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CORRESPONDENCE OF THE MODEL OF OVERCOMING POVERTY OF NOBEL LAUREATES TO THE CONDITIONS OF THE ECONOMIC SITUATION OF MODERN UKRAINE

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ВІДПОВІДНІСТЬ МОДЕЛІ ПОДОЛАННЯ БІДНОСТІ НОБЕЛІВСЬКИХ ЛАУРЕАТІВ ДО УМОВ ЕКОНОМІЧНОЇ СИТУАЦІЇ СУЧАСНОЇ УКРАЇНИ

The article highlights the issue of poverty and presents the main, internationally recognized definitions of poverty. It was explained that despite the positive international assessment, Ukraine remains the poorest country in Europe. It is determined that the concept of poverty is multifaceted and can also mean a state of mind that each person borrows from their environment in the process of physical and intellectual development; from this, it was concluded that reforms aimed at the availability and quality of social services would have the most long-term and positive impact on living standards. The scientific works of the Nobel Laureates of 2019, who explored practical ways to overcome global poverty, are considered. Field experiments in education, health, and personal finance were investigated. It was found that the biggest threat to modern Ukrainian business is staff shortages, which is exacerbated by the global aging population, low birth rate. As fewer and fewer people can work due to an aging population, which has a negative impact on the country's economy, many countries are actively implementing the practice of raising the retirement age. The Preston curve is studied, which shows the trend of life expectancy on GDP per capita, and found that life expectancy depends significantly not only on the number of resources but also on the conditions of their spending, the competent distribution of finances by budget items. The Nobel laureates focused on key areas of human capital development, such as education, health care, and personal finance. The state of these industries in Ukraine has been studied and analyzed. It is these consolidated budget items that have suffered the most considerable reductions in the last five years. Fall in GDP in the second quarter of 2020 Compared to the previous quarter, the decrease in the number of students, the increase in arrears of wages, the mismatch between nominal and real wages significantly negatively affect the deteriorating economic situation and increasing poverty in the country. The conclusion is made in Ukraine's relevance of using the model of overcoming poverty of Nobel laureates in the current economic conditions.

У статті висвітлено питання бідності та наведені основні міжнародно визнані визначення бідності. Пояснено, що попри позитивну міжнародну оцінку, Україна залишається найбіднішою країною Європи. Визначено, що поняття бідності багатогранне й може також означати стан мислення, який кожна людина запозичує у свого оточення в процесі фізично-інтелектуального розвитку; з цього зроблено висновок, що реформи, спрямовані на доступність та якість соціальних послуг, будуть мати найбільш довгостроково-

вий та позитивний вплив на рівень життя населення. Розглянуто наукові роботи Нобелівських лауреатів 2019 року, які досліджували практичні шляхи подолання глобальної бідності. Було досліджено роботи на польові експерименти в галузях освіти, охорони здоров'я та особистих фінансів. Було виявлено, що найбільшою загрозою сучасного Українського бізнесу є нестача кадрів, яка посилюється через глобальне старіння населення" низький рівень народжуваності. Оскільки через старіння населення все менше людей можуть працювати, що негативно впливає на економіку країни, багато країн активно впроваджують практику підвищення рівня пенсійного віку. Досліджено криву Престона, яка показує тенденцію залежності очікуваної тривалості життя від ВВП на людину, та виявлено, що тривалість життя людини істотно залежить не лише від кількості ресурсів, але і від умов їх витрачання, грамотного розподілу фінансів за статтями бюджету. Нобелівські лауреати зробили акцент у своїх дослідженнях на такі ключові галузі із розвитку людського капіталу як освіта, охорона здоров'я та особисті фінанси, стан яких було досліджено в Україні. Саме ці статті видатків зведеного бюджету зазнали найбільших скорочень за останні п'ять років. Падіння ВВП у II кварталі 2020 р. порівняно з попереднім кварталом, зниження кількості здобувачів освіти, зростання суми заборгованості з виплат заробітної плати, невідповідність номінальної та реальної заробітних плат — чинники, які значною мірою негативно впливають на погіршення економічної ситуації та підвищення рівня бідності в країні. Зроблено висновок щодо актуальності використання моделі подолання бідності Нобелівських лауреатів у сучасних економічних умовах України.

Key words: poverty, imbalance, disproportions, Nobel laureates.

Ключові слова: бідність населення, дисбаланс, диспропорції, нобелівські лауреати.

FORMULATION OF THE PROBLEM

Since the proclamation of Ukraine as an independent state, the living standards of the population have increased significantly. GDP rose from one to three thousand dollars, inflation fell, [1] infant mortality fell to less than one percent.

Despite the positive developments, Ukraine still faces many challenges: The protracted war, one of Europe's lowest GDPs, and growing international debt. These aspects have a strong negative impact on the welfare of the population.

Three Nobel laureates in 2019 — Abhijit Banerjee, Esther Duflo, and Michael Kremer [3] — suggested concrete steps that emerging economies can take to overcome or reduce poverty. Their works need to be studied in accordance with Ukrainian realities.

ANALYSIS OF RECENT RESEARCH AND PUBLICATIONS

Since the mid-1990s, the problem of poverty has been considered in the works of such domestic scientists as Libanova, Saenko, Revenko, Gribidenko, Mandibury, Paniotto.

THE PURPOSE OF THE ARTICLE

To analyze the level of poverty of the population of Ukraine and the appropriateness of using the model of Nobel laureates in the modern economy.

PRESENTING THE MAIN MATERIAL

The concept of poverty is rather vague and varies depending on the time, country, region, people, and ultimately on who is trying to define the concept. The International Center for Poverty, led by the United Nations Development Program, discusses four definitions of poverty in its journal *Poverty in Focus* [4]. The first is based on the concept of income-poverty or its more general nature of consumption-poverty. The second group — material shortage. This definition includes a lack or insignificant ownership of resources and a lack or low quality of a person's assets, such as shelter, clothing, furniture, personal vehicles, and so on. The third group can be described as the deprivation of opportunities that we may or may not do, who we may or may not be. The fourth definition is more complex and combines all previous definitions in the form

of factors that inextricably affect or mutually reinforce each other.

The poverty rate, which is \$ 5.50 US per day, is the percentage of the population living on less than US \$ 5.50 per day. This amount is considered the extreme poverty line in the world. From 1992 to 2018, this figure for Ukraine fell from 41.3% to 4% of the country's population living below the poverty line [5]. The World Bank Group ranks Ukraine among the countries with a poverty rate of 3% (2018) [6], including the Maldives (2016), Israel (2016), Italy (2017), Uruguay (2018), Latvia (2017), Malaysia (2015) and others.

The UN ranks Ukraine 88th out of 189 countries for which the Human Development Index is calculated — a consolidated indicator for measuring long-term progress on three main parameters of human development: long and healthy life, access to knowledge, and a decent standard of living, which puts the country in the category of the high level of human development [7].

Despite the positive international assessment, Ukraine lags far behind other countries on the European continent. According to the IMF report, Ukraine is the poorest country in Europe, surpassing its "Competitor for the title" — Moldova [8].

The concept of poverty is constantly evolving in accordance with the development of the world and its trends. There is no doubt that poverty is not just the calculation of GDP, the level of the minimum wage or lack of access to certain resources, the lack of which negatively affects the situation and development of the individual. Poverty is a state of mind that a person borrows from the socio-cultural environment in the process of its development and growth. In conclusion, it is safe to say that reforms aimed at the availability and quality of social services — education and health care — can have a long-term impact on personal and public living standards.

To combat Ukrainian poverty, we must study international practices, borrow methods, and identify the most effective steps. The main directions of development of the state and society on the way to prosperity should be to increase the level of education, medicine, financial stability, and awareness of citizens.

The 2019 Nobel Prize winners showed how to solve the problem of global poverty by breaking it down into a series of smaller — but more precise — issues at the individual or

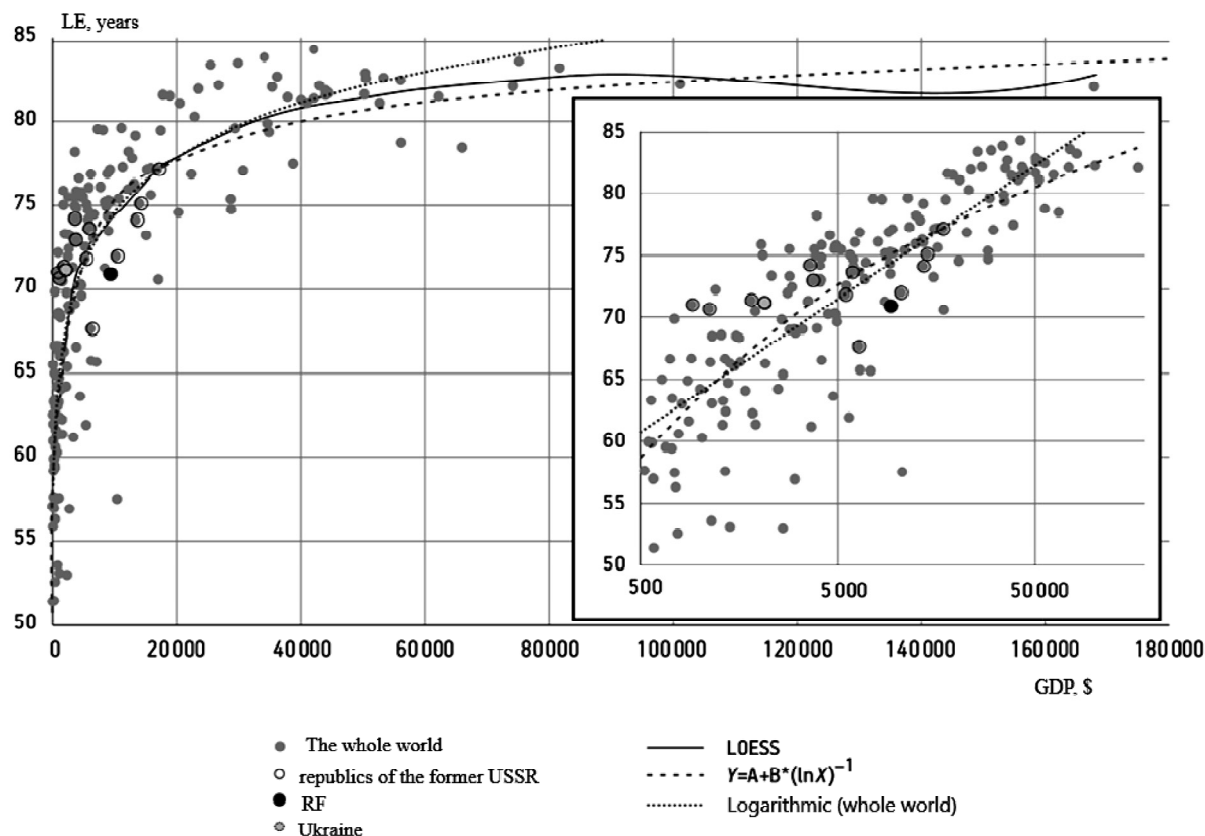


Figure 1. The relationship between GDP and life expectancy as of 2015

group level. They responded to each of them with a specially designed field experiment. In just twenty years, this approach has completely changed research in an area known as development economics. This new study now provides a steady stream of concrete results, helping alleviate global poverty [9].

The first study of the winners focused on the problems of the education system. What changes can be made to improve the level of education at the lowest cost? Children from low-income countries often do not have access to quality textbooks and good nutrition. Would the overall school performance improve if these problems were solved? Michael Kremer and his colleagues conducted a series of field experiments to find answers to these and other questions.

"Much attention in the world is paid to data that tells only part of the story of people's lives. For example, it is becoming increasingly clear that it is not enough to simply count how many children are in school; we also need to know if they are learning something. Focusing on quality is extremely important to promote sustainable progress in human development," said Selim Jahan, Director of the UNDP Office of Human Development [10]. The main obstacles identified by the Nobel laureates were the inconsistency of the program and method of teaching with the needs of students, the frivolous attitude of teachers to the performance of their duties, and the low level of schools. By addressing this, additional targeted work with the weakest students is seen, which has a positive effect in the medium term.

Another study in this area was to increase the motivation of teachers by employing them on short-term contracts. Teachers were more interested in better teaching students since the test results would determine whether their contract would be extended or not. Teachers found new teaching methods and worked more with the weakest students, which increased the average level of knowledge recorded through tests. This new experimental study of education in low-income countries shows that adapting learning to students' needs, rather than additional

resources, has the most significant effect on improving the situation.

The next branch was medicine. The main question was whether the medicine should be paid for, and if so, how much it should cost. With low wages, poor people are very sensitive to changes in prices and are wary of recommendations for investment in prevention measures. The study found that 75 percent of parents gave their children deworming and antiparasitic pills if they were free, compared to 18 percent when the price was about one US dollar. The low quality of medical services has also become an obstacle for the population to take preventive measures. The lack of doctors, the inaccessibility of a number of medical services in small towns and villages, and the constant shortage of vaccines have been addressed through mobile clinics. The level of vaccination in the villages has tripled — 18 to 6 percent, and when encouraged by giving a family a bag of lentils after vaccinating children, the percentage rose to 39.

The microcredit program did not have a significant impact on improving the well-being of the population. A slight positive impact on investment in existing small businesses was found, and the effect on consumption or other development indicators was almost zero.

A vaccination study found that 61% of children in many poor countries remain partially immunized. The main obstacles to this procedure were the inaccessibility of assistance and the inadequate level of encouragement and awareness of the population. However, another but less obvious factor was the irrationality of the people. This explanation may also be key to other observations that, at least at first, seem difficult to understand.

One such observation is that many people are reluctant to use modern technology. In a field experiment, Duflo and Kremer investigated why smallholders — especially in sub-Saharan Africa — do not use relatively simple innovations such as fertilizer, although they can provide great benefits. Today's focus does not allow people to see the prospects of investing in newer inventions, which could significantly improve the productivity of enterprises.

In policy matters, the limited rationality of people can be a key factor in many issues. For example, temporary subsidies have more advantages than permanent ones because they encourage people to make decisions here and now and invest in their businesses. This is exactly what Duflo and Kremer's study found: temporary subsidies had a much greater impact on fertilizer use than permanent subsidies.

As a developing economy, Ukraine has a similar list of problems with the countries listed in the study, so ways to solve them can be borrowed.

According to the results of the second annual survey of KPMG in Ukraine 2019 CEO Outlook, the greatest threat to business growth in Ukraine for the second year in a row remains the risk associated with the lack of qualified personnel. This opinion is shared by 29% of company executives [11].

The main reason can be considered the aging population of Ukraine and the world as a whole. Over the past 60 years, the birth rate has almost halved: in the 1960s, it was 5 children per woman, now it is 2.4 children per woman. In Ukraine, this figure in 2016 was 1.5 children per woman [13]. An aging population means that fewer and fewer people are able to work, leading to declining productivity and, as a result, reducing economic growth. As the older generation of workers is actively retiring, and the replacement of the younger age is insufficient, most states are raising the retirement age and focusing on improving health care.

In 1975, Samuel Preston developed the Preston curve: the horizontal axis marked GDP per capita, the vertical — life expectancy. The curve shows a clear but gradually declining trend towards an increase in life expectancy with an increase in GDP. In essence, this is a trend that is manifested when comparing life expectancy (LE) and gross domestic product (GDP).

The Preston curve reflects at least three circumstances:

- 1) Life expectancy increases with increasing resources available for life;

- 2) Life expectancy cannot grow indefinitely, no matter how many resources are allocated for it, so as GNP increases, life expectancy slows down;

- 3) taking into account the scatter of points around the Preston curve, it turns out that life expectancy depends significantly not only on the resources available to support life but also on the conditions of their consumption; in addition to natural, the distribution is considered by different budget items (health care, defense spending, investment in development) and by different groups of the population (property inequality, city/village) [14–17]. The relationship between GDP and Life expectancy as of 2015 is shown in Figure 1 [18].

In their research, Nobel laureates looked at key areas of human capital development, such as education, healthcare, and personal finance. The question arises: what is the situation in Ukraine with these industries?

In the draft law on Ukraine's state budget for 2020, these public funding areas have undergone the largest reductions compared to previous years. Expenditures of the consolidated budget of Ukraine by functional classification, % of GDP, have been

Table 1. Expenditures of the consolidated budget of Ukraine by functional classification, % of GDP

Indicator	2012	2013	2014	2015	2016	2017	2018	2019	2020
Expenses	34,9	34,8	33,0	34,2	35,1	35,4	35,1	35,9	32,9
National functions (without debt service)	2,1	2,0	1,7	1,6	1,6	1,9	2,1	2,2	2,1
Public debt service	1,8	2,3	3,1	4,3	4,0	3,7	3,3	3,6	3,2
Defense	1,0	1,0	1,7	2,6	2,5	2,5	2,7	2,6	2,7
Public order, security and the judiciary	2,6	2,7	2,8	2,8	3,0	3,0	3,3	3,5	3,6
Economic activity	4,4	3,5	2,7	2,8	2,8	3,4	4,0	4,3	4,4
- agriculture, forestry and fisheries	0,5	0,5	0,4	0,3	0,2	0,4	0,4	0,4	0,4
- coal industry	0,9	1,0	0,6	0,1	0,1	0,1	0,1	0,1	0,1
- road management	1,1	1,1	1,1	1,4	1,1	1,4	1,7	1,7	2,0
Environmental protection	0,4	0,4	0,2	0,3	0,3	0,2	0,2	0,3	0,3
Housing and communal services	1,4	0,5	1,1	0,8	0,7	0,5	0,9	0,8	0,7
Healthcare	4,1	4,2	3,6	3,6	3,2	3,4	3,3	3,2	2,9
Spiritual and physical development	1,0	0,9	0,9	0,8	0,7	0,8	0,8	0,8	0,8
Education	7,2	7,3	6,3	5,7	5,4	6,0	5,9	6,2	5,6
Social protection and social security	8,9	10,0	8,7	8,9	10,8	9,6	8,7	8,3	7,0
- transfers to the Pension Fund	-	5,7	4,4	4,8	6,0	4,5	4,2	4,5	3,8
- housing subsidies	-	0,1	0,1	0,7	1,6	2,2	2,0	1,4	1,0
Net loans provided by the state	0,3	0,0	0,3	0,2	0,1	0,1	0,1	0,1	0,1
Budget balance	-3,6	-4,4	-4,5	-1,6	-2,3	-1,4	-1,9	-3,2	-2,1

reduced by the following items: health care, education, social protection and social security [19].

Real gross domestic product (GDP) in the second quarter of 2020 compared to the previous quarter (taking into account the seasonal factor) decreased by 9.9% and compared to the second quarter of 2019. — at 11.4%. Nominal GDP amounted to UAH 867.8 billion, and GDP per capita amounted to UAH 20,744.

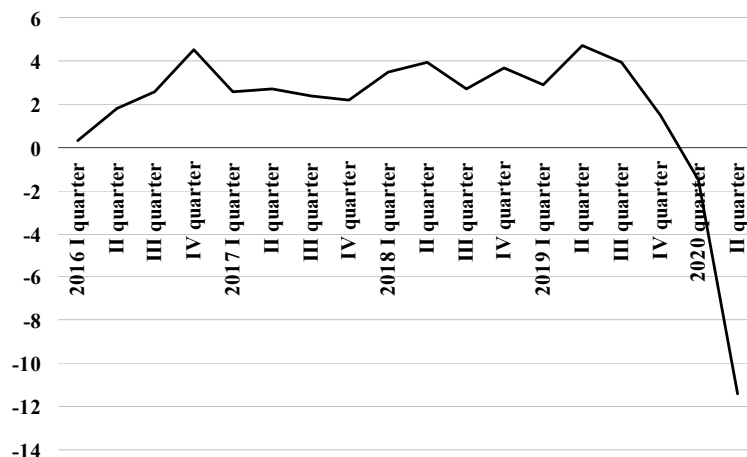


Figure 2. Change in real GDP (in% to the corresponding quarter of the previous year)

Table 2. Number of students in higher education institutions by sources of funding for their education

	Colleges, technical schools				Universities, academies, institutes				Total			
	2010/11	2015/16	2018/19	2019/20	2010/11	2015/16	2018/19	2019/20	2010/11	2015/16	2018/19	2019/20
Number of students - total, persons	351 444	230 110	199 926	173 585	2 066 667	1 375 160	1 322 324	1 266 121	2 418 111	1 605 270	1 522 250	1 439 706
including studying at the expense of												
state budget	127 825	82 793	27 010	10 307	798 571	649 225	570 043	534 967	926 396	732 018	597 053	545 274
local budgets	76 520	64 724	105 177	109 684	14 486	14 722	12 834	10 926	91 006	79 446	118 011	120 610
legal entities	250	716	25	132	8 374	9 520	6 850	2 935	8 624	10 236	6 875	3 067
individuals	146 849	81 877	67 714	53 462	1 245 236	701 693	732 597	717 293	1 392 085	783 570	800 311	770 755
The proportion of students (%) who learn at the expense of												
state budget	36,3	36,0	13,5	5,9	38,6	47,2	43,1	42,3	38,3	45,6	39,2	37,9
local budgets	21,8	28,1	52,6	63,2	0,7	1,1	1,0	0,9	3,8	4,9	7,7	8,4
legal entities	0,1	0,3	0,0	0,1	0,4	0,7	0,5	0,2	0,4	0,6	0,5	0,2
individuals	41,8	35,6	33,9	30,8	60,3	51,0	55,4	56,6	57,5	48,9	52,6	53,5

Table 2 shows that in all educational institutions of the country, the number of students is declining sharply. In the coming years, the aggravation of the problem of the shortage of qualified personnel in Ukraine will be a very expected phenomenon.

The personal finances of the population also underwent significant reductions. As we can see, in ten years, the country has not only not lost the tendency to arrears of wages but also significantly exceeded the initial data.

If in 2010 as of January the amount of arrears of wages in the country as a whole amounted to 1390.8 million hryvnias, in September 2020, the arrears increased to 3421.4 million hryvnias without taking into account part of the occupied territories in Donetsk and Luhansk regions. Given the unstable political and economic situation in Ukraine, late payment of wages can be a decisive factor in exacerbating the personal crisis, which has adverse consequences for the whole country (Fig. 3).

The main component of household income is wages, the amount of which directly affects the socio-economic development of the country and largely determines the standard of living of its citizens. The growth rates of nominal and real wages remain very low against the background of inflation (Table 3).

From table 3, we see that the nominal wage does not correspond to the real wage during the study period. The discrepancy between nominal and real wages has a negative impact on living standards. Today we see that wages do not perform their basic functions, namely — most workers can not provide adequate living conditions [22].

CONCLUSIONS

Reduction of consolidated budget expenditures on health care, social protection, and social security, fall in real gross product, reduction in the number of students in higher education institutions, increase in arrears of wages, the

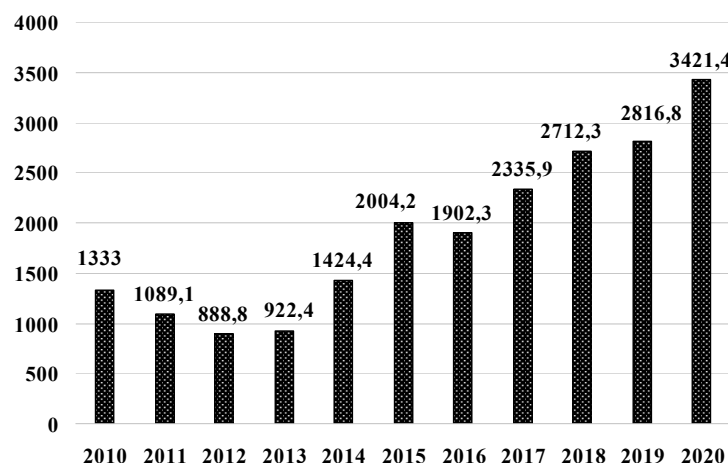


Figure 3. Amount of wage arrears by country in September of each year [20]

Table 3. Growth/decrease rates of nominal and real wages (%) [21]

	Nominal salary		Real salary	
	to the previous year	December to December of the previous year	to the previous year	December to December of the previous year
2010	117,6	117,9	110,2	110,5
2011	117,7	116,2	108,7	111,0
2012	114,8	110,5	114,4	111,1
2013	107,9	107,2	108,2	106,7
2014	106,0	110,4	93,5	86,4
2015	120,5	130,4	79,8	90,1
2016	123,6	123,8	109,0	111,6
2017	137,1	135,5	119,1	118,9
2018	124,8	120,5	112,5	109,7
2019	118,4	116,0	109,8	111,3

mismatch between nominal and real wages — all these are factors in the falling level of economy and development of Ukraine.

The winners of the Nobel Prize in Economics in 2019 were Abhijit Banerjee, Esther Duflo, and Michael Kremer for "an experimental approach to combating global poverty" [3]. Through field experiments, they identified steps that could be taken in poor countries to improve living standards in education, medicine, and personal finance.

It is safe to say that, of course, the use of the Nobel laureate model in Ukraine will have a positive impact. Still, the problem will not be fully resolved because it is very multifaceted and requires a comprehensive approach, the work of government officials and the public. This scientific work can be presented to public activists as recommendations on areas of work and ways to implement them, but in no case as a scientific basis for legislative processes, the lack of which is so detrimental to the national economy. Therefore, recommendations should be developed for government officials that can be used in the development of regulations.

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