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### **The Role of State Policy in the Formation of Food Security in the Countries of the European Union**

**Abstract.** *Introduction. The correlation between inflation and unemployment is a very relevant topic for both Ukraine and other countries. The connection between them is so strong that they are like a natural disaster with severe socio-economic consequences directly for the population of the countries on whose territory these processes are taking place. The level of food supply in modern conditions is one of the priority areas of state policy in the vast majority of countries in the world. The categorical apparatus of the sphere of food supply was formed in the 70s of the 20th century, when the problem of hunger acquired special importance for most countries of the world. The main priorities in this field at that time were quantitative satisfaction with food products and their financial availability for each person. And although almost half a century has passed since that time, this question has not only not lost its relevance today, but has also become one of the most important and priority ones.*

**Purpose.** *The aim of this study is to thoroughly analyze the current trends of inflation in the countries of the European Union and the impact of these factors on the level of unemployment and the sustainable development of agro-food production as a component of food security in the region.*

**Results.** *The results of empirical and regression analysis have shown that there is a direct causal relationship between inflation and unemployment, with inflation being the cause and unemployment being the effect. This made it possible to assert that the maintenance of macroeconomic stability in the EU countries should, first of all, consist in ensuring stable prices and a stable exchange rate. Maintaining the stability of the country's economic condition will prevent violations of the system of sustainable development of enterprises and contribute to the strengthening of food security trends.*

**Conclusions.** *Inflation and unemployment threaten the economy of any country. However, as a rule, the most vulnerable strata of the population suffer, which affects food security. The relationship between inflation and unemployment exists and is legally regulated by the state administration. As practice shows, modern analytical software tools are used in various states, which are based on macro-, regional, and micro-level statistical data for modeling socio-economic situations, which helps to make the most realistic forecasts of the economic situation. In the future, it will be expedient for the EU government to set the following key tasks: first, use the entire arsenal of measures aimed at further suppressing inflationary factors; secondly, optimization of the nature and structure of public expenditures, while not abandoning the state's duties to protect socially vulnerable segments of the population, which is necessary for successful state regulation of food security processes; to establish the mechanisms and algorithm for achieving national food security, which will include scientific support, the formation of a regulatory and legal framework, increasing production volumes and increasing food security.*

**Keywords:** food security, inflation, unemployment, EU food policy, governmental support, food.

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### **Роль державної політики у формуванні продовольчої безпеки країн Європейського Союзу**

*Співвідношення інфляції та безробіття є дуже актуальною темою як для України, так і для інших країн. Зв'язок між ними настільки сильний, що вони схожі на стихійне лихо з важкими соціально-економічними наслідками безпосередньо для населення країн, на території яких відбуваються ці процеси. Рівень продовольчого забезпечення в сучасних умовах є одним із пріоритетних напрямів державної політики переважної більшості країн світу. Категоріальний апарат сфери продовольчого забезпечення сформувався в 70-х роках ХХ ст., коли проблема голоду набула особливого значення для більшості країн світу. Основними пріоритетами в цій сфері на той час були кількісне задоволення харчовими продуктами та їх фінансова доступність для кожної людини. І хоча з того часу минуло майже півстоліття, це питання не тільки не втратило своєї актуальності на сьогодні, а й стало одним із найважливіших і пріоритетних.*

*Результати емпіричного та регресійного аналізу показали, що між інфляцією та безробіттям існує прямий причинно-наслідковий зв'язок, причому інфляція є причиною, а безробіття – наслідком. Це дозволило стверджувати, що підтримка макроекономічної стабільності в країнах ЄС має полягати насамперед у забезпеченні стабільних цін і стабільного валютного курсу. Збереження стабільності економічного стану країни запобігатиме порушенням системи сталого розвитку підприємств та сприятиме зміцненню тенденцій продовольчої безпеки. Як показує практика, в різних державах використовуються сучасні аналітичні програмні засоби, які базуються на статистичних даних макро-, регіонального та мікрорівня для моделювання соціально-економічних ситуацій, що дозволяє робити найбільш реалістичні прогнози економічної ситуації. На перспективу уряду ЄС доцільно поставити такі ключові*

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*завдання: по-перше, використати весь арсенал заходів, спрямованих на подальше придушення інфляційних факторів; по-друге, оптимізація характеру та структури державних видатків, не відмовляючись від обов'язків держави щодо захисту соціально незахищених верств населення, що є необхідним для успішного державного регулювання процесів продовольчої безпеки; встановити механізми та алгоритм досягнення національної продовольчої безпеки, що передбачатиме науковий супровід, формування нормативно-правової бази, збільшення обсягів виробництва та підвищення продовольчої безпеки.*

**Ключові слова:** продовольча безпека; інфляція; безробіття; продовольча політика ЄС; державна підтримка; харчування.

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**Formulation of the problem.** Food security is considered as a set of four main components: economic availability of food, physical availability of food, quality of food and environmental safety of agricultural production. Thus, in addition to the qualitative composition of the consumer's diet, the dominant factor determining the food security of the population is the level of income and the development of the logistics distribution system. In addition, the component of environmental stability of production is often associated with the level of economic development of society, since it is the high level of productive forces that allows paying sufficient attention to the observance of the principles of sustainable production.

Undoubtedly, economic stability in the country and a high level of development of productive forces allow the use of resource-saving technologies and an increase in the share of organic products in the consumption structure, but often the safety of agricultural production for the environment is determined by other factors, among which the state regulation of agricultural activity, which determines agrotechnical technologies used in production. In order to achieve the required level of economic indicators to ensure the country's food security, the role of state policy in the formation of processes that ensure food stability becomes especially relevant.

**Analysis of recent research and publications.** Many articles by domestic and foreign scientists are devoted to the problems of food security and the role of state policy in its formation. Thus, the work of Babych M. and Kovalenko H. [1] is devoted to the issue of defining the basic definitions of food safety. Economic criteria for evaluating the effectiveness of budgeting in the process of forming a food security system were developed by scientists Brown K., Venkateshmurthy N., Law C., Harris F., Suneetha K., Shankar B., Mohan S., Prabhakaran D., and Knai C. [2]. The issue of ensuring the purchasing power of citizens as the main factor of food stability was highlighted in the article Kotykova O., and Albeshchenko O. [3]. Shebanina O. and Klyuchnik, A. carried out a thorough analysis of the impact of employment on the formation of the foundations of food stability in the state [4]. Sumane S., Dionisio M., Pinto-Correia T., Czekai M., Duckett D., Galli F., Grivins M., Noble C., Tisenkopfs T., Toma analyzed the role of state support of the agro-food sector for the creation of fundamental food security I. and Tsiligiridis T. [5].

**Formulation of research goals.** The main goals of this article are the analysis of the state policy of supporting food policy in the EU countries, the study of inflationary processes, which have recently been gaining momentum along with the growth of unemployment. The purpose of this article is to establish the relationship between inflation, unemployment, and compliance with the principles of sustainable development in the agro-industrial complex of the EU countries in order to formulate relevant recommendations.

**Outline of the main research material.** The EU has a price support program through intervention mechanisms. That is, target and intervention prices for the main crops and types of plant and animal products are determined. The target price is the desired price in the most scarce zone for a certain product, where it is set annually, and the intervention price is a lower price than the target by approximately the amount of transportation costs for delivering the product to the most scarce zone. If the market price falls below a critical level, intervention agencies are opened throughout the EU, which buy products at intervention prices. Next, they keep product stocks and sell it either on the domestic market in the event of an unwanted price increase (commodity intervention), or on the foreign market with a planned loss. Maintaining the financial resources of agricultural enterprises is a significant problem. The requirements of the WTO to reduce support for national agricultural commodity producers have seriously shifted the emphasis of state aid from production support to support of agricultural producers' incomes through so-called unrelated measures.

At the same time, the EU established base periods and, accordingly, base areas, yields and production volumes. State payments tied to the indicators of these years do not stimulate production growth and, in accordance with the requirements of the WTO, are subject to gradual reduction. In the EU, the income of food producers is supported through food programs. Direct payments, countercyclical payments, and market aid loans form the basis of the product programs of the US agricultural policy. Direct payments are intended to directly increase the income of such manufacturers, regardless of the market situation and sales channels of finished products; the mechanism of anticyclical payments is activated when market prices (as a rule, seasonal) are not in favor of agricultural producers; market assistance loans, which allow producers to obtain a loan from the government against the actual or potential collateral of the products produced, reduce the risk of loss of income from fluctuations in market prices.

In the EU, direct payments to the producer's income are tied to the basic indicators of cultivated areas (animal population), yield (productivity), production volumes, and therefore are considered unrelated support measures [1]. The recipients of direct payments are producers of grain, protein, energy and oil crops, rice, nuts and milk. In beef cattle breeding, the EU policy is somewhat different: industrial-type enterprises cannot claim direct income payments, so only small agricultural producers, characterized by a low density of animals per hectare of fodder crops, can participate in the program.

Similar to the US food policy, the EU has restrictions on agricultural producers who wish to participate in price and income support programs. In particular, they must sign a commitment to reduce the cultivated area by 10% on a

long-term basis and adhere to the rules and standards of farming established by the laws of both the EU and their countries. An additional condition has been introduced for large agricultural producers who receive more than 15,000 euros in direct payments or with a turnover of more than 100,000 euros. Such producers are obliged to cooperate with the system of consulting agricultural producers [3].

The beginning of 2022 was marked by economic and political upheavals in the world, which caused the manifestation of crisis phenomena in the economy, and, as a result, led to a rapid increase in prices for entire groups of goods in the countries of the European Union in particular (Fig. 1).

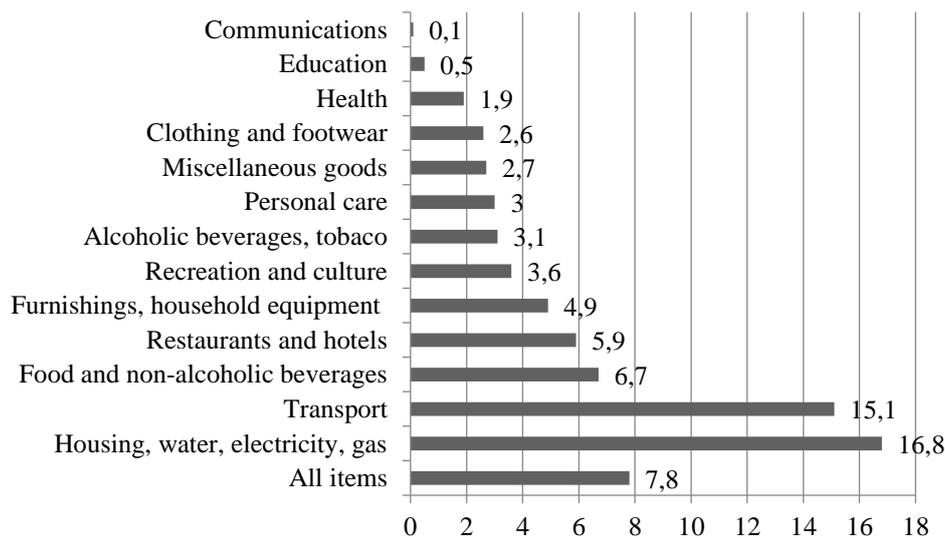


Figure 1– Harmonized index of consumer prices inflation rate of the European Union in March 2022, by sector

Source: built by the author on the basis [6]

The inflation rate for all items in the European Union was 7.8 percent in March 2022, driven by rising prices in the housing and energy sector which had an annual inflation rate of 16.8 percent as well as rising costs in the transport sector, which had an inflation rate of 15.1 percent.

Inflation has become the biggest economic problem that unnerves voters and forces politicians of every country to look for non-standard ways to curb it. Central banks are preemptively raising interest rates to stop rising prices, but their reckless actions could "bleed" the world economy and trigger a recession. At the same time, even without strict monetary measures, the world may face stagflation - the high cost of raw materials by itself cools economic growth.

The growth of inflationary expectations, and not only among the population, is another important prerequisite for inflationary growth. The growing difference between the yield on inflation-protected bonds and the yield on

government bonds indicates that market participants believe in high inflation. This belief determines the actions of market players, whose strategies are based on the expectation of price growth, which affects the strengthening of inflationary processes in many countries (Fig. 2).

But the most negative phenomenon associated with inflation is unemployment. Unemployment as a social phenomenon is characterized by impossibility a certain number of citizens of working age to find a job for reasons beyond their control, and the employment service cannot offer them relevant work.

Unemployment is preceded by deep structural shifts in the economy, which

restrain disproportions between the quantity, quality and structure of demand and job offers; recessions and crises in the economy, which lead to a reduction labor demand and uneven distribution of productive forces, as a result, labor supply and demand are divided territorially.

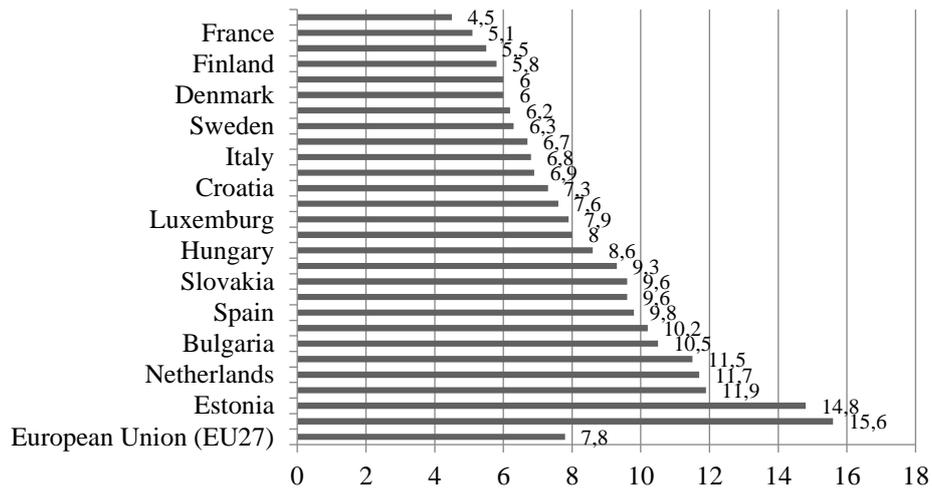


Figure 2- Harmonized index of consumer prices inflation rate of the European Union in March 2022, by country

Source: built by the author on the basis [7]

As of March 2022, the inflation rate in the European Union was 7.8 percent, with prices rising fastest in Lithuania, which had an inflation rate of 15.6 percent. By contrast, the inflation rate in Malta was 4.5 percent, which was the lowest in the EU during this month. The current rate of inflation in the EU is higher than at any other time, with the peak prior to 2021 recorded in July 2008 when prices were growing by 4.4 percent year-on-year. Before the recent rises in inflation, price rises in the EU had been kept at relatively low levels, with the inflation rate remaining below three percent between January 2012 and August 2021.

Among the main reasons that provoked a rapid increase in prices for consumer products in the EU can be attributed:

- unsatisfied pent-up demand that took off after the easing of COVID restrictions (increased demand leads to higher prices);

- a shift in demand from the service sector to goods, especially durable goods;

- logistic factors, for example, the cost of container transportation increased almost three times in a year, which immediately affected the prices of transported goods;

- low interest rates of key central banks, which will not be significantly increased, otherwise the servicing of the national debt, which has increased sharply, will become very expensive, etc.

Simultaneously with the rise in prices in the EU countries, the trends of increasing unemployment are intensifying (Fig. 3), which also affects the purchasing power of the population and the food security of the state.

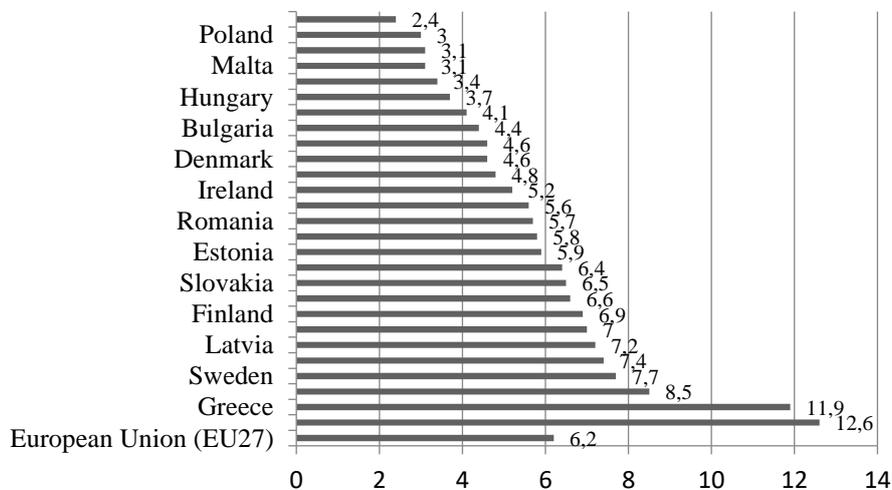


Figure 3- Unemployment rate in the European Union as of February 2022, by country

Source: built by the author on the basis [8]

Among European Union countries in February 2022, Spain is currently suffering the worst unemployment rate at 12.6 percent, followed by Greece at 11.9 percent while Czechia has the lowest unemployment rate in Europe, at 2.4 percent.

The most powerful tool for combating unemployment in the EU member states was a compromise between the government, entrepreneurs and employees: the government legislates the reduction of the working week; entrepreneurs intensify the creation of new jobs; salaried staff agree to some reduction in the minimum wage level.

Programs to reduce the level of unemployment in the EU foresee an increase in the level of employment among women. In order to properly realize the working potential of women in the labor market, the EU adheres to the following principles:

- equalization of wages for men and women for performing the same work;
- increasing the availability and quality of care systems for children and the elderly;

- provision of flexible work schedules, especially for mothers;

- a maximally personalized approach to the specific needs of disabled women.

Although the leading European countries are constantly increasing their competitiveness in almost all sectors, there is a wide differentiation in the components of competitiveness. The largest gap is observed in the "macroeconomic environment" component, which is a reflection of the uneven recovery of EU countries from the global financial crisis. EU averages are the weakest for innovation: The region's countries are clearly divided, with a significant gap between innovation scores for Northern and Western Europe compared to Central, Eastern and Southern Europe. Accelerating the development of the innovative component is crucial for maintaining the current level of well-being, and EU countries can expect a high return on investment in this component (Fig. 4).

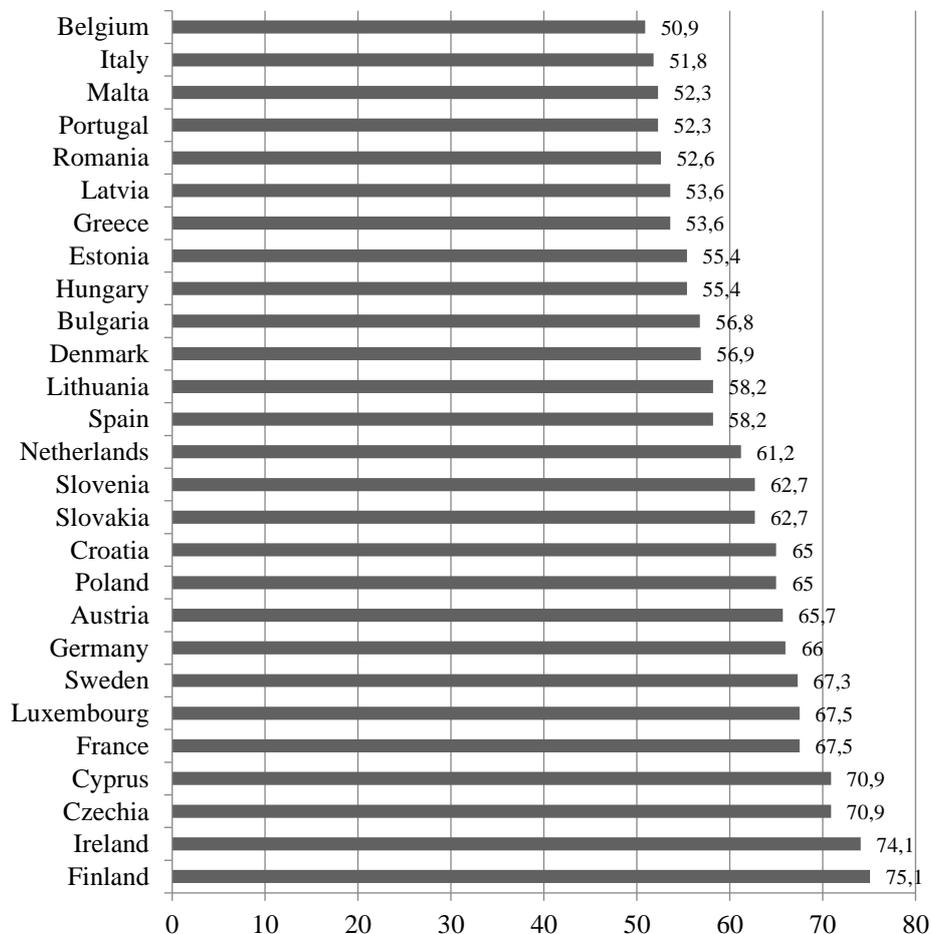


Figure 4- Natural resources and resilience index in the European Union in 2022, by country

Source: built by the author on the basis [9]

Thus, we will analyze the influence of factors of economic stability of the countries of the European Union on the indicator of environmental safety of agricultural

production (Fig. 5). Among the selected indicators of economic stability, we will choose indices of inflation and unemployment in the countries of the European Union. As

an indicator of environmental safety of agricultural production, we will take the corresponding index, which forms the global index of food security for the specified countries.

The Global Food Security Index, developed by the research division of "The Economist" magazine, evaluates the main aspects of financial and physical availability of food, as well as the quality and safety of food products in 109 countries of the world. The Global Food Security Index until 2017 consisted of three general indicators: quality and safety, financial availability and physical availability. In 2017, a fourth indicator was added - natural resources and sustainability. Such a change in the calculation methodology is connected with the fact that in 2017, for the first time in five years, the deterioration of global food security was observed. In addition to traditional risks, problems with global warming and adverse weather conditions play an increasingly significant role. Starting in 2017, it was decided to publish two versions of the Index: the average rating of food security based on three indicators and adjusted taking into account the fourth - the influence of natural factors [10].

In recent years, a certain trend has emerged in the behavior of producers of goods and services. In order not to scare the consumer, manufacturers of food products do not increase the price of a specific product, but reduce its quantity in a package or its weight. Analyzing the level of inflation in the country, one should not forget that it is closely related to the level of unemployment, productivity and wages.

When formulating an anti-inflationary policy, it is necessary to take into account the versatility and interdependence of all factors that create inflation, because only then can one really assess the scale of the impact of anti-inflationary measures on the terms of stabilization, rates of economic growth, as well as the formation of the structure and proportions of the economy. Anti-inflationary measures must correspond to the modern period, and therefore have flexibility and be adjusted according to the pace of changes that occur in the economy at certain stages of its development. All separate stages must logically complement each other and act in a coordinated and synchronous manner.

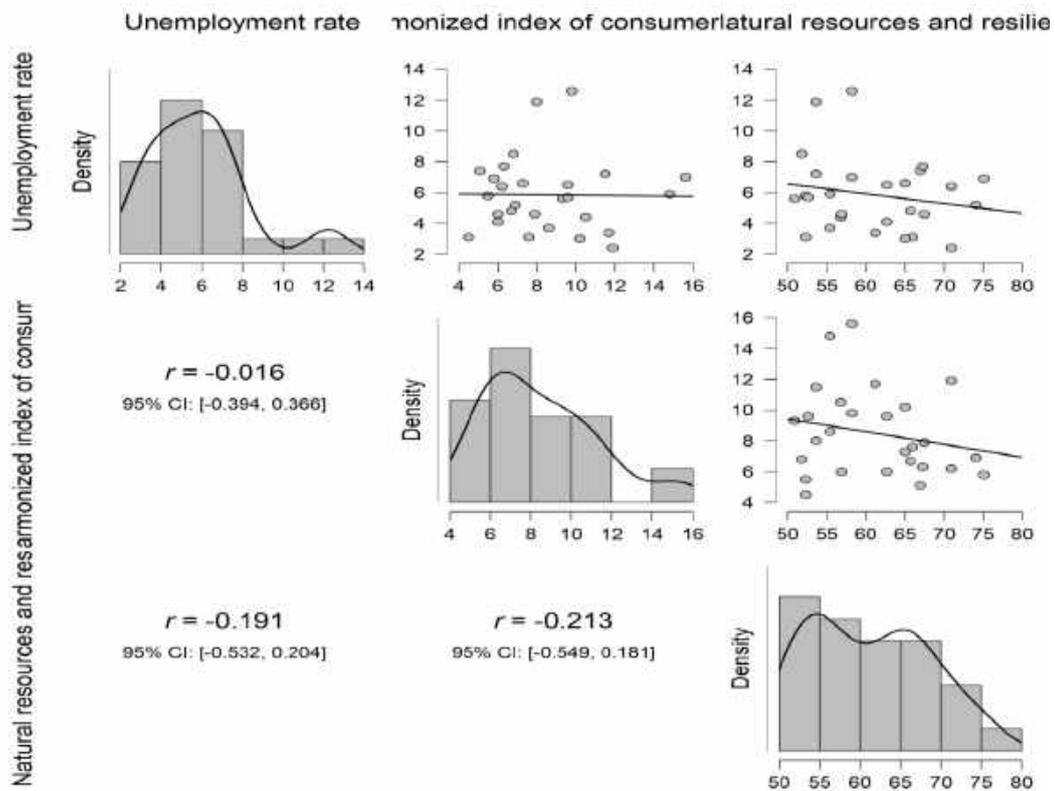


Figure 5- The influence of factors of economic stability of the countries of the European Union on the indicator of environmental safety of agricultural production in 2022

Source: built by the author on the basis [6-10]

Inflation and unemployment are the main macroeconomic problems that disturb the economic balance and lead to structural imbalance of the entire economic system. Thus, an increase in the general level of prices in the country always leads to a decrease in the real

income of the population, which, in turn, reduces the motivation of individuals to work and, ultimately, leads to a shortage of labor. On the other hand, an increase in the number of unemployed leads to a contraction of effective aggregate demand and causes a prolonged economic

recession. In addition, there is a negative impact of inflation on the sustainable development potential of the studied countries, which directly poses a threat to food security.

Thus, the results of empirical and regression analysis have shown that there is a direct causal relationship between inflation and unemployment, with inflation being the cause and unemployment being the effect. This made it possible to assert that the maintenance of macroeconomic stability in the EU countries should, first of all, consist in ensuring stable prices and a stable exchange rate. In this regard, it is worth proposing such measures as the improvement of the transmission mechanism of monetary policy using the interest channel, the reduction of public debt, the spread of digital means of payment, further smartization and robotization of production. The implementation of these measures will allow solving two main macroeconomic problems in the EU countries: forming long-term adaptive inflationary expectations of the population and reaching the level of natural unemployment. In addition, maintaining the stability of the country's economic condition allows preventing violations of the system of sustainable development of enterprises and promoting the strengthening of food security trends.

**Conclusions.** Inflation and unemployment threaten the economy of any country. However, as a rule, the most vulnerable strata of the population suffer, which affects food security. The relationship between inflation and unemployment exists and is legally regulated by the state administration. As practice shows, modern analytical software tools are used in various states, which are based on macro-, regional, and micro-level statistical data for modeling socio-economic situations, which helps to make the most realistic forecasts of the economic situation.

The question of the relationship between inflation and unemployment was and is the subject of attention of many representatives of economic science and various scientific schools. Inflation and unemployment are considered two main factors of macroeconomic instability. They will exist as long as the economy exists, and their close connection will always create difficulties.

People's behavior and production activity are influenced not only by rising prices, but also by expectations. If they are rational, then the behavior is also rational. People are not interested in the nominal salary, but the real one. Inflation itself now becomes dependent on the degree of trust in the actions of the executive authority. The policy of choosing between unemployment and inflation is losing its relevance. The main emphasis shifts towards the study of factors under the influence of which expectations are formed. However, the accuracy of data on the level of inflation and unemployment also depends on the level of the shadow economy, which hides a large amount of information.

In the future, it will be expedient for the EU government to set the following key tasks:

- firstly, the use of the entire arsenal of measures aimed at further suppressing inflationary factors. The step-by-step action plan will make it possible to first drive inflation into the so-called "security corridor", and then to eliminate economic disparities of non-monetary factors of inflation, which will make it possible to eliminate the triggers of food instability and threats to food security;

- secondly, optimization of the nature and structure of state expenditures, while not abandoning state duties to protect socially vulnerable segments of the population, which is necessary for successful state regulation of food security processes.

#### References:

1. Babych, M. & Kovalenko, A. (2018). Food Security Indicators in Ukraine: Current State and Trends of Development. *Baltic Journal of Economic Studies*. 4. 1. p. 8–15. <https://doi.org/10.30525/2256-0742/2018-4-1-8-15> [in Ukrainian].
2. Brown, K., Venkateshmurthy, N., Law, C., Harris, F., Suneetha, K., Shankar, B., Mohan, S., Prabhakaran, D., & Knai, C. (2021). Moving towards sustainable food systems : A review of Indian food policy budgets. *Global Food Security*. 28. 345-356. <https://doi.org/10.1016/j.gfs.2020.100462> [in English].
3. Kotykova, O., & Albeshchenko, O. (2017). An indication of the sustainable development of Ukraine in global Dimensions. *Baltic journal of economic studies*. 3. 5. 196-202. <http://dx.doi.org/10.30525/2256-0742/2017-3-5-196-202> [in Ukrainian].
4. Shebanina, O., Klyuchnik, A., Burkovska, A. & Caruso, D. (2018). Providing Labour Income as a Supporting Factor of the Food Security. *Management Theory and Studies for Rural Business and Infrastructure Development*. 40. 597-608. <https://doi.org/10.15544/mts.2018.52> [in Ukrainian].
5. Sumane, S., Dionisio, M., Pinto-Correia, T., Czekai, M., Duckett, D., Galli, F., Grivins, M., Noble, C., Tisenkopfs, T., Toma, I. & Tsiligiridis, T. (2021). Supporting the role of small farms in the European regional food systems: What role for the science-policy interface? *Global Food Security*. 28. 319-327. <https://doi.org/10.1016/j.gfs.2020.100433> [in English].
6. Measuring inflation – the Harmonised Index of Consumer Prices (HICP). Retrieved from : [https://www.ecb.europa.eu/stats/macroeconomic\\_and\\_sectoral/hicp/html/index.en.html](https://www.ecb.europa.eu/stats/macroeconomic_and_sectoral/hicp/html/index.en.html) [in English].

7. Inflation in the euro area. Retrieved from : [https://ec.europa.eu/eurostat/statisticsexplained/index.php?title=Inflation\\_in\\_the\\_euro\\_area&oldid=567957](https://ec.europa.eu/eurostat/statisticsexplained/index.php?title=Inflation_in_the_euro_area&oldid=567957) [in English].
8. Unemployment rate in the European Union. Retrieved from : <https://www.statista.com/statistics/1115276/unemployment-in-europe-by-country/> [in English].
9. Natural resources and resilience. Retrieved from : <https://www.eolss.net/sample-chapters/c13/E1-21-05-06.pdf> [in English].
10. Natural Resource Management. Retrieved from : <https://www.resiliencelinks.org/building-resilience/natural-resource-management> [in English].



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