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MARKETING RESERVES TO INCREASE THE COMPETITIVENESS OF THE ENTERPRISE IN MODERN CONDITIONS

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Abstract. The *aim* of the article is to study the theoretical approaches to the formation and practical application of the mechanism of marketing management of enterprise competitiveness and the development of marketing reserves aimed at improving it in modern business conditions. The *methodology* basis of the study was a synthesis of the results of applied research in economics, scientific works of domestic and foreign scientists, which highlighted the fundamental theories of competitive advantage, competitiveness and marketing management. *Results* were presented in the level of enterprises competitive support determines the criterion of competitiveness, the most important economic categories and it characterizes the enterprises ability to adapt to market conditions and operate in complex transformation processes, competitive relations, and market management mechanisms. *Practical results* with the help of marketing reserves we can ensure the competitiveness of the enterprise. These and other circumstances have determined the relevance of the topic of our study and the need to develop a modern mechanism for marketing management to increase the competitiveness of domestic enterprises. *Value/originality.* The authors believe that the generalization of existing tools of Internet marketing and the selection of the most relevant and effective, will allow companies quickly to navigate and choose those that will benefit in a particular area of business. According to the authors, in the current conditions of economic and business development, no company will have an advantage in competition if it does not use Internet marketing tools.

Key words: competition, enterprise competitiveness, marketing reserves, advertising campaign, staff motivation, adaptation to market conditions.

JEL Classification: M30, M11, M31, P23

1. Introduction

Current trends in the domestic market economy are characterized by intensification of globalization and integration into the world market, resulting in increased competition in domestic and foreign markets. In conditions of fierce competition in the market, there is a competition between producers for favorable conditions of production, sales, consumer engagement, quality indicators, profit indicators and other competitive advantages.

Domestic enterprises are currently operating in a very difficult environment of the global economic crisis, which is caused by the pandemic and threatens the ability of enterprises to operate effectively. It is important for companies to survive in crisis conditions, adapt to them and minimize threats to the environment. This is possible with a high level of competitiveness of the enterprise, with the available competitive advantages, potential opportunities and reserves to increase them. Aggressive competition for domestic enterprises is a modern reality with scale, dynamism and aggravation of actions, in the fierce struggle for their own competitive positions.

In these conditions, there is a need to adapt commercial enterprises to dynamic changes in the

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business environment, provided the opportunity to take into account marketing principles, namely: systematic, comprehensive study of the market environment and production and economic activities of enterprises; drawing up and implementing a marketing action program at all levels and planning periods; directing the activities of all structural units and units of the enterprise to meet the needs of existing and potential consumers, the implementation of consistent product, pricing, distribution and communication policy.

The level of enterprises competitive support determines the criterion of competitiveness, the most important economic categories and it characterizes the enterprises ability to adapt to market conditions and operate in complex transformation processes, competitive relations, and market management mechanisms.

The issue of developing marketing reserves to increase the competitiveness of the enterprise is relevant and plays an important role in the industrial relations, sales policy formation, sales activities organization, sales system development. With the help of marketing reserves we can ensure the competitiveness of the enterprise. These and other circumstances have determined the relevance of the topic of our study and the need to develop a modern mechanism for marketing management to increase the competitiveness of domestic enterprises.

2. Research of economic essence of concept of reserves and their role in increase of competitiveness of the enterprise

We are convinced that the successful operation of any enterprise in market conditions depends primarily on two factors: available resources (material, labor, financial) and a system of effective management. Today, the issue of finding optimal ways to manage the resources of enterprises in order to increase its competitiveness in the current conditions of Ukraine's economy is extremely important.

Competitiveness of the enterprise is one of the most important categories of market economy and characterizes the possibility and effectiveness of adaptation of the enterprise to the competitive environment, it is traditionally associated with the success of the subjects of competition, efficiency and stability of the market mechanism. The high level of competitiveness of the enterprise is manifested in the productive use of the resource potential of the enterprise and an effective management system. These positions should be taken into account when assessing the competitive position of the company and benchmarking.

Marketing is the main factor in the success of the enterprise, and marketing management of the competitiveness of the enterprise, in conditions of unpredictable and unstable demand, must comply with the principles of marketing. In modern conditions of commodity production, competition is a mandatory economic component, the action of which, according to Galelyuk M.M. is "for commodity producers an external coercive force to increase labor productivity in their enterprises, increase production, accelerate scientific and technological progress, introduce new forms of organization of production, forms and systems of wages, and so on. Many economic laws take the form of coercive forces of competition as competition between market participants for the most favorable conditions of production, sale and purchase of goods and services, as a result of which competition is an important driving force of economic system, part of the economic mechanism" (Galelyuk, 2008). In general, the competitiveness of the enterprise – the ability to produce and sell its products quickly, cheaply, efficiently, sell it in sufficient quantities, with a high technological level of service. Radeeva M.M. defines the competitiveness of the enterprise as an opportunity to effectively manage their own and borrowed resources in a competitive market (Radyeva, 2006). Competitiveness of the enterprise in terms of marketing orientation is the ability of the enterprise to function effectively in the market with timely response to changes in consumer needs and preferences at a given time compared to competing companies operating in this market (Tkachenko, 2006).

In such difficult business conditions, enterprises must form a model of behavior that takes into account the relationship of environmental factors with all strategic economic units of the enterprise, which must also be competitive.

The density of the relationship of factors and conditions of competition of enterprises for the favorable attitude of consumers to the goods of certain manufacturers, are components of the structure of this concept (Figure 1).

Reserves of competitiveness as untapped opportunities are connected, on the one hand, with features of use of separate elements of

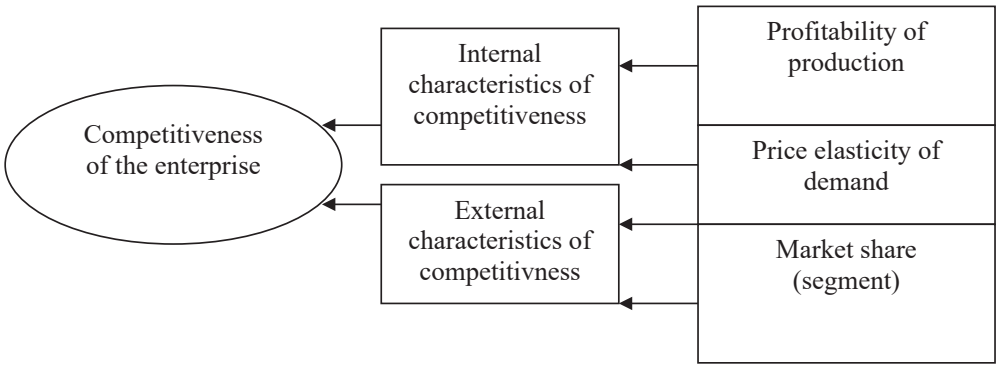

Figure 1. The structure of the concept of enterprise competitiveness

Source: generated by the authors

internal potential of the enterprise, and on the other, with use of factors of the external market environment. The latter include reserves for the use of rules and regulations set by the state and reserves for market mechanisms (Gryneveczka, 2015).

Competitiveness reserves should not be combined with reserves as stocks of inventory needed to produce competitive products. The fact is that the same company with the same stock of inventory, quality and composition can create products of completely different competitiveness. And this will be determined not only and not so much by the quantity and quality of raw materials, how effectively and adequately to the market situation will be used the internal potential of the enterprise (Litvinova, 2012).

Implementing a comprehensive approach to competitiveness, based on the main components of the company's potential: the degree of customer satisfaction with products, strengthening human resources, focus on innovation, competitive

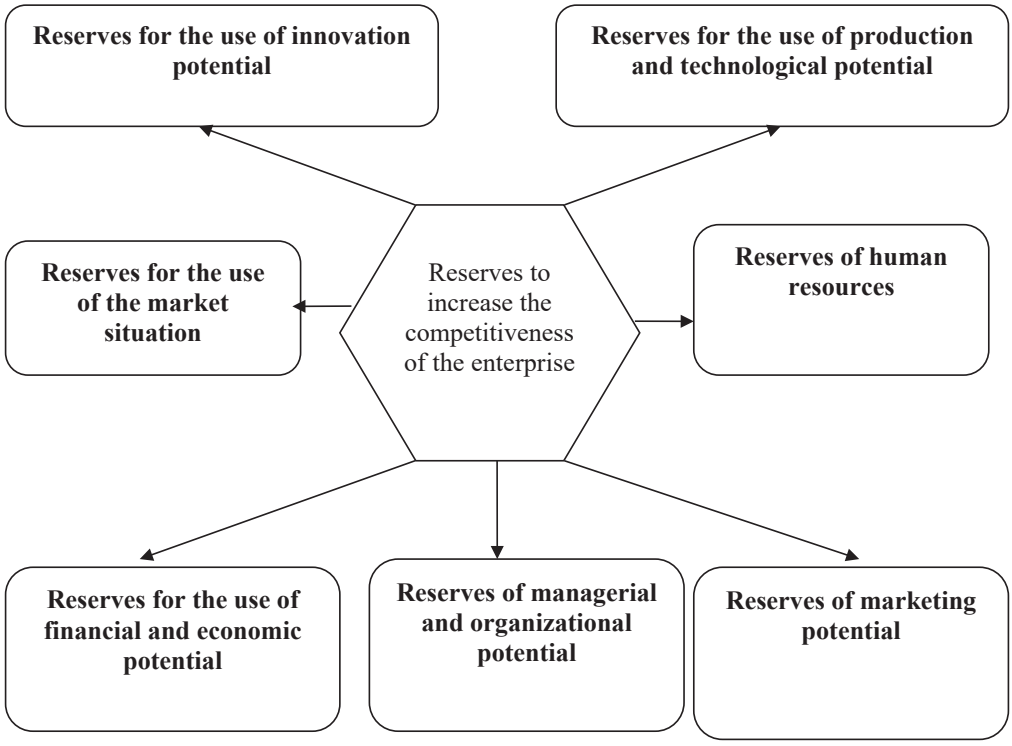

Figure 2. Classification of reserves to increase the competitiveness of the enterprise

Source: generated by authors based on (Yamnenko, 2012)

potential and effective strategy for a particular market segment, reserves to increase the competitiveness of domestic groups (Figure 2).

Enterprises operating in the market differ in a number of specific features: size, areas of specialization, markets, market segments, additional services and more. The key factor of success is compliance with the requirements of consumers, who today are becoming more motivated, informed, aware, demanding.

3. Marketing reserves to increase the competitiveness of the enterprise

In modern conditions, both wholesale and retail enterprises face today's problems: constant changes in demand and prices, high risk, and at the same time make strategic decisions without deep marketing reasoning and analysis, without a marketing management system. The consequences of this may be unprofitable and instability of most commercial enterprises. We have identified and summarized the main shortcomings in the organization of marketing activities of most commercial enterprises, among which are the following:

1. Enterprises do not have a department that would be directly engaged in marketing activities, and the functions and tasks performed by employees of the enterprise are quite diverse and unevenly distributed among them. In our opinion, this is a very serious problem, because the effective work of the company as a whole is possible only with the efficient work of individual employees, and this is possible only in a clear division of responsibilities between employees.

2. Employees of the enterprise are guided in their activities by outdated management concepts, are not always sufficiently qualified and motivated.

3. The state of advertising for most companies is quite low.

4. Lack of a unified methodological approach to the implementation of the marketing management concept.

5. Lack of a well-established system of "feedback" with buyers of goods and services of the enterprise.

Therefore, we are convinced that most companies use only certain elements of marketing, which follow from the needs of their current sales activities.

For most commercial enterprises, there are threats that can lead to:

– to a critical state of the enterprise can lead or entry into the industry of a large number of competitors and a radical change in consumer tastes;

– restrictive policies of state bodies may lead to liquidation of the enterprise or its withdrawal from the industry, for example, increase of customs duties and fees, increase of transport tariffs, change of trade rules. In our opinion, marketing reserves are a set of tools with the help of which modern enterprises will be able to significantly improve the existing situation, accumulate internal opportunities and help implement effective development strategies.

We have summarized marketing reserves that can increase the competitiveness of the enterprise (Figure 3).

At the same time, marketing reserves can not be narrowed only to characterize the capabilities of the enterprise, but are part of a comprehensive marketing system based on the marketing concept of management, organization and implementation of effective marketing activities through marketing tools, research, collection and analysis, organization strategic planning and control of marketing activities. The basis of marketing reserves are groups of elements: marketing complex, marketing research and marketing analysis of information, tangible assets, human resources, qualified work of the marketing department.

It is important to enhance the marketing potential through personnel policy requires compliance with certain principles:

– the principle of professional skills and competence of staff;

– the principle of development, which provides for continuous training of staff in accordance with modern requirements for doing business;

– the principle of motivation, according to which the management of the trading company should encourage professional competition of staff, motivate the achievement of goals;

– the principle of attitude to staff as the main human capital to establish a system of motivational factors, taking into account the factor of individuality of each employee.

Adhering to certain principles, it can be argued that although personnel policy is not the only reserve of the enterprise, but its effectiveness and efficiency can ensure the prestige of work in the enterprise and increase its competitiveness.

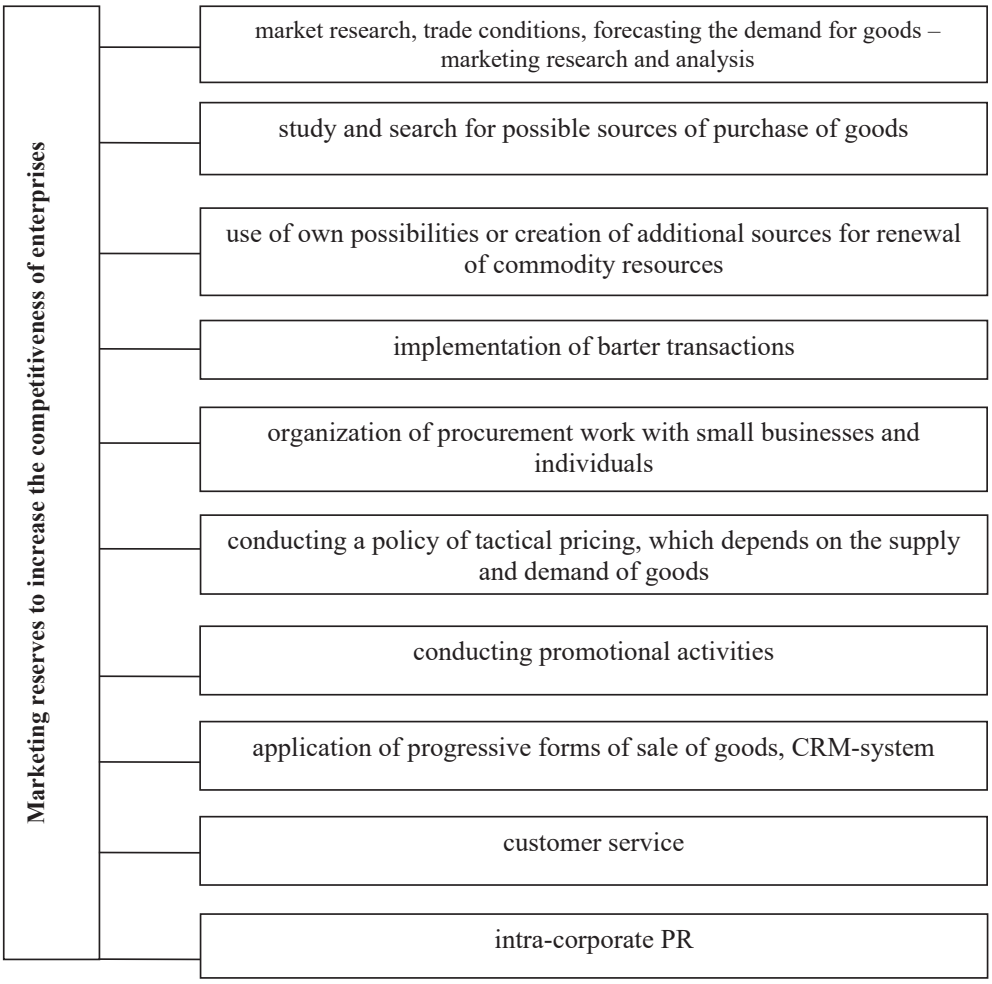

Figure 3. Marketing reserves to increase the competitiveness of commercial enterprises

Source: developed by the authors

In our opinion, increasing the competitiveness of the enterprise depends mainly on three factors: properly formed marketing tools, elements of organizational structure and management system. In this context, the organizational structure of marketing activities in the enterprise can be defined as a basic component of the organization on the basis of which marketing management will be carried out, ie – a set of services, departments, units, including employees engaged in various marketing activities. One of the main principles of marketing management is to bring the places of marketing decisions closer to the units where they are engaged in practical marketing. In order for the management system to be able to adapt to consumer demands, innovations, market conditions, it is necessary to create a marketing service at the enterprise. Any marketing organizational structure should be based on the following components and their interaction: functional features, location, products and consumer markets. We consider it necessary to pay attention to the fact that the extreme lack of reliable market information leads to high uncertainty in management decisions, and primary information is not collected and systematized. The primary task for the employees of the department will be to gather information in the right form and volume.

Kovalenko V.O. emphasizes that the attractiveness of a product does not provide sufficient guarantees for its sale. To do this, you need to inform consumers about its existence, to convince of its good quality and persuade them to purchase goods (Kovalenko, 2013). That is, consumers need complete information to understand the benefits of the product. From this point, we want to draw attention to the importance of creating a CRM-

system – customer relationship management as one of the main components of the marketing communications complex.

At the same time, we understand that if we focus only on the CRM-system, the company will lose many market opportunities associated with entering other consumer markets. Tools that support such analysis should exist in programs that provide marketing planning, along with analytical CRM – tools.

We offer active use of the marketing communications system in a comprehensive marketing system. We insist that in modern conditions, special attention should be paid to the full use of the Internet resource. We are confident that in this way there will be a stimulation of sales, a positive image of the company and provide feedback from consumers to producers. In addition, Internet communications will help to establish direct contacts with buyers of products, bringing the relationship with them to a new level, which will provide up-to-date information on market conditions and changes in the structure of consumer demand. We offer marketing reserves that will help increase the competitiveness of the enterprise (Table 1).

The measures proposed by us will promote the effective use of marketing reserves and activities of the enterprise. The authors in Table 2 systematize current trends in the field of Internet marketing.

Therefore, we must state that marketing reserves are a tool by which any company will be able to increase its competitiveness. Unused marketing reserves to increase competitiveness, for most commercial enterprises, is the integrated use ofall tools (elements) of marketing, the introduction of new forms of trade, the use of modern management methods.

4. Conclusions

It is established that marketing reserves are one of the most important factors in ensuring the competitiveness of the enterprise, which should be implemented through the creation of appropriate management structures, market monitoring system, marketing analysis, the formation of comprehensive information systems.

Without sufficient experience and strategic management tools to take into account the growing competition, instability and high level of uncertainty of the external environment, it is very difficult for companies to ensure efficiency and high level of competitiveness in the market. In this context, it is necessary to understand that in the system of market economic relations, as a result of a number of inherent features of enterprises it is difficult to adapt to changes in the business environment. Given this fact, the introduction of a marketing approach in the practice of commercial enterprises is a reserve for improving the efficiency of existing resource potential, and especially marketing to ensure its competitiveness and sustainable development.

The main areas of search for reserves to increase competitiveness are: resource, organizational, technological and marketing potential – the

Table 1
Suggestions for more efficient use of marketing reserves

Events	Characteristics
Creating a marketing organizational structure	In order to strengthen analytical work, strategic planning and sales promotion.
Creation of CRM-system and B2B and B2C systems	In order to manage relationships with customers and construction companies, the use of e-commerce
Formation of a permanent marketing information system	It will help the company to avoid strategic surprises, receive timely, complete and reliable information about the environment, build a positive reputation, promote more successful marketing and increase sales, the strategic planning department will include monitoring and audit services, public relations
Review contracts and implement a system of discounts	Refuse unprofitable deliveries and sales; introduce a system of discounts for regular customers.
Increasing employee interest in product sales	Motivation and incentive system for employees (bonuses, salary increases, interest on sales).
Active use of marketing communications system	Carry out a number of measures to intensify work on promotion on the Internet, site reconstruction, site distribution in search engines and other work.

Source: suggested by the authors

Table 2

Modern trends in the field of Internet marketing

Trends	Brief description
The emergence of fake formats	News created in the interests of certain people, often panicked, is gaining popularity in the media, sent to groups and channels in Telegram, Viber, distributed through Facebook, Instagram and YouTube. "Fake chains of influence" through photos, texts, graphics based on the model "actualization of the problem + popularization of the problem" is no longer just a trend, but a contrived reality that people with a low level of critical thinking do not even try to deal with.
Increasing the relevance of online tools	Online tools have become relevant to most, and those who may not have noticed them before have finally thought about their importance: the use of CRM, online platforms, the creation of new online products, remote team management
Narrower specialization in the field of targeting	Work with specific audiences and work to increase social responsibility of the brand
Definiteness of unified messages and visual communication of the brand on all platforms	A good message is specific, understandable and able to arouse interest in the brand. For example, Auto. Ria sells up to 1,400 cars a day. This was the content of the key message.
Digitization of education	Use of educational online platforms, including: All-Ukrainian online school, e-magazines and e-diaries, Microsoft Teams for Education and others
Micro trends in video marketing	The share of stories and videos has increased
Emphasis on really tangible socially oriented cases	Various kinds of patronage, sponsorship. Consumer survey results show that 82% of respondents will pay more for goods / services of socially responsible enterprises
Online reputation	More and more users are making purchasing decisions based on information received online. Consumers are more likely to turn to reviews and comments published on the Internet. That is why companies need to pay more attention to monitoring their reputation online and constantly analyze the factors influencing it.

degree of customer satisfaction with products, strengthening human resources, focus on innovation, competitive potential and effectiveness of strategy for a particular market segment.

The authors believe that the generalization of existing tools of Internet marketing and the selection of the most relevant and effective, will allow companies quickly to navigate and choose those that will benefit in a particular area of business. According to the authors, in the current conditions of economic and business development, no company will have an advantage in competition if it does not use Internet marketing tools.

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DEVELOPMENT AND STRENGTHENING THE INSTITUTE OF TAX CONSULTANTS IN THE TAX SYSTEM OF UKRAINE

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Abstract. *The purpose* of this article is to formulate the main prerequisites and economic consequences of strengthening the institute of tax consultants in the tax system of Ukraine, to substantiate the importance of tax counseling as a separate profession, as well as to determine the cross-functional role of tax consultants in interaction with taxpayers, fiscal authorities and the government, according the world trends in tax consulting. *Methodology*. The research is based on the analysis of specialized scientific sources of international researchers and practitioners who have been studying the issues of tax consulting as a separate type of professional activity for the last 30 years. Based on the analysis, using general scientific methods – analysis, synthesis, generalization, abstraction – the conclusions of the study were made, which can be interpolated into the Ukrainian business environment. *Results* of research showed the importance and role of tax advisers in modern tax systems. Based on the research, it is proved that tax advisers can perform different functions (acting in different roles) on the interaction between taxpayers, fiscal authorities and the government. They are qualified representatives for taxpayers in solving certain problems in the field of taxation, including in matters of tax planning and optimization of tax payments. At the same time, tax advisers are important as intermediaries, arbitrators, regulators in relations between taxpayers and the government, as well as they act as agents of fiscal bodies on tax compliance of taxpayers. The importance of tax counseling for different subjects of the tax system is determined for: taxpayers, fiscal authorities and the government. Further research in the field of tax consulting is proposed to focus on the formulation of ethical principles of tax consultants, which, according to world practice, have a great importance in their activities. It is also proposed at the legislative level to consolidate the legal status and responsibility of tax advisers. This is proposed to be done by establishing the procedure for documenting the consultations provided, establishing the legal responsibility of the consultant for poorquality services, which is a separate important area of further research. *Practical implications.* In the article the necessity of development of tax consulting institute in Ukraine on the basis of implementation of relevant international standards and practices is substantiated. The functions (roles) of tax consultants in the tax system of the country and their interaction with taxpayers, fiscal authorities and the government are defined. *Value/originality.* The correspondence between the world practice of tax consulting and the Ukrainian legal framework allowed to show serious gaps in local legislation and tax awareness of taxpayers, which should be corrected ASAP.

Key words: tax consulting, tax agent, tax consultant, taxpayers, tax legislation, tax system, tax compliance, tax culture.

JEL Classification: H26, H30, H32, H39

1. Introduction

The complexity of tax legislation and its periodic changes require systematic attention from taxpayers. Ignoring legislative changes can have negative financial consequences and seriously damage the reputation of a business. For most small and medium taxpayers, it is quite problematic to understand all the intricacies of the tax system. The Tax Codes of the world are not simple and Ukraine in this sense is no exception. The possibility of misreading of tax legislation is a problem for both taxpayers and the state

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authorities. Taxpayers are required to pay taxes, and complications and frequent changes in tax laws mean that they may not keep up with the changes or they may lack the experience, time and confidence that they are doing everything right. It is important for the state authorities that taxes have to be received in a timely manner and in full in order to provide the necessary attributes of a modern country, such as: education, health care, social security, public transport, etc. It also enables the state authorities to maintain a healthy economy in society.

Due to the absence of the institute of tax consulting in Ukraine as an element of the tax system, it is especially important to define the essence of tax consulting at the legislative level and study the role of professional tax consultants as tax agents of taxpayers and the Government.

2. Review of research by world scientists and practitioners

The issue of compliance with tax legislation is traditionally given a lot of attention by tax authorities, economists, practitioners, scientists. Some efforts of the expert community (primarily government and legislative committees) are aimed at helping the government increase tax revenues by liberalizing tax rules, improving payment discipline of taxpayers and reducing the amount of tax-free (shadow) transactions. However, research on the place and role of tax consult-ants (tax consultants) by domestic researchers has not been conducted. At the same time, the analysis of foreign literature sources showed that research in this area has been conducted for at least the last 30 years, starting from about 1988.

Researchers A. Hite and Gary A. Mcgill (1992) looked at the demand for tax filing services and related cost of tax consulting, quality of service, and the impact of tax specialists on taxpayer compliance.

The specifics of the relationship between taxpayers and professionals who help compile tax returns, as well as the study of the impact of tax audits (audit / audit of the US IRS) on the level of responsibility of tax advisers and the possibility of further cooperation with them were researched by Dan L. Schisler and Susan Coomer Galbreath (2020).

D. Jordan Lowe, Philip M. J. Reckers and Robert W. Wyndelts. (1993) in their research examined how tax consultants who prepare tax reporting, decide on the correctness of tax payments, the factors that affect it and investigated the role of experience, client conditions and mutual obligations of the parties to tax consulting (1993).

A number of studies by domestic authors have contributed to the study of applied issues of tax consulting (tax clarifications), as well as to the disclosure of problems of interaction between taxpayers and tax authorities. However, important issues of prerequisites for the development of consulting services, the formation of standards for the work of tax consultants, the development of methodological concepts have been studied by domestic scientists insufficiently.

The work of A.Y. Voronkova (2010) is devoted to the issues of management consulting as a basis for tax consulting.

The work by Shuvalova E.B., Yefymova T.A. (2011) is devoted to the problems of legal aspects of professional activity in the field of tax consulting. International experience in organizational and legal regulation of tax consulting is described in the research of Smirnova O.M. (2010) and Tkachyk F. (2014).

The study of ways to solve institutional problems of tax consulting in Ukraine using the experience of foreign countries was carried out in the works of Izmailov Y.O. and Yehorova I.H. (2020).

3. Challenges in Ukraine targeted by the research

The purpose of the article is to formulate the main prerequisites and economic consequences of strengthening the institution of tax consultants in the tax system of Ukraine, substantiate the importance of tax consulting as a separate profession, and determine the cross-functional role of tax consultants in cooperation with taxpayers, government and fiscal authorities, taking into account global trends in tax consulting.

4. Methodology of research

The research is based on the analysis of specialized scientific sources of international researchers and practitioners who have been studying the issues of tax consulting as a separate type of professional activity for the last 30 years. Based on the analysis, using general scientific methods – analysis, synthesis, generalization, abstraction – the conclusions of the study were

made, which can be interpolated into the Ukrainian business environment.

All comparisons and generalizations are made on the basis of the tax legislation of Ukraine as of 2022. For the same methodological purpose, tax explanations of the State Tax Service of Ukraine were taken, which have legislative force in terms of interpretation of legislative gaps.

5. Findings

Tax consulting services are a special type among the wide range of consulting services provided in the world. This is primarily due to the fact that many companies have difficulties with the application of tax law, understanding of some of tax rules, the variability of interpretation of certain fiscal requirements by members of the tax system.

Thus, according to the United States Internal Revenue Service (IRS), as of 2014, 90% of taxpayers sought help with tax reporting in different cases. Of these, 56% of the total number of filed returns were made by tax consultants, another 34% of taxpayers used software to prepare returns (CNSnews, 2014).

The report of the Source Global Research (an organization that analyzes how economic, business, technological and behavioral changes affect how organizations use professional services and the implications for professional service firms) In 2017 showed, that the global market of tax consulting services was estimated at 20.3 billion US dollars and increased by 8.6% year on year (Source Global Research, 2018).

As a result of Covid-19 in 2020 there was a reduction in the global market of tax consulting by 9% – more than 3 billion US dollars, resulting in a market size of 33.4 billion US dollars. At the same time, the report predicts a rapid recovery of the global market of tax consulting with an expected growth rate of 7% (Source Global Research, 2021). Thus, the demand for tax consulting services in the world is growing every year and tends to increase.

The main purpose of tax consultants is to protect the interests of taxpayers. Practical experience shows that the main requirement when applying to tax consultants is the preparation of tax returns. But the study of the international experience of tax consulting determines the multifunctional role of tax advisors in the tax system of countries. With the help of tax consulting services, taxpayers can make informed decisions on taxation, receive recommendations for starting a new business in compliance with tax legislation, advice on choosing a tax system and tax accounting, optimizing operating costs to reduce the tax burden, the possibility of using preferential tax regimes for individual operations, etc. Using their experience and knowledge, tax consultants help clients comply with tax rules and regulations, as well as save clients financial resources by optimizing tax payments and minimizing taxes.

Tax consultants act as intermediaries and "balancers" of relations between taxpayers and fiscal authorities. In this case, each party has its own goals, interests and tools to achieve them. This model of interaction leads to certain difficulties, because tax consultants are forced to balance, on the one hand, the requirements of the state and tax authorities, and, on the other hand, to fulfill obligations to their clients – taxpayers.

The tax advisor, whose activities are regulated by the state and who is a representative of the profession, has a list of responsibilities and obligations (including legal), defined by law. At the same time, he must adhere to the ethical principles and culture of tax behavior.

At the same time, the consultant advises the client – the taxpayer and assists in his activities on tax issues and, in particular, in the optimization of tax payments and tax minimization. An important reason for attracting tax advisors to taxpayers is the criterion of cost effectiveness in terms of time and cost of services. However, the main lever to use consulting services is the lack of awareness of taxpayers on tax issues, because for them the rules of tax law seem too complicated and confusing. And the tax advisor should help taxpayers avoid possible misunderstandings about the definition and payment of tax liabilities.

Such a two-directed focus of the services of tax advisers means that they must facilitate, on the one hand, the proper amount of tax payments, which will increase state budget revenues, and on the other hand, must comply with agreements and save the customer's tax payments. That requires to keep at the attention both parties and to be in the median of interests of all stakeholders.

Thus, considering the multifaceted interaction of tax advisors with taxpayers, tax (fiscal) authorities, government, professional associations, etc., we can identify the following functions (roles) of tax advisors (Figure 1):

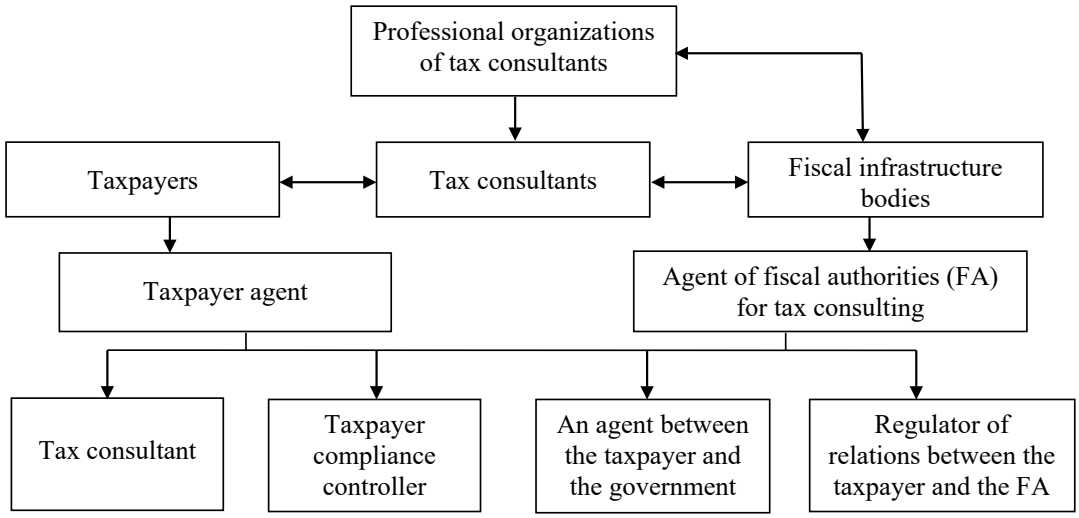

Figure 1. Roles (functions) of tax advisors in interaction with other subjects of the tax system

As mentioned above, a tax consultant, on the one hand, is an agent of the client (taxpayer), and on the other – acts as an agent of fiscal infrastructure bodies (in Ukraine – the State Tax Service of Ukraine) on tax compliance, assisting the state in building and improving tax legislation. Another entity involved in improving tax legislation is the professional organizations (associations) of tax consultants. In Ukraine, professional organizations of tax consultants are represented by the Chamber of Tax Consultants and the Union of Tax Consultants.

The purpose of the activities of professional organizations of tax consultants, which are public, is the development of the institution of tax advice, as well as protection of legitimate social and economic rights and interests of members of organizations and other taxpayers. And one of the main tasks of such organizations is the development of tax culture, both taxpayers and representatives of the executive branch, the impact on improving the efficiency of the tax system, as-sisting in the preparation of draft regulations on tax legislation, etc. (Chamber of tax advisor, 2013, Union of Tax Advisors, 2016).

Thus, based on the goals and objectives of professional organizations of tax consultants, both tax advisers and the government are interested in their effective work. The mentioned organizations take part in discussions of bills, can address requests to tax bodies, be active in transformational processes which occur in the tax legislation. On the other hand, they contribute to the establishment of dialogue between taxpayers and public authorities, the development of partnerships between business and government (Chamber of tax advisor, 2013, Union of Tax Advisors, 2016).

In Europe, professional organizations of tax advisers are represented by the European Confederation of Tax Advisers (Confédération Fiscale Européenne, CFE) and the European Federation of Tax Advisers (ETAF), based in Brussels.

In the United States, the largest professional organizations are (www.irs.gov):

– American Academy of Attorney-CPAs (AAA-CPA – the only organization consisting of people with dual qualifications: attorneys and certified public accountants);

– American Institute of Certified Public Accountants (AICPA – the world's largest association representing the accounting profession. Participants bring a high level of knowledge, experience and understanding of the process of tax planning and processes` development);

– National Association of Enrolled Agents (NAEA is a professional organization representing enrolled agents (EAs), American tax experts);

– National Association of Tax Professionals (NATP – the largest non-profit organization, that unified all 50 states as co-members which are specializing in the federal taxes development);

– The National Conference of CPA Practitioners (NCCPAP is a professional organization that deals with issues important to practicing accountants and their clients throughout the United States);

– National Society of Accountants (NSAN and its state branches represent independent practitioners

who provide accounting, tax, auditing, financial and property planning services);
– National Society of Tax Professionals (NSTP helps to achieve the highest level of knowledge, skills and competencies in all areas of tax compliance, as well as in preparation for a high level of qualification for the effective provision of professional services for tax returns).

In order to establish a dialogue between taxpayers and the government, the state should regulate the role of tax advisors in the market, which, in turn, contributes to ensuring quality relations between the parties.

Acting as a taxpayer agent, a tax advisor is able to weaken compliance. The practice of other countries shows that there are some obstacles to the independence of tax advisers. Taxpayers can evade taxes, thus gaining tax savings and increasing their profits. A tax consultant, as a subject of a competitive market, can assist to an interested party through accumulated experience in ambiguous interpretation or in different cases non-compliance with the law. For a particular group of clients, tax advisers may understand the risks involved in using the ambiguity of tax regulations to avoid tax evasion.

Compliance is a common practice in the world and is used in various fields. The institute of compliance in Ukraine is being implemented and is increasingly used in the banking sector and among large companies with foreign investment, as one of the components of control over their activities.

The concept of "compliance" in Ukraine was firstly defined in 2007 by the Resolution of the Board of the National Bank of Ukraine of March 28, 2007 № 98 "On Approval of Methodological Recommendations for Improving Corporate Governance in Ukrainian Banks", where it was determined as "compliance with legislation and internal procedures (compliance) – the necessity to know, understand and comply with all requirements of Ukrainian legislation, regulations, provisions and rules, internal policies, standards and codes of the bank" (National Bank of Ukraine, 2007).

Later, the interpretation of the term "compliance" appeared in other Resolutions of the National Bank of Ukraine, which have expired now. For example, in the Resolution of the Board of the National Bank of Ukraine of December 29, 2014 № 867 "On approval of the Regulation on the organization of internal control in banks of Ukraine", compliance was defined as compliance with legislation, market standards and internal standards, procedures and documents in banks of Ukraine (National Bank of Ukraine, 2014).

The concept of "tax compliance" and its application is quite new in the tax system of Ukraine. It was firstly defined in the official publication of the State Tax Service of Ukraine in 2019 and states that compliance is a duty to ensure compliance with legislation and international norms by developing and adhering to certain domestic policies and procedures (Visnyk, 2019).

In our opinion, the concept of compliance should be considered as an act of implementation or observance of laws and regulations, which is a consequence of trust the government and recognition of laws. Tax compliance means that taxpayers have fulfilled their legal obligations under tax law, and includes fulfilling their obligations to submit all tax returns (declarations) and paying tax payments. However, tax compliance is a mandatory requirement for all taxpayers without exception.

In Ukraine in 2019, the State Tax Service began preparing a compliance strategy – "Promotion strategy of voluntary compliance with tax legislation", as the first step towards positive changes in tax administration and interaction between fiscal authorities and taxpayers. In 2021, it was made a decision to introduce a system of tax compliance, which defines that tax compliance is a set of motives and incentives for taxpayers that encourage them to comply with tax law, legislation on the payment of a single social contribution and payment of state and local taxes (EVP, 2021).

Thus, tax consultants, professionally knowledgeable in the field of taxation, have a unique position in the market of relevant services, because they interact and work for both the government and taxpayers. They act as agents of fiscal authorities on tax compliance between the taxpayer and the government and a regulator of relations between the taxpayer and the fiscal authorities (FA).

The complexity of tax legislation may be the reason for the violation of taxpayers' control over it. Taxpayers do not have the desire and time to understand the intricacies of the law. As a result, they may act passively, referring all matters relating to tax liabilities to a tax advisor. Thus, all decisions can be made by consultants themselves, which can lead to abuse and control of taxpayers' behavior. That means, that taxpayers will do everything that the tax consultant offers.

The role of the tax advisor as a taxpayer compliance controller can be seen in the context of changing the behavior of taxpayers under the tax burden. This can lead to tax evasion (legal and illegal) and fraud. In turn, tax advisors can also be quite "creative" and use their expert status to have some motivation to abuse. And this, in turn, can lead to loss of revenue by the state and harm the country's tax system.

As noted above, tax advisers as independent professionals can act as intermediaries between taxpayers and fiscal authorities. After all, the government is interested in improving relations with taxpayers and preventing or changing the opinion of taxpayers that taxes are a burden for them. In such a situation, for positive and high-quality cooperation between taxpayers and the government, it is important to have an independent party to reconcile such a relationship, which can be a tax advisor (consultant).

Complicated tax regulations that make it difficult for taxpayers can create a negative perception and resistance of taxpayers to tax obligations, which can lead to conflicts between them and the fiscal authorities. Tax consultants in this situation act as intermediaries, they can also be useful in challenging (arbitrating) the results of tax audits.

The role of tax advisers as a regulator of the relationship between the tax-payer and the fiscal authorities in the context of ethical standards is also important, because the Code of Ethics is one of the basic documents of tax advisors. We noted above that due to certain circumstances, taxpayers may influence the behavior of consultants in order to evade taxes. The desire to minimize tax-payers' tax payments and the responsibilities of tax advisers as agents of the government and fiscal authorities to comply with the law requires strict adherence to the code of professional ethics.

6. Conclusions

The conclusions and generalizations made in this article prove the necessity of consolidation and further development of the institution of tax consulting in the tax system of Ukraine. The experience of foreign tax systems proves that it is impossible to achieve sufficient efficiency of the tax system without the services of tax consultants, because the most taxpayers do not have the necessary (expert) knowledge of tax law. In turn, tax advisors can help businesses determine reliable tax liabilities by optimally linking tax discipline to the financial interests of a particular business.

Based on the research, it is proved that tax advisors can perform different functions (act in different roles) in the interaction between taxpayers, fiscal authorities and the government. They are qualified representatives for taxpayers in solving certain tasks in the field of taxation, including in matters of tax planning and optimization of tax payments. At the same time, tax advisers are important as intermediaries, arbitrators, regulators in the relationship between taxpayers and the government, and they act as agents of fiscal authorities on tax compliance of taxpayers.

In our opinion, further research in the field of tax consulting should additionally focus on the formulation of ethical principles of conduct of tax consultants, which according to world practice are of great importance in their activities. In addition, the state needs to consolidate the legal status and registration of tax advisers at the legislative level. This is possible, including through the establishment of the procedure for documenting the advice provided, the responsibility of the consultant for poor quality services, which is a separate important area of further research.

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DEVELOPMENT OF THE MODERN MARKET OF BIOENERGY – THE DRIVER IN INCREASED COMPETITIVENESS OF THE UKRAINIAN ECONOMY

Nadiia Hryshchuk[1]

Abstract. *The purpose* of the work is to study the development of the bioenergy market to determine its role and place in increasing the competitiveness of the Ukrainian economy, to determine the priority financial programs for financing alternative energy. *Methodology*. Theoretical and methodological basis of the study are general and special methods of scientific knowledge: generalization, analogy, analysis and synthesis, induction and deduction (to clarify the conceptual apparatus, theoretical generalizations of research results, conclusions and proposals); economic-statistical, tabular research method is used. *Results*. Theoretical, methodological approaches to the development of bioenergy are substantiated. The understanding of the essence of the concept of "bioenergy" is revealed and the ecological-economic and legal aspects of development of the agricultural sector of the economy on the basis of combination of economic and ecological interests are analyzed. Analytical assessment of the types of financial security showed that attracting different types of financial resources will improve the ability to gain a competitive position in the bioenergy market. *Practical consequences*. According to the results of the research, priority areas for improvement have been identified. Bioenergy crops are an important component of Ukraine's bioenergy potential. Their cultivation will have a number of positive effects, including: replacement of natural gas, which will improve the balance of payments of our state; the possibility of reducing the heat tariff, which will contribute to economic security, through a balanced and sound public policy to support economic activity and implement the proposed recommendations for businesses and authorities.

Key words: bioenergy potential, agricultural sector, natural resources, alternative sources, environment, financial provision, financial resources.

JEL Classification: P34, G32, Q14

1. Introduction

Natural resources are an important component of full-fledged human activity, but among them are those without which the existence of society is impossible. The basic for its life are biological resources that form the biological cycle of matter and energy in nature. Natural resource potential includes renewable and partially renewable resources. The world's energy problem every year exacerbated by the constant depletion of traditional energy sources. Among renewables, energy sources of biological origin (biodiesel, biotalon, biogas) are becoming more and more developed as energy sources, the main raw material for the production of which is agricultural products. Mankind is increasingly interested in the main source of energy – wildlife. It will further provide a person with energy both for life through food consumption and for the use of renewable energy sources of biological origin. At the present stage of state development, alternative fuels are the main catalyst for new global trends in the agricultural market, which is objectively due to the reduction of mineral reserves, high dependence of the country on oil imports, changing the structure of agro-industrial constant growth of price disparities in energy, industrial and agricultural products. The need for production and consumption of biofuels in the world associated with limited world reserves of fossil energy resources, as well as environmental pollution due to their use. Ukraine is particularly in need of biofuel market development, as our country faces the issue of energy security and inability to

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provide itself with its own energy resources, such as coal, oil, natural gas, which serves the development of this topic and requires further study of possibilities and practical use of energy crops.

2. Literature review

The study of theoretical and methodological and practical issues of biofuel production in Ukraine are engaged in a number of scientists, among which: G. Geletukha (2015), M. Gumentyk (2007), G. Kaletnik (2008), O. Makarchuk (2011), V. Savchuk (2011), V. Baidala (2014), O. Shpychak (2015), M. Talavyria (2012), and others. Special scientific and of practical interest are scientific works on the reform of the agricultural sector of Ukraine through the prism of biofuel production of outstanding scientists-economists G. Kaletnik (2008). Their fundamental ideas, concepts, approaches and proposals are significant enriched economic thought. However, further research is needed and systematization of the bioenergy market, which can be considered from the proposal of global human resources for energy as a strategic priority in the system sustainable development of Ukraine's economy in the current dynamic environment. An important component in strengthening Ukraine's energy independence is the development of bioenergy, which will contribute to the effective use of the country's potential to achieve economic, social and environmental effects.

Given the importance of the development of bioenergy as an important component of energy security in Ukraine, the prospects for the development of this area of energy is devoted to the work of prominent scientists. In particular, G. Kaletnik (2008) studies the impact of biofuel production from biomass on energy, environment and food security of the state. G. Geletukha (2015) notes that Ukraine has significant potential for bioenergy development.

Studying the issues of bioenergy as the need to ensure food security of the country, the formation of a state strategy to support development. M. Talavyria (2012) defines the concept of "bioenergy" as an interdisciplinary ecologically oriented branch of science and agro-industrial complex, which includes subjects of science and management, whose activities are related to the cultivation of bioenergy crops, processing of biomaterials (biomass of plant and animal origin and other biologically active external sources of alternative energy, including (coal, peat, oil, gas, etc.), owned by or on other grounds provided by law to bioenergy entities or others.

Given the urgency of the issue of energy security of the state and individual sectors of the economy, the issue needs to be detailed in order to identify potential capacities to increase bioenergy potential, especially in the context of conservation of natural resource potential.

3. Current state and significance bioenergy resources market

Current state and significance bioenergy resources market. The beginning of the XXI century was a period of active formation and development of the bioenergy market, in the process of which the future model of the world's energy system is laid. The formation and rapid development of the bioenergy market in Ukraine is a requirement of today. As stated in the Unified Comprehensive Strategy and Action Plan for the Development of Agriculture and Rural Areas in Ukraine until 2030, Ukraine has significant potential for energy production from biomass, which includes waste from agriculture, utilities and food industry, wood waste, energy crops and energy plantations of willow and poplar. Biomass is a cheap and affordable local fuel. Its use is important from a strategic point of view, as it increases the country's energy security, reduces energy costs and increases agricultural efficiency, improves the country's balance of payments.

According to the scientist O. Shpychak (2015) in the scientific work of the same name, the economically justified energy potential of existing biomass waste in Ukraine is 24.5 million tons of conventional fuel (ppm), and the energy potential of energy crops and plantations that can to grow on agricultural lands (approximately 4 million hectares) that are not used – about 13.7 million tons The total potential is 38.2 million tonnes, which is up to 18 percent of total primary energy consumption in Ukraine.

The volume of biomass consumption as a biofuel since 2012 amounted to 2.3 million tons p.p. (1.2 percent of total energy consumption). The annual level of use of biomass potential does not exceed 6 percent. The potential for biogas production is 2.9 billion m^3 / year from livestock waste and 31.7 billion m^3 / year from crop waste. In addition, the production of biofuels provides an opportunity to reduce the energy dependence

of our country. Due to the establishment of production and use of biofuels in agriculture of Ukraine, it is possible to create additional jobs, and thus increase employment of the rural population

If we monitor the potential of renewable energy sources in Ukraine, we find that under current conditions, alternative energy meets from 1.0 to 2.0% of energy needs, which is a small share. Priority in development is the improvement of approaches to increasing the capacity of bioenergy, solar, wind, geothermal energy. The energy potential of renewable sources is shown by us in table 1.

At the present stage of bioenergy development in Ukraine, special attention is paid to greening and conservation of resources. Bioenergy, like the economy of sustainable development, needs not only investments or new technologies, but also environmentally oriented innovations.

In Ukraine, the main strategic goals for the state environmental policy are prescribed in the Law of Ukraine "On the basic principles (strategy) of the state environmental policy of Ukraine for the period up to 2030".

This greening strategy provides for:
– development and application of environmental technologies;
– achieving Ukraine's sustainable development goals;
– wider use of waste disposal technologies;
– development of information technologies and production of new types of products;
– formation of requirements for environmental control of existing technologies.

Research has shown that the current conduct of economic activity is accompanied by exacerbation of environmental problems in the world in general and in Ukraine in particular. The need to solve environmental problems is confirmed by the fact that Ukraine has shown worse results in international environmental rankings. This ranking is compiled by the Universities of Yelsin and Colombia in conjunction with the World Economic Forum. The places in the ranking are determined according to the environmental efficiency index, which shows the achievements of countries in the rational use and management of natural resources .

It is recognized and proven that the key to increasing the competitiveness of the economy and reducing consumer spending on energy is the cultivation of certain types of energy crops and their processing into solid biofuels as an important component of energy autonomy of agricultural enterprises.

Bioenergy plays a leading role, bioenergy consumption has reached 119,301 kilotons, it is a unique role in the energy sector, there are significant advantages and priorities in terms of energy security, affordability, sustainability and competitiveness.

Researching the issue, we know about 20 species of fast-growing plants that can be grown for the development of bioenergy in Ukraine. The table presents the main and indicators of energy crops that are suitable for many regions of Ukraine.

The main technical and economic indicators of promising energy crops for Ukraine using data from Ecolog-ua.com

Among the positive consequences for the environment are the reduction of greenhouse gas emissions through the use of carbon-neutral fuels and the replacement of fossil fuels with biomass, as well as the cleaning of contaminated lands. the potential of energy crops for 4 million hectares is equivalent to replacing almost 20 billion cubic meters of natural gas per year. At the same time, Ukrainian energy plantations, which are able to improve soil quality, occupy only 0.5% of the total number of unproductive and degraded lands.

Table 1

Potential of renewable energy sources in Ukraine

Direction of development of energy recovery	Annually technically achievable energy potential		Annual volumes of natural substitution gas billion m^3
	billion kW year million	tons of p.p.	
Wind energy	41,7	21,0	18,3
Solar energy	28,8	6,0	5,2
Geothermal energy	105,1	12,0	10,4
Small hydropower	8,3	3,0	2,6
Bioenergy	162,8	20,0	17,4
Environmental energy	154,7	18,0	15,7
Total	501,4	80,0	69,6

Source: presented by the author using information from the Institute of Renewable Energy

Table 2
The main promising energy crops for Ukraine*

Culture	Life cycle, years	Yield That year	Dry mass yield, (t/ha) / year	Energy production, GJ/ha	Water content at the time of harvest, %
Miscanthus is a giant	Until 20	15-20	8,0-32,0	311,9-419,0	15,0
Switchgrass (millet rod)	8-10	10-17	9,0-18,0	266,8-312,2	15,0
Willow	20-25	12,4-22,7	8,0-20,0	280,0-315,0	53,0
Poplar	20-25	10-20	9,0-16,0	170,0-300,0	49,0

*These tables show that the cultivation of energy crops has economic and environmental effects

Currently, development is hampered by the lack of the term "energy plants" in Ukrainian legislation, complicated state and municipal land lease procedures, short terms of land lease agreements, long payback periods and the lack of a civilized biomass market.

To accelerate the development of the sector, the State Agency for Energy Efficiency and the Ministry of Energy have developed relevant bills, which were registered in March 2021 to remove barriers to energy crops, strengthen the conditions necessary to attract investment and long-term energy crops, including simplify administrative burdens.

In the context of Ukraine's Energy Strategy until 2035, it is envisaged and approved that the consumption of energy and bioenergy based on bioenergy crops should increase to 11 million tons, which is 4 times more than in the previous 2019 economic recovery. To achieve the desired positive result, you should rely only on an integrated approach. Success depends on many factors, one of the main ones being the alternative energy financing program.

4. Problems of attracting and using bioenergy financing

We can confidently say that the Alternative Energy Financing Program in Ukraine (USELF) is a credit line of up to EUR 50 million, opened by the European Bank for Reconstruction and Development (EBRD) to facilitate the implementation of renewable energy projects in Ukraine. loans and assistance in the development of projects that meet the financial, technical and environmental criteria of the Program. In addition, the Clean Technology Fund, part of the Climate Investment Funds, provides additional funding of 20 million euros. USELF provides financing for small and medium-sized projects directly from the EBRD under a simplified and accelerated lending scheme that reduces operating costs. The program provides funding for all forms of electricity production from renewable sources, such as water, wind, biomass, solar energy.

Conformity criteria, requirements for companies:
– privately owned companies registered and operating in Ukraine;
– companies operate in accordance with national legislation on environmental protection, health and safety;
– companies not involved in activities prohibited from financing with EBRD loans;
– Project requirements:
– replacement of electricity from traditional sources and significant reduction of greenhouse gas emissions;
– application of proven technology and financial viability of the project.

Investment projects are evaluated by the EBRD on the basis of information provided by companies (feasibility study, business plan). Technical consultants prepare a project analysis and provide the EBRD with technical, environmental and financial assessments of promising projects, as well as provide legal support to companies.

Free technical support, funded by a grant from the Global Environment Facility, is provided to companies interested in obtaining a loan under the Program.

Support for borrowing companies includes: obtaining a permit and project licensing, feasibility study, commercial negotiations, recommendations for project management. We will also pay attention to innovation vouchers as a financial instrument that allows Ukrainian companies to finance the implementation of climate innovation. Innovative vouchers can be used by a variety of companies, from climate technology developers to those who want to use them to reduce environmental impact or reduce energy consumption. These funds are not a loan or credit. In 2017–2018, 1,000,000 euros will be used under the Innovation Voucher program. In total, the program is planned to support 50 Ukrainian companies.

The program is implemented in Ukraine by the European Bank for Reconstruction and Development under the FINTEC program and funded by the EU Neighborhood Facility. The Ukrainian Energy Innovation Network Greencubator is implementing and administering Innovation Vouchers.

Vouchers of two categories are offered:
– vouchers up to € 20,000 (most of the companies that win the competition will receive Innovation Vouchers with an average amount of EBRD financial support of up to € 20,000);
– mega-voucher up to 50,000 euros (for companies with projects that have the potential to breakthrough, 5 mega-vouchers up to 50,000 euros are offered).

USAID Municipal Energy Reform in Ukraine Project – funded by the United States Agency for International Development (hereinafter referred to as the USAID MED Project)

Activities under the USAID MED project are aimed at improving energy policy, developing energy efficiency, reducing traditional energy consumption, increasing investment in the energy sector, reducing energy costs and energy imports, and reducing greenhouse gas emissions. The project budget is $ 16.5 million.

The program of lending to SMEs of Ukraine in priority areas from the German-Ukrainian Fund. Priority areas for investment loans under the program are agriculture, processing industry, energy efficiency and renewable energy projects, etc. Individual entrepreneurs or enterprises with no more than 250 people and an annual income of no more than 10 million euros in equivalent, operating for at least 3 years, have income for the last 4 consecutive quarters and a positive credit history of the bank for at least 12 months, and do not belong to large companies. The maximum term of an investment loan is 6 years, and a loan to replenish working capital is 2 years. Under the program, financial support to enterprises will be provided through partner banks in the national currency at an interest rate below the market average. The maximum loan amount is 100,000 euros.

Financial support of the State Innovative Financial and Credit Institution.This institution was established in accordance with the resolution of the Cabinet of Ministers of Ukraine dated 13.04.2000 № 654 and is the legal successor of property rights and obligations. The institution belongs to the sphere of management of the Ministry of Economic Development and Trade of Ukraine and has several regional offices. The purpose is to provide financial support to businesses of various forms of ownership in the framework of state innovation policy. In their activities SIFCU are guided by the current legislation of Ukraine, including the Law of Ukraine "On Innovation".

According to Bioenergy Europe, bioenergy accounts for about 60% of renewable energy consumed in EU countries and heats 66 million European households.

Implementation of the state energy program will ensure the development of energy-saving technologies and reduce energy dependence. At the same time, it will help increase the greening of production and development of bioenergy. This is explained by the fact that in the agricultural sector the production process is closely related to living organisms: plants and animals, biological processes that occur according to certain laws of nature and objectively require adaptation of certain technological processes to the rhythm of nature, types of natural resources, including bioenergy.

Thus, the development of bioenergy is an important direction on the way to increasing the competitive advantages of the domestic economy and preserving the environment, which creates opportunities to ensure a balanced development of the industry.

The leaders among the EU countries in terms of total areas under energy crops are Poland, Germany, Sweden and Greece, according to the European Bioenergy Association. In all these countries, measures of state support for the cultivation of energy crops were applied at different times.

Almost all EU member states consider energy crops as a promising area of bioenergy and already have a total of about 118 thousand hectares of plantations in their territories. In Ukraine, 6.4 thousand hectares are still reported.

Given the cultivation of energy crops on 2 million hectares of unused agricultural land, it is possible to potentially replace 8.9 billion cubic meters of natural gas annually, which is 35% of its consumption.

The development of the bioenergy market can be considered from the proposal of global provision of mankind with energy resources. In the twenty-first century, humanity has almost the only problem – the energy security of their

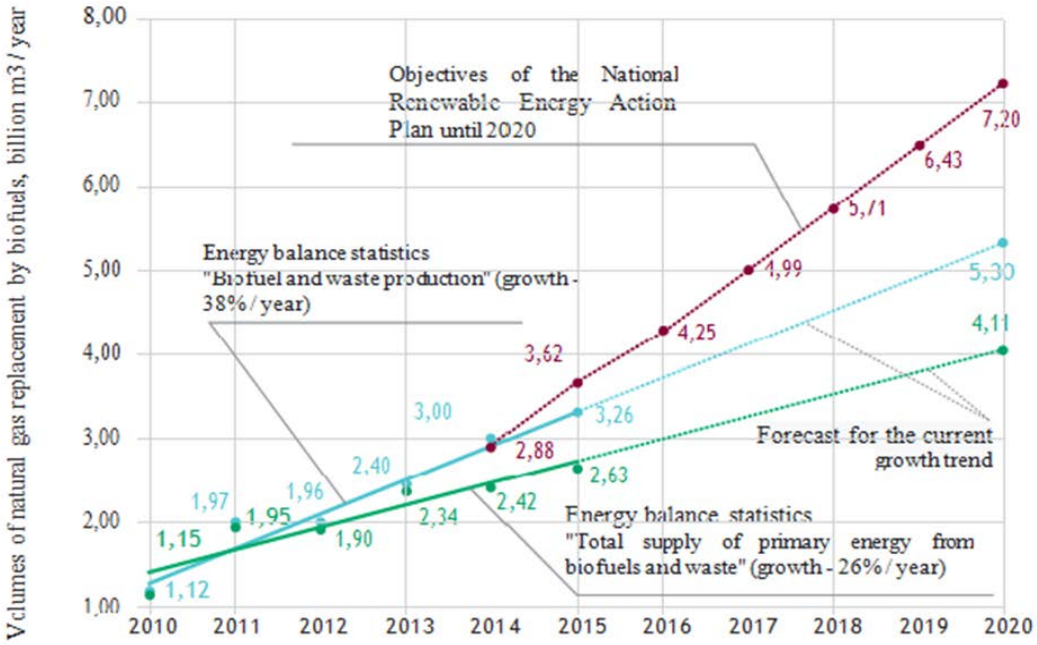

Figure 1. Dynamics of renewable energy sources in Ukraine

own existence, which exists constantly regardless of the stage of evolution.

Energy efficiency and "green" energy are the areas that need to be developed even in difficult times. After all, this is the key to increasing the competitiveness of the economy and reducing consumer spending on energy.

In 2020, about € 2 billion was invested in bioenergy projects in Ukraine. Ukraine's bioenergy replaces 5.2 billion m^3 of natural gas per year, and investments in this area bring Ukraine closer to energy independence and a stable energy system based on renewable energy sources.

In Ukraine, the share of bioenergy has grown by 26% in 2020 and replaces 5.2 billion m^3 of natural gas per year. The total supply of primary energy from biofuels and waste increased by 26% and amounted to 4.2 million tons. in 2020 (against 3.3 million tons in 2019). Thus, in the structure of electricity production from RES in 2020 the share of biofuels was 4.3%, while in 2019 it was 3.1%.

At the same time, Ukraine follows global trends, has chosen a course for sustainable development and supports the ambitious program of the European Green Course.

Given the high energy intensity of the domestic economy and international obligations, the State Agency for Energy Efficiency, together with the Ministry of Energy and partners, has introduced a cross-sectoral approach to energy efficiency, intensified work on legislation and financial support instruments.

Together with the Ministry of Regional Development, the development of requirements for buildings with close to zero energy consumption was initiated and a law was adopted to introduce the green bond market.

A whole package of bills has been developed to intensify the development of bioenergy, namely:

– on the development of a transparent and competitive market for solid biofuels through the introduction of an e-commerce system for such biofuels;

– on the mandatory use of liquid biofuels in the field of transport;

– to stimulate the cultivation of energy crops;

– on the exemption of biofuels from the tax on CO_2 emissions;

– on the introduction of a mechanism for trade in biomethane and the introduction of guarantees of origin of biomethane.

There is reason to believe that the adoption of legislative initiatives will further replace expensive gas with its own biofuels, whose imports in 2019-2020 amounted to 14 billion m^3. Given the maximum potential for the use of biofuels in Ukraine (agricultural waste, energy crops, biogas, biomethane), the potential for substitution of imported gas is more than 35 billion m^3 of gas per

year. So, concluding, we conclude that renewable energy sources can serve as a cost-effective replacement for old coal-fired power plants. The desire to integrate into the European ENTSO-E system will change the economic and technological requirements for the electricity system, which will be better met by the new capacity. For Ukraine, this will serve as an impetus for structural changes in the entire energy system, After all, proposals have been developed to stimulate the production of energy from renewable sources for own needs, work has begun on creating a system of guaranteeing the origin of energy from renewable sources and the National Energy Efficiency Action Plan until 2030 to ensure secure, economical and low-carbon electricity supply, increasing the competitiveness of the economy.

5. Ways and vectors of further development

Entities that finance the activities and development of bioenergy should be primarily interested in the current diagnosis of the financial condition of the entity. Their interest is to guarantee the ability of quality and energy-saving products and fulfill their obligations. If the company has exhausted reserves to further increase additional borrowing and increase the share of borrowed capital in the financing structure, the best way to further financial security is to reform financial policy and focus on another vector of development.

It should be noted that in total, the alternative energy sector of Ukraine has 881 business entities for which "green" for electricity generated at electricity facilities.

Starting from April 1, 2020 "Green" tariffs for electricity produced by economic entities at power facilities using alternative energy sources, and allowances to "green" tariffs for compliance with the level of use of Ukrainian equipment, set by the NCREC at level 2, 1954 UAH/kWh (including VAT) to 15.807 UAH/kWh (including VAT), i.e. the average "green" tariff is 9.0012 UAH/kWh (including VAT)(Strategy for the development of the agricultural sector of the economy until 2020).

We can state that the issue of bioenergy development at the present stage of economic development is an extremely relevant, innovative and strategic guideline for achieving energy, food and environmental security of Ukraine. An important task today is to take into account the significant threats to the development of energy security in Ukraine, namely: the lack of effective structural reforms in the energy sector, quality and efficient energy management system; lack of effective control over the activities of natural monopolies. Given the high level of Ukraine's energy dependence on imports of fuel and energy resources, it is the development of energy-saving technologies and renewable fuels that will have a positive effect, which will be reflected in the improvement of environmental performance. During the period of Ukraine's independence, examples of successful attraction of foreign investments into the national economy. At the same time, for three quarters of 2020. $ 1.2 billion worth of investments in the alternative energy sector.According to the results of 2019, participants in the alternative energy market paid UAH 19.8 billion to the budgets of all levels, which is three times more than paying taxes to the coal sector.

During the economic recovery, UAH 93.6 billion was paid to the state budget, which is UAH 45.4 billion more than the level of tax payments by coal mining and heat generating enterprises. The largest share of taxes fell on VAT and personal income tax. A significant difference between the tax burden on the coal industry and alternative energy is the payment of the latter at the same time land tax and environmental tax. It should be noted that will grow (Strategy for the development of the agricultural sector of the economy until 2020).

A study of the situation in the alternative energy sector indicates that in 2020. the attention of market participants is evenly focused and is exclusively in the range of medium-high level of business activity. This fact indicates the aggravation of the situation, the emergence of new challenges, increasing the importance of information and political factors.

6. Conclusions and prospects for further research

Bioenergy crops are an important component of Ukraine's bioenergy potential. Their cultivation will have a number of positive effects, including: replacement of natural gas, which will improve the balance of payments of our state; the possibility of reducing the heat tariff for the population by 10%; land reclamation and restoration; decarbonisation of the economy and the beginning of the transition to a bioeconomy based on the use of

biological resources as energy sources; economic growth in rural areas through job creation, increased revenues to local budgets in the form of taxes of enterprises engaged in growing energy crops and processing them into biofuels, etc. Thus, the implementation of the state energy program will ensure energy saving technologies and reduce energy dependence.

Thus, the reproduction of natural resource potential is influenced by the possibility of greening production and development of bioenergy. This is explained by the fact that in the agricultural sector the production process is closely related to living organisms: plants and animals, biological processes that occur according to certain laws of nature and objectively require adaptation of certain technological processes to the rhythm of nature, types of natural resources, including bioenergy.

Given the above, the development of bioenergy is an important area for increasing the competitive advantages of the domestic economy and preserving the environment, which creates opportunities to balance the development of the industry. Summing up the researched problems we state that the implementation of measures for the efficient (optimal) use of renewable energy sources remains a strategic issue for the development of the agricultural sector. This is due to a number of objective factors: ensuring energy security and reducing dependence on energy imports; development and efficiency of enterprises; creating new jobs and increasing budget revenues at all levels; improving the environmental situation. This is a basis for further scientific discussions and achievements in the field of research.

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MAIN WAYS TO INCREASE INVESTMENT EFFICIENCY OF AGRICULTURAL SECTOR DEVELOPMENT

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Abstract. *The purpose* of the article is to identify ways to increase investment efficiency of the agricultural sector, identify factors influencing the formation of investment potential of the sector, which will outline the components of investment support models for the development of the agricultural sector. *Methodology*. The expediency of using the method of principal components is proved, which will solve the problem, because, unlike others, it allows to combine disparate indicators, is able to identify a sufficient number of characteristic factors in factor analysis and has other advantages over simple methods of factor analysis. The initial data were the indicators of investment activity of the agricultural sector of Ukraine for the period 2017–2022. The calculations were performed using the software product Statistica 10.0. *Results*. The use of the main components method allowed to identify four main directions of improving the investment efficiency of the agricultural sector, in particular, "investment architecture", "balancing the investment product", "investment climate" and "stimulating investment activity". *Practical implications*. The practical significance of the results is short- and medium-term prospects, the success of the new system of investment support for agricultural development will combine infrastructure for investment and the formation of growth points that are attractive to investors and eliminate barriers to investment between investors and Ukrainian companies. *Value/originality*. The new model of investment support for the development of the agricultural sector will have the above components and will provide a rationale for choosing priority areas of investment, investment sources, investor selection, identifying investment instruments, forecasting investment for the new period with analysis of previous performance.

Key words: investments, investment support, development, investment architecture, balancing of investment product, investment climate of stimulation of investment activity, agrarian sector.

JEL Classification: Q14, Q19, E22, E27

1. Introduction

Investment security is one of the main factors of effective development of the agricultural sector, however, the investment environment is characterized by variability, stagnation and the presence of sustainable bifurcations, which certainly constrain the development of the agricultural sector. The current state of investment support of the agricultural sector of Ukraine does not allow to ensure further growth and development of agrarian business, which is why the search for new conditions for expanding investment opportunities of agricultural enterprises is particularly important, including by building a model of investment support for the agricultural sector. will help restore the reproductive process in the agricultural sector. The new model of investment support for the development of the agricultural sector aims to intensify investment activity, accelerate the response to changes in the investment climate and timely implementation of appropriate structural changes in investment potential, accordingly, the use of on the array of data used and ensure the identification of common generalizing features of the studied category.

2. Methodology for determining areas

Determining the priority areas for improving the efficiency of investment in the agricultural sector requires exemption from subjective assessment, grouping a large number of factors that determine the development of the agricultural sector and mathematically justified, which is why we consider it reasonable to use the method of main components. it allows you to combine disparate

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indicators, is able to identify a sufficient number of characteristic factors in factor analysis and has other advantages over simple methods of factor analysis.

The principal components method is to obtain the values of each feature by linear combinations in the form of the sum of the contributions of common factors and, mathematically, can be represented as follows (Andrienko, Samisko, 2008):

$$Z_j = a_{j1} \times F_1 + a_{j2} \times F_2 + ...a_{jr} \times F_r + d_j U_j,$$
$$j = \overline{1,n}, \quad R \angle p, \qquad (1)$$

where, Z_j – j – the studied feature (random value); F_1, F_2, …, F_r – common factors (random values, normally distributed), common to all signs; u_j – characteristic factor ; a_{j1}, a_{j2}, …, a_{jr} – factor loads that characterize the significance of the influence of each factor (show the contribution of the corresponding factor in the sign *Z j*); d_j – loading of the characteristic factor only for a sign *Z j*.

Accordingly, formula 1 is a normal multiple regression equation, where the independent variables are the factors *Fk* $\left(k = \overline{1,r}\right)$ and the dependent variable is the sign *Zj*.

General factors are essential for the analysis of all features, and the characteristics show that it applies only to this j-th feature, this specificity of the feature can not be expressed through the factors *Fk*.

The essence of this method is to construct factors – the main components, each of which represents a linear combination of initial features. The first main component *F1* determines the direction in the space of initial features, along which the set of objects (points) has the largest scatter (variance). The second main component *F2 is* constructed in such a way that its direction is orthogonally directed to *F1* and it explains as much as possible of the residual variance, etc. up to the *r-th* main component *Fr*.

The selection of the main components is in descending order in terms of the variance they explain, the features that are included in the first main component with coefficients a_{j1}, $j = \overline{1,m}$, have the maximum influence on the differentiation of the studied objects (Dubrov, 1979).

On the other hand, since each factor is determined by interrelated features, they can be represented as a linear combination of features (Soshnikova, Tomashevich, Webe, Schaefer, 1999):

$$F_k = w_{k1}Z_1 + w_{k2}Z_2 + ... + w_{kn}Z_n, \quad k = \overline{1,r}, \qquad (2)$$

where, $w_{kj}\left(j = \overline{1,n}\right)$ – factor load of factor *Fk* on the sign *Zj*.

Factor loads are analogs of correlation coefficients that characterize the degree of relationship between the relevant features and factors: the greater the absolute value of the factor load, the stronger the relationship of the feature *Zj* with the factor *Fk*, the greater the contribution of the feature to the factor. the action of the relevant factor.

Using the principal components method implemented in the software product Statistica 10.0, we will identify a small number of factors that most significantly affect the initial characteristics.

It is possible to find the main components under the condition of the significance of the correlation matrix, which is checked using the Bartlett test (Bolch, Huan, 1979):

$$\chi^2 = -\left[n - (1/6)(2p+5)\right]\ln|R,| \qquad (3)$$

which is distributed χ^2 $v = p(p-1)/2$ degrees of freedom.

Thus, we consider it justified to use the method of principal components to determine the main ways to increase investment efficiency of the agricultural sector.

3. Practical approaches to investment development

The first step in applying a certain method is to study the cumulative eigenvalues and the proportion of total variance that explains each component. As a result of calculations in the Statistica 10.0 package, based on the initial data, four factors were identified that explain 100.0% of the variability of the initial indicators that characterize the efficiency of investment support for the development of the agricultural sector (Table 1).

Table 1
Eigenvalues of the initial factors of investment efficiency of the agricultural sector

Value number	Eigenvalue	Total variance, %	Cumulative Eigenvalue	Cumulative, %
1	7,66	54,75	7,66	54,75
2	3,93	28,09	11,60	82,84
3	2,03	14,49	13,63	97,33
4	0,37	2,67	14,00	100,00

Eigenvalues of correlation matrix, and related statistics

The eigenvalue of the first dependent variable is 7.66; the share of total variance 54.75%; cumulative eigenvalue 7.66; cumulative variance 54.75%. The eigenvalue of the second dependent variable is 3.93; the share of total variance 28.09%; cumulative eigenvalue 11.60; cumulative variance 82.84%. The eigenvalue of the third dependent variable is 2.03; the share of total variance 14.49%; cumulative eigenvalue 13.63; cumulative variance 97.33%. The eigenvalue of the fourth dependent variable is 0.37; the share of total variance 2.67%; cumulative eigenvalue 14; cumulative dispersion 100%.

It is possible to determine the rational number of principal components by using the scree-test criterion or the Kaiser criterion, accordingly, the calculation of the initial correlation matrix showed that four of the initial eigenvalues are important because they have one or more units and explain in total 100.0% of the cumulative variance.

The obtained general coefficients of relative importance of influence on the main factors of investment support of agricultural sector development allow to determine the following indicators influencing the formation of the first main component: positive impact *E 1.8* (share of agricultural sector in GDP, %), which is 0.9371; *C.2.1* (number of employees, thousand persons) 0.9770; *Ek 3.2* (level of plowing of agricultural lands, %) 0.7521; *Ek 3.5* (coefficient of ecological stability, units) 0,3359; *Ek 3.6* (anthropogenic load factor, units) 0.1877; *I 4.5* (bank loans (including foreign) and other loans) 0.3091; *B 5.1* (agricultural lands, thousand hectares) 0.8814; *B 5.6* (capital intensity) 0.7890; *B 5.8* (profitability of production, %) 0.3826, the values of other indicators are negative: *E 1.6* (volume of exports of agricultural products thousand US dollars) -0.9291; *E 1.7* (volume of imports of agricultural products thousand US dollars) -0.9680; *C.2.2* (average salary in the industry) -0.9753; *C.2.3* (direct labor costs, UAH million) -0.9534; *B 5.2* (sown area, thousand hectares (agricultural crops)) -0.9168; *B 5.3* (value of fixed assets, million UAH) -0.9186. Thus, the first main component that affects the investment support of the agricultural sector should be defined as "investment architecture".

The formation of the second main component is influenced by: *E.1.3* (current liquidity ratio) value is 0.7921; *E 1.5* (return on equity) 0.7113; *E 1.6* (volume of exports of agricultural products thousand US dollars) 0,2013; *Ek 3.2* (level of plowing of agricultural lands,%) 0,6572; *I 4.4* (own funds of enterprises and organizations) 0.1348; *I 4.6* (funds of domestic investment companies, funds, etc.) 0.4220; *B 5.6* (capital intensity) 0.6097; *B 5.7* (volume of production (gross output), thousand tons) 0.2272, however, taking into account the negative values of other indicators of factors influencing the investment support of the agricultural sector, namely: *Ek 3.5* (coefficient of environmental stability, units) -0.9174; *Ek 3.6* (anthropogenic load factor, units) -0.9298; *I 4.5* (bank loans (including foreign) and other loans) -0.9288; *B 5.8* (profitability of production, %) -0.8576, it seems appropriate to justify the second main component as "balancing the investment product".

The formation of the third main component determines the value of the following indicators: *E.1.1* (volume of sold products (plant. + goods) UAH million) 0.4708; *E 1.7* (volume of imports of agricultural products thousand US dollars) 0.2330; *C.2.2* (average salary in the industry) 0.2131; *C.2.3* (direct labor costs, UAH million) 0.2349; *I 4.1* (capital investment in agriculture, UAH million) 0.5484; *I 4.4* (own funds of enterprises and organizations) 0.6320; *I 4.6* (funds of domestic investment companies, funds, etc.) 0.3843; *I 4.7* (funds of foreign investors) 0.4057; *I 4.8* (other sources of funding) 0.9544; *B 5.1* (agricultural lands, thousand hectares) 0.2219; *B 5.2* (sown area, thousand hectares (agricultural crops) 0.3686; *B 5.3* (value of fixed assets, million UAH.) 0.3731; *B 5.7* (production volume (gross output), thousand tons) 0 , 5972; *B 5.8* (profitability of production, %) 0,2239, with negative values are: *Ek 3.1* (share of investment in protection and rational use of natural resources, %) -0,9638; *Ek 3.3* (volume of mineral fertilizers on 1 ha of sown area, tons. -0.8025; *E 1.4* (coefficient of financial stability) -0.8057, which allows to define this main component as "investment climate".

The fourth main component is formed under the influence of the following indicators: *E.1.3* (current liquidity ratio) 0.2044; *E 1.8* (share of agricultural sector in GDP, %) 0.1373; *C.2.4* (labor capital) 0.4503; *Ek 3.6* (anthropogenic load factor, units) 0.3027; *I 4.1* (capital investment in agriculture, UAH million) 0.7249; *I 4.2* (state budget funds, UAH million) 0.4930; *I 4.3* (local budget funds, UAH million) 0.7738; *I 4.4* (own

funds of enterprises and organizations) 0.7602; *I 4.6* (funds of domestic investment companies, funds, etc.) 0.3667; *B 5.1* (agricultural lands, thousand hectares) 0.2792; *B 5.8* (profitability of production,%) 0.2609 and negative values: *B 5.5* (return on assets) -0.5393, *B 5.7* (volume of production (gross output), thousand tons) -0.2802, *E 1.6* the volume of exports of agricultural products (thousand US dollars) -0.2855, which determine the fourth main component as "stimulating investment activity".

4. The results obtained

Thus, the formation of the first main component, defined as "investment architecture" can be represented as a linear relationship:

$$F_{InAr} = -0,9291E_{1.6} - 0,9680E_{1.7} + 0,9371E_{1.8} + 0,9770C_{2.1} - 0,9753C_{2.2} - \ldots$$
$$-0,9534C_{2.3} + 0,7521E\kappa_{3.2} + 0,3359E\kappa_{3.5} + 0,3091I_{4.5} + 0,8814B_{5.1} - \ldots \quad (4)$$
$$-0,9168B_{5.2} - 0,9186B_{5.3} + 0,7890B_{5.6} + 0,3826B_{5.8}$$

The formation of the second main component "balancing the investment product / balancing the investment product" has the following linear relationship:

$$F_{B.In\,\Pr} = 0,7921E_{1.3} + 0,711E_{1.5} + 0,6572E\kappa_{3.2} - 0,9298E\kappa_{3.6} + 0,1314I_{4.4} - \ldots$$
$$\ldots - 0,9298I_{4.5} + 0,4220I_{4.6} + 0,6097B_{5.6} + 0,2272B_{5.7} - 0,8576B_{5.8} \quad (5)$$

The linear dependence of the third main component "investment climate" is as follows:

$$F_{In.Cl} = 0,4708E_{1.1} - 0,8571E_{1.4} + 0,2330E_{1.7} + 0,2131C_{2.2} + 0,2349C_{2.3} - 0,9638E\kappa_{3.1} - \ldots$$
$$\ldots - 0,8025E\kappa_{3.3} + 0,5484I_{4.1} + 0,3843I_{4.6} + 0,4057I_{4.7} + 0,9544I_{4.8} + 0,2219B_{5.1} + \ldots \quad (6)$$
$$\ldots + 0,3686B_{5.2} + 0,3731B_{5.3} + 0,5972B_{5.7} + 0,2239B_{5.8}$$

The formation of the fourth main component, defined as "stimulating investment activity" is presented in the form of the following linear relationship:

$$F_{Ct/In.Ac} = 0,2044E_{1.3} - 0,2855E_{1.6} + 0,1373E_{1.8} + 0,4503C_{2.4} + 0,3027E\kappa_{3.6} + 0,7249I_{4.1} + \ldots$$
$$\ldots + 0,4930I_{4.2} + 0,7738I_{4.3} + 0,7602I_{4.4} + 0,3667I_{4.6} + 0,3667I_{4.6} + 0,2792B_{5.1} - 0,5393B_{5.5} - \ldots \quad (7)$$
$$\ldots - 0,2802B_{5.7} + 0,2609B_{5.8}$$

The obtained results allow to build a system of linear dependences of the influence of certain main components *(Fn)* on the investment support of the agricultural sector *Z* in the *i-th* period, which will be as follows:

$$\begin{cases} Z_{2017} = 5,651F_1 + 3,073F_2 + 0,871F_3 + 0,03F_4; \\ Z_{2018} = 2,401F_1 - 4,823F_2 + 0,591F_3 - 0,561F_4; \\ Z_{2019} = -1,537F_1 + 0,771F_2 - 4,233F_3 - 1,237F_4 \\ Z_{2020} = -2,119F_1 - 0,129F_2 - 0,294F_3 + 3,079F_4 \\ Z_{2021} = -4,396F_1 + 1,109F_2 + 3,065F_3 - 1,314F_4 \end{cases} \quad (8)$$

The principal components method allowed to obtain a combined and reduced amount of output information, which includes the main component of indicators that simulate 100% of the data, while the noise remaining after the projection leaves a percentage of the original data is absent. Based on the interpretation of the main factors, the main components that affect the overall result of investment support for the development of the agricultural sector, in particular, "investment architecture", "balancing investment product", "investment climate", "stimulating investment activity".

5. Conclusions

Using the method of the main components allowed to identify four main areas of investment efficiency of the agricultural sector, including: "investment architecture", "balancing the investment product", "investment climate", "stimulating investment activity". In accordance with the proposed directions of improving the investment efficiency of the agricultural sector, the strategic priorities for the development of investment support of agricultural enterprises are identified, including: active activity in the investment market, commercialization and

support of market innovations, strengthening the information and analytical support of investment activities, the implementation of investment incentives for intellectual and creative activities of employees, increasing the level of staffing of investment activities, increasing the level of investment attractiveness of enterprises, investing capital in new approaches to trade, logistics and warehousing, investing in modern technical means of managing trade and technological innovations, investing in the creation and introduction of product innovations, increasing market share and forming internal investment funds, strengthening cooperation with entities external financial sector investment environment. The use of the principal component method has reduced the amount of source information that includes the main component of indicators that simulate 100% of the data, so that the noise left after the projection leaves a percentage of the original data is absent. The obtained general coefficients of relative importance of the impact on the main factors of investment support for the development of the agricultural sector allowed to determine the indicators that affect the formation of certain components, which allowed to present their impact in the form of linear dependence. The practical significance of the results is short- and medium-term, the success of the new system of investment support for agricultural development will combine infrastructure for investment and the formation of growth points that are attractive to investors and will eliminate inhibitions of investor-Ukrainian companies. The new model of investment support for the development of the agricultural sector will have the above components and will provide a rationale for choosing priority areas of investment, investment sources, investor selection, identifying investment instruments, forecasting investment for the new period with analysis of the previous. The expediency of introducing an effective system of investment support for the development of the agricultural sector is substantiated.

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CRIMINAL LIABILITY FOR SMUGGLING OF GOODS: UKRAINIAN PROSPECTS AND FOREIGN EXPERIENCE

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Abstract. *The purpose* of this article is to determine the prospects and economic consequences of the introduction of criminal liability for violation of customs regulations and to study foreign experience in this matter. The closer Ukrainian legislation is to the legislation of neighboring countries in the customs sphere, the more effective the fight against cross-border crime will be. The aim of this research is to compare the attitude to smuggling of goods in different countries and to reveal the future effect of criminal liability for smuggling of goods. *Research methodology.* In this paper a theoretical research method was used. We were studying published academic journals, legislation and databases. Correlation analysis method was used to determine the strength of the relationship between the smuggling liability and budget revenues. Also we used the results of the questionnaire between the professional exporters and importers. The *result* of this study is the conclusion that granting smuggling the status of a criminal offense will give more opportunities for Ukrainian law enforcement agencies to more thoroughly investigate this type of crime, will give more opportunities for international cooperation and cooperation in combating cross-border crimes. *Practical implications* of launching the criminal liability for smuggling of goods will give our country the chance to widen the borders of smuggling investigation, to fulfill the state budget with increasing customs revenues and to prevent dishonest enterprisers from smuggling of goods instead of goods' pure declaring. *Value/originality.* After the beginning of Russian aggression against Ukraine, the State Budget of Ukraine stopped receiving customs revenues because of international trade blocking. Still Ukraine as a state must think of renovation of its economy and trade, that's why customs regulations and violation of customs rules are still very important for fiscal policy of the country. Researching of criminal liability for violation of customs rules is not the new theme, but making comparison to European legislation and the US experience contributes to the developing of Ukraine national research school of customs affairs with the relevant data, examples of customs regulations and prospects for the national economy.

Key words: smuggling, criminal liability, criminalization, goods, foreign experience, violation of customs rules, sanctioning systems.

JEL Classification: G28, H26, H71, H83, K14, K34

1. Intoduction

Today, there are many discussions in political and scientific circles on the need to criminalize commodity smuggling in Ukraine. Proponents of such criminalization cite examples of advanced world economies. Opponents cite as an example the experience that Ukraine already had before 2012, when in the previous Customs Code of Ukraine, smuggling of goods was already the subject of criminal liability and was abolished due to the humanization of criminal liability. Today, the issue of combating commodity "smuggling" is identified by the President of Ukraine as a priority. This is evidenced by the sanctions imposed by the National Security and Defense Council against the "top" smugglers of the country, and the bill introduced by the President of Ukraine for consideration by the Verkhovna Rada of Ukraine. However, in addition to the political aspect of this issue, it is important to consider the economic effect that is expected to be obtained after the introduction of criminal liability for smuggling goods. The study of foreign experience, in particular, the experience of the European Union, which Ukraine seeks to join, should answer the question: does Ukraine choose the

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right path in the fight against violations of customs rules?

The literature review shows that many authors and scientists have studied the question of smuggling in different countries. Previous research showed that the problem of smuggling can not be the inner problem of the country, but this is the question of an international liability. A number of questions regarding the procedure of goods' smuggling investigation in criminal cases in Ukraine remain to be addressed. Although studies have been conducted by many authors, this problem is still insufficiently explored. As far as we know, no previous research has investigated studying the issue of today's bill on the criminalization of commodity smuggling in Ukraine. In order to rectify the problem of the shadow economy, the government is trying to introduce tougher methods to combat economic offenses. We will review the main approaches to solve this problem. The contributions made here have wide applicability for the future public administration in the sphere of customs affairs.

A challenging problem which arises in this domain is to establish a fair and effective measure of liability for violations of customs regulations, which will reduce the number of such violations.

2. Prospects for criminalization of smuggling of goods in Ukraine

Since 2012, movement of goods across the Ukrainian customs border without fulfilling customs declaration or giving wrongful data about the quality or quantity of goods is not smuggling and is not considered a crime. The current version of Article 201 of the Criminal Code of Ukraine provides for criminal liability only for movement with violation of current legislation of cultural property, poisonous, weapons, ammunition. Illegal movement of other goods specified in this article, except for narcotic substances (Article 305 of the Criminal Code of Ukraine), and exports of timber or lumber from Ukraine (Article 201-1 of the Criminal Code of Ukraine), today is not smuggling. In accordance with Article 2 of the Code of Ukraine on Administrative Offenses, issues of administrative liability for violation of customs rules are regulated by the Customs Code of Ukraine (Official website of the Verkhovna Rada of Ukraine, 2021).

Section XVIII "Violation of customs rules and liability for them" of the Customs Code of Ukraine provides that "for non-declaration of goods, commercial vehicles" (Article 472), "movement or actions aimed at moving goods, commercial vehicles across the customs border of Ukraine out of customs control" (Article 482), "movement or actions aimed at moving goods across the customs border of Ukraine with concealment from customs control" (Article 483), there is "liability in the form of a fine of 100 percent of the value of goods (vehicles) with their confiscation" (Customs Code of Ukraine, 2012).

However, this does not provide a proper preventive function and does not eliminate the desire of individuals to engage in further illegal activities and, ultimately, negatively affects the filling of the budget and thus narrows the state's ability to adequately fund the needs of both the state and the individual. Thus, based on the results of organizational and practical measures aimed at detecting and preventing the facts of illegal movement of goods across Ukrainian border, in 2019 on the basis of these offenses by customs officials against officials of enterprises made 1,105 protocols, 6 billion hryvnia. During 2020 – 1234 protocols on violations of customs rules in the amount of 1.96 billion hryvnias. At the same time, in 2019, 984 cases of this category worth 348.22 million hryvnias were sent to the courts, based on the results of which the courts decided to impose a fine in 788 cases (80%) amounting to 40.46 million hryvnias (11.6%). and confiscation was applied in 765 cases (77.7%) in the amount of UAH 39.56 million (11.4%). Based on the results of consideration of 126 cases (12.8%) in the amount of UAH 142.96 million (41%), the courts decided to close the cases, mostly on the grounds of lack of corpus delicti, including failure to prove certain elements of the corpus delicti (Official website of the Verkhovna Rada of Ukraine, 2021).

Thus, in the framework of administrative proceedings in accordance with Ukrainian customs legislation, given that the courts close cases with a significant value of the offenses, customs authorities do not have sufficient powers and are unable to take all necessary measures to document and proving the circumstances of the offense, which further makes it impossible to bring the perpetrators to justice. As noted in the explanation to the bill on criminalization of smuggling in Ukraine, the lack of criminal liability for illegal goods' crossing Ukrainian customs border

(including excisable) out of customs control, as well as for false declaration of goods contributes to sector of the shadow economy, promotes among entrepreneurs the use of illegal means and methods in doing business. In addition, criminal proceeding means much longer terms of pre-trial investigation than the terms of administrative proceedings, which will ensure the quality of evidence collection.

At the same time, this article proposes to release a person who has committed acts that led to the illegal reduction or exemption from payment of customs duties in significant, large and especially large amounts from criminal liability, if such person has paid double the amount of unpaid customs payment.

To summarize given above, as well as the fact that the application of administrative sanctions under the Customs Code of Ukraine does not deter persons from further illegal behavior, it is proposed to establish criminal liability for smuggling goods, excisable goods (except electricity) and for false declaration of goods.

The need to introduce criminal liability in Ukraine for smuggling of goods and excisable goods, as well as for tax evasion is constantly emphasized by representatives of the European Union Advisory Mission to Ukraine (EUAM), EUBAM Mission and other international institutions.

According to the results of the fifth wave of the annual survey of Ukrainian exporters and importers:

– more than 50% of respondents support the criminalization of smuggling of commercial goods, but without imprisonment;

– 26% believe that criminal liability with imprisonment should be introduced for smuggling;

– only 15% do not support the criminalization of smuggling.

To the question: in which cases should smuggling be criminalized?

– more than half of the respondents (who support the criminalization of smuggling) answered that criminal liability should be introduced for the import of all goods with violations;

– every eighth respondent believes that smuggling should be criminalized in large volumes and as much – in large volumes + excisable goods.

The study was conducted by the Institute for Economic Research and Policy Consulting in the framework of the project Support to the Public Initiative for Fair and Transparent Customs with the financial support of the European Union, the Renaissance Foundation and Atlas Network (Research of the Institute for Economic Research and Policy Consulting, 2020).

3. European experience in criminalizing smuggling

The European Union´s customs legislation is harmonised, but the enforcement, including supervision, control, investigation, prosecution and application of customs sanctions remains in the hands of Member States. As interpretation of the customs rules varies between Member States and the practical application differs based upon historicallyndeveloped national principles, habits and local guidelines, customs remains significantly fragmented along national borders, which may create additional costs for economic operators and consumers. Sanctions for customs infringements currently remain entirely a non-harmonised national matter. These sanctioning systems are based upon national legislation, national policies and legal culture with respect to controls, prosecution and sanctions. Most Member States have a legal system that provides for both criminal and non-criminal proceedings and sanctions. The other Member States have a legal system that only provides for criminal sanctions and proceedings for customs infringements. Furthermore, there is a large diversity in the types of sanctions that are applied by the individual Member States (Analysis and effects of the different Member States' customs sanctioning systems, 2016).

In cases where the likelihood that the violation of the economic operator will be discovered is 100% or close to 100%, the obligation to pay legal interest on the unpaid duties in addition to the unpaid import duties may already be a sufficient deterrent for motivating economic operators to comply with customs law. However, such a 100% detection likelihood is not generally the case in the European Union. Member States have therefore implemented various instruments to enforce economic operators´ compliance with customs law. These instruments for enforcing compliance with customs regulations are required under the current customs control system for safeguarding the financial interests of both the EU and the Member States and the market surveillance function of the customs authorities (Analysis and

effects of the different Member States' customs sanctioning systems, 2016).

EU Customs Code Regulation (EU) No 952/2013 stipulates that every State – the member of Union must provide sanctions for customs' legislation violation. These sanctions must be effective. Where administrative penalties are applied, they may take, inter alia, one or both of the following forms:
(a) a pecuniary charge by the customs authorities, including, where appropriate, a settlement applied in place of and in lieu of a criminal penalty;
(b) the revocation, suspension or amendment of any authorisation held by the person concerned (Union Customs Code, 2013).

In its 2016 analysis of the sanctioning systems of different Member States for customs offenses, the European Parliament revealed that EU States were encouraged distinguishing between criminal and administrative liability for customs offenses. It is recommended to leave criminal liability only for the sphere of illegal trade (goods, the circulation of which is prohibited), introducing only administrative liability for other offenses.

European experience in criminalizing smuggling shows that in a number of developed countries with stable strong economies, the emphasis is on the use of economic incentives to combat smuggling, given the high level of law-abiding businesses and citizens. At the same time, among the levers of influence there is criminal liability for smuggling goods, including excisable, in particular in some European Union countries (Italy, Republic of Lithuania, Republic of Poland, Romania, Slovak Republic, Kingdom of Sweden, Federal Republic of Germany, Hungary, etc.) severe criminal liability for smuggling.

4. US criminalization experience

US initiated trend towards criminalization that is influencing other countries. Effect has been to cause US Customs to refer more cases to the US Department of Justice for criminal investigation and prosecution.

Criminalization of import violation expands ability to conduct broad investigations, such as:
– more targets (foreign-based producers and traders; consignees);
– more theories of culpability and liability (including broad conspiracy statutes; obstruction of justice);
– significant prison terms and/or fines.

Failure to comply results in penalty proceeding under 19 U.S.C. §1592 – Elements of 1592 Claim:
– by fraud (i.e., voluntarily and intentionally), gross negligence (i.e., with actual knowledge or wanton disregard), or negligence (i.e., fails to exercise reasonable care);
– enters or introduces (or attempts to enter or introduce) any merchandise into the commerce of the US;
– by means of any document or electronically transmitted data or information, written or oral statement, or act which is material and false, or any omission;
– which is material.

Corporations can criminally liable based on respondent superior:
– certain criminal conduct by employee acting within scope of employment;
– pressure on corporation to monitor activities of employee;
– complicates investigation because of potential tension between corporation and employee (Brown, 2011).

Upon receipt of penalty notices, importers are generally given sixty days to file a written petition responding to the allegations and presenting additional information that may be considered mitigating factors. In most cases, upon request, CBP will agree to grant extensions of time in which to submit the petitions. Customs law cases are not frequently taken up by the Supreme Court. If the Supreme Court chooses not to hear the case, the import community will have to adopt a "wait-and-see" approach as to whether CBP will begin targeting individuals for their companies' customs violations. As the old cliché goes, the best offense is a good defense. Prudent importers should solidify their compliance programs, train their employees, establish robust auditing mechanisms, and erect swift escalation measures so that the appropriate corrective actions can be taken when and if issues arise (Miller Proctor, 2015).

5. Practical aspects of criminal proceedings in EU cases of smuggling

In the vast majority of EU countries, customs are endowed with law enforcement tools. Customs has primary responsibility for controlling international trade in and taking measures to protect the EU from unfair and illegal trade. Customs is vested with broad powers – it can

conduct any customs checks it deems necessary – in particular, based on a risk analysis. It is not surprising that the Customs Code, which establishes general procedures and procedures for goods entering or leaving the EU customs rules, approves the institution of customs, the main task of which is duties or simply control of goods at the border, but endows customs with all kinds of tools to control the safety of goods and assigns it the role the so-called "cargo police". In different EU countries, the limit on the value of goods, from which criminal liability arises, differs significantly. For example, in Slovakia this figure does not reach 300 euros, while in Portugal the amount is over 50 thousand. In general, border controls prevent less than half of all illegal traffic. One of the reasons is that in most cases the "payback" of smuggling is quite high: it is no secret that, for example, tobacco products in Lithuania are 3-4 times more expensive than in Ukraine, and in Great Britain – 10 times.

Administrative responsibility focuses on a quick process against the offender, but not on the identification of the entire group, including the organizers. The criminal process, in contrast to the administrative one, makes it possible to conduct work and development in relation to the organizers. It takes much more time, but a well-planned operation, a comprehensive investigation makes it possible to detain not a single consignment of contraband, but the entire group, including the organizers. If the service does not have such tools, deep development is virtually impossible. It should be borne in mind that the criminal process, in comparison with the administrative one, is much more complicated both in time and in the assessment of evidence.

Effective criminal investigation depends on the well-functioning and cooperation of all services, including the prosecutor's office and the courts. Work experience and sufficient funding also play a very important role – the service receives the proper competencies not after months of practice and only with qualified personnel and technical support. Customs services of the absolute majority of EU countries are endowed with law enforcement tools, that is, they can conduct full-fledged investigations in the field of customs offenses. Even those countries that do not have problematic external borders or ports see the institution of customs as a full-fledged player in the field of law enforcement. Customs services have relevant competencies not only at the national but also at the interstate level. This is very important in our case, when the specificity is the movement of goods between countries. Although the EU Customs Code does not give customs services the right to conduct operational and criminal procedural actions, and law enforcement is mainly regulated by national legal acts, international agreements and conventions set out in some detail the rules for conducting law enforcement in the field of international cooperation.

The most commonly used tool for the exchange of urgent information between customs services is the Naples Convention. It allows the exchange and provision of information without prior agreement, surveillance (surveillance), controlled deliveries between EU countries, provides for special actions. In particular, it is possible to carry out pursuit, surveillance, surveillance in another state (of course, with a restriction on the distance from the border), and this information will be considered obtained by legal means. It should be noted that the legal systems of the EU countries are only partially unified, and this can complicate the planning of international operations. When planning them, you should always take into account that the rules of other countries differ in the qualification of offenses, authorization of various kinds of law enforcement methods, in the use of the information received, etc. However, the use of international law enforcement institutions (Europol, Olaf, Eurojust and a new institution, which began to work only this year, the European Prosecutor's Office) saves time and allows you to foresee possible legal nuances before the operation begins. The European Prosecutor's Office is empowered with the tools to conduct independent investigations with representatives of law enforcement agencies of the EU countries in relation to international corruption, fraud and crimes that cause great damage to the EU budget.

Thus, customs in the EU countries are generally incorporated into the law enforcement system and are endowed with appropriate legal instruments. For the effective fight against offenses between countries, it is important both the possibility of information exchange, and a similar qualification of offenses in the EU countries (Sarapinas, 2020).

6. Conclusions

Research on liability for smuggling has a long tradition. Though beforehand smuggling used to be a crime inside one state, today this problem is of international level. Most of the research in this field is aimed at solving this problem. Recent theoretical developments have revealed that smuggling is complex phenomenon, that needs to use all instruments inside and outside the country to determine all officials and companies, included in this process. This seems to be a common problem in definition the level of responsibility for violation of customs regulations. The scope of this study can be both a theoretical study of this problem and the practical application of the results in further management decisions.

Implementation of the draft law for criminalization of smuggling in Ukraine will create conditions for increasing revenues to the State Budget of Ukraine from the application of fines for smuggling goods, excisable goods. The introduction of criminal liability for smuggling goods and excisable goods, as well as for inaccurate declaration of goods will reduce the number of violations of thecustoms rules, will help stop illegal movement of goods, which will increase revenues to the State Budget of Ukraine. Nevertheless, Ukrainian authorities should count on the fact, that law enforcement system of Ukraine may not be able to provide investigation in this field of criminal law.

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SPECIFICITY OF ORGANIC PRODUCTION IN UKRAINE AND ITS INFLUENCE ON THE FORMATION OF RELATED COSTS

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Abstract. The rapid development of organic production contributes to the improvement of the existing accounting system, which should reflect all the necessary information for management decisions. The purpose of the scientific publication is to study the organizational and technological features of organic production and their impact on the formation of related costs to identify problematic accounting aspects in the context of European integration. The research of opinions of modern scientists on actual questions of the account of manufacture of organic products is analyzed. The current state of development of the European consumer market of organic production is considered, it is noted that the active development of organic production in Ukraine contributes to its long-term success in the organic market of Europe. It is established that organic agricultural production in Ukraine is one of the main directions of development of the agricultural sector of the economy, the article identifies priority areas for achieving strategic goals of the state. The objects of accounting for the costs of organic production enterprises are revealed, their main characteristics are indicated. It is established that the system of accounting for the costs of organic enterprises should be uniform, so it must take into account the standards of organic production, production technology, the requirements of current legislation on production, circulation and labeling of organic products. The study analyzes that in recent decades, completely new methods of cost accounting and costing systems for organic products, which can be divided into three groups. The components of accounting and analytical support for information support and management of costs for the production of organic products are detailed. The specific features that affect the organization of accounting support for organic production are outlined, the main aspects are indicated. The article describes the structured methods of the concept of cost management through appropriate budget planning and regulatory cost accounting, the methods presented include basic principles. The need to reflect in the indicators of financial statements accounting data on the costs of organic production has been confirmed. According to the results of the study, the need to develop methodological tools for accounting for organic production was determined. With the development of organic production, an accounting system should be properly organized, which will help provide users with timely and accurate information on the production, storage and sale of organic agricultural products. It is established that the correct organization of accounting for production costs, in an organic enterprise, should ensure the efficiency and reliability of the entire management system, in particular to enable prompt receipt of true and complete accounting information about costs. The objects of accounting for the costs of organic production enterprises have been identified, which will allow to organize separate accounting of costs for the production of organic products, inorganic products and products of the transition period. It was found that the differentiation of such costs will help control the quality of products and allow you to adapt financial information to the needs of external and internal users.

Key words: accounting, organic products, costs, environmental quality, organic production, management.

JEL Classification: O13, M41, Q17

1. Introduction

The development of organic production is one of the priorities of the agri-food sector of Ukraine and the state agricultural policy. In recent years, there has been a positive trend in increasing the area of agricultural land that occupies organic production.

The strategy of organic production is to completely abandon the use of preservatives, chemical fertilizers, pesticides, pesticides, etc.,

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and at all stages of production (cultivation, processing, storage) use methods, principles and rules prescribed by the Law of Ukraine "On Basic Principles and Requirements organic production, circulation and labeling of organic products "in order to obtain environmentally friendly products, as well as the restoration and conservation of natural resources and the environment. Organic agriculture is one of the key levers in solving global environmental, economic and social problems and contributes to the goals of sustainable development. There is a growing interest of external and internal users in obtaining up-to-date information on the state of development of organic production, related costs and the cost of organic products. The production of organic products has certain organizational and technological features in relation to the display of accounting information, modern scientists are actively conducting research on the formation of related costs.

Zolotareva N. and Nizova L. (2019) note that proper accounting for the production of organic crop products will increase the company's profits. According to the authors, it is necessary to allocate specific items of costs for the cultivation of organic matter and create separate analytical accounts for organic products of the production process, which are prescribed in the work plan of accounts.

Ishchenko Ya. (2019) notes that in determining the items of expenditure it is necessary not only to competently form their structure, but also to give comprehensive characteristics of the composition of each article. Features of organic production necessitate increased control over the use of seeds, planting material, plant protection products, fertilizers and other components of the production process. Therefore, the nomenclature of cost items of the crop industry in terms of organic production should take into account these features. Accounting for such items of expenditure as seeds and planting material, fertilizers, plant protection products, raw materials and materials should be carried out in terms of substances and materials allowed by the technology for organic production.

The work of Kaletnik G. and Lutkovska S. (2021) is devoted to the study of the problems of organic activity of the agroeconomic sector of Ukraine. The authors propose various forms of public-private partnership to address urgent environmental and economic security issues. One of such directions is the state support of organic agricultural production.

Syroid N. (2018) discloses the objects of internal control of operations on accounting for the costs of environmental quality of products, the subjects of control and their functions in the control system, and the information base for its implementation. Emphasizes that the correct organization of the process of internal control of costs for environmental quality of products will contribute to clear documentation of transactions, timely and complete registration of accounting data in the registers, the true reflection of information in management and financial reporting.

In my own research revealed the features of the primary accounting of costs for the production of organic products. The proposal to approve updated forms of primary documents at the level of the relevant ministry, taking into account the norms of modern organic farming and organic production and the information requirements of its users and consumers of organic products. (Podolyanchuk, Markevych, 2021)

The research conducted by modern scientists is undoubtedly important, but the relevance of the topic is due to a number of issues related to the specifics of organic production and the formation of the corresponding costs.

The purpose of the scientific publication is to study the organizational and technological features of organic production and their impact on the formation of related costs to identify problematic aspects in the context of European integration.

2. Status and prospects of development of the market of organic products in Ukraine

Studying the peculiarities of the production of organic products and the formation of related costs, it is worth noting the current state of development of organic production and the organic market in Ukraine.

According to research (Ishchenko, 2021) the accumulated world experience in the formation of integrated information on environmental, economic and social processes should be used in domestic practice to develop a national system of integrated environmental and economic accounting. At the same time, under the formation of indicators at the macro level, it is necessary

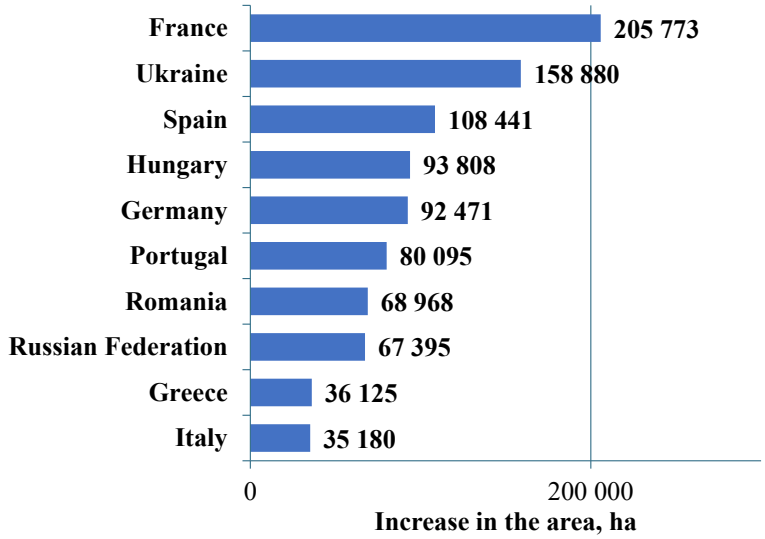

Figure 1. Leading countries with the highest growth of organic agricultural land in 2019, ha

Source: Organic World. Presentations "World of Organic Agriculture 2021". Part 3: Organic Agriculture in the Regions, 2021

to adapt the system of primary monitoring and consolidated accounting indicators.

Recently, there has been a positive global trend in all key indicators of organic production. Ukraine is not one of the leading countries either in terms of area or production of organic products, but in 2019 it took second place among European countries in terms of growth rates of areas involved in organic production (Figure 1). According to the growth of the market of organic products in 2019 (Ishchenko, 2021).

The active development of organic production in Ukraine contributes to the long-term success of the European organic market. In 2019, Ukraine entered the top 10 European countries and took eighth place (Figure 2).

According to her, the priority ways to achieve the strategic goals of the state for the development of the agro-industrial sector are:

– implementation of programs to support producers of organic products and implementation of measures aimed at raising awareness of producers about the benefits of organic production;

– development of programs of financial and advisory support for producers of organic products;

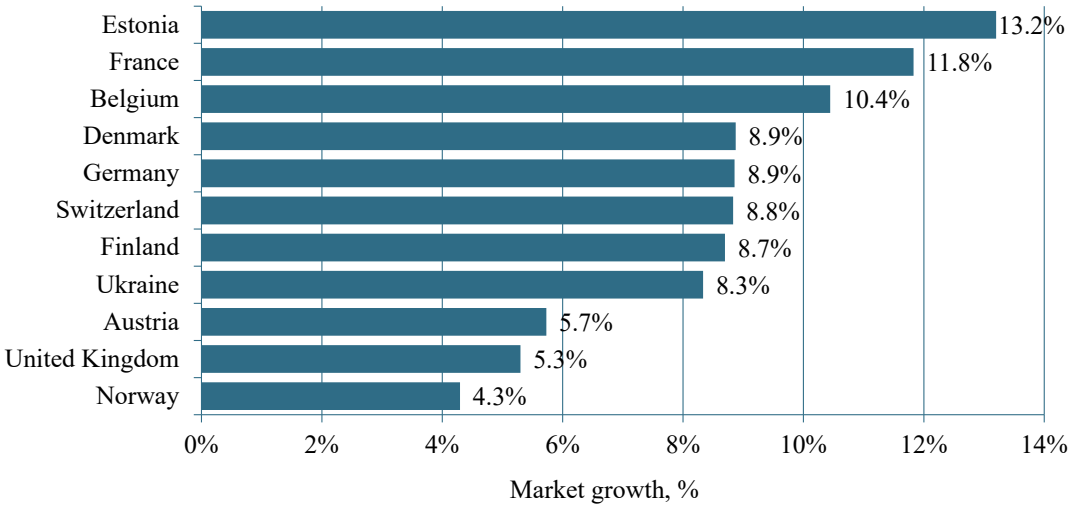

Figure 2. European countries with the highest growth of the organic market in 2018–2019

Source: Organic World. Presentations "World of Organic Agriculture 2021". Part 3: Organic Agriculture in the Regions, 2021

– attracting more producers to organic production by improving government regulation in this area;
– ensuring the development of sustainable production, where the task of the government is to promote sustainable agricultural production, protect the environment and animals, spread the use of organic production and biotechnology, "climate-friendly" agriculture and forestry with reduced greenhouse gas emissions and adaptation to climate change, sustainable management of natural resources and conservation and enhancement of biodiversity.

Summarizing the data of the analysis, we can note a positive trend in the development of the Ukrainian organic market. Ukraine is actively increasing the growth rate of areas involved in organic production. State support for the development of organics will help increase the share of Ukrainian organic products in the European market, which in turn will lead to increased production capacity.

3. The main aspects of the formation of costs of organic production

The accounting system is designed to ensure the proper functioning of organic production, to reflect accounting information in the reports of enterprises and to provide confidence to consumers in products and raw materials positioned as organic. Proper documentation of all organic production processes will facilitate the display of accounting data. The lack of developed standard documents for cost accounting and yield of organic products necessitates the independent formation of a package of primary documents by business entities. To do this, the standards of organic production, production technology, the requirements of current legislation on the production, circulation and labeling of organic products must be taken into account.

We share the opinion of Ya. Ishchenko, the scientist notes in his works that the objects of cost accounting in agricultural production are traditionally crops (groups of crops), species and groups of animals. Given the specifics of the technological processes of organic production operators, building a system of cost accounting facilities for such entities will be somewhat more difficult. It is worth considering the objects of cost accounting of organic production enterprises (Figure 3).

The system of accounting for the costs of organic enterprises should be uniform. In recent decades, completely new methods of cost accounting and costing systems for organic products have emerged, which can be divided into three groups.

The first group is production-oriented. The accounting system is formed on the basis of a certain concept of production and management, which is closely related to production processes.

The second group of accounting-oriented methods. This group considers an organic enterprise as a set of interdependent activities (functions, operations), in the process of which different types of resources are consumed: materials, labor, equipment.

The last group of methods defines a clearly structured and detailed concept of cost management through appropriate budget planning and cost accounting. The presented methods combine the following basic principles:
– clear delineation of fixed and variable costs of organic production in each individual cost center;
– cost centers are the main subjects of planning, cost accounting and cost of organic products.

The proposed arrangement of accents will allow the management of enterprises to manage the centers of responsibility and monitor their productivity.

In modern conditions, an integral prerequisite for the use of advanced methods of cost accounting of organic enterprises is computerization, which can significantly speed up the speed of feedback, ie it is a real-time reporting system. It expands the possibilities of processing the information received in the accounting system for the purpose of forecasting, effective cost control, management decisions, comprehensive assessment and cost analysis. In the absence of an adequate level of technical support, it is difficult to obtain the necessary practical results from the application of the latest cost accounting methods.

Skrypnyk M. and Hryhorevska O. (2020) note that the study of the peculiarities of agricultural enterprises made it possible to outline certain specific features that will affect the organization of accounting and analytical support of organic production, which should be taken into account:
– strict compliance with the technology of the production process and compliance with the norms of production costs of organic products;

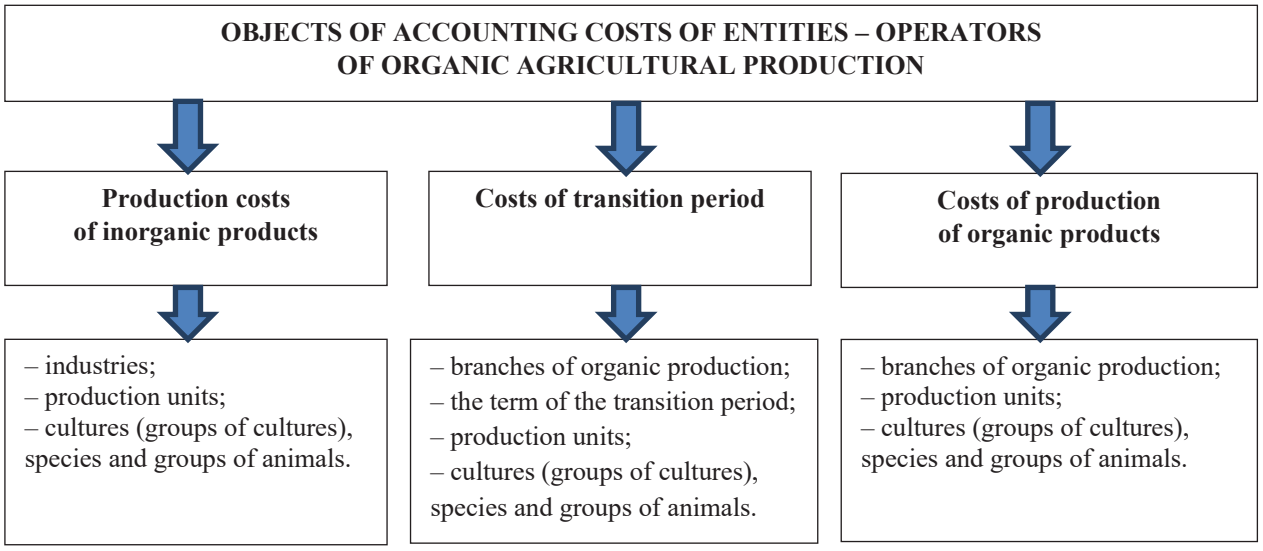

Figure 3. System of objects of accounting of expenses of organic production

Source: (Ishchenko, 2021)

– the need to clarify the production plan in view of the demand for manufactured organic products and order volumes;
– short shelf life of organic products;
– taking into account the traditions of consumption of a product in the country;
– high competition in the segment of organic production;
– dependence of the agricultural enterprise on suppliers and quality of raw materials used for production needs;
– development of auxiliary and service industries (logistics and marketing services, production of packaging and containers);
– the complexity of conducting logistics activities over long distances due to the uneven distribution of production capacity and short shelf life;
– the possibility of using organic agricultural receipts during purchase / supply / payment operations for manufactured organic products / organic raw materials, which minimizes risks and reduces potential costs.

Based on the study, it should be noted that the correct organization of cost accounting in an organic enterprise should ensure the efficiency and reliability of the entire management system, including the ability to quickly obtain true and complete accounting information on production costs, timely make the necessary management decisions to ensure rational use of the necessary production resources. This will significantly improve the information support of the control function of the management of organic production and provide an opportunity to reasonably calculate the cost of organic products.

4. Conclusions

The conducted research allowed to actualize the importance of scientific research of organizational and technological features of organic production and to determine their influence on the formation of related costs. The active development of organic production is the reason for improving the methods of accounting, which will help to take into account all the costs incurred and determine the cost of organic products. Given the specifics of the technological processes of operators of organic production, it was found that the construction of a system of cost accounting of such entities will be somewhat more complex and should take into account all the features of its production.

The objects of accounting for the costs of organic production enterprises mentioned in the article will allow to organize separate accounting of costs for the production of organic products, inorganic products and products of the transition period. Differentiation of such costs will facilitate product quality control and allow to adapt financial information to the needs of external and internal users. Presentation in the study of a group of cost accounting methods and costing system for organic products will allow the management

of enterprises to manage the centers of responsibility and monitor their productivity.

We believe that further areas of research on this issue are the development of methods for accounting and allocation of indirect production costs and the reflection of relevant information in financial, management and statistical reporting.

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EUROPEAN REMIT REGULATION AS THE LATEST DETERMINANT OF CORPORATE RISK MANAGEMENT STRATEGIES IN ENERGY SECTOR

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Abstract. *The purpose* of the paper is to summarize and present the fundamental trends of the past few decades related to the financial crisis of 2008 and growing integration of European sovereign economies, including the integration of energy markets, that led to development of regulation of relationships and preventing manipulation in such markets. This regulation has become a powerful new determinant for the European multinational enterprises of the energy sector (MNE) when developing their own risk management strategies. *Methodology*. The analysis is based on the recent studies of the pan-European power exchange company Nord Pool Group, international organization Energy Community and relevant regulations and recommendations of the European Parliament and of the Council and European Union Agency for the Cooperation of Energy Regulators. *Results* of the analysis showed the growing demand for transparency and stability in the European wholesale energy markets. This demand was reflected in the EU Regulation 1227/2011 on Wholesale Energy Market Integrity and Transparency (REMIT) that was adopted by the European Parliament and the Council of the EU in 2011. While REMIT Regulation, on one hand, provides reliable and equal conditions for MNE, on the other hand, it increases the risk and burden of REMIT compliance obligations for such MNE. The consequences of misconduct can potentially be serious – both high fines and personal liability of MNE employees. Today the European multinational enterprises of the energy sector must develop the respective risk management strategies to ensure effective governance of this type of risks. *Practical implications.* MNE participants of the EU energy market should develop efficient risk management strategies to comply with REMIT requirements, in addition to existing commitments on the transparency of the Third Package. The REMIT compliance risk management strategies will support MNE market participants in complying with rules and policies, creating a secure structure for employees of such enterprises and promoting fair and equal conditions for trade, trusting the energy market. Furthermore, proper REMIT compliance risk management strategy will help to avoid or minimize the risk of fines and other regulatory sanctions and potential civil lawsuits. It will also help to avoid or minimize the risk of reputation loss, such as negative media reviews or poor customer experience. *Value/originality*. The conducted analysis provides deep understanding of the main drivers of the European wholesale energy markets regulations that create a compelling determinant for the risk management strategies of multinational enterprises of the energy sector. Ukraine has committed itself to the Energy Community to implement the REMIT Regulation in its regulatory field, which increases the relevance of developing appropriate multinational enterprises risk management strategies within the country.

Key words: risk management strategies, multinational enterprises, regulation, REMIT, insider trading.

JEL Classification: G32, F23, G18, G14

1. Introduction

Over the last few decades, Europe's wholesale energy markets have become increasingly interconnected. Therefore, the abuse of the energy market in one country often affects not only wholesale prices for electricity and natural gas across national borders, but also retail prices for consumers and micro-enterprises. Hence, concern for the integrity of markets cannot be a matter for individual Member States alone. Strong cross-

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border market monitoring is important for the full functioning, interconnected and integrated internal energy market.

EU Regulation 1227/2011 on Wholesale Energy Market Integrity and Transparency, REMIT is an EU legal act adopted in 2011 with the aim of increasing transparency and ensuring stability in European wholesale energy markets (The European Parliament and of the Council, 2011). It was important for the European Parliament and the Council of the EU to ensure that Europe's multinational enterprises of the energy sector (MNE) and consumers can have confidence in the integrity of the electricity and gas markets, and that prices in wholesale energy markets reflect fair and competitive the interaction between supply and demand, and that one cannot make a profit from the market due to abuse. The aim of increasing the integrity and transparency of wholesale energy markets should be to promote open and fair competition in wholesale energy markets for the benefit of final energy consumers.

REMIT Regulation is based on four basic principles:

1. Transparency – obligation to disclose energy market data and information:
– public disclosure – obligation to disclose inside information;
– regulatory disclosure – submission of data to ACER and national regulators.
2. Integrity – prohibition of abuse in wholesale energy markets:
– prohibition of insider trade;
– prohibition of market manipulation.
3. Monitoring system developed for wholesale energy markets:
– registration of market participants;
– market monitoring by ACER and national regulators.
4. Cooperation at EU and national level.

While the REMIT Regulation, on one hand, provides reliable and equal conditions for MNE, on the other hand, it increases the risk and burden of REMIT compliance obligations for such MNE. The consequences of misconduct can potentially be serious – both high fines and personal liability of MNE employees.

The REMIT Regulation covers three main elements: the obligation to disclose insider information, the prohibition of market manipulation and the reporting of MNE trade data. The Regulation also empowers the EU Agency for the Cooperation of Energy Regulators (ACER) and national regulators to investigate and enforce energy markets in countries that have implemented the REMIT Regulation.

Ukraine has committed itself to the Energy Community to comply with Article 1 of Decision 2018/10 / MC-EnC, as well as Articles 6 and 89 of the Treaty by November 29, 2019 (Energy Community, 2021).

2. General information on remit compliance mode

According to section 5 of the ACER Guidelines (European Union Agency for the Cooperation of Energy Regulators, 2020), MNE participants of the EU energy market should develop a clear compliance regime for the disclosure of real-time or near-real-time insider information, as well as further REMIT requirements, in addition to existing commitments on the transparency of the Third Package. In addition to ACER's recommendations, the REMIT compliance regime will support MNE market participants in complying with rules and policies, creating a secure structure for employees of such enterprises and promoting fair and equal conditions for trade, trusting the energy market. Furthermore, proper REMIT compliance will help to avoid or minimize the risk of fines and other regulatory sanctions and potential civil lawsuits. It will also help avoid or minimize the risk of reputation loss, such as negative media reviews or poor customer experience.

Based on the above, each MNE market participant should develop a REMIT compliance regime specifically tailored to the MNE characteristics, where the specific risks faced by the market participant should be the basis for prioritizing compliance.

Ensuring compliance with the REMIT is a complex task that requires MNE to actively address and manage related risks, taking into account the nature, size and complexity of the MNE business, as well as the nature and range of wholesale energy products. This requires a strong REMIT compliance culture, adequate and clear policies and procedures, regular training of staff and proper documentation of the measures taken.

Although each MNE market participant must develop an individual REMIT compliance regime, ACER identifies its following components

(European Union Agency for the Cooperation of Energy Regulators, 2020):

1. Compliance with REMIT requirements, namely the obligation to register, disclose and report and prohibit market abuse.
2. Creation of corporate culture in accordance with the requirements of REMIT.
3. Defining roles and responsibilities in the internal structure of the MNE.
4. Identification / assessment of specific risks of REMIT compliance.
5. Description of specific actions to determine appropriate / inappropriate behavior.
6. Notification of rules and regulations to be followed:

– the concept of internal communication and training (raising employee awareness);
– external communications and reporting to ACER / national regulators;
– reporting processes: internal compliance reports, reports of violations, the status of current processes, etc.

7. Improvement of monitoring: internal control, audit, reporting lines for monitoring results; documenting processes and actions.

3. Technical features of REMIT

At the technical level of regulation, REMIT requires all EU electricity and gas market participants who make transactions and / or electronic platforms through which transactions are made to report to the RRM (Registered Reporting Mechanism). The role of the RRM is to provide a secure communication channel to meet market participants' reporting obligations and to standardize and simplify the reporting process (European Union Agency for the Cooperation of Energy Regulators, 2020).

Data on transactions submitted by market participants through RRM is recorded and then transmitted to ACER and its ARIS IT system (ACER REMIT information system). This surveillance system collects, stores, processes and analyzes the submitted data, automatically detecting anomalies, sending alerts and supporting investigations. As part of the development of the RRM reporting system, the REMIT Implementing Regulation (№ 1348/2014) was adopted in 2014, which obliges MNE market participants to also provide "fundamental data".

This is usually information on the capacity and use of facilities for the production, storage, consumption or transmission of electricity or natural gas, or on the capacity and use of liquefied natural gas (LNG) facilities, including planned or not-planned unavailability of these objects. Typically, fundamental data is reported by transmission system operators on behalf of market participants (Hritsyshyna, 2021).

REMIT has created a relatively reliable platform for cooperation between ACER and national regulators and has significantly increased the risk of fraud detection. If you compare ACER's annual and quarterly reports, the number of cases is constantly growing. As of 2019, there were more than 15 000 registered participants in EU energy markets. According to REMIT, EU energy market participants report annually on about 2,5 billion deals.

4. Remit compliance risk management

As noted in the analysis above, an important component of the individual REMIT compliance regime is effective MNE risk management, which should be based on the following principles (Nord Pool Group, 2020):

– REMIT-compliance function of the MNE must assess the areas of compliance-risk on a regular basis according to the following steps:
- identification of REMIT compliance zones inherent in MNE area of activity;
- identification of the main sources / areas of REMIT-compliance risk;
- identification of existing means of control (including internal);
- identification of key stakeholders for identified areas of REMIT-compliance risk to bring MNE business activity to REMIT requirements;

– MNE REMIT Compliance function can interview key MNE stakeholders for the following purposes:
- obtaining a description of the activities of MNE business unit, within which REMIT compliance risk may arise;
- preliminary structuring of the potential flow of internal and insider information;
- receiving additional comments on REMIT compliance risks from key stakeholders.

Risk assessment may be based on the impact of the potential incident and its likelihood, and may include existing controls. The approach to risk assessment should take into account the size and complexity of the MNE market participant, as well as the results of any previous monitoring

activities and the relevant conclusions of the REMIT-compliance function of the MNE.

When assessing the risks of REMIT compliance, the results can be divided by descriptions (e.g. low, medium, high or very high), colors or numbers. Each MNE market participant decides which level of risk is acceptable for each area / activity.

Risk assessment is a good starting point for identifying a REMIT compliance program that includes a REMIT compliance plan, as well as for ensuring that the right steps are taken to comply with REMIT compliance risk reduction requirements. In particular, high-risk areas should be considered and managed to maintain them at an acceptable level. It should be noted that different MNE market participants have different REMIT compliance risks, and that the risks and consequences may also differ between different MNE market participant activities.

The risk assessment should include an assessment of all types of market abuse, as well as the obligation to publish insider information.

5. Typology of market abuse in wholesale energy markets

The following types of market abuse are considered in accordance with the ACER Guidelines for the Application of Regulation (EU) № 1227/2011 of the European Parliament and of the Council of 25 October 2011 on the integrity and transparency of the wholesale energy market (European Union Agency for the Cooperation of Energy Regulators, 2021):

1. Insider trading, which affects the transparency of the market:

– *insider trading* – cases when an insider trades or tries to trade in wholesale energy products on the basis of internal (insider) information related to this wholesale energy product. A market participant in possession of insider information is also obliged to refrain from making any changes or selective revocation of the placed order ("non-interference approach") in order to comply with the ban on insider trading;

– *improper disclosure of insider information* – cases when the carrier of confidential (insider) information improperly discloses insider information to another person, unless such disclosure is made in the ordinary course of employment, professional activity or official duties;

– *recommendations based on insider information* – cases when the carrier of confidential (insider) information recommends or encourages, on the basis of inside information, another person to buy or dispose of wholesale energy products to which this information belongs;

2. Market manipulations (including attempts to manipulate the market) that affect market integrity:

– *false and misleading agreements* – trade or placing orders for trade that give or may give false signals or mislead about the demand, supply or price of wholesale energy products;

– *price positioning* – trade or placing orders for trade that provides or seeks to provide, to a person or persons acting in cooperation, the price of one or more wholesale energy products on an artificial level, unless the person who concluded the agreement or issued the trade order establishes that its reasons for doing so are legitimate and that this agreement or trade order is in line with accepted market practice in the wholesale energy market;

– *transactions using false techniques / misleading* – trade or placing orders for trade in which fictitious methods or any other form of deception are used;

– *dissemination of false or misleading information* – providing information that creates a false impression of a wholesale energy product or is misleading when a person doing so knows or should have known that the information is false or misleading.

6. Building an effective MNE strategy for managing market manipulation risks

According to the REMIT Regulation (The European Parliament and of the Council, 2011), market manipulation means the following:

1. Performing any transaction or issuing any order to trade in wholesale energy products that:

a) gives or may give false or misleading signals about the supply, demand or price of wholesale energy products;

b) provides or attempts to provide a person or persons cooperating with the price of one or more wholesale energy products on an artificial level, unless the person who entered into the transaction or issued the trade order establishes that his reasons are legitimate and that this the transaction or trade order is in line with accepted market practice in the relevant wholesale energy market;

c) uses or attempts to use a fictitious measure or any other form of deception that gives or may give false or misleading signals about the supply, demand or price of wholesale energy products.

2. Disseminating information through the media, including Internet, or in any other way that gives or may give false or misleading signals about the supply, demand or price of wholesale energy products, including rumors and false or misleading news, when a person who disseminates information, knew or should have known that the information was untrue or misleading.

The following measures are recommended to build an effective MNE strategy for managing market manipulation risks:

1. *General measures:*

– to ensure awareness among MNE employees about what behavior can be manipulative;
– mandatory trainings for traders, training on specific scenarios of market manipulation;
– risk assessment of market manipulation. The assessment of the risks of market manipulation should be based on all types of market manipulation specified in the ACER Guidelines for the Application of the REMIT Regulation. In addition, one should consider whether there are other types of manipulation.

2. *Measures to prevent market manipulation through orders and agreements:*

– traders should have clear authorities and instructions on how to trade with the risk of market manipulation in mind. Authorities must be approved on paper. It is recommended to record deviations from trade authorities;
– in the case of any investigations conducted by National Regulators or persons authorized to regulate agreements, it is important to have carefully established procedures for documenting trade authorities. In addition, traders themselves are encouraged to document their behavior in situations where they have either entered into atypical or exceptional transactions (high / low prices; profitable agreement to publish important information; trades outside the standard spread), or made atypical or exceptional profits / losses. Or if there have been other atypical or exceptional situations or market conditions that may be of interest to regulators. Such measures are important in order to be able to clarify the agreements and relevant circumstances, as well as to provide documentation in the case of both internal investigations of National Regulators;
– internal instructions and procedures on what a trader can and cannot do should be developed and communicated to all relevant employees. They must be dynamic and updated in the event of any regulatory changes inside and outside the market;
– standard trading error prevention procedures: these can be automatic signals / checks, manual checks or a combination of these;
– prohibition of cooperation, exchange of information with other market participants or discussion of pricing strategy with them;
– in terms of strategy building, it is considered common practice to assess how the proposed trading strategy will affect the market. In addition, MNE market participants need to assess whether a combination of different trading strategies can send erroneous or misleading signals to the market.

3. *Measures to prevent market manipulation by disseminating false or misleading information:*

– Policy on communication with mass media:
- only authorized persons can communicate with the media; the persons concerned must receive special training in the field of communication so that they do not disseminate false or misleading information;
- information must be correct and accurate (not rumors).

– Staff policy on information provided on social networks and other forums.

Typical reasons for market manipulation that require appropriate risk management measures include the following:

– deliberate manipulation to increase profits;
– unintentional or careless manipulations:
- ignorance of what is forbidden;
- technical or human errors;
- dissemination of insufficient or incorrect information.

7. Building an effective MNE insider risk management strategy

According to the REMIT Regulation (The European Parliament and of the Council, 2011), insider information means accurate information that has not been disclosed and relates, directly or indirectly, to one or more wholesale energy products and which, if disclosed, could significantly affect the prices of these wholesale energy products. Within this definition, the term "information" means:

– information to be made public in accordance with Regulations (EU) № 714/2009 and (EU) № 715/2009, including guidelines and network codes adopted in accordance with those Regulations;
– information concerning the capacity and use of facilities for the production, storage, consumption or transmission of electricity or natural gas or related to the capacity and use of underground gas storage facilities, including planned or unplanned unavailability of such facilities;
– information to be disclosed in accordance with legal or regulatory provisions at national or EU level, market rules, and contracts or practices in the relevant wholesale energy market, as this information may have a significant impact on wholesale energy prices;
– other information that the MNE market participant is likely to use as part of its decision to enter into a wholesale energy trade agreement or to issue a wholesale energy product order.

It is recommended that the following measures be taken to build an effective MNE insider risk management strategy:

1. *Identification of insider information and display of information flows:*
– determine which of the available information may be insider information;
– identify all objects (production / consumption / transmission) and indicate in which situations insider information may arise;
– identify which situations exist in general, not related to specific objects, where insider information occurs or may occur (for example, access to customer orders);
– identify MNE concentration / subdivision points that are vulnerable to intentional and unintentional information leaks;
– display information flow to identify any information that may be classified (or potentially classified) as insider or hold it;
– determine in which situations a MNE market participant can obtain insider information from third parties.

2. *Protection and handling of insider information:*
– availability of appropriate written manuals and instructions on the procedure for handling insider information, including liability and the procedure for processing insider information;
– ensure that insiders do not have access to insider information prior to its publication;
– traders must be physically separated from any person who has access to insider information;
– if the personnel processing the insider information are located in the same building as the traders, additional measures may be required to document that the insider information is not available to traders, such as controlling access to the trader's place by registering;
– ensure the introduction of sufficient restrictions in the relevant IT systems;
– insider information from third parties: it is necessary to ensure the protection of such information, to prevent the conclusion of agreements based on this information, etc.;
– it is recommended to conclude confidentiality agreements with external contractors.

3. *Measures to prevent insider trading:*
– tracking products / markets related to different types of insider information: trade in other products may be allowed;
– tracking information:
- recording of telephone conversations of relevant employees;
- compiling maps of insider information flows and keeping a log of the personnel / employees who received the information;
- periodic/systematic inspections;
– information barriers for traders and mechanisms to stop trading in case the trader gained access to insider information.

If MNE market participant uses a trading algorithm:
– it must be possible to stop any trading activity immediately using an algorithm. This must be achieved through the kill functionality. The responsibility for running the kill functionality must be clearly defined to avoid a lengthy negotiation process during which the algorithm may continue to contribute to chaotic trading conditions;
– structured and formalized testing of the algorithm for possible market manipulation should be carried out. Test results should be documented;
– the possibility of deploying an algorithm with a limited trading mandate in a limited period may be additionally considered, for example rule 100-10: in the first 100 hours of deployment the algorithm may open positions only within 10% of the expected trading mandate.

8. Conclusions

Fundamental trends in recent decades have focused on the integration of Europe's sovereign economies, including the integration of energy markets, and create a powerful determinant for the risk management strategies of multinational enterprises of the energy sector (MNE). As part of the formation of the relevant regulatory field, the European Parliament and the Council of the EU adopted in 2011 EU Regulation 1227/2011 on Wholesale Energy Market Integrity and Transparency, REMIT. In accordance with the requirements of the REMIT Regulation, MNE participants in the energy markets must establish an appropriate REMIT compliance regime, which should ensure risk management taking into account the nature, size and complexity of MNE business and the nature and range of wholesale energy products. This requires a strong REMIT compliance culture, adequate and clear policies and procedures aimed at building effective MNE strategies to manage the risks associated with market manipulation and insider information.

Ukraine has committed itself to the Energy Community in implementing the REMIT Regulation in its regulatory field, which increases the relevance of developing appropriate MNE risk management strategies within the country.

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THE PRACTICE OF HOUSEHOLD EXPENDITURE IN UKRAINE: FACTOR ANALYSIS AND ESTIMATE

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Abstract. *The purpose* of the paper is research practice of household expenditure in Ukraine and factor analysis of the impact on ones. The indicators for estimating household expenditure allow finding how their financial stability has changed over ten years (from 2010 to 2020). *Methodology*. The results of the study were obtained after analysing the indicators of household expenditure (from 2010 to 2020). In the course of research, an analysis, synthesis as methods of theoretical knowledge of phenomena has been used. Comparisons and measurements are used as empirical methods for the conducted research. *Results* of the research showed that on average per month per household expenditure increased 3 times for the period 2010–2020. Despite this practice, no significant changes have taken place in their structure – about 90% of ones are spent on the consumption of goods and services. Proposed relative indicators for estimating household expenditure (Food cost ratio coefficient (C_{fe}) and Engel's coefficient (C_e)) showed a decrease in their values in 2020 compared to 2010. Calculated linear functions of the dependence of household expenditure show the amount of their income had a greater impact on expenditure than the change in prices for goods and services. This indicates a deterioration in the financial stability of domestic households. *Practical implications*. For conducting research and substantiation of relevant conclusions, the indicators of household expenditure for ten years have been analyzed (from 2010 to 2020). *Value/originality.* The researched relative coefficients C_{fe} and C_e expand the methodological basis for estimating the financial stability of households through the prism of their expenditure.

Key words: household, expenditure, household expenditure, indicator, factor analisys.

JEL Classification: D14, G59

1. Introduction

Analysis of the composition and structure of household expenditure creates the preconditions for estimating their financial stability at the microeconomic level. That is: the financial condition of households improves with the reduction of the share of expenditures on food and non-alcoholic beverages and vice versa – to get worse with the growth of the share of expenditure on this group of goods. This conclusion is based on the regularity described by Ernst Engel (in 1857) and the functions of change in prices for goods, researched by Leo Tornquist (in 1936). In particular, an Engel describes how household expenditure on a good or service varies with household income; Tornquist, developing Engel's idea, proposed functions of dependence of demand for goods on income for three groups of ones: (1) foodstuffs, (2) industrial products of standard consumer quality and (3) high-quality goods and services.

2. Indicators of household expenditure estimate

Analysing the existing approaches of domestic scientists, and methodologies for studying living conditions in households of the State Statistics Service of Ukraine, we conclude that there is almost unanimity in the interpretation of the essence of the concept of "household expenditure". For example, as "cash or other tangible assets (for example, personal subsidiary products) that have already been used by the household to meet personal or collective needs" (Kizyma, 2009); "the total amount of all money and wealth, which were spent in the course

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of households performing their economic functions" (Mocherny, 2002); "consist of money costs ... the value of food consumed by the household and donated by it to relatives and other persons ... the number of benefits and subsidies" (Zamora & Yarema, 2016); close to the positions of the above authors are (Yurchyshena, 2014), the team of authors of the textbook "Theory of Finance" (edited by Fedosov & Yuriy, 2010), defined ones.

These researches are based on the determination of household expenditures by the State Statistics Service of Ukraine, which determines ones as "aggregate household expenditure consist of the sum of consumer and non-consumer aggregate expenditures .... include actual cash expenditure, the number of benefits and non-cash subsidies" (The State Statistics Service of Ukraine, 1998). By sharing the position of the state public authority on the origin and classification of household expenditure, the authors have the opportunity to analyze their composition and structure and assess the dynamics of change over time.

After analysing the existing approaches, under households expenditure, we consider the money used by them to meet their own needs. In fact, it is a set of payments that a household makes to support its living.

Based on the methodology of the State Statistics Service, as part of household expenditure, there are:

(a) *consumer expenditure*: on the purchase of food and non-alcoholic beverages; alcoholic beverages, tobacco products; non-food goods and services (clothing and footwear, housing, water, electricity, gas and other fuels for current housing, health, transport, communications, recreation and culture, education, restaurants and hotels, various goods and services);

(b) *non-consumer expenditure*: related to personal subsidiary farming, financial assistance to relatives and others, expenditures on real estate, construction, an overhaul of housing and outbuildings, acquisition of shares, certificates, currency, increase in deposits with banking institutions, alimony, taxes (except for personal income tax, fees, contributions, etc.), the amount of non-cash benefits and subsidies for housing and communal services, electricity and fuel, the amount of non-cash benefits for telephone, travel, transport, payment for goods and services on health care, tourist services, vouchers to recreation centres, etc. (The State Statistics Service of Ukraine, 1998).

The study of household expenditure estimates is based on indicators of their formation and structure, namely, the study of the share of expenditures of consumer and *non-consumer* parts. These indicators will be determined according to the State Statistics Service to study the financial stability of households at the microeconomic level per household per month.

Such indicators are given in table 1, in our opinion, are:

1) food expenditure ratio coefficient C_{fe} – calculation of the share of payments for food and non-alcoholic beverages in the total amount of household expenditure. Characterize the level of food expenditure in the total amount of household expenditure;

2) Engel's coefficient C_e – calculation of the share of payments for food and non-alcoholic beverages in the total household income. German statistician Ernst Engel theoretically researched changes in the structure of household expenditure depending on its income. Examining

Table 1

Indicators for estimating household expenditure

Indicator	Calculation formula		Economic interpretation
Food cost ratio coefficient (C_{fe})	$C_{fe} = Fe / He$, where Fe – the cost of food and non-alcoholic beverages per household per month, UAH; He – the amount of household expenditure per household per month, UAH	Characterize the level of food expenditures in the total amount of household expenditure	The higher indicators, the lower the financial condition of the household and the fewer opportunities it has to conduct its own financial policy
Engel's coefficient (C_e)	$C_e = Fe / Hi$, where Fe – the cost of food and non-alcoholic beverages per household per month, UAH; Hi – the amount of income per household per month, UAH	Characterize the level of food expenditures in the total amount of household income	

the budgets of 153 Belgian families (Britannica, 2022), the scientist concluded that the lower the household income, the greater the proportion of it spent on food (Chai & Moneta, 2010). This pattern works in the opposite way – the greater the household income, the smaller the proportion of it spent on food.

The dynamic of coefficients (C_{fe} or C_e), in our opinion, characterize the practice of household expenditure through the prism of estimating its financial stability. Engel's law allows us to implement the conclusion in the field of household finance: with increasing household income, the share of its food expenditure should decrease, the share of non-food expenditures within consumer expenditure should change slightly, and the share of non-consumer expenditure (cultural, travel, luxury items, etc.) – to grow. Namely, the smaller part of household income or expenditure is spent on food expenditure, the more financial stability such ones.

3. The practice of household expenditure in Ukraine in 2010–2020

Classification of the total expenditure of households on *consumer* and *non-consumer*, allows us to analyze the practice of their current financial support. Based on the reporting data of the State Statistics Service of Ukraine, Figure 1 shows the dynamics of total expenditures per month on average per domestic household for 2010–2020. We also calculated the share of consumer expenditures in the structure of total household expenditures.

The data in Figure 1 show that on average per household per month, expenditure for the period 2010–2020 increased 3 times from 3 thousand UAH up to 9,5 thousand UAH. At the same time, no significant changes have taken place in their structure – about 90% of all expenditures of domestic households go to the consumption of goods and services. Moreover, this trend is clearly expressed in the growth of consumer expenditures. Namely, if in 2010 they accounted for 89% of total household expenditure, in 2020 more than 91%. Thus, despite the increase in household expenditure in absolute terms by more than three times, we cannot draw conclusions about the improvement of their financial stability based on the absolute values of indicators.

Since household *consumer expenditure* include the purchase of food and non-alcoholic beverages (based on the methodology of the State Statistics Service), in Table 2 we calculated the food cost ratio coefficient C_{fe} and Engel's coefficient C_{fe}.

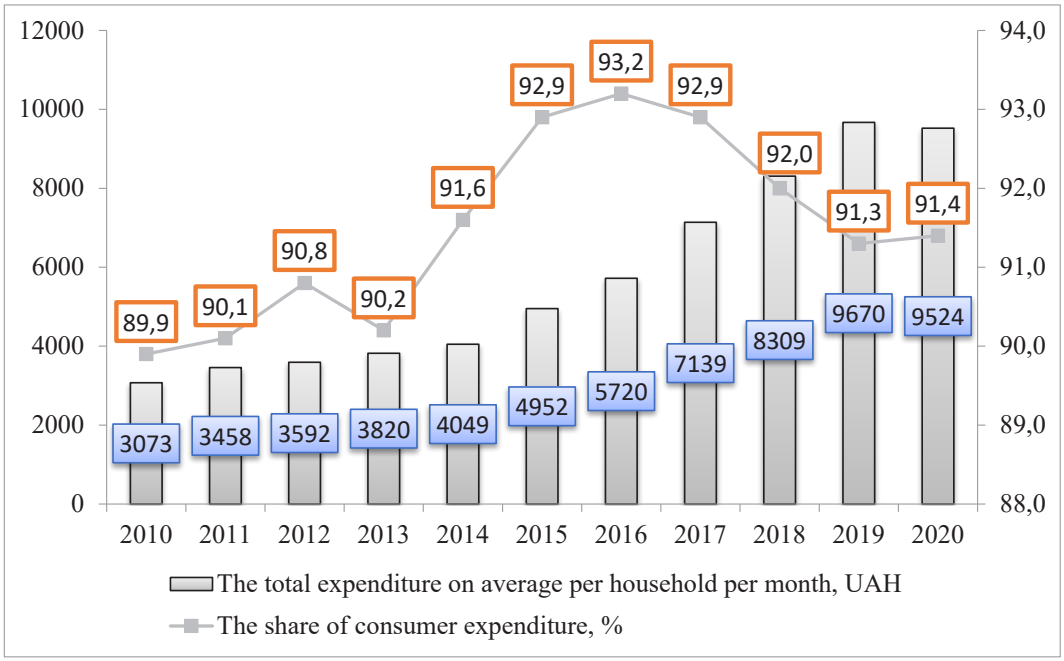

Figure 1. Dynamic of the total expenditure on average per household per month and the share of consumer expenditure for 2010–2020

Source: compiled by the author on the basis of data (The State Statistics Service of Ukraine, 2022)

Table 2

Dynamic of coefficients C_{fe} and C_e on average per household per month for 2010–2020

Indicators	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Household expenditure, UAH, *He*	3073,3	3458,0	3592,1	3820,3	4048,9	4952,0	5720,4	7139,4	8308,6	9670,2	9523,6
	Annual change of the indicator +12,3% The change in the indicator in 2020 compared to 2010 is **3,1** times										
Household income, UAH, *Hi*	3481,0	3853,9	4144,5	4470,5	4563,3	5231,7	6238,8	8165,2	9904,1	12118,5	12432,3
	Annual change of the indicator +13,9% The change in the indicator in 2020 compared to 2010 is **3,57** times										
The cost of food and non-alcoholic beverages, UAH, *Fe*	1585,8	1774,0	1799,6	1914,0	2101,4	2629,5	2848,7	3419,8	3963,2	4506,3	4580,9
	Annual change of the indicator +11,4% The change in the indicator in 2020 compared to 2010 is **2,89** times										
Food cost ratio coefficient (C_{fe})	0,516	0,513	0,501	0,501	0,519	0,531	0,498	0,479	0,477	0,466	0,481
	Annual change of the indicator –0,7% The change in the indicator in 2020 compared to 2010 is **0,93** times										
Engel's coefficient (C_e)	0,456	0,460	0,434	0,428	0,461	0,503	0,457	0,419	0,400	0,372	0,368
	Annual change of the indicator –1,9% The change in the indicator in 2020 compared to 2010 is **0,81** times										

Source: compiled by the author on the basis of data (The State Statistics Service of Ukraine, 2022)

According to Table 2, for the period 2010–2020 we observe two opposite trends:
(a) an increase in household income and expenditure (3,57 times and 3,1 times, respectively);
(b) an annual reduction in the values of the coefficients C_{fe}, (by 0,7%) and (1,9%) despite the increase in household expenditure on food and non-alcoholic beverages.

Thus, based on the dynamics of the values of the coefficients C_{fe}, C_e and despite the growth of both income and expenditure of domestic households, we conclude that at the microeconomic level, their financial stability in 2020 has deteriorated compared to 2010.

4. Factor analysis of the impact on household expenditure

The estimation of household costs should be supplemented by factor analysis, namely, elements of the theory of correlation-regression analysis (Bahrushyn, 2009; Ryadno, Piskunova, Rybal'chenko, Hrusch, 2011; Andriyenko, 2004). It is the functional type of dependence that will allow us to determine the influence of certain internal or external factors x on the result indicator y. In the context of estimating household expenditure, which we define as a result indicator (y), the factor indicators (x) will be: household income (internal factor) and inflation (external factor).

The linear function of the dependence of household expenditure on the amount of their income is presented in Table 3.

A linear function of the dependence of changes in household expenditure depending on changes in income is as follows:

$$y = 0,74x + 711,46 \quad (1)$$

Thus, with an increase in household income by 1 UAH, expenditure increase by 0,74 UAH. Based on the data in table 3 determine for the period 2010–2020 the coefficient of elasticity (ε) between the studied factors, which is equal to:

$$\varepsilon = a\frac{\bar{x}}{\bar{y}} = 0,74\frac{6782}{5755} = 0,88 \quad (2)$$

This means that during the analysed period, with an increase in household income by 1%, their expenditures increased by 0,88%.

In our example, the total variance (σ_y^2) deviation of the re-gression line from the mean ($y - \bar{y}$) is equal to:

$$\sigma_y^2 = \frac{\Sigma(y-\bar{y})^2}{n} = \frac{62419555}{11} = 5674505 \quad (3)$$

The residual variance (σ_e^2) which measures the effect of others other than the studied factor (x) (household income) is equal to:

$$\sigma_e^2 = \frac{\Sigma(y-y_x)^2}{n} = \frac{785403}{11} = 71400 \quad (4)$$

Factor variance ($\sigma_{y_x}^2$) is defined as the difference between total and residual variances:

$$\sigma_{y_x}^2 = \sigma_y^2 - \sigma_e^2 = 5674505 - 71400 = 5603105 \quad (5)$$

The coefficient of determination (R^2) which characterizes that part of the variation of the resultant indicator (y) which depends on the variation of the factorial indicator (x) is equal to:

Table 3

A linear function of the dependence of expenditure on the amount of income on average per household per month for 2010–2020

Indicators	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Household expenditure, UAH (y)	3073	3458	3592	3820	4049	4952	5720	7139	8309	9670	9524
Household income, UAH (x)	3481	3854	4145	4471	4563	5232	6239	8165	9904	12119	12432
Parameters of a linear function $n = 11; \Sigma x = 74605; \Sigma y = 63306;$ $\Sigma xy = 512239205; \Sigma x^2 = 617442683; (\bullet x)^2 = 5565906025$ $\bar{x} = 6782; \bar{y} = 5755$											
$a = \frac{n\Sigma xy - \Sigma x \Sigma y}{n\Sigma x^2 - (\Sigma x)^2} = \frac{11*512239205 - 74605*63306}{11*617442683 - 617442683} = 0{,}74$ $b = \frac{\Sigma y}{n} - \frac{a\Sigma x}{n} = \frac{63306 - 0{,}74*74605}{11} = 711{,}46$ $y = ax + b = 0{,}74x + 711{,}46$											

Source: compiled by the author on the basis of data (The State Statistics Service of Ukraine, 2022)

$$R^2 = \frac{\sigma^2_{y_x}}{\sigma^2_y} = \frac{5603105}{5674505} = 0{,}987 \qquad (6)$$

Thus, from 2010 to 2020, 98,7% of the variation in household expenditure was explained by variation in the level of their income. This means that the relationship between household income and expenditure is strong (close) and direct. The influence of other factors on the analyzed household expenditure is not significant.

When buying goods and services, household members choose a range of prices within which they can pay. Any price fluctuation affects the consumer's decision to purchase or not to purchase the product. Therefore, we can say that consumer behaviour is influenced not only by his income but also by changes in the price of goods. If the level of income in relation to the household, as a subject of financial relations, is an internal factor that affects the level of current expenditure, the level of retail prices and goods and services – external.

Also, the strength and direction of the interdependence between the consumer price

Table 4

A linear function of the dependence of the rate of change in household expenditure on changes in prices for goods and services for 2010–2020

Indicators	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
The rate of change in household expenditure, % (y)	109	105	100	101	125	143	112	114	110	104	105
The rate of change in prices for goods and services, % (x)	114	113	105	106	108	124	116	124	115	116	99
Parameters of a linear function $n = 11; \Sigma x = 1240; \Sigma y = 1228; \Sigma xy = 138966; \Sigma x^2 = 140380; (\Sigma x^2) = 1537600$ $\bar{x} = 113; \bar{y} = 112$											
$a = \frac{n\Sigma xy - \Sigma x \Sigma y}{n\Sigma x^2 - (\Sigma x)^2} = \frac{11*138966 - 1240*1228}{11*140380 - 1537600} = 0{,}898$ $b = \frac{\Sigma y}{n} - \frac{a\Sigma x}{n} = \frac{1228 - 0{,}898*1240}{11} = 10{,}46$ $y = ax + b = 0{,}898x + 10{,}46$											

Source: compiled by the author on the basis of data (The State Statistics Service of Ukraine, 2022)

index and household consumption expenditure for 2010–2020 will be researched through elements of regression analysis.

The researched linear dependence function is presented in Table 4.

A linear function of the dependence of changes in household expenditure depending on changes in prices for goods and services is as follows:

$$y = 0,898x + 10,46 \quad (7)$$

The coefficient of elasticity (ε) between the studied factors is equal to:

$$\varepsilon = 0,898\frac{113}{112} = 0,906 \quad (8)$$

This means that with a 1% increase in prices for goods and services, household expenditure increased by 0,906%.

According to formulas (3)–(6) we determine the the strength and direction of interaction between the studied variables:

(a) the total variance (σ_y^2) is equal to:

$$\sigma_y^2 = \frac{\sum(y-\bar{y})^2}{n} = \frac{1573}{11} = 143 \quad (9)$$

(b) the residual variance (σ_e^2) is equal to:

$$\sigma_e^2 = \frac{\sum(y-y_x)^2}{n} = \frac{1091}{11} = 99 \quad (10)$$

(c) the factor variance ($\sigma_{y_x}^2$) is equal to:

$$\sigma_{y_x}^2 = \sigma_y^2 - \sigma_e^2 = 143 - 99 = 44 \quad (11)$$

(d) the coefficient of determination (R^2) is equal to:

$$R^2 = \frac{\sigma_{y_x}^2}{\sigma_y^2} = \frac{44}{143} = 0,306 \quad (12)$$

As we can see, from 2010 to 2020, 30,6% of the variation in household consumption expenditures was explained by the variation in the level of the consumer price index. This means that the link between prices and household spending is direct, but not strong.

Thus, comparing the values of the coefficients of determination, we conclude that the variation in the values of the result indicator – household expenditure – is determined more by changes in the internal factor of household income (formula 6, +0,987) than changes in external factor of prices for goods and services (formula 12, + 0,306). This indicates that the nominal growth of income of domestic households (in 2020 compared to 2010 more than three times) was offset by the devaluation of the national currency. This is confirmed by the fact that households continue to consume almost 90% of their income and this trend remains unchanged during the analyzed period. Therefore, we have no reason to conclude that the financial stability of Ukrainian households has improved from 2010 to 2020.

5. Conclusions

1. Data (Figure 1 and Table 2) show that on average per household per month expenditure increased 3 times for the period 2010–2020. But, no significant changes have taken place in their structure – about 90% of all expenditure of households is spent on the consumption of goods and services. Thus, we cannot draw conclusions about the improvement of their financial stability based on the absolute values of indicators.

2. Our proposed relative indicators for estimating household expenditure (Table 1 and Table 2) – Food cost ratio coefficient (C_{fe}) and Engel's coefficient (C_e) – showed a decrease in their values in 2020 compared to 2010. This indicates a deterioration in the financial stability of domestic households.

3. The linear functions of the dependence of household expenditure show the amount of household income had a greater impact on their expenditure than the change in prices for goods and services (Table 3 and Table 4). This is confirmed by the coefficient of elasticity (ε), the total variance (σ_y^2), the residual variance (σ_e^2), and the factor variance ($\sigma_{y_x}^2$) calculated for the period 2010–2020.

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ECOLOGICAL AND ECONOMIC ASPECTS OF EXPENDITURE OF HUNTING FARMS IN ZAPORIZHZHIA REGION

Tetiana Yavorska[1], Olha Sobolevska[2]

Abstract. *The purpose* of the article is to study the composition and cost structure of hunting farms in the Zaporizhzhia region and consider the economic and environmental aspects of their formation. The method of analysis and synthesis revealed the dynamics of changes in the costs of hunting farms over five years (2015, 2016, 2017, 2018, 2019). Using the method of comparison, the main trends in the change of individual loss items are identified. *Methodology*. The classification of costs, their dynamics and structure on 37 hunting farms of Zaporizhzhia region are given. The studied farms differ in different forms of use of hunting grounds. Thus, as of January 1, 2020, 6 farms were part of the Ukrainian Society of Hunters and Fishermen, 20 – belonged to the enterprises of the State Forestry Agency of Ukraine, the remaining 11 – were part of other private and public hunting organizations. A vertical and horizontal analysis of costs was conducted, which revealed an increase in their volume throughout the structure, without significant changes in the structure itself. There is a tendency to reduce the share of costs for the protection, reproduction and accounting of wild animals and the management of hunting grounds. Instead, the costs of maintaining the current activities of hunting farms are increasing. *The results* of the study showed that the main part of the costs of hunting farms in Zaporizhzhia region (almost 80 %) consists of the cost of wages and a single social contribution, operation and maintenance of vehicles, hunting buildings and structures and costs associated with the purchase of weapons, ammunition and other costs. The costs of environmental activities are decreasing, among which the costs of biotechnical measures play an important role. The share of expenditures on biotechnical measures for the conservation and reproduction of wild animals in total expenditures decreased from 14.5 % in 2015 to 11.8 % in 2019. *Practical consequences*. The study found that the current costly model of hunting in the Zaporizhzhia region, and in Ukraine as a whole, does not meet market relations and inhibits the development of effective economic and environmental hunting. Its formation was influenced by the following factors: imperfection of hunting legislation; non-compliance with European standards; excessive number of hunting grounds in use and lack of a clear mechanism for payment for their use; poaching; lack of programs for breeding wild animals, control of predators and clear requirements for the hunting service; low level of hunting culture and ethics. The current hostilities in the Zaporizhzhia region further complicate the environmental situation. *Value/originality*. Economic evaluation of hunting farms should take into account, in addition to estimating the direct costs and revenues of hunting farms, their total environmental, economic and social role. This is confirmed by foreign experience. For its implementation there is a need to develop a new methodology.

Key words: hunting farms, classification of costs, composition and structure of costs, costs of biotechnical measures, costs of protection and reproduction, costly management model.

JEL Classification: D21, M21, O13, Q29

1. Introduction

The experience of developed countries shows that hunting is a tool for preserving the environment and a source of financial income to state and regional budgets. In Ukraine, the existing costly model of hunting has survived since Soviet times. It does not correspond to modern market relations, primarily because the lands on which hunting activities are carried out belong to the state form of ownership. Accordingly, hunting in

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Ukraine is carried out by users of hunting grounds (state enterprises, public organizations, private enterprises).

The size of expenses has a significant influence on the formation of financial results. It is also the basis for evaluating the company's performance. Achieving maximum economic and environmental efficiency of hunting farms depends on their ability to address cost management. The study analyzed the costs of 37 hunting farms in the Zaporizhzhia region for the period 2015–2019. As of January 1, 2020, 1508.1 thousand hectares (83.2%) of hunting grounds were provided for use by organizations of the Ukrainian Society of Hunters and Fishermen (UHFA), 192 thousand hectares (10.6%) – to the enterprises of the State Forest Agency of Ukraine (SE ULMG), 113.5 thousand hectares (6.3%) – to other private and public hunting organizations (Statystychna zvitnist Zaporizkoho oblasnoho upravlinnia lisovoho ta myslyvskoho hospodarstva, 2020).

2. Content and structure cost of hunting farms

Costs are the use of resources in the activities of any enterprise in order to achieve its goal and is a stable driving force that allows it to maintain its competitive position and be profitable.

Determining the types of costs, initiated the formation of the classification of costs. The classification of enterprise costs is their systematization and grouping for the needs of their management. Cost information, grouped in different ways, is needed for effective business management. On the one hand, the identified and formulated needs of cost management determine the choice of classification criteria and the division of the total costs of the enterprise in accordance with them. On the other hand, a more detailed study of the classification of costs allows to identify new criteria for distinguishing and groups of costs and thus improve the information support of decision-making, provide the necessary information (Kozachenko, Pogorelov, 2008).

The specifics of hunting, as an independent branch of the economy, has its impact on the content and structure of costs. The activity of hunting farms is mostly accompanied by such costs as: organization of hunting farms (arrange-ment of hunting grounds and periodic inventory); biotechnical measures; administrative expenses (maintenance of management, hunters and other categories of employees); special shooting (catching) of wild animals, processing, preservation and sale of hunting products; resettlement and acclimatization of valuable species of hunting fauna, semi-artificial maintenance, breeding work, etc.; prevention of damage that can be done by wild animals (protection of plantations and agricultural crops, fencing of plots, purchase and use of deterrents, etc.); prevention of damage that may be caused to hunting fauna (shooting of predators, stray dogs, etc.); payment for the use of natural resources; dog costs (breeding, keeping and training of hunting dogs); capital construction and repair (hunting lodges, shelters, shooting ranges, etc.); purchase of equipment, hunting equipment, ammunition, low-value equipment, etc.; scientific work; transportation costs; expenses for own activity; coverage of damage caused by wild animals to agriculture and forestry (Torosov, Zuev, Kharchenko, 2012).

In hunting farms the main costs include the cost of feed, seeds, ammunition, medicines, biologicals and disinfectants, containers and packaging materials, the cost of litter for animals (straw, peat, sawdust) in enclosures, construction materials, the cost of sperm in artificial breeding, auxiliary and other materials necessary for the main activities of the hunting economy, the cost of works and services of production of third-party enterprises and organizations, the cost of fuel and energy for the economy, labour costs and contributions to state social insurance hunters, maintenance and operation costs vehicles of industrial nature (fuels and lubricants, spare parts). Overheads include costs associated with the organization, management and maintenance of the hunting economy, namely: general production – the cost of wages and social security contributions of hunters, veterinarians, insemination technicians and other hunting workers, depreciation of industrial vehicles, expenses for overalls and special footwear of hunters and hunting experts; administrative costs, marketing costs and other costs (Medvid, Govda, 2013).

According to the Report on hunting management (Form № 2 – TP (hunting) (annual)), the types of expenses included salaries of employees employed in hunting; protection, reproduction and registration of wild animals, arrangement

of hunting grounds (including: registration of hunting animals, protection of wild animals; reproduction of hunting animals, taking into account biotechnical measures: resettlement of hunting animals and birds and laying of fodder for their feeding); streamlining of hunting grounds (Pro zatverdzhennia form derzhavnykh statystychnykh sposterezhen iz ekolohii, lisovoho ta myslyvskoho hospodarstva: Nakaz Derzhavnoi sluzhby statystyky, 2017).

According to the results of the vertical analysis, the total costs of hunting farms in the Zaporizhzhia region for the period 2015–2019 increased by 65.9 % (Table 1). Expenses for protection and reproduction increased by 25.5 %, other expenses – by 79.7 %.

Among the types of costs for protection and reproduction, there are various trends. In particular, in recent years there have been no costs for the registration of animals, landscaping of hunting grounds.

In the structure of total costs of hunting farms, the largest share is occupied by other costs (Figure 1). These include the wages of workers employed in the hunting economy, the single social contribution; costs of operation and maintenance of vehicles, hunting buildings and structures; costs associated with the purchase of weapons, ammunition and other expenses.

According to the results of the horizontal analysis, the share of other expenses increased from 74.5 to 80.7 % of the total cost. Accordingly, the costs of protection and reproduction of animals decreased by 6.2 %.

3. Biotechnical measures as an environmental component of costs

Expenditures aimed at the protection, reproduction and accounting of wild animals and the management of hunting grounds are the main component of the activities of hunting farms, the effective use of which improves the environmental component and increases the financial performance of hunting. Among them, the cost of biotechnical measures plays an important role. Biotechnical measures in hunting farms are carried out to reduce the negative impact of man on the fauna and flora, to compensate for the damage caused to nature, to create a normal environment for the existence of game (Muraviov, 2019).

The Law of Ukraine "On Hunting Farms and Hunting" defines biotechnical measures as a set of various economic works aimed at improving the living conditions, reproduction and increasing the number of hunting animals (Pro myslyvske hospodarstvo ta poliuvannia: Zakon Ukrainy, 2000). These include: winter feeding of hunting animals, improvement of forage, protective and nesting properties of lands, pest control, resettlement, acclimatization and acclimatization of hunting animals and birds, creation of reserves, reproductive areas and rest areas, works on protection of hunting animals from infectious and invasive diseases.

Carrying out biotechnical measures, creation of reserves, sanctuaries and state hunting reserves, setting harvesting deadlines, bans on hunting certain species of animals – these measures allow

Table 1
Dynamics of costs for hunting farms of Zaporozhye region for 2015–2019, thousand UAH

Indicators	2015	2016	2017	2018	2019	2019 in % to 2015
Total expenses on running hunting farms	**9106,7**	**10072,2**	**11937,6**	**16807,4**	**15106,9**	**165,9**
The cost of security, reproduction,	**2321,2**	**2790,9**	**3056,1**	**3065,3**	**2913,0**	**125,5**
incl. Animal count	38,8	50,8	53,2	2,0	-	-
Protection of animals	896,2	1099,0	1224	60,8	1227,2	136,9
Biotechnical activities for conservation and reproduction of wild animals	1323,1	1604,9	1750,4	1657,6	1685,8	127,4
of them resettlements of animals	144,2	362,9	206,3	246,4	293,4	у 2 рази
installation of biotechnical structures	246,3	241,0	506,0	265,6	59,2	24,0
purchase of feed for animals	932,6	1001,0	1038,1	1145,6	1333,2	142,9
Maintenance of hunting grounds	63,1	36,2	28,5	28,5	-	-
Other expenses	**6785,5**	**7281,3**	**8881,46**	**13742,1**	**12193,9**	**179,7**

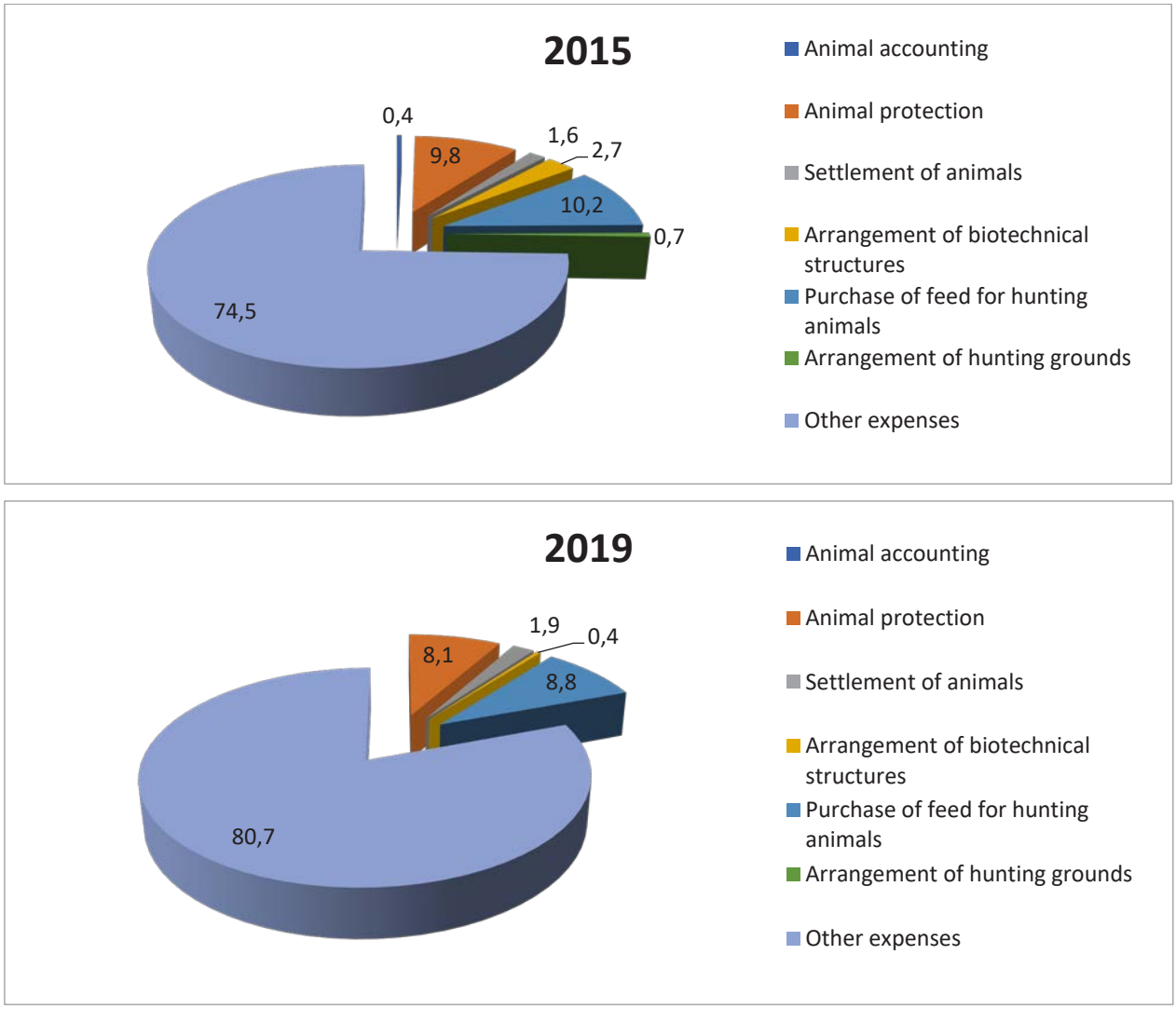

Figure 1. Structure of costs for hunting activities, %

to restore and increase the number of many valuable species of animals (elk, sable, beaver) and birds, almost completely destroyed (Novytskyi, Domnych, 2011)

Management of economically useful faunal complexes involves maintaining the optimal number of their groups at a set level at which the rate of reproduction of the latter reaches satisfactorily stable values (Watt, 1971).

Among the costs of conducting biotechnical activities in hunting farms in the Zaporizhzhia region, the costs of arranging biotechnical facilities decreased the most (4.2 times). The cost of feeding for hunting animals increased slightly and the cost of relocating animals doubled. As a result, many hunting farms in the region lack or lack biotechnical facilities, there is insufficient volume and low nutritional value of harvested fodder, in general or unsystematically fodder crops are sown. The share of expenditures on biotechnical measures for the conservation and reproduction of wild animals in total expenditures decreased from 14.5 % in 2015 to 11.1 % in 2019 and tends to decrease further (Figure 1).

The rational use of hunting resources should be based on their planned and inexhaustible exploitation, when the pre-industrial number of a particular species from year to year will remain close to optimal for the established middle-class quality of local lands, against the background of planned environmental measures to maintain or improve living conditions. and animal breeding. At the same time, in our country the primitive technique of normalized extraction of hunting resources is still legally regulated and professed by users of hunting lands, while in developed

countries equal attention is paid to much more effective spatial and qualitative approaches (Volokh, 2004).

According to the Law "Hunting as a branch – a sphere of social production, the main tasks of which are protection, regulation of wildlife, use and reproduction of hunting animals, providing services to hunters to hunt, development of hunting dogs" continued. This indicates that the main goal of hunting farms as an industry is not achieved, because the current management model the main direction of their activities, namely – improving environmental activities in the field of nature, aimed at preserving habitat, species diversity and genetic fund of wild animals, regulation of their numbers, protection, reproduction and rational use of populations of hunting animals as a natural resource and component of ecosystems has no continuation (Myronenko, Sheremet, Protsiv, Bashta, Delehan, Vovchenko, Stankevych-Volosianchuk, Burmas, Novikov, Karabchuk, 2015).

This situation is typical of hunting farms in Ukraine as a whole, with a small difference in trends by region. It does not help to improve their economic situation, as the efficiency of hunting depends primarily on adherence to the principles of biodiversity conservation and productivity of hunting grounds.

4. Conclusions

Today's costly model of hunting management, which has remained from previous times, shows its inefficiency and imperfection, and the financial and economic situation in the country does not contribute to the further development of the hunting industry. Analysis of the dynamics of the costs of hunting farms in Zaporozhe region shows that currently they simply maintain their existence by reducing the share of funding for the main activity (costs of protection, reproduction and accounting of wild animals and landscaping). The main part of the costs (almost 80 %) is spent on salaries of workers employed in hunting, the single social contribution; costs of operation and maintenance of vehicles, hunting buildings and structures; costs associated with the purchase of weapons, ammunition and other expenses.

During the hostilities in the Zaporizhzhia region, the situation worsens due to fires. Due to the actions of the occupiers, who do not allow forest protection to fight fires, dry and windy weather, timely localization of fires is difficult. Thus, the fire destroys entire forest ecosystems, which will then be difficult to restore and requires large expenditures. In order to bring the hunting industry out of the crisis to a profitable, competitive level, in addition to state support, it is necessary to pay attention to changes in economic assessment that would significantly affect the formation of financial results.

Foreign experience of economic assessment of the importance of hunting farms shows that the material value, in addition to harvested game, is the consumer value of services. These services are directly related to hunting, production and consumption of goods for its needs. In addition to direct costs, it is necessary to assess the economic role of hunting, which would take into account the growth of investment and activation of various sectors of the economy based on meeting the needs for its conduct. To do this, it is necessary to develop a new methodology that would assess in addition to direct costs and revenues from hunting, the total environmental, economic and social role of this important area of nature.

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