groups:

- methods for calculating the amount of the provisions balance at the reporting date;
- methods for calculating the amount of provisions before accrual in the period [14].

Method 1: the amount of provision for warranty is defined as a percentage of revenue from the sale of goods in the most recent reporting period.

This method is most often used in practice and allows you to determine the average amount of the provision.

The percentage is calculated as the ratio of actual warranty costs over a given period to the actual income from the sale of products during the same period. Such a period for the purpose of calculating the percentage in practice is usually from 1 to 5 years.

Guarantee costs for these purposes should be understood not as the amount attributed to the costs for a certain period (sales costs), but the amount directly from the costs incurred in connection with the warranty service (reflected at the expense of the rest of the security and only on top of it – in costs period).

If the entity is just getting started, then the percentage is determined expertly.

As a rule, in practice, the percentage is revised once a year, even if provision is accrued more frequently (quarterly or monthly).

For example, according to the data presented in Table 2, it is necessary to determine the amount of provision to be shown in the balance sheet as of 31.12.19.

Table 2 shows that in 2019 compared to 2018, there was a sharp increase in sales revenue - 2.25 times (2 450 thousand UAH / 1090 thousand UAH). In this case, the warranty costs have not changed significantly, how much of the warranty cases related to the 2019 sales will occur in the following periods. Therefore, it is logical not to use the last period to calculate the percentage, otherwise we will get an underestimated result: the percentage value drops from 2.12 % to 1.69 percent.

Table 2

**Actual indicators of sales revenue and warranty costs of a contingent enterprise over the last 5 years**

Indicators	Period, years						
	Together for 2015–2019	2019	Together for 2015–2018	2018	2017	2016	2015
Revenue from sales, thousand UAH	8390	2450	5940	1090	1600	1050	2200
Warranty costs, thousand UAH	142	16	126	21	25	30	50
Percentage, %	1,69	0,65	2,12	1,93	1,56	2,86	2,27

Source: conditional data.

Thus, the provision amount will be:  
 $2\,450 \text{ thousand UAH} * 2.12\% = 52 \text{ thousand UAH}$

As the percentage shows the average share of annual warranty costs in the annual amount of sales revenue, 52 thousand UAH is, in fact, the annual expected value of warranty costs in 2020.

In practice, using this method the result in most cases is regarded as providing the balance of the reporting date (and not as turnover (charges) for

the reporting period). Here it is necessary to pay attention to such a moment. If the warranty period is more than or less than one year, then the calculated balance of the provision is subject to adjustment.

For example, if the warranty period is 18 months, then logically, the balance of the provision as of 12/31/19 should be adjusted:

$52 \text{ thousand UAH} * 18 \text{ months} / 12 \text{ months} = 78 \text{ thousand UAH}$ .

In this case, 52 thousand UAH will be recorded in current liabilities and 26 thousand UAH in long-term liabilities.

If the warranty period is less than a year, then the amount of provision should be adjusted, but only for the smaller side. As the liability on the balance sheet will be overstated at the reporting date and the provision needed to cover the costs only within the warranty period should be recorded.

In order to avoid undervaluing your liabilities, you need to make sure that your accounting policies provide for more often than once a year. For example, if the warranty period is 3 months, it is best to calculate the security quarterly.

If we consider the estimated 52 thousand UAH not as a provision balance as of December 31, 2019, but as the amount of provision accrual in 2019, there is a need to conduct analytics on the balance of provision for warranties in terms of their accrual periods. In addition to reflecting the accrued amount, you must further adjust the amounts of provision recorded in prior periods as the warranty period expires, as well as in the event of a material change in the percentage used to calculate provision. The calculations will be simpler if the warranty period does not exceed the period over which the sales revenue is multiplied by a percentage to determine the value of the provision. The result will then be the balance of the provision at the reporting date. Accordingly, all prior provision balances (subject to their use) are written off.

Here is an example where the warranty period is 2 years.

The balance of provision as of December 31, 2018 is 18 thousand UAH, including 3 thousand UAH for 2017 and 15 thousand UAH for 2018. In 2019, warranty costs were incurred in the amount of 10 thousand UAH for goods sold in 2018 and 2 thousand UAH for goods sold in 2019. The provision in 2019 is equal to 52 thousand UAH.

Determine the balance of provisions in terms of goods sold:

– in 2019: 52 thousand UAH – 2 thousand UAH = 50 thousand UAH;

– in 2018: 15 thousand UAH – 10 thousand UAH = 5 thousand UAH.

The balance of the provisions in terms of goods sold in 2017 in the amount of 3 thousand UAH should be written off, since the warranty period of operation of these goods as of 31.12.19 has expired.

Thus, as of December 31, 2019, in addition to the accumulation of 52 thousand UAH of the provision, which are considered as expected warranty expenses for sales in 2019, it is necessary to reverse the 3 thousand UAH of provision charged for sales in 2017.

Together, the balance of the provision as of 31.12.19 will be 55 thousand UAH, including 5 thousand UAH for 2018 and 50 thousand UAH for 2019.

Therefore, this option is more time consuming and less logical, since the estimated amount of provision (52 thousand UAH) is still the expected amount of warranty costs for a certain period (in our case for 2020), rather than the expected amount of warranty costs associated with goods sold during the settlement period (that is, not the amount of future warranty costs for goods sold in 2019).

It should be noted that in most cases, businesses sell more than one type of product with different warranty periods. In this case, the average weighted warranty period can be calculated.

If there are many contracts, it is possible to select only those that give the main income from the sale in the reporting period and to calculate the average weighted warranty period. However, in practice, often, the share of sales under such contracts with major buyers is no more than 60–70 percent. In this situation, it is advisable to consider the remaining 30–40 percent when calculating the warranty period.

As a rule, the warranty period does not differ for all other small orders. Accordingly, additional “weighing” can more accurately determine the warranty period.

Method 2: expertly determine a fixed amount for accrual under warranty for a specified period of time. This rule can be enshrined in a separate order. It is inappropriate to indicate this amount in accounting policy, as it is likely to change periodically. Accordingly, you will need to make changes to your accounting policies each time. It is best to indicate in accounting policies that such value will be set and reviewed by individual orders.

Method 3: if there are several variants of events in which the warranty obligations arise, then the warranties provision is calculated by “weighing” the results of such variants on the probability of their occurrence.

Thus, Table 3 presents information on warranty costs and repair of the basic components of a product in case of their failure, as well as on the probability of such events during the warranty period.

Table 3

**Output data for calculating the guarantee on the liability method using the expected cost method (method 3)**

Product	Probability of failure, %	The cost of warranty repair of the basic part of the product, UAH
A	6	2000
B	4	2500
C	11	600

Source: conditional data.

1. It is necessary to calculate the amount of security for guarantee obligations for one unit of goods sold:

$$2000 \text{ UAH} * 6 \% + 2500 \text{ UAH} * 4 \% + 600 \text{ UAH} * 11 \% = 286 \text{ UAH.}$$

2. It is necessary to calculate the total amount of provision provided for sale, for example 1100 units of goods:

$$286 \text{ UAH} * 1100 \text{ units} = 314600 \text{ UAH}$$

Thus, Method 3 can be used for a limited or similar product nomenclature with approximately the same warranty period and if possible to determine the probability a warranty occurrence.

Method 4: The amount of provision for warranties is calculated on a specific object.

In practice, it is advisable to apply this method to single large transactions, which can expertly assess the probability of a warranty event and the potential amount of warranty costs. If there are few such transactions, it will be easy for you to keep track of the accrued amounts until the expiration of the warranty period.

Method 5: Can be used with a limited or similar product range with approximately the same warranty period. In addition, it is necessary to determine the estimated value of the warranty costs

based on the income from sales in the reporting period – for each year of operation throughout the entire warranty period.

For example, the warranty period of the product is 2 years. It is empirically (or expertly) determined that the warranty costs: for the first year of operation of the goods make up 2 % of the value of income from its sale; for the second year of operation they make 5 % of the amount of income from its sale.

Revenue from sales for 2017 is 1.5 million UAH, for 2018 – 1.6 million UAH.

As of December 31, 2018, the amount of the provision balance will be:

$$1.6 \text{ million UAH} * 2 \% + 1.5 \text{ million UAH} * 5 \% = 107 \text{ thousand UAH;}$$

If, in 2019, the sales revenue was UAH 1.8 million and the cost of warranty service is 50 thousand UAH. Then the amount of the warranties provision balance on December 31, 2019 will be:

$$1.8 \text{ million UAH} * 2 \% + 1.6 \text{ million UAH} * 5 \% = 44 \text{ thousand UAH.}$$

Therefore, by this method it is necessary to calculate the amount of the provision at the reporting date.

Method 6: The actual warranty costs for the previous periods is used to calculate the balance of the warranties provision as of the reporting date.

For example, warranty costs for 2018–2019 are 50 thousand UAH and 40 thousand UAH, respectively. The average warranty period is 21 months.

The average monthly amount of warranty costs should be determined:

$$(50 \text{ thousand UAH} + 40 \text{ thousand UAH}) : 24 = 3 \text{ 750 UAH;}$$

Thus, the balance of the provision amount as of December 31, 2019 will be equal to:

$$3 \text{ 750 UAH} * 21 \text{ months} = 78 \text{ 750 UAH.}$$

When you change sales revenue in different periods, you need to adjust the estimated provisioning amount accordingly. This should be done because the change in sales is reflected in the delayed warranty costs. Therefore, it is incorrect to start from the actual warranty costs for previous periods only.

For example, if the volume of sales in recent periods increases, then the result can be adjusted as

follows. Suppose the average growth rate of sales revenue is 9 % per year.

The monthly average growth rate should be calculated:

$$9 \% : 12 = 0.75 \%$$

Next, we calculate the adjusted amount of the provision balance:

$$3750 \text{ UAH} * 21 \text{ months} * (1 + 0.75 \%) * 21 = 92\,129 \text{ UAH};$$

$$\text{Or: } 3\,750 \text{ UAH} * 21 \text{ months} * (1 + 0.75 \% * 21) = 91\,153 \text{ UAH}.$$

It is best to use metrics over several periods to determine the coefficient of change in sales revenue. It is logical to calculate approximately the same number of periods used to calculate the average monthly warranty costs. You can find a relative change in each successive period from the previous one and calculate the average of the results obtained. You can also, for example, summarize sales revenue over the last N years, as well as sales revenue over the last (N + 1) years, minus sales revenue in the most recent period, and find the relationship between the results obtained.

Method 6 (like method 1) is simple, does not require the use of probabilistic estimates, takes into account the dynamics of income from the sale of goods, so it is often applied in practice.

With regard to all the methods considered, it should be noted that when the warranty period exceeds 1 year, warranties provision in the balance will in most cases be reflected in both current and long-term liabilities.

In this case, it may be appropriate to apply a discount to the long-term component of the provision and to reflect it in a smaller amount with a further increase that will relate to the financial cost. Of course, this should be done if the discount amount is significant.

### **Conclusions**

The results obtained confirm that the following conclusions and suggestions can be formulated:

1. If the business entity for the goods sold assumes the warranty (legal and / or constructive) and during the warranty period is obliged to eliminate the identified defects at its own expense (to bear the warranty costs), then it becomes obligatory to create provision for warranty in

accordance to IFRS. This will allow him not to lower the liability in the balance sheet, evenly distribute the amount of warranty costs over time and put them in the price of the product.

2. It is justified that the seller's warranty can be recognized as a guarantee if all three criteria are fulfilled, namely: the obligation (legal or constructive) must arise as a result of a past event (past event is the fact of sale of goods); repayment will reduce economic benefits; the estimate can be calculated. If at least one of these criteria is not met, then the security is not recognized.

3. The procedure for calculating the value of security in international standards is not specified. The main thing is to consolidate the order of formation of provision for warranties obligations in accounting policy. The accounting policies also need to record the details of the warranty costs under which the provision is created, the frequency of accrual and review of the provision balance, as well as the procedure for adjusting the provision balance as a result of its review.

4. A provision is recognized as an expense for the sale of the period in which it was created. During the reporting period, warranty service costs are recognized at the expense of the balance of previously created provision. If such a balance of provisions is not sufficient, then warranty costs in the amount of excess direct are included in the cost of sales.

5. Recognition of provision implies compliance with the relevant criteria under IAS 37 "Provisions, Contingent Liabilities and Contingent Assets". However, the entry into force of IFRS 15 "Revenue from Contracts with Customers" requires a review of contract provisions based on a five-tiered revenue recognition model. IFRS 15 considers two types of guarantees – assurance-type warranties and service-type warranties. In order to determine the type of guarantee, it is necessary to consider such factors as whether a warranty is required by law, the length of the warranty period, the nature of the tasks that the enterprise promises to perform.

6. The balance will be reflected in the balance in current and/or long-term liabilities, depending on how long the entity provides guarantees – up to or more than one year.

7. The paper presents 6 methods for calculating a warranties provision under the IFRS financial reporting entities. Conventionally, these methods can be divided into two groups: methods that involve calculating the amount of the balance of the provision at the reporting date; methods for calculating the amount of provision prior to accrual in the period. The first group of methods is easier to apply because it does not require accounting for provision balances by periods of their occurrence. The list of methods considered is not definitive, and other modifications are possible. It all depends on the needs (and capabilities) of the users of the financial statements. When choosing a method, it is necessary to evaluate the complexity, the level of automation, determine the threshold of materiality and then make a decision.

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**ACCOUNTING BOOK OF THE LVIV MINT (1656–1657)  
AS A SOURCE OF ACCOUNTING AND ANALYTICAL EXPERIENCE  
IN MANAGING BUSINESS ENTITIES IN EMERGENCIES**

**Abstract.** Information for the management of economic entities is formed in accounting and does not lose its value in time for research and development of practical recommendations for the future. The Accounting Book of the Lviv Mint of 1656–1657, partially developed by historians, is a unique source of research and analytical experience in the management of public sector economic entities in emergencies, such as the war between the Polish-Lithuanian Commonwealth and Sweden (1655–1660). Unlike the books of merchants and artisans, keeping the Accounting Book at the Lviv Mint was mandatory, which testifies to the responsibility of its executors, and thus argues the authenticity of the reflected facts. The application of the rotary-historical method of studying the data of the Account Book in comparison with other historical and economic sources allows not only to reconstruct the events surrounding the opening of the Lviv Mint, but also to restore the sequence and targeting of management decisions to establish coin production in Lviv. The value source advantage of the Accounting Book is the use of in-kind, labor and cost measures, which allows to determine with sufficient accuracy all types of costs associated with the operation of the Lviv Mint and coinage. The participation of the king and the most influential elite of the Commonwealth at that time influenced the attraction of church property and private loans in the financing of the Lviv Mint in such an emergency situation as the war. The organization of cost accounting in the Accounting Book is built in chronological form, but characteristic of individual production processes, which is inherent in the minting of coins, which led to the use of cost accounting by places (centers) of their occurrence. Based on the data of the Accounting Book, the issues of payroll accounting, their types and composition of employees of the Lviv Mint were studied. Accounting and analytical

data allow to determine the nature of management and logistics decisions for the production process and methods of external settlement operations at the Lviv Mint in emergency situations. Organizational and methodological bases of management decisions and their experience of accounting and analytical support of the Lviv Mint in the conditions of war have the prospect of use in modern emergencies, and in particular pandemics. This will mobilize management capacity and resources to reduce the risk of human losses from the spread of COVID-19 virus worldwide.

**Key words:** Lviv Mint, accounting, accounting and analytical experience, Accounting book, management

**Formulation of the problem.**

One of the problems of today's civilized world in the fight against the pandemic caused by the spread of the COVID-19 virus is the unpreparedness of the management system of economic entities to act in emergency situations. This also applies to government structures at all levels of government. The lack of instructions and protocols of actions at all levels of government and business entities has led to disorganization in the activities of relevant agencies and in the economy as a whole. As a result – human losses and panic among the population, the suspension of entrepreneurship. The development of measures at all levels to counter the pandemic has faced a lack of regulatory support for emergency activities, as well as a lack of illuminated and scientifically developed historical experience. If directives and protocols tested in the EU can be used in the

creation of normative and legal support, the elaboration of domestic historical experience requires immediate efforts of Ukrainian scientists. Search and scientific elaboration of such unique sources, which is the Accounting Book of the Lviv Mint for 1656-1657, will clarify the existing but little-known accounting and analytical experience of management of economic entities in emergencies in the Ukrainian lands and consider the possibility of its application at present.

#### **Topicality of the chosen topic.**

Despite the constant development of scientific and technical process, the emergence of new technologies and information systems, the study of historical sources such as accounting documents, accounting records or accounting records are the most reliable carriers of information about specific events in certain time periods. Such unique sources of information include the Accounting Book of the Lviv Mint for 1656–1657, which, despite the ancient methods and techniques of registration of economic facts, contains detailed information about the receipt of materials, their processing and its costs in the production process. The information presented in the Accounting Book contains natural and cost measures of each economic fact on the activities of the Lviv Mint for the period 1656-1657 in a continuous way, which makes it especially valuable in terms of complexity of information. But its greatest value lies in the ability to study the experience of management decisions in the emergency situation of the war of 1655-1660, as it allows you to create an information base to address today's issues related to the pandemic. Without the creation of such a national information support, we will be doomed to keep repeating the same mistakes in emergencies.

#### **Analysis of recent research and publication.**

The Lviv Mint, as an object of scientific research and publications, covers about 100 years. The authors are dominated by Polish and Ukrainian scholars. One of the first researchers of the Accounting Book of the Lviv Mint was the work of Rudolf Menkitsky, known in historical and artistic

circles in 1932 [1]. As a specialist in numismatics, R. Menkitsky used this Account Book from the archives of Krakow to disclose information about the activities of the Lviv Mint in 1656-1657 in terms of establishing the facts of coinage, their classification and description of the circumstances due to which came into circulation Lviv horts and shostaks. After a rather long break, Teofili Opozda's research on the activities of the Lviv Mint appears, where a manuscript from the library of the Polish Academy of Sciences in Krakow is more fully used [2]. Among Ukrainian studies, the works of Volodymyr Shlapinsky and Roman Shust deserve the most attention who, using the archives of Lviv, systematized the periods of activity of the Lviv Mint and classified the minted coins [3–4]. At the same time, the issues of accounting and analytical experience and management of such an entity as the Lviv Mint in emergency situations are not given enough attention. Insufficient attention is also paid in the modern economic literature, after the spread of the pandemic, to the possibility of applying historical experience in the management of economic entities in emergencies, as the possibility of using it to solve today's problems [5].

#### **Purpose and tasks.**

The purpose of the study is to analyze and summarize the accounting and analytical experience of managing business entities in emergencies based on historical sources about the activities of the Lviv Mint in 1656–1657 to form practical proposals for solving modern problems. Achieving this goal involves solving a number of tasks, namely: analysis of the Accounting Book as a source of accounting and analytical experience in managing the activities of the Lviv Mint; assessment of the peculiarities of the emergency situation in the Commonwealth related to the war; analysis of sources of financing the activities of the Lviv Mint; finding out the types of expenses of the Lviv Mint and accounting and analytical experience of their reflection; analysis of staffing of the Lviv Mint and types of its remuneration; identification of the most useful practices from the accounting and analytical experience of managing business entities in emergencies to address issues related to the current pandemic.

### **Outline of the main research material and the obtained results.**

The Lviv Mint is a unique phenomenon not only in the historical, but also, first of all, in the economic dimension. In the historical dimension, the uniqueness of the Lviv Mint lies in the special mission of Lviv to support Polish King Jan Casimir in rescuing the Swedish army and to distribute coins minted by Lviv masters in the circulation of the Commonwealth. The uniqueness of the Lviv Mint in the economic dimension lies in the creation of a powerful financial resource for the royal treasury of the Commonwealth in an emergency situation - war. Moreover, the creation of additional financial resources for the royal treasury was possible due to the harmonization of management measures, as evidenced by accounting and analytical data from the Accounting Book of the Lviv Mint. Information about the preservation and content of the Accounting Book of the Lviv Mint for 1656–1657 became known from historical research in 1932 thanks to Rudolf Menkitsky (1887–1942) [1] – Director of the National Museum named on Jan Sh. III in Lviv [6]. Being a well-known numismatist, R. Menkitsky used the data of the Account Book to describe Lviv coins, namely: six-penny coins and orts (18 money). At that time it was the most complete study of the Lviv Mint in the period 1656–1657. Only after the Second World War did a more complete study of Teofila Opozda [2] on the activities of the Lviv Mint, which not only describes in detail the contents of the Accounting Book, but and the analysis of technology of production of coins is carried out and their systematization is carried out.

The researched manuscript is in the library of the Polish Academy of Sciences in Krakow under the title: „Mennica lwowska r. 1656. Tu jest dowodów piętnaście r. 1827 uporządkowałem” [2]. This manuscript has been preserved without a title page, beginning on page 90 and ending on page 140. According to Teofilia Opozda, this is the second copy of the Accounting Book of the Lviv Mint (the first was used by R. Menkitsky). It is in the form of notebooks and is part of a set of documentary artifacts of the “Act of Pinocchio.” The records were made in chronological order, mainly reflecting business transactions for the receipt and processing of silver, bringing its

sample to the desired quality, use of stocks and labor costs. The pages indicated: types of operations, content, natural and cost measures of operations Hryvnia, lots and quentles were used to measure the weight of silver – the main raw material for coinage. Accounts were kept weekly, usually on Fridays, the results of processing and preparation of raw materials, metal smelting The final entries related to the movement money as of the 37th week of the Lviv Mint’s activity, the last record being the payment of its debt obligations.

The Mint’s ledger is considered as an autonomous source of information about its life, about the forms and style of cooperation of individual workshops in the sequence of specific events of their implementation. The materials of the accounting book allow to find out about the settlement operations of the administration with the employees regarding the performance of various works and the results of the activity of the Mint as a whole. Thanks to the credentials, it became possible to cover the process of coin production, which increases the importance of accounting information in the time context. And this information is comprehensive. Covering all aspects of coin production that could be covered by cost measures.

The opening of the Mint in Lviv, which at that time was part of the Commonwealth, preceded by political and economic preconditions. As a result of the Polish-Swedish war of 1655–1660, the Polish-Lithuanian Commonwealth was destroyed. The Swedes captured Warsaw and Krakow, and Gdansk and Zamost were under threat. King Jan Casimir was forced to withdraw to Opole, where on November 20, 1655 he issued a manifesto calling for a fight against the Swedes. However, the treasury was empty, there were no tax revenues, which made it impossible to finance the army. Jan Casimir was forced to arrive on February 10, 1656 in Lviv, which at that time was in a safer place in the country. By order of King Jan Casimir, a mint was to be opened in Lviv as soon as possible, which was established in 1650. It should be noted that the absence of a mint at that time was nonsense for Lviv as a shopping center at the crossroads. trade, namely: east – west; North South. While coins were minted not only in Krakow and Gdansk, but also in Bydgoszcz, Vilno, Poznan, Lublin and

permanently appeared in other cities of the Commonwealth. The only real source of funding for the monetary could be only the church, which agreed to donate silver and gilded utensils to the king. As early as February 22, 1656, Jan Casimir issued an order to open a mint in Lviv and to appoint authorized persons to collect church donations. The authorized commissioners were goldsmiths, who were to determine the weight of each donated item, examine its quality (sample) and record this data in the accounting register. Thus, political and economic reasons influenced the creation of the Lviv Mint. At the same time, it should be noted that this was essentially a resumption of coin minting in Lviv. After all, since the middle of the XIV century. to the beginning of the XV century in Lviv there was a mint, which first minted Galician-rus coins (to ensure money circulation in the annexed ancient Ukrainian lands), later Rus quarters (under Vladislav Jagail (1388–1394), and later Lviv half-grossus (1394–1414).

Thus, on March 1, 1656, Jan Casimir issued a normative act on the opening of the Mint in Lviv: “Jan Casimir, by the grace of God, King of Poland, etc. marks this letter, watching today’s destruction of Poland, while the cities in which the mint used to be, is in enemy hands. Moreover, believing that the great disadvantage of the RP and our subjects is happening, because the Monetary in the state is not open and wanting both the RP and the people to have their own benefit, and the silver that different churches in our region to save and defend the RP, can be used in the open with the participation of the Senate Monetary, and they to the Grand Duke Stefan Koryczynski Grand Chancellor of the Crown, Warsaw, who took over this burden, and in charge of it we give Jerome Pinocchio to our Secretary to the administration and ordering it ... only orti and shostaki were minted, orti of the eleventh sample - 32 pieces from one hryvnia; shostaki of the sixth test - from one hryvnia 53 pieces. Moreover, all that remains above the costs and expenses of the monetary silver of the church, the monetary can not take any profit and should benefit the RP.” [2]. King Jan Casimir emphasizes in this ordinance that he made his decision on the advice of senators (the Seimas). Perhaps in such a difficult political and economic situation, it was a

diversification of risk. Attention is drawn in this situation to the person of Jerome Pinocchi, an Italian by birth, a merchant who lived in Krakow, had the status of royal secretary and was a famous diplomat. After taking over the management of the Lviv Mint, Jerome Pinocchi entrusted the functions of his secretary to Lorenzo Bandinelli, who was also Italian but lived in Lviv, where he owned real estate and, in particular, the famous Kaminica Bandinelli on Rynok Square, where his father opened the first office [6].

Determining the time lag of the organization of the Lviv Mint would probably also be difficult without the above-mentioned Account Book. Once again we see the importance of accounting to clarify important historical events. According to the Accounting Book, on May 15, 1656, the first batch of minted coins was received. Given the date of publication of the royal ordination (March 1, 1656), we see that the creation and launch of the Lviv Mint took a little more than eleven weeks. During this time, the premises were selected, the necessary artisans were hired, the necessary additions and re-equipment of the premises with the necessary means for processing silver and minting coins were performed. As a rule, such government agencies; their creation and activity were clearly regulated in the legislative plane. On the basis of the Accounting Book, it became known that from May 1, 1656, the expenses for the maintenance of the royal secretary, the superintendent of the Mint, Jerome Pinocchi and Lorenz Bandinelli, who supervised the workers, were accrued. That is, from the beginning of the actual activity of the Lviv Mint, and not the preparatory period of its functioning and the receipt of church silver (April 8-28, 1656).

There is no reliable information about the location of the Lviv Mint. However, most researchers believe that most of it was in a house at the corner of Market G2 and Dominican Street, owned by Lorenzo Bandinelli. Confirmation of this fact is that the most important production sites and the administration of the Lviv Mint were located in a rented building - Kamyaniitsa Bandinelli. including the rent of the house where the coin was minted) [2]. The only thing that the Accounting Book contained about the building of the Lviv Mint was the information about the payment of the plaque with the royal coat of arms,

which hung above the entrance to the house. Payment was made on May 22, 1656 in the amount of - 8 zloty 12 grosh. At the same time, T. Opozda expressed her surprise that in such a detailed and specific document, which is the Accounting Book, which reflected all the costs of raw materials and the amount of coin production, registered the movement of funds, calculations and liabilities, bypassed the development of Lviv mint. But understanding the main purpose of the Accounting Book, as the main accounting register of this time, according to common practice, rented buildings did not reflect on the balance sheet of the entity, which T. Opozda as a historian may not have known. Researchers also believe that the Lviv Mint was created temporarily due to the difficult political and economic situation in the country (war, the crisis of royal finances), so the building was rented for it. But these are rather subjective opinions of the supporters of the diminished role of the city of Lviv in the economy of the Commonwealth and ignoring the traditions of the existence of the Mint since the middle of the XIV century. Opening of the Mint in Lviv in the 16th century. became an objective necessity, which made it possible to fill the royal treasury to finance the victory over the enemy, who captured a large part of the Polish-Lithuanian Commonwealth.

The leased premises required the completion of special additional premises to ensure the operation of the Lviv Mint. The costs of construction materials and payment to employees are evidenced by records of a synthetic nature, for example, it is stated that on May 15 for nails, 11 shields, carpenters and 12 peasants who worked different days – 44 zloty 28 grosh. Or: May 29, for two rafters, for five pairs of such rafters, 6 kopas (1 kopa = 60 pieces) of shingle nails, two carpenters for work for a whole week – 11 zloty 16 grosh. These types of costs indicate the construction of additional ancillary facilities, such as sand grinding required for the manufacture of molds or for storage of materials. The presence of another auxiliary room is evidenced by the entries in the Account Book for November 20, 1656, namely: For the installation of a stove between the city walls for melting cretaceous (pieces of silver) – 2 zloty 12 grosh. Of course, the installation of the stove involved the

preliminary construction of a room under the city walls, where at that time there were many different outbuildings, mostly for the service of the city of Lviv.

Before the church silver acquired the forms of orts and six-penny coins prepared for minting at the Lviv Mint, it underwent a special cycle of processing. The main production stages were the following processes: breaking (crushing) of silver products; meltdown; separation of gold from silver (shading); standardization of the required sample (addition of silver or copper); casting in flat vats of blanks of the 11th or 6th test (according to the lot metrological system); heating the blanks to give them the softness needed to mint coins; cutting or squeezing out of the plate the appropriate number of plaques to the size of coins; bleaching plaques in a chemical solution to give them shine; weight control of individual plaques; stamping. In addition to the sequential technological process of coinage, certain types of necessary work were envisaged, which were carried out in parallel with the main production process, namely: carving of stamps; blacksmithing; metalwork; grinding sand. For these types of work there was a need for separate rooms. The Accounting Book testifies to the selected types of work, as all work was evaluated and paid for. However, in order to obtain information from the Accounting Book on all types of work at the Lviv Mint, it was necessary to conduct a historical analysis of accounting data and their grouping. It was also important to find out what technology was used and, accordingly, what funds were available at the Lviv Mint. As the analysis of the data of the Accounting Book shows, the accounting reflected the operations on the receipt of raw materials, which were products made of precious metals donated to churches and monasteries at the request of King Jan Casimir of Poland. First of all, as evidenced by the records in the Account Book, the Lviv Mint of the analyzed period was dominated by manual labor. At that time, rollers were already widely used in European coin production to stretch the tin, which could not yet be at the Lviv Mint due to the war and the lack of financial resources of the royal treasury. This work was performed by master goldsmiths who specialized in minting silver.

There were also no screw presses at the Lviv Mint for minting coins, like rollers before stamping on prepared ribbons. Instead of a press, they used an installed hammer suspended by a cord on the tower of the building (this hammer with a special lug for fastening was called in the BABA Account Book). This hammer was rhythmically raised and lowered onto a wooden log on which the lower stamp of the coin was properly fixed. When lowered, the hammer struck the upper stamp, which was fixed by a special device over the lower stamp of the coin and pressed their image on a metal disk placed between them. In order to avoid deviations from the vertical fall of the hammer, rods were driven into its sides, which were part of the streams cut vertically in the beams. In this way, the hammer struck the place where the lower stamp of the coin was fixed. However, according to the Accounting Book, the installation of this hammer took place in the process of the Lviv Mint, as the settlement with the peasants for guides to the tower was recorded on June 12, and for the transfer of logs and hammers - June 19, 1656 [2]. Whereas coinage has been going on since early May. Researchers suggest that the first coins were minted by hand, and only in June was the process of making coins modernized. Evidence of this is also the numismatic material, which is characterized by the presence of low quality coins due to non-minting of all elements of the image from the stamp. Of course, it can be assumed that the reflection of these calculations was associated with the repayment of debts to employees of the Lviv Mint, but in such cases in the Account Book recorded the payment of the debt.

The number of employees at the Lviv Mint fluctuated constantly, depending on the size of the prepared material before the time of coinage. For example, on May 22, 1656, ie at the end of the second week of operation of the Lviv Mint, 21 employees in coin production were recorded in the Account Book. And this number of employees does not take into account builders (carpenters, joiners) and security (two people). And on June 12, 36 people were registered in the Account Book during the production of coins. The maximum number of employees – 45 people, according to the Accounting Book, falls on

10.07.1656, which was a consequence of the need for urgent execution of the royal order to mint a large number of coins. The king demanded that the administrator provide the appropriate amounts: in the second week of the Lviv Mint, sending an assignment (order) in the amount of 2000 zloty. On the basis of the king's payment order, a loan was obtained from the Lviv merchant Joseph Potochko, as recorded in the Account Book of May 22, 1656. It should be noted that at this time in Europe were in circulation full-fledged money (coins at the price of silver). And this unique fact shows that the rulers in the difficult financial situation of those times began to use credit money in the form of assignates (assignatina, assignment - comes from the Latin term assignatio - payment order). These are documents (securities), which are essentially debt obligations in settlements with third parties. In this case, the signed assignor Jan Casimir guaranteed the return of zloty 2,000 to the creditor who financed the production of coins. Unlike credit (paper) money, which is used in an unlimited number of times, money orders were used once. As the analysis of the use of credit money, which originates in the VIII century. from China, paper credit money in Europe began to print regularly in the late XVII century. first in Sweden and England, and centuries later in Austria and Russia (which included the divided lands of Ukraine). Thus, the data of the Account Book on the use of appropriations in financing the activities of the Lviv Mint indicate one of the first facts of the use of credit money on the territory of Ukrainian lands as part of the Commonwealth. In general, after reporting on the work of the Lviv Mint, the money orders issued by Jan Kazimir in the amount of zloty 96,562 were mentioned [2].

The researched sources reveal information about the organization of work and staffing of the Lviv Mint. The above data showed the largest number of employees and the factors that influenced this growth. However, later, due to the depletion of raw materials (church silver), the number of employees at the Lviv Mint began to decline. It is known from the Account Book that on January 15, 1657, 10 people worked, namely: Bandinelli; three foundries; two weight controllers for making coins; carver Dombrovsky; blacksmith

and his deputy; locksmith. However, as early as January 22, 1657, only seven people remained at the Lviv Mint – there was no carver of stamps and two inspectors of coin disks. Based on the data of the Accounting Book and the final report – Sumariush, it is possible to find out the organization of work at the Lviv Mint and the results of its operation. The above-mentioned normative act (Ordinance of March 1, 1656) regulated that the organizer and administrator of the Lviv Mint was Jerome Pinocchi, over whom the crown chancellor was appointed – Korychensky. In reality, the immediate supervisor of Jerome Pinocchi was Boguslaw Leszczynski, who supervised the minting of coins in the country as a whole with the title of Treasurer of the Crown. Confirmation of this fact is the testimony of Boguslaw Leszczynski from 30.04.1658 on the report of Jerome Pinocchi to the state treasury on the use of church silver and additionally purchased silver for coinage in Lviv in accordance with the order of King Jan Casimir in 1656. After that, the Treasurer Pinocchi with data on the activities of the Lviv Mint on the basis of the presented Accounting Book. At the same time, it remains interesting that the treasury of the Commonwealth did not cover the costs of organizing the activities of the Lviv Mint due to

the lack of money in the royal treasury. After all, from the very beginning I. Pinocchi did not receive a single zloty allocated for the organization of coin production. He had to find people who could and wanted to support the king and the state during the war. At that time, volunteering was expressed in loans of money, goods and raw materials for the organization of the Lviv Mint.

From the Account Book we learn that from the beginning of the organization of coinage, in the calculations of production at the first stage (15.05.1656) recorded a loan from a Lviv merchant in the amount of 120 zloty. (Table 1), which was repaid in minted orts only on August 1, 1656. Successfully managed to attract commodity loans from Lviv merchants. For example, from the account of November 20, 1656, it is known that Stanislav Krekhmalovich was connected with the organization of the Lviv Mint for long-term expenses – 216 zloty and 17 grosh. Similarly, Lviv artisans provided their services and performed work on credit, for example, from the data of 11.12.1656 it is known that Jan Robicki for blacksmithing from the beginning of the mint received a balance of 92 zloty and 3 grosh. Thus, the financing of the first weeks of work of the Lviv Mint was carried out, and, first of all, payment to employees, which was carried out by weeks.

*Table 1*

**Attracting credit resources for the functioning of the Lviv Mint in 1656–1657**

	Lenders	Sum		Date of entry in the Account Book (in chronological order)
		Zloty	Grosh	
1.	An unknown Lviv merchant	120	–	15. V. 1656
2.	S. Krekhmalovich	216	27	20. XI. 1656
3.	Merchant Joseph Potochek	2000	–	22. V. 1656
4.	Various burghers of Lviv and merchants	18250	–	24. VII. 1656
5.	Unknown close merchant	2650	–	4. IX. 1656
6.	Cash register of Lviv merchants	4000	–	8. I. 1657
7.	L. Bandinelli	2263	22	22. I. 1657
	Total	29 500	19	*

Historical sources show that the royal secretary and diplomat Jerome Pinocchi was reluctant to accept his appointment as manager and superintendent of the Lviv Mint, although he carefully complied with the royal order. Because as soon as Jan Casimir assigned him a mission to Gdansk, without releasing him from the management

of the Lviv Mint, I. Pinocchi transferred his powers to Lorenzo Bandinelli and left Lviv, as evidenced by the entry in the Account Book of 20.11.1656. Bandinelli accepted this position with the consent of the king. After all, from the beginning of the organization of Lviv Mint Lorenzo Bandinelli acted as a deputy administrator, and

according to the Account Book, he officially acted as a clerk, for which on May 15, 1656 he was charged 30 zlotys. From that time on, he also served as a senior master. His competence included supervision and quality control of manufactured coins, accrual of salaries to employees, kept the cash desk of the Lviv Mint and the Accounting Book. It is also known from the records that L. Bandinelli was assisted by scribes, but neither their names nor their number are mentioned in the Account Book. With the departure of Jerome Pinocchi, from November 20, 1656 to January 1657, Lorenzo Bandinelli performed all managerial functions at the Lviv Mint. As a senior clerk, he received 30 zloty a week, which was several times more than masters, goldsmiths, blacksmiths or carvers of coins. After November 20, his reward rose to 45 zloty.

The composition of the masters was constantly changing, for example, June 12, 1656. The accounting book contained 8 names of employees in the immediate vicinity of L. Bandinelli (Table 1), and on July 3, 1656 only three were identified: S. Krekhalovich, P. Lasch and T. Hendrich. The July 17 record mentions P. Lasch (older than tin), T. Hendrich (older than blacksmiths) and Libatsky (older than making horts), who was no longer mentioned on July 24. From 14.08.1656 to 6.11.1656 only P. Lashch spoke next to the clerk, and from that time only L. Bandinelli himself remained to work.

As can be seen from the Table. 2 most of the management staff were masters, but about the last three there is no more detailed information in the Accounting Book. It is

possible that they replaced the functions of the above-mentioned masters depending on the degree of workload on individual production cycles of the Lviv Mint. If workers were paid on working days, the masters received a weekly payment. For example, in the Account Book dated July 3, 1656, it was recorded that T. Hendrikh was paid zloty 12, S. Krekhalovich – zloty 12, P. Lashch – zloty 10.

An important part of the work at the Lviv Mint was the process of making stamps for coinage. The quality of coins, their presentability, perception of trust on the part of the population depended on it. This required the involvement of experienced metal carvers, which was difficult due to the lack of coin production in Lviv. It was necessary to find and attract metal carving masters as soon as possible in the conditions of war and difficult financial situation, and thus to stimulate them financially. The data of the Accounting Book give us the opportunity to know not only their names, but also the form of payment that was made in accordance with the rates of payment for a pair of stamps and the number of their production (Table 3). According to the Accounting Book, we see that at that time used two forms of remuneration in today's interpretation, namely: piecework and hourly. Only hourly wages were called daily, or in parts: half a day, a third and a quarter of a day. That is, it depends on the amount of time worked and was used for management staff, as well as part of the workers. Whereas piecework, which depended on the quantity and quality of work performed and products produced was used in wages.

Table 2

**Management staff of the Lviv Mint (1656–1657).**

	Surname	Title / status	Management functions
1.	Jerome Pinocchi	Royal Secretary and Diplomat	Administrator, superintendent
2.	Lorenzo Bandinelli	Lviv burgher	Secretary of the Administrator; administrator (since 20.11.1656)
3.	Stanislav Krekhalovich	Master	Senior over coinage workers
4.	Libitsky	Master	Chief over coinage workers
5.	Pavlo Lashch	Master	Chief over goldsmiths
6.	Tomasz Hendrich	Master	Chief over blacksmiths and locksmiths
7.	Martin Zelenka	Master	–
8.	Matthew Snoikovich	Master	–
9.	Wojciech Slosar	Master	–

*Table 3*

**Remuneration of carvers of coin stamps for work performed at the Lviv Mint (1656–1657)**

Carvers (working hours)	The rate of payment for a pair of stamps		The amount of earnings		Made stamps
	Zloty*	Grosh	Zloty	Grosh	Pairs
Matthias Nimets (15.05–14.08)	1	20	140	–	84
Shchepko Zhyd (22.05–27.05)	1	15	9	–	6
Joseph Zhyd (29.05–25.09)	1	15	160	15	107
Yurkovich (28.09–9.10)	1	15	15	–	10
Dombrowsky (14.08–25.11)	1	15	135	–	90
Dombrowsky (27.11–15.01.1657)	1	24	46	24	26
Total	*	*	505	9	323

\*1 zloty = 30 grosh.

As can be seen from the table. 3 we have a number of carvers (engravers), but in the first place Matthias Nimets, whose name is mentioned in the Account Book of 15.05.1656, that is, he worked from the beginning of coinage at the Lviv Mint. He was paid zloty 20 for a pair of stamps made. - more than the following carvers. Most likely Matthias Nimets came from German lands, but according to researchers he was a Pole and was mainly engaged in carving engravings. Being the first (who cuts stamps) at the newly opened Lviv Mint, he obviously had the experience and courage to start performing such a responsible job, which is why he received a high salary. During the whole period of his work he made 84 stamps, which he managed to calculate according to the Account Book on the rate and amount of payments. The following week, a second carver, Shchepko Zhyd, arrived at the Lviv Mint, apparently as an assistant to M. Nimets, but worked only one week making literally six stamps. He was replaced by Joseph Zhyd (possibly the brother of Joseph the Zhyd). As can be seen from the table. 3 carver J. Zhyd made the largest number of pairs of stamps during his work – 107 [2]. Mathias the Nimets worked until August 14, 1656, after which he was replaced by the carver Dombrowsky, who performed these functions until the penultimate week of the Lviv Mint. During the 21st and 22nd weeks of the Lviv Mint's operation, ie from September 26 to October 9, Yurkovych, who had previously been involved in the process of forging silver plates, worked in stamp cutting. His temporary move to

stamp-making was most likely due to the September 26 dismissal of carver Joseph Zhyd.

Payments to carvers were made weekly in the amount depending on the number of stamps made. As mentioned above, M. Nimets received the most – 10 zloty, the rest of the engravers received 9 zlotys each, and Dombrowski, starting from November 27, 1656, received only 7 zloty and 6 grosh for a pair of stamps. The lower level of payment is due to the production of fewer stamps at a slightly higher price than the previous ones..

Coin minting at the Lviv Mint in 165–1657 required various technical workers, including blacksmiths and locksmiths. Their functions were in demand from the beginning of the organization until the last days of the Lviv Mint. Locksmiths and blacksmiths took part in the installation of equipment, in the repair of tools and instruments, as well as participated directly in the process of minting coins. For example, when processing silver castings into plates and when stamping discs. The Accounting Book of the Lviv Mint has preserved the names of many such craftsmen, among whom the most frequently mentioned are: Martin Koval, Jan Piotrowski, Wojciech Semkowicz, Jan Lubaczewski, Andriy Olesytsky, Martin Zielonka, Kasper Skibitsky, Ferenc Kovalczyk, Matviy Snojnkovych [2]. However, after July 10, in the Account Book of the Lviv Mint, the separation of surnames was stopped, but only the profession was indicated, for example: a blacksmith – 10zloty, a blacksmith – 7 zloty, two locksmiths – 14 zloty. Obviously, rationalism in the work of the scribe prevailed or saving

resources (paper and ink). From 16.10.1656 to 23.01.1657 the craftsmen included two blacksmiths and one locksmith. The average weekly earnings of these workers were quite high and ranged from: blacksmith – zloty 8–10; assistant blacksmith – zloty 2.5-7; locksmith – 6–7 zł. In addition, craftsmen were provided with breakfast in the period from October 16, 1656 to January 2, 1657. It is possible that the reduction of work towards the end of the Lviv Mint reduced the discipline of artisans, and breakfasts encouraged workers to be faster at work, or the additional interests of L. Bandinelli in the sale of agricultural products, and thus write off these costs of minting coins.

According to the Accounting Book of the Lviv Mint, it is known that in addition to the above-mentioned groups of workers, four sand miners were involved on a periodic basis, as well as two young men, to help everyone. There were two security guards (gaiduks) at the entrance of the Lviv Mint, who were paid 4 zloty a week. Subsequently, a night watchman was hired, paying from 2 to 3 zloty.

In addition to the Accounting Book, an important source on the activities of the Lviv Mint are the data of the final report called Sumarius General compiled by Jerome Pinocchi, as well as a more detailed register compiled by him on the

supply of precious raw materials transferred by churches and monasteries. [2]. According to these sources, the Lviv Mint received a total of 6,348 hryvnias, 15 lots and 4 quintals of silver and gold weighing 191 red gold. It should be noted that the hryvnia was used as a weight-counting system when minting coins and at that time was approximately 198 grams of pure silver, so only the church silver (pure) was donated 1270 kilograms. The term red gold was used to denote gold coins - ducats of Hungarian minting, which weighed about 3.4 grams of pure gold) [7]. Jerome Pinocchi proved to be a talented organizer and responsible superintendent of the Lviv Mint, especially he was aware of personal social responsibility for the work entrusted to the king and the church values passed to him. I. Pinocchi realized that regardless of the emergency situation – the war, he will have to report on the performance of its functions. To do this, he conducted a detailed analytical description of all accepted values using not only natural and cost indicators, but also such qualitative parameters as the sample. On the basis of the analytical data compiled by him and the documents signed by the representatives of each diocese, it became possible to generalize the receipt of silver at the Lviv Mint (Table 4).

Table 4

**Receipt of silver at the Lviv Mint according to the report of I. Pinocchi**

Sources of income	Number			Sample (average)	Value	
	Hryvnias	Lots	Quintles		Zloty	Grosh
Przemyśl diocese	2455	13	12	10	43 000	–
Diocese of Krakow	3124	6	8	9	52 000	–
Diocese of Poznan	335	4	–	10	6 000	–
Janów Church	433	7	–	8	6 500	–
Purchased	1000	1	4	different	16 461	19
Total	7349	–	8	*	125 961	19

As can be seen from the table. 4, the largest share of silver was donated by the dioceses of Kraków (41.28 %) and Przemyśl (34.14 %), and in third place - silver purchased by the Lviv Mint from the population (13.07 %). The documents compiled by Jerome Pinocchi were used to report to Crown Chancellor Stefan Korczyński, Treasurer Bogusław Leszczyński, the State Treasury and the Senate. It was already mentioned above that on

April 30, 1658, the Treasury Crown Leszczyński testified before the State Treasury about the compilation of a report by I. Pinocchi on the use of church silver and additionally purchased silver for coinage. It should be noted regarding the transactions of purchasing silver from the population by the Lviv Mint. This is where purely market problems arise, when information about actual public procurement has benefited resellers

and speculators in a limited market. To solve this problem, the king adopted special regulations, but they were powerless in the interests of market participants in obtaining additional benefits. This was also reported by Jerome Pinocchi, as a loss of possible but not received benefits in the activities of the Lviv Mint.

The events of 350 years ago can be compared to today's events related to the global pandemic through the prism of the management system and its accounting and analytical support. Common features are the extraordinary nature of events, their suddenness and unpreparedness on the part of the authorities. First of all, this is due to the lack of an effective legal mechanism for organizing the activities of economic entities in emergency situations. Thus, in Ukraine, at the beginning of the pandemic, there were isolated regulations governing activities in emergency situations [8-9]. While the possibility of changes in the regulatory mechanism in accordance with the adopted European integration vector of development under the adopted Association Agreement with the EU has not been fully used. At the same time, the government's actions in connection with the spread of the COVID-19 virus in the first stage (from March to May 2020) can be assessed mainly as positive, as they were carried out in a similar manner by EU governments. Application of preventive measures aimed at reducing the spread of the virus through the adoption of restrictions on the movement and mass concentration of people. Restrictions applied to passenger traffic, recreation, entertainment and trade. Gathering and gathering of people at entertainment events and social and political events was completely banned. The author conducted an expert survey on this issue among 128 students of the Faculty of Economics of Lviv National University during May 2020 by using an electronic questionnaire. The respondents were students of flax form of education, aged from 18 to 22 years. The survey showed the following: to the question "Do you think our government has taken sufficient measures to social distance in a pandemic?" 80 people answered in the affirmative "Yes" and 48 respondents answered "No", and among the critical comments it was emphasized that some restrictive measures were not

considered. To the question "Have you seen patients with COVID-19" with your own eyes?" affirmatively, five respondents answered yes, 16 respondents chose "Maybe" and 107 answered "No". Thus, the results of the survey generally positively assess the role of government in the first stage of the pandemic (March-May 2020).

The fact that the fund for the fight against the coronavirus pandemic in the amount of UAH 66 billion was managed to be set up quite quickly also deserves a positive assessment. At the same time, part of the fund's funds was used for roads (UAH 10 billion). As of June 1, 2020, UAH 27 billion was spent from the Fund to Combat COVID-19. [11]. A total of UAH 16 billion and UAH 35 billion were planned from this fund for the Ministry of Health. is directed on reconstruction, repair and the maintenance of highways. Of course, this situation of misallocation of funds indicates an increase in corruption risks.

The pandemic and restrictive measures have negatively affected business and the economy as a whole. The main factor in the decline in GDP in Ukraine by 11.4 % was the reduction of domestic demand (II quarter of 2020). This is primarily due to the impact of quarantine restrictions on economic activity, as well as due to the uncertainty of the further scenario of the situation with the second wave of the pandemic[10]. This led to a change in consumer behavior of the population in the direction of reducing the purchase of durable goods, which negatively affected the investment behavior of entrepreneurs, and thus there was a postponement and curtailment of business projects. As a result, household consumption expenditures decreased compared to 2015 by 10.4 %. However, according to the National Bank of Ukraine, economic activity will be constrained by the preservation of certain restrictions in the conditions of adaptive quarantine, as well as increasing the risks of further increase in the incidence of coronavirus.

In contrast to the situation studied on the example of the Lviv Mint, an important accounting and analytical regulator in business and banks today is the order of the accounting policy which should provide for activities in emergency situations. However, as the practice of

enterprises and banks shows, the statute can still find a section on risk management, but there is no specification of the actions of officials in an emergency, as in the accounting policy, unfortunately, the problem of emergencies is not adequately covered. In fact, such a meaningful content of the order on accounting policy should be paid attention to and analyze the needs for such changes under the influence of the pandemic, and in particular the results of the impact of restrictive measures.

Ending a coronavirus emergency can have quite sad consequences that need to be prepared for at the state level. This applies to the highly anticipated aggressive investment policy in industries that have suffered losses from restrictive measures in connection with the pandemic. This is most likely to be the case for the land market. After all, this market is just beginning to be created and can provoke significant risks for both government agencies and the general population. Thus, systematically developed changes to regulations and organizational and methodological support using generalized historical experience in emergencies has the potential to be involved not only in combating the spread of the virus COVID-19, but also to create a regulatory mechanism to protect business and banking sector in case of emergencies.

### **Conclusions**

Today's challenges to people around the world require similar approaches as 350 years ago to dealing with wars, epidemics and natural disasters. Such complex problems are today described by the common name of emergencies, in which the pandemic due to the spread of coronavirus infection has shown the unpreparedness of humanity to adequately protect millions of people on the planet and in Ukraine. Analysis of accounting information from the Accounting Book of the Lviv Mint (1656–1657). showed a number of theoretical and methodological foundations of management of socially responsible business entities used in emergency conditions related to the war. Based on the results of the analysis, the following conclusions can be drawn:

First, the Accounting Book of the Lviv Mint is an important source of accounting and

analytical experience in managing the activities of socially significant entities that use public funds for their activities, as accounting at the Mint at that time was an example of few types of management where accounting and reporting were mandatory. At the same time, the obligation of accounting, in contrast to today's accounting practice, did not provide for such a degree was regulated, but served to make management decisions and document the transactions.

Secondly, when assessing the peculiarities of the emergency situation in the Polish-Lithuanian Commonwealth related to the war, the initiators of solving the problems related to emergency situations are traditionally the authorities. In the case of the Swedish-Polish war, King Jan Casimir, the church and the nobility, initiated the solution of financial problems to save the Commonwealth. Drawing parallels with today's pandemic in the world, we see positive management initiatives in most countries around the world, which have reduced the risk of disease and mortality from the COVID-19 virus. At the same time, the premature easing of quarantine restrictions and the imbalance of government action at all levels and, above all, the financing of public protection have led to a prolongation of the pandemic and an increase in death threats.

Third, the analysis of sources of funding for the activities of the Lviv Mint showed a significant degree of cohesion between the ruling elite, the clergy and the nobility in emergency conditions of hostilities to save the state. The sacrifice of the church hierarchs, the creditor mission of the nobility provided financial resources for the successful activities of the Lviv Mint in helping to fight the enemy. Today's pandemic in Ukraine has shown the possibility of rapid formation of financial resources of the state to protect the population in the amount of 66 billion UAH. At the same time, their development is accompanied by corruption risks based on individual party interests, which can nullify the noble mission of the ruling elite.

Fourth, the elucidation of the types of expenses of the Lviv Mint and the accounting and analytical experience of their reflection showed a flexible adaptation of the then management in such extraordinary types of production, which is

characteristic of coinage, which led to the application of costs by places (centers) of their origin and responsibility. This practice is relevant today, especially in the newly created in Ukraine family medicine and the formation of the cost of paid services, which is a necessary condition for the successful development of insurance medicine.

Fifth, conducting an analysis of the staffing of the Lviv Mint and its types of remuneration; Determining the most useful practices from the accounting and analytical experience of managing business entities in emergencies can serve to address the problems of stimulating the payment of health workers associated with services in a modern pandemic.

Successful application of historical accounting and analytical experience in the current emergency situation will help solve management problems at all levels.

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## **METHODOLOGY OF PROSPECTIVE AND CURRENT RESEARCH IN FINANCE**

**Abstract.** The article deals with issues related to research methodology in the financial field. An important aspect of the author's approach is a new look at the research, which is proposed to be considered as prospective and current. The argument for this approach is the need to combine traditional basic and applied research into a group of prospective, ie those that result in some long-term goals and can usually result in scientific novelty. Instead, current research is no less practical. It is through current research that the necessary measures are being implemented. This applies to technical, technological, organisational, economic and financial measures, which ultimately provide some improvement in the activities of any entity. The characteristics of prospective and current research are given, which determine the differences between them. In particular, such characteristics are: the expected result, the tools for the study and the composition of researchers – performers of prospective or current research. Based on the division of research into prospective and current, the different directions of these types of scientific and practical research are determined. It is noted that the formulation of tasks of different purpose and nature requires the definition of certain pre-defined sets of research methods. Narrowing of methodical tools can lead to erroneous results. Instead,

an integrated approach, formulated not only for a hypothetical goal and potential outcome, but also for the choice of research methods, is an important safeguard against erroneous conclusions. To do this, a matrix has been developed, in which complexes of research methods (for several examples) have been formed, which will allow to obtain the most substantiated result of the research, both prospective and current. Such examples are: economic and social efficiency of financial research, public policy in the field of finance, funding schemes for research. A study of well-known empirical and theoretical research methods has been carried out, from the standpoint of the peculiarities of financial research in scientific and practical activities. In particular, examples from the financial sphere of possible searches, with the help of general methods of analysis, synthesis, induction, deduction and analogy, are investigated and given. From empirical methods examples of directions of possible researches, with use of comparison, experiment, modeling, are considered and resulted. The generally accepted and special characteristics of research in the field of finance are considered. Among them are important for financiers the concept of science and the need to master the scientific approach to financial research; the nature and characteristics of the research process; scientific

(theoretical) base and financial aspects of research; research priorities; directions of research of natural and social sciences; stages of scientific research; methodological approach to the study of efficiency in finance. These issues are important for researchers, as well as for students and graduate students studying in financial educational-professional and educational-scientific programs.

**Key words:** research methodology in finance, prospective and current research, general scientific methods of research in finance, empirical methods of research in finance, a complex of research methods in financial policy, effectiveness research methodology in finance.

### **Introduction**

It is well known that methodology is always in the field of view of scientists. Based on the methodology, the most important aspects of the development of nature and society are studied. This area of human activity is at the epicenter of the relationship between people, corporations, and countries. Many scientific works have been published on improving the methodological tools to ensure the best way of functioning of human teams, optimising the activities of enterprises, organisations and institutions. In particular, scientists are improving methodological approaches to the study of the financial system. Instead, researchers often focus on those methodological aspects that relate to their subject of study.

In modern conditions, the science of methodology came from a purely philosophical study and moved to special studies of all branches of science. In some sciences, such as medicine, the methodological aspects are given special attention. In research on economic, managerial and financial issues, the issue of methodology is covered mainly in the context of a specific, rather narrow topic. These questions are limited to the consideration and justification of the subject, topic of research, as well as a description of the methods chosen for the study. If the reasons for choosing the subject of research, which determines the problem range of publications on the topic of the dissertation, are considered with sufficient arguments, then the research methods are simply chosen. In other words, well-known research methods are usually taken into account. Researchers do not delve into the methodological content and nature. That is, most often the features of the choice and justification of the choice and use of methods

selected for the study remain undisclosed. This can sometimes lead to the use of an insufficiently complete set of methods and defects in the results of the study. A more complete and reasoned choice of research methods should be based either on previously developed by scientists recommendations, or on independent methodological research. When the first requires the availability of relevant results of methodological research, the second is quite time consuming, which would take a significant amount of time and would interfere with the main study. It is these considerations that motivate us to explore methodological features in the field of finance, to try to determine a set of methods for some problematic areas of financial research. In this way, it is possible to develop, firstly, a scheme of methodological approach to determine the group of necessary methods for a particular financial problem. Secondly, the substantiation of this scheme provides an opportunity to get an idea of the necessary and possibly mandatory set of issues, the solution of which will allow in any other case to determine the necessary set of research methods. Thirdly, certain sets of methods for conducting research can be used by other researchers as a ready-made and well-argued set that will allow you to conduct your own research of financial problems without wasting time on methodological reasoning.

### **Literature review**

Many scientific works of domestic and foreign researchers, which are reflected in both scientific and educational literature, are devoted to the issues of methodology. In particular, we can cite the following examples of monographic works of general methodological nature [Garafonova, 2014; Howell, 2012; Kothari, 2004; Williams, 2016; Mints, 2017; Pernecky, 2016; Tuck & McKenzie, 2014]. The most numerous group of publications on methodology issues are textbooks designed for students and graduate students. A number of works can be attributed to educational publications in which the problems of methodology are considered in the general philosophical sense [Cekhmistrova, 2003; Danylian & Dzioban, 2017; Jonker & Pennink, 2010; Konverskyi, 2010; Kraus, 2012]. The development of scientific research in all fields of knowledge requires the use of a significant number of approaches, principles, methods. In each field of knowledge, scientists and practitioners

strive to explore and understand certain patterns, to identify the most essential characteristics of those processes that can later be used in practice.

It should be noted that the study of the content of the methodology has long philosophical roots, and therefore thanks to philosophers, this area of science has received serious generalised formulations of the categorical apparatus. Currently, scientists in other sciences use the achievements of philosophers and enrich the realm of methodology with new research, mostly of an applied nature. This also applies to the sciences of economics, management and finance [Kyrylenko, 2012; Martsyn, Mitsenko & Danylenko, 2002; Mishchenko, Chornii & Fishchuk, 2017; Orlov, Novytska & Yatskevych, 2011; Romanchikov, 2007; Vajinskii & Shcherbak, 2016; Zatserkovnyi, Tishaiev & Demydov, 2017]. An important aspect of methodological research is information support, which, in particular, is devoted to the work [Martynov & Orlov, 2013; Sharavara, 2017]. It is now generally accepted to include in ScD dissertations a section devoted to the methodology of research of a specific problem of such research. Examples of such works are [Azarenkova, 2007; Kharlamova, 2016; Korneiev, 2015, 2004].

The results of methodological research on the problems of the financial system, covering financial policy, areas of the financial system, etc., are published and supplement the general idea of the methodological aspects of the activities of financiers, scientists and practitioners. Among such publications in periodicals are works [Ryan, Scapens & Theobald, 2002; Boronos, 2011; Dyba & Maijorova, 2013; Ivanov & Udovenko, 2015]. Of course, it should be recognized that the range of such works is wider, including research conducted and the results published in previous decades.

Examining the issues of methodological research in the field of finance and differentiating such publications by financial problems, we can see that they are quite diverse. The methodology of formation and architecture of transparent financial reporting is investigated in the dissertation [Kharlamova, 2016]. The work of Boronos V. [Boronos, 2011] is devoted to the financial potential of the territory. Theoretical and methodological principles of research of investment process in finance are covered by [Dyba & Maijorova, 2013]. In the article [Ivanov, 2015] there are proposed the

results of developing a methodological approach to assessing the effectiveness of measures in the field of deregulation. The methodology of classification of financial flows of insurance companies is considered in the work [Kneisler, 2015]. Methodological approaches to the flexibility of the financial system are described in the monograph by Laktionova O. [Laktionova, 2016]. Theoretical and methodological issues of balancing the finances of enterprises are set out in the publication [Lomachynska, 2009]. Issues of financial security of the enterprise are considered in many works, in particular Martiusheva L. studied this issue from a methodological standpoint [Martiusheva, 2011]. Paientko T. investigated the problem of institutionalisation of fiscal regulation of financial flows [Paientko, 2013]. Methodological aspects of public finance research are studied in the article by Tulai O. [Tulai, 2019]. The work [Volokhova, 2014] reveals the methodology of the study of financial decentralisation by type.

Many studies of financial problems with an emphasis on the methodological principles of scientific research are in the foreign literature. An example of publications of such studies on specific topics in particular is the article, which examines research methods and methodology in finance and accounting [Ryan, Scapens & Theobald, 2002]. In articles [Schmidt, 1982] Reinhard H. Schmidt analyses the relationship between methodology and financial economics; suggests considering capital market theory as a successful research program; the author prefers a behavioral approach to business financing as opposed to an economic approach. In his publication, Sean Peek considers small business financing options that bypass traditional banks. Williams C [Williams, 2007], based on a comparison of management research strategies in the two periods, 1995–97 and 1985–87, draws conclusions about trends in research strategy reports, as well as about the rationale for research design.

The study of many aspects of the functioning of the financial system (as we see from the examples of scientific papers, as well as what is well known from dissertation research) is quite deep in the sense of considering purely financial problems. Instead, in terms of deepening the methodological aspects, from the subject of the dissertation to the analysis of the possibilities of applying research methods for their wider use, it is

necessary to note the local nature in this sense. That is, methodological issues are disclosed only for a specific study, for the selected subject area and no attempt is made to expand the range of methodological tools for other financial and economic problems, ie the methodological apparatus itself is not improved.

*The purpose of the article* is to improve approaches to the study of methodology in the field of finance, to clarify the nature and features of the use of certain well-known research methods on financial instruments, financial relations, financial system, financial efficiency, financial policy, and to identify areas for research methods for study of financial problems.

### **Methodological approach**

When it comes to a methodological approach to the methodology itself, there is a phenomenon of the second order of research. That is, there is a problem of research methods for the research methods themselves. Obviously, to study research methods it is necessary to use well-known approaches to well-known methods. Therefore, we have chosen to study the methodology of financial research methods of analysis and synthesis, historical method, matrix method and method of description to compare and contrast such complex issues as, in particular, the formation of complex methods of financial policy research, economic and social efficiency of financial measures, financial research, etc.

Thus, analysing and covering a wide range of methodological categories, we have chosen a context in which the issues will be gradually considered: firstly, the classification of types of research depending on their purpose and time requirements and coverage of different types of resources; secondly, substantiation of the topic and composition of methods for the implementation of research in the field of finance; thirdly, the characteristics of well-known research methods for use in the field of finance; fourthly, a description of the generally accepted and special characteristics of the research process in the field of finance.

### **Conducting results of research.**

#### **Prospective (fundamental and applied) and current research in finance**

When it comes to research, science is mentioned first. It is from scientific activity that

research processes, knowledge about research methods and directions, about desirable and probable scientific results originate. Thus, if we keep in mind the training of personnel of different levels of qualification, there is always a ranking and separation of a certain range and amount of information that should be submitted for the training of bachelors, masters, PhDs. It is well known that this sequence of professional growth expands the range of research methods and, accordingly, increases the amount of educational material. Instead, for each of these educational levels, knowledge of some ascending positions is required, in particular the division of research into certain groups.

Scientific or research activity is an activity aimed at obtaining and applying new knowledge, including: basic and applied research.

Basic research can be conducted as experimental or theoretical. They are aimed at gaining new knowledge about the basic laws of construction, functioning and development of man, society, environment; the result of basic research is the discovery of phenomena, natural effects, and so on. In the financial and economic sphere, basic research is conducted mainly in a theoretical way and aims to identify trends in economic development.

Applied research is aimed primarily at applying new knowledge to achieve practical goals and solve specific problems; the result of applied scientific research in material production are new technological processes, machines, mechanisms, devices, etc .; in intangible production such results are certain methodological developments, descriptions of recommendations, procedures for performing certain actions, etc. In the field of economics and finance, applied research should determine the prospects and effectiveness of new economic mechanisms, financial instruments and others.

Research in any field of human activity may have a different purpose and, accordingly, a different tool base, and hence differences in the composition of research performers. When it comes to research, which is undoubtedly promising, aimed at using a wide range of the latest research tools and resources, aimed at developing new designs and technologies for production, making certain recommendations for future management, they can be called prospective. In the scientific sense, such studies aim to obtain a result in the form of a certain scientific novelty.

If it is necessary to obtain some improvement in the activities of a particular institution, to achieve some positive (according to the selected criteria) result in the work, then it may be a study to achieve certain changes in production and / or management. Thus production activity is activity of both industrial enterprises of any kind of economic activity, and activity of scientific, educational, financial and credit establishments. Such studies are quite acceptable to call current.

Thus, the difference between perspective (scientific) and current research is, firstly, in the expected result, secondly, in the composition of the tools used to obtain this result (although in both cases the same tools can be used), thirdly, as a part of executors-researchers.

Thus, as noted above, perspective (scientific) research is aimed at obtaining scientific novelty, which differs significantly from the knowledge that was known before the research. The current study is intended to obtain information about the possibility of changes in the parameters of the enterprise, organisation, and institution. In other words, the current study involves changes in known indicators using well-known methods.

As for the tools used in perspective (scientific) and current research, they may be the same, especially for research of humanitarian and financial and economic nature. Only fundamental (in the fields of physics, chemistry, biology) and applied (technical) research may require special tools, ie such tools, which itself can be innovative, carries elements of scientific novelty. As for financial research, they use mainly publicly available and special financial statements, which are processed using computers and software products. A novelty, as a rule, in scientific financial research is a set of ideas of researchers and the results obtained.

The performers are important for any research. Thus scientific research is carried out, as a rule, by scientific workers at possible involvement of technical workers for performance of purely technical operations. For ongoing research, it is not necessary to involve scientists to perform it. Most likely, experienced practitioners with extensive experience in a particular field and young professionals with an extraordinary view of trivial things should work here. That is, the combination of experience and certain new ideas

should bring results in the process of conducting current research, which aims to improve the work, in our case, the financial structure (department, administration, ministry, etc.), or procedures for financial transactions.

Based on the above, the first practical conclusions should be made, in particular for the educational sphere, on the chosen methodological approach of our study. First, mastering the methodology of current research is important for a Master's degree. As for mastering the methodology of scientific (perspective) research, it should be done on a Doctoral degree. Secondly, an important aspect of assigning the results of our research to educational and scientific fields is a clear distinction between current and future (scientific) research, as masters must understand the objectives of financial research to improve results and not consider their future financial activities as routine financial transactions (this type of work should rather be entrusted to bachelors). As for research, masters need to gain some knowledge to understand what they should do and what scientists should do. This approach is fair, because it is common knowledge from cybernetic approaches that a system or individual performer must have knowledge and knowledge much broader and deeper than required by the work assigned to them.

#### **Substantiation of subject and methods of research in finance**

Subject of perspective (scientific) research is defined differently for fundamental and applied research.

The topic of the current study is determined in accordance with the tasks set by the management of the enterprise, organisation or institution to ensure economic development, gain competitive advantage in the market, improve the socio-economic status of the united territorial community (UTC), region, country. Executors of current research can, if necessary, rely on the results of scientific research, the content of which opens up certain prospects in production activities.

We have already noted that the topic determines the choice of a set of methods to be used for research. In particular, for the current financial research, we propose a matrix in which, in accordance with the desired (defined) results, we propose the choice of a certain set of methods (Tab. 1).



In determining the composition of a set of methods for the study of a particular subject area, we were guided by the conclusions of the analysis of those problematic issues that should be considered and studied in order to achieve a certain result. Of course, in each case the range of methods mentioned by us in the matrix can be supplemented. Instead, the main set of methods is determined by the need to conduct certain research operations.

Thus, the study of economic efficiency of financial problems obviously requires the use of methods of measurement, calculation, analysis and synthesis of indicators involved for comparison. In another way, it is even difficult to imagine the study of quantitative indicators of financial performance. Here it is important to note that it is a question of cost indicators, ie direct calculation of efficiency indicators, can go only after definition of indicators of technical effect. Under the technical effect, as is well known, we understand the change in the parameters of structures, technological processes, organisation of work and so on. These changes, ie the technical effect, are measured in absolute physical units, or in units of time. Therefore, it is necessary firstly to measure and calculate the technical effect, analyse its components, and then make (if necessary) certain adjustments and synthesise the final value of the technical effect. Only then can we proceed to determine the economic effect.

The study of the social effectiveness of financial measures will require the use of methods of observation, interviews, questionnaires, testing, measurement, description and comparison. Only in this way we can evaluate the effectiveness and expediency of the use of financial instruments. It is well known that any changes must take some time from implementation to the planned result. At the same time, the result planned by the managers of the enterprise, region, state is not immediately realised by people. One of the clearest examples of this is the economic reform in the Republic of Poland, which was carried out under the leadership of Prime Minister Balcerowicz. Of course, we should mention the difficult state of the Polish economy, the difficulties that befell all Poles. This reform still has its critics, as some believe that it could have been done differently. Instead, the reform has its fruits, at least in a stronger national

economy, the stability of the national currency. However, it came over time, albeit with a lot of work from the whole society.

The study of public policy in the field of finance requires the application of the axiomatic method, which provides for the definition of clear guidelines (axioms, axiomatic method) and long-term plans (hypotheses, hypothetical method) of parliament and government on current financial activities in the state. On the basis of experiments and modeling, formalisation of certain processes, generalisation of historical lessons of both domestic and foreign financial practice, ranking of socio-economic problems, abstraction from populist proposals of various political and public organisations, system analysis is carried out and state and local budgets are formed to attract and use the necessary financial instruments in this period. In this case, methods of analysis and synthesis, induction and deduction, analogy should usually be used. In other words, it is impossible to develop public financial policy without the use of a range of research methods. An example is the submission of certain financial and economic projects by the government, the central bank. To convince parliamentarians and society, draw analogies with the experience of other countries, analyse their own capabilities, available resources, synthesise the projected effects of the proposed measures, take into account the effect of synergies from the integrated use of certain financial instruments. A practical example of defining public finance policy is the study and government decision to allow or prohibit the use of cryptocurrencies. Under uncertainty among government officials, financiers, bankers, and society, some countries have allowed and some have banned the use of cryptocurrencies in settlements.

The study of research funding schemes also requires a range of methods, including axiomatic, hypothetical, formalisation and abstraction, ranking and generalisation, the historical method, the method of systematic analysis, observation, description and comparison. Such a set of methods allows to study the experience of other countries, to systematise one's own domestic experience and on the basis of correctly defined priorities to provide the necessary financial resources to those scientific institutions that will provide breakthrough

innovative development. Every country has its "limited" financial resources. Restrictions may be of different nature in different periods of development of the state, under different conditions of the national economy, under different market fluctuations in the domestic and world markets and under other circumstances. All factors will affect the definition of sources of funding, both from the state and with the participation of private investors or patrons. Undoubtedly, the priority of the state will be such projects that provide its main functions. With regard to state support for projects that are more commercial in nature, public authorities in this case are guided by the requirements of social orientation. After all, the reduction of unemployment, increasing the level of employment of certain socially vulnerable groups largely depend on the availability of jobs, on orders for certain types of products. In some cases, these are socially significant products, and in some cases they are products that can be used for social assistance abroad, but they provide an opportunity to increase the number of jobs in the country.

#### **Examples of the use of research methods in finance**

Analysis is a general method and belongs to the general scientific methods of research. However, it should be emphasised the need to deepen the understanding of this research method for a specific subject area, such as finance.

The method of analysis in financial research is the differentiation of the studied financial system or financial process into constituent elements in order to study each of them more thoroughly.

Examples include vertical and horizontal budget analysis. You can also consider analysing individual budget items or estimates. In each case, the analysis process involves differentiation, or division of the research statement or the entire financial document (plan, or report) into some components, which allows you to learn more about the details of a particular type of income (profit) or spending on certain resources.

*Types of analysis are classification and periodisation.*

Examples of classification include the division of the financial system into corporate finance (corporations), local and public finance, and

international finance. The budgets of enterprises and organisations, local authorities and administration, and the state budget correspond to these categories. It should also be reminded of the relevant financial authorities that plan and implement these budgets. These include financial departments of enterprises and organisations, financial departments and departments of the united territorial communities (UTG), district, city and regional public authorities, ministries and departments, the Ministry of Finance. As for international finance, they are represented by international financial organisations: the International Monetary Fund (IMF), the European Bank for Reconstruction and Development (EBRD), as well as similar banks on other continents, the World Bank and others.

Examples of periodisation are the time division of financial activities depending on the emergence of different types of means of payment, the emergence of systematic accounting of financial transactions, the emergence of budgets and changes in revenues and expenditures, changes in the tax system, changes in financial management, the emergence of financial companies national and international legislation in the field of finance, etc.

Synthesis belongs to general scientific research methods. However, understanding this method of research requires clarification for "finance" as a subject area of research. The method of synthesis in financial research is an assumption about the combination of components or elements of the studied financial units or financial instruments in order to study them as a whole.

Take by analogy accounting, where the final, summary or synthetic result of the balance sheet is an indicator of the balance sheet currency. In the financial plans and reports it is also possible to note certain generalising results on separate sections of estimates and budgets which are final, integrating, synthetic indicators.

Synthesis, as a method of research in finance, allows you to make the right management decisions to create, organise and reorganise individual production, government agencies, public and political organisations, local communities and so on.

Methods of analysis and synthesis are interrelated, they are used in research in combination. The analysis allows us to answer

questions about the in-depth individual characteristics of the financial functioning of a business entity or territorial community, administrative territory. And the synthesis allows us to see the prospect of unification, joint production, economic activity, ensuring innovative development according to modern requirements.

Market principles of management provide daily examples of mergers or acquisitions of some corporations to others. Such decisions are made based on the results of the analysis of current activities and consideration of development prospects on the basis of synthetic indicators that reflect the total income, expenses, results of activities. Examples of such processes are mergers or amalgamations of banks in Switzerland, Ukraine, and the consolidation of automobile companies in Europe, USA, and South Korea. At the same time, such tendencies have an interstate, global character.

As for the administrative-territorial aspect, examples are Great Britain in the 1970s, the Republic of Poland in the early 21st century, when the consolidation of counties in the UK and communes in Poland led to the strengthening of local budgets. Such a reform was envisaged in Ukraine at the end of the 20th and the beginning of the 21st century, but has not yet been fully implemented. The decision of the Verkhovna Rada of Ukraine on the consolidation of districts in the regions was adopted in 2020. Instead, there is a lot of work ahead to streamline the authorities and management in the new districts, analysis and determination of the financial capacity of these new territorial entities, which are formed of several UTCs. It is known that not all united territorial communities are financially viable. As a result, districts may be unable to implement the necessary social projects and programs at the expense of their own financial resources.

Induction belongs to general scientific research methods. Regarding this method, it is better known from the philosophical and technical literature. Instead of the financial subject area of research, it is difficult to find in-depth research on this method. However, as in other activities, the method of induction may sometimes be beyond conscious perception, but is used by practitioners and scientists. In particular, this applies to cases:

(a) the individual experience of the financial work of a corporation or financial institutions, (b) the use and distribution of a financial instrument (eg certain derivative etc.) in different structural entities. Therefore, there is a need to interpret this research method for a specific financial area.

The method of induction in financial research is a generalisation of conclusions from observations of a set of disparate facts, trends in the use of financial instruments, experience of financial work, which allows formulating general provisions, principles, laws.

Examples of using the induction method include the already mentioned derivatives, which became widespread after certain operations, which in some cases allowed unlocking the problems of temporary defaults. Also, the results of using the method of induction include the strengthening of local budgets through the spread of international practice of consolidation of territorial communities. Of course, combining two or more budgets does not generate more revenue than simply compiling separate budgets. Instead, the larger amount of funds available to the authorities of the enlarged territorial community allows for the consistent implementation of larger projects in all former small communities and the solution of socio-economic problems when it would be impossible to do so separately.

Deduction belongs to general scientific research methods. However, here we should also say about a certain specificity of the view on such a method, which is deduction. After all, social, natural and technical sciences derive certain laws of development of society, natural phenomena, laws of functioning of technical means in certain technological processes and then use the obtained general rules (laws, principles, etc.) for certain socio-political conditions (methods of governing states, development and civilisations, etc.), to find new means and methods of production, to organise and manage enterprises and so on. If in the field of finance it is possible to formulate certain generalised approaches to financial policy, financial cooperation at different levels (from international, interstate to intercorporate), then such approaches can be used for a narrow range of financial relations – in a country that has not yet implemented certain financial innovations, or a

corporation which has not yet used some financial tools, financial technology.

The method of deduction in financial research is the conclusion of the application of certain financial instruments and technologies for a particular case, based on the general provisions, principles and laws.

An example of the use of the deduction method is the introduction of blockchain technology in the financial sector. After all, the technology itself originated in the field of information technology (IT) and is generally intended for the use of computer technology. Instead, like many other advances in science and technology, it has become more widespread and, among other things, has proved to be very effective for financial and credit operations.

Observations and descriptions are empirical research methods that are not given much attention in modern conditions. Although for the science of astronomy, observation is probably the most important, key method. After all, only close observation, combined with comparison, can answer questions about new objects in galaxies and about galaxies themselves. Observation is also an important method of research in medicine and biology. In current mode, observation is an important method of border protection, law enforcement and preservation of property against fire and theft. At the present stage for observation there are used high-power tools: telescopes, microscopes, video surveillance. If in astronomy and medicine it is possible to consider observation as a purely scientific method, then the use of observation for protective purposes is a method of current research.

As for the description, this method is used in all studies. Instead, it is hardly possible to see the name of this method in dissertations in the list of used research methods. However, the description is an extremely important method, which will be mentioned by legal investigators. It is a series of descriptions from interrogations that make it possible to reveal false testimony. With regard to financial and economic activities, we should mention accounting documents, financial statements, which are specific descriptions of production and economic activities and from which we can draw a lot of different conclusions to identify financial

irregularities, to identify ways to improve not only purely financial work but also organisation of production and economic activities.

Another empirical method is comparison, which also belongs to general scientific research methods. Comparison is confronting features inherent in two or more objects, designed to establish differences between them or to find common ground in them. Comparison is a common method. Even when people have not studied the classification of research methods, when they do not even think that they are conducting any research, they use comparisons. In different cases, the objects of comparison are different phenomena, processes, countries, territories, enterprises and organisations, and finally the people themselves, who are compared in terms of anthropometric, psycho-emotional, professional and other characteristics. All this is more or less familiar to everyone. On the other hand, with regard to special subject areas, the method of comparison in this case is not always sufficiently disclosed and described. This also applies to the method of comparison in the subject area of “finance”, and therefore requires specification.

The method of comparison in financial research is the comparison of features inherent in two or more financial categories, such as financial instruments, parts of the financial system, etc., and is designed to identify differences between them or find common ground. This allows you to use them in a certain set or sequence (for example, financial instruments) or integrate (for example, funds of financial resources for various purposes) to joint projects.

Examples of using the comparison method are international comparisons of state budgets and their statements, state and non-state pension funds, taxation systems, insurance, the structure of the banking system and national conditions of financial market regulators, and so on.

The experiment is an empirical method and belongs to the general scientific methods of research. Experiments have not become widespread in economics and finance. Instead, there are historical examples of experiments in economics and finance. Experiments in the financial and economic sphere take a long time, as it is impossible to determine the financial and economic

consequences of such innovations in one day, month, year, and sometimes decades. That is why we are talking about historical experience, domestic and foreign.

The method of experiment in the financial sphere is to conduct financial and economic measures to identify the reactions of participants in financial and economic relations to the proposed financial instruments and the changes they cause in different parts of the financial system and the economy of the state or region.

It is no coincidence that we are talking about financial and economic measures when using the method of experiment in financial research. After all, financial changes or the introduction of financial innovations are accompanied by large-scale economic reforms.

In the early 1990s, a new income tax scale was introduced in Ukraine (now it is a personal income tax). A characteristic feature of that progressive tax scale was the establishment of a maximum rate of 90 % of income (a shedular approach was used, according to which each shedula, ie each subsequent amount of income, was taxed at a certain higher amount of tax). The practice of using such a progressive tax scale did not work, as employers and employees did not show income above the amount that was taxed at 30 %. In the socio-economic aspect, such an “experiment” can be considered harmful because it pushed for the shadow payment of wages.

A well-known example of the use of derivatives, which led to the global financial crisis of defaults at the end of the 20th century, can also be considered a rather long financial experiment. The crisis was triggered by failed speculations in South Asian stock markets, and the result - the mass bankruptcy of companies around the world.

Successful economic reforms in Poland in the 1990s were accompanied by serious financial measures, which at first significantly limited both business and citizens. Instead, later the whole set of financial and economic measures led to the development of the Polish economy.

The method of modeling in the financial sphere is an attempt to reflect the real conditions of financial instruments using economic and mathematical methods to assess the likely reactions of participants in financial and economic relations

to the proposed financial instruments and the changes they cause in different parts of the financial system.

At the present stage of development of science in the field of information technology and programming, the modeling method is used very widely. In particular, examples of modeling in finance include the development of variable budget forecasts, financial plans, development programs for financial and credit institutions, and so on. That is, without modeling none of the financial issues, in countries with developed economies, digitalisation of financial and credit processes, are solved.

### **General and special characteristics of research in the field of finance**

It is important (for those who have to conduct financial research) to understand and be aware of certain well-known and accepted aspects of research practice, as well as to develop their own special approach to research.

The question of classification of sciences is important for understanding the scientific approaches, as each of scientific directions has the specific conditions of functioning and accordingly – a methodology of carrying out researches. For financiers, knowledge of the specifics of certain scientific fields is important, in terms of both – the peculiarities of the financial support of such branches of science, and the possible use of some approaches to these types of science to conduct own research.

Mastering the scientific approach to the study of various socio-economic and financial phenomena is a necessary basis for the competent and reasonable use of research methods. Knowledge of the system of scientific research is an important aspect of achieving effective results not only in science but also in the process of current research, which aims to improve the activities of any enterprise, organisation, institution. This consistency provides, in particular, the need for consistent: (1) awareness, establishment and pursuit of the goals of scientific (prospective) or current research; (2) understanding the nature and characteristics of the planned research process; (3) understanding of the scientific, theoretical basis for the study; (4) awareness of the need to identify sources and amounts of funding to provide research; (5) awareness of research priorities.

It is important for financiers to know about the differences between different perceptions of reality, and accordingly about the way it is studied by representatives of different professional groups. Such differences in the perception of phenomena are often the cause not only of substantive differences, but also the perception of the need for financial support of a process. In particular, it is important to understand the differences between aesthetic and scientific perception. Also, along with the development of science and research methods, the content and certain features of research are changing. The need to solve urgent promising problems in the financial sector creates a deepening of research on financial relations, expanding the range of financial instruments. Accordingly, new financial institutions appear, financial legislation changes. That is, there is not only an increase in the "amount" of experience and positive knowledge about the development of the financial system, but also a change in the entire structure of the financial and credit relations and the research methods used in it.

Scientific (theoretical) research base should be considered as a system consisting of: theory; research methodologies and techniques; practices of implementation of the obtained results. The data obtained from the results of scientific (prospective) research, if we talk about the financial sphere, are necessary for further use in financial or credit institutions. On this basis, current research is being conducted to improve indicators, use new financial instruments, implement innovative financial procedures based on the use of IT technologies, new ways of working with clients, achieve positive development, including attracting new investors.

In the aspect of current researches the reporting data allow to study a concrete situation and to define directions of improvement of financial institutions' activity. In the context of both current and future (scientific) research, factual data allow scientists to predict trends in financial institutions, the financial system, and the prospects for the use of certain financial instruments, interaction with customers, financial intermediaries and competitors in financial markets.

Financial aspects in the system of scientific (prospective) and current research should be considered: firstly, in terms of stakeholders as: national interests, the interests of representatives of

certain industries and the interests of business entities; secondly, in terms of direct participation in the formation of appropriate funds for research funding; thirdly, in terms of recipients of funds for scientific or current research; fourthly, in terms of recipients of the share of profits (losses) from the implementation of scientific or practical projects, ie from the successful (unsuccessful) implementation of the results of scientific and / or current research.

Financiers will always be faced with the need and adequacy of funding for certain types of research. If the need for current research and their funding is dictated by the immediate needs of the enterprise, organisation or institution, and therefore may not cause serious questions, then scientific (prospective) research always raises questions about their feasibility, and even more so the financial costs. That is why there is a need to clarify the directions of scientific and technological development, their impact on the economy and finance. And not only in terms of costs, but also in terms of prospects for profit due to the introduction of new technologies, new types of equipment, new management decision-making procedures, the use of new software products.

Financiers work in various spheres of economic activity, where they are responsible for full and timely financing of relevant works, and in scientific institutions - for financing research and scientific and technical development. That is why the financier should have an idea of the specifics of prospective and current research in various fields, including the natural and social sciences.

Natural sciences study the phenomena and laws of development of nature, the properties of the physical world. The social sciences deal with human behavior and social institutions. The specificity of research in these fields of science is that the results obtained mostly can not be estimated in value terms. It is possible to measure the costs of such research, but it is impossible to measure any economic effect.

To successfully conduct a prospective or current research, it must be properly planned, organized and performed in a certain sequence. These plans and the steps depend on the type, subject and research purposes. So, if it is held for the technical subject, then you must first develop a basic document - a feasibility study and then carry

out theoretical and experimental research, make scientific and technical report and implement the work in production.

If the research is conducted on a financial topic, then first an order or decree is issued, which determines the purpose of the research, the necessary resources (human and material) and the deadline. After that, the results of the study are reported to management, and managers decide to implement the results of the study and issue an order indicating in what form these results should be implemented.

Researching financial efficiency is a rather complex process. Firstly, the category of "efficiency" is perceived in at least two aspects: as the ratio of the cost of the economic result to the cost of obtaining this result; and as a generic name for all aspects of effects evaluating. Such effects include: economic effect as an absolute indicator (the value of the change in a certain parameter of production activity, ie change in cost, profit, etc.); economic efficiency as a relative indicator; social efficiency; environmental efficiency. The last two types of efficiency are often not valued, but in some cases can be measured in both absolute and relative units, which characterise changes in certain parameters of the social and / or environmental environment. Based on this, it is necessary to draw a conclusion about the different indicators of measuring efficiency, which in turn leads to the use of different methods for such measurement. Typically, such methods are used in the complex necessary for the most accurate determination of the result.

It is also necessary to single out the definition of efficiency both as a result of the direct implementation of financial measures and the determination of the possible effectiveness of financial research. The result will usually be determined in the field of material production or in financial markets. Both in the first and in the second case it is necessary to use well-known methods of estimation of effects, efficiency, payback periods, turnover terms, etc.

### **Conclusions**

The research of publications on methodological topics, both general theoretical and special, including financial, allowed to identify certain problems in covering issues of methodology. In

particular, it was found that methodological developments are aimed primarily at scientific research. Instead, research to improve the condition of enterprises, organisations and institutions, ie those that do not necessarily require scientific novelty, are not covered by published research. Of course, it can be assumed, as it happens in real life, that practitioners use scientific advances in methodology in their work projects. However, when it comes to the need to determine the content of academic courses, then in educational and professional and especially in educational and scientific programs of the educational level of Master the course of "research" is included. The same is called the course for the Doctoral educational level (PhD). Teachers and students of the appropriate educational level understand that there must be some difference in the content of teaching, which must be aimed at different results. This is achieved through a clearer definition of competencies at each level of education.

However, to date, this is not clearly formulated in textbooks and manuals. To solve this problem, we propose to consider research with their division into prospective, ie scientific (fundamental and applied), and current, which are aimed at developing recommendations for improving certain issues in the activities of enterprises, organisations and institutions.

In addition, the analysis of dissertations submitted for a doctorate degree shows that to a large extent researchers do not use all methods and indicate only a limited number of them to study a specific problem in a particular field of science and practice, including financial sphere. We have developed and proposed a matrix that allows a comprehensive approach to determining the range of methods that are needed to study the problem on a particular topic. From the matrix developed and presented it follows that for realiation of some research it is necessary to use some methods which can make a certain complex, however can be used also separately. The argumentation of the use of certain sets of methods for several examples with an illustration of the practical experience of financial activities is given. There is also a justification for the need for researchers of the financial system to master well-known approaches to conducting not only promising (scientific)

research, but also current research to improve current work.

Our results can be useful in future research on various problems of the financial system. In particular, our proposed matrix of forming the complexes of research methods can serve as a basis for further methodological research on the synthesis of research methods for new problems and challenges in the financial system, as well as in other areas.

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## ACCOUNTING AND CONTROL FEATURES OF THE USING OF SPARE PARTS (PNEUMATIC TIRES, RECHARGEABLE BATTERIES) ON MOTOR TRANSPORT ENTERPRISES

**Abstract.** The modern approach to accounting of reusable spare parts of motor transport enterprise (MTE) envisages including of pneumatic tires and storage batteries in the complement of current assets. The share of costs for their maintenance in the total cost of transportation services amounts to 25 %, and under these conditions makes it impossible for a sufficient level of internal control (IC) to use such assets effectively. A number of scientists has investigated this issue; however, a unified approach has not been determined, which proves the pressing research problem. Hence, in times of crisis, the issue of accounting improvement, which will lead to optimization of the cost of MTE services cost, becomes especially relevant. The purpose of the research is to summarize the existing regulatory and accounting principles for the accounting of reusable spare parts, to analyze the system (IC) of the use of spare parts of MTE, to develop recommendations for their improvement and practical use. Achieving this goal requires the following tasks: to investigate the features of accounting for the use of spare parts of MTE and to determine the current methodological basis for controlling their use; to analyse tendencies of development of the transport industry of Ukraine, activity and features of accounting of tires and accumulators at MTE (PC “Avtomobilni Perevezennya “Avtoera”); based on the results of the analysis, provide recommendations for improving the organizational and methodological basis of accounting for reusable parts

with the introduction of component accounting; to develop accounting support for the process of renting pneumatic tires for PC “AP ”Avtoera”. The tasks are set in the work, solved using the following methods: systematization; abstract-logical analysis; empirical research (in studying the normative and theoretical basis of accounting and control of the use of pneumatic tires); classification and analytical; statistical and comparative analysis (using Microsoft Excel tools in the analysis of the financial state of PC “AP ”Avtoera” to determine the main prerequisites for improving the accounting and control system for the use of pneumatic tires); testing the internal control system; dialectical and comparative (to summarize the results obtained); logical (to build the structure and summarize the results of the research). The work generalizes and analyzes the theoretical and methodological principles of accounting for pneumatic tires and batteries at motor transport enterprises, identifies alternative options for tire accounting and contradictory points that need correction, and formulates a working hypothesis. The tendencies of development of the Ukrainian transport industry, activities and features of accounting of tires and accumulators for MTE (PC “AP ”Avtoera”) analyzed. Improvement of organizational and methodological bases of accounting for spare parts with introduction of component accounting is proposed; accounting support for the process of renting pneumatic tires was developed, recommendations were made to make changes to the

accounting policy of the company, in accordance with the proposed directions for improving the organization of accounting for the use of pneumatic tires and batteries.

**Key words:** accounting and analytical support, spare parts, pneumatic tires, storage batteries, tire rentals, document management, internal control.

### Formulation of the problem.

The complexity of accounting for spare parts of a motor transport enterprise lies in the nature of their use and recognition as current assets. On the example of the research of features of accounting of the use of pneumatic tires and batteries, the necessity of carrying out their component accounting in the composition of fixed assets of the enterprise considered.

### Analysis of recent research and publications.

The mentioned problems from different points of view covered in a number of scientific works, in particular in the works of: A. V. Basiluk, O. I. Malyshkin, V. F. Maksimova, A. Khimich, K. Saiko, V. Furs, O. Kobi, V. Bilichenko, O. Akimenko, A. A. Balan, V. V. Kirsanova, N. M. Selivanova and others. At the same time, the number of accounting and control aspects of the problem remains unresolved.

### The purpose of scientific research

*The purpose of the research* is to systematize and adjust the methodological bases for the

accounting of reusable spare parts, to analyze the system of internal control of the use of spare parts at motor transport enterprises, to develop recommendations for their improvement and practical use.

Separate provisions and results of the study were presented in the following scientific works: [1, 2, 3].

### Explanation of the main material of the research

Motor transport enterprises occupy a significant share in the national economy sector, they ensure the continuous functioning of most industries, improve the quality of life of the population and its mobility, promote the development of relations in the field of foreign economic activity. Road transport in the domestic market is the most advanced, as according to the State Statistics Service of Ukraine [4] 73.37 % of cargoes are carried by freight motor transport (Fig. 1, Appendix A), in addition, the volume of transportation increased, for the period 2016–2018 they increased by 11.04 % (Tab.1, Appendix B).

Pneumatic tires and batteries required for the current and major overhaul of transport at the MTE are included in the item of expenditure for material and service costs used in production. This item is the most significant in the structure of expenses and makes 81.6 % (Fig. 2), which proves the expediency of optimization of this item of expenses.

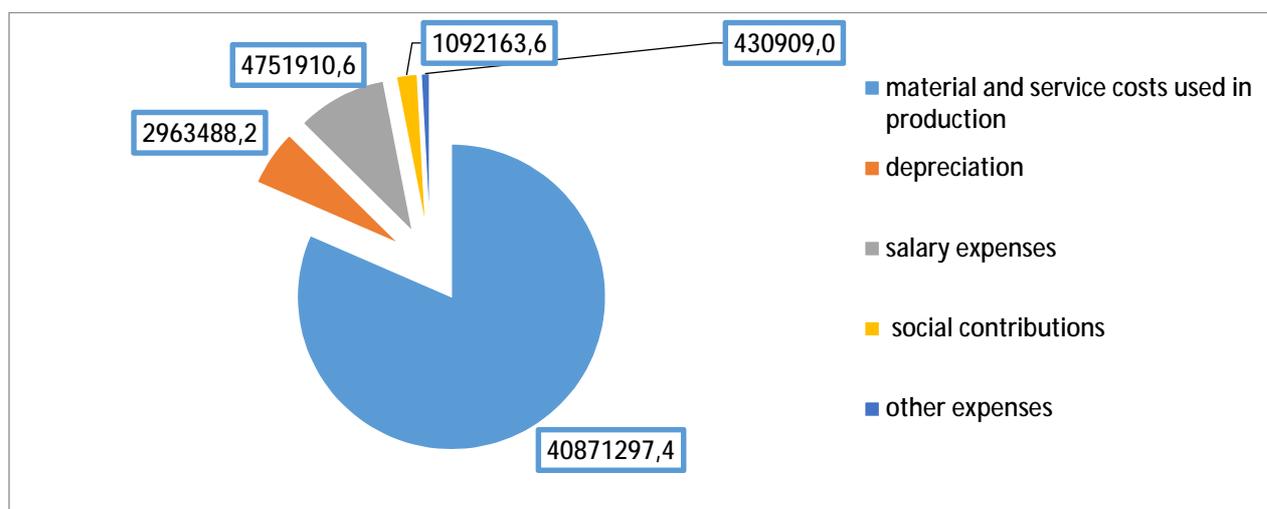


Fig. 2. Cost structure of enterprises (thousand UAH) operating in NACE 49.41 Freight road transport in 2018

Source: compiled by the authors on the materials [4].

Spare parts at a motor transport enterprise (MTE) are one of the most important components of an assets and are usually used for internal needs: repair, improvement and modernization of machines and equipment that are on the balance of the company. Spare parts are related to the costs of the enterprise and affect the results of its business activities, and, accordingly, require the most exact accounting and control.

The specifics of this category are the so-called reusable spare parts (pneumatic tires and batteries), the accounting of which differs significantly under national and international law. The authors will consider the possible variants of

their accounting, highlight the advantages and disadvantages of each one. The analysis of the legal framework and scientific database in the direction of spare parts accounting and control is presented in Tab. 2–3 (Appendix C-D).

The background of the research is first of all the contradiction of the reusable spare parts of the conditions for attribution of the object to current assets: the operation period of pneumatic tires and batteries more than one year; the value of these objects exceeds the value criterion for attribution of the tangible assets to the “property, plant and equipment (PPE)” noticed in article 14 of the Tax Code of Ukraine [17]; require periodic repair and regain.

*Table 4*

**Price overview of actual truck tire models as of early 2020**

Producer	Price, UAH		
	295/60, R 22,5*	315/70, R 22,5	385/65, R 22,5
<i>INFOSHINA (seller)</i>			
MATADOR	8132	8025	8239
BRIDGESTONE	12500	11055	10786
AELUS	6050	7374	8987
GOODYEAR	8011	12200	12600
<i>SHIPSHINA (seller)</i>			
MATADOR	9591	9426	9536
BRIDGESTONE	8658	14821	13308
AELUS	6896	8895	9500
GOODYEAR	11307	14882	13099

*Source: compiled by the authors on the materials [18–19].*

*Notes: \*– width, profile and diameter of the pneumatic tire.*

The high cost of pneumatic tires and batteries in most cases exceeds the value criterion of attribution of the object to fixed assets, specified in the Tax Code of Ukraine in the amount of 6000 UAH. The high cost of new pneumatic tires also indicates the feasibility of optimizing the costs of purchasing and operating them. One of the solutions in this situation is to rent pneumatic tires. Table 4 provides

an overview of the pricing policies of pneumatic tire manufacturers and sellers in the Ukrainian market as of early 2020.

There are two ways of accounting for pneumatic tires and batteries on a sub-account 207 “Spare Parts”. *The first way* is to account objects at their historical cost until writing off as a result of unsuitability. The using of this method requires the opening of additional sub-accounts (but the

analytical accounting of tires and batteries can be conducted on various signs (Fig. 3, Appendix E):

- 207.1 “Pneumatic tires”;
- 207.11 “Pneumatic tires in stock”;
- 207.12 “Pneumatic tires in operation”;
- 207.13 “Pneumatic tires under repair (restoration)”;
- 207.14 “Restored pneumatic tires in stock”;
- 207.15 “Restored pneumatic tires in operation”;
- 207.2 “Storage batteries”;
- 207.21 “Storage batteries in stock”;
- 207.22 “Storage batteries in operation”;
- 207.23 “Storage batteries transferred for repair (restoration)”.

An example of the application of the proposed accounts for the registration of business transactions is given in Tab. 5.

This method is not perfect because valuing car tires and batteries in use at initial cost is an overestimation of the real value of the assets of the enterprise, because the process of operation is accompanied by loss of cost wear.

*The second way* is to write off the cost of commissioning. This method is more imperfect, since the commissioning of pneumatic tires and batteries is accompanied by the write-off of their cost (by types 23, 91, 92, 93, 94 sub-accounts), which makes it impossible to keep track of accounting accounts [20].

Table 5

**Application of additional sub-accounts for tire and battery accounting [11–16]**

Contents of the business operation	Debit	Credit	Document
Received at the stock purchased tires (batteries)	207.11 207.21	631	Waybill, the card of inventory accounting
Calculated VAT tax credit	641	631	Tax waybill
Purchased tires (batteries) installed for the car	207.12 207.22	207.11 207.21	Requisition slip, Tire (batteries) working accounting card
Registered removed from the car tires (batteries)	207.11 207.21	207.12 207.22	Requisition slip, the card of inventory accounting, Tire (batteries) working accounting card
Damaged tires (batteries) transferred for repair	207.13 207.23	207.11 207.21	Requisition slip, the card of inventory accounting, Tire (batteries) working accounting card
Repair of the damaged tires (batteries) completed	23 91	631	Work completion statement
Registered tires (batteries) at the stock after repair	207.11 207.21	207.13 207.23	Waybill, the card of inventory accounting, Tire (batteries) working accounting card
Tires (batteries) installed for the car	207.12 207.22	207.11 207.21	

It is inappropriate to use this method because of a fundamental violation of paragraph 23 of NSAU 9 “Inventories”, whereby only the value of low-value and high-wear items to which the pneumatic tires and batteries are not included can be excluded from the assets. The algorithm of using the second method on the example of the use of pneumatic tires is presented in Fig. 4.

Accounting for reusable spare parts as an item of property, plant and equipment in accordance with IASB 16 “Property, Plant and Equipment” is

possible provided that the entity expects to use the spare part for more than one period and if it is used only in connection with the object of the PPE [21].

Basiluk A. V. and Malyshkin O. I. [22] investigated: primary accounting for the purchase and writing-off of spare parts; display of results of liquidation of spare parts; tire accounting; displaying transactions in reporting forms and tax accounting for spare parts. The authors look at typical MTE situations and suggest alternative methods for controlling tire costs.

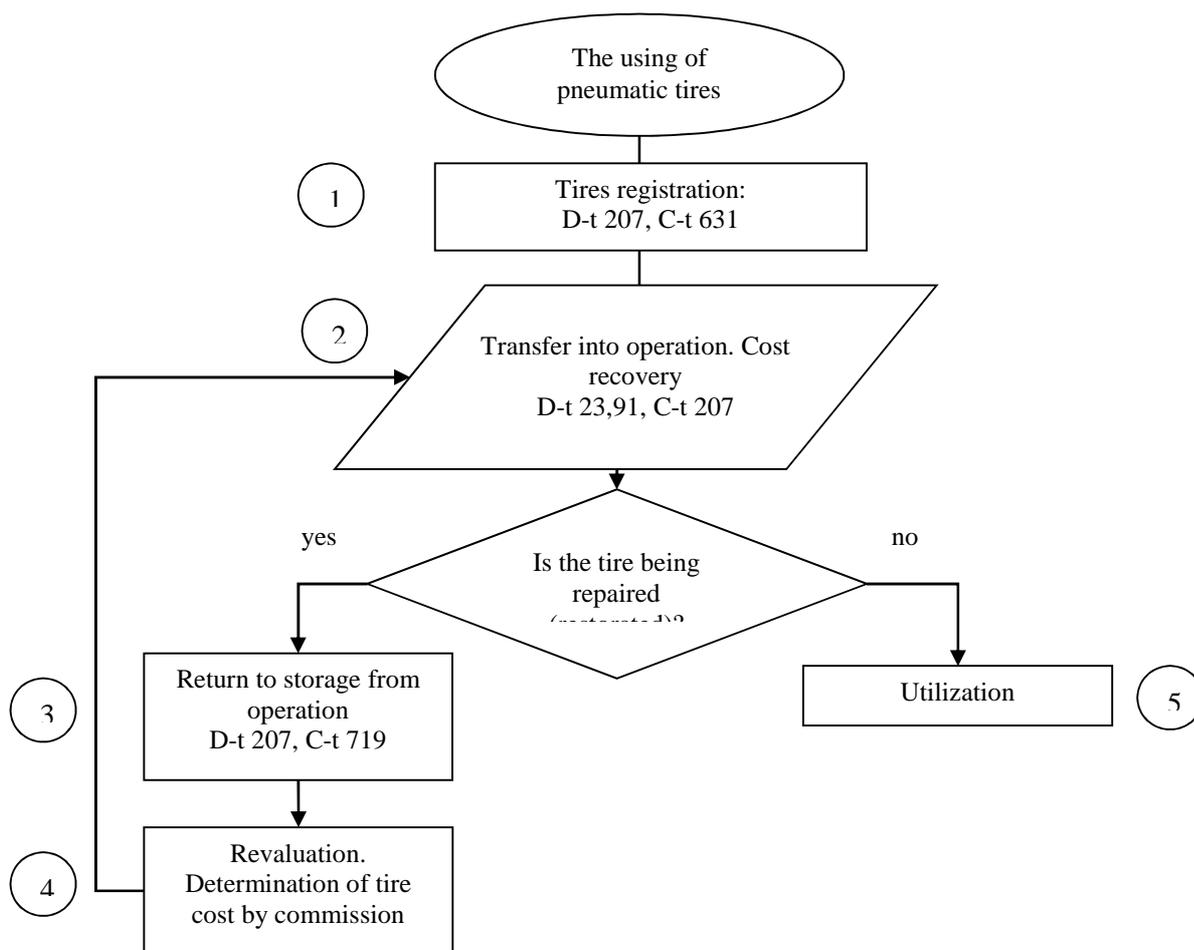


Fig. 4. Algorithm for the implementation of the first method of accounting for pneumatic tires with write-off for the cost of commissioning

Notes: Documents accompanying the tire use process: 1 – waybill; 2 – requisition still, the act of writing-off; 3 – warehouse accounting card; 4 – protocol of the commission decision; 5 – tire recycling agreement.

Source: compiled by the authors on the materials [11, 14, 20].

The first alternative of accounting involves the recording of tires and batteries not on 207 sub-accounts, but on 112 as *low-value non-current tangible assets*, the second option consists in the allocation to a *sub-account 23* of a separate item for repair and replacement of tires. The authors also describe the variant used under irrelevant accounting rules, accounting for spare parts for *sub-account 22* - Low value items. These accounting optimization methods allow tracking the cost of new tires and the cost of recovery.

One of the features of accounting for spare parts is the existence of differences in accounting and tax accounting. In accounting, the cost of spare parts used in the repair of the vehicle is written

off against the costs of the enterprise. In tax accounting it is determined that if the cost of repair does not exceed 10 %, in order to eliminate the double attribution of the cost of spare parts to the gross costs (when purchasing and writing off production costs), spare parts are involved in the calculation of the increase or decrease in the book value of inventories.

If the amount of repairs exceeds 10 %, then the cost of spare parts used in the repair should be excluded from inventory balances at the beginning of the reporting period, this accounting scheme is shown in Fig. 5 [23].

The analysis of contradictory provisions of regulatory acts, violation of accounting principles by existing methodological principles, shortcomings

and advantages of possible variants of accounting of pneumatic tires and batteries in accounting accounts (Tab. 6), made it possible to conclude that

accounting of these objects in the composition of irregularities the best option for creating the right accounting security.

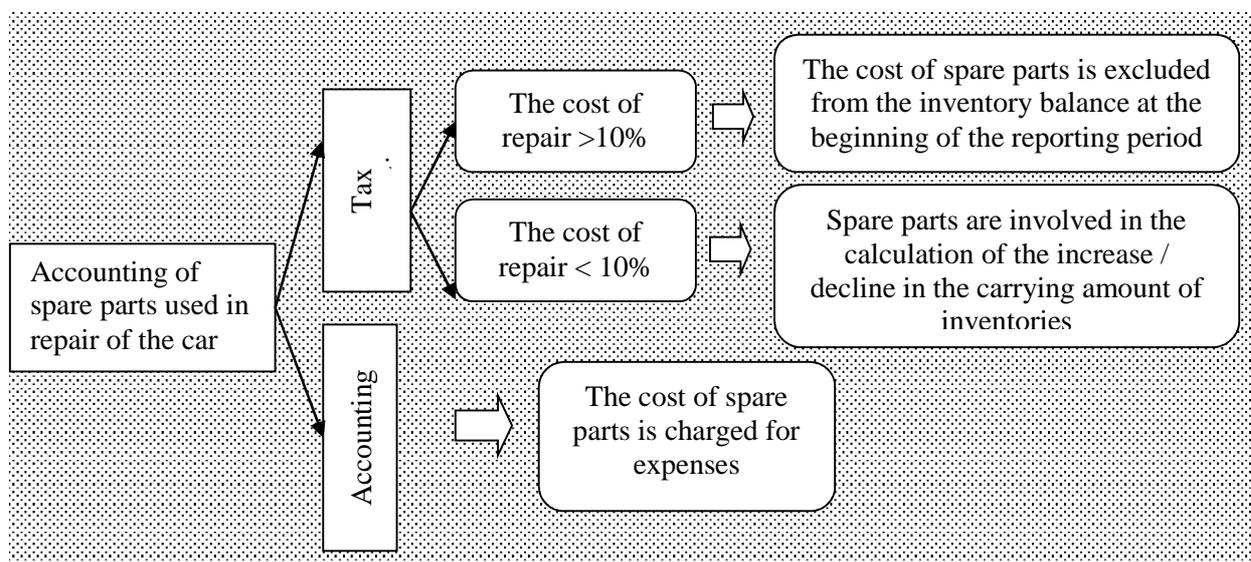


Fig. 5. Differences in accounting and tax accounting when used in the repair of a vehicle spare parts

Source: compiled by the authors on the materials [23].

Table 6

**Systematic list of possible options for the accounting of reusable spare parts (for example pneumatic tires) in accounting accounts for MTE**

Variant		ADVANTAGES	DISADVANTAGES
207 subaccount	At historical cost	Ability to track in-service tires on sub-accounts	Overstatement of the real value of the enterprise assets contradicts the implementation of the rent tires process
	Write-offs on costs	Governed by NSAU	Impossible to track tires value after implementation in the operation; violation of point 23 NSAU 9 "Stocks"
23/ "Tire repair and replacement"		Allows you to write-off the cost of a new tire when installed on the vehicle and the cost of repair	The account reflects not only the costs written-off but also the costs remaining in the warehouse as retreaded tires.
105 "Vehicles"		It is governed by IAS 16; it is appropriate because of the cost criterion and the long duration of tire operation; option of component accounting; Tire rental possible	According to NSAU 7 tires are not PPE because they cannot perform separate functions separately from the vehicles; only the first tire set and the "spare part in the car" are considered by the PPE
112 Non-current tangible assets of low cost		Allows you to track the cost of new tires that have been recovered, the cost of rebuilding them through the surplus account of the "Used Tires"	Assigning the amount of tire retreading to the first event will increase the gross cost, while their cost does not fit into the "low value" category
22 Low-value items		Makes possible the application of the method of accounting of tires, writing off the costs at commissioning, does not violate point 23 NSAU 9 "Stocks"	The cost of the tires is high, so they cannot be considered inferior and have a lifetime of more than a year

In view of the foregoing, the **working hypothesis** of the research requiring analytical confirmation and methodological justification is as follows: *adjusting the methodological bases of accounting for pneumatic tires and batteries will optimize the cost of purchasing reusable spare parts, track their cost in accounting accounts at each stage of operation (repair, restoration, write-off), to avoid violations of accounting standards and related sanctions; to harmonize accounting and tax accounting of spare parts as much as possible; implement the process of renting pneumatic tires in accordance with current legislation.*

In order to confirm the working hypothesis, the experience of a typical motor transport enterprise, selected because of the analysis of accounting policies of enterprises operating under the NACE Freight Motor Transport, was analyzed. Private Company "AP "AVTOERA" provides transportation services in particular of grain crops by truck. In the course of the analysis of the financial statements of the Private Company "AP "AVTOERA", a number of deviations were detected, signaling the pre-crisis state of the enterprise (tab. 7, Appendix F).

The accounting of pneumatic tires and batteries directly at the PC "AP "AVTOERA", as

well as at most MTEs, is organized according to the traditional classification and requirements of the NSAU 9 and is accompanied by a number of imperfections. Accordingly, the write-off process is performed according to the same algorithm for all spare parts, and is executed by conducting the business transaction with the following correspondence of accounts: on the debit of the sub-account of expenses of the enterprise 91 "General expenses", on the credit of the sub-account of 207 "Spare parts". In this case, the write-off of pneumatic tires and batteries thus requires that, upon returning to storage, the following economic operation be made: on the debit of sub-account 207 "Spare Parts", and on the credit of sub-account of 719 "Other operating income".

Receipts of reusable spare parts in monetary terms are given in Table 8. Thus, in 2016, the company purchased only pneumatic tires in the amount of 401.81 thousand UAH. In 2017, the proportion of the amount of disposable spare parts was 59.12 %, and reusable – 40.88 %, of which tires – 38.79 %, batteries – 2.09 %. In 2018, the share of disposable spare parts increased by 7.42 % and amounted to 66.54 % and reusable to 33.46 %. The share of tires decreased by 8.59 % and amounted to 30.20 %, and batteries – 3.26 %.

Table 8

**Share of types of spare parts (in monetary terms) in the total amount of spare parts receipts at PC "AP "AVTOERA"**

Kind of spare parts	2016		2017		2018	
	thousand UAH	%	thousand UAH	%	thousand UAH	%
Disposable	–	–	1247.87	59.12	3675.30	66.54
Reusable	401.81	100.00	862.86	40.88	1848.20	33.46
–tires	401.81	100.00	818.74	38.79	1668.04	30.20
– batteries	–	–	44.12	2.09	180.16	3.26
Total	401.81	100.00	2110.73	100.00	5523.50	100.00

The analysis of the internal control system in the aspect of spare parts is made in Tab. 9 (Appendix G) in the form of testing to determine the existence of accounting, document management and spare part control issues.

The conducted testing has revealed that the enterprise is not properly carrying out the process

of writing-off of reusable spare parts; there is no necessary documentation for accounting of pneumatic tires and batteries, which can be used to track the condition, location and level of wear of spare parts. In addition, the company does not enter additional sub-accounts to 207 accounts, does not take into account the legally stipulated and actual

rates of tire operation when they are written off, rented tires are not tracked in accounting accounts. The presence of such problems indicates the need to improve the system of internal control of the use of spare parts and eliminate the shortcomings of the organization of accounting for pneumatic tires and batteries, rental of tires.

Improvement of the methodological foundations of the process of decommissioning of reusable spare parts is to develop a detailed algorithm, at each of which stages it will be possible to track all the necessary information regarding the condition of pneumatic tires and batteries in the enterprise.

NSAU 7 “Property, Plant and Equipment” provides for a component account of property, plant and equipment, according to which the unit of account is also a separate complex of structurally connected objects of the same or different purpose [24]. This definition can be attributed to the car as the object of property, plant and equipment that only in combination with pneumatic tires, batteries

and other components can fulfill its purpose in the enterprise - the provision of freight services. It should be noted that if the complex components have a different useful life, then in accordance with Methodological Recommendations № 561 [25], the company has the right to independently consider the complex as a single object of PPE, or each of the components separately.

The complexity of determining the original cost of each individual component relating to the first and spare sets of pneumatic tires and the battery is solved by clause 9 of NSAU 7 “Property, Plant and Equipment” [24], which states that the initial value formed by the total is proportionally proportional to the value of the component in the total fair value of the item.

Therefore, it is proposed to keep pneumatic tires and batteries in the sub-account 105 “Vehicles” using the component accounting of property, plant and equipment, and it is proposed to open additional sub-accounts indicated in fig. 6.

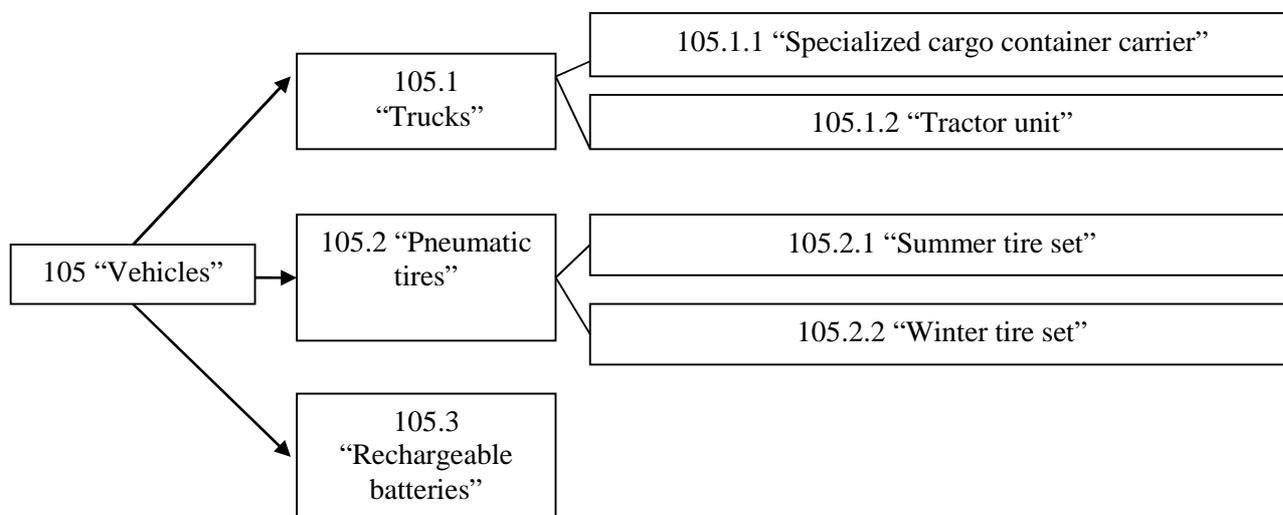


Fig. 6. Development of additional sub-accounts for account 105 “Vehicles” for component accounting of trucks

Using additional sub-accounts allows tracking the seasonality of a pneumatic tire kit from the stage of purchase to disposal or completing disposal of the tire. Batteries do not have additional sub-accounts, as they are not subject to seasonal replacement, but can only be decommissioned for repair, recharging and other necessary processes that can be tracked by internal documents.

Tire and battery accounting for property, plant and equipment requires depreciation, and it

is proposed to calculate depreciation by the production method most appropriate for motor vehicles. The production method of depreciation involves the calculation of the production rate of depreciation.

For pneumatic tires, the calculation of the production rate is proposed to be carried out using the data of Performance norm № 488 [7], in which it is possible to find individual data for the various tire models and vehicles with which they operate.

On PC “AP «AVTOERA»”, tires are purchased with the following characteristics: size 315/80 R22,5, 156/150 M, M729, manufacturer - Bridgestone. According to these indicators, the tire operating time is 225 thousand km, which is typical under normal tire operating conditions. The calculation of the actual norms of the average tire pneumatic tire resource is made to predict the need for the tire’s business activity; to determine the reasons for writing off tires; predicting the volume of tire utilization. It is proposed to calculate the actual tire operating rates adjusted by coefficients, the adjustment should not exceed 25 %. The values of the correction coefficients typical for the PC “AP «AVTOERA»” and an example of calculation are given in Tab. 10.

The value of the adjusted value of the life of pneumatic tires should not exceed 25 % in total, in our case the normalized value was adjusted by 17.44 %, which is within the normal range.

The trucks at the PC “AP «AVTOERA»” make about 80-90 thousand km per year, which means that the tires serve about 2.6 years at the enterprise. For rechargeable batteries according to Rules № 795 [9], the useful life is approximately 2.5–2.7 years. Therefore, accounting for depreciation by production method for pneumatic tires and batteries as property, plant and equipment is similar and is shown in Table 11, if the original cost of the purchased tire is 8500 UAH and liquidation – 400 UAH.

Table 10

**Values of correction coefficients and example of calculation of actual value of operating standards**

The name of the indicator	Value
$K_1$ – correction factor according to the climatic conditions of operation	0.98
$K_2$ – correction factor according to the intensity of operation of the pneumatic tires	0.9
$K_3$ – correction factor according to the duration of the tire life	1.04
$K_4$ – adjustment factor for load capacity utilization	0.98
$K_5$ – correction factor pneumatic tires for cars, trucks, Heavy and long vehicles that are constantly used with trailers	0.9
$K_6$ – correction factor for the ratio of city-to-city mileage outside the city	1.04
Normative value of the average tire tire life (thousand km)	225.00
Actual value of the pneumatic tire average life (thousand km) (225,00 *0,98*0,9*1,04*0,98*0,9*1,04)	185.75

Table 11

**Example of depreciation of pneumatic tires by production method for PC “AP «AVTOERA»”**

Contents of the business operation	D-t	K-t	Sum
Production rate calculation	(8500-400)/185750=0.044 UAH/km		
Depreciation on a month if the actual output is 7100 km	0.036*7100=312.40 UAH		
Depreciation is calculated on a monthly basis	91	131	312.40

Due to the calculations given in Tab. 10–11, the accounting and analytical information obtained as a result of them will be much higher and as much as possible adjusted and adapted to the specific conditions of operation of pneumatic tires at PC “AP «AVTOERA»”.

Considering that, pneumatic tires and batteries may be under repair, it is proposed to suspend the depreciation of pneumatic tires and batteries at the time of its implementation. Due to

this stop, it will be possible to track exactly which set is in operation and on which it is depreciated, and which is withdrawn (for the reasons specified in the card for accounting of working hours of the tire) and suspended depreciation. It is suggested that the decommissioning of tires and accumulators be made by the orders of the governing bodies of the enterprise and the corresponding entry in the individual cards of working hours. And commissioning by the act of commissioning after repair (form

№ OZ-2). When accounting for pneumatic tires and batteries as a part of PPE, the write-off process follows the standard scheme for property, plant and equipment without violating accounting principles. When transferring tires and batteries for recycling, a check is made similar to the normal sale of materials, is transferred to the composition of PPE held for sale at the expense of 286.

It is important that the process of renting tires, which has not yet been described in the national theoretical and regulatory literature, is impossible in accounting for tires in the stock, because according to NSAU 14 “Rent” [26] rent is an agreement under which the tenant acquires the rights to use the PPE for a fee within the period agreed with the landlord. The key in this definition is the statement “use of a non-current asset”, i.e. only the rent of such assets is allowed, which again confirms the expediency of accounting for pneumatic tires in the property, plant and equipment. Among

the advantages of the process of renting tires over their usual purchase are the following:

- payment is made only for actual mileage;
- all moments regarding the operation of the tire service are borne by the firm landlord (which is stipulated in the terms of the tire rent agreement);
- as a result, the tenant optimizes the mileage and cost of transportation (the cost of the mileage is offered by the lessor is lower than that calculated at the enterprise);
- no need to take responsibility for the timely disposal of used pneumatic tires;
- the working capital intended for the purchase of tires is released.

Calculating the cost of your own kilometer of tire mileage and periodically comparing it with the one proposed in the contract will allow you to determine a better way to get tires. The registration of business operations for the rental of tires is given in Tab. 12.

Table 12

**Example of typical business operations for the rental of tires**

Contents of the business operation	D-t	K-t	Document
Received pneumatic tires for rent	01		The act of acceptance-transfer and installation of the object of rent
The rent for the tires received is charged	91	631	Vehicle mileage calculation
Calculated VAT tax credit	641	631	Tax waybill
Rent paid	631	311	Voucher
Tires returned for the depreciated value under the contract	01		The act of removal and acceptance of the leased property

Rent of non-current assets is, in turn, possible and according to Instruction № 291 [27] it is recommended to account for rented non-current assets under the off-balance-sheet account 01 “Rented non-current assets” at the carrying amount stipulated in the tire rent agreement. The list of proposed developments and changes in the organization of accounting for the use of pneumatic tires and batteries at PC “AP «AVTOERA»” will make it necessary to revise the accounting policies of the company. Therefore, recommendations for changes in accounting policies are summarized in Tab. 13 (Appendix H).

Accounting for pneumatic tires and batteries as a part of property, plant and equipment causes a change in the documentation of accounting and control over the movement of these objects in the course of business activities of the enterprise. The documentary provision for accounting for PPE does not fully meet the necessary requirements for controlling the use of tires and batteries.

The deed of conveyance (internal movement) of PPE (form № OZ-1), which is recommended for registration of receipts to the company of tires and batteries, does not require improvements, because it contains all the necessary information about the object.

Taking into account that the company did not organize the documentary accounting of tires and accumulators in the tire accounting (running) Card of the pneumatic tire and in the performance accounting and battery tracking Card, it is proposed to introduce obligatory keeping of the card data for each tire unit and accumulator objects, number and results of repair work, seasonal replacement.

Card data metrics should be consistent with the depreciation charge to record the charge suspension. Each record of this card must have a reason, justified by the availability of the relevant document, for example, the basis for the decommissioning of the tire for repair is the order of the governing bodies of the enterprise to carry out the repair of the object. These cards are an alternative to inventory cards for accounting for property, plant and equipment, and are more appropriate for use with regard to pneumatic tires and batteries because of their maximum consideration of the features and specific characteristics of these objects. Examples of filling the pneumatic tire accounting (running) Card are given in Appendix I, and the performance accounting and battery tracking Card are given in Appendix J for PC "AP «AVTOERA»".

The decommissioning of pneumatic tires and batteries for the purpose of repair work and seasonal replacement must be accompanied by appropriate instructions from the governing bodies of the enterprise. In order to increase the efficiency and improve the organization of documentary control at the enterprise, during the research, the recommended forms of orders of the governing bodies were developed and listed in Appendix K.

The seasonal tire change order is only applicable for summer tire and winter tire changes, and the fixed asset repair order applies for decommissioning for both battery and pneumatic tires.

Taking into account the necessary specific documents that were developed to ensure a high level of accounting and analytical information of the processes of accounting and control of the use of pneumatic tires and batteries at the enterprise, a new cycle of document flow of objects was

developed at PC "AP «AVTOERA»". The document cycle of document flow is shown in Fig. 7.

Above is an improved and adapted document flow that will provide accounting and analytical information of the required level regarding the use of tires and batteries purchased by the company. To ensure a similar level of accounting and analytical information regarding the status of leased pneumatic tires, it is necessary to develop an appropriate document flow.

The installation of rented pneumatic tires on the vehicles of the lessee is formalized by the Deed of conveyance and installation of the rent object, which has an arbitrary form of assembly, but must contain a mandatory list of details, the presence of which is regulated by the Regulation on Documentary Support of Accounting Entries No. 88 [28].

The removal from the vehicles of the lessee and the return of the pneumatic tires to the lessor is formalized by a similar Act of removal and conveyance of the leased property. In addition to the specified parameters in the deed of conveyance and installation of the object of rent, the act of removal assumes the existence of additional parameters: vehicle type (main or trailer); odometer performance.

Pneumatic tire rental charges are calculated in accordance with the vehicle mileage calculations set out in a separate document, the form of which is provided by the lessor at the end of the month. This document summarizes the indicators of the deed of conveyance of the rent object and the act of removal and conveyance of the object of rent and sums up the total amount for the month. An example of a recommended form of calculation of mileage of vehicles is given in Tab. 14.

In order to make strategic management decisions regarding the feasibility of renting pneumatic tires compared to the purchase, it is necessary to calculate the actual operating time of their own tires, and the cost rate of thousands of km. mileage. Having considered and improved the necessary forms of accounting for rented tires, we will demonstrate the developed cycle of document flow of the process of renting tires (Fig. 8).

Developing document form enhancements and creating document flow cycles allow us to

move to the next stage of improving the internal control system for the use of spare parts and pneumatic tires and batteries in the property, plant and equipment of the enterprise.

Similar internal control tasks are also performed with respect to the property, plant and equipment that are considered to account for pneumatic tires and batteries. So, in Fig. 9 shows a step-by-step algorithm for controlling the operation

of tires and batteries in the property, plant and equipment.

Compliance with a step-by-step plan to control the operation of tires and batteries at the enterprise will avoid the most common problems that occur with an inefficient internal control system: malpractice, failure to perform or poor performance of duties, misjudgment of operations of property, plant and equipment and from the point of view of cost effectiveness .

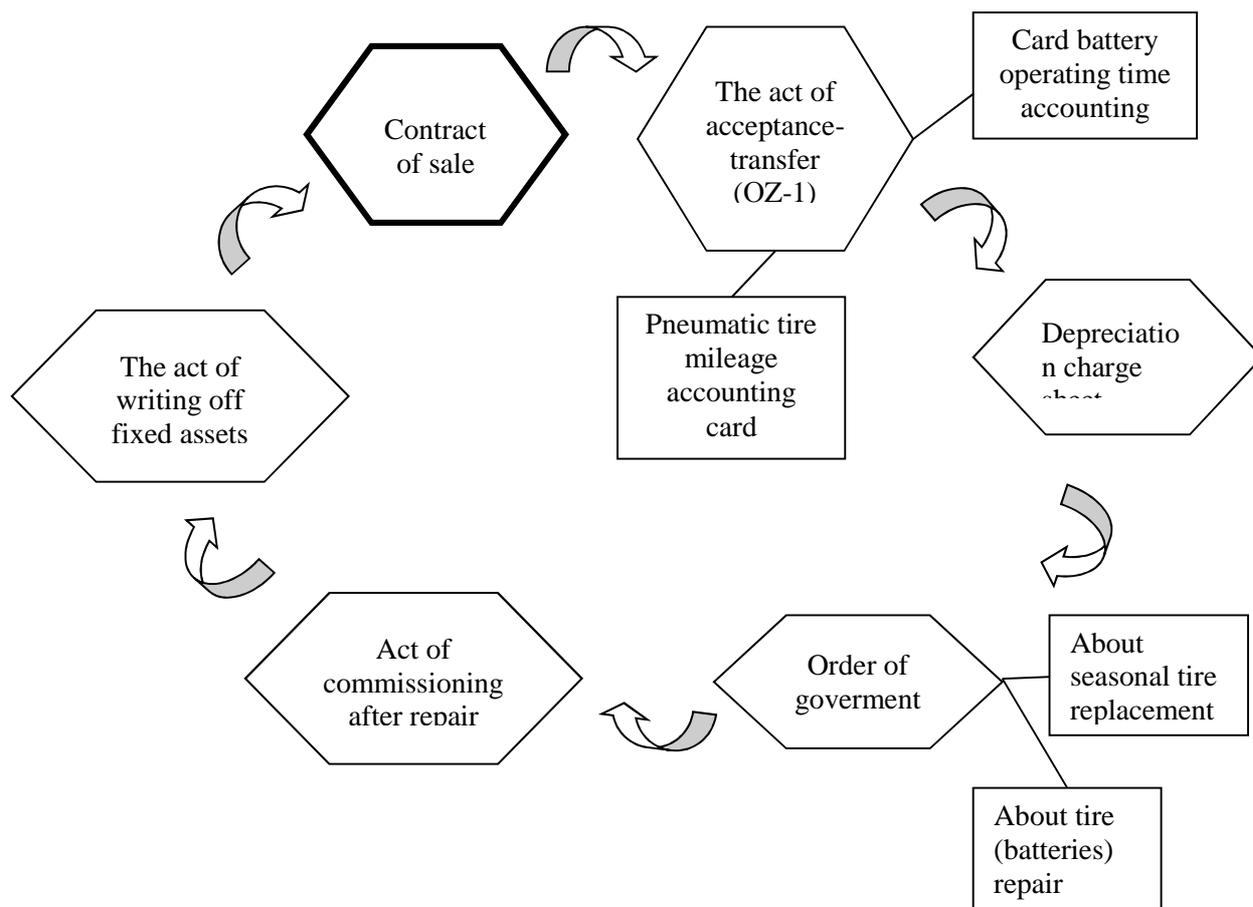


Fig. 7. Recommended document flow for accounting and control of the use of pneumatic tires and batteries in the property, plant and equipment

Table 14

**Recommended form of calculation of vehicle mileage for PC “AP «AVTOERA»”**

Vehicle registration numbers	Vehicle type (destination)	Odometer reading, km			Mileage for the period, km		Rate, UAH	Amount, UAH
		At the beginning of the rent	at the b.p.	at the e.p.	Rent (total)	Reporting		
VN0851ET	Main	979264	1051817	1064700	85436	12883	613.24	7900.4
VN4861XM	Trailer hitch	979264	1051817	1064700	85436	12883	635.96	8193.0

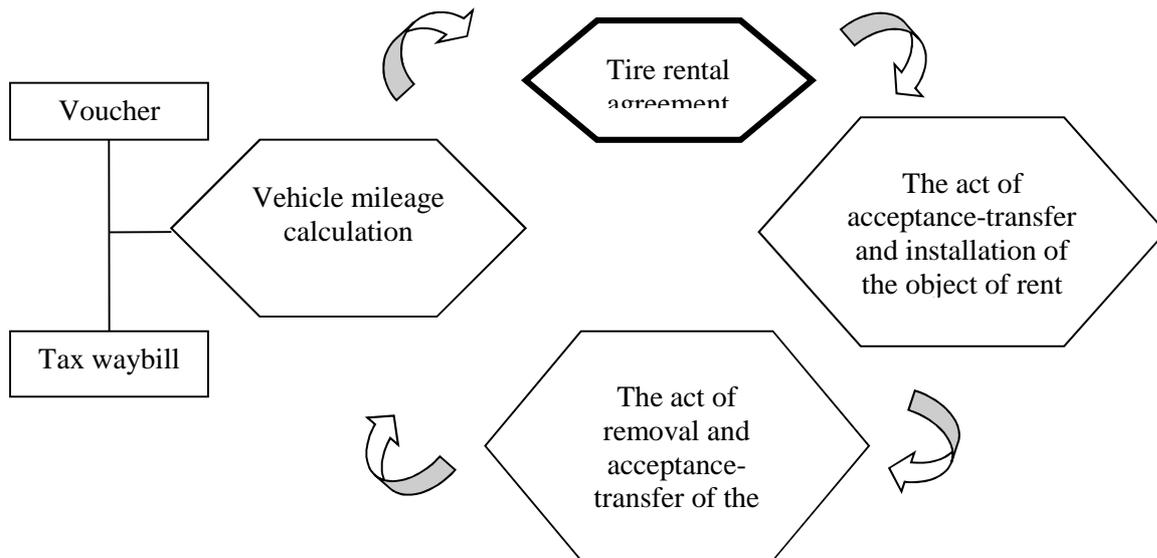


Fig. 8. Recommended document flow for the accounting and control of the rental of pneumatic tires

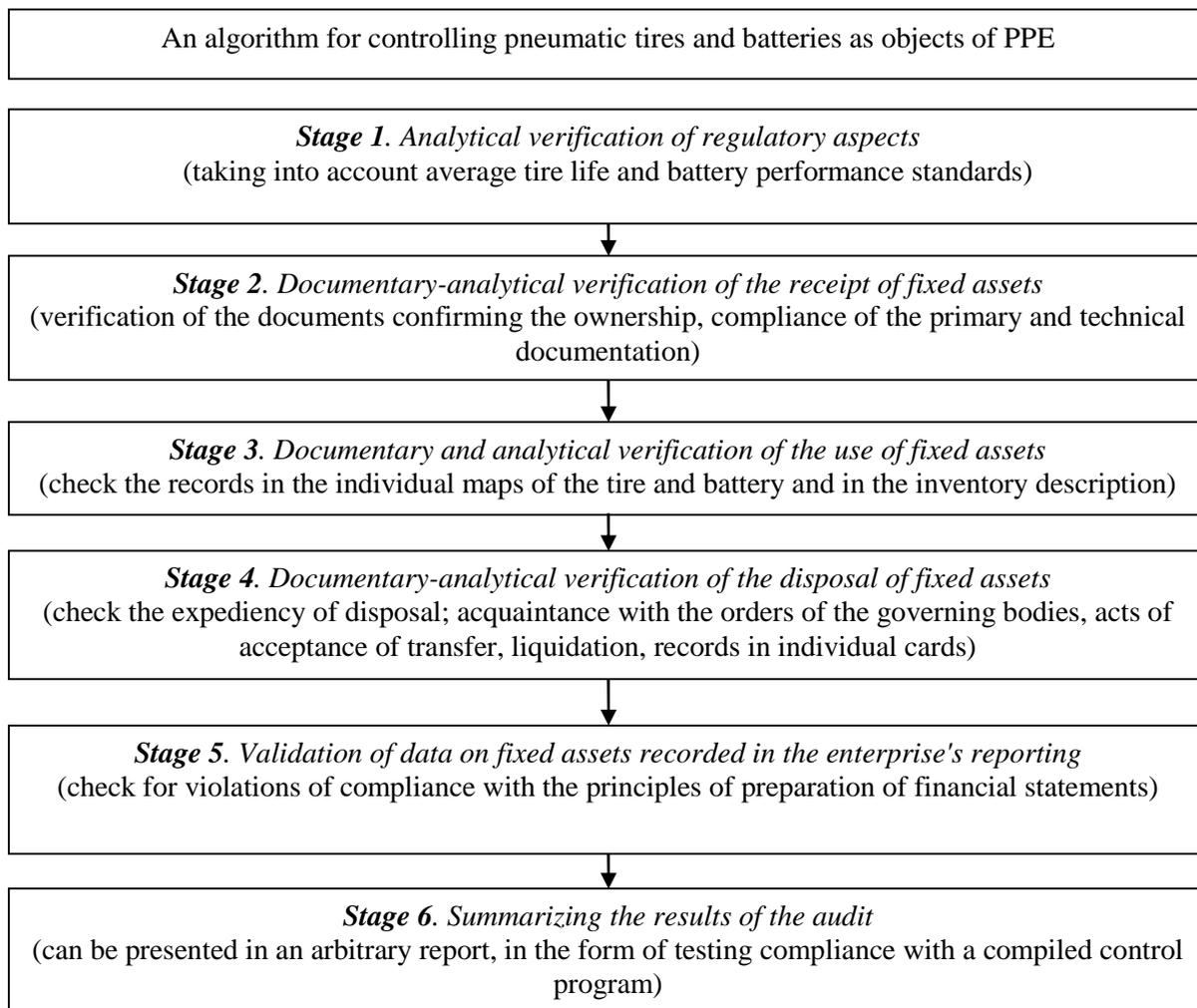


Fig. 9. Stages of internal control of the use of pneumatic tires and batteries in the property, plant and equipment of the enterprise

The recommendations on revision of the accounting policy of the enterprise in the context of the property, plant and equipment proposed earlier and on the introduction of additional forms of documents to ensure the proposed document circulation, in the aggregate, can significantly improve the efficiency of the functioning of the internal control system of the enterprise.

To assess the truth of the analytical and accounting information specified in the documentation and reporting of the enterprise, it is necessary to

compare it with the data obtained during internal control. This comparison is proposed to be made in the form shown in Tab. 15.

Systematizing all the improvements proposed in this section, we are developing an internal control program for the use of pneumatic tires and batteries. The plan-program consists of the analysis of tires and batteries, planning, checking of correctness of preparation of primary documents, drafting of correspondence of accounts, depreciation and wear disclosed in Tab. 16 (Appendix L).

Table 15

**Form of verification of data on the movement of pneumatic tires and batteries in the enterprise**

Indicator	According to the company		According to internal control		Deviation	
	pieces	UAH	pieces	UAH	pieces	UAH
<i>Pneumatic tires</i>						
Revenues	'	'	'	'	'	'
Repair	'	'	'	'	'	'
Seasonal replacement	'	'	'	'	'	'
Disposals	'	'	'	'	'	'
<b>Total</b>	'	'	'	'	'	'
<i>Rechargeable batteries</i>						
Revenues	'	'	'	'	'	'
Repair	'	'	'	'	'	'
Disposals	'	'	'	'	'	'
<b>Total</b>	'	'	'	'	'	'

Methodical approaches to the internal control of spare parts, tires and accumulators as objects of property, plant and equipment, which, unlike existing ones in the enterprise, include: the cycle of document flow of tires and accumulators, with the necessary developed forms of documents, a step-by-step algorithm for conducting internal control of tires and accumulators, an internal control plan was developed with timing, evidence, tasks and control objectives.

**Conclusions and prospects of further research**

The work is prepared on the theme “Accounting and control features of the using of spare parts (pneumatic tires, rechargeable batteries) on motor transport enterprises”, in which the questions of methodological bases of accounting of spare parts of reuse by motor transport enterprises are considered and recommendations on improvement of their accounting are given both in

the conditions of carrying out normal business activity and in the conditions of providing such assets for rent.

In the course of the research, the purpose of the work was achieved and the tasks were solved. The main conclusions are the following:

- The classification of reusable spare parts (including pneumatic tires and batteries) by common practice to current assets of the enterprise is erroneous, because by its nature (the life span exceeds a calendar year, high cost) it is more expedient to identify them as components of property, plant and equipment accounting of trucks. It is also determined that the rental of such spare parts in the regulatory and methodological literature is not foreseen and requires the development of appropriate accounting support.

- Analysis of trends in the development of the Ukrainian transport industry, activities and features of accounting of tires and accumulators of MTE (on the example of PC “AP «AVTOERA»”)

proved the working hypothesis of the research. In connection with this, it was proposed: adjusting the organizational and methodological basis of accounting for pneumatic tires and batteries, developing accounting support for the process of renting tires, improving the internal control system of the company, necessary changes in the accounting policy of the company.

- Developing a system of analytical accounts will improve the quality of accounting and analytical information received and prevent the occurrence of fundamental violations that occurred when accounting for these objects in the inventory. These proposals made it necessary to develop and justify the changes and additions that should be made to the accounting policy of the enterprise. An accounting security was developed for the tire renting process that has not been previously covered in national scientific literature. A number of improvements have been made to the internal control system for pneumatic tires and batteries as a part of property, plant and equipment. The implementation of this proposal implies the introduction of new forms of documents, which is a source of necessary information for internal control.

Based on the results of the study, we can confirm the implementation of the working hypothesis, which is that *the adjustment of the methodological basis of accounting for pneumatic tires and batteries will first of all avoid violations of accounting standards and appropriate sanctions, as well as implement the process of renting pneumatic tires with current legislation.*

The areas of further research are to improve the development of methodological and conceptual principles for accounting and control of pneumatic tires and batteries in the enterprise.

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## INTANGIBLE VALUES IN THE ACCOUNTING THEORETICAL AND APPLIED SPHERE OF THE EASTERN GALICIA OF THE SECOND HALF OF XIX – THE BEGINNING OF XX CENTURY: HISTORICAL DISCOURSE

**Abstract.** The evolution of the economic category “intangible value of the enterprise” and the content of the objects that present it are summarized. The historical formalization of intangible components of the value of the enterprise is given and the development of accounting methodology and methods of reflection of objects related to the concept of “intangible asset” is analyzed. The article presents theoretical and applied aspects of the reflection of intangible assets by accounting in the global and regional sections. The first part of the study highlights the generalized and systematized by the author historiography of the basic principles of accounting for intangible assets with an emphasis on existing problem aspects and ways to solve them at the turn of the century. The second part of this historical and accounting investigation reveals the panorama of solving the problem of accounting for intangible assets in Eastern Galicia. The study of this component has the character of theoretical scientific knowledge and is based on literary criticism, based on selected textbooks and scientific works of accountants of the study area.

The hypothesis of the study is the assumption of the development of Western Ukrainian scientists in the period declared by the article of certain ideas that can be rationally used to develop modern concepts of accounting for intangible assets. Among the scientific novelty of the article is a proposal on the principles and approaches to writing off the value of intangible assets, as well as methods of accounting for goodwill in the accounting method, substantiated in the past. The study is based on historical-retrospective analysis, and therefore the main methods of historiographic analysis and historical-genetic method were used.

**Key words:** intangible asset, enterprise reputation, goodwill, methodology of accounting, Scientific knowledge, Galicia territory

### Introduction

The reflection in accounting and the presentation in one way or another of public information about economic resources of the intangible type during the evolution of this system have always been and remain the subject of discussion. The dual economic and legal nature (as a special institution and economic resource) gives rise in accounting practice to different approaches to accounting for the intangible value of the enterprise. Throughout the history of the theory of accounting and practical accounting, no unified approaches to the recognition, evaluation and agreed methods of reflection of the accounting system of many objects of intangible type. This type of resources has a dual economic nature - they form a value comparable only to a particular enterprise (for example, a trademark or trademark) and, at the same time, the total capital of owners, expressed through their value. However, a significant part of these objects cannot be identified using traditional accounting tools. This makes it insurmountable to establish the share of the value of the business when one of the partners leaves.

Accounting is influenced by changing financial and economic doctrines, and therefore, during the evolution of this system, it has acquired a different conceptual framework for intangible assets. In the vast majority of economic theories,

the content of this category was reduced to the fact that the intangible component of the value of the enterprise organically combines all the assets of an intangible nature available at the enterprise. The dominance of certain financial and economic doctrines in a particular period of time caused the fact that intangible objects were expressed in different accounting categories. At various stages, the terms “intangible assets”, “intangible assets”, “intangible capital”, “goodwill” were used in relation to them, and later – “information and intellectual assets”, “intellectual capital” and others. Regardless of the terminological content, the basic basis for all concepts is the understanding of the ability of intangible assets to provide benefits in the future, significantly affect the market value of the enterprise and act as the main resource of its competitive advantages.

The basic principles of accounting have been built and continue to be based on the following principles: write-off of internally generated assets simultaneously with the capitalization of functionally identical acquired intangible assets and their amortization (write-off). The lack of sound financial and economic doctrines for the assessment and establishment of agreed recognition criteria, negatively affects the ability to develop objective accounting methods, which, in turn, complicates the problem of managing them at the enterprise level, operating this information in capital and investment markets.

In economic theories (paradigms), intangible economic resources in the synthesized expression are represented through goodwill or intellectual capital, the structure of which in turn is formed by human, structural and consumer (client) capital. Similar to the “blurred” financial and economic concepts is the modern standardization of accounting, which has the ability to reflect different groups of intangible assets on the basis of expert judgments. The problem intensified with the introduction of the ideology of positivism in the theoretical and applied economy in the 1990s, which had a significant impact on the development of financial models of decision-making, including the use of accounting and reporting information. Based on expert assessments of information and intellectual capital, the efficient market hypothesis (Efficient Market Hypothesis) and the Capital Asset Pricing model were built. In these models, data on intangible economic resources are

generated on the basis of subjective estimates, which are said to provide a fairly reliable expression of the fair value of assets and liabilities [1]. However, in modern accounting standardization, as the well-known scientist Baruch L. concludes, “many estimates, such as the fair value of non-trading (non-market) assets, and especially goodwill, are often not better than simple assumptions and tend to manipulate... indiscriminate write-offs of intangible assets. costs significantly deprived the profits of their ability to inform about the results of the enterprise and forecasting” [2].

In the process of scientific knowledge of the general theoretical principles of accounting or individual issues of intangible assets of the enterprise often indicate the feasibility of turning to the developments of the past, in which you can find original ideas relevant to the present. It is believed that the use of certain provisions of past developments can provide identification of new opportunities and ways to generate information about the intangible potential of the enterprise. For example, domestic scholars M. Koryagin and P. Kutsyk argue the expediency of turning to the development of the German school of accounting, which conducted research on the use of fair market valuation in accounting in the late nineteenth century and which were not fully implemented in the twentieth century [3, p. 10]. During the period under study, theoretical developments in the field of accounting and organization of accounting practice in Austria-Hungary, including Eastern Galicia were part of German accounting, which justifies the direction of our study, updating assumptions about making some successful decisions directly by scientists.

### **Methodological approach**

To ensure the study of the evolution of theoretical accounting knowledge about intangible assets, methods and approaches to their reflection in practical accounting, providing information on the value of intangible capital in accounting, a triad of approaches: empirical (evolutionary experience of reflecting objects of this type in practical accounting); normative-practical interaction of regulatory requirements and theoretical progress of financial-economic and accounting knowledge for the formation of information about the intangible potential (capital) of the enterprise (fundamental): the level of in-depth understanding and expression

in terms of the essence of accounting developments of scientists, ie science. object “intangible assets” allowed to identify the conceptual and substantive content of articulated objects (business reputation, goodwill, intellectual capital, etc.) and the direction of developing a methodological arsenal of accountants in Eastern Galicia. The study is based on retrospective analysis using historiographical and historical-genetic methods.

### **Formulation of the problem**

The purpose of the article is to reveal the evolution of the concept of “intangible assets” as an accounting and economic category and to study the historical development of approaches to the reflection of these objects by the accounting system. The defined goal is focused on the retrospective analysis of specifically selected works of East Galician scientists in the field of accounting for intangible objects, analytical assessment of their proposed conceptual and methodological approaches in terms of the period and present. The analysis of the obtained results is aimed at formulating recommendations on the possibilities of using some successful ideas of the past in modern research.

### **Analysis of recent research and publications**

In its specialized report for 2019. “Eccountancy Europe indicates that current accounting methods in many cases do not take into account internally generated intangible assets, which have become a major component of companies’ market value” [4, p. 4]. Assessing the possibility of developing accounting techniques based on existing standardization, a well-known researcher in the field of intellectual capital Magg W. concludes that the search for “an objective approach to the valuation of intangible assets creates huge problems, and for this reason the formation of objective accounting for intangible assets is either quite difficult or almost impossible” [5, p. 172].

Modern case studies use various ascending positions to improve the accounting of intangible assets, but also offers a reference to the achievements of the past. This applies both to the view of the content of economic matter of certain types of economic resources, and the evolution of accounting techniques in general. For example, IM Nazarenko argues that “for an in-depth understanding

of the accounting interpretation of the studied category is important retrospective analysis of the development of categorical-conceptual apparatus” [6, p. 135]. Circumstances of origin and evolutionary changes of the accounting category “intangible assets” are considered important for modern research by scientists. For example, based on the results of a comprehensive case study, VS Rzhanitsyn concludes that this aspect “is of great interest because the analysis of the historical preconditions for the reflection of intangible assets and existing standards will allow to formulate a description for the modern accounting category” [7, p. 10].

Regarding the methods of reflecting the entire intangible potential of the enterprise, expressed by the category of goodwill, a similar position is taken by SV Kucher: company value “, is relevant” [8, p. 1165].

An example of the use of some developments of the past is the results obtained in the works of I. Yaremko. Based on the developments of Western Ukrainian scientists of the period under study, he formulated and introduced into scientific circulation the accounting category “Ideal Capital”, which synthesized the productive power of all intangible economic resources of modern enterprise. His work [9] and copyright [10] substantiate the impossibility of expressing information and intellectual economic resources in the traditional way (from assets to capital), ie on the basis of pre-estimated values of a special kind that form the price of the firm. This development proposes a new approach (from capital to assets), ie the ascending disposition is the assessment of the information-intellectual component of the total capital of the enterprise (“ideal capital”), and its productive function is expressed in terms of “ideal resources”, offering its own, but taking into account the developments of Galician scientists of the past, improved balance sheet format for modern corporations through the additional introduction of articles “Intellectual assets” on the active side of the balance sheet and “Intellectual Capital” in the liabilities of the balance sheet. It is substantiated that such a basic basis “allows a more comprehensive representation of the intangible (information-intellectual) component of the potential of the corporation” [11].

### **The main materials.**

#### **Historiography of the problem**

Various concepts in relation to the intangible economic resource (intangible value) of the enterprise in the commercial sense has long been used and in a generalized sense is reduced to the acquired business reputation of the enterprise. The importance of the reputation component for the effective functioning of the enterprise over a long historical period necessitates the quantitative measurement of this category to operate it in the applied economy. The accounting system is the only economic tool that can formally (according to an agreed method) to establish the value of intangible assets of the enterprise. However, for the entire historical period there is a difficulty in providing this function by the accounting system, which in general terms is that the economic value of the intangible asset taken on the balance sheet in the current period is determined by the amount of income they expect to receive from it in the future.

From the time of formation of accounting as a formalized system (science) to the middle of the XX century. in the accounting field was dominated by normative theorizing with a pronounced mainstream application of the deductive method. Theoretical constructions of the then accounting system for accounting and reflection of information in accounting were largely based on prescriptive nature (content of mandatory instructions), and the improvement of accounting for intangible assets was based on the opinion of an individual researcher and for a specific situation. This was especially true of objects such as trademark, brand, trademark, business reputation, and so on. Formed in any historical period, the theoretical structure of accounting is in the coordinates of decision theory, measurement theory (evaluation) and information theory, where there is a clear problem with intangible assets. Information about the intangible potential of the enterprise is especially important for investment decisions, and therefore due to the lack of clear formalization of data on these objects, decision-makers are dominated by hermeneutics (summary method of interpretation), ie arbitrary interpretation and interpretation of these indicators.

During the study period in Europe and also in Eastern Galicia, the predominant position of scholars was that various intangible assets are the values of fixed assets and represent the real value of the company's capital. In accounting

historiography on the subject, it is believed that one of the first established references to “incorporeal intangible assets” with an emphasis on their reflection in accounting were contained in the book R.P. Coffy “Tableau synoptique des principes gene raux”, published in Paris in 1832. The earliest established definition of goodwill as a definitive concept is given in the “British Dictionary” (“A Counting House Dictionary”) in 1883[12]. In it, goodwill is disclosed (interpreted) as an advantage associated with a good reputation (well-established business). Goodwill is said to have value because a business acquired at an “inflated” price is expected to bring in excess profits. In the future, goodwill is associated with its elements (brand names, patents, trademarks, copyrights).

In a more formalized accounting sense, the term “intangible assets” was used in 1916 in the article “Intangible assets in the balance sheet”, published in the “Journal of accountancy” [13]. In the period declared by our article, with varying degrees of formalization, the category of “intangible assets” contained four types of assets: goodwill, patents, trademarks and copyrights, which were combined on the basis of lack of material form. The intellectual capital market formed during this period required formalized information, ie the need to reflect intangible assets in the company's financial statements. This has led to increased attention of scientists to develop satisfied methods for the accounting system.

In accounting historiography, L. R. Dicksee is recognized as a well-known scholar in the field of accounting for intangible assets. It is believed that he published in the economic journal *The Accountant* in 1897. article (lecture) “Goodwill and its Treatment in Accounts” [14] and published in 1906. the manual laid down certain basic provisions for the formalization of this accounting object [15]. According to this scholar, “goodwill as an asset includes the benefits that a business owner receives where the value of the business depends on business relationships – goodwill acquired in the acquisition of a business consists of the right to use those relationships”. In other words, the elements of business relations were emphasized in these works – clients will continue to increase cooperation with the company. In his works, the author considers in detail the issue of valuation of goodwill and the order of its reflection on the accounts. Note a separate of the rarely proposed

approaches – *write off goodwill* from the balance sheet as quickly as possible *at the expense of reserves, not profits* [15] (italics highlighted by the author of this article).

Among the scholars who studied the problem of accounting for goodwill was a practicing accountant and founder of the London firm of chartered accountants Leake P. D. In 1914, he published the article “Goodwill, its nature and evaluation” and published in 1921, the book “Commercial goodwill: its history, value and treatment in accounts” [16]. Goodwill was seen as a collection of intangible assets: patent law, copyright and the right to conduct business, taking into account the use of brand names and trademarks. It was believed that the total working energy of these assets provides additional income in the future. In his proposed principles of construction of the valuation methodology, the postulate was put forward - the current market value of the business is associated with the criterion of future (expected) benefit. In this work was formulated “Super-profit Valuation Theory of Goodwill”. Goodwill is seen as a right formed on the basis of past resources expended for the expected profit (increase in the value of the company). The cost of goodwill in this sense depends on the probability of earning future profits. The described theory became, in fact, the basis for the formation of a profitable method of estimating goodwill.

Another scholar who studied the problems of accounting for goodwill was Hatfield HR, who in his work “Modern Accounting, its principles and some of its problems” [17] argued the impossibility of objectively assessing goodwill and took the position that in the financial statements of this object should be reflected subject to its purchase for the amount paid. Many scholars have criticized the approach to goodwill valuation based on expected superprofits, one of which was Kaner H. A. His New Theory of Goodwill [18] stated that superprofit is a variable and the theory of goodwill valuation based on it is incorrect. These arguments have given a new impetus to the study of accounting for intangible assets.

Closer to the middle of the twentieth century, in the conditions of capitalist industry the role of a trademark (“trademark”, a trademark) as an effective means of advertising, a means of increasing sales, increased. The first legislative

(civil law) norms appear, guaranteeing the protection of trademarks, which within different countries had different variational approaches. The value of a trademark (trademark rights) as an intangible asset consists of the cost of its development (acquisition) and payment of state duty. A significant impetus for the development of the international system of intellectual property protection was made by the development of the Paris Convention (1883), which concluded the International Agreement (Convention) on the Protection of Industrial Property, which allowed to protect the rights of patent holders in different countries.

In 1944, the Accounting Procedures Committee of the American Institute of Accountants issued the world’s first normative document – Accounting Research Bulletin № 24 “Accounting for Intangible Assets” [19]. It substantiates the nature of intangible assets and discloses the rules relating to the recognition, measurement and order of their accounting. The defining feature of this document was the division of all intangible assets into objects with a certain useful life (patents, copyrights, licenses, franchises) and objects with an indefinite term (trademarks, trade secrets, perpetual franchises, subscriptions and organizational costs). For both types of intangible assets, a cost estimate was used.

Analyzing the research of accounting scientists of the late nineteenth century – early twentieth century, we can conclude that in this period formed two approaches to accounting for intangible assets or goodwill – in terms of current market value (future profits) and in terms of historical value (the difference between the acquisition cost and the book value). Approaches to the direct reflection in the accounting of such objects were divided into: 1) capitalization of acquired intangible objects or goodwill in the balance sheet; 2) write-off of the value of purchased objects by their depreciation; 3) write-off of purchased goodwill for expenses or due to capital reduction.

#### **Accounting for intangible assets in the territorial context**

Accounting category of the intangible component of the value of the enterprise in the late nineteenth century, both in the world and in the study area remained insufficiently studied. In the

then (traditional) model of accounting, the dominant input factor was physical capital (tangible assets). However, the practice of doing business, which has developed dynamically both in Europe and in the study area, required a more extensive reflection in accounting (especially in the financial statements) of intangible factors that are actually owned by the company. On the territory of Eastern Galicia there were companies with well-known brands: Concern of French oil industrial and trade companies “Malopolska” (“Malopolska”, Concern francuskich towarzystw naftowych, przemyslowych i handlowych we Lwowie); Polish-Italian Joint Stock Company of the Oil Industry “Bonariwa” (Polsko-wloska spylka akcyjna dla przemyslu naftowego “Bonariwa” we Lwowie), Dutch Oil Syndicate. Limited Liability Company Holenderskyj syndykat naftowy. Limited Liability Company in Lviv). This further exacerbated the need to reflect the intangible component of enterprises in their financial statements. Numerous financial and economic paradigms have emerged, emphasizing the importance and necessity of accounting information for intangible assets for business management.

At the forefront of economists and accountants of the region, who had sufficient opportunities to implement regional developments, raised the question of formalizing the very concept of intangible value of the enterprise. In their work, East Galician accountants emphasized that “capital should be understood as a set of all values that ensure the activities of the enterprise” [20 p. 5.]; capital is the establishment of the height of the value of the economy in monetary units through the assessment of material and *ideal values*, which discourages the company [21] (italics highlighted by the author of this article).

Regional economic theories (paradigms) have formulated various variations on the semantic disclosure of data on intangible objects. For example, let’s look at the capital of the famous Austrian economist Shumpeter IA, who at that time worked in Western Ukraine (Chernivtsi University): “the concept of” capital “is money in essence and means either real money or *some goods valued in money*” [22 ] (italics highlighted by the author of this article). We emphasize that this scientist with high professional authority in Galicia and the entire Austro-Hungarian state recognized the full component of the capital of the enterprise

economic resources of the intangible type. In parallel, we present the view of regional scholars in the field of accounting regarding the reflection of accounting intangible component (ideal values) of the enterprise: “from the point of view of national economy [23, p. 171]. This approach was put forward for the first time (1910) in world accounting research.

At the national level, the problem of accounting for such intangible components of fixed assets as patents, organizational funds (costs of establishing a business), the formation of clientele and other similar values were considered against the background of the German school of accounting, which included scientists from Austria-Hungary. In Eastern Galicia, the “authoritative” and widely used in our field of theoretical knowledge was “Buchhaltungs-Lexikon” Stern R. (1902) [24], works by Reisch R., Kreibig J. Bilanzund Steuer (1907; 1909) [25], as well as “Di Bilanzen der Uftigenfellitaften” by Simon G. (1899) [26]. The works of Staub also had a sufficient influence on the progress of accounting (theory, practice, professional training) [27] and Sher [28].

Herman Veit Simon, based on the provisions of the German Commercial Code in 1861. published a work of the monographic type, which in the form of the following edition was widespread and authoritative among Galician scholars [26]. The general conceptual content of his works on the accounting of intangible assets was based on jurisprudence: “by means of acquisition (payment - transfer of ownership) such economic property confirms its ability to circulate and, consequently, acquires the right to include it in the balance sheet” [26, c. 169]. However, H. Simon emphasizes that “are not property and are not reflected in the reporting of items that can not be unambiguously assessed, such as the image and know-how of the organization, the quality of staff or relationships with contractors”. We find a critique of this in Staub before the VII edition of the commentaries on the German collection of commercial laws (p. 797): “It seems that H. Simon was too captive to double-entry bookkeeping and in terms of conjuncture (dominance of legal aspects over economic) seeks to explain joint-stock balances”. Nevertheless, Staub consciously or opportunistically supports this view: “the balance sheet of a joint-stock company is not a property

balance sheet, but a distribution balance sheet, which allows us to see what value the company has for distribution and how large the contribution to this value of an individual partner is" [27, p. 796].

In some works of East Galician accountants it was considered (mostly on a declarative rather than methodological level) that accounting should take into account both "objects of material nature and values of intangible nature" (intangible benefits) - the relationship (clientele of a merchant or lawyer) and the rights that use (privileges, real rights, etc.)" [30; 31; 32; 23, p. 1–2]. At that time, a fairly large content of various intangible assets was synthesized in the concept of "organizational funds", ie the cost of organizing the enterprise and its subsequent acquisition of market value (prototype of the category "goodwill"). It is around this issue that perhaps the largest discussions have taken place. There were various arguments and approaches to reflect their asset or justification for the need to write off in one way or another.

In the works of Reisch R., Kreibig J. such organizational funds were considered as "intangible value (ideal asset) and real asset to the extent that the funds spent can be reimbursed in the liquidation of the enterprise through payment by a third person" [25, II, p. 91]. Staub pointed out: "In addition to real things, the asset can also reflect all the objects that are the subject of the progress of the law, as well as such economic values as unprotected trade secrets, company law, etc. These things constantly form part of the asset, but according to the law (jurisprudence), their accounting is verified only when the necessary costs were incurred for their acquisition" [27]. That is why in the field of accounting such an article was not considered fundamentally incorrect (unrealistic), but only as one that "contradicts legal norms and trade customs, and therefore incorrect" [29; 31; 25, II p. 16].

Austrian legislation at the time forbade the capitalization of almost all types of intangible assets, as well as the costs of establishment and to reflect them in the balance sheet. However, under the influence of the needs of practice, the work of Cher I. F. [28] and some European (primarily French) developments in the theoretical developments of East Galician accountants began to dominate the position that although such amounts in principle

burden the main balance sheet of the company, but in terms of reflecting potential energy should be introduced into the "balancing system", as the company has benefited from the funds spent in subsequent years. Therefore, at the end of the XIX century the accountants of the region begin to have the first attempts to solve the problems of accounting for intangible assets of the enterprise by means of theoretical developments, which, however, were fragmentary and were solved in the general system of accounting improvement.

The authors, with a few exceptions, used the traditional positivist approach of the time, which provided for the development of accounting theory based on the description of the existing practice at that time, including and foreign companies operating in the region (for example, above). For theoretical developments in the field of accounting of intangible assets of great importance were the state legislation on the conceptual and categorical apparatus, as well as instructive provisions for the reflection of accounting values of intangible nature. In many cases, regional accounting specialists were involved in the development of mandatory rules and accounting regulations. Therefore, in the theoretical accounting developments of East Galician accountants, there are numerous appeals and references to the legislation of the Austro-Hungarian state and, for comparison, similar legislation of other countries.

First of all, in our opinion, it is important to single out the legislative consolidation of the conceptual apparatus in relation to the categories of "capital", because it is from these ascending positions that the preconditions for developing methods of "capitalization" on the balance of intangible values followed. So, for example, the Austrian shareholder instruction (§28, item 6) under the fixed capital it is a question of all share capital, that is the cost of the enterprise is equated to a market estimation. At the same time, according to Article 18 of the Implementing Instructions to the Austrian Personal Tax Act of 25 October 1896, applied capital is not only all types of "classical" investment in entrepreneurship (acquisition of tangible assets), but also and the funds associated with the attraction (attraction) of foreign capital (the cost of printing and advertising, quotations). In a generalized form, this law refers to fixed

capital as capital invested for a long time in entrepreneurship. However, certain paragraphs of this law (§92 and §94) operate in one case with the concept of “applied“, in another “invested” and at the end of “fixed” capital. Unambiguous interpretation of the disposition of intangible values in these terms is extremely difficult. The only thing that is clear from the imperative prescriptions is that in relation to assets of intangible nature the position is held that when an enterprise uses this type of economic resources, their energy is converted into working energy of capital, ie it acquires the power of capital.

Due to the content of legal interpretations, the difficulty on the basis of evidence to express intangible objects, in accounting practice, such data were used to a limited extent. However, in the

educational process of training accountants, questions were introduced regarding the recognition, valuation and ability to reflect intangible assets in the accounts as a component of the property assets of the enterprise.

Based on this, accountants of the region formulated approaches to the accounting of intangible assets. For example, we give the content of topics from the textbook for the Higher Agricultural School in Dublin Au Juliusz (1889) [29]. This textbook had a scientific and theoretical orientation and the nature of optional use; it was published with the financial support of students (wydane nakładem b. studentów b. wyższej szkoły rolniczej w Żabikowie i wyższej szkoły rolniczej w Dublanach) “Nauka rachunkowosci dla potrzeb gospodarstwa wiejskiego zastosowanej”.

*Table 1*

**Contents of the manual topics “Nauka rachunkowosci dla potrzeb gospodarstwa wiejskiego zastosowanej”, relating to intangible assets**

<b>Contents of topics (in the original language)</b>	<b>Contents of topics</b>
1. Części składowe majątku	1. Components of property wealth
2. Szacowanie czyli oznaczenie wartości części składowych majątku	2. Valuation or marking of the value of property components
3. Pogląd krytyczny na błędne sposoby szacowania	3. A critical look at the wrong assessment methods
4. Zestawienie inwentarza	4. Inventory list of components of property assets
– Rachunki formalne: rach. bilansu, rach. kapitału, rach. zysków i strat	– Formal accounts: balance sheet account, capital accounts, profit and loss account
– Rachunki rzeczowe: rach. części składowych majątku	– Property accounts: accounts of components of property wealth

The material on the above topics was undoubtedly directed to tangible objects, and the emphasis on intangible property was an important component of this textbook. Assessment of property, including intangible assets, is presented from the point of view of the author of the manual. This approach is presented to the inventory of property, as well as its reflection on property accounts and capital accounts.

The above-mentioned Austrian law of 1906, analogous to §261 of the German Code of Commercial Laws, categorically stated: “funds for the establishment and management of entrepreneurship should not be included in the balance sheet as an asset”. Instead of the asset item,

it was supposed to use the item “losses”, which in the balance sheet of that time was reflected on its active side.

The comparative content of the imperative prescriptions of the two states is aimed at comparing the positions of German and East Galician accountants regarding the basic approaches to the methodology of accounting for this type of costs. For example, in the works [24; 25; 28] German accountants proceeded from the position that the costs of the organization that are not reimbursed for the reporting period are, in fact, losses (specific losses of an economic nature). Given this “specificity”, they consider them in terms of “anticipation” (action that precedes the onset of

real events), proposing to use a separate “account of losses of organizational funds” [25, II, p. 120]. That is, in fact it was a reflection in the balance sheet (asset) of a kind of loss account (loss). In this context, some scholars of the region expressed a slightly different view on the existing issues: “It is absolutely true that loss is not a value and cannot be presented as a value, but organizational funds, when they have an exchange value, are an *ideal fixed asset* and should be reflected on the basis of this content of this economic category” It was proposed – “if the law wants to limit the distribution of profits, it is much more logical and correct to direct the relevant part of the profits to reserve capital” [23, p. 172].

However, there was no unanimity among East Galician accountants on this issue, and therefore various discussions were held. There has been controversy that “organizational funds” (in the modern sense of “internally formed goodwill” or “business reputation”) may not have any exchange value at all and therefore it is debatable to reflect them as property (intangible asset) [30; 32]. In contrast, other considerations were put forward - when establishing a business, the owner usually transfers cash or items equivalent to this cash payment, which were articulated as “Apport” (intangible assets, from the French). It was noted that “French accounting still recognizes the rights, patents, founding funds as *actif fictif*, ie as the estimated value, although, in contrast to *actif reel*, uses very limited approaches to their introduction into the accounting system [23; 30; 31].

Some scholars have emphasized the debatable reflection in the balance sheet of such an active article, based on the fact that the accounting expression of the emergence of such value should guarantee its existence as property at the time of sale of the business. Such intangible assets were proposed to be called unfinished (unfinished and “hanging in the air”) property, and the capital that concerns it – unfinished capital, ie it was, in fact, the balance sheet item “deferred expenses” [23; 30].

The problem was the reflection of unsold shares (assets), as well as their sale at a rate above par (liabilities). The norms of the Austrian trade

instructions (§53) of 20.09.1899 prescribe that “the amount of increase (growth) of fixed capital due to the sale of shares at a higher rate than the nominal value should be treated by the reserve fund”. This legal norm “automatically” obliged the accounting department not to reflect the increase in the value of capital (liabilities), but in connection with the presentation of the received funds (assets) to show capital reserves. In practical accounting, this is how the issue of presenting the growth of shares in property and capital accounts was resolved, bypassing the balancing item “internally generated goodwill”.

Some studies by East Galician accountants suggested that some types of intangible assets have the ability to increase their value without additional costs, which should be reflected in accounting not only at the time of sale, but also at the end of the year directly in the balance sheet. From this point of view, it has been suggested that “the increase in values such as the increase in property and at the same time the increase in capital should be recorded at the end of the year, although we usually do not see growth, just as we do not see growth of grass” [23, p. 31]. It was proposed to measure the growth of the value of intangible assets through an inventory organized directly at the enterprise. The period of the late XIX – early XX centuries. characterized by rapid economic development of the region. The scale of development of the world-famous Boryslav oil basin, salt mines, as well as the construction of railways and related economic activities have led to the emergence of numerous foreign joint-stock companies in the region. Financial and credit institutions (unions) of the non-state type, large-scale insurance organizations were created. In practice, the operation of the concept of “enterprise value” has become particularly important, which gave a new impetus to accounting developments in the field of accounting and reflection in the reports of enterprises of their intangible property.

Here is a meaningful presentation of individual topics (issues) related to the accounting of intangible components and their reflection in the financial statements. The works of Sciborski A. and Ciompa P. are chosen as examples.

## Contents of topics that covered intangible assets in manuals [23; 30]

Sciborski A. Podręcznik do nauki rachunkowości ogólnej i państwowej (1912)	Ciompa P. Grundrisse einer ökonometrie und natürliche theorie der buchhaltung (1910)
<b>Contents of topics</b>	
Znaczenie s podział majątku w gospodarstwach (the importance of division of property in farms)	<b>Die Darstellung des Tauschwertes: Vermögen und Kapital (Representation of exchange value: property and capital)</b>
O kapitale w ogóle (about capital in general)	– Das Verhältnis des Vermögens zum Kapital (the ratio of assets to capital)
Zmiany majątkowe, spowodowane przychodami (changes in ownership caused by income)	<b>Die wirtschaftlichen Handlungen:</b> Die Wertveränderungen des Vermögens und Kapitals (economic action: change in the value of assets and capital)
Rozpoznanie majątku (recognition of property)	<b>Gruppierung des Vermögens und Kapitals (grouping of assets and capital)</b>
<b>Oznaczenie ilości majątku (designation of components of property status):</b>	
– Majatku czynnego (active property)	– Betriebsvermögen und Betriebskapital (business assets and working capital)
– Majatku biernego (passive property)	
<b>Oznaczenie właściwości majątku (marking of property assets)</b>	– <b>Anlagevermögen und Anlagekapital (fixed assets and fixed (invested) capital)</b>
Oznaczenie i opisanie pojedynczych części składowych majątku (designation and description of individual components of the property)	a) Verbrauchsvermögen, schwimmendes Vermögen und schwimmendes Kapital (expendable assets, floating assets and working capital)
Oszacowanie majątku (asset valuation)	
<b>Zmiany majątkowe (changes in ownership)</b>	b) Ideales Anlagevermögen und Kapital (ideal (intangible) fixed assets and capital): Schwebendes Vermögen (floating assets)
O zapisywaniu zmian zaszych w stanie majątku i prowadzeniu w tun celu rachunków (about records of changes in the state of the estate and holding accounts on accounts)	Die Akkommodation des Vermögens und Kapitals (placement of wealth and capital)
O pozycjach statycznych czyli idealnych (kompensacja, nowacka, cesia i asygnacja) (About static or ideal positions (compensation, novation, assignment and assignment))	Preisgewinn mit Vorrat (price increase with shares)
	Die Vermögenskonten (asset accounts)
	Die Personenkonten: debitorenkten (personal accounts: customer accounts)
Powiększenie i pomniejszenie należności (increase and decrease in the scale of ownership)	Eigene Kapitalkonten (equity accounts)
Wpływy ubytków należności na stan majątku (the impact of losses on receivables on the state of assets)	<b>Grundsätze der Bewertung in der Bilanz (principles of valuation in the balance sheet)</b>
<b>Bilans majątkowy (property balance)</b>	Bewertung des Betriebsvermögens (valuation of business assets)
Sposód sporządzania bilansu majątkowego (method of preparing the property balance)	Kritik der gesetzlichen Vorschriften (criticism of legal regulation)
Wzór dilansu majątkowego (property distribution template)	
<b>Oddanie i przechowanie majątku (Return and preservation of property)</b>	Bewertung des idealen Anlagevermögens (valuation of ideal assets)

The textbook Sciborski [30] and the theoretical development of Ciompa P. [32] had different character and content. The first directed

accounting as a general and social science and was intended for the educational process in Lviv institutions of the university type and was based on

the data of practical management (opracowany według wykładów radcy Dworu Tadeusza Klusik-Orzechowskiego na c.k Uniwersytecie we Lwowie). The development of Ciompa P. is a “classic representative” of scientific work and is known in historiography as “econometric balance theory”. It was developed at the Lviv School of Commerce, and its theoretical and methodological level is evidenced by the fact that it was proposed for consideration at the next European Accounting Congress in Lyon (1914). This development takes the position that “intangible assets constitute capital only if the real effect of their productive force on the effective functioning of the economic entity, ie non-productive assets cease to be property of capital... capital disappears (undergoes reduction) and a former asset that has lost value for enterprises should not be counted on the balance sheet” [23, p. 13].

The problem of accounting for organizational funds (costs for the organization and formation of internally generated goodwill (business reputation)) also affected the issue (price) of shares, registration fees, and so on. In this context, discussions have unfolded regarding the write-off of their value (depreciation). There was an unequivocal position that since the acquired intangible assets (information, privileges, patents, etc.) are classified as property, plant and equipment, they should be depreciated in the same way as other property, plant and equipment. The depreciation of objects formed directly by the enterprise was approached differently: “in the case of founding and organizational funds it looks different than writing off the loss of share capital: they are value, represent the value of property and capital, and therefore can be indicated in the balance sheet as an asset” [23, p. 128].

The development of theoretical approaches was influenced by the requirements of regulatory policy in the financial sector. For example, the provisions of the Austrian legislation on the regulation of shares (§21) allowed newly established insurance companies to “depreciate” (write off) organizational funds (up to 5 years) and final commission costs (up to 10 years). The balance not written off for the reporting period should be transferred to a new account as an asset. “This approach (reflected in the balance sheet of an unlisted intangible asset) was focused on future profits or one that could be offset by a third party in the sale of the business.

In the then regional financial and economic doctrines and accounting conventions (developments) the greatest controversy concerned the choice (selection) of means and methods of measuring such an abstract (without material content) category and to quantify the company has this kind of economic resources. Different approaches were proposed, but the common view was that by improving traditional approaches to the assessment of the intangible component of capital on the basis of existing methodological principles of accounting (metaphysical approach) is not able to solve existing problems. Analysis of the developed accounting developments of East Galician accountants of the studied period shows that their focus was on the formulation of new principles in the field of evaluation, rather than improving the methodological arsenal. The valuation of intangible assets should be approached differently than the valuation of tangible assets. Their real value lies in the income they can generate. The value of intangible property is its use, not its costs.

Table 3

**Contents of topics related to intangible assets in the manuals [31; 32]**

Góra W. Bilanse. Studja ekonomiki prywatnej (1920)	Tomanek F. Księgowość kupiecka: pojedyncza i podwójna (1923)
<b>Analiza i krytyka bilansów (analysis and critique of balance sheets)</b>	<b>Кonta складників majątkowych (рахунки компонентів власності)</b>
– Stosunek wzajemny poszczególnych pasywów (the relationship of individual liabilities)	– Konta wkładek kapitałowych (capital contribution accounts)
– Stosunek wzajemny poszczególnych aktywów (the relationship of individual assets)	– Księgowanie interesów partycypacyjnych (accounting for interests with equity participation)
– Stosunek pomiędzy aktywami a pasywami bilansu (the relationship between assets and liabilities)	– Praktyczne zastosowanie księgowości w interesach komisowych, partycypacyjnych i spółkach jawnych (practical application of accounting in the interests of commissions, joint and general partnerships)
– Analiza rachunku strat i zysków (analysis of the income statement)	

Under the influence of the above and many other theoretical developments in practice began a broad manipulation of the introduction into the balance sheet generalization of various types of “fictional” intangible value. This led to the bankruptcy of enterprises due to distortions in the share price and their real financial condition. The facts of real practice have naturally reduced the theoretical developments in the field of accounting for the intangible value of the enterprise. For example, the content of topics from later manuals – Gora W. (1920) and Tomanek F. (1923). The first textbook was theoretical in nature and was intended for the studio study of the private economy, the second – was intended for higher trade schools and had a practical inclination, although the theoretical and scientific principles occupied a significant place in it.

The content reflected in these textbooks in comparison with the above shows a significant decrease in the amount of work in the field of accounting for intangible assets.

### **Conclusion**

Based on the elaborated developments of East Galician scholars for the historical period defined by the article, it can be concluded that some justifications, which have been left out of the accounting of accounting, contain rational and for modern theory and practice elements of intangible assets. For example, the sound principle of “capital is written off” can be used to improve the existing standardization of goodwill accounting. Acquired goodwill is, in essence, the value of intangible assets not reflected in the balance sheet. Such an acquisition is usually made at the expense of the equity of the purchasing entity, and therefore the write-off of goodwill should be made at the expense of fixed capital and not attributable to costs. In a more precise version, it is a question of writing off at the expense of “reserve capital”, which should be formed as a real source of financing in the structure of fixed capital. This becomes especially evident in crisis situations within the national or global economy. To create such targeted reserve capital requires stricter mandatory requirements at the state level. In the author’s opinion, the strengthened regulations should be included in the international standard “Business Association”

The principles of writing off the value of intangible assets such as a trademark (trademark) proposed in the works of Western Ukrainian scholars – accountants at the turn of the era can also be used to develop a more objective conceptual basis for modern accounting of intangible assets. The content of the principles proposed at that time was the assertion of the illegality of using the methods of direct amortization of this group of intangible assets. The position was held that the productive power of this type of assets over time mostly only increases, and therefore used then and preserved to this day the approach of valley write-off of their value unreasonably distorts both the financial result and the book value of the enterprise. It was proposed that the company independently with the involvement of external experts to determine the list of objects, depreciation (write-off) of which is unreasonable from an economic point of view. Provisions of this nature in relation to this group of assets should be reflected in IFRS “Impairment of Assets”. These proposals are based on those that will increase the level of objectivity of information about the intangible economic resources of modern companies.

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## ACCOUNTING AND ANALYTICAL SUPPORT OF FUNDRAISING OPERATIONS IN ORGANIZATIONS OF NON-PROFIT SECTOR OF THE ECONOMY

**Abstract.** In the modern world, organizations that have based their activities not on economic but social benefits are becoming more widespread. Non-governmental non-profit organizations bring together individuals and/or entities for meeting economic, public, social, cultural, environmental and other interests, needs for political will, religious service, etc. Such organizations are usually not commercially active, so finding sources of funding or fundraising is an important component of their business activity. Different types of funding sources and different approaches to attracting such funding can be applied to each type of non-governmental non-profit organization. Accounting of such funding and the cost of its finding is the core of transparent activity of these organizations and reflection of the results of their work. The purpose of the research is to explore the accounting and analytical support for the implementation of fundraising in non-governmental non-profit organizations. The article describes the concept of fundraising as an activity of finding and raising funds for the realization of social functions by non-governmental non-profit organizations. Types of non-governmental non-profit organizations in Ukraine and abroad are investigated, methods of fundraising implementation are disclosed. The nomenclature of expenses on fundraising, the procedure for recognizing such expenses and reflection in accounting of non-governmental non-profit organizations are defined. The location of the cost of searching funding in the transaction costs of the organization is determined.

**Key words:** fundraising, the cost of fundraising, non-governmental non-profit organization, accounting for the cost of fundraising, transaction costs.

### Problem statement

Non-governmental non-profit organizations have got into all spheres of social life of the state. We are constantly confronted with the activities of public organizations, political parties, charitable foundations, religious organizations and etc. Environmental non-profit organizations call for environmental conservation, develop strategies and often influence governments to reduce atmospheric emissions or pollution of the oceans. Most of us are active parishioners or involved in some kind of religious community. We support a particular political party by expressing their will during the elections or hiding charitable assistance for the implementation of charitable foundations. The activities of all these non-governmental non-profit organizations are an integral part of our society.

### Analysis of recent research and publications

The peculiarities of the activities of non-profit organizations, as well as the issues of accounting and reporting in different types of non-profit organizations have been researched by many scientists: O. B. Andreeva, N. O. Gura, O. M. Vinnyk,

O. S. Vysochan, O. O. Vysochan, O. A. Klymenko, Y. R. Skorobogata, L. M. Chupryna, S. Levytska, S. Svirko, V. Khomutenko and others.

Every non-profit organization, in the course of its business, is faced with the need to find resources to ensure its effective functioning. Each non-profit organization in its activities is faced with the necessity of finding resources to ensure their effective functioning. The exploration of the sources of origin, ways of involvement and methods of implementation such financing is also the subject of research not only by practitioners but also by domestic and foreign scientists. The problem of fundraising in non-profit organizations, ways of fundraising in the context of attracting human, material and financial resources for the work of non-profit organizations pay attention to such leading domestic and foreign theorists and practices as: O. I. Shnyrkov, I. O. Mingazutdinov, T. Krupsky, O. Ovsianyuk-Berdadina, S. Collins, V. Sekerin, V. Snihulskaya, A. Sokolova, O. Solosich, S. Orlova, O. Chernyavska, A. Babiyy and others.

At the same time, a number of issues, especially with regard to accounting of economic processes for attracting financial resources for the activities of non-governmental non-profit organizations, remain to be ignored.

### **Goals statement**

The goals of our research are:

- exploration of foreign and domestic experience of functioning of non-governmental non-profit organizations;
- research of the main sources of financing of non-governmental non-profit organizations;
- analysis approaches to the definition of the term “fundraising”;
- research of methods of fundraising;
- developing a methodology for accounting the cost of fundraising.

Until recently, accounting methods for non-governmental non-profit organizations have not been the subject of research by scientists. It was thought that such organizations did not need to pitch specific approaches or highlight specific accounting entities. However, the practice of conducting business activities of non-governmental non-profit organizations shows that the features

exist and need not only detailed research, but also the development of new decisions and approaches, both for the functioning of organizations as a whole and for accounting of economic processes in particular.

### **Presentation of the main research material**

#### **I. Non-budgetary non-profit organizations as subjects of economic activity in Ukraine and abroad**

In recent years, there has been a rapid development of the non-profit sector of the economy in Ukraine. A large number of non-governmental organizations have emerged, the purpose of which was not to profit but to satisfy the social interests of citizens. Abroad such organizations are widespread and have been operating for a long time, so the creation, basic principles of functioning and ways of attracting sources of financing for non-governmental non-profit organizations in Ukraine are based primarily on foreign experience.

Non-profit organization or NPO is a legal entity formed by a group of persons to promote cultural, religious, professional, or social objectives, etc. The initial funds are raised by the members or trustees of the NPO. As the organization is a non-profit making entity, it applies its surplus funds on the promotion of the objectives of the organization rather than distributing it among the members of the organization [1].

As we can see, non-profit organizations include also governmental organization which are funded by local or state budgets.

The main feature that distinguishes non-governmental non-profit organizations from budgetary institutions is the initiator of their creation. In the case of non-governmental non-profit organizations, it can be any individuals or entities (except as prohibited by law), in the second case, exclusively by public authorities or local governments.

Non-government organization or NGO is an association formed by the citizens, that functions completely autonomous from the government to perform a broad spectrum of services and humanitarian functions. It is a non-profit making entity, that operates at a regional, national or

international level depending on its reach and connectivity. These organizations raise its funds from government, foundations, businesses and private people. It performs a number of activities, to draw the attention of the government towards the citizen's grievances, advocating public policies, promoting political participation by providing information [1].

Let's define the basic principles on which the activity of a non-governmental non-profit organization is based:

- the activities of non-profit organizations are not aimed at profit, profit serves as a means of achieving socially significant goals;
- the profit received is directed to achievement of the goals of the organization;
- the activity of a non-profit organization combines economic efficiency of the market and social efficiency of the state.

The GlobalGiving Foundation website [2] identified a number of differences that distinguish between commercial and non-profit organizations:

1. A nonprofit organization must benefit the general public.

A business can benefit the personal financial interests of an individual, shareholder, or group. At the same time, a non-profit organization does not necessarily have to bring public benefit to the general public. An organization can provide the economic, social, sports, creative, environmental and other needs of an individual group. Non-profit organizations also have economic interests. They earn income, acquire assets, have employees and can make a profit as a result of their activities. But all profits from a charitable organization must be reinvested into the organization, whereas profits from a business can benefit owners or other individuals. If a nonprofit violates this basic principle, it could risk losing its tax-exempt status.

2. Nonprofits are eligible for tax exemption because of their valuable contributions to the community.

Since the profit of non-governmental non-profit organizations does not serve to obtain the financial benefit of individuals, but is invested in the activities of the company, such organizations are exempt from income (profit) taxes. Nonprofit enterprises, institutions and organizations in accordance with the procedure and under the

conditions established by item 133.4 of Art. 134 of the Tax Code of Ukraine [3], are not payers of income tax. However, other taxes such as taxes related to employee salaries are required to be charged and paid by the organization.

3. The nonprofit sector fills gaps in community that the public and private sectors are unable or unwilling to address.

Non-profit organizations are an integral part of every country's social life. And not just as public or charitable organizations that often perform even individual functions of the state, but as an association of individuals to protect their rights, freedoms or common interest, such as creative unions or gardening societies.

Through the nonprofit sector, people can select which services you deem the most important and support them with a charitable donation (rather than a mandatory tax). The public has also historically entrusted the nonprofit sector to ethically address certain social and structural issues because it is free of the financial and personal interests that underlie actions in the private sector.

4. Nonprofits rely on funding from many different sources.

In general, the income of nonprofit organizations, depending on the source of their income, can be divided into target, non-target, passive income, income from the main or other statutory nonprofit activities. Huge amount of the nonprofit sector's overall revenue comes from charitable giving. Each non-governmental non-profit organization can receive revenue from specific for her sources: charitable assistance from individuals and entities, subsidies, grants, donations or membership fees. The ratio of such revenues to each organization is different. There is no single approach to attracting financing to support the activities of non-governmental non-profit organizations.

5. Nonprofits contend with widespread misconceptions about spending and impact.

One of the most prevalent misconceptions about nonprofits is called the overhead myth. Society believes that a nonprofit organization should use a very small portion of its expenses on its own maintenance, and direct all proceeds towards the achievement of its goals and objectives as defined in the charter. However, the effective

activity of the organization requires first and foremost a team of specialists and appropriate working conditions. For example, in Ukraine there is a cap for charitable organizations on spending expenses on maintenance. The maintenance costs of charitable organization cannot exceed 20 % of total expenditure for the current year. Transparent reporting and disclosure of costs to the public or other stakeholders will help to avoid accusations of overestimation of the costs of maintaining NGOs.

6. Growth is not always the best measure of success for a nonprofit.

While continuous growth is the most common measure of success for a business, success for a nonprofit is not always as straightforward. Progress toward a social mission can be tricky to measure. Non-profit organizations should at first place put their purpose and goals, but not expansion of the activity. For example, charitable assistance to a small category of citizens, but quality and timely, is more important than dispersing or spreading it over large territories.

The one common theme for all nonprofits is that they are not organized solely for profit. They instead serve a social purpose.

If we talk about the experience of the United States in regulating the activities of non-governmental non-profit organizations, then Internal Revenue Service or IRS in United States recognizes more than 30 types of nonprofit organizations. A separate subsection of the 501(c) section of the tax code rules each type of nonprofit.

Technically under the IRS's 501(c) code, there are two main types of nonprofits: nonprofit organization (NPO) and not-for-profit organization (NFPO). NPO's serve the public via goods and services while a not-for-profit organization (NFPO) may serve just a group of members. 501(c)(3), are organizations that are "corporations, funds or foundations that operate for religious, charitable, scientific, literary or educational purposes." Conversely, NFPOs may exist for more private focused groups or members. Other main types include [4]:

Section 501(c)(4): civic leagues and social welfare organizations, homeowners associations, and volunteer fire companies;

Section 501(c)(5): such as labor unions;

Section 501(c)(6): such as chambers of commerce;

Section 501(c)(7): such as Social and Recreational Clubs;

Section 501(k): childcare-related organizations.

In Ukraine non-profit organizations and institutions are classified according to the attributed feature of non-profit:

(0031) – budgetary institutions;

(0032) – public associations;

(0033) – political parties;

(0034) – creative unions;

(0035) – religious organizations;

(0036) – charitable organizations;

(0037) – pension funds;

(0038) – unions;

(0039) – associations and other associations of legal entities;

(0040) – housing cooperatives (from the first day of the month following the month in which a dwelling house is completed and completed or purchased by a dwelling cooperative in accordance with the law);

(0041) – summer (summer-construction) cooperatives;

(0042) – gardening and garage (garage building) cooperatives (societies);

(0043) – an association of co-owners of an apartment building, an association of homeowners;

(0044) – trade unions, their associations and organizations of trade unions;

(0045) – employers' organizations and their associations;

(0046) – agricultural service cooperatives;

(0047) – cooperative associations of agricultural service cooperatives;

(0048) – other legal entities whose activities meet the requirements set out in paragraph 133.4 of Article 133 of the Tax Code of Ukraine, established and registered in the manner specified by the law governing the activities of the non-profit organization concerned.

There have been a large number of non-governmental non-profit organizations in Ukraine over the past five years and their number has been constantly increasing (table 1).

Table 1

**Number of non-governmental organization in Ukraine for 2015-2019\***

Type of organization	Number of organizations, at the beginning of year				
	2015	2016	2017	2018	2019
Public organization	64 526	70 321	75 988	80 461	84 608
Public union	526	753	990	1 254	1 455
Charitable organization	15 934	15 384	16 837	17 726	18 433
Political party	18 237	15 557	15 817	15 791	15 485
Creative union	277	279	292	311	314
Religious organization	24 957	23 261	24 072	25 223	26 075
Trade union, union of trade unions	28 890	26 321	26 899	27 601	28 026
Association of co-owners of apartment building	15 992	17 109	26 080	27 999	29 916
<b>Total</b>	<b>169 339</b>	<b>168 985</b>	<b>186 975</b>	<b>196 366</b>	<b>204 312</b>

\*Source: compiled on the basis of statistics data for 2015–2019.

The number of entities registered as non-governmental non-profit organizations increased by 21 % during 2015–2019. Among the types of NGOs, the largest dynamics are attributed to public unions and association of co-owners of apartment building, whose increase for 2015–2019 is 177 % and 87 % respectively. In general, there was no significant decrease in the number of non-profit organizations for each of their types. As for the structure of non-profit organizations, the public organizations have the most important share for the surveyed period, whose share averages 40 % annually.

All these organizations provide their business activities from different sources depending on their type. However, for each organization important is the search of ways and directions to attract such funding.

## **II. Foreign and domestic experience of attracting financing by non-governmental non-profit organizations**

There are a number of problems in the activities of non-governmental non-profit organizations, which affect the effectiveness of the activity. However, one of the most important is financing and asset search - fundraising.

In spite of the large number of works that have considered the issue of fundraising by different types of organizations, most of the scientists identify the latter as a specific activity for finding and raising different types of resources (material, human, financial) for the activities of

non-profit organizations, the implementation of socially significant or research projects. However, the definition of “fundraising” has some differences depending on the type of organization or the purpose of the engagement.

I. Khaliy, O. Aksenova, L. Luneva [5, p. 1] consider “fundraising” as process of raising funds that are used both for the implementation of socially significant projects and for the organizational support of non-profit organizations. O. V. Chernyavska and A. M. Sokolova [6, p. 12] believe that “fundraising” is a professional activity in mobilizing financial and other resources for the implementation of socially significant and research non-profit projects, which requires special knowledge and fundraiser skills.

According to O. Y. Babiyy [7, p. 6], “fundraising” is a wide range of activities, involving the attraction of various sources of funds: donor, membership, charity.

Fundraising is not, in essence, a search for investment, because the investor will not receive further profit from the investment, since the projects of non-governmental non-profit organizations are not-for-profit and do not bring financial benefits to either the owners (founders) of the organizations or their donors.

The sources of formation of property of non-governmental non-profit organizations can be:

- funds of the state and local budgets, in particular in the form of appropriations, subventions, subsidies, etc.;
- grants;

- funds and other means received as charitable assistance and donations;
- revenues from owners of organizations;
- entrance and membership fees;
- property received from other non-profit organizations after their liquidation;
- dividends and interest received on securities and bank deposits;
- funds received as income from the use of NGOs' property (such as rent);
- funds received as income from the sale of tangible assets and/or services (provided if such implementation is not the main activity under the statute and not prohibited by the legislation);
- other specific revenues (pension contributions to non-state pension funds; funds received by trade union in accordance with collective agreements; property rights of religious organizations, etc.) not prohibited by law.

Therefore, the sources of financing non-governmental non-profit organizations can be grouped into two large groups:

1) self-financing: membership fees, charity events, provision of various paid services (providing information, conducting seminars, trainings) and performance of contract works (expertise, survey, conducting research) and others;

2) external sources of financial support: grants, local budget funds, participation in state (or regional) targeted programs, sponsorship, etc.

The state often supports the activities of non-governmental non-profit organizations, both directly and indirectly. Consider the example of public organizations how solve the problem of financing in European countries. In this way, European public organizations cooperate with public authorities, which in turn financially support them. There are two main types of financing in European countries [8]:

– direct financial support from the budget, through subsidies or grants (state funding for the implementation of a specific project), state competitive procurement (purchase by the state of goods and services produced by public organizations), regulatory support (monetary compensation paid to public organizations for providing services);

– indirect financial support, such as an organization's income tax benefits, tax benefits for

donors if a donation is made to a particular organization.

The experience of individual countries makes it possible to determine specific directions of financing by the state for non-governmental non-profit organizations.

In Germany, public funding accounts for 64,3 % of the total income of public organizations, which is deducted from taxes and income from social insurance, private donations, payment for services, duties and lottery income. In Croatia established the National Foundation for civil society development, which supports the small number of organizations, but for quite a long period. The National Foundation for civil society development is funded by lottery winnings, which provide reliable funding each year.

Hungary also has a National Fund for the development of civil society to provide institutional and programmatic support to public organizations. Each year the Fund receives amounts equal to a total of 1 % of taxpayers' contributions to public organizations.

The financing of public organizations in the UK is a one third of their total revenue, most of the funding from government sources is distributed to organizations working in the field of social service delivery. More than 75 % of all public organizations do not have direct financial relations with the state.

Public organizations in the Czech Republic are financed from the state budget and all local budgets. The country also introduced the practice of financing from special funds of the European Union. While in other countries such assistance was used to empower local governments, in the Czech Republic part of these funds was used to support the development of public organizations.

In Ukraine public organizations with legal entity status have the right to financial support at the expense of the State budget of Ukraine, the local budget and are obliged to submit and publish reports on the use of these funds. But it should be noted that state funding of public organizations in Ukraine is formal and unregulated, there is no long-term state funding and no funds for the support of public organizations. Therefore, the involvement of financial resources for the work of public organizations and the implementation of

their projects is mainly due to sponsorship and voluntary donations [8].

The situation is similar with other non-governmental non-profit organizations. For example, a research of Ukrainian Charities' activities conducted by Corestone group and Gfk Ukraine in 2018 shows that funding coming from state or local budgets is only 2 %. At the same time, the largest percentage among the various sources of financing of charitable organizations in Ukraine belongs to voluntary donations of individuals and is 39 % (the average amount of donations from one individual is UAH 2033). According to research, international donors (33 %) and business donations (17 %) are also significant sources of funding for charities in Ukraine. Thus, charitable organizations are fundraising in two ways: among the public and among businesses (or fundraising among the public and fundraising among the business).

According to a survey conducted in the framework of the research [9], the most effective methods of raising funds for charitable organizations are direct communication with people, cooperation with business enterprises (possibility to transfer funds for charity during the purchase of goods) and organization of charity events.

In general fundraising is the process of asking for contributions from individuals, companies, and foundations. Voluntary donations and other fundraising activity provide the funds that enables the nation to have a thriving voluntary sector and provides a wide array of charitable services that benefits people and communities at home and abroad. Fundraising campaigns and activity connect people with causes they care about, but excellent fundraising is not just about bringing in the money. It is about developing positive, sustainable and respectful relationships with supporters and embedding the values of your organization into your strategy and approach to raising money [10].

Fundraising, in all of its forms, is crucial for nonprofits to complete their projects and fulfill their causes. Without fundraising, organizations would have no incoming revenue [11]. Different types of organizations are characterized by different sources of funding. For example, for charitable organizations the amount of charitable assistance received from individuals and entities is crucial, while associations of entities or trade unions can be funded almost entirely by membership fees.

Different ways of fundraising by companies and individuals are at the Table 2.

*Table 2*

**Comparison of the main fundraising methods\***

Fundraising method	Received from	Simplicity	High cost	Popularity
Matching Gifts	Companies	+	-	+
Volunteer Grants	Companies	+	-	+
Corporate Grants	Companies	-	+	-
In-Kind Donations	Companies	+	-	+
Direct Mail Donations	Individuals	-	+	+
Online Donations	Individuals	+	+	+
Event Donations	Individuals	-	+	+
Text Donations	Individuals	+	+	+
Peer-to-Peer Fundraising	Individuals	+	+	+
Phonathon	Individuals	+	+	+
Pledge Fundraising	Individuals	+	-	+
Recurring Donations	Individuals	+	-	+
Annual Campaign Donations	Individuals	-	+	+
Planned Gifts	Individuals	-	+	+
Major Gifts	Individuals	-	+	+
Capital Campaigns	Individuals	-	+	+
Community Foundation Grants	Foundations	-	+	+
Private Foundation Grants	Foundations	-	+	+

\* Source: [11]

Analyzing the table, we can conclude that comparing different methods shows some inverse interdependence between the simplicity of its implementation and the end result. Thus, the effectiveness of attracting funds in a particular method is directly proportional to its complexity of the application.

It should also be noted that there is no perfect way to raise funds. However, comparing different methods it is worth highlighting Online Donations, Text Donations, Peer-to-Peer Fundraising, Phonathon which are quite effective, very popular and relatively easy to use. All of these methods belong to the group of fundraising methods among individuals.

Consider separately the most common fundraising methods:

- volunteer grants are sums of money that companies will distribute after employees have volunteered a minimum number of hours with an eligible nonprofit;

- corporate grants are local, state, or national grants that companies distribute to eligible nonprofits;

- in-kind donations are contributions of products or services that companies give to nonprofits;

- online donations are contributions that a donor makes via a nonprofit's online donation page;

- peer-to-peer fundraising is a way for supporters to fundraise on organization's behalf;

- event donations are contributions that supporters make during a fundraising event such as a gala, walkathon, or charity auction;

- capital campaigns are large fundraising initiatives that aim to raise money for a specific project like a new building, an expansion to an existing structure, or the supplication of an endowment;

- community foundation grants are sums of money that are distributed by local, state, or national foundations;

- private or family foundation grants are very similar to community foundation grants.

Not every fundraising method will require the exact same set of resources. However, there are some standard resources that are crucial for nonprofit fundraising success regardless of how or

why donations are asked: financial goal, budget, volunteers, marketing materials.

### **III. Accounting for the financing of the activity of non-governmental non-profit organizations and the costs of fundraising**

For accounting purposes, it is important to classify sources of financing for a non-government non-profit organization in order to further reflect them in the system of accounts. Such classification will allow to receive timely and prompt information in terms of sources of funding, projects for which this funding is received and costs of each type of financing.

Funds received by a non-governmental non-profit organization as targeted financing can be used solely to meet pre-established needs and implement specific measures.

The current accounting methodology makes it impossible to monitor their intended use without additional adjustments to their cash accounts.

The solution to this problem is complicated by situations where the funds are received in several tranches and do not cover all the actual project costs.

In this case, the question of obtaining and using the targeted funds does not arise only in cases where the organization has one source of funding for the implementation of a single project.

An analysis of the practical activities of various non-profit organizations shows that this is uncommon.

There are three main methods of accounting for targeted financing in the accounts:

- 1) common to both commercial and non-commercial enterprises, comply with applicable standards regulations (standards) of accounting, but cannot be used to solve management problems.

- 2) the simplified methodology is used for accounting in small NGO that have a small number of projects and do not receive additional income from related activities. Simplified accounting does not allow to obtain information on the financing in terms of sources and directions of their further use.

- 3) computation technique provides an opportunity to compare accounting indicators with the approved budget (computation). This approach is useful for management accounting, but provides for the creation of an additional nomenclature of subaccounts for income and expense accounts.

We believe that the basic classification for the division of sources of funding for NGO should be the direction of further use of the resources received.

On this basis it is possible to allocate:

- sources of funding for statutory activities (resources will be used to cover the costs of maintaining the organization);

- sources of funding for the implementation of statutory tasks (resources are assigned to the implementation of specific projects, programs, activities and are targeted).

Such classification will not only separate the funding into targeted and non-targeted, but will also create the basis for forming analytics into income, expense and financing accounts.

For accounting and generalization of information on availability and movement of funds for targeted activities it is recommended to use account 48 “Target financing and target receipts”. In the practice of activity of NGO, the most common forms of targeted financing are: subsidies,

appropriations from the budget and extrabudgetary funds, targeted contributions of individuals and entities, humanitarian aid, membership fees.

In the process of finding resources, a non-profit organization use their own funds and incurs the necessary expenses. At the same time, an important task is their correct and accurate accounting. Based on the fact that fundraising costs are the costs associated with finding and attracting resources for the implementation of socially important projects and the maintenance of running costs, various classifications are proposed and refined in the scientific literature to optimize the process of attracting resources to a non-governmental non-profit organization.

The classification of the costs of fundraising, investigated in scientific work [12], provides to distinguish the following expenses categories: the cost of the donor search; the costs for preparation and presentation of the project; the costs associated with obtaining resources. Each cost category has its own specific feature of accounting billing (table 4).

*Table 3*

**Accounting for the cost of fundraising in non-governmental non-profit organizations\***

Cost of fundraising	Types of costs	Cost structure	Method of accounting
The cost of the donor search	Costs of finding information about potential donors, of forming a project team and planning a fundraising campaign, costs of legal regulation of fundraising activities	Salaries of project team members and accruals on it, materials, low value items, payment for services of contractors	Write-off on expenses of the reporting period (for example, account 92 “Administrative expenses”)
The costs for preparation and presentation of the project	Costs of searching information for project development	Salaries of project managers and the depreciation of office and computer equipment	Write-off on future expenses (expense 39 “Expenses of future periods”)
The costs associated with obtaining resources	Costs of legal and consulting support, of signing the contract of receiving funds	Payment for banking services, payment for the services of a lawyer, of notary and payment of other counterparties	Write-off on specific project costs (for example, account 949 “Other operating expenses” using analytical accounting by project)

\* Source: author`s generalization/

Although the costs of the donor search are insignificant in the overall set of expenses, they are risky for organizations and therefore subject to write off on expenses of the reporting period.

The project costs are uncertain because the probability of receiving resources is not evident,

and the share of such costs in total costs is significant. Therefore, it is economically feasible to accumulate project costs (it can be used account 39 “Expenses of future periods”) with their subsequent distribution, depending on the decision made on the project.

The third category of expenditure relates to specific projects and is organizational in nature. For this reason, accounting for costs associated with obtaining resources involves including them in the costs of a particular project.

Also common is the approach of reflecting the cost of fundraising on accounts, which involves the use of a separate subaccount with the necessary analytics (according to the stages of fundraising or affiliation with a particular project). However, if a non-governmental non-profit organization is systematically working on the development and implementation of a fundraising strategy, a separate team is working on its implementation, then the cost of fundraising is appropriate to separate and account for the type of such costs.

### **Conclusions and perspectives of further research**

The role of non-governmental non-profit organizations in modern society is often perceived as secondary because such organizations are not targeted for profit, holding of economic growth and expansion of business activity and so their importance to the economy of the country is usually considered to be insignificant. However international experience shows that non-governmental non-profit organizations perform their activities no less effectively than commercial enterprises, but their purpose is social.

In every area of the country's life, one can find organizations that act as an association of citizens to protect their rights, freedoms or common interest.

In Ukraine over the past five years there has been an increase in the number of non-governmental non-profit organizations in particular public organizations.

Each of the non-governmental non-profit organizations faced with the necessity of finding funds to support their activities. Purposeful search for sources of funding and assets to support its activities, projects and programs - fundraising, allows non-governmental non-profit organizations to achieve their goals and objectives. Fundraising is not considered as the search for investment because it will not bring commercial benefits of investments in non-profit organization.

At the same time, the received targeted income by fundraising and costs for the

implementation of such measures require correct accounting.

For management accounting purposes, the sources of funding for non-budget nonprofit organizations should be grouped into two large groups: self-financing sources (membership fees, charity events, provision of all kinds of paid services and contract work); external sources of financing (grants, local budget funds, participation in state (or regional) targeted programs, sponsorship, etc.).

Funds received non-governmental non-profit organization like the target of funding can be used only to meet pre-set requirements and the implementation of specific measures.

In this way, the organization will be able to determine its dependence on external financing and make management decisions on the fundraising strategy.

Due to the specific nature of the activities of non-governmental non-profit organizations, the purpose of which is not to make a profit, adaptation of target financing methods that are relevant for commercial enterprises is not always possible to solve the problems of managing NGO.

We believe that it is appropriate for NGO to use a computation accounting methodology for targeted funding which provides an opportunity to compare the measurements with the approved budget (computation).

Practical implementation of the budget method is possible with the proper organization of management accounting and detailing of accounts on the basis of classification of sources of financing: financing for statutory activities and financing for the implementation of statutory tasks.

When looking for resources, a non-profit organization incurs some costs. Fundraising costs are the costs associated with finding and attracting resources to implement socially important projects and maintenance of running costs.

For a small non-governmental non-profit organizations costs of fundraising can be accounted for as administrative expenses without distribution by types of expenditure and projects.

The classification of fundraising costs involves the following categories of costs: the cost of the donor search; the costs for preparation and presentation of the project; the costs associated

with obtaining resources. The accounting of such costs depends on their type, but they are all complex costs, that is, they consist of different elements of costs: wages, social insurance, materials, etc.

Thus, the cost of a donor search should be written off to expenses of the period. It is advisable to accumulate project costs as part of project costs or future periods, with their subsequent distribution, depending on the project decision. Costs associated with obtaining resources for specific projects are included in the costs of that project.

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## DEVELOPMENT OF ACCOUNTING FOR INTANGIBLE ASSETS BASED ON THE THEORY OF INTELLECTUAL CAPITAL

**Annotation.** The relevance of the study lies in the fact that development of a market economy and enterprises themselves, especially in a highly competitive environment, is almost impossible without the active orientation of production structures towards innovative and intellectual activities. The question of the nature of intellectual capital and how it is measured is therefore relevant, since it is the efficient use of such capital that greatly improves the quality of information, and improve management technology and innovation. Intellectual capital is a necessary part of the economic policy of a modern enterprise. The study aimed to determine the essential characteristics and structure of intellectual capital. To achieve this goal, we were focused on the next tasks: determination of the intellectual asset, research in the framework of the legislative requirements of accounting for the composition of intangible assets, and improvement of accounting process of valuation of intangible assets. During the research following general and specific scientific methods were used: theoretical generalization, analogy, abstraction, statistical observation, analysis, synthesis, scientific abstraction, critical analysis of accounting issues.

**Keywords:** intangible assets, intellectual assets, balance sheet, accounting, capital.

### Introduction

The modern period of development of the countries is high-quality and rapid development of science and technology. Science can develop in the case when the production is able to provide it with the necessary equipment, devices, tools. Production,

in turn, cannot function properly and develop without scientific achievements. That is why only the innovative entrepreneurship based on the latest achievements of scientific and technological progress can become the main factor of prosperity of our country's economy. In other words, the prerequisite for long-term success of the enterprise in the market is the availability of advanced technologies, which are supported by intellectual property.

Ukraine was one of the first countries that were part of the USSR, adopted the main international normative-legislative acts concerning industrial property and in 1993 accepted a package of laws on the protection of intellectual property. Thus, a new kind of property is emerging in our country - intellectual property, and scientific knowledge is a specific goods, that can be owned, used or disposed of. The concept of "intangible assets" is closely related to the concept of "intellectual property". The concept of "intellectual property" has emerged in the course of long practice of securing rights of use for certain persons. Understanding the essence of intellectual property, the conditions of its creation and transformation into intangible assets of the enterprise opens up new possibilities for realizing the creative potential of employees.

A significant contribution to the development of the terminology of the foundations of the concept of "intellectual capital" made by foreign

researchers, namely M. Armstrong, D. bell, e Institution, D. Duffy, L. Gioia, L. Edvinsson, D. Klein, H. McDonald, M. Malone, L. Prusak, and P. Sullivan, K. Sveiby, T. Stuart. Issues of intellectual capital were explored by such scientists as V. Bazilevich, N. Bendikov, Alexander Berveno, A. Butnik-Siverskiy, N. Gavkalova, V. Geets, E. Jamai, V. Zinov, V. Inozemtsev, A. Kendyuhov, S. Legenchuk, To. Leont'ev, A. Malyshko, N. Markov, A. Strizhak, P. Tsybuliv, A. Chukhno. I. Yaremko.

According to E. Brooking, intellectual capital is a term for intangible assets without which a company cannot exist, enhancing its competitive edge. The component parts are human assets, intellectual property, infrastructure and market assets. Another scientist O.B Butnik-Seversky argued that intellectual capital is a created or acquired intellectual product that is valued, objectified and identified (separated from the enterprise), held by an enterprise (entity) for profit [4].

M. Eskindarov believed that intellectual capital is a system of characteristics that determine a person's ability, that is, the quality of the workforce of an individual, a total employee of an enterprise, firms, corporations, countries that creates goods, services, an additional product for their reproduction on the basis of personified economic interest. each subject and their totality [6].

According to T. Stuart, intellectual capital is invisible assets, knowledge, basic competence, strategic assets, basic capabilities, intangible resources, organizational memory [12].

The most accurate definition that characterizes the concept of "intellectual capital" is the statement that intellectual capital is a generalized intangible asset, the set of mental achievements of the individual by which he can be separated from other individuals in order to gain a competitive advantage.

The composition of intangible assets under accounting provisions (standards) 8 "Intangible assets" is as follows:

Ø rights to use natural resources (right to use subsoil, other natural resources, geological and other environmental information, etc.);

Ø the right to use property;

Ø the right to commercial designations (trademarks rights, trade names);

Ø the right to industrial property (right to inventions, utility models, industrial designs, plant varieties, animal breeds, trade secrets, including know-how, protection against unfair competition, etc.);

Ø copyright and related rights (right to literary, artistic, musical works, computer programs, programs for electronic computers, compilation of data (databases), performance, phonograms, videograms, broadcasts (programs) of broadcasting organizations, etc.) );

Ø other intangible assets (right to pursue business, use economic and other privileges, etc.) [2].

The concept of intangible assets is closely related to intellectual property rights, the essence of which is disclosed in the Civil Code of Ukraine (CCU).

According to article 420 of the CCU, these objects include, in particular:

Ø literary and artistic works;

Ø computer programs;

Ø compilation of data (databases);

Ø implementation;

Ø phonograms, videograms, broadcasts (programs) of broadcasting organizations;

Ø scientific discoveries;

Ø inventions, useful models, industrial designs;

Ø arrangement of semiconductor products;

Ø rationalization proposals;

Ø plant varieties, animal breeds;

Ø commercial (trade name) names, trademarks, geographical indications; trade secrets [1].

So, as we see in the Civil Code of Ukraine there is no detailed classification of objects according to the categories to which they belong. The accounting for intangible assets in Ukraine is regulated at the state level. Accounting Standard 8 "Intangible Assets" was approved by the Ministry of Finance Order No. 242. dated 18.10.1999. However, the information is only a recommendation and therefore the specifics of individual accounting items are not always taken into account. Today, the continuous development of business activity and the unstable development of the market environment causes a problems of accounting for the presentation valuation of intangible assets. The study of this

problem requires special attention, because every enterprise during its activities, directly facing the property and special rights. The development of a system of measures to improve the accounting reporting of intangible assets is a top priority among the objectives in the conditions of formation of economy based on knowledge.

### **Outline of the main research**

Analysis of recent researches and publications. The issue of development of management of intangible assets, methods and organization of valuation of assets has been considered in the works of such scientists as: E. Brooking, A .S. Borodkin, S. F. Chairman, L. Edinson, Z. V. Zadorozhny, YK Krupki, MV Kuzelny, P. Kutsik, B. Lev, S. Legenchuk, N.M. Malyugi, A. Pilipenko, L. Pilipenko, M. Plekan, O. Sizonenko, H. Skop, E. Hendrickson, V. G. Shvets, S. Shulga, I. Yaremko and others. However, there are still many unresolved issues related to the definition, use, estimation and asset management activities of enterprises that require careful research and development of proposals for practical activities.

Thus, from the point of view of accounting, intellectual capital includes intangible assets that are recognized in the balance sheet (intellectual property) and knowledge which are not reflected in accounting - the knowledge of employees, their skills, organizational culture, etc. However, it should be noted that in the new information society, such components of intellectual capital are very important, so they cannot be ignored.

In the period of the initial formation of economic science, attention was focused on the material assets of the enterprise: cash, inventories, equipment, etc [11]. However, the twentieth century gave rise to a very different kind of asset - intangible. At that moment, enterprises began to have more valuable than tangible assets, which, if used correctly, can generate more profits than production and services. This problem is relevant, first of all, because the intellectual capital of the enterprise significantly influences the formation of value and in the future becomes an indicator of the efficiency of the business entity. Today, however, there are significant problems in measuring and evaluating intellectual capital in the accounting system of the enterprise. This can lead huge

difference of cost of the enterprise in an accounting valuation and market value as of the first (accounting) does not sufficiently take into account the concept of brand, authorship, name of the company. Therefore, the improvement of methodology of accounting of intellectual capital is a promising area of research [9].

At the present stage of development of the economy of information and intellectual direction is increasingly important. A few years ago the main direction of the largest-capitalization public companies focused in the field of oil and gas or engineering profile, but now the situation has changed radically. The priority enterprises have become those dealing with software and computer technology. The market became focused on the capitalization of the largely intangible, informational and intellectual than material factors.

Based on the information above, we can summarize that intellectual capital is the main component of capital for the smooth and effective operation of economic entities in modern informational and intellectual economy [13].

Intellectual capital performs the following functions:

1. reflects the ability of the company to produce the intellectual assets that are necessary for the implementation of activities in modern conditions of economic development;
2. describes the ability of the corporate governance system to achieve a full impact on dynamic conditions of supply and demand in the market through the optimization of various forms of assets and capital [13].

This type of capital cannot be separately allocated, distributed, transferred or otherwise segregated, because it is inseparable from the enterprise.

When an enterprise creates or acquires intellectual assets, it incurs such costs:

- Ø payment of funds to suppliers;
- Ø calculation and payment of employees' salaries, developing such intellectual assets;
- Ø payment of funds for the use spend material resources [13].

An important aspect of management of intangible assets of the enterprise is the selection of appropriate methods and analytical procedures for their conduct strategic diagnostics. With its help it

### *Development of accounting for intangible assets based on the theory of intellectual capital*

is possible to determine the strategic directions, objectives, priorities, and to identify assets that generate competitive advantages for the enterprise, form the strengths and weaknesses in relation to each resource and identifieret strategic space organization and reveal strategic opportunities in the external environment.

At this stage it is advisable to:

Ø constant monitoring of the place and position of the enterprise market in the external environment;

Ø determine the direction of the formation of the goals and objectives of improving the management of;

Ø anticipate potential crises;

Ø propanoate measures to eliminate or mitigate their negative effects;

Ø justify the possibility of applying the identified strategic assets to achieve certain goals and strategies of the enterprise.

The are many complexities involved in the asset valuation process:

Ø internal sources of information are often incomplete and contradictory, so the information system may require additional diagnosis;

Ø external sources of information are ambiguous.

The valuation of intangible assets needs to be considered very carefully. Thus, if the intangible assets meet the goals and strategies of the company, their value increases significantly. Conversely, if they fail to meet the value of intangible assets will be considerably small, despite the amount of money spent. It becomes necessary to use a differentiated approach to determining the fair valuation of intangible assets given their nature, namely:

Ø first, searches for an active market with similar intangible assets, which is a prerequisite for the use of the market approach to the valuation of intangible assets;

Ø secondly, you may search for similar intangible assets in the balance sheet with the application of appropriate correction parameters;

Ø third, the selection of the most appropriate valuation method for intangible assets based on the income and cost approaches, by applying weighting factors to account for the significance of the asset;

Ø fourth, to the valuation of intangible assets can be applied to any approach that will ensure the reliability of the assessment. If none of the methods does not allow a reliable estimate of the value of intangible assets, it is necessary to use other atypical methods.

Intangible assets for both the company and the economy as a whole is one of the key resources for the development of innovation activities, they define competitive advantage and ensure survival in the market. Therefore, when evaluating the effectiveness of management of intangible assets, important is the determination value, which is generated intangible assets.

But not every intangible asset can be measured in financial statements. Practice of management of intangible assets and their evaluation from the position determining influence on the value creation of the organization is moving too slowly as a result of: existing contradictions in the regulations; insufficient skills and lack of motivation of staff, which is obliged to provide objective information about the value of the company; deliberate understating the value of the enterprise; the misunderstanding of the nature of the assets and factors that affect their value; the independence of the value of intangible assets from the quality of management, etc.

It is therefore recommended that, in order to overcome these deficiencies, tax incentives and fines should be applied where intangible assets are not recognized; programmes for the management of intangible assets should be developed and incorporated into educational processes; company owners should strengthen controls over the management of intangible assets; and legal firms should identify unaccounted intangible assets within the property complex of the enterprise; audit firms are encouraged to identify and report intangible assets in the audits of individual organizations.

Intellectual property valuation - the valuation, which is due to the potential effectiveness of an intangible asset, characterized by technological and industrial innovation.

The need for evaluation of intellectual property and intangible assets occurs under the following conditions:

Ø in the case of sale license;

Ø at the conclusion of contracts for the transfer of know-how;

Ø during the transfer of rights to objects of intellectual property into the authorized fund of enterprises;

Ø at the conclusion of contracts on joint activity;

Ø if you want to define losses due to unauthorized use of intellectual property under unfair competition;

Ø when you establish a reasonable market value of the enterprise for the purpose of sale of property;

Ø when obtaining loans secured;

Ø during the determination of the tax base;

Ø in property insurance;

Ø in determining the value of the participants' shares during the reorganization or liquidation of the company.

The main cost, which is considered in the valuation of intangible assets is market value. In international valuation standards market value is the amount calculated as at the valuation date, for which the intellectual property is exchanged between a buyer and a seller in a commercial transaction in which each party has acted competently, prudently and without compulsion. Market value is defined as the most probable price on the market on the valuation date. This is the maximum price that can be paid to the seller, and the minimum, which can offer the buyer. The appraiser analyzes real market transactions and compares the evaluated object to others which have similar consumer qualities.

The following types of cost in accordance with international standards, are:

Ø consumers cost;

Ø investments cost;

Ø cost of reproduction of the object;

Ø replacement cost;

Ø insurance cost;

Ø cost of tax purposes of property legal and physical persons;

Ø liquidation value;

Since intangible assets are heterogeneous in their composition, the nature of the use or operation in the production process and have different degrees of impact on the financial condition and results of operations of the company, to evaluate them it is impossible to use traditional approaches.

The main factors that determine the value of intellectual property is:

Ø legal (validity of the security document, its reliability, the volume of transferred rights);

Ø expendable (the cost of creation of object of legal protection, for the registration of rights and maintenance of security documents, marketing and advertising, insurance of risks related to intellectual property, to solve legal conflicts, the tax on operations related to the use of intellectual property, and inflation factor);

Ø profitable (expected royalties, and the expected economic effect from the use of intellectual property).

The first step in the assessment of an intangible asset is to determine the purpose of the evaluation and, depending on her kind of value that must be calculated. The next step is to choose the assessment methodology, namely the general approach and specific evaluation methods.

Choosing the valuation method, the appraiser should be guided by these main criteria:

Ø credibility: assessment methods must be credible, practical and theoretical;

Ø objectivity: the assessor should be guided by objective information;

Ø universality: reliability is enhanced if standard approaches are used for enterprises, industries and various types of intangible costs;

Ø cash costs: results of benefit assessment should be sufficient to justify the effort expended;

Ø consistency: methodologies are consistently applied during the assessment period, which will facilitate this process;

Ø reliability: the assessment should be reliable, such that other evaluators would be able to reproduce the results obtained using similar approaches;

Ø adequacy: assessment approaches should be user-friendly;

Ø practicality: the methods and parameters should be clear and relatively simple for practical application.

In accordance with the international valuation standards intangible assets generally use three main approaches;

Ø expendable;

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- Ø market;
- Ø profitable.

Each of these approaches involves the use of a number of methods, which give different values of cost of the evaluated object. Therefore, in the process of assessing the value of intangible assets subject to comparative analysis of the methods used, identifies their advantages and disadvantage.

When we conduct a valuation of intellectual assets on a cost-based basis, the value is significantly underestimated (assuming that such productive assets, not fictitious (toxic)). However, in the new information economy, the value is so determined that it does not correspond to the real value set by the market. The result is a huge gap between the book value of the firm and its market capitalization. Therefore, in the literature we meet a lot of criticism regarding the use of the cost method.

In Particular, N. M. Malyuga believes that this leads to:

- Ø undervaluation of property of the enterprise;
- Ø understatement of expenses of the enterprise in parts of intangible costs and depreciation entails an unjustified underestimation of costs and overestimation of profits;
- Ø the underestimation of costs entails a partial refund of the actual amount of current expenditures from the revenue of the enterprise [9].

In Ukraine today there is currently a problem with in harmonization of categories of equity from the point of view of financial management and accounting. A significant impact on the accounting of own capital has structure, which in turn affect organizational and legal form of the enterprise, form of ownership, size, purpose, activities and others. Organization of accounting in the enterprise should be aimed at reducing the complexity of the management of equity capital associated with continuous changes in the course of the economic entity's current operations. The weighting factor, which could provide a combination of management and organization, accounting is the resource that describes the knowledge, intellectual potential of the organization. It is the basis of intellectual capital. This notion is in economic theory,

appeared not so long ago, therefore, requires consideration and research [5].

So, one possibility accounting reflection of intellectual assets can be their evaluation with simultaneous recognition of liabilities carrying articles on the representation of intellectual capital.

With such methodology, the indicator of intellectual capital in the liabilities side of the balance sheet does not reflect the entire value of the property of intellectual forms and origin, but only the part that corresponds to the additionally created an intellectual value. Intellectual capital as a liability in the balance sheet is not a form of property or capital but the substance of origin of the capital value of the enterprise (fig. 1).

K.-E. Sweybi identifies 25 measures of intellectual capital grouped into 4 categories:

1. Direct Intellectual Capital Methods (DIC). This category includes all methods based on the identification and monetary valuation of individual assets or individual components of intellectual capital.
2. Market Capitalization Methods (MCM). The difference between the market capitalization of a company and the equity of its shareholders is calculated. The value obtained is treated as the value of its intellectual capital or intangible assets.
3. Return on Assets Methods (ROA). The ratio of the average pre-tax income of a company to the tangible assets of a company, the ROA company, is compared with that of the industry as a whole.
4. Scoring methods – Scorecard Methods (SC). Various components of intangible assets (intellectual capital) are identified, indicators and indices are generated and reported as points or as graphs [3, p. 5].

For a more detailed understanding of the essence of the concept of “intellectual capital” it is necessary to pay attention to changes among tangible and intangible assets, namely:

- 1) Fewer and fewer companies are dealing primarily with physical assets. However, most companies are service providers.
- 2) Among the production factors there are noticeable changes, as evidenced by the increasing number of intangible (i.e. intellectual) elements [3, p. 5].

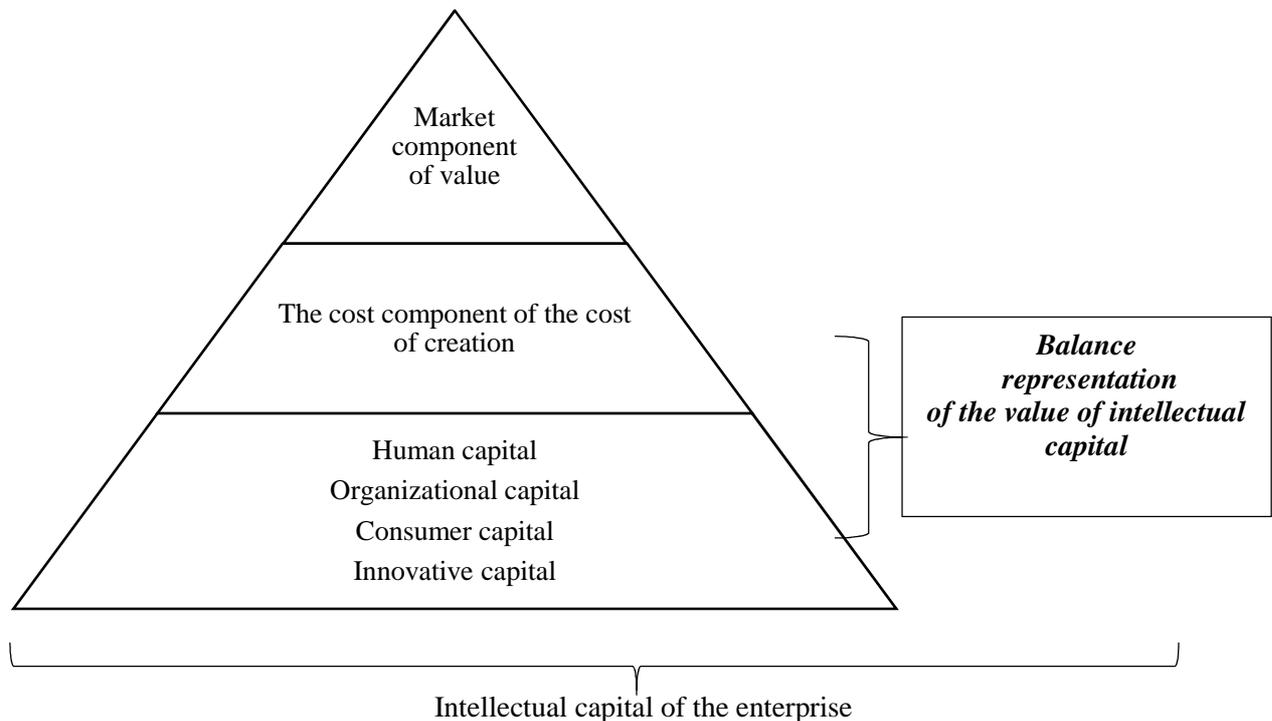


Fig. 1. Balance representation of the intellectual capital of companies

Understanding the essence and role of the intellectual capital of an enterprise in reproduction processes should be the basis for the formation of a new paradigm for the management of domestic entities – knowledge management. Its importance derives from the practice of many thriving companies in the world: experts estimate that, on average, 80 per cent of their market value is derived from intangible assets and corporate knowledge, while 95 per cent of the exchange value of high-tech organizations is derived from intangible assets [8].

You should take a little focus on assets that have a “higher index of intellectual capital”. There are several reasons why we should focus on the process. The growing value of the company – in most cases – does not mean that the total book value of assets is also growing with the same rhythm, but the proportion of the total book value of assets in the value of the company becomes smaller as the value of the company grows [3, p. 8].

The market value of a company consists of:

- Human capital (value associated with external structure)
- Organizational capital (value associated with internal structure)

- Consumer capital: knowledge and competence of employees (value associated with employees) [3, p. 8].

At the present stage of the development of market relations, special attention is paid to consumer capital. This interest is due to the rapidly growing demand between the user and the consumer. The search for new ways of interacting with clients leads to necessary researching their needs, improving the possibilities of support and expanding the scope of services. Marketing studies conducted in this direction show that buyers, in addition to choosing the technical characteristics of a good, focus on the level of service during the purchase. That is why interaction with the client becomes an important element when such relations are converted into monetary expression of intellectual capital.

Having analysed the above, it can be concluded that intellectual capital groups concretizes intangible assets that enable the enterprise to become competitive and obtain further economic benefits. Such changes create additional costs. So intellectual capital has quite a powerful influence on the value of a company and therefore becomes one of the main benchmarks for improvement investment decisions of external users.

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Human capital includes relations with the customer, suppliers and other relations. It also provides advice about the importance of public relations and the image of the company (and its products). These elements may constitute a significant portion of the value of the company. Sometimes, elements such as patents are allowed in the company's accounting records.

Organizational capital includes standardized and configured processes, information and administration systems / systems and company reputation. These elements differentiate the nature of such organizations and allow the organizations to be unique and operate in their own way.

Consumer capital refers to the capacity of workers to create tangible or intangible assets and properties. These elements are strongly

related to the workforce of the company. That is why they can be defined as knowledge capital or intellectual capital. Based on womenevery factors, the balance sheet, which describes the capital of the company should be extended to these new elements [3, p. 9].

Given that today is used in enterprise activity are much broader in number than displayed in the system buhgalterskogo the treatment of intangible assets proposed to extend them on the basis of the use described above, the classification of intellectual capital of enterprise. In addition, to take into account specific properties intangible assets as objects of accounting proposed to allocate the intangible liabilities and intangible capital in the structure of the liabilities side of the balance. The advanced balance are given in Table. 1.

*Table 1*

**Structure of expanded balance sheet**

<b>Assets</b>	<b>Liabilities</b>	
Current financial and tangible assets	Shareholders' equity	} <i>Material and financial component of the balance</i>
Non-current financial and tangible assets	Short-term liabilities	
Other assets	Long-term liabilities	
<b><i>External intellectual assets</i></b>	<b><i>Intangible liabilities</i></b>	} <i>Intangible component of the balance</i>
<b><i>Internal intellectual assets</i></b>	<b><i>Intangible capital</i></b>	
<b><i>Human assets</i></b>		

However, for some elements of intellectual capital (intellectual assets), such as customer commitment, brand reputations, it is not certain whether they belong juridical person. In such a case, there is a problem of its being reflected in the accounting system, i.e., the impossibility of controlling such an asset.

Second, some elements of intellectual capital in the balance sheet represent the amount invested by the enterprise in intellectual activity. There is a problem in valuing the value of the investment, because intellectual investments do not always yield instant returns, so the balance sheet condition is broken: the mismatch of the asset and the liability [7].

Third, the use of a separate reporting form can also cause some inconvenience: there is a high probability of imbalance and the risk of double-counting in the financial statements of an

enterprise, since the share of intellectual capital can be described as "Intangible assets" [7].

Each enterprise has the right to revalue intangible assets at fair value for which there is an active market. In the case of revaluation of one intangible asset, all other intangible assets of that group should be revalued. Where an enterprise has revalued the intangible assets of a certain group, the revaluation should be carried out annually thereafter.

The amount of the estimate of the residual value of an intangible asset shall be recorded as additional capital by:

- 1) Dt 12 "Intangible Assets"; Kt 423 "Valuation of Assets" – Value of the Carrying Value of Intangible Assets;
- 2) Dt 423 "Valuation of Assets"; Kt 133 "Depreciation of Intangible Assets" – on the sum of the valuation of depreciation of intangible assets.

The amount of depreciation is recorded as an expense of the reporting period:

1) Dt 133 “Depreciation of intangible assets”; Kt 12 “Intangible assets”.

The difference between the book value and the depreciated value:

1) Dt 975 “Sales of non-negotiable assets and financial investments”; Kt 12 “Intangible assets”.

The use of intangible assets expenses arise from the reduction of their utility, they are included in the expenses of the reporting period, with the increase in the balance sheet the amount of depreciation of intangible assets, record:

1) Dt 975 “Valuation of non-negotiable assets and financial investments”; Kt 133 “Depreciation of intangible assets”.

At the same time, from the economic point of view, the increase in the value of intellectual assets should not be counted as an estimate, but as an example of the growth of the intangible capital of an enterprise, we propose that “intangible capital” be recorded in Account 426. Since some intellectual assets have a value that does not already correspond to the market value at the time of their creation, it is also proposed that the difference should be included in the intangible capital of the enterprise through Dt 154 “Acquisition (creation) of intangible assets” Kt 426 “intangible capital”.

With respect to intellectual assets in their broad sense, intangible liabilities may also arise, relationships that may have a significant negative impact on the business reputation or on the creation of the long-term value of the enterprise. It is recorded on 56 account “Long-term intangible liabilities” and 686 “Settlement of current intangible liabilities”. Because of the rapid growth in demand for intellectual property, contracts for its use are increasingly being concluded, and it is proposed that payments under such contracts be made through the holding of Dt 56 “Long-term Intangible Commitments” Kt 311 “Current accounts in national currency”.

Thus, the intellectual capital of an enterprise has several constituent elements and its formation and size is influenced by a sufficiently large group of heterogeneous factors. In the world’s largest companies, the share of intellectual capital

occupies more than half, and the value of the company increases sufficiently, as the share of intellectual capital increases. Intellectual capital will soon become the main criterion for evaluating companies and organizations, as it is the only one capable of reflecting the dynamics of organizational. Only it is capable of measuring modern production, changing so quickly that its value can be judged only by the talent of its employees, their dedication and quality tools that they.

In order to be reflected intellectual capital in the accounting system, the notion of intangible assets should be expanded to the level of intellectual resources and also to take account of its specific features to supplement balance sheet liability item by concepts of “Intangible capital” and “Intangible liabilities”.

### **Conclusions**

In the present economic environment, the role of intangible assets in the functioning of enterprises is being significantly increased and these assets are being transformed into a significant factor affecting the market value of the enterprise and its competitiveness in the market, creating new value in the form of technological, product and management innovation. Those assets contributes to development enterprise and requires effective governance.

It is proposed to develop and value intellectual assets at the current stage of doing business on the basis of the concept of preserving intellectual potential. According to this conceptual framework, it is recommended that the accounting treatment and disclosure of intellectual potential be addressed by the recognition of intellectual assets in an asset and intellectual capital in a liability. Such a change would improve the level of disclosure of intellectual capital in the balance sheets of companies and equity holders.

The need to prepare and present financial statements arises from the fact that users of financial statements require systematic information on the activities of the enterprise. These data can better assess the economic condition of a business. Studies show that, on average, 75 per cent of the value of the company is not described in its balance sheet. That is why

the issue of an expanded balance sheet is a topical one that requires full implementation.

It is recommended that non-cash replenishment of intangible capital be carried out by correspondence Dt 311 “Current accounts in national currency” Kt 426 “Intangible capital”. It is proposed to make the next payment under the contract in part of the financial expenses by carrying out Dt 952 “Other financial expenses” Kt 56 “Long-term intangible obligations”. The acquisition of an intangible (intellectual) asset is recommended by entering Dt 154 “Acquisition (creation) of intangible assets” Kt 686 “Settlement of current intangible liabilities”.

Thus, it remains relevant topic to solve the problems of measurement, valuation of intellectual capital in the accounting system of enterprises. The choice and justification of valuation methods for intangible assets for accounting purposes is an important methodological issue.

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## METHODOLOGY OF MARKETING VS METHODOLOGY OF SOCIAL AND ECONOMIC RESEARCH

**Abstract.** The presented paper is methodical in character. Marketing methodology is an important matter looking from the prism of identifying its scientific status. There are differing views on the scientific status of marketing, nevertheless marketing, from the perspective of scientific cognition, has developed dynamically throughout its entire history. The main objective of this article is to present the methodological dilemmas of marketing in the context of social and economic sciences. The foundations of the methodology of research on marketing cannot be separated from the methodology of social sciences. Marketing belongs to social sciences, so it is based on similar assumptions with regard to the character of reality and scientific cognition. Marketing is engaged in exploring human behaviour and, similarly to other social sciences, makes use of such research methods and techniques. It is difficult to conduct research in the area of marketing without referring to the methodology of social sciences. The article presents the foundations of marketing research methodology, assumptions of the analysis of methodology of research on marketing in comparison to methodology of social and economic research and final remarks.

**Key words:** marketing, marketing research, social research, economic research, marketing methodology, economic research methodology, social research methodology.

### Introduction

The methodology of marketing research is a significant issue from the perspective of an attempt to identify the scientific status of this discipline of knowledge. Marketing has a history of more than one hundred years as an area of scientific research and an academic discipline (Sagan, 2005, p. 2;

Kamiński 2010, p.6; Kamiński 2012, p. 2). In terms of the time of its activity, it is not inferior to sociology or scientific management. Marketing, from the perspective of scientific cognition, has developed dynamically throughout its entire history. From the point of view of contemporary times, the second decade of the 21<sup>st</sup> century, attention should be given to its identity which mainly comprises marketing's scientific status and academic position. The identity and scientific character of marketing have been the subject of much controversy since the 1950s, and in Poland – with much intensity – since the beginning of the 21<sup>st</sup> century. The first attempts to identify the scientific foundations of marketing were made by R. Bartels (Sagan, 2005, p. 2; Shaw & Tamilia, 2001).

Several dozen years of disputes over the scientific status of marketing have not led to any agreement. The extreme opinions on this issue can be divided into three groups. K. Hutchinson and his followers claim that marketing will never be a science, while other scientists, e.g. Sh. Hunt, believe that marketing has achieved the status of a science (Szumilak, 2005, p. 2). In Poland, a widely known opinion was expressed by J. Dietel, who notes that marketing is a practical area, indispensable to company operations, it has an increasingly important role in business activities, but is also employed on a large scale in non-profit organizations. Marketing's problem in this context is the fact that it does not possess its own theory, methods and methodology, so it cannot aspire to

become a science (Dietl, 2001; Dietl, 2000). L. Żabiński expressed the opposite opinion arguing that marketing has its own paradigms, original terminology, research categories, and even unique research procedures which allow for creating its own framework (Żabiński, 2002). Kamiński (2016), having analysed marketing literatures, concluded that the science of marketing is distinguished by its original area of interests. The third group of scientists argue that marketing does not actually meet the criteria of a science, which does not exclude such a possibility in the future. Sz. Figiel noted that due to its interdisciplinary character and complexity, as well as the fragmentation of knowledge and lack of methodological autonomy, marketing cannot be treated as science. Simultaneously, a greater focus of research areas and methodological regime would enable marketing to develop a theory for predicting market phenomena (Figiel, 2004).

A review of the methodology of social and economic sciences leads to the conclusion that marketing, in its search for identity, is in a similar situation. The presented paper is methodical in character. Its objective is to present the methodological dilemmas of marketing in the context of social and economic sciences (Chlipała, 2018, pp. 38–49, 88–98).

### **Marketing – the foundations of research methodology**

The defining of the foundations of the methodology of research on marketing should start with distinguishing between two terms: research on marketing and marketing research. Research on marketing refers to the process of gathering knowledge about marketing aimed to create a marketing theory. Research on marketing adopts a scientific perspective – it is cognitive in character and a macroeconomic dimension (Pilarczyk & Wanat, 2009). Marketing research is usually viewed from a microeconomic perspective, i.e. the perspective of the marketing problems of individual businesses, and is conducted for commercial purposes. It refers to a process of gathering market information – competitors and customers, as well as information about a company's environment and the effects of its marketing activities for the purpose of making

effective and efficient marketing decisions (Sagan, 2004, p. 9-10; Kędzior & Karcz, 2001, p. 20).

Due to the dominance of practical dimensions over a scientific domain in contemporary marketing, research on marketing is frequently identified with marketing research (Kaczmarczyk, 2003, p. 15). It also results from the fact that research on marketing and marketing research are not different in terms of procedures, data gathering methods and analyses of research results. However, the two areas differ from the perspective of their objectives and the manner in which they use and disseminate knowledge. It seems that these differences justify treating the two areas separately.

Research on marketing can have a historical character – presenting reflections on its evolution and development – or it can focus on exploring its current status and components. Research on marketing should serve to create paradigms and theoretical concepts, providing knowledge about marketing. Getting acquainted with marketing conditions the creation of its academic status, being an integral component of its identity as a scientific discipline. There are three basic methodological paths of seeking knowledge in marketing and about marketing: critical, positivist and interpretative (Sagan, 2013, p. 34). Critical methodology is engaged in social issues – researchers employing critical methodology intend not only to get to know reality, but they also try to shape it. In the context of a researcher's attempts to improve social life and environment, critical methodology is opposed to the two other approaches: positivism and interpretationism. In the above methodological paths, researchers focus exclusively on the cognitive sphere: they gather and disseminate results. In the positivist trend, which dominates marketing, they seek to create reliable and unquestionable knowledge which is independent of time. In the interpretative trend knowledge is deepened but local and dependent on culture, time and context.

Since the beginning of the 21<sup>st</sup> century more attention has been given to historical and methodological studies in the critical trend, but marketing scientists still show very little interest in this issue (Shankar, 2009, p. 683, 690). According to A. Shankar, critical marketing is a marginal area

of marketing thought as compared with the main trend (Table 1).

Table 1.

**Systems of marketing thought**

Description	Internal group of recipients – scientific community	External group of recipients – non-scientific community
Instrumental knowledge	Main, academic trend in marketing	Main, applicatory trend in marketing
Reflective knowledge	Critical marketing	Intelligent marketing

Source (Shankar, 2009, p. 683)

The typology of systems of marketing thought, proposed by A. Shankar, was based on two variables: a group for which knowledge is created, and the character of knowledge. A distinction was made, following an earlier work of M. Burawoy, between instrumental knowledge – fairly narrow, specialised, but created with attention to procedures and reliability (Burawoy, 2004), and reflective knowledge – much more general, comprehensive and broad. Academic marketing in the main trend and critical marketing are shaped by the community of scientists engaged in this discipline. A. Shankar pointed to another group of recipients – students and the representatives of business practice. With regard to “intelligent marketing”, attention should be given to the followers of the critical trend (e.g. philosophers), who express their opinions on marketing, and the representatives of other professions (e.g. journalists).

**Methodology of research on marketing vs methodology of social and economic research – assumptions of the analysis**

The foundations of the methodology of research on marketing cannot be separated from the methodology of social sciences. Marketing belongs to social sciences, so it is based on similar assumptions with regard to the character of reality and scientific cognition. Marketing is engaged in exploring human behaviour and, similarly to other social sciences, makes use of such research methods and techniques as observations, reviews,

surveys, etc., but their usage has a different scope and frequency. It is difficult to conduct research in the area of marketing without referring to the methodology of social sciences.

Being aware that marketing is part of economic sciences, it is necessary to refer in this work to the methodology of this field. The important aspect is the common root of economic sciences – interest in economic entities.

Presented below are the methodological problems of marketing in the context of the main issues of social and economic sciences. These sciences are characterised by a different degree of generality. Social sciences represent the broadest concept. In the typology of sciences, they belong to real sciences and constitute (as humanities even in a broader context), apart from natural sciences, one of the main trends. Economic sciences are defined as part of social sciences, and management sciences belong to economic sciences. Because of different degrees of generality of the above disciplines, methodological issues are contained in each other.

It should be noted that in the presented considerations the methodology of scientific disciplines is linked to specific sciences. We deal here with the methodology of social research as well as with the methodology of sociological research, economic sciences and economics. Obviously, the methodology of economics can be discussed as part of the methodology of social sciences, while the presented disciplines have a major impact on creating the methodology of scientific disciplines, which implies that sociology had the greatest impact on the methodology of social sciences, while economics – on the methodology of economic sciences. The below characteristics of methodological problems are presented from two perspectives – a general one, referring to the discipline of sciences, and the specific perspective – the science that is most strongly correlated with the analysed discipline.

**Methodology of social and sociological research vs cognition in marketing**

The methodology of social research comprises a number of disciplines including economics, sociology, psychology, law, pedagogy, management, accounting, finance as well as marketing.

Regardless of the level of advancement and scientific maturity, the above-mentioned disciplines make use of procedures, methods and techniques relevant to social sciences. Because of their specificity with regard to the researched areas and adopted assumptions they use such methods and techniques in varying degrees. For example, observation research is much more commonly used in sociology than in marketing. However, social research viewed in a broad perspective allows for outlining general problems characteristic of this type of research regardless of which specific discipline makes use of particular methods.

The methodology of social research represents a wide range of approaches and analytical and research methods which can be employed by scientists dealing with social sciences. Social research, unlike natural sciences research, is a discipline focused on exploring social realities. Its objective is to investigate social institutions, phenomena and relationships (Sztumski, 2010, pp. 12–22). The common characteristic of social sciences is their focus on exploring and explaining human behaviour. Each of specific sciences analyses a certain fragment of social reality. Research on marketing explores economic phenomena connected with the exchange of goods and services and related values, as well as relationships among economic entities and entities engaged in cooperation with consumers.

Social sciences employ various methodical approaches and orientations, relying on specific ontological, axiological and epistemological assumptions. A review of literatures on the scope of the methodology of social research leads to the final conclusions about the adoption of methodical approaches (Somekh & Lewin, 2011; Flick 2011; Babbie 2004; Rószkiewicz et al., 2014). The dominant assumption of social sciences is a relative ordering of social structure, aimed to achieve the regulation and satisfaction of social needs. This assumption is consistent with a functionalist and interpretative approach.

Literatures on social sciences can be divided into two groups: the first one is dominated by a positivist approach. Such analyses are often referred to as quantitative, but it is a certain simplification. The other group of manuals and monographs, apart from a positivist orientation

(functionalist), presents an interpretative approach. Reality and cognition in this orientation are somewhat subjective, humans are not limited by the environment, and knowledge created by scientists is idiographic in character. This type of research is referred to as qualitative. D. Silverman notes that researchers usually follow one of the two methodical concepts. The author describes antagonisms between two groups (Silverman, 2007). Many researchers are not inclined, or even prepared to shape social knowledge on the basis of more than one methodical approach.

Despite the fact that functionalism and interpretationism are dominant methodical concepts in social sciences, literatures also present opinions expressed by the advocates of radical change. Examples include the feminist movement and post-modernism. Z. Bauman, a well-known representative of post-modernism, stressed the significance in contemporary sociology of a researcher's engagement in change and shaping reality (Bauman, 2010, pp. 643–644).

Scientific research on marketing is dominated by a positivist approach, with just a few examples of an interpretative approach and a combination of both orientations. It results from marketing's area of activity – the functioning of marketing could hardly be possible without assumptions concerning social equilibrium, the satisfaction of consumer needs, the development of individuals and social groups, or transactions and exchange. The question arises whether marketing could accept other research orientations. There are a number of areas such as social marketing or consumerism, in which there is much room for change and social improvement to be undertaken by researchers. This approach is likely to be adopted in the future, considering marketing's growing interest in social issues. However, the combination of research and creative functions in social interactions is much less likely in light of the tradition and history of marketing.

It should be noted that at the level of sociology a crucial role is played by theory. It is reflected in the attempt to create theory as a result of the research process and the adoption of preliminary theoretical assumptions and verification of theories. Undoubtedly, it results from sociology's rich output. J. H. Turner presented

seven basic sociological orientations, constituting a theoretical and methodical framework of sociological thought: functionalism, evolutionism, conflict theory, exchange, interactionism, structuralism, and critical theory (Turner, 2005). Embedding research in theory and focus on creating theory constitute the essence of science. In this context, sociological research is much more advanced and mature than research on marketing. Therefore, it is necessary to postulate greater concentration on creating theory in research on marketing. A large number of research studies in this field merely result in formulating conclusions, and researchers do not aspire to generate theories or create knowledge that could lead to building theoretical constructs.

A significant role in developing sociological research is played by anthropological tradition. There are far-fetched correlations between sociology and ethnographic and ethnological research as well as cultural anthropology, depending on the adopted methodological tradition. Sociology is part of broadly understood anthropology as a science of man (Mauss, 2010, pp. 311–315). Anthropological research focuses on the social structure – sociology’s main area of interest (Geertz, 2005, p. 14). In-depth analyses based on participant observation make a significant contribution to developing sociological concepts, constituting a rich empirical output – both in the past and presently (Chwieduk & Pomieciński 2008). It should be noted that the inspiration of ethnographic and anthropological research has a cognitive value for many aspects of marketing. Attempts are made to use the concepts of these types of research in marketing, but attention given to this methodical orientation is not sufficient.

#### **The methodology of economic sciences and economics in the context of research on marketing**

Economic sciences are based on the concept of humans who act in a rational way and make careful choices in the area of economic processes. This is a general assumption resulting from the definition and nature of economics. Identifying economic sciences with economics is a common practice. It is economics that dominated the perception of economic sciences as a result of treating it as a “hard” social science because of a

large-scale application of mathematical rigour, econometric methods and modelling, which led at the end of the 20<sup>th</sup> century to its dominant position as a social science (Brzeziński et al., 2009, pp. 50-51). However, theoretical and methodical disputes relate to the very definition of economics as well as its concepts and trends. The following issues are being given increasing attention (Brzeziński et al., 2009; Wotyła, 2009; Koźmiński, 2009; Malawski, 1999, p. 15):

- the necessity to depart from the classical concept of rational man and to consider psychological, social and cultural aspects of decision-making processes, as it is done in behavioural economics,

- the interdisciplinary character of problems and blurring of economic lines, reflected in an impact on sociology, psychology and management, accompanied by the simultaneous benefits derived from these fields; this interdisciplinary character becomes visible in economic research on mainstream economics;

- extended range of research instruments (data mining, case studies, content analysis) through borrowings from other disciplines belonging to social sciences,

- shifting the centre of gravity of scientific activity towards empiricism.

Certainly, it is still possible to identify the major subject of economic research – the classically understood purposefulness and rational of economic behaviours, as well as the allocation of economic resources, a dominant approach to research and a research procedure which consists in the creation and verification of an economic model, or, according to the adopted epistemological orientation, its falsification (Wojciechowska, 2011). On the other hand, the above-mentioned issues lead to the blurring of lines between economic sciences and other disciplines of science (from the perspective of the general level of the methodology of scientific disciplines), and they heat up disputes over the scientific status of economics (assessing the situation from the level of specific science). Some other problems in this context include the low prognostic capabilities of economics and its thematic incoherence.

Disputes conducted by economics scientists over leading paradigms, the reliability of knowledge and its prognostic capabilities, the coherence of theories, the originality of research areas and methods are reflected in research on marketing. It is difficult to compare the range of disputable areas, but the scope of problems and criticism of a scientific status are very similar. It clearly shows how difficult it is to follow the restrictive norms of science within economic sciences, and, simultaneously, how important it is to define the boundaries of a research field and ensure the correctness and reliability of acquired knowledge.

In economic sciences it is possible to identify several thematic perspectives related to the limitations of cognition and assumptions concerning science.

The first level of disputes refers to the issue of the methodological dualism of economic sciences (Hanaszko, 2014; Surma et al., 2010; Krysiak et al., 2010). We can identify a naturalistic approach, which is rooted in positivism and based on the rigorous requirements of a scientific approach, aimed to parametrize and quantify economic phenomena. In contrast to naturalism, the humanistic trend assumes the concept of social, free and irrational man. A more significant role in this approach is played by an axiological perspective and an idiographic model of knowledge. The other group of problems relates to the role of economics in social life. This role can be considered in two dimensions: a descriptive and normative one. The first orientation seeks to describe and explain economic life, while the other one aims to change and improve the economic system (Balicki, 2002, pp. 15-21).

The above-mentioned divisions reflect the objective and subjective character of scientific cognition – a naturalistic approach derived from positivism and interpretationism is part of the concepts of humanism. In turn, the division into descriptive and normative economics reflects the division into social regulation and radical change. The former methodical approach separates the cognitive process from the application of knowledge, while the latter approach combines the two areas of activity.

### **Concluding remarks**

A comparison of the methodologies of research on marketing should be also referred to other disciplines of science, for example management sciences, which – due to the formal limitations – is not discussed in this paper. The presentation of methodological dilemmas shows that many issues related to the identification of research areas, the boundaries of disciplines and the scientific status are also discussed within social and economic disciplines. Moreover, the issues related to cognition and knowledge verification are not ultimately resolved due to the specificity of social sciences and difficulties in generating reliable and unquestionable knowledge. However, it should be noted that both sociology and economics resort to a wider range of methodological orientations and approaches, which indicates that marketing should become more open for various research orientations, particularly interpretationism and critical methodology.

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