Chapter 2

Diagnostics of Tax Security Threats and Counteraction Mechanisms for Tax Avoidance Schemes

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2.1. Introduction

Tax security is determined by fiscal sufficiency and tax system efficiency as well as by the predictability of tax relations between the state and taxpayers with the permissible level of tax burden for them. The indicators for assessing the level of tax security include those of the budgetary component of security: the fiscal burden, the level of implementation of planned targets, the cost intensity of administration and effectiveness of tax control, the level of shadow economy, and the tax evasion by individual taxpayers.

The purpose of this chapter was to evaluate both the indicators that affect the tax security, and the ability of society to avoid tax threats and the vulnerability in countering identified threats. To achieve this goal, it was necessary to solve the following tasks: to diagnose the tax security by indicators of fiscal burden, level of gathering, efficiency of administration and effectiveness of tax control measures, and to develop a mechanism to counteract threats and strengthen the tax security of Ukraine as a whole.

Methodology. To build an integrated approach, all the existing and potential factors of threats were analysed. Data from reports of the State Statistics Service of Ukraine, National Bank of Ukraine, Ministry of Finance of Ukraine, OECD and World Bank were used.

The survey was based on an analysis of studies by Ukrainian and international scientists about the essence and nature of tax security over the last 15 years. In addition, to determine the essence and the concept, goals and objectives, methods and principles of the economic nature of the tax security, the main risks, threats, expectations and results of efficient tax security and tax avoidance schemes were identified.

The author applied as the main methods: comparison (factual and planned tax revenues, elements of national tax systems), systematisation and classification (indicators for tax security, indicators classification by stimulants/destimulants), economic analysis (calculation of the security indicator), as well as mathematical and statistical methods (analysis of time series, averages).

The result of an excessive tax burden is the attempt on the part of taxpayers to reduce it. Therefore, in order to strengthen the tax security of the state it is necessary to reduce the scale of tax avoidance by taxpayers and increase the efficiency of tax administration and the effectiveness of tax control.

2.2. Evaluation of Fiscal and Tax Burden of Ukraine and OECD Countries

Tax security indicators of Ukraine for 2016-2022 and their deviation from the threshold values were calculated by the author in Table 2.1. Over the last eight years, the level of fiscal burden (including social security contribution) has increased from 32.8% of GDP in 2016 to 33.4% in 2022, but decreased to 32.4% in 2023. Exceeding the actual value of the indicator above the threshold level existed throughout the analysed period – the highest was in 2018 and 2022 (by 4.1 percentage points).

Table 2.1. Tax security indicators of Ukraine in 2016-2023

Indicators	Threshold level	Years							
		2016	2017	2018	2019	2020	2021	2022	2023
Indicators of fiscal and tax burden									
Fiscal burden (including social security payments), % of GDP	30	32.8	33.8	34.1	33.8	33.9	33.1	33.8	32.4
Labour burden (personal income tax and charge + social security), % of GDP	≤ 13.8[a]	11.3	12.3	12.9	13.8	14.0	12.8	16.1	14.9
Total tax burden, % of GDP	≤ 25	27.3	27.8	27.7	26.9	26.9	26.7	25.6	25.1
The level of concentration of tax revenue in the consolidated budget, %	≥ 60	83.1	81.4	83.3	83.0	82.6	87.5	61.2	52.8
The level of concentration of tax revenue in the state budget, %	≥ 60	81.8	79.1	81.2	80.1	79.1	85.4	53.1	53.1
Total coefficient of elasticity of tax revenue	≥ 1	1.41	1.09	0.98	0.73	1.01	0.96	1.96	0.89
Level of shadow economy, % of GDP	≤ 30	33	32	29	28	30	32	n/a	n/a
Indicators of the level of tax collection (fulfilment of planned tasks)									
Total level of tax collection	≥ 1	1.03	1.00	1.00	0.96	1.02	1.04	0.84	0.99
Indicators of administrating efficiency (cost intensity)									
Result ratio (index of expenditures on tax administration, per 100 UAH of tax revenue)	≥ 1	0.96	1.02	1.21	1.09	1.12	1.10	0.96	0.76

Expenditures on tax administrating per permanent population, UAH/person	≤ 258,6[a]	147.2	199.4	283.0	280.9	307.3	388.8	n/a	n/a
Expenses for tax administrating per economically active population, UAH/person	≤ 609,4[a]	348.4	476.4	664.1	648.7	724.1	925.0	n/a	n/a
Tax debt rate, %	≤ 5	10.7	11	10.3	11.7	9.1	7.3	10.8	8.5
Level of tax integrity, %	≥ 95	95.6	96.8	96.5	95.4	98.4	95.6	98.5	97.2
The efficiency ratio of the fiscal authorities	≥ 5	4.5	3.1	2.9	4.2	1.4	4.0	1.5	3.7

[a] Average value for the analysed period.

Source: based on (Chuy et al., 2021).

However, the total tax burden in Ukraine for the analysed period decreased from 27.3 to 25.1%, an increase of the fiscal burden was observed – by direct taxes from 9.1 to 10.9 % of GDP (by 1.8 percentage points). Instead, a decrease by 2.6 percentage points for indirect taxes (from 15 % to 12.4 %) and for taxes on property, resources, capital by 1.4 percentage points (from 3.2 % to 1.8 %) was seen (Fig. 2.1).

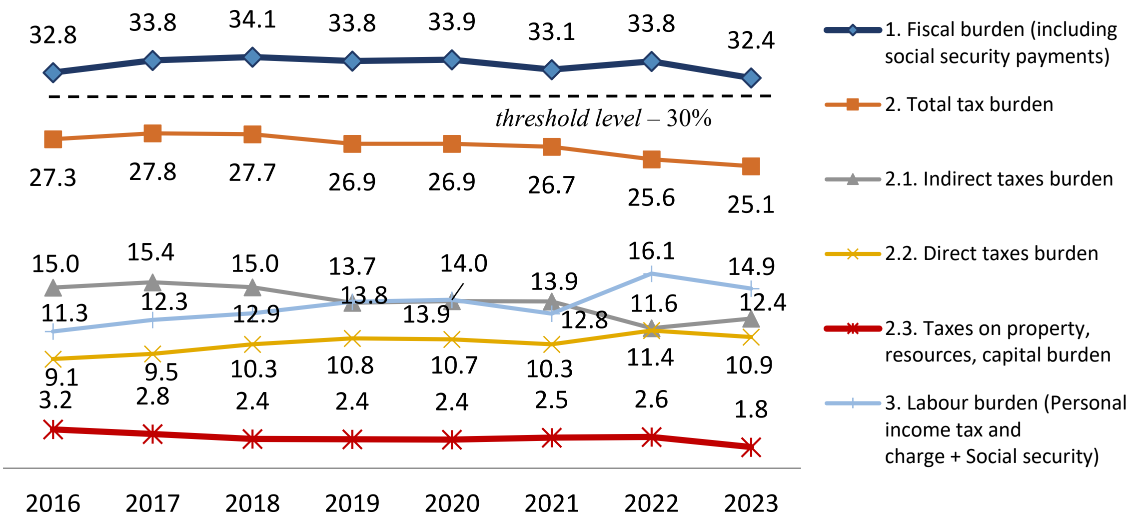
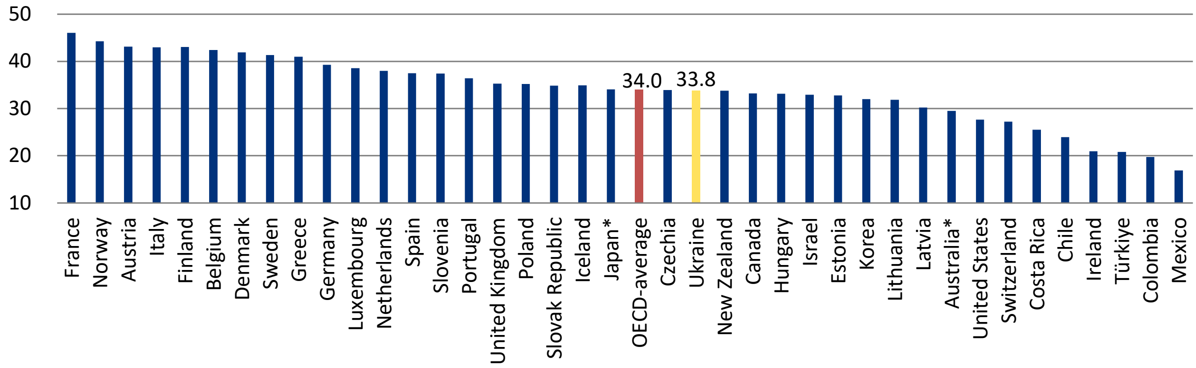


Fig. 2.1. Fiscal and tax burden of Ukraine, 2016-2023, % of GDP

Source: own study.

The tendency to increase the tax burden was demonstrated by the majority of developed countries which are members of the Organization for Economic Cooperation and Development (OECD). The OECD Tax database showed that the average level of tax burden for OECD countries in 2022 was 34% of GDP against 33.6 % in 2016 (Fig. 2.2). Only 15 countries (Austria, Denmark, Sweden, the Netherlands, Spain, Poland, Slovak Republic, Iceland, Estonia, Hungary, Lithuania, Latvia, Switzerland, Ireland, and Türkiye) among the 38 OECD members reduced the level of tax burden during 2016-2022.

The results of econometric analysis by OECD economists showed that economic growth slowdown was due mostly to indirect/consumption taxes, therefore income taxes had a negative impact on tax security, and regular land/real estate taxes were the least harmful



* GDP

Fig. 2.2. Tax burden in OECD countries and Ukraine in 2022, % of GDP

Source: based on (OECD, 2022a).

(Akgun et al., 2017). The problems that reduced the fiscal efficiency of direct taxes and lowered the level of tax security in Ukraine were caused by the low income of the majority of the population, the significant level of tax evasion, and the uneven distribution of the tax burden between the real and financial sectors of the economy (Chuy et al., 2019). The desire to avoid corporate tax was becoming the dominant motive to use offshore schemes (Dubrovsky et al., 2021). Taxes on labour, which include personal income tax, social security payments on both employers and employees and military charges, are harmful because they discourage legal employment and the development of labour-intensive industries, increase the cost of job creation, and instead drive the labour market 'into the shadows' and stimulate labour migration. The state of tax security in terms of labour taxation in Ukraine is exacerbated by low levels of minimum and average wages and their excessive taxation – 11.3% of GDP in 2016 up to 14.9% in 2023. Across OECD countries, the sum of personal income tax (PIT), employer social security contributions (SSCs) and employee SSCs as a share of labour costs for the average worker ranged from 52.6% in Belgium to 0 in Colombia, with an average of 34.6% (OECD, 2022b). The average for labour burden (PIT and SSCs as a percentage of GDP) was 17.8%, with a much higher average applied by Germany (25.4%), Austria (25.1%), Finland (24.8%), Italy (24.7%), and Denmark (24.6%).

The average level of taxes on goods and services in OECD countries in 2021 was 10.8% of GDP and 31.2% of total taxation; these taxes are considered less vulnerable to tax abuse. However, the shadow economy, smuggling, 'grey imports', VAT abuse, excise and import duties, and the sale of counterfeit alcoholic beverages and tobacco products still remain threats to tax security (Dubrovsky et al., 2021).

The least vulnerable to their impact on tax security are taxes on property, since the basis for their accrual is not subject to concealment, and in case of non-payment, there is a pledge in the form of property. The fiscal significance of property taxes averaged 1.8% of GDP or 5.3% of total tax revenue in OECD countries in 2022. In Ukraine, the share of property taxes was much lower; in 2023 it amounted to only 1.8% of GDP and 7% of tax revenue of the Consolidated Budget. The deterioration of the security situation occurred only in cases of fraud in the valuation of property, the use of unlawful benefits or improper administration. The evasion of taxation of extraction of natural resources and underestimation of environmental pollution was possible due to the non-transparency of such activities, concealment of production, monopolisation, and the weakness of state control.

The calculations presented in Table 2.1 showed higher concentration of tax revenue in the state budget – 53.1 %, was higher than in the consolidated budget.

The total coefficient of the tax revenue elasticity was determined via division of the growth rate in tax revenue of the consolidated budget by the growth rate in GDP. The measures of the elasticity coefficient were above 1 in 2016, 2017, 2020, and 2022, which means that tax revenues grew at a higher rate than GDP increased. The ambiguity of trends in the coefficient of tax elasticity is a negative phenomenon caused by an excessive level of tax and fiscal burden, instability of the tax policy of the state and its regulatory influence.

The total level of the tax collection had a negative trend only in 2019. Analysis of the consolidated budget for 2016–2022 showed that in five years out of eight there was an over-fulfilment of the tax revenue plan: in particular, in 2016 – 102.6%, in 2017 – 100.5%, in 2020 – 101.9%, in 2021 – 103.7%, in 2022 – only 84.3% and in 2023 – 99.9%. Due to the strengthening of the hryvnia and the slowdown in import growth in 2020, it was impossible to obtain the planned amount of taxes on imported goods, namely VAT, import duties, and rent payments.

The main fiscal threats were the level of the shadow economy, the culture of taxpayers, the effectiveness of the tax authorities and the stability of the legislation (Golikov, 2016). According to the Ministry of Economy of Ukraine, the level of the shadow economy in 2021 amounted to 32% of GDP, which is 4 percentage points higher than the lowest indicator in 2019. After four years of a positive downward trend, the level of the shadow economy was higher than the threshold level; this requires identifying the causes and finding mechanisms for de-shadowing. During 2018-2020, the level of the shadow economy in Ukraine remained in the safe zone (28-30% of GDP), but its trend was negative. Experts exploring the level of the shadow economy in the field of fuel, alcohol and tobacco production found an extremely high level in these markets (*Assessment of the Level*..., 2024). In 2024, the shadow turnover in the tobacco sector increased to 18% (Q3/2024), and decreased both in alcoholic beverages to 22% and in fuel sectors to 18% (Fig. 2.3). The increase in the level of the shadow economy as a percentage of GDP during 2022-2023 can be explained by the low tax culture, which negatively reflects on the tax security.

The state's losses from the shadow tobacco sector were at least UAH 18-20 billion in 2023, and UAH 7-8 billion in the alcoholic beverages, and UAH 9-10 billion in the fuel sector (*Assessment of the Level*...., 2024).

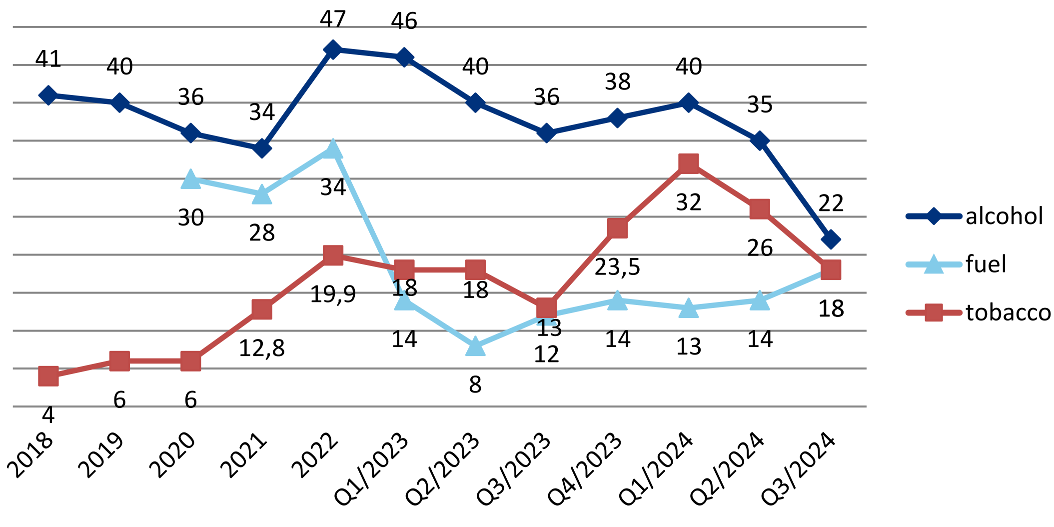


Fig. 2.3. The level of shadow economy turnover in alcohol, tobacco and fuel sectors in Ukraine, %

Source: based on (*Assessment of the Level*...., 2024).

The main reasons were: insufficient awareness of the importance of tax revenue in social and economic development, corruption in tax administrations, inefficient use of funds from the government budget, the examples of impunity for certain individuals or companies for tax violations, abuse of tax benefits, and permanent changes in tax legislation.

2.3. Diagnostics of the Tax Administration Efficiency and Effectiveness of Tax Control

The level of tax security largely depends on the efficiency of the tax authorities. Indicators that measure this include the effectiveness of tax and customs administration and of tax control, especially the cost of the administration process per unit of tax revenue, *per capita* and per economically active population, coefficients of integrity of tax payments and the level of tax debt, as well as the coefficients of efficiency, effectiveness, quality of control measures and payback of fiscal authorities.

Many studies proved the inefficiency of the fiscal authorities, which was confirmed by taxpayers' dissatisfaction with their work, inefficiency of tax administration, excessive control over tax payments and corruption (Chuy et al., 2021; Dubrovsky et al., 2021; Golikov, 2016; Tiutiunyk, 2020). This was also confirmed by the deterioration of Ukraine's Paying Taxes rating, according to which Ukraine's rank was 65 in terms of ease of paying taxes, which is worse than in 2019 by 11 points (World Bank, 2020). The declared automation of processes has not reduced the cost of maintaining the service and combating corruption schemes. The taxpayers spent an average of 328 hours on tax accounting, preparation, reporting and payment in Ukraine, which was higher than in the USA (175 hours), Slovak Republic (192 hours), Germany (218 hours), Czechia (230 hours), and Hungary (277 hours).

The result ratio of administration efficiency calculated by the author (the index of tax administration expenditures per UAH 100 of tax revenue) showed a growing trend in 2016--2018 from UAH 0.96 to UAH 1.21 per UAH 100 of tax revenue, which then decreased to UAH 0.76 in 2023 (Table 2.1). The increase in the cost of fiscal authority's activity had no correlation with the increase in the amount of tax debt and tax evasion. The burden of the cost of tax administration on the economically active population increased over the past eight years, expenditures *per capita* tripled from UAH 348.4 to UAH 925. At the same time, expenditures in the sphere of fiscal, tax and customs policy during 2016-2023 doubled (increased from UAH 6.3 billion to UAH 12.5 billion).

The low efficiency of tax administration was reflected by the increasing tax debt in Fig. 2.4.

The amount of tax debt doubled for the period 2017-2023: from UAH 69.6 billion to UAH 139 billion. The level of written-off 'hopeless' tax debt was determined by dividing its amount by the total amount of tax debt, also showing growing dynamics (from 0.4% at the beginning of 2017 to 14.5% at the beginning of 2021). The amount of written off hopeless debt as of January, 2021 amounted to UAH 15.1 billion (the highest level was 14.5%) – in comparison to 2016, it increased 52 times.

The tax debt rate significantly exceeded the threshold of 5%: in 2016 – 10.7%, 2017 – 11%, 2018 – 10.3%, 2019 – 11.7%, 2020 – 9.1%, 2021 – 7.3%, 2022 – 10.8%, 2023 – 8.5%, which reflected the unsatisfactory state of security. The significant share of tax debt belonged to VAT, corporate tax and rent payments.

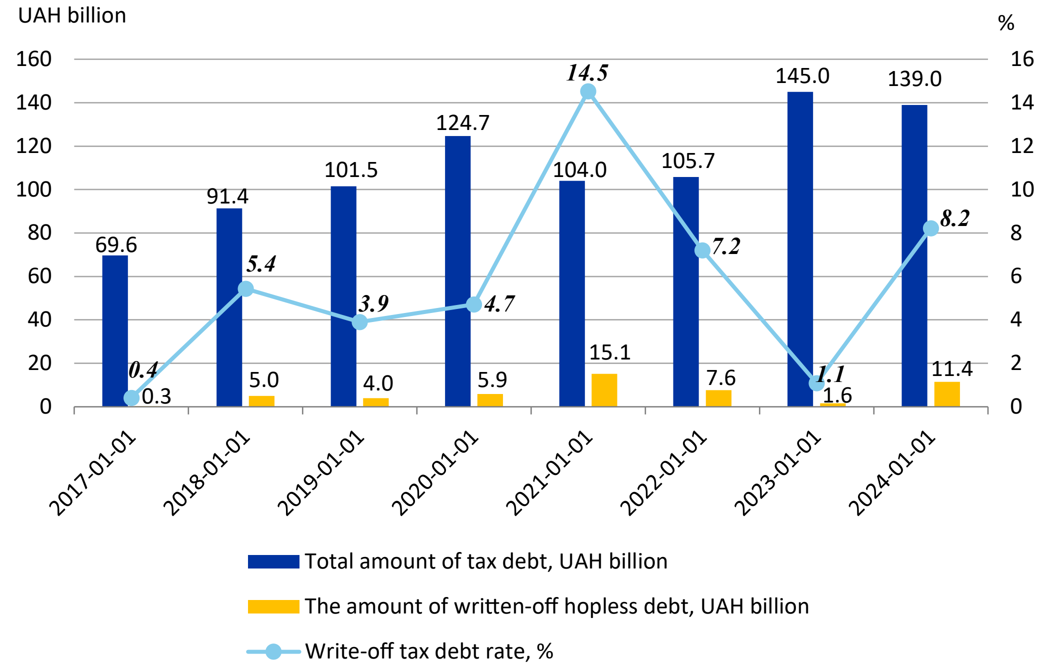


Fig. 2.4. Tax debt and its write-off rate in Ukraine, 2017-2023

Source: based on (State Tax Service of Ukraine, 2024).

The ineffectiveness of the measures taken by the fiscal authorities led to a sharp increase in tax debt during this period, with one of the main measures aimed at paying off tax debt and cancellation of that deemed hopeless.

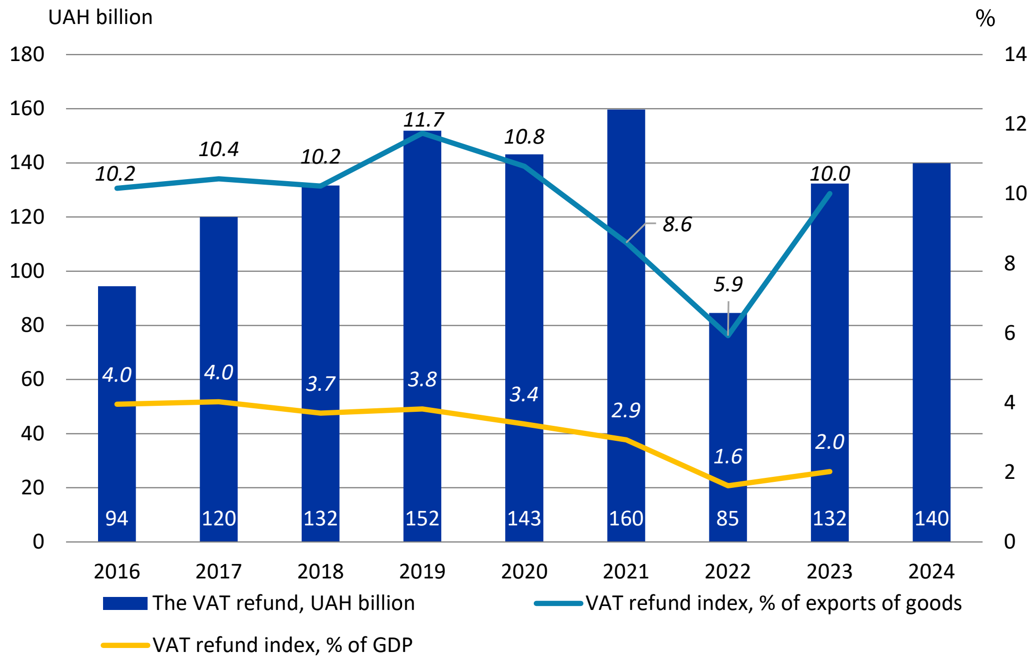


Fig. 2.5. The VAT refunds in Ukraine, 2016-2023

Source: based on (State Tax Service of Ukraine, 2023).

The situation concerning VAT refund is presented in Fig. 2.5. During 2016-2023, the amount of VAT refunds increased from 94 billion UAH to 140 billion UAH. The case of VAT refunds improved in 2017-2019 as opposed to the background of a slowdown in export growth. The highest value of the VAT refund index was in 2019 (11.7% of exports of goods), but it decreased in 2021 (to 8.6%). After the start of the war in Ukraine in 2022, the government suspended the payment of VAT refunds to exporters in order to save budget funds needed for the military and social needs. In May 2022, the VAT refunding was returned, and in June, the business sector began to receive the first renewed payments again. However, for some entrepreneurs and large enterprises the state tax service has resumed meticulous tax audits.

Currently, in this period of martial law in Ukraine, and because of this, there are changes in the mechanism in VAT refunds: the amount of VAT refunds in 2022 decreased to the lowest value for nine years (UAH 84.6 billion), which is only 5.93% of exports of goods. The VAT amount index as a percentage of GDP decreased from 3.96% to 1.63%. The strengthening of tax control in the direction of desk-audit confirmation of amounts to be refunded and delays in the timing of VAT refunds, have caused distortion of competition and created opportunities for corruption where VAT refunds are carried out manually and only 'selected' entities receive refunds. At the same time, when verifying the correctness of VAT refunds, the tax authorities were faced with the following methods of the illegal overstatement of VAT amounts subject to budget refund, or the overstatement of VAT tax credit as (Ponomaryova & Artyukh, 2022):

- sale of goods at prices that are lower than purchase prices,
- fictitious exports,
- import of goods at reduced prices,
- fictitious tax credit through the creation of fictitious enterprises,
- export of goods that are smuggled back to the customs territory of Ukraine with subsequent registration of their re-export.

Thus, the problem is twofold: the unscrupulousness of taxpayers who are trying to avoid taxation and receive fictitious VAT refunds, and the abuse of the tax authorities in the field of its confirmation.

The effectiveness of tax control is measured by the number of control measures carried out and the amount of additional accrued and collected tax liabilities. After reducing the number of control measures due to the introduction of a moratorium on inspections in 2022, the workload of taxpayers with inspections and reconciliations diminished. Additional charges also decreased: from UAH 28.4 billion in 2016 to UAH 19.6 billion in 2022. The total amount of additional charges for scheduled and unscheduled inspection reports by the State Tax Administration reached UAH 45.9 billion in 2023 (State Tax Service of Ukraine, 2016-2023). However, the average level of tax collection after inspections remained low at 27%, e.g. in 2017 – 31.1%, and in 2023 – 18.7%.

The efficiency ratio of the fiscal authorities reflects the amount additionally accrued to the budgets and public social security funds of Ukraine relative to the amount spent on the maintenance of the controlling authorities. Thus, according to the calculated indicators, ineffective work in the field of risk assessment and tax administrating, poor-quality control, verification work of fiscal authorities, and measures to repay and prevent the accumulation of tax debt and the unreasonableness of additional accrual of taxes were revealed.

2.4. Tax Avoidance Schemes in Ukraine

The most popular in Ukraine were the following tax avoidance schemes: salaries ‘in envelopes’; violation of customs rules due to manipulating the customs value of goods and services, interrupted transit, ‘grey imports’, direct smuggling, illegal VAT refund for exports, fictitious entrepreneurship, in particular ‘carousel’ schemes, substitution of goods – ‘twists’ conversion centres, transfer of profits to tax havens and offshores, counterfeiting, schemes of the shadow land rental market, and abuse of tax privileges and special tax regimes.

Analysts declared positive changes in reducing the level of tax evasion in Ukraine in 2022: VAT schemes, offshore schemes, schemes with the land rental, and with the individual entrepreneurs, and salaries ‘in envelopes’. However, smuggling, grey imports, counterfeiting, and illegal trade have increased.

The evasion schemes in illegal salaries, grey imports, smuggling, conversion centres, and the understatement of private entrepreneur’s income increased in 2023 (Fig. 2.6).

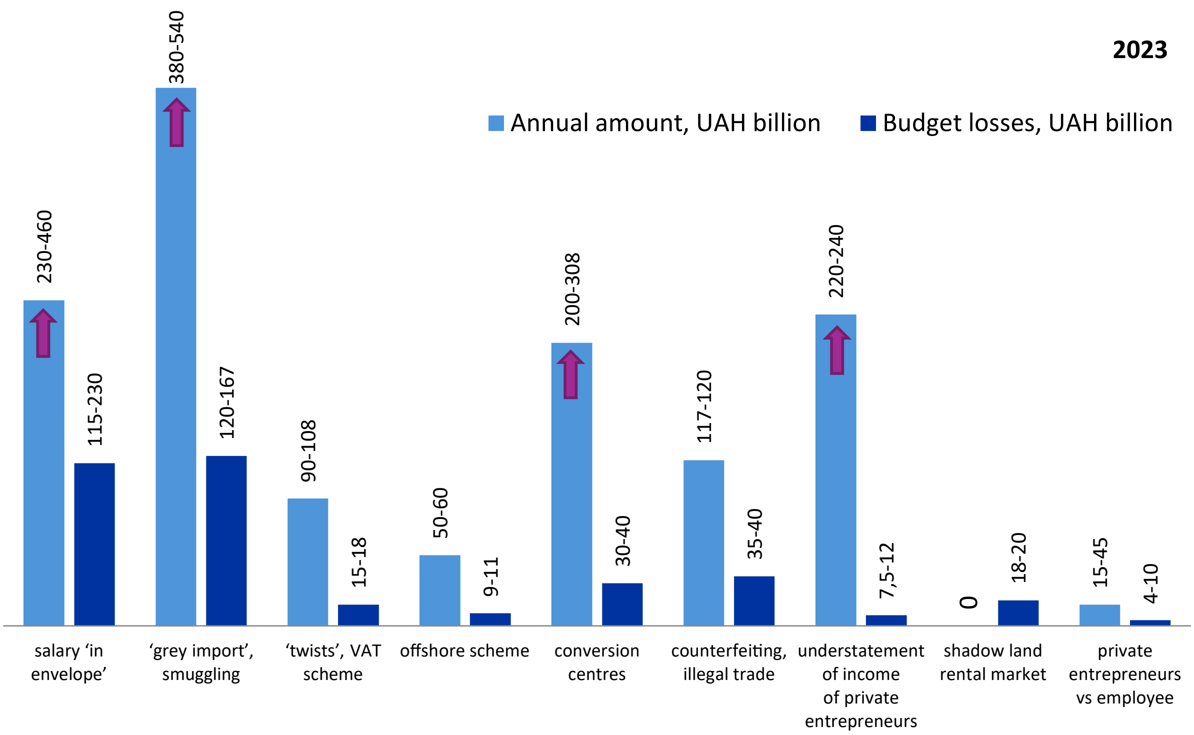


Fig. 2.6. Annual amount and budget losses from tax evasion schemes in Ukraine, 2023

Source: based on (Dubrovsky et al., 2024).

In order to reduce the level of salaries paid ‘in envelopes’, it is necessary to significantly reduce the labour burden to the target of at least 20% cumulatively (instead of the current 45%), while compensating for lost budget revenue by reducing inefficient expenditures and reforming the collection of resource and property taxes (by increasing its share in GDP).

Budget losses caused by smuggling, mainly due to underestimation of customs value and violations of customs rules, and tightening of customs controls, could improve the situation.

The improvement of administrative efficiency would be possible mainly due to the optimisation of tax payments and the introduction of electronic reporting and taxes payments. The electronic reports will reduce the administration costs, tighten the communication between tax inspectors and taxpayers, and eliminate the possibility of corruption schemes.

Tax avoidance through offshore schemes, which resulted in a shortfall in tax revenue to the budget, was approximately UAH 9-11 billion annually (Dubrovsky et al., 2024), and provided for the use of legally permitted by instruments, in particular through cross-border aggressive tax planning, tax optimisation, abuse of legal mechanisms or the use of unfair practices (manipulating of residence status in countries with lower tax rates). Unfortunately, the low institutional capacity of controlling bodies to overcome these schemes does not have the effect of reducing corruption risks. The existing anti-offshore instruments in Ukraine (e.g. the transfer pricing control introduced in 2013), have not been properly implemented.

The conversion centres' activities, with the budget losses at UAH 30-40 billion (Fig. 2.6), supplied the informal economy with cash, salaries in envelopes, as well as provided services for manipulation of primary documents and tax invoices.

The problem of excessive tax burden, combined with the weakness of controlling authorities, led to the loss of government control over the market of excisable products, which resulted in the shadow counterfeit market. Counterfeit and illegal trading, in particular excisable goods, generated annually UAH 35-40 billion budget losses in Ukraine. The critical situation with the illegal trade in excisable goods requires the actual launch of the Bureau of Economic Security and the creation of a national system for detecting and tracking excisable goods (alcohol, tobacco products).

Tax evasion through the simplified taxation system can be reduced by: bringing the tax conditions of private entrepreneurs and employees closer; liberalizing the cash register market and simplifying the procedure for their application; reducing the level of excessive fiscalisation of the flat tax payers; simplifying the procedures for registration of employees and liberalising labour legislation.

Using the pseudo private entrepreneurship scheme instead of hiring labour, involved the conclusion of a fictitious contract for the provision of services, according to which non-cash funds were transferred, which, after paying taxes, unified social contributions, remuneration and bank commission, are withdrawn in cash as entrepreneurial income, and returned to the disposal of the company's management. To reduce the amount of such transactions, it is necessary to simplify the process of tax administration and make it much less vulnerable to corruption pressure, in particular by replacing the income tax with the tax on withdrawn capital, simplifying and automating the administration of VAT, reducing the tax burden on wages, eliminating the attractiveness of tax evasion.

2.5. Conclusions

The largest tax abuse schemes in Ukraine in 2023 were grey imports and smuggling, as well as salary in envelopes, and conversion centres. Moreover, the global COVID-19 pandemic became a new threat, along with the introduction of martial law and the destruction of the economic potential of taxpayers due to war losses (this concerns the stability and sufficiency of tax revenue, and the vulnerability of taxpayers to new conditions). The negative impact on the security situation was augmented by the late launch of the Bureau of Economic Security, the low level of investigation of tax crimes, personnel turbulence in the fiscal authorities and often the unprofessionalism of the employees.

Having considered the most typical schemes of avoidance/evasion of taxation in Ukraine, as well as the economic, administrative and legal measures to minimise tax threats, the author proposed the directions for strengthening tax security by reducing the tax burden, increasing the effectiveness of tax control and the efficiency of the tax administration, along with counteracting tax evasion.

The top priority strategic measures are: reducing the tax burden on labour, increasing the fiscal burden on property and resources, reducing the shadow employment, an amnesty for illegally acquired income and property, introduction of public reporting and KPIs on the results of control measures of state fiscal service employees (tax and customs), increasing the level of investigation of tax crimes, raising the level of professionalism and competence of fiscal service employees, motivating taxpayers to reflect real indicators of financial and economic activity in reporting, strengthening the control over the application of tax privileges and deliberate concealment of sales volumes and illegal write-off of expenses, identification and liquidation of intermediary firms in offshore jurisdictions, creation of the database of 'risky' taxpayers and those with a tendency to avoid taxation, and the exchange of information with financial authorities on taxpayers' income.

To strengthen the tax security in Ukraine, it is necessary to reform the tax and customs services, to increase the tax control effectiveness, and to counteract tax evasion. In order to de-shadow the sphere of remuneration and reduce the level of evasion, income taxation in Ukraine needs to be improved in terms of the transition from proportional to progressive taxation of individual income, along with the application of indirect methods for determining the real income of individuals. To improve the tax culture and integrity of taxpayers, it is necessary to activate explanatory and advisory work by employees of the fiscal authorities. De-shadowing and reducing tax evasion constitutes an imperative factor to increase fiscal efficiency.

To improve the efficiency of administration, along with reducing excessive fiscalisation, it is necessary to introduce data monitoring of its cost and effectiveness, together with the simplification of administrative procedures, while strengthening the responsibility of taxpayers for tax evasion. The introduced amnesty for shadow income and illegally acquired assets, along with encouraging investment of funds, should help in reducing tax threats.

References

Akgun, O., Cournède, B., & Fournier, J. (2017) *The Effects of the Tax Mix on Inequality and Growth*. OECD Economics Department Working Paper No. 1447. http://dx.doi.org/10.1787/c57eaa14-en

Assessment of the Level of Shadow by Industry. (2024). Economic Expert Platform [in Ukrainian]. https://economics.org.ua/index.php/nasha-robota/dashbord

Chuy, I., Holdak, S., & Duma, O. (2021). Tax Security as a Factor in Increasing the Fiscal Efficiency of the Tax System of Ukraine. *Bulletin of Lviv University of Trade and Economics*, (65), 151-160 [in Ukrainian]. https://doi.org/10.36477/2522-1205-2021-65-21

Chuy, I., Vlasyuk, N., & Zhurbych, K. (2019). Analysis of Fiscal Potential of Income/Profit Taxes in Ukraine and Foreign Countries. *Entrepreneurship and Trade, 24,* 137-145 [in Ukrainian]. https://doi.org/10.36477/2522-1256-2019-24-21

Dubrovsky, V., Cherkashin, V., & Hetman, O. (2021). *Comparative Analysis of the Fiscal Effect of Tax Evasion/Avoidance Instruments in Ukraine.* Center for Social and Economic Research CASE Ukraine, Institute for Social and Economic Transformation.

Dubrovsky, V., Hetman, O., & Cherkashin, V. (2024). *Comparative Analysis of the Fiscal Effect of the Use of Tax Evasion/Avoidance Tools in Ukraine.* Center for Social and Economic Research CASE Ukraine, Institute for Social and Economic Transformation.

Golikov, S. (2016). Basic Concepts of Tax Security as Part of the Financial Security of Ukraine. *Baltic Journal of Economic Studies*, *2*(1), 25-31.

OECD. (2022a). *Revenue Statistics – OECD Countries*. https://stats.oecd.org/

OECD. (2022b). *OECD Tax Database.* https://www.oecd.org/tax/tax-policy/tax-database/tax-database-update-note.pdf

Ponomaryova, V. & Artyukh, O. (2022) Problem Aspects of VAT Refunds at the Current Stage. *Socio-Economic Problems and the State*, *27*(2), 153-160. http://sepd.tntu.edu.ua/images/stories/pdf/2022/22pvsnse.pdf

State Tax Service of Ukraine. (2016-2023). *Control and Verification Work.* https://tax.gov.ua/diyalnist-/pokazniki-roboti/kontrolno-perevirochna-robota

State Tax Service of Ukraine. (2023). *VAT Refund*. [in Ukrainian]. https://tax.gov.ua/diyalnist-/vidshkoduvannya-pdchv/

State Tax Service of Ukraine. (2024). *Dynamics of Tax Debt.* https://tax.gov.ua/diyalnist-/pokazniki-roboti/dinamika-podatkovogo-borgu/

Tiutiunyk, I. (2020). *De-Shadowing of the National Economy Based on Tax Gap Management* [Doctoral dissertation, Sumy State University]. Sumy, SymSU [in Ukrainian]. https://essuir.sumdu.edu.ua/handle/123456789/77289

World Bank. (2020). *Ease of Doing Business Rankings*. https://archive.doingbusiness.org/en/rankings