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### TAX TRANSFORMATIONS EFFECTS

**Abstract.** The tax reforms in Ukraine last a long time but do not lead to the desirable results. It actualizes the research of mistakes and wrong managerial decisions. The authors consider that the main reason of ineffective tax reforms is ignoring the objective features of taxes and fundamentals of management under policy making. The article aims to prove this hypothesis. The authors use the method of logical assumptions based on the interrelation of objective and subjective as well as the statistical data analysis for evidence. They show that the definition of taxes can be interpreted in different way. It predetermines the tax reform beneficiary: government or society. The Ukrainian government determines the tax reform purposes in abstractive form without quantitative indicators and does not analyses the previous tax transformations results. Such management does not meet the principles that objectively predetermine tax reform successful results. The tax transformations during 2014—2018 led to the tax burden grows. In the result the government revenue increased. At the same time it led to the cutback of consumption demand. The indicators of the pharmacy market and excise goods market development prove this conclusion. Such effect was a logical result of the ignoring objective properties of taxes. Managerial decisions on the tax system reforming contradicted to the purpose of the tax system reform in Ukraine — to provide economic grows. The statistical data demonstrate a little GDP grows. But most of people became much poor through unequal distribution of income. The Ukrainian government did not use the natural properties of tax as regulators of consumption demand through shifting the tax burden from poor sector of population due to towards the income that significantly exceeds the average. The authors suggest the further ways of the tax system reforming in Ukraine

**Keywords:** tax, tax system, tax reform, objective and subjective, economic grows.

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## ЭФФЕКТЫ ПОДАТКОВЫХ ТРАНСФОРМАЦИЙ

**Анотация.** Податкові реформи в Україні змінюють одна одну, проте не призводять до бажаних результатів. Такий стан речей актуалізує дослідження помилок і неправильних управлінських рішень, які ухвалюють під час реформування. Вважаємо, що головною причиною неефективних податкових реформ є ігнорування об'єктивних особливостей податків та основ менеджменту під час розроблення та реалізації податкової політики. Мета статті — довести цю гіпотезу. У процесі дослідження застосовуємо метод логічних умовиводів на основі взаємозв'язку об'єктивного і суб'єктивного та статистичний аналіз даних. Вони показують, що визначення податків можна трактувати по-різному. Це активізує бенефіціара податкової реформи: уряд чи суспільство. Уряд України визначає цілі податкової реформи в абстрактній формі без кількісних показників і не аналізує результати попередніх податкових трансформацій. Такий підхід не відповідає засадам управління. Податкові трансформації протягом 2014—2018 років призвели до зростання податкового навантаження. У результаті доходи держави зросли. Водночас це призвело до скорочення споживчого попиту. Такий висновок підтверджують показники розвитку фармацевтичного ринку і ринку підакцизних товарів. Ефект був логічним результатом ігнорування об'єктивних властивостей податків. Управлінські рішення щодо реформування податкової системи суперечать меті реформування податкової системи в Україні — забезпечити економічне зростання. Статистичні дані свідчать про незначне зростання ВВП. Але більшість людей стали значно біднішими через нерівномірний розподіл доходів. Український уряд не використовував природні властивості податків як регуляторів споживчого попиту через перенесення податкового тягаря з бідних верств населення на платників, дохід яких значно перевищує середній. Пропонуємо подальші напрями податкових трансформацій.

**Ключові слова:** податки, податкова система, податкова реформа, об'єктивне і суб'єктивне, економічне зростання.

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## ЭФФЕКТЫ НАЛОГОВЫХ ПРЕОБРАЗОВАНИЙ

**Аннотация.** Налоговые реформы в Украине не приводят к желаемым результатам. Считаем, что основной причиной является игнорирование объективных особенностей налогов и основ менеджмента при разработке и реализации налоговой политики. Цель статьи — доказать эту гипотезу. Доказано, что управленческие решения по реформированию налоговой системы противоречат цели реформирования налоговой системы в Украине — обеспечить экономический рост.

**Ключевые слова:** налоги, налоговая система, налоговая реформа, объективное и субъективное, экономический рост.

Формул: 0; рис.: 3; табл.: 1; библи.: 31.

**Introduction.** The tax reforms in Ukraine do not lead to the desired economic transformation. The depth of the problem is obvious, given the length of tax transformations. In fact, they began with the formation of the tax system of Ukraine. During this period, more than one concept and strategy of the reform was adopted and implemented, the numerous changes were made to the tax legislation, and the foreign experts were involved for implementation of the best international practices of tax reforms. However, instead of economic progress and the growth of welfare, we state the reverse movement. Indicators of Ukraine's social and economic development are worse than at the time when Ukraine became an independent state and the tax system is a constant object of the criticism from academics, politicians, government officials and business. Of course, there were the periods characterized by positive dynamics and it would be incorrect if we have not mentioned it. Moreover, we note that new conceptions, strategies for the tax system reforming were developed in the periods when an increase of the social and economic development indicators took place. However, in the scientific literature, we do not find the scholars' conclusions that the balanced tax system was managed to create and it meets the requirements of the time, and will help to achieve the determined goals and objectives. There are also not the government reports with the analysis of the tax reform results and the argumentation of achievements and mistakes. Consequently, the scientific search for the causes of failures and mistakes made both in the development of the strategy of tax reforms, and in the process of their implementation, has not lost its actuality.

To determine the aspect of the study, we turn to the researches on taxation. We are interested in works analyzing the impact of the tax transformations on economic growth. Indeed, the constructive management decisions, in particular, relating to tax reforms depends on the understanding of the relationship between the identified factor and the resulting components.

**Research analysis.** In the writings of scientists, we find different results of assessing the impact of taxes on the indicators of gross national product, employment, income, and investment. Thus, Bernd Hayo, Matthias Uhl (2014) investigating the macroeconomic effects of changes in the tax legislation in Germany, found that with an increase in the tax burden on the economy (the share of taxes on GDP) by 1%, the output is reduced by 2.4% [1]. Researchers P. Gil, F. Martí, R. Morris, J.J. and Pérez, R. Ramos (2018) received a bit lower reduction figure, namely 1.3% of GDP one year after 1% increase in tax burden. However, according to their findings, the negative effect disappears in the long run. The scientists have found that the effects of changes in indirect taxation are large and investments react more than consumption [2]. James Cloyne (2013) states the constant positive effect of tax cuts. In his study, he estimates the impact of tax burden on GDP, consumption, investment, imports, and real wages in the UK [3]. (2015) make a different conclusion. In their opinion in the U.K. the tax cuts have no significant effect while the tax increases substantially reduce output. They compare U. K. and U. S. and find that in the U.S. instead the tax increases do not affect output while the tax cuts have large, positive effects [4]. Researches from RJ Barro and J Furman (2018) also predict an increase in GDP from the 2017 tax reform in the United States. As you know, the changes that took place during the reform were to reduce the marginal rates of personal income tax. According to the calculations of scientists, the change in rates will lead to an annual GDP growth rate of 0.9 percentage point [5]. In the Russian Federation, on the contrary, the tax reform involves an increase in tax rates. The scientists estimated the effects of such innovations. According to their calculations, the change in tax rates will affect 97.7% of the working population of the country. The new behavioral model will reduce the market capacity and the consumption of domestic products of low quality with high prices. Most businesses will lose their customers, and the temporary fiscal effect will be lost completely or partially due to lower consumption and narrowing of the market [6].

Scientists E. Sims, J Wolff (2018) also studied the impact of tax changes on GDP. With regard to their research, it is important to note that they substantiated the analytical provisions that tax reductions do not have a permanent impact on production volumes along the time. Their model assumed that tax cuts should be the least stimulating for output in periods when it is low (that is, during recession periods). The results of the calculations have shown that tax cuts are in fact the

most desirable during the recession, despite the fact that tax cuts are comparatively less stimulating for output in such periods [7].

Evidence of GDP growth with decreasing marginal tax rates is also found in the research of Karel Mertens José L. and Montiel Olea (2018). They emphasize that the change exactly in marginally, not average, tax rates has a positive effect. But only the reduction of taxes for the top 1% has short-term positive effects, that is, economic activity is increasing and income is increasing too, but at the same time the inequality in income before taxation increases. The reduction of taxes for non-top-earners with a top 1% also leads to higher incomes and business activity, but with a longer delay [8]. The other conclusions on tax impacts are made by Owen Zidar (2017). According to the results of his analysis, the tax cuts for 10% of high-income people are less effective than for 20% of low-income citizens. However, he suggests, that lowering taxes for high-income people may have an impact on long-term investment in human capital and innovation [9].

In the context of our research, we also cannot avoid researches that explore the fiscal effects of changing tax rates. Tax reforms should provide the government with revenues sufficient to fund its expenditures. N. Guner, M. Lopez-Daneri, G. Ventura (2016) raised the question of how effective a more progressive tax system is to ensure a growth in budget revenues. The results of their research show that the increase of tax rates on high incomes leads to the insignificant increase of budget revenues. In response to an increase in progression, there are changes in output, capital, and labor supply. The final conclusion is the policy recommendations implying the tax progression increase are false if their goal is solely to increase public revenues [10]. SK Burns, JP Ziliak (2017) concluded that the tax rate which maximizes revenue by almost 30%, should be lower than that which was determined using typical identification strategies [11].

The conclusions of A. Baltajak (2016) about the impact of the global financial crisis on the level of tax burden in Central Europe compared to the old members of the EU are also important to our research. His study showed that the higher level of tax burden usual for the EU-15 has grown even more compared to the EU-11. But the economic situation after the crisis in the EU-15 improved more slowly than in the EU-13 [12].

Proving the positive impact of lowering tax rates on investment activity and business development, scientists use different time periods. Romer and Romer (2014) analyze the effects of lowering income tax rates in the 1920s and 1930s. In this period, the tax rates have changed frequently and sharply. The scientists also state although insignificant but positive effects in the elasticity of taxable income [13]. However, not all scientists make conclusions about the connection between investment activity and the reduction of tax rates. Radionova I., Boger. O. (2014) believed that a direct connection between tax burden and innovation activity in the EU countries perhaps is. However, the analysis of Ukrainian data indicates that there is no such connection [14]. This conclusion we will take into account in the study of tax transformations in the context of the goal of tax reforms in Ukraine.

And at the end of literature review, we give the conclusions of D. Caldara and Chr. Kamps (2017) which aimed to find out what is the best tool for stimulating production: tax cuts or spending increases. The authors propose a new proxy SVAR-based identification strategy that uses non-fiscal tools to directly assess the tax rules. According to their findings the increase of spending stimulates production more than tax cuts [15].

Summing up we conclude that despite the domination of evidence that the reduction of tax burden contributes to economic growth, the existence of various assessments on this issue complicates the use of foreign experience in analyzing tax reform flaws in Ukraine and developing proposals for adjusting tax transformations.

**The purpose of the article.** The study of the tax changes influence on economic development led us to consider the causes of the ineffective tax transformations in Ukraine through the interrelation of objective and subjective. We mean it is very important making managerial decisions to take into account the regularities and natural properties inherent in the object of management. It is a prerequisite of the effective management and goals and objectives achievement. Tax reforms are the result of people's subjective activity: the decisions taken in relation to the goals

and objectives of the reform, the content of reforms, and concrete practical actions for their implementation. The object of reform is the tax system, an extremely complex structure, the underlying elements of which are taxes with their natural features. It should be added that management as an activity is also subject to certain rules the ignoring of which does not allow to achieve the desired results. Consequently, we put forward the hypothesis that the reason for inefficient tax reforms is ignoring taxes objective properties and fundamentals of management. Our research is directed to confirm or refute this hypothesis. The method of logical assumptions and statistic data analysis were used for evidence. Representing the received results is the purpose of writing this article.

**Research results.** Let's start with the concepts and definitions adopted as the basis of the study. We should first define the concept of "reform". In English-language reference sources, we find that the reform is: 1) correction of defective, vicious, corrupted; 2) elimination, correction of errors [16]; reforming — means: 1) to change to a better condition, shape, improve by changing, replacing, canceling [16, 17]; 2) to put an end to misuse, disorder [16]; 3) to improve due to a change in the behavior of a person or structure of anything [18]. We want you to pay attention that in the above versions of the interpretations, the result of the reform efforts, namely, "improvement", is clearly seen. In our opinion the essence of managerial activity is improvement exactly. But along with the aforementioned, we also find another interpretation of the term "reform", in particular, in terms of the ultimate goal — strengthening and refining the foundations of the state -- which does not always lead to an improvement in living standards, expenditure reductions, and, conversely, leads to the increase of revenues [19], that is, in fact, an increase in taxes. Thinking of this interpretation, we agree that, indeed, the result of reforms may be an increase in income. By the way, this may not necessarily lead to worsening the welfare of people. It is also difficult to deny that in the result of reform the living conditions may have been deteriorated rather than improved. Ukraine is a vivid example to that. However, it is one thing to treat such a consequence of the reform as a warning to the government, which is responsible for the result, and should understand that mistakes made in the process of reform can lead to undesirable effects. Another thing is to introduce reform measures, knowing in advance that they will result in enrichment of power structures and worsening the living conditions for people. Thus, one or another version of the interpretation depends on the subjective understanding by the reformers of their mission, but in both cases "improvement" is seen as an essential feature of the reform, but only for different subjects: in one case — for people, in the other — for the authorities.

The notion of "tax reform" is derived from the above concept. The determinant word "tax" narrows the field of reform, pointing to the object of management — taxes, or rather, tax system. However, it does not change the essential characteristic of "improvement — change of state, correction of errors", and the beneficiary can be both government and society. In the latter case, as a result of the reform efforts, a new qualitative state of the tax system should be obtained, but not for the purpose of updating the tax system itself, but for solving the problems of social and economic development. Such an interpretation of the purpose of tax reform is logical, based on the objective properties of taxes, namely, taxes are not an end in itself, but an instrument for achieving goals. But we are aware that our position is not indisputable. It all depends on the interpretation of the essence of taxes, which also varies. Therefore, we have to express our point of view in this regard in order to continue our research. Of course, we will not bring all the polemics of the theory of taxes, but we give a few definitions that show the difference in the interpretation of the content of this category, which is important for the study of tax reform issues. In English vocabulary reference literature, we find the following tax definitions: 1) "a compulsory contribution to state revenue, levied by the government on workers' income and business profits, or added to the cost of some goods, services, and transactions" [20]; 2) "compulsory monetary contribution to the state's revenue, assessed and imposed by a government on the activities, enjoyment, expenditure, income, occupation, privilege, property, etc., of individuals and organizations" [21]; 3) "money paid to the government that is based on your income or the cost of goods or services you have bought" [22]; 4) "an amount of money that you have to pay to the government so that it can pay for public services" [23]; 5) "a

charge usually of money imposed by authority on persons or property for public purposes” [24]. We see that the fourth and fifth definitions differ from the first three by the fact that they indicate why money is paid to the government. Recalling the contributions of Ukrainian and foreign scientists regarding the disclosure of the nature of taxes, we note that the scientists S. Yu Vitte, P. Leroy-Beaulieu, M. I. Mitilino, M. N. Sobolev, A. M. Sokolov, E. Seligman, R. Sturm, V. M. Soutormina, L. F. Stein, I.T. Tarasov define taxes as obligatory payments to meet the needs of the state; A. Lebedev, F. Nitti, Y. Targulov, I. I. Janzhul — to meet social and collective needs. There will be no contradiction between these approaches if the government performs its functions for the needs of society. Consequently, if the government in its subjective perception treats taxes as compulsory payments for financial support of the functions performed by it for the benefit of society, then reforming the tax system, it is necessary to clearly set out the tasks of socio-economic development for the achievement of which need to reform the tax system to accumulate with the help of taxes the necessary funds. Defining goals and objectives is the essence of strategic management, an objective necessity, the neglect of which negates the meaning of management activity, in particular, in the process of reform, dooms to failure any conceived changes. The goals must meet certain requirements namely: they should be achievable, flexible, measurable, specific, compatible, acceptable to all actors of influence, especially for those who will have to achieve them. Let’s check if these requirements were met in determining the goals and objectives of tax reforms that were carried out in Ukraine. For this purpose we compare how the goal of tax reform in various government documents was determined (*tabl. 1*).

An analysis of the mentioned goals provides the basis for the following conclusions:

1. The identical goal has determined in all documents and it consisted of two components: 1) the ensuring economic growth on the innovation-investment basis and 2) the balance of the income and expenditure of all levels budgets. It is important to note here that in the setting goal in such a way is clearly traced the correct understanding the objective property of taxes by the subjects of the management: their collection — is not an end in itself, but an instrument for achieving goals. However, as we have two components it requires their prioritization. It means whether the growth of budget revenues is a consequence of economic growth or a prerequisite for economic growth.

2. The goal and tasks specified in the documents are achievable, measurable (in fact there are indicators that characterize economic growth, volume of investments, and volume of income and budget expenditures) and flexible (it is provided through adjustment of indicators). However, they cannot be considered specific, because the indicators which should be achieved as a result of the reform are not defined. This fact complicates the assessment of the effects of tax reform. In the Program "Prosperous society, a competitive economy, and an effective state" we find indicators of success that should be achieved through tax reform, but they do not characterize either investment or economic growth or an innovative component. The analysis of the tasks and expectations indicated in the investigated documents also allows asserting that the goals and objectives are compatible, acceptable to all actors of influence. However, the lack of their quantitative measurement makes them abstract. This is especially evident in the Concept of Tax Reform proposed by the Ministry of Finance in 2015. Characteristics such as simplicity, transparency, justice are not clearly defined. It remains unclear what the tax system should be to stimulate investment and create conditions for economic growth. So, the requirements under which the goals and objectives should meet have only partially implemented.

3. Each new concept, strategy, reform program was developed at a time when the previous tax reform was not completed. But we do not find available sources in which the quantitative and qualitative analysis of the intermediate results of previous reforms has done. These tax reforms were interrupted by a new vision of means of achieving essentially the same goals. Only an abstract description of the problems to be solved and they is also the same in all of Government’s documents. The term of the last tax reform is not defined at all, which does not correspond to the principles of management and calls into question the evaluation of its results. In this context, it should be recalled that those measures for reforming the tax system that have been introduced over the past 5 years are the result of compromise solutions. After all none of the proposed concepts of

tax reform was not adopted. So, there is no single strategic document that clearly defines the goals and objectives in quantitative terms, the stages of the tax reform and the period of its completion. That is, the basic rules, the principles of management (an objective component) that must be observed in the process of tax reform have violated. Therefore, it is unlikely that it should be hoped for its success, especially since indicators of this success have not been determined.

Table 1

The purpose of the tax reform in the Ukrainian government documents

Name and date of the document	The purpose of the tax reform	The period of the tax reform
<p><b>CONCEPT</b> of reforming the tax system of Ukraine Order of the Cabinet of Ministers of Ukraine dated February 19, 2007 No. 56-p</p>	<p>The matching the tax system in line with the priorities of the state policy of social and economic development, <b>promoting sustainable economic growth</b> through the liberalization of the tax system on the basis of well-balanced <b>investment and innovation policy, the ensuring adequate volume of aggregate tax revenues to the budgets of all levels</b> on the basis of balanced budget policy, establishing a liberal attitude to payers who faithfully fulfil their tax obligations, and to increase liability for non-payment taxes.</p>	By 2015
<p><b>STRATEGY</b> of the tax system reforming Order of the Cabinet of Ministers of Ukraine dated December 23, 2009 No.1612-p</p>	<p>The construction of a modern, competitive, socially oriented market economy, integrated in the EU, the ensuring <b>sustainable economic growth on an innovative and investment basis</b>, the implementation of balanced fiscal and social policies for the medium term</p>	By 2018 p
<p><b>PROGRAM</b> of the economic reforms for 2010-2014 "Prosperous society, a competitive economy, an effective state" Decree of the President of Ukraine dated March 12, 2012, No. 187</p>	<p>The ensuring <b>sustainable economic growth on the innovation-investment framework</b> while simultaneously <b>increasing total tax revenues to the budgets of all levels and the state target funds</b></p>	2010 — 2014
<p><b>CONCEPTION</b> of the tax reform of the Ministry of Finance of Ukraine Explanatory note to the draft Law of Ukraine "On Creating Competitive Conditions in Taxation and Stimulation of Economic Activity in Ukraine"</p>	<p>The construction of a simple, transparent, fair tax system stimulating investment, creating conditions for the <b>sustainable development of the national economy</b> while <b>ensuring the needs of the State and local budgets</b> for funding priority expenditures</p>	Not determined

Source: Compiled by the authors

But even if the government defines the goal of tax reform in an abstract form only like ensuring economic growth, the means to achieve this goal (i.e., the change in taxation) must be adequate. For this purpose, of course, the interpretation of the concept of "economic growth" is important, which also depends on subjective perception, which, in turn, affects the approaches to its evaluation. The economic growth can be estimated simplified, exclusively by macroindicators, such as nominal GDP, household income, and average wages. The positive dynamics of these indicators is beneficial to the authorities in terms of reporting to the public on the results of reforms. However, even with the growth of macroeconomic indicators, there may be significant disproportions in the sectoral structure of the economy, in the distribution of income, in the ratio of employed and unemployed people. All these factors affect consumer demand, which is one of the most important drivers of economic development.

Assessing the adequacy of the tax transformations that took place within the tax reform of 2014-2018, we will proceed from the well-known truth that economic growth is impossible without growth in production, and the necessary prerequisite for the latter is the consumer demand growth. This is an objective regularity. Hence it is logical that changes in the taxation of individual incomes during the reform should not lead to a reduction in the revenues remaining after taxation. As it is

known in 2014 individual income was taxed at rates of 15% and 17% and according to scientists, most individuals paid a personal income tax at a rate of 15%. Taking into account the single social contribution which paid at a rate of 3.6% and reduced the taxable base for income tax, the real personal income tax rate was 18.06%. In the course of the reform, the marginal tax rate was initially increased from 17% to 20%, followed by a uniform rate of 18%, and an additional military tax of 1.5% was introduced, which increased the level of taxation for most individuals to 19.5%. Consequently, the measures for reforming the income taxation of individuals did not contribute to an increase in consumer demand, and, conversely, diminished it. A similar conclusion can be drawn regarding the introduction of a 7% VAT rate for medicines. Based on the nature of VAT, an increase in the rate of this tax can lead to the various consequences: 1) to increase the price of goods; 2) to reduce profits or save costs if, in order to maintain demand the producer or trader will try to keep the price of the product at the level that has developed before increasing the tax rate. The regulatory effect in the second case is important, given the significant volume of imports of both pharmaceuticals and raw materials for their manufacture. So, the introduction of the 7% rate theoretically could affect the customs value of goods in the direction of its reduction. However, the analysis of the pharmacy market in Ukraine suggests a significant increase in drug prices. Due to the lack of data, it is difficult to do a factor analysis in order to accurately determine the impact of the VAT component itself as a pricing factor. But we can argue that, together with the inflation factor, the overall synergy effect is that the increase in sales in cash terms after the introduction of a 7% VAT occurred simultaneously with a decrease in sales in kind, that is, the demand for medicines has decreased. The reason for the decrease was the low purchasing power of the population. According to analysts, in order to secure profits the pharmacy business began to look for price niches, in which the sale of drugs is the largest. In 2016 this price category was 50—70 UAH. The need for medicinal products of the higher price categories was not satisfied. This conclusion was made by the specialists in this field [25]. At the same time some positive effect should be noted for the development of the pharmaceutical industry. It is an increase in the consumption of the domestic production drugs in the physical dimension. But how exactly the 7% VAT has influenced on the domestic medicine consumption increase is impossible to determine.

The changes in taxation during 2014—2018 also concerned payments for resources, fees, and property taxes. All of them were aimed at raising the tax rates. Each of the listed types of compulsory payments has its own economic nature, regulatory properties and the possibility of their use as instruments of economic growth. In particular, the "fee" as is known, implies a certain equivalence of the relations between the payer and the government, that is the amount of fee depends on the volumes of extracted, used, consumed resources. So, an increase in the value of a unit of a resource through a payment rate may encourage saving resources. But such savings are only possible to a certain extent below which consumption cannot be decreased. Considering that the rent payment increases business costs, is included in the price, and therefore actually shifted on consumers, it is difficult to grasp the logic of how an increase in this case can contribute to economic growth, especially in the conditions of the low purchasing capacity of consumers. The consumer's debt leads to failure to pay taxes (it means the government loses its resources for funding expenditures on economic activities), as well as to failure to invest because of the absence of profits. Land and property taxes also are limited to be used as a tool for economic growth. However, both rent fee and property taxes can serve as an instrument of economic growth if their rates are reduced, while prices for goods and services at least remain at the same level and correlate with consumer purchasing capacity. In this case, the released funds could become an investment resource of business entities, a source of industry development.

The next step in the tax system reforming in Ukraine — raising the rates of excise tax- also runs counter to the goal of ensuring economic growth. It should be noted that we do not consider it to be not a sound decision. As it is known from the theory of taxes, specific excises can be used to influence the structure of consumption. The increase in rates, therefore, the prices for the corresponding groups of products, in fact, can reduce the demand for them. By the way, the goal of reducing the consumption of harmful goods for health was raised during the reform of excise duties.



If it is really so, the result will be a reduction in production in physical volumes, rather than its build-up. This is exactly the case in Ukraine. The analysis of statistical data showed that from 2011 to 2017 the production of alcohol and tobacco products in natural terms decreased significantly, for some types of goods, almost 2.5 times [26]. Of course, to encourage the decrease of the alcohol and tobacco products consumption is the right intention of the government. But the increase in prices for these kinds of goods and the official statistics of the downward dynamics of alcohol and tobacco goods production does not mean that their consumption has really decreased. Indeed, not only the price policy with the help of excise taxes affects the demand. If the need for the consumption of these types of goods remain the same, then the shadow market is growing, the government loses its revenue, and the goal to bring into a healthy nation remains unrealized. Taking into account the further increase of the excise taxes on alcohol and tobacco products, the results of analytical research of the individuals' purchasing capacity, the experts predict an increase in the shadow segment of the market [27].

To summarize, we can conclude that the measures for the tax system reforming introduced during 2014—2018 were aimed not at ensuring economic growth, but in the implementation of another component of the goal — the increase in the government revenues. In this context, the government's decision on a significant reduction in the rate of the single social contribution (SSC) cannot be ignored. In this case, the government also hoped to increase revenues by expanding the tax base. The expected effects were not achieved. In our opinion, the main reason was the failure to take into account the objective factors, namely, the interests of business entities. The government expected that a reduction in the rate would lead to the legalization wages, thus, to increase the base of accrual of the PIT and the SSC. This is a subjective interpretation of the behavior of employers by the government.

In an attempt to understand the employer's reaction to the reduction of the SSC rate we proceed from the logic that the general expenses of the entrepreneur for the payment of labor and the payment of taxes and fees will not be greater than those which were at the time of the introduction of the reduced rate. After all, the entrepreneur will not receive any benefits from the increase in costs for this item. Therefore, he will try, at least, to save the same level of expenditure as he had at the moment of reforming the SSC. Such behavior corresponds to the objective characteristics of the economic individual, who will agree to give away more only in exchange for the corresponding benefit. Based on this logic, it becomes clear at once (even without calculations) that the government will lose revenue from such a management decision. Our assumption is confirmed by calculations. Let the salary of a hired employee before reducing the rate of SSC was 5 thousand UAH. The SSC paid by an employer at an average rate (41%) — UAH 2050, the total amount of withholding from an employee's salary — UAH 903 (3.6% of the SSC is 180 UAH and 15% of the personal income tax is 180 UAH). In general, the employer's expenses make up UAH 7050, and government revenues are UAH 2953. Now estimate how much the salary can be increased (that is, what the expansion of the tax base the government can consider on), if the total labor cost of the employer remains at the same level of 7050 UAH. Our calculations give grounds for such conclusions. The salary of a hired employee may as much as possible increase by UAH 779, that is, it will be UAH 5779 ( $7050 / 1.22$ ). Given the increase in deductions to 19.5% (18% — PIT and 1.5% military tax), government revenues will amount to 2397 UAH, which is 556 UAH less. The government revenues will be even lower if the employer does not decide to increase salary for his employees. The dynamics of the revenues to the Pension Fund of Ukraine has confirmed our subjective view of the employer's behavior, but taking into account his economic interests. Evaluating the indicators of economic growth, we note that they are formed not only under the influence of taxes, but also other factors, and to evaluate separately the impact of tax transformations is hardly possible. Since we have argued the mismatch of tax reform measures in terms of their impact on demand, we will try to take into account other factors in the analysis of economic growth indicators, in particular the growth of household incomes, which increases demand and the taxable base. As it was shown above, all measures to reform the tax system were aimed at increasing the tax burden. This is confirmed by the indicators presented in *Fig. 1*

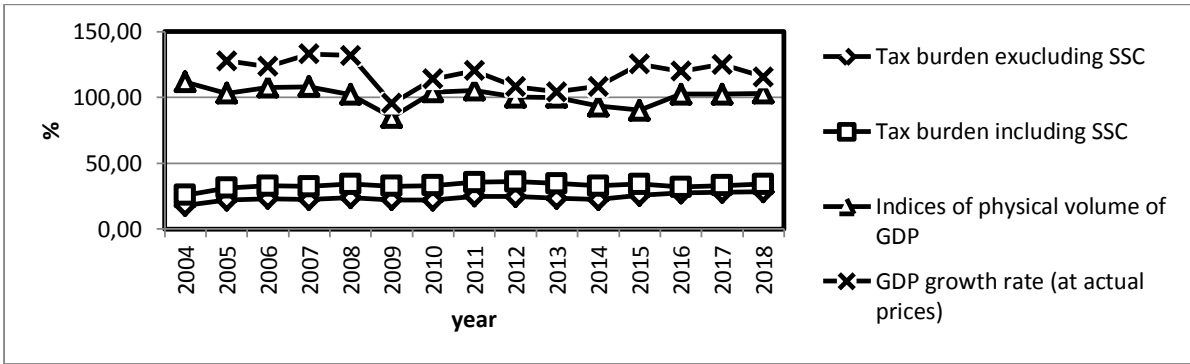


Fig. 1. Tax burden on the economy and GDP growth rate, 2004—2018

Source: Compiled by the authors based on [28; 29]

According to the above data, the tax burden on the economy within the investigated period increased from 17.98% in 2004 to 28.40% in 2018. The largest values are observed in the last 4 years of the specified period. The tax burden with SSC has also changed significantly. The smallest value is for 2004 — 25.86%, the greatest one — in 2012, 36.02%. In recent years, we record a decline to 34.26%. The above data gives grounds for concluding that definitely to estimate the relationship between the growth rates of the tax burden and GDP is impossible. In periods where there is a declining trend of indices of the GDP physical volume the tax burden did not increase, but even declined a bit. Since 2016, the indices of the physical volume of GDP have grown, while the tax burden on the economy has also increased. We assume that the growth of physical volumes of GDP was caused by the growth of consumer demand, as it is evidenced by the data presented in Fig 2.

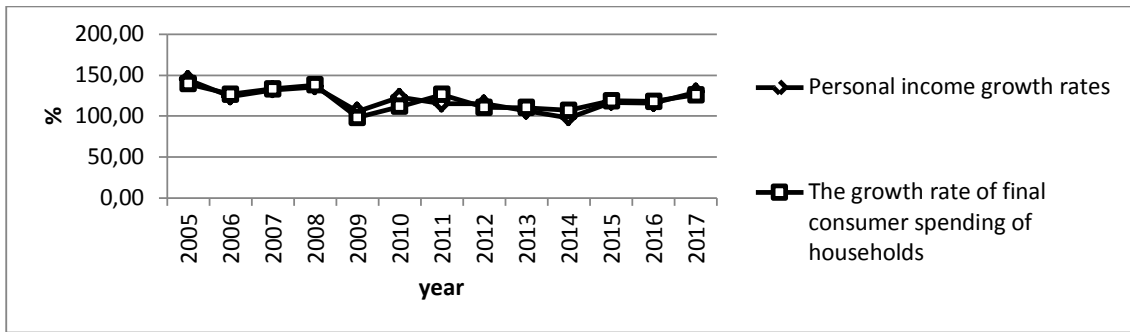
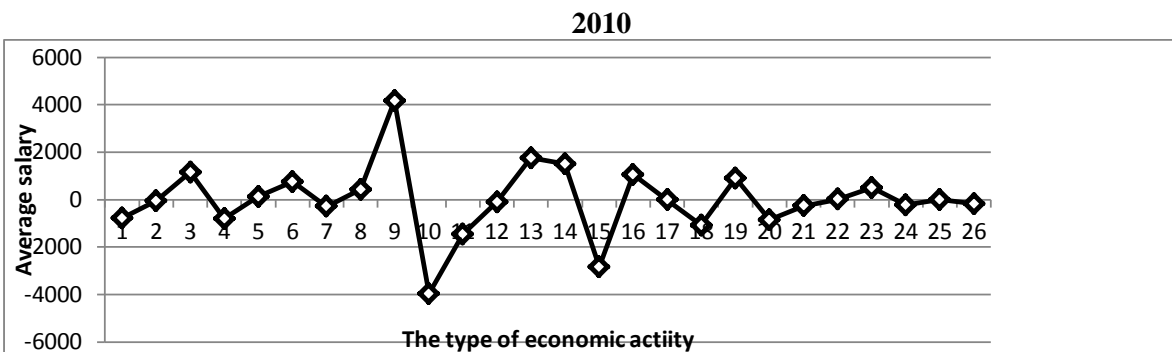
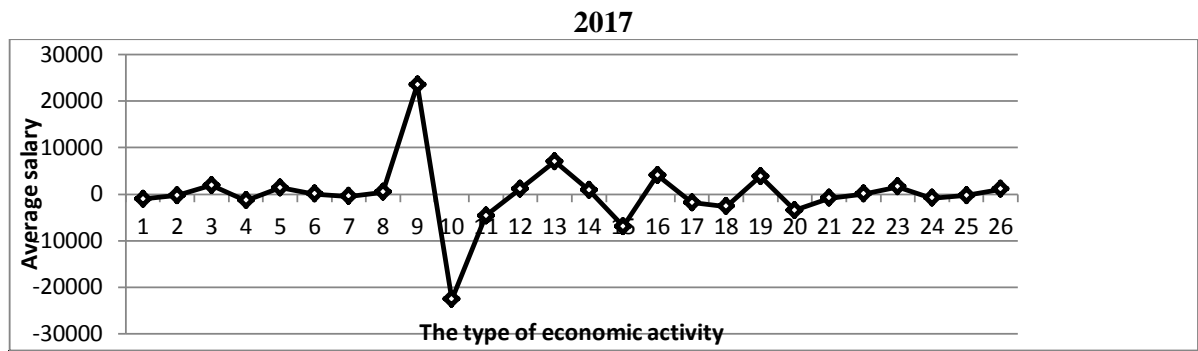


Fig. 2. Growth rate of the household income, household final consumption expenditure and GDP in Ukraine, 2005—2017

Source: Compiled by the authors based on [28]

We see that the trends in the dynamics of the above indicators are identical. It means that households' final consumption expenditure and GDP increase with higher incomes. It should be noted that the high growth rates of income are observed in 2005—2008 and in 2015—2017. Consequently, we conclude that the increase in the tax burden, which caused the rise in prices and the decrease in consumer demand, was offset by an increase in household incomes, in particular, salary. But it should be noted that incomes are distributed among the population unequally. This is evidenced by the indicators of average salary by the types of economic activity (Fig. 3).





- |   |  |
|---|--|
| <ul style="list-style-type: none"> <li>1 Agriculture, Forestry and Fisheries, including:</li> <li>2 - agriculture</li> <li>3 Industry</li> <li>4 Construction</li> <li>5 Wholesale and retail trade; repair of motor vehicles and motorcycles</li> <li>6 Transport, warehousing, postal and courier activities, including:</li> <li>7 - ground and pipeline transport</li> <li>8 - water transport</li> <li>9 - air transport</li> <li>10 - warehousing and auxiliary transport activities</li> <li>11 - postal and courier activities</li> <li>12 Temporary placement and organization of food</li> <li>13 Information and telecommunications</li> </ul> | <ul style="list-style-type: none"> <li>14 Financial and insurance activities</li> <li>15 Real estate operations:</li> <li>16 Professional, scientific and technical activities, including</li> <li>17 research and development</li> <li>18 Activity in the field of administrative and auxiliary services</li> <li>19 Public administration and defence; compulsory social insurance</li> <li>20 Education</li> <li>21 Health care and social assistance, including:</li> <li>22 health care</li> <li>23 Arts, sports, entertainment and recreation, including:</li> <li>24 activities in the field of creativity, art and entertainment</li> <li>25 the operation of libraries, archives, museums and other cultural institutions</li> <li>26 Provision of other types of services</li> </ul> |
|---|--|

Fig. 3. The average salary by the types of economic activity  
*Source:* Compiled by the authors based on [30]

Despite some smoothing of the differentiation of salary by the type of economic activity in 2017 compared to 2010, the deviation from the average salary in some industries remains significant. The lowest salary is in health and education fields, that is, in sectors that are mostly funded from the budget. Consequently, the additional income received as a result of an increase in the tax burden was not used to equalize incomes in order to increase consumer demand. The number of people with average per capita gross monthly income lower than the subsistence minimum although declined in comparison with 2015 and 2016, remains high — 34.9% of the total population. The proofs of the inconsistency of the fiscal efficiency of the personal income tax on the standard of living of the population we found in the work of Boyko S. and Dragan O. (2016) [31]. According to their findings, the increase in income from the personal income tax is accompanied by the impoverishment of the population. This, in turn, affects consumer demand.

**Conclusions.** The reform of the Ukrainian tax system is of a permanent nature. Each next tax reform began without the logical conclusion of the previous one. Its goals remained the same without the appropriate quantitative measurement of indicators which have to be achieved and the analysis of mistakes. This is contrary to the principles of management.

The measures to reform the tax system, applied during 2014—2018, were aimed at increasing the revenues of all level budgets, that is, the fiscal function naturally inherent in taxes was implemented. However, this did not ensure the necessary revenues to finance expenditures as it was envisaged in the tax reform conception. The content of the tax transformations contradicted the goal of economic growth, since their consequence was the reduction of aggregate demand, which, on the contrary, led to a decline in business activity and output reduction. This effect was offset by

the growth of the individuals' incomes, including salary. However, despite the low GDP growth rates, the living standards of most people worsened due to the unequal distribution of revenues. During the reform, the natural properties of taxes as a consumer demand regulator by the way of the tax pressure reduction on the poor sectors of the population and shifting the tax burden on the income significantly exceeding its average level were not used. We believe that in the case of unequal distribution of income, further tax transformations should provide for progressive taxation of income. So, our further research will be aimed at substantiating the progressive scale, taking into account the conclusions of the scholars, which were given in the literature review.

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