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Food aid for the poor – key working tool for protection of food interests of Ukraine's population

Summary. The need to protect the food interests of Ukrainian citizens is conditioned by a number of pressing challenges – insufficient level of income, high growth rates of consumer food prices, excessive level of market concentration, excessive volumes of food exports, which cause a deficit in the domestic market, etc. For a full-scale deployment of the Ukrainian food aid program, it is necessary to preliminarily conduct an experiment. As part of the experiment, we propose to involve low-income citizens in the program, who has a total income not exceeding 130% of the poverty line (subsistence level). According to the statistics of 2017, the protection of food interests needs those households whose average income is less than UAH 2,085 per month – these are household's first decile group. The average benefit is UAH 284 per person per month. A tentative budget for food aid for all households and the decile group should be UAH 1204.6 million. An increase in food expenditure by 1% will lead to an increase in real GDP of Ukraine by 0.97%. Food expenditures of the population of Ukraine in 2017 amounted to UAH 673539.0 million. Their increase by UAH 1204.6 million, or 0.18%, will cause real GDP growth of 0.17% or UAH 4266.9 million.

Key words: food interests, protection, subsistence level, food aid, budget, cost multiplier

Introduction

The key global problems of dissatisfaction with the physiological needs of mankind are the lack of food and drinking water. Since economic interests are a form of manifestation of certain needs, it can be argued that the economic form of manifestation of the human need for food is food interest. We believe that the food interest is the interest of the individual, the group of individuals to satisfy their own need for safe quality food, necessary for existence and healthy livelihoods, through market exchange, self-reliance, or help.

An important methodological aspect of the justification for the problem of protecting the food interests of the citizens is the differentiation of the categories "food interest" and "food security". The Law of Ukraine "On State Support to Agriculture in

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Ukraine" defines the term "food security" as the protection of human life interests, which is expressed in guaranteeing the state of unimpeded economic access of a person to food products in order to maintain her normal life activity[1]. In this definition, "food security" is a form, while "protection of vital interests of citizens" is content. There is no doubt that in this case, "vital interests of citizens" refer to "food interests".

Protecting the food interests of the country's population is a matter of food security. However, the methodology for assessing the level of protection of food interests cannot be reduced only to the analysis of existing official indicators of food security. The disadvantage of this approach is that the analysis of food safety is an assessment of the consequences, a statement of the actual state of the system under research. Instead, the reasons that are caused by them are usually considered in the context of other problems of the functioning of the national economy, and they are not directly related to the state of protection of food interests of the population. As a result, there may be a breakdown of the cause-and-effect chain, which leads to the wrongful neglect or mitigation of the role of individual destructive factors. In turn – this leads to a violation of the principle of integrity in addressing the problem of protecting the food interests of the country's population. For example, the course of state administration to increase household incomes without adequate response to the growth of consumer prices as a result of cartels of unscrupulous market agents will nullify or restrict the effect of the state's efforts to raise the standard of living of citizens[2]. The urgent need to protect the food interests of Ukrainian citizens is due to a number of urgent challenges: insufficient level of income of the citizens of the country, high growth rates of consumer food prices, excessive level of market concentration, excessive volumes of food exports, which cause a shortage in the domestic market, etc.

The purpose of the study is to substantiate the conditions for the participation of food aid recipients in the relevant programs, assessment of the costs of their implementation and the forecast of the impact on the social production of Ukraine.

Methodology

As a methodological basis for the study of the impact of the growth of food solvency of the population of the country on the overall level of economic activity, we adopted the Keynesian theory. In particular, the rationale for the mechanism of the impact of aggregate expenditures on the volume of national production[3]. The expenditures or expenditures of the population for the purchase of food products are part of total expenditures (AE), while in the situation of Ukrainian households, more (over 50%) of component C:

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[1] Verkhovna Rada of Ukraine: Low of Ukraine "About state support of agriculture of Ukraine" from 24 June 2004, nr 1877–IV, Bulletin of Verkhovna Rada of Ukraine 2004, nr 49.

[2] R. Mudrak, V. Lagodienko: The consumer price index of food products and agroinflation: comparative analysis Ukraine-European Union, Economy of Ukraine 2018, nr 1, s. 29–39.

[3] J.M. Keynes: The General Theory of Employment, Interest, and Money, Macmillan Publishing Company, London 1936.

$AE = C + G + I + X$

where: AE – total expenditures;
C – household expenditures for the purchase of goods and services; expenditures of non-profit charities for goods and services for the needy;
G – government expenditures;
I – gross accumulation of capital;
X – net exports.

Total expenditures are the total sum of all customers expenditures on final goods and services produced by the national economy. They play a key role in ensuring an equilibrium amount of national production. After all, the equilibrium level of national production is such that its volume corresponds to the aggregate expenditures that are sufficient for the purchase of all products manufactured in the current period. It depends on changes in any of the components of aggregate expenditures. An increase in any of the components will move the line of planned output up, which will increase the equilibrium output. Conversely, a decrease in the value of any component of aggregate expenditures will shift the expenditure line downwards, which will be accompanied by a reduction in employment and equilibrium GDP (Figure 1).
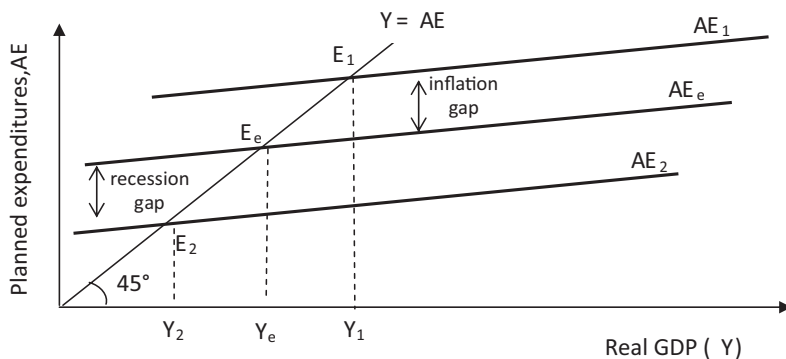

Figure 1. "Keynesian Cross", method "expenditure–output"

Source: J.M. Keynes: The General Theory of Employment, Interest, and Money, Macmillan Publishing Company, London 1936.

An increase in any component of aggregate expenditures leads to a slightly higher increase in equilibrium output, or, equivalently, in revenue. This result is called the multiplier effect. The multiplier effect is a multiplier effect that changes the aggregate expenditures to equilibrium GDP. The multiplier effect is inherent in all types of expenditures – consumer expenditures, investments, government purchases of goods and services, and net exports. Expenditure multiplier is the ratio of changing equilibrium GDP to the change of any component of aggregate expenditures:

$$\mu = \frac{\Delta Y}{\Delta AE}$$

where: μ – expenditure multiplier;
ΔY – change in equilibrium GDP;
ΔAE – change in aggregate expenditures independent of dynamics of Y.

The multiplier is the coefficient to be multiplied by the change in total expenditures to determine the final change in equilibrium GDP. In other words, the multiplier shows how many times the total increase in total production (income) exceeds the increase in aggregate expenditures. The multiplier operates in both directions: the reduction in any component of aggregate expenditures leads to a multiple reduction of equilibrium GDP, and vice versa.

The mathematical content of the multiplier also allows it to be considered as a value that shows how much the function (real GDP) changes with the change in aggregate expenditures (AE) by 1%. That is, we are talking about the elasticity of national production in total expenditures.

Research results

Introduction of advanced international experience in food protect the interests of the population showed that there are significant differences in national approaches to solving this issue. As an example, we are guiding the main aspects of the relevant policy in the EU and the US.

In the EU, the White Paper on food safety is a regulatory document defining the key aspects of protecting the food interests of the population of the member states, "White paper on food safety" is the tool for implementing the relevant policy and the mechanism for their application. To achieve the stated goal, it provides for the implementation of measures for the following directions:

1. Formation of bodies and normative support for the implementation of their powers ("Priority measures").
2. Animal feed.
3. Zoonoses (infectious diseases of animals that can affect people).
4. Animal health.
5. Animal by-products.
6. Diseases transmitted from food of animal origin are related to animal origin ("BSE / / TSE").
7. Hygiene.
8. Contaminants.
9. Nutrition supplements and flavors.
10. Materials that come in contact with food.
11. New Products / Genetically Modified Organisms.
12. Radiation irradiation of food.
13. Dietary foods / nutritional supplements / enriched foods.

14. Labeling of food.
15. Pesticides.
16. Nutrition.
17. Seeds.
18. Support measures.
19. Third Country Policy / International Relations[4].

Researching the practical implementation of the measures provided for by this document allows us to conclude that the key objectives of the EU food policy are to ensure that sufficient food production meets the identified safety and quality criteria. There are no specific measures specifically aimed at increasing the economic availability of food products for poor people, as part of a common European food policy. This is the prerogative of the national governments of the EU member states, who, through their own budgets, can implement policies to increase the economic availability of food for their citizens. For example, the Ministry of Agriculture of Lithuania plans to adopt final laws on the introduction of food coupons. The introduction of food-based coupons is a measure to combat rising food prices. It is assumed that vouchers will be available to all residents of the republic who bring up preschool children. One person per month plans to allocate three coupons, which provides a discount on products in the amount of 20%. The program has been allocated EUR 5 million[5].

Another approach is applied in the United States – there are a number of programs that directly aim at increasing the economic affordability of food for socially vulnerable and disadvantaged groups. In the United States, 96% of all federal expenditures fall into five major programs, namely:
– Supplemental Nutrition Assistance Program (SNAP) – 70%;
– Special Supplemental Nutrition Program for Women, Infants and Children (WIC) – 6%;
– School Lunch Program – 13%;
– School Breakfast Program – 4%;
– Child and Adult Care Food Program – 4%.

The Supplementary Food Assistance Program (SNAP) is one of the most comprehensive programs, both in terms of number of participants and in terms of funding. By October 2008, this program was known as the "Federal Food Stamp Program". Food stamps were introduced in the US back in 1939 – during a period of deep economic crisis and a massive decline in people's standard of living.

Today, SNAP can be used by any US citizen with an insufficient level of income, regardless of article, race, age or even an immigrant. To do it, the applicant must contact a special official body and fill out the relevant application, which, in particular, indicates the amount of income received, possession of property, insurance, etc. The approach

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[4] Commission of the European Communities: White paper on food safety, Brussels, 12 January 2000, COM (1999) 719 final.
[5] FINANCE.UA: The following year, Lithuanians will be issued food stamps, https://news.finance.ua/ua/news/-/443922/nastupnogo-roku-lytovtsyam-vydavatymut-talony-na-yizhu [in Ukrainian] (access: 22.07.2019).

to each applicant is individual. In the case of a positive decision, you must be assured of SNAP no later than 30 days from the date of submission of the application. The corresponding funds are credited to the SNAP member's debit card, which he can use at many authorized retail outlets: supermarkets, food markets, etc.

With the help of SNAP you can buy: food; baby food, diabetic and dietary foods; edible ingredients that are used in cooking, such as herbs and spices; seeds of food crops and food plants for growing at home.

It is not allowed to spend SNAP assistance on: cooked hot dishes in grocery stores; any cooked food (hot or cold) that is sold and intended for use in the store (except for people who cannot cook for themselves); alcoholic beverages and tobacco products; household chemicals, paper and perfume and cosmetic products, as well as kitchen utensils; goods for animals; items for storage of food products; medicines, vitamins or mineral supplements; gardening items.

A special nutrition program for women, infants and children (WIC) helps protect the health of pregnant women and nursing mothers, as well as infants and children under the age of five who are at risk for healthy eating. Within the framework of the WIC program, the target population can receive additional food for free, necessary for a healthy diet.

To qualify for assistance, applicants' income should not exceed 185% of the poverty line.

The program of school lunches was started in 1946 and provides pupils with nutritious free or special occasions. Schools participating in the program receive funds and certain types of food from the US Department of Agriculture. In turn, schools should provide food according to federal food requirements, as well as offer free or privileged lunch meals for children from low-income families. Each child attending school can participate in the program. Children from income families at the level of 130% of the federal poverty line are entitled to free food. Children from families with income from 130 to 185% of the poverty line are entitled to a reduced-price food. Children from income families are paying more than 185% of the poverty line, but their lunches are still subsidized to a certain extent.

The program of school breakfasts has been in operation since 1975 and provides for pupils from low-income families (eligibility requirements are the same as for the School Lunch Program) of federally-subsidized breakfasts. The participating schools receive funds from the US Department of Agriculture to compensate for their expenses under the program.

A food program for children and adults in need of care was introduced in 1968. The program envisages subsidizing healthy food (lunch, breakfast or snacks) for children and adults who are in kindergartens, orphanages, and care centers for sick people, elderly people, shelters, etc.

Suppliers receive reimbursement from the federal budget for food delivered. In addition to reimbursement of food costs, the US Department of Agriculture also provides free rural produce products to relevant care facilities that are participants in the program[6].

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[6] Economic Discussion Club: USA Food Support Programs, or about how the state power respects its

Hence, the most comprehensive coverage of recipients of assistance and budget expenditures is the Supplemental Food Program or SNAP.

To receive food stamps, families must meet three criteria:

1) their monthly gross income should be less than 130% of the poverty line or about USD 26,600 per year for a household of three;

2) 2) a family where there is no retirement age or disabled person cannot have more than USD 2,250 in assets;

3) 3) the family, one of whose members is a retired person or a disabled person, cannot have more than USD 3,500 in assets.

In 2017, the program of food stamps involved more than 42.2 million people in the United States. According to the financial year 2016, 44% of food stamp recipients were children, and 12% were older than 60 years old. Others were adults of working age. About 57% are women, 43% are men.

On average, a household of three people gets about USD 376 a month. They can spend money on one of the 260,000 retailers participating in the program. Food stamps often do not cover the cost of all the food per month, but this program should be an addition to the family budget.

The SNAP program requires most able-bodied childless adults to work, and in some states, parents who raise minors should also work. Adolescents without minors can receive assistance only for three months during the 36-month period if they do not work or did not participate in curriculums lasting 20 hours a week. States may waive this requirement in those districts where unemployment is at least 10%, or where there are not enough occupational positions as defined by the Department of Labor.

According to the US Department of Agriculture for 2013, 1.3 cents from each dollar of help goes to fraudsters. This is generally the case when coupons are exchanged for cash or non-liquid goods from small retailers.

In 2017, the federal government spent more than USD 68 billion on SNAP. More than 93% of the funds are directed to direct assistance, which is credited to the card, while some cover administrative expenses[7].

In our opinion, taking into account that the extremely high shares of low-income households in Ukraine, as well as the government's refusal to stately regulate prices for socially significant foodstuffs[8], it is appropriate to take US experience - to develop and implement programs for direct protection of food interests of the population.

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people, http://edclub.com.ua/analityka/programy-prodovolchoyi-pidtrymky-naselennya-u-ssha-abo-pro-te-yak-vlada-povazhaye-sviy (access: 23.07.2019).

[7] T. Luhby: The real story of food stamps, CNN Business, 2018, https://money.cnn.com/2018/02/13/news/economy/food-stamps-what-to-know/index.html?sr=fbmoney021318food-stamps-what-to-know1144PMVODtopLink&linkId=48080593 (access: 29.07.2019).

[8] Cabinet of Ministers of Ukraine: Decree "About making changes to the application to the decree of the Cabinet of Ministers of Ukraine dated 25 December 1996, No. 1548 and recognition of invalidations of some decrees of the Cabinet of Ministers of Ukraine 7 June 2017, No. 394", Official Bulletin of Ukraine, 2017, No. 48 (access: 05.08.2019)

For a full-scale deployment of the Ukrainian food aid program, it is necessary to preliminarily conduct an experiment that would allow identifying vulnerabilities in the program, comparing costs and results, and if a sufficient level of efficiency is found, expanding the program by reaching more recipients, including in the framework of parallel food aid programs.

As part of the experiment, we propose to include in the program food cards of low-income citizens whose cumulative income does not exceed 130% of the poverty line (subsistence level). To determine the targeted amount of budget expenditures for financing the announced event, we will calculate the income and expenditure statistics of Ukraine for 2017 (Table 1). The monthly living wage in 2017 amounted to an average of UAH 1604 for one person (from 01.01.2017 to 30.04.2017 – UAH 1544, from 01.05.2017 to 30.11.2017 – UAH 1624, from 01.12.2017 to December 31, 2017 – UAH 1700)[9].

Consequently, 130% of this amount, will be UAH 2,085 per person Thus, the protection of food interests needs those households whose average per capita income is less than UAH 2,085 month. That is, these are households and decile groups (Table 1).

Table 1. Calculation of total incomes by decile (10%) for the level of average per capita equivalent total income in 2017 (on average per month per one person, UAH)

Indicator	All persons	including the decile (10%) groups by the level of per capita equivalent gross revenues per month									
		I	II	III	IV	V	VI	VII	VIII	IX	X
All total household income	8013	4160	5415	5859	6255	7316	7848	8322	9461	10786	14719
Average equivalent household size (individuals)	2.11	2.31	2.29	2.16	2.07	2.18	2.12	2.03	2.05	2.03	1.84
Total comprehensive income for one person	3798	1801	2365	2713	3022	3356	3702	4100	4615	5313	7999

Source: Statistical Yearbook. "Expenditure and resources of households of Ukraine in 2017 year" (access: 05.08.2019)

And the average amount of assistance should be UAH 284 per person per month (2085 – 1801 = UAH 284). The number of permanent population of Ukraine in 2017 amounted to 42,414,900 people; hence the number of first decile group amounted to 4,241,490 people (10% of 42 414 900 people). Therefore, the estimated budget for food aid for all households of the first decile group for statistics in 2017 should have been 1204.6 million UAH. (4,241,490 (persons) 284 (UAH).

In our opinion, it is expedient to use the current methodology for determining who has the right to receive a housing subsidy according to these criteria in order

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[9] Minfin: Living wage in Ukraine, https://index.minfin.com.ua/ua/labour/wagemin/ (access: 05.08.2019).

to determine the persons entitled to receive food aid on the basis of property status and status of economic activity (employed / unemployed). Given that the aggregate income includes:

1) benefits, benefits, subsidies and compensatory payments provided in cash;
2) cashless grants and subsidies for housing and communal services, electricity and fuel;
3) non-cash benefits for the payment of goods and health care services, travel services, trips to recreation facilities, etc.;
4) non-cash benefits for the payment of transport services, communications – their amount should not be taken into account (deducted from the total income) in determining the right of a person (household) to receive food assistance.

We will also try to predict the overall economic effect of increasing the food solvency of the population. To conduct an empirical experiment, assume that changes occur only in food expenditure of households, and the rest of the components of total expenditures are unchanged. We construct a graphic model and define the relationship between the function of "change in real GDP" and the factor "household expenditures on food" (Figure 2).
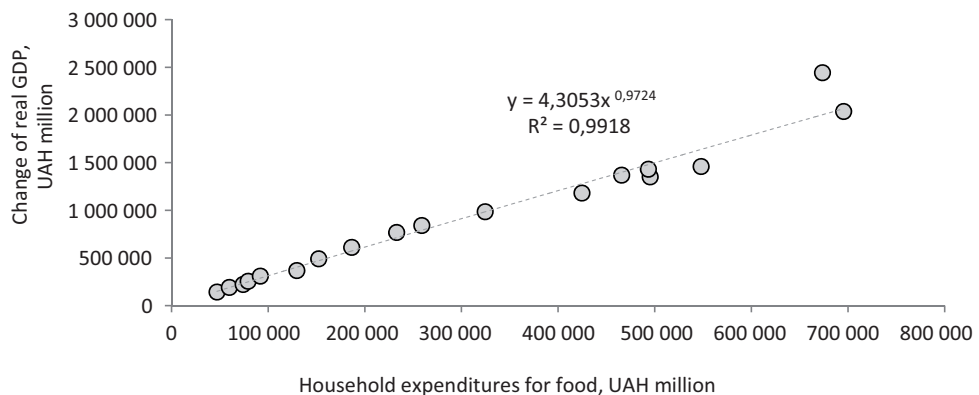

Figure 2. Graphic model of the connection between the function "change of real GDP" and the factor "household expenditures for food" according to the statistics of Ukraine for 2000-2017

Source: calculated on the basis of: State Statistics Service of Ukraine, www.ukrstat.gov.ua (access: 14.08.2019).

According to the form of the relationship between Y and X, the formula for calculating the elasticity coefficients will change. Only for the power functions $Y = a \cdot xb$ the elasticity coefficient is a constant independent of the x value (equal in this case to parameter b). That is why the power functions are widely used in econometric studies. The parameter b in such functions has a clear economic interpretation – it shows the percentage change of the function when the factor is changed by 1%. Consequently, according to the results of our calculations, an increase in food expenditure by 1% will increase the real GDP of Ukraine by 0.97%. Food expenditures of the population of

Ukraine in 2017 amounted to UAH 673539.0 million. Their increase by UAH 1204.6 million, or 0.18%, will cause real GDP growth of 0.17% or UAH 4266.9 million.

Thus, the multiplier of food expenditures of the population of Ukraine is 3.54. It means that each increase in real food expenses of the population of the country is one UAH causes multiplicative growth of real GDP by UAH 3.54.

Conclusions

1. For the full development of the Ukrainian food aid program, an experiment should be carried out in advance to identify vulnerabilities in the program, compare costs and results, and, in the event of an adequate level of effectiveness, to expand the program by reaching a larger number of recipients, in including through parallel food aid programs.
2. Within the framework of the experiment, we propose to include in the program food cards of low-income citizens whose cumulative income does not exceed 130% of the poverty line (subsistence level).
3. According to 2017 statistics, the protection of food interests needs those households whose average per capita income is less than UAH 2085 per month – these are households of first decile group. The average aid amount is UAH 284 per person per month, and the indicative budget for food aid for all households in the first decile group should be UAH 1204.6 million.
4. In order to determine the individuals entitled to receive food aid on the basis of property and the status of economic activity (employed / unemployed), it is expedient to use the current methodology for determining who has the right to receive a housing subsidy according to these criteria.
5. The increase of food expenditures of the Ukrainian population by UAH 1204.6 million, or 0.18%, will cause real GDP growth by 0.17% or UAH 4266.9 million. The multiplier of food expenditures of the population of Ukraine is 3.54. It means that each increase in real food expenses of the population of the country is one UAH causes multiplicative growth of real GDP by UAH 3.54.

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