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ANALYSIS OF TAX REVENUES TO THE BUDGET AND TAX ADMINISTRATION OF DIGITAL BUSINESS

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Kraus K. M., Kraus N. M. Analysis of Tax Revenues to the Budget and Tax Administration of Digital Business

The aim of the article is to present characteristics of taxes on digital goods and services (DGS) and virtual business (VB) in some countries of the world. The authors indicate and compare the amounts of tax revenues to the budget of Ukraine in 2023–2024 in terms of various taxes and some domestic IT companies. As of 01.01.2024 UAH 35.9 billion in taxes were paid by the IT industry, as of 01.01.2023 UAH 32.2 billion, and as of 01.01.2022 p. – UAH 27.8 billion. The article analyzes the signs of taxes in terms of the characteristic features of collection and accrual, with the aim of improving the tax policy concerning virtual business ant entrepreneurship on the basis of this knowledge. A general characterization of the gross tax on digital services, VAT on the digital products in Switzerland, Iceland, Thailand, Poland, Slovakia, Norway, and Ukraine is presented. It is substantiated that the efficiency of taxation of digital business faces the need to form a reliable and effective mechanism for tax collection from transactions of digital entrepreneurship. It is proposed that the Government of Ukraine pay attention to the establishment of a progressive tax scale for environmental tax, in accordance with the size of the enterprise. The adoption of laws that prohibit or restrict environmental pollution could be effective. Such laws compel potential polluters to be accountable and cover the costs of disposing of industrial waste or to make production waste-free. Thus, it is a matter of the parallel formation of two types of economies – circular and sharing ones. The authors maintain that taxes for small businesses during martial law (and for another 2-3 years after its conclusion) should be kept at a minimally low level, so that micro and small businesses do not close but continue their business activities and employment.

Keywords: *digital enterprises, taxation of digital business, tax revenues, budget, taxes on digital products and services.*

Fig.: *3.* ***Tabl.:*** *2.* ***Bibl.:*** *30.*

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Краус К. М., Краус Н. М. Аналіз податкових надходжень до бюджету та адміністрування податків цифрового бізнесу

Метою статті є представлення загальної характеристики податку на цифрові товари і послуги та віртуальний бізнес у деяких країнах світу. Автори вказали та порівняли суми податкових надходжень до бюджету України у 2023 та 2024 рр. у розрізі різних податків та деяких вітчизняних ІТ-компаній. Станом на 01.01.2024 р. ІТ-галуззю сплачено 35,9 млрд грн податків, на 01.01.2023 р. – 32,2 млрд грн податків, на 01.01.2022 р. – 27,8 млрд грн. У статті проаналізовано ознаки податків у розрізі характерних особливостей стягнення і нарахування, з метою того, щоб на базі даного пізнання вдосконалити податкову політику цифрового бізнесу та підприємництва. Представлено загальну характеристику валового податку на цифрові послуги, ПДВ на цифрові продукти і послуги в Швейцарії, Ісландії, Таїланді, Польщі, Словаччині, Норвегії та Україні. Обґрунтовано, що ефективність оподаткування цифрового бізнесу зіштовхується з потребою формування надійного та дієвого механізму стягнення податків з транзакцій цифрового підприємництва. Запропоновано уряду України звернути увагу на встановлення прогресивної шкали оподаткування для екологічного податку, відповідно до розміру підприємства. Результативним може стати прийняття законів, які забороняють або обмежують забруднення навколишнього середовища. Закони такого характеру змушують потенційних забруднювачів нести відповідальність і брати на себе витрати за утилізацію промислових відходів або робити виробництво безвідходним. Тобто, мова йде про паралельне становлення двох типів економік – циркулярної та шерингової. Автори стоять на позиції того, що податки для малих підприємств в умовах воєнного стану (та ще 2–3 роки після його закінчення) повинні бути мінімально низькими, щоб мікро- та малий бізнес не закривався, а продовжував свою ділову активність і зайнятість.

Ключові слова: *цифрові підприємства, оподаткування цифрового бізнесу, податкові надходження, бюджет, податки на цифрові продукти і послуги.*

Рис.: *3.* ***Табл.:*** *2.* ***Бібл.:*** *30.*

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Carrying out innovation, improving tax management in a professional, effective, efficient, and synchronous manner based on digital technologies, pursues the goal of creating maximum convenience, clarity, and transparency in taxpayers' fulfillment of their obligations to the state budget. Digital entrepreneurship (DE) and virtual business (VB) are those based on the operation of digital tools and the functioning of digital platforms. It is safe to say that e-entrepreneurship and e-business are new types of business activity [1, p. 3].

The effectiveness of DE taxation faces the need to form a reliable and effective tax collection mechanism for digital business transactions. Improving taxation, developing new rules for collecting taxes from VB and DE, and improving the quality of services for taxpayers by tax institutions in terms of the ease and accessibility of paying tax payments have become priorities in the fiscal policy of any country.

Scholar O. Adebiyi studies the methods and consequences of virtual infrastructure taxation in the context of the development of the digital landscape and economies, taking into account the proliferation of digital assets, online transactions, and virtual organizations [2]. J. Ntiamoah and J. Asare devoted their research to the study of issues of taxation of digital business transactions. They found that it is the rapid growth of technical and technological progress that changes the way of conducting business operations in the business environment, and the complexity of taxation of DE is caused by the lack of a physical commercial environment [3, p. 38].

Researchers R. Belahouaoui and E. Attak analyzed the impact of tax digitalization, focusing on AI, machine learning, and blockchain technologies, to improve tax compliance in different contexts [4]. They were able to study the impact of new digital tools on taxpayer behavior and compliance, as well as assess their effectiveness in reducing tax evasion.

In an article 'Does taxation of digital financial services negatively affect the financial inclusion agenda? Lessons from a developing country' by F. Pobee, A. Jibril and E. Owusu-Oware presents the determinants of mobile money use and the moderating effect of taxation on mobile money adoption. Scientists have concluded that expected productivity and duration of effort, social influence, and favorable conditions influence the behavioral intentions of economic agents [5, p. 1].

Scientists L. Nga and P. Tam devoted their research to studying tax legislation and finding out the peculiarities of its compliance by online businesses [1, p. 1]. Researchers claim that the communication and exchange of information about taxpayers between tax authorities, ministries, and departments does not meet the digital requirements of the tax administration, as the information exchange mechanism is inadequate and the level of application of information technology is still low [1, p. 3].

In the context of our research, we consider the scientific and educational products of the International Grant Project 'Teaching Digital Entrepreneurship' to be valuable [6; 7; 8; 9]. Project participants and authors of educational and scientific products provided detailed materials on the foundation and implementation of DE, analyzed the peculiarities of running a digital business, and presented methodological materials for educational programs dedicated to training students in digital business affairs.

In previously published works, we attempted to conduct a thorough study of the digitization of business processes at the enterprise and study the issues of post-war reconstruction of the national economy on the basis of DE and business mobility [10; 11]. At the same time, we studied the peculiarities of taxation of Industry 5.0 and its business agents [12; 13] and analyze the advantages of business operation in conditions of augmented reality and virtual opportunities [14; 15].

At the same time, a significant number of issues, such as the mechanisms and latest fiscal instruments

of taxation of DE, digitalization of the tax institute, organizational and economic conditions and components of taxation of digital business, which will have priority during the reconstruction of the economy of Ukraine, and in general economic measures to support DE, remain poorly studied. In addition, there is no clear understanding of the role of the introduction of taxes on digital goods/services (DGS) and VB in the national economy.

The **purpose** of the article is to present characteristics of taxes on DGS and VB in some countries of the world; indicate and compare the amounts of tax revenues to the budget of Ukraine in 2023–2024 in terms of various taxes and some domestic IT companies; to analyze the signs of taxes in terms of the characteristic features of collection and accrual, with the aim of improving the tax policy of DE on the basis of this knowledge; to provide proposals of a recommendatory nature in terms of mitigating the impact of taxation on the process of investment attraction, implementation of innovation and digital transformation processes.

Having analyzed scientific achievements in the field of the digital transformation of business processes, elucidating the tools of a high-quality digital business taxation system, we believe that the policy of taxation of DE and VB as a result of the influence of digital technologies remains unexplored. On the basis of dialectical, systemic methods, and comparative analysis, an attempt was made to reveal features of the introduction of taxes on DGS in individual countries of the world. Using a comparative analysis, the size of the largest amounts of taxes transferred to the budget of Ukraine in 2023 by residents of 'DiiaCity' and some IT companies is indicated. Tax revenues to the revenue part of the state budget of Ukraine as of June 1, 2024 have been analyzed.

With the development of digital technologies and the digitization of business processes, DE, e-commerce, and Internet trade are becoming general trends in the latest economic development. The issue of taxation of digital business needs to be resolved under the existing conditions of global convergence of economies.

'The technical layer between ministries and agencies is still not homogeneous and uniform. The connection of the centralized data management program of the tax authorities with external programs such as electronic tax filing, audit and audit risk management is complex, which leads to difficulties in the verification, control and decentralization of data' [1, p. 3]. The current global trend towards digital tax administration 3.0 highlights the importance of regulatory framework, capacity building and tax simplification for small and medium-sized digital enterprises [4].

Some classification features of taxes in terms of features of collection and calculation are presented in *Tbl. 1*. But this list is constantly expanding, because new types of business appear and there is a need to improve fiscal policy specifically for DE.

Table 1

Classification features of taxes in terms of features of collection and assessment

Classification sign	Type of tax	Content and general characteristics
According to the ratio between the tax rate and the amount of the object of taxation	Proportional	The amount of the rate remains unchanged, regardless of the amount of income. They act in the same percentage relation to the object of the tax without taking into account the differentiation of its amount (for example, VAT, corporate income tax)
In economic terms	Regressive	As income increases, the average rate decreases. As income increases, less and less of it is collected in taxes
	Progressive	As income grows, its average rate increases. Such a tax not only increases in absolute terms, but also represents a larger part or percentage of income as this income grows
	On income	They deal with legal entities and individuals in accordance with the established rates (for example, personal income tax, corporate income tax)
According to the form of taxation	For consumption	Charged to consumers in the prices of services and goods that are purchased (for example, customs duties, excise, VAT)
	On property	It is collected from specific property of individuals and legal entities (for example, cars, houses)
	Direct	They are collected directly from the taxpayer's income or property
	Indirect	It is paid by the consumer as a result of its inclusion in the form of a surcharge to the price of the product

Source: grouped based on sources [16, p. 364; 17–19].

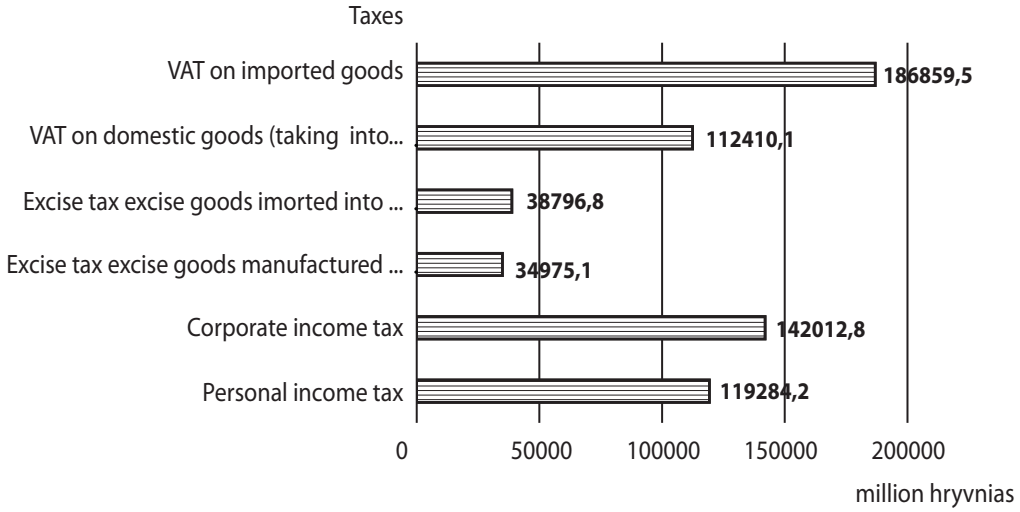

Fig. 1. Amounts of tax revenues to the revenue part of the state budget of Ukraine as of June 1, 2024

Source: compiled based on the source [21].

For the past two decades, VB and individuals who receive income from electronic transactions have not yet voluntarily registered and, accordingly, do not pay taxes. Every year, the budgets of a number of countries around the world lose a significant source of income from uncollected taxes. In the future, these losses will only increase as transactions in the digital business grow. To avoid this, governments will have to review and supplement the tax rules for VB and e-business to make tax declaration and payment convenient and the tax rates for DGS moderate. At the same time, it will strengthen the ability to monitor and prevent tax evasion by digital businesses that derive income from online commerce. On the other hand, it is worth strengthening coordination between tax institutions and banks, specialized management institutions and international organizations in the exchange of tax administration information for strict control over the declaration and payment of taxes by digital enterprises [1, p. 12].

In 2023, 12% more taxes came from the IT industry to the budget of Ukraine. As of January 1, 2024, 35.9 billion UAH in taxes were paid to the IT industry, as of January 1, 2023 –32.2 billion UAH in taxes, as of January 1, 2022 – 27.8 billion UAH. The increase in the amount of taxes paid from the IT sector was observed despite the decrease in the number of taxpayers in this field. During 2019-2023, taxes paid by the IT sector increased 2.1 times [20]. In Fig. 1 presents the amount of revenues to the budget as a result of the payment of certain types of taxes in the first half of 2024. Tax revenues in budget revenues accounted for 63.15% of the total amount of budget revenues. The share of tax on income, profit and increase in market value was 24.31%, the share of internal taxes and goods and services was 34.7% [21].

The list of some companies that are residents of 'DiiaCity' and IT companies that transferred the largest amounts of taxes to the budget of Ukraine in 2023 is presented in *Fig. 2* and *Fig. 3*. IT companies contributed tax revenues to the budget in 2023 by 17.4% more than in 2022 [22]. The following companies (limited liability companies) contributed the largest amounts to the budget through the payment of taxes: 'FINTECH BEND', "UYSI DISI PROCESSING", 'CHEKBOX', INFOPULSE UKRAINE', 'PLARIUM KYIV', 'PLARIUM UKRAINE', 'SOFTSERV DEVELOPMENT', 'SOFTSERV INDUSTRY', 'SOFTSERV INNOVATIONS', 'UKRAINIAN INFORMATION TECHNOLOGIES', 'SOFTSERV'.

Currently, the government of Ukraine is interested in the active development of industrial parks and strives to attract projects with large investments as much as possible. By the end of 2023, there were 73 objects in the register of industrial parks. First Vice Prime Minister, Minister of Economy of Ukraine Y. Svyridenko has repeatedly noted that 'it is industrial parks that can ensure the solution of important problems for the investor. We are talking about land, industrial buildings, connection to networks, the cost of equipment at the expense of tax and customs incentives. For 2024, budget financing for the development of the infrastructure of industrial parks in the amount of 1 billion UAH, for the support of projects with significant investments and the implementation of the mechanism of partial compensation of significant investments through taxes in the amount of 3 billion UAH is provided' [23]. Pursuing the goal of filling the budget of Ukraine, the government should choose the path of structural transformation of the work of the country's customs service in terms of its digitalization.

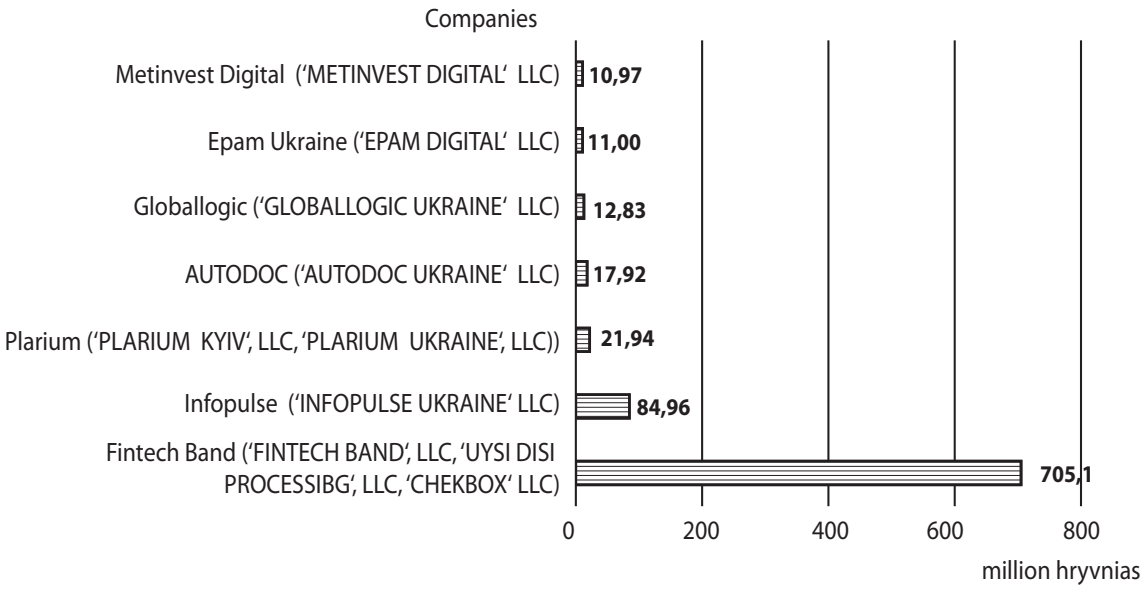

Fig. 2. 'DiiaCity' resident companies that transferred the largest amounts of taxes to the budget of Ukraine in 2023

Source: compiled based on the source [22].

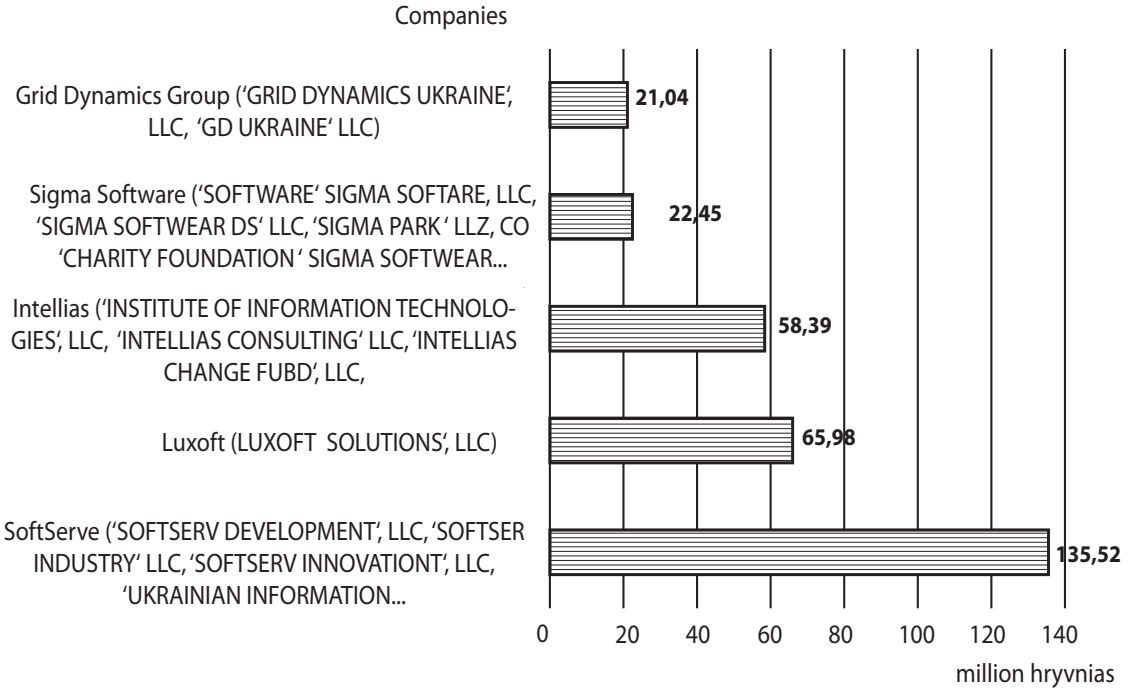

Fig. 3. IT companies that transferred the largest amounts of taxes to the budget of Ukraine in 2023

Source: compiled based on the source [22].

This can bring the work of this institution out of the 'shadows' and reduce the share of the shadow, illegal market, in particular, reduce the volume of smuggling in Ukraine. Taxes for small businesses during martial law and for another 2–3 years after its end should be minimally low so that micro and small businesses do not close but continue their business activity and employment.

For the economy of Ukraine, it makes sense to establish a progressive scale of taxation for environmental tax according to the size of the enterprise. It is obvious that when enterprises pollute water, land, air, they should be taxed with an environmental tax on a progressive scale. Adopting laws that prohibit or limit environmental pollution is effective. Laws of this nature make potential polluters responsible and bear the costs

of disposing of industrial waste or making production zero-waste. We are talking about the parallel formation of two types of economies – circular and sharing. Digital enterprises are forced to purchase and 'install smoke absorbers and installations for the treatment of industrial waste. And let the waste continue to be reprocessed and produce some new types of waste products' [16, p. 79–80].

'A high rate of environmental tax contributes more to the improvement of the quality of innovation, and the intermediate effect of the quality of innovation is felt only in regions with high tax rates. Environmental subsidies and subsidies for research and development play a key role in improving the quality of technological innovation' [24]. Environmental taxes can fundamentally affect the innovative behavior of enterprises and their digitization of their business processes. 'The legal effect of environmental taxes makes them market norms of regulation with command and administrative functions. Mandatory legal force of environmental taxes increases the legal responsibility of digital enterprises, increases the risk and cost of illegal actions, such as evasion of payments for emissions, inaction, concealment' [24].

Technological progress, capacity, and changes in tax systems affect many aspects of tax administration in terms of compliance with the law and the ability of tax authorities to resolve complex tax issues. Technology has become an important part of business operations in both developed and developing economies. The influence of technologies and the rapid development of digital business is felt by all countries of the world [3, p. 46]. The general characteristics of taxes on DGS and VB in some countries of the world are presented in *Tbl. 2*.

Table 2

General characteristics of taxes on DGS and VB in some countries of the world

Country	The name of the tax	Taxation	Characteristic features, recovery procedure
1	2	3	4
Slovakia	Gross tax on digital services	5%	Charged from 2018 on digital platforms providing transport and housing services
Poland	Tax on digital services	1,5%	The tax is effective from July 1, 2020. Charged from audiovisual media services and audiovisual commercial communication
Thailand	Gross tax on digital services	5%	Charged since 2019 for the supply of goods and services through e-commerce in the country. The financial institution carrying out the transaction is responsible for withholding and remitting the tax
Norway	VAT	25%	It has been implemented since 2011. Provided that if the company's annual sales in the country exceed the tax threshold of $5,681, then for B2C transactions it must register as a VAT payer in Norway. In the case of B2B services, VAT is accounted for by the buyer using the mechanism of reverse charge
Switzerland	VAT	8.1%, 2.6%, 3.8%	From January 1, 2024, the following VAT rates apply in the country: – normal rate of 8.1% (various commercial services); – reduced rate of 2.6% (newspapers, magazines, books and other printed products without advertising nature, e-newspapers, magazines and books without advertising nature; services of radio and television companies; food products, except alcoholic beverages; fish, poultry, cattle livestock; live plants; animal feed and fertilizers); – special tariff for accommodation 3.8% (accommodation services in the hotel and restaurant business, in particular, bed and breakfast, apartment rental for recreation)
Iceland	VAT	24%	The standard Icelandic VAT rate of 24% applies to all sales of e-services, with the exception of e-books, which are subject to 11% VAT. The VAT registration threshold is ISK 2 million over a 12-month period
Ukraine	Special legal zone for the IT industry	9% or 18%	In 2021, amendments were made to the Tax Code of Ukraine, which provide for the taxation regime of companies registered in 'DiiaCity' (a special legal zone for the IT industry) and their investors, employees and engaged specialists. Residents of 'DiiaCity' pay corporate income tax at the rate of 18% of the financial result of income before taxation, taking

End tbl. 2

1	2	3	4
			into account tax adjustments, or they can choose to pay corporate income tax at the rate of 9% from the distribution of profits and 18% corporate income tax from the value of transfer adjustments pricing arising from controlled operations and income of foreign companies

Source: compiled on the basis of sources [19, p. 5, 10, 13, 14, 20, 23, 24, 68, 69; 18, p. 15; 16, 20; 25, p. 4, 7; 26–30].

Taxing virtual infrastructure significantly increases government revenues, contributing to fiscal stability and improving the financing of public services, but at the same time, taxing virtual infrastructure significantly discourages investment and innovation. For these reasons, measures should be taken to mitigate the impact of such taxation on investment and innovation in the digital economy [2].

In Ukraine, in government circles, there is an opinion about the abolition of VAT refunds for the export of raw materials and the introduction of a special export duty on the export of unprocessed raw materials, because most of Ukraine's exports are unprocessed raw materials, and this makes the country's economy continue to be a raw material appendage in relation to European countries. In the future, this tool can be used as an incentive for the launch of domestic processing smart factories and smart plants, which are very important in the conditions of martial law. The opening of Factories 5.0 would allow attracting foreign investments and stimulate and motivate domestic investors to invest in processing. We are convinced that, already in the near future, the country could have national-type processing innovation ecosystems on the basis of digital and inclusive entrepreneurship, social innovation.

The Government of Ukraine should consider the introduction of strict and effective control such as an audit and constant, ongoing online monitoring of the use of financial and economic assistance from international financial institutions and partner countries. In particular, when conducting an audit, it is worth using the capabilities of modern digital technologies such as AI (including the so-called 'strong AI' and 'friendly AI'). This would make it possible to increase the rationality and efficiency of the use of donor funds and loans provided by partner countries for the implementation of innovative digital projects.

Pursuing the goal of filling the country's budget, obviously the tax policy should be reviewed in terms of:

- introduction of a special temporary import fee on certain types of innovative goods and digital services. It is something like a luxury tax. For example, we can talk about goods for the individual use of Ukrainians (for example, premium cars, jewelry). Excise goods were already reviewed by the government in 2024 in terms of increasing tax revenues due to an increase in the amount of excise duty. The government of Ukraine argues that most excise goods are socially useless for the population (for example, we mean cigarettes, alcohol, and carbonated drinks);
- provision of training subsidies in the form of educational loans for specialties needed by the country, precisely those that are lacking in the labor market for government institutions and digital enterprises. Loans will contribute to the growth of demand for vocational and higher education in educational institutions [16, pp. 79–80];
- providing subventions to support research programs and improve the quality of COVID-19 vaccines. Provision of grants for the development of research in the field of prosthetics with the aim of treating, in the future, with domestic means and instruments, military personnel who have suffered amputations as a result of participation in armed conflicts. This will allow budget funds to remain in Ukraine and not bear the costs of purchasing foreign equipment, improving the qualifications of medical workers, and direct treatment of wounded soldiers.

CONCLUSIONS

Savings can be considered a basis for investing in risky innovative digital business projects aimed at rebuilding the economy of Ukraine. For these reasons, there are groups of economists who advocate lowering marginal tax rates on savings. As an option, you can consider the introduction of a lower tax on income from investments. This is done in order to encourage Ukrainians to invest their own savings in innovative business projects, since one of the main factors of investment costs is their net after-tax yield. So, it becomes clear that lower marginal tax rates provide a stronger incentive to save and invest. As a result, this leads to the fact that employees will be provided with a greater number of labor tools, equipment, which is

also higher in technological class. Labor productivity will increase, which in this case will lead to an increase in the long-term total supply and an increase in the rate of economic growth. In the country as a whole, such changes will have a positive effect on reducing the growth of inflation and the level of unemployment [16, p. 720].

It is equally important that in parallel with the incentives and preferences for the launch of DE, a number of institutional changes are taking place. The goal of these changes is 'in the coordinate system' of securing investors and restoring the level of trust in the Ukrainian business environment and state institutions. But it is worth remembering that government officials must be 'vaccinated' against corruption and bribery. They should have inherent corruption inadmissibility. ■

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