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INFLUENCE OF WATER SUPPLY DEVELOPMENT STATE ON THE QUALITY OF ECONOMIC SECURITY OF UKRAINE

Abstract. The article analyzes the influence of the state of development of the water supply sector on the level of economic security of Ukraine. There are a number of problems that are of a systematic nature for the water supply and sewage system, among which: high level of demolition of communal infrastructure, water supply and sewage facilities from 50 to 90 %; social significance of the sphere, restriction of growth of tariffs; significant modernization costs, low expected return on projects, low investment attractiveness for business; increase in electricity tariff; tariffs, which are approved for the enterprise, “resist” in the limit index, which generates planned loss-making activity for the future period; increased power of used equipment; considerable deterioration of structures and piping system; The huge impact on the development of the sector is due to the indebtedness of the population and businesses for housing and communal services. The internal and external factors that directly influence the economic security of Ukraine from the standpoint of the state of development of the water supply sector are characterized.

Building on its own resources and strength, on the effect of the united work of the people, Ukraine must realize its chance to become a great competitive political nation with the European economy as well as security in general. The most important national economic interests (which are distinguished by today’s researchers) are grouped, the future of Ukraine, welfare and prosperity of the nation depend on the realization of these, in particular: the creation of a self-sufficient, competitive, socially oriented, powerful national economy; creation of a reliable system of economic security of Ukraine, ensuring the possibility of independent, progressive national and economic development; structural adjustment of the economy; ensuring the effective development of national industry; implementation by the state of protectionist measures aimed at supporting the national commodity producer; Significant reduction of energy intensity and material consumption of GDP; realization of cardinal modernization of production and development of its knowledge-intensive industries; creation of closed cycles of production of strategically important products, including military equipment and weapons; creation of equal social and economic opportunities for all citizens of Ukraine; gaining Ukraine a proper place in the world division of labor and international trade, integration into the world economy; construction of economic relations with other countries on the principles of equality and mutual benefit; ensuring the competitiveness of domestic products; improvement of commodity structure of export and import; ensuring the geographical balance of exports and imports; increase of export potential, provision of a positive balance of foreign trade activity; support of domestic exporters, assistance to producers of import-substitute products, especially critical imports; protection of the national market from the adverse effect of the world situation

and foreign competition; the effective use by Ukraine of its advantageous geographical position for the implementation of international transit.

However, we have come to the conclusion that so far the state structures in Ukraine have not achieved economic equilibrium. In particular, gas supplies are constantly supported at the state level, instead of replacing it with electricity and other types of energy. This is a fundamental structural moment of equilibrium that Ukraine seeks to achieve.

Keywords: water supply, drainage, state, economic security, communal sphere.

ВПЛИВ РОЗВИТКУ ВОДОПОСТАЧАННЯ НА ЯКІСТЬ ЕКОНОМІЧНОЇ БЕЗПЕКИ УКРАЇНИ

Анотація. Розглянуто вплив стану розвитку сфери водопостачання на рівень економічної безпеки України. Окреслено ряд проблем, які носять системний характер для сфери водопостачання та водовідведення, серед яких: високий рівень зносу комунальної інфраструктури, об'єктів водопостачання та водовідведення від 50 до 90 %; соціальна значущість сфери, обмеження зростання розміру тарифів; значні витрати на модернізацію, низька очікувана прибутковість проектів, низька інвестиційна привабливість для бізнесу; збільшення тарифу на електроенергію; тарифи, які затверджуються для підприємства, “упираються” в граничний індекс, що породжує планово-збиткову діяльність на майбутній період; підвищена потужність використовуваного обладнання; значне зношення споруд та трубопроводної системи; на розвиток галузі значний вплив має заборгованість населення та бізнесу за житлово-комунальні послуги. Схарактеризовано внутрішні та зовнішні чинники, що мають вплив безпосередньо на економічну безпеку України з позицій стану розвитку сфери водопостачання.

Спираючись на власні ресурси та сили, на ефект об'єднаної праці народу, Україна має реалізувати свій шанс стати великою конкурентоспроможною політичною нацією з європейським рівнем економіки і безпеки загалом. Згруповано найважливіші національні економічні інтереси (які виокремлюють дослідники сьогодення), від реалізації яких залежить майбутнє України, добробут і процвітання нації, зокрема: створення самодостатньої, конкурентоспроможної, соціально спрямованої, потужної національної економіки; створення надійної системи економічної безпеки України, забезпечення можливості самостійного, прогресивного національно-економічного розвитку; здійснення структурної перебудови економіки; забезпечення ефективного розвитку національної промисловості; здійснення державою протекціоністських заходів, спрямованих на підтримку національного товаровиробника; істотне зменшення енергомісткості і матеріаломісткості ВВП; здійснення кардинальної модернізації виробництва та розвиток його наукомістких галузей; створення замкнутих циклів виробництва стратегічно важливої продукції, зокрема військової техніки та озброєння; створення рівних соціальних та економічних можливостей для всіх громадян України; здобуття Україною належного місця у світовому

поділі праці та міжнародній торгівлі, інтеграція у світове господарство; побудова економічних відносин з іншими країнами на засадах рівноправності та взаємовигідності; забезпечення конкурентоспроможності вітчизняної продукції; удосконалення товарної структури експорту й імпорту; забезпечення географічної збалансованості експорту й імпорту; нарощування експортного потенціалу, забезпечення позитивного сальдо зовнішньо торговельної діяльності; підтримка вітчизняних експортерів, сприяння виробникам імпорто-замінної продукції, особливо критичного імпорту; захист національного ринку від несприятливої дії світової кон'юнктури та іноземної конкуренції; ефективне використання Україною свого вигідного географічного положення для здійснення міжнародного транзиту.

Визначено, що державні структури в Україні не досягли економічної рівноваги. Так, зокрема, постійно підтримуються на державному рівні поставки газу, замість того, щоб замінити його використанням електроенергії та іншими видами енергоносіїв. Це — принциповий структурний момент рівноваги, яку Україна прагне досягти.

Ключові слова: водопостачання, водовідведення, держава, економічна безпека, комунальна сфера.

ВЛИЯНИЕ СОСТОЯНИЯ РАЗВИТИЯ СФЕРЫ ВОДОСНАБЖЕНИЯ НА УРОВЕНЬ ЭКОНОМИЧЕСКОЙ БЕЗОПАСНОСТИ УКРАИНЫ

Аннотация. Рассмотрено влияние состояния развития сферы водоснабжения на уровень экономической безопасности Украины. Определен ряд проблем, которые носят системный характер для сферы водоснабжения и водоотведения, среди которых: высокий уровень износа коммунальной инфраструктуры, объектов водоснабжения и водоотведения от 50 до 90 %; социальная значимость сферы, ограничение роста размера тарифов; значительные затраты на модернизацию, низкая ожидаемая доходность проектов, низкая инвестиционная привлекательность бизнеса; увеличение тарифа на электроэнергию; тарифы, которые утверждаются для предприятия, “упираются” в предельный индекс, порождают планово-убыточную деятельность на предстоящий период; повышенная мощность используемого оборудования; значительный износ сооружений и трубопроводной системы; огромное влияние на развитие отрасли оказывает задолженность населения и бизнеса за жилищно-коммунальные услуги. Охарактеризованы внутренние и внешние факторы, влияющие непосредственно на экономическую безопасность Украины с позиций состояния развития сферы водоснабжения.

Опираясь на собственные ресурсы и силы, на эффект объединенного труда народа, Украина должна реализовать свой шанс стать большой конкурентоспособной политической нацией с европейским уровнем экономики и безопасности в целом. Сгруппированы важнейшие национальные экономические интересы (которые выделяют исследователи современности), от реализации которых зависит будущее Украины, благосостояние и процветание нации, в частности: создание самодостаточной, конкурентоспособной, соци-

ально направленной, мощной национальной экономики; создание надежной системы экономической безопасности Украины, обеспечения возможности самостоятельного, прогрессивного национально-экономического развития; осуществление структурной перестройки экономики; обеспечение эффективного развития национальной промышленности; осуществление государством протекционистских мер, направленных на поддержку национального товаропроизводителя; существенное уменьшение энергоемкости и материалоемкости ВВП; осуществление кардинальной модернизации производства и развитие его наукоемких отраслей; создание замкнутых циклов производства стратегически важной продукции, в том числе военной техники и вооружения; создание равных социальных и экономических возможностей для всех граждан Украины; обретение Украиной надлежащего места в мировом разделении труда и международной торговле, интеграция в мировое хозяйство; построение экономических отношений с другими странами на основе равноправия и взаимной выгоды; обеспечение конкурентоспособности отечественной продукции; совершенствования товарной структуры экспорта и импорта; обеспечения географической сбалансированности экспорта и импорта; наращивание экспортного потенциала, обеспечение положительного сальдо внешнеторговой деятельности; поддержка отечественных экспортеров, содействие производителям импорто-заместительной продукции, особенно критического импорта; защиту национального рынка от неблагоприятного воздействия мировой конъюнктуры и иностранной конкуренции; эффективное использование Украиной своего выгодного географического положения для осуществления международного транзита.

Определено, что государственные структуры в Украине пока не достигли экономического равновесия. Так, в частности, постоянно поддерживаются на государственном уровне поставки газа, вместо того, чтобы заменить его использованием электроэнергии и другими видами энергоносителей. Это — принципиальный структурный момент равновесия, который Украина стремится достичь.

Ключевые слова: водоснабжение, водоотведение, государство, экономическая безопасность, коммунальная сфера.

Formulation of the problem. In the current conditions of the Ukrainian economy, the institutions of power are in a state of transformation characterized by the presence of numerous gaps and weaknesses in the system of public administration. This is especially true in the sphere of water supply and drain-

age, which is currently in a rather difficult situation due to the high level of depreciation of fixed assets, arrears by the population and business, the inefficiency of public administration in this area, as well as other negative factors. All this has a significant negative impact on the economic security of Ukraine,

because this area is strategically important and requires constant continuous operation. The ineffectiveness of measures and actions of state authorities at the national and regional levels does not contribute to ensuring the development of the water supply and sewage sector, as well as the economic security of the state, which results in a low level of innovation and investment development of Ukrainian enterprises in this area, low level of qualification of labor resources and a number of other problems. The declarative nature of the policies and policies of the state authorities exacerbates these problems, so today it is necessary to take all possible measures to eliminate them.

The analysis of recent research and publications. Issues of development of the sphere of water supply and economic security of Ukraine were devoted to their work by such leading scientists as Babych M., Bilyk R., Gyrol' M., Zhykhor O., Kizin H., Levchuk O., Semchuk H. M., Skoruk O., Khomko V. and others. However, as of today, additional research requires the specifics of the impact of the state of development of the water supply sector on the level of economic security of Ukraine, which predetermined the choice of the subject of this article.

The purpose of the paper is to clarify the impact of the state of development of the water supply sector on the level of economic security of Ukraine.

Presenting of main material. Water is the most important ecological resource and the main component of living organisms. No sphere of human activity can be done without the use of water, because water is the very life. Water is a non-alternative essential

product that supports the life, work capacity and existence of society, and ensures economic, social and environmental well-being of the population.

Among the main problems of Ukraine related to water resources, which, in turn, are caused by the peculiarities of the formation of water resources of the regions of Ukraine, is the imbalance of the scheme of placing the most water-based enterprises and the inheritance of imperfect water policy. Among the physical and geographical factors of the complication of the water-ecological conditions of Ukraine are noted: the prevalence of shallow steppe and forest-steppe zones; the limited water resources of its own formation (50 bcm/year), including 21 bcm/year of groundwater of drinking quality, which, except for the soil, are protected from direct anthropogenic pollution and form the strategic base of drinking water supply of the population of Ukraine, which is determined by the peculiarities of natural conditions of river basins and groundwater basins. According to international standards, Ukraine belongs to low-water countries (less than 1,1 thousand m³/year man) and with uneven territorial distribution of water resources. Historically, the system of drinking and economic water supply, which was formed during the days of the former Soviet Union, is based on the predominant use of surface water contaminated from anthropogenic pollution. The availability of surface water, a lower cost of sampling 1 m³ of water, the possibility of creating large water intakes, etc. became the main arguments of the Soviet economy without taking into account the increasing pollution and vulnerability of

these sources in emergency situations. The advantage of surface water was given even where it was necessary to construct conduits with a sufficiently large distance to use them, at the same time, near-existing deposits of groundwater with sufficient reserves (Kyiv, Kharkiv, Chernivtsi, Donbas). As a result, Ukraine's drinking water supply is 80 % secured from surface sources, and in some regions it is almost 100 % [1].

In order to ensure sustainable maintenance of the population and sectors of the economy of water during the Soviet Union, river flow regulation was widely used in Ukraine. Today, reservoirs and rates totally contain about 58 billion cubic meters of water, which exceeds the local annual runoff of all rivers in the country. In connection with the foregoing, the regulation of the flow of most rivers has reached or even exceeded the upper economically and environmentally sound permissible limit of water and ecological destruction (more than 75 % of the total length of the channels with an optimum of 25–30 %), which sharply reduced, and often completely destroyed them self-cleaning ability. Due to the construction of a large number of ponds, medium and small reservoirs (more than 30 thousand), the landscape-hydrological complex of 23 thousand small rivers is lost, which makes up 36 % of their total. This negative trend continues to take place despite the fact that only 25 % of surface water resources are formed on the territory of Ukraine. In addition, a large number of hydrotechnical structures slackened surface runoff and caused long-term increase in ground water levels in large areas, which intensified the development of regional flooding of

land (stable manifestation of 2–3 million ha) with the simultaneous development of pollution areas of groundwater and surface waters. The water supply of Ukraine's population is complicated in full due to poor water quality in water bodies. Almost all surface water sources in Ukraine have been intensively contaminated over the past 10 years. Due to the low quality of sewage treatment (sometimes the treatment plants do not work at all), the flow of contaminated wastewater into the surface water does not decrease, although the use of water in comparison with the beginning of the 90-ies decreased more than twice. The crisis situation of water use, the catastrophic environmental state of water resources is aggravated by the presence of extremely high-density plants in Ukraine, as well as water-based technologies, which require water 2–6 times more than the technologies of developed countries of Europe and America. The specific centralized water supply for the population of Ukraine also exceeds the indicators of developed countries [1].

In terms of water supply, Ukraine is one of the last places among European countries, while the vast majority of them are ahead of the gross domestic product of the gross social product – the water resources of our country are used, and therefore polluted much more intensely than in other countries. The sphere of water supply of Ukraine is of great importance not only for the development of the economy, but also, first of all, for the vital activity of the population of the country. However, in recent years, many elements of the water supply system have begun to pose a threat to the security of the population.

Providing the population with benign water becomes almost the most important problem. Sustainable development of society and preservation of the natural environment depend on its solution. Despite the fact that Ukraine has well-developed water supply systems, today there is a deterioration in the quality of water supply and a decrease in the reliability of technical systems. This is due to the fact that the objects of these systems are obsolete, practically not updated and, as a result, increased their accident rate. In many cities, water treatment plants have ceased to function. Therefore, a major technical upgrade of water supply facilities, the introduction of modern technologies, and the provision of environmental protection measures [2].

The solution of this problem requires an integrated approach, the consolidation of forces in the state in the field of use and protection of freshwater supplies. At the same time, the huge responsibility for the organization and implementation of state policy in this area lies with the representatives of all government bodies and local self-government, which adopt laws and regulations in this area aimed at ensuring public administration, state regulation, state policy, use, protection water objects, water supply and drainage.

Objective changes in the social economic development have led to the formation of a new model of the economy, which is characterized by fundamentally new features and priorities. Today, the need to address the problems associated with the development of the Ukrainian economy, in particular one of the most strategically important sec-

tor – water supply and drainage, which to some extent is a guarantee of national economic security, is of particular importance. However, without the state taking decisive steps and actions in the direction of stimulating innovation, these issues remain unresolved. Consequently, the state innovation policy in the field of water supply and water drainage should become the most important basis of activity and create conditions for the activation of national scientific and technical potential. The main goal of such a policy should be the strategic orientation of the development of production for the creation and widespread use of fundamentally new machines, materials, integrated technological systems, effective development of scientific and technical developments, ensuring socio-economic, organizational and legal conditions for the continuous implementation of effective activities [3, p. 97].

Nowadays, there are a number of problems in the water supply and drainage sector that are of a systemic nature, among which: high level of demolition of communal infrastructure, objects of water supply and drainage from 50 to 90 %; social significance of the sphere, restriction of tariffs growth; significant modernization costs, low expected return on projects, low investment attractiveness for business; increase of electricity tariff; tariffs approved for the company “resist” in the limit index, which generates planned loss-making activity for the future period; increased power of used equipment; significant deterioration of structures and piping system; huge impact on the development of the sector is provided by the indebtedness of the population and

business for housing and communal services.

The problem of providing population with drinking water of normative quality is exacerbated by the increase in anthropogenic pressure on water resources. More than 80 % of the population of Ukraine uses water from open water for satisfaction of its needs, in particular about 30 million people consume water from the Dnieper. Unfortunately, the basins of almost all rivers in Ukraine are polluted mainly by nitrogen compounds, petroleum products, heavy metals, etc. The condition of underground sources also largely does not meet the norms for drinking water. Observations on the quality of artesian water on modern water intakes indicate its constant deterioration. The content in such waters of iron, manganese, nitrogen-containing compounds, rigidity in some cases exceed permitted levels more than 10 times [4].

In Ukraine, the main kind of drinking water supply of the population is centralized with the use of both surface water and underground water from the deep-water aquifers for the production of drinking water. It is known that the quality of tap water depends on various factors, the main of which is the state and quality of the water source of drinking water supply, the efficiency of water treatment plants and technology of water treatment, the sanitary and technical state of the water supply networks. In modern conditions, all these factors do not meet the regulatory requirements, resulting in unfavorable conditions for drinking water of appropriate quality [5; 6].

The water supply system of Ukraine is a rather complex engineering com-

plex, annual productivity of which reaches $2 \times 10^9 \text{ m}^3$. A significant part of the facilities of this complex worked out a normative term and needs updating [7]. The biggest problem of the water supply system in Ukraine and the water supply network, built 30–50 years ago, is its productivity, which is 30 %. This negatively affects the quality of purified water and causes secondary pollution. The most depreciated networks are in Dnipropetrovsk (51,4 %) and Lviv (48,4 %), the least in Volyn (16,5 %), Poltava (17,1 %) and Kyiv (17,2 %). A similar situation with the state of the water supply networks in the village [8; 9].

With the deterioration of the technical condition of water supply systems, the efficiency of their operation decreases and water losses increase. Indicator of water losses in urban networks is too high – within the range of 0,4–3,0 $\text{m}^3/\text{km}/\text{h}$, whereas in Western Europe – 0,1–0,4 $\text{m}^3/\text{km}/\text{h}$ [4; 7; 8].

Pipelines in cities are laid out from cast iron (47 %), steel (41 %), asbestos cement (5 %), polyvinylchloride and polyethylene (3 %) and reinforced concrete (2 %) pipes. At the same time, 24 % of networks have completed their term, since they have been operating for more than 30 years. This is primarily water pipes made of steel and asbestos cement pipes. The indicators of their high accident rate testify to the wear of steel pipes. Thus, for the average accident rate of the water pipelines, 116 accidents per 100 km a year, the accident rate of steel water pipes is 367 accidents per 100 km per year [4].

In Ukraine, predominantly used outdated energy-intensive technologies for purifying drinking water, which

do not provide removal of new technogenic pollutants. Unfortunately, there are no estimates of economic losses and obtaining possible economic effects from solving water management problems in the real sector of the economy.

With problems with drinking water, about 20 % of it (after water treatment) goes to production needs and another 15 % is lost during transportation. More than half of these losses are attributed to the housing and utilities sector. In some regions, water losses reach 60 %, which affects the cost of centralized drinking water supply and tariffs for the population. There continues to be a high percentage of samples of drinking water from centralized water supply systems that do not meet the requirements of the State Standard. The situation surrounding the quality of drinking water in the system of decentralized water supply is even more complicated. Up to 30 % of the analyzed samples of drinking water from sources of decentralized water supply do not meet the sanitary norms for sanitary-chemical indicators and up to 20 % for bacteriological. This situation leads to an increase in both infectious and non-infectious diseases of the population. In addition, problems with drinking water quality are one of the reasons for the rapid growth of the population's use of packaged drinking water. [1].

Today in Ukraine the legal basis for state water policy has been formed and adaptation of the Ukrainian water and environmental legislation to the legislation of the European Union continues. At the same time, it should be noted that the system for monitoring water resources and quality control of drinking water in Ukraine does

not meet international and European standards. The state sanitary norms and rules "Hygienic requirements for drinking water intended for human consumption", approved by the Ministry of Health of Ukraine dated May 12, 2010, were considered to be invalid as state sanitary norms and norms of 1996, but in full will begin to operate only from 2020 (in terms of sanitary-chemical indicators of safety and quality of drinking water). Thus today in Ukraine there is practically no full-fledged state standard for drinking water.

To improve the provision of the population of Ukraine with drinking water of normative quality within the limits of scientifically substantiated norms (norms) of drinking water supply; reforming and developing the water supply and sewerage network, increasing the efficiency and reliability of its operation; improving on this basis the health of the population and improving the socio-ecological situation in Ukraine; restoration, protection and rational use of sources of drinking water supply, the National Target Program "Drinking Water of Ukraine" was approved at the state level. The program should solve the problem of preventing the pollution of sources of drinking water supply, ensuring their compliance with sanitary and epidemiological requirements, increasing the efficiency and reliability of water supply and drainage systems by implementing water protection, technical and sanitary measures, improving water treatment technologies at water treatment plants, monitoring the quality of drinking water, the development of fence systems, the transport of drinking water and drainage, as well as the development of the regulatory frame-

work for foodstuffs water supply and sanitation, water economic mechanism that encourages saving drinking water, including through government support the development and sustainable operation of water supply and sewerage system [10].

At the same time, according to the results of the audit of the effectiveness of the use of the State Budget funds foreseen in the National Program “Drinking Water of Ukraine”, the Accounting Chamber Board stated that its objective is not being achieved. Within the framework of the Program, which is being implemented for 10 years (since 2006), due to its inadequate organizational and financial support, it is almost unrealistic to solve the problem of providing citizens with drinking water in the required volumes and in accordance with established standards. The audit findings give grounds for asserting that there are risks of non-compliance with the Program and after five years (2020). The current legislation does not provide for the holistic regulation of the issues of providing citizens with drinking water. Measures for the development and reconstruction of centralized water supply and sewage systems are carried out unsystematically and inconsistently. There is practically no permanent source of funding, especially for the reconstruction or construction of these systems. In the absence of control by the state customer, updated in 2011, the Program did not contribute to a radical upgrade of the water supply and sewerage enterprises. Significant changes in provision of citizens with quality drinking water during 2012–2015 did not take place. The funds of the state budget allocated to the Pro-

gram in 2012 were used ineffectively and in violation of the requirements of the current legislation. From 2013, the Program did not allocate funds at all. From local budgets and other sources, which make up almost 70 percent of the total amount of program financing, the funds in the planned volume were also not allocated. According to the data of the Ministry of Regional Development, Construction and Housing and Communal Services of Ukraine, in 2012–2015 only UAH 66,5 million (5,6 % of the estimated financial provision of the Program for this period) was made at the expense of the state budget [11].

The state of the water supply and drainage system is closely linked to ensuring the economic security of Ukraine. Economic security is by right the central place in the system of national security, since it is the basis for the proper functioning of all elements related to this system: political, social, military, environmental, technological, information security, etc. This is due to the fact that the proper maintenance of the level of national competitiveness, military-political stability, reliable defense capabilities, effective social policy, harmony in the moral and spiritual life of society, the development of scientific and technological progress, information security and a guarantee of a safe ecological state are impossible without the effective functioning of the economy.

To determine the impact of the state of development of the water supply sector on the level of economic security of Ukraine, we will define the essence of economic security.

As noted by Skoruk O. V., in foreign and domestic literature, there are many approaches to the interpretation

of the concept of economic security of the state with the help of the following characteristics [12]:

- capability and stability, counteraction to internal and external threats, which is understood as the strength and reliability of the links between all elements of the economic system, the stability of the economic development of the state, the resilience to deterrence and the elimination of destabilizing threat-factors;

- economic independence, which characterizes primarily the possibility for any economic security entity to independently adopt and implement strategic economic and political decisions for development, the opportunity to use national competitive advantages for ensuring stability and development;

- self-reproduction and self-development. This characteristic involves the creation of the necessary conditions for conducting effective economic policy and expanded self-reproduction, ensuring the competitiveness of the national economy on the world stage;

- national interests. This characteristic determines the ability of the national economy to protect national economic interests.

The development state influence of the water supply sector on the level of economic security of Ukraine is a special condition of the water supply and drainage system, which is ensured by sustainable and well-grounded methods of leveling out the effects of threats to the internal and external environment, in which the proper conditions for the development of this sphere are created.

As Levchuk O. V. remarks, the most pressing challenges to the economic se-

curity of the outside state are the following [13]: the instability of the global financial system, which is accompanied by the imbalance of world trade and investment flows between the world's largest economic centers; expansion of world markets for certain types of products, goods and services; the spread of crisis phenomena; expansion of the advanced countries of the world; shortage of resources for expanded development.

In view of this, factors that have an impact on Ukraine's economic security from the standpoint of the state of development of the water supply sector should be characterized. It should be noted that after the collapse of the Union of Soviet Socialist Republics and gaining independence Ukraine, gradually moving from a planned to a market type of management, began to build its own economic system. The complexity of this process was aggravated by the fact that in Ukraine the transition to market relations took place during the period of the global financial crisis, which, in its turn, was the cause of the undermining of the already difficult situation in the economic sphere. At this stage, there is a need for new guidelines, methods and methods for the formation of a fundamentally new model of the national economic system that can protect the economic interests of the individual, society and the state. In this regard, research and practical solutions to the problems associated with ensuring the economic security of Ukraine are of paramount importance.

In our opinion, the assessment of the indicators of threats to economic security is an analysis of the main indicators for each indicator of threats to economic security and the evaluation of re-

sults according to certain criteria in terms of the most important processes that reflect the essence of economic security. The criterion is the criterion on the basis of which an evaluation, definition or classification of something is made, an evaluation criterion. In view of this, the critical safety assessment includes estimates [9]:

- resource potential and opportunities for its development;
- level of effectiveness of the resources use, capital and labor and its level of correspondence in developed countries, as well as the level at which the threats of internal and external character are minimized; competitiveness of the economy;
- the integrity of the territory and economic space;
- sovereignty, independence and the possibility of confronting external threats;
- social stability and conditions for the prevention and solution of social conflicts.

The essence of economic security is realized in the system of indicators – indicators of economic security. The following indicators are distinguished:

Economic – gross domestic product, economic growth, public debt, integration into the world economy, inflation, money supply.

Social – the level, quality and life expectancy of the population, the level of unemployment, wages and salaries payable.

Financial indicators – balance of export-import; energy dependence; the size of the gold reserves; volume of the shadow economy.

For economic security, not only the indicators themselves, but also their

limit values are important. Limit values are the limit values, non-compliance of which hinders the normal course of development of various elements of reproduction, leads to the formation of negative, destructive trends in the field of economic security. It is important to emphasize that the highest level of security is achieved, provided that the entire set of indicators is within certain limits and has its own limit values.

The sign of the threshold value of the indicator is the moment of loss by the corresponding economic process of functions allocated to him in the reproductive system. For example, the range of exchange rate exchange should ensure that it performs functions of regulation of foreign trade balance; the amount of the loan interest should be sufficient to saturate the transactional demand for money and the transition to a “long money” demand segment, and the size of the money supply should be sufficient to serve its business turnover; the size and structure of the tax burden should ensure the implementation of taxes stimulating and regulatory functions, etc.

The dynamism of specific thresholds for economic security indicators generates considerable difficulties for their a priori definition, therefore they can hardly be defined for a certain long term, especially since they are borrowed from the experience of other countries of the world.

Let's analyze some of the indicators of threats to Ukraine's economic security. The next, third component – energy security, provides for a rational structure of fuel and energy consumption (FEC), ensuring their needs at an affordable price and quality in the ab-

sence of excessive dependence on one country.

For Ukraine, it is important to reduce the share of gas in the overall structure of consumption of FEC. In addition, countries in the world that are energy-deficit, believe that the share of imports of energy from one country should not exceed 30 % of their total needs.

Ensuring energy security depends on finding new sources of energy supply and reducing dependence on FEC imports from one country by diversifying sources of energy supplies. In this case, it is necessary to strengthen its own role of the transit corridor, otherwise the role of the transit can be intercepted by other countries. The problem of energy security is aggravated by the fact that 35 % of the gas pipelines have been in operation for more than 20 years. The gas transportation system (GTS) needs urgent billion investment. Without external investment (and this possibility is foreseen by the creation of a consortium for the operation of the GTS) it is not possible to do this [9].

The energy intensity of production in Ukraine is too high due to technological backwardness, energy losses, and the existence of a “shadow” economy. The energy intensity of GDP (industries and major types of products) should be compared with the thresholds of energy intensity, which are determined at the level of indicators of analogue countries. Ukraine is forced to import a significant amount of energy, which leads to a deficit in the balance of payments. Thus, the basis of energy security is the steady development of the fuel and energy complex, diversi-

fication of energy imports, and energy conservation.

According to the Methodological Recommendations on Calculating the Level of Economic Security of Ukraine, energy security is defined as “the state of the economy that promotes the efficient use of the country’s energy resources, the availability of sufficient energy producers and suppliers in the energy market, and the availability, differentiation and environmental friendliness of energy resources” [9].

According to the International Energy Agency, energy security is a continuous access to energy at an affordable price. According to scientists, the subject of study of which are the laws of development of the energy sector, under the energy security of Ukraine should be understood as the state’s ability to ensure the efficient use of its own fuel and energy base, to optimize the diversification of sources and ways of supplying energy resources to Ukraine to ensure the vital functions of the population and the functioning of the national economy in the mode ordinary, emergency and martial law, to prevent sharp price fluctuations on fuel and energy resources or the creation of to provide conditions for painless adaptation of the national economy to new prices for these resources.

An overview of the legislative framework and scientific sources provides grounds for arguing that energy security is an integral part of economic security, and therefore the study of these concepts should take place in close interconnection. Achievement of energy security is impossible without revealing the factors, which may adversely affect the development of the fuel and energy

complex. In today's geopolitical situation, ensuring energy security becomes important, if not the main, issue of sovereignty of the state. Thus, according to the "National Security Strategy of Ukraine" of 05/26/2015, one of the topical threats to the national security of Ukraine is defined "actions to block Ukraine's efforts in relation to counteracting the monopolization of the strategic sectors of the national economy by Russian capital, in regard to getting rid of dependence on monopolistic supplies of critical raw materials, primarily energy resources" [9].

The consensus is the forecast of Ukraine's Development Prospects (periodic publication by the Ministry of Economic Development and Trade of Ukraine prepared by the Department of Economic Strategy and Macroeconomic Forecasting with the assistance of the United Nations Development Program under the "Accelerated Progress towards the Millennium Development Goals in Ukraine" Project) the aggravation of the energy resource deficit in the country is recognized as one of the largest internal risks for 2015–2017.

In addition to threats indicated to national security that arise from the vulnerability of the energy sector, other threats to Ukraine's energy security are also highlighted. They include, in particular:

- excessive dependence on import of energy carriers;
- insufficient level of diversification of sources of energy supplies and technologies;
- limited use of own energy potential and new technologies;
- low efficiency of fuel and energy use;

- distortion of market mechanisms in the energy sector;
- criminalization and corruption of the energy sector;
- ineffective energy efficiency and energy efficiency policy.

The problem of ensuring the energy security of Ukraine is constantly in the sight of the state structures. This is evidenced by the approval by the Cabinet of Ministers of Ukraine of 24.07.2013 of the updated version of the Energy Strategy of Ukraine for the period up to 2030. The modern reading of the strategy allows us to formulate the following: the document is aimed at solving energy security problems in conditions of state survival under the circumstances of external aggression with the use of armed forces, and non-military influences. The strategy offers mechanisms of a transformational nature for the period up to 2020 and defines strategic guidelines for development until 2035. It identifies the main goal of Ukraine's energy development for the period up to 2020 – ensuring energy security and the transition to energy efficient and energy efficient use and consumption of energy resources with the introduction of innovative technologies.

Table analyzes the main indicators of energy security for the years 2013–2017 and defines the critical, unsatisfactory and optimal value of indicators that characterize real and potential threats to economic security in general [9].

Internal and external threats lead to insufficient level of stability of the water supply and wastewater sector, and, consequently, and, consequently, decrease of the level of economic security of Ukraine. External threats include the following:

**Analysis of the main indicators of Ukraine's energy security for the period
from 2013 to 2017**

№	Name of the indicator, unit of measurement	2013	2014*	2015*	2016*	2017*	Optimum value	Threat level
3. Energy security								
3.1	Share of own sources in the balance of fuel and energy resources of the state, percent	61,26	54,08	62,02	54,08	67,41	80–100	Unsatisfactory
3.2	The level of import dependence on the dominant resource in the total supply of primary energy, percent	53,51	77,24	61,81	77,24	47,05	30	Dangerous
3.3	The ratio of investments in the fuel and energy complex enterprises to the gross domestic product (hereinafter – GDP), percent	–	1,51	1,94	2,27	1,44	2,5–3,5	Unsatisfactory
3.4	The share of renewable sources in the total supply of primary energy, percent	1,97	1,99	2,02	1,99	2,65	6	Dangerous
3.5	The share of losses in transportation and distribution of energy, percent	2,72	2,84	2,79	2,84	3,17	1,10	Critical

* all data is calculated by the author according to the indicators of state statistics without taking into account the temporarily occupied territory of the Autonomous Republic of Crimea and the city of Sevastopol and data on Donetsk and Lugansk regions.

- instability of the national currency, which occurs during an unstable situation in the economy, during the crisis;
 - reduction of foreign investments;
 - unstable foreign trade conditions;
 - large external debt, which is a burden for our country and depressively affects the development of the economy;
 - the state's dependence in the area of energy supply stability.

The main internal threats are:

- insignificant share of innovative products;
 - ineffective state regulation, that is, inconsistency with the tasks of economic growth;
 - low competitiveness of products;
 - corruption;
 - low living standards of the majority of the population as a result of uneven development of territories,

the spread of unemployment, the impact of the global financial crisis, etc.;

- outflow of capital abroad is also a factor that has a certain impact on economic security.

In order to more effectively determine the level of economic security of the state, we are invited to supplement the current methodology for calculating economic security with additional components.

One of them is environmental safety. In our time, the ecological aspect of Ukraine's economic security has become extremely important and requires a lot of attention from the state authorities. One of the most important concepts in this field is the notion of environmentalization.

Ecologization is a process of steady and consistent implementation of systems of technological, managerial, legal and other decisions, which will enable to increase the efficiency of using natural resources and conditions along with improving or at least preserving the quality of the environment. The prerequisite for this process is to improve production processes and environmental measures.

Among indicators of indicators of ecological safety of Ukraine, the following should be highlighted: the number of implemented low-waste and resource-saving technologies (X9Q); use of secondary energy resources at enterprises and organizations pC91); Efficiency of using fuel and energy resources in economy (X92); the total mass of accumulated waste in Ukraine per 1 sq. km of area (X93); the amount of pollutant emissions into the air (X94) and surface water (X95).

Indicators of Ukraine's environmental safety, as well as demographic security, should also be used for instrumental variables in the design of Ukraine's economic security systems.

In order to carry out the necessary calculations as inputs, it is necessary to choose the degree of influence of threats on the state of economic security of Ukraine. The use of economical and mathematical methods developed in the department of regional problems of national security of the RVPS of Ukraine of the National Academy of Sciences of Ukraine, makes it possible to calculate the quantitative parameters (coefficients) of the territorial dimension of security in its components.

The coefficient of economic security Y_i for any region is possible to be calculate on the basis of the following formula:

$$Y_i = \frac{Z_i^*}{Z_0^*}, \quad i = 1 \dots m, \quad (1.1)$$

where Y_i – the coefficient of economic security of the region; Z_i^* – integral assessment of regional indicators; Z_0^* – integral assessment of the upper pole of the state; m – number of regions ($i = 1 \dots m$).

Coefficient Y of the economic security of Ukraine is calculated as the ratio of the maximum possible value of assessment and integral assessment of the upper pole of the state (2.6):

$$Y = \frac{1}{Z_0^*}, \quad (1.2)$$

where Y – coefficient of economic security of the state; 1 – the maximum possible value of the assessment; Z_0^* – integral assessment of the upper pole of the state.

The list of indicators for 2013–2017 is presented in Annex N.

Foreign economic security (FES) is the significant component of Ukraine's economic security. In the conditions of strengthening the integration of Ukraine's economy into the world economic system, the issue of FES becomes more and more important and consists in the ability of the state to resist the influence of external negative economic factors, to minimize their losses, to actively use participation in the world division of labor to create favorable conditions for economic development, to ensure compliance of foreign economic activities of national economic interests.

Of particular importance is the fact that Ukraine depends on the dominant suppliers of some strategic resources and sole consumers of significant volumes of domestic products. This forces the diversification of exports and imports, as high volumes of trade in certain commodities increase the dependence of the state in the global environment.

Therefore, relying on its own resources and strength, on the effect of the united work of the people, Ukraine must realize its chance to become a great competitive political nation with the European economy as well as security in general.

Among the most important national economic interests, the realization of which depends on the future of Ukraine, the welfare and prosperity of the nation, researchers singled out the following [7]:

- creation of a self-sufficient, competitive, socially oriented, powerful national economy;

- creation of a reliable system of economic security of Ukraine, ensuring the possibility of independent, progressive national and economic development;

- structural adjustment of the economy;

- ensuring the effective development of national industry;

- implementation of protectionist measures aimed at supporting the national commodity producer by the state;

- significant reduction of energy intensity and material consumption of GDP;

- implementation of cardinal modernization of production and development of its high-tech industries;

- creation of closed cycles of production of strategically important products, in particular military equipment and armaments;

- creation of equal social and economic opportunities for all citizens of Ukraine;

- gaining a proper place in the world division of labor and international trade, integration into the world economy by Ukraine;

- construction of economic relations with other countries on the principles of equality and mutual benefit;

- ensuring the competitiveness of domestic products;

- improvement of commodity structure of export and import;

- ensuring the geographical balance of exports and imports;

- increase of export potential, provision of a positive balance of foreign trade activity;

- support of domestic exporters, assistance to producers of import-sub-

stitute products, especially critical imports;

- protection of the national market against the adverse effects of the world situation and foreign competition;
- effective use of its advantageous geographical position for the implementation of international transit by Ukraine.

However, so far, state structures in Ukraine have not achieved economic equilibrium. In particular, gas supplies are constantly supported at the state level, instead of replacing it with electricity and other types of energy. This is a fundamental structural moment of equilibrium that Ukraine seeks to achieve.

In the context of this study, there are examples of tools for securing economic security [14, p. 71]:

1. Institutional — optimization of the system of state bodies; strengthening powers of the authorities on regulation, administration and control of economic activity; the regulation of the order and sequence of the introduction of e-government; improvement of the system of institutional support for the development of public-private partnership; institutionalization of social responsibility and support of critical spheres of life support;

2. Organizational — activation of the administrative functions of the authorities in the preparation and search of sources of investment in social and economic development; initiation of the practice of forming funds of preferential crediting and financing of priority investment projects for the economy; planning and development of the infrastructure of innovation, educational and research activity for the purpose of

intellectualization of the economy; improvement of the quality of the policy of guaranteeing social security;

3. Economic — expansion and modernization of territorial infrastructure; investing funds in the development of basic and priority economic activities; formation and development of inter-regional, inter-sectoral and inter-sectoral local integrated production systems; activation of entrepreneurial activity in the sphere of small and medium business; Increasing the efficiency of using science and technology and intellectual and human resources through the development of venture business.

Conclusions. As a result of the study, it can be concluded that Ukraine failed to create a national economic system that would ensure the country's dynamic development and its compliance with high world standards. In connection with the intensification of the crisis, lately, there has been an increase and threats to the economic security of Ukraine, especially in the sphere of water supply, which is currently in a crisis situation. To prevent negative manifestations in Ukraine, the issue of ensuring an adequate level of economic security, taking into account all possible threats and problems, is of paramount importance.

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