Abstract. The filling of budgets at all levels is crucial for the implementation of national and regional programs of socio-economic development. Tax and non-tax revenues are exactly the fillers. A key source of revenue for the budget system was and remains tax revenue. However, the worldwide taxation practice shows that budgetary entities are primarily failing to fulfill their obligations. The fraud of taxpayers makes it necessary to retain special fiscal bodies, which are responsible for controlling the amount and timeliness of taxes, both legal and private persons. The problem of tax revenue is a problem in all countries, but it is very acute in Ukraine. An important component of the problem is identifying tax arrears and ensuring that debtors make payments to the budget system. The solution to this problem should be based on the domestic tax policy and the methods set out therein to ensure tax revenues to the budget system. It is generally accepted that tax compliance requires external control and audit of taxpayers. Control is a necessary tool not only to determine the correctness of tax charges, but also to stimulate their timely implementation. Monitoring has been and remains an important aspect of tax policy implementation, and it is quite voluminous by its functions. It is stated that in addition to keeping track of planned figures for tax and non-tax payments to budgets, monitoring should also address the effectiveness of taxation methods used. Monitoring will only be effective if researchers and practitioners of the State Fiscal Service (SFS) receive answers to key questions of taxation and budgeting at all levels. Purpose of the work is to study the dynamics of payment of taxes, levies, payments, which is an important result of all tax activities, including the SFS measures to monitor the status of tax and non-tax (financial) flows, first and foremost, the tax additional charges. An analysis of the publications of the results of the research showed that the problem of tax charges is not given enough attention. It is obvious that the flow of additional tax charges, which is not actually too large today, is not so interesting to researchers and, as evidenced by tax practice, also to fiscal practitioners. Instead, given the large size of the shadow economy, tax evasion through optimization schemes, due to the occurrence of tax arrears due to the improper performance of contractual obligations, should be considered as a potentially significant flow of additional tax charges. The above identified the hypothesis of the study of the problem and its solution in the process of monitoring tax and non-tax flows. The research methodology for this hypothesis is to find the reasons that lead to the need to calculate the amount and payment of tax charges by the entity, as well
as to determine the stages of monitoring. The study of
the first of the stages of monitoring tax and non-tax
flows, including the flow of tax charges, is the content
of this publication. The statistical method, as well as the
methods of analysis, synthesis and generalization, were
used for this purpose. Analysis of tax and non-tax
revenues (payments) to ensure the formation of state and
local budgets is made. Structure of actual revenues and
expenditures of general and special funds of the state
budget of Ukraine is calculated and analyzed. An
undulating nature of shares of tax flows in the total
amount of consolidated budget revenues is noted.
Weights of tax and non-tax flows in the consolidated
budget of Ukraine for the studied period 2014-2018 are
compared. It is recorded that the taxation system in
Ukraine is constantly influenced by reform initiatives.
Changes in the composition of governments lead to
transformations of the taxation system. Tax rates are
changed most often and it reflects the interests of those
financial and industrial groups that control the
government. In addition, from time to time there are
requests from the public for introduction or cancellation
of certain taxes, changes in preferential taxation
regimes, control of accrual correctness, completeness
and timeliness of payment by taxes, levies or payments.

Key words: monitoring of tax and non-tax
(financial) flows, tax and non-tax (financial) flows, tax
deduction stream, timing of inspections, optimization of
work of the state fiscal service.

Introduction
The reforms that have been implemented in
Ukraine for several decades require considerable
financial resources. Since the reforms are initiated
and implemented by the government, it is generally
recognized that the main financial source is the
state budget. Mobilization of funds to the state
budget is carried out through tax and non-tax
revenues. Pursuant to the current legislation [1; 2;
3; 4; 5; 6], a key aspect of attracting the funds to
the state budget is administration of taxes. It is the
successful administration of taxes by the bodies of
the State Fiscal Service of Ukraine as well as the
Customs Service of Ukraine, that allows formation
of the necessary revenue of state and local
budgets, which is a prerequisite for ensuring the
expenditures of budgets of all levels.

However, it is common knowledge that the
budget systematically underreports significant tax
revenue for a variety of reasons. On the one hand,
there is a large part of the shadow economy, the
size of which differs from different researchers, but
according to Ukrinform, in 2017 it was 46.8 %
and grew in 2018 to 47.2 % of GDP [7]. The
Kiev International Institute of Sociology (KIIS)
conducted research on the shadow economy in
2017 and 2018 and identified certain components
of the shadow economy: salary in envelopes –
18.3 % (2017) and 21.4 % (2018), unregistered
employees – 21.4 % (2017) and 21.9 % (2018),
derclared business income – 60.2 % (2017) and
56.7 % (2018) [8].

On the other hand, as it is a worldwide
practice, businesses seek to pay a minimum of
taxes using so-called tax optimization methods [9].
There are consulting companies that provide tax
optimization services [10; 11].

Another reason for not receiving tax
payments is the temporary inability of businesses
to pay their taxes due to financial difficulties. Some
companies have already been declared bankrupt,
others are in the process of recognizing such status,
they are actively functioning, but they have arrears
both in payment of wages and in payment of taxes,
as evidenced by official data [12, 13]. Also, these
aspects of the problem of financial and economic
insolvency of enterprises are investigated by
scientists, in particular [14].

The monitoring of tax payments aims to
identify those businesses that have problems with
paying taxes, to identify the causes of these
problems, including the exposing of entrepreneurs' intentions to avoid tax. Such monitoring should
result in the payment of tax arrears. In doing so,
taxpayers should determine the amount of the
deduction, given the circumstances of the delay in
tax compliance of enterprises. The problem of
additional tax charges should be seen as a complex
one, part of which is to monitor and the other to
determine the amount of additional tax collection
as debt or intentionally unpaid tax. The problem
with our study is the monitoring of additional tax
charges.

Literature review

Execution of tasks of socio-economic
development of state in the tax area begins with
formation of tax policy, which is emphasized by
T. I. Yefymenko, O. T. Zamaslo, Y. B. Ivanov,
A. I. Krysovatiy, M. I. Krupka and A. M. Sokolovska
Monitoring of tax and non-tax flows

At this, we should note that many negative aspects have not been overcome yet, and this have been noted for a long time. Thus, in 2007, T. I. Yefimenko wrote about multiple taxation [15]. V. M. Melnyk and T. V. Koshchuk wrote about the need for correction of the tax policy of Ukraine [16]. We have noted in previous publications that the taxation system has not yet been simplified, which is needed to facilitate business operations [17]. It is the work by O. T. Zamaslo, which is dedicated to further development of the taxation system with respects to European integration requirements and peculiarities of economic development in the second decade of the 21st century [9].

Monitoring has been and remains an important aspect of tax policy implementation. Monitoring of tax activity is quite voluminous by its functions. After all, addition to keeping track of planned figures for tax and non-tax payments to budgets, monitoring should also address the effectiveness of taxation methods used. Monitoring will only be effective if researchers and practitioners of the State Fiscal Service (SFS) receive answers to key questions of taxation and budgeting at all levels. Undoubtedly, the main result of the SFS activity is the increase of tax flows, increase of budgetary revenues.

Many studies have been devoted to monitoring problems in the tax field, on the basis of which a number of recommendations have been proposed to improve the filling of budgets at all levels through tax revenues. Article V. Khomutenko and I. Lutsenko are devoted to the research of monitoring of tax revenues to the consolidated budget of Ukraine [26, p. 292–302]. I. Lutsenko's publication is devoted to a separate aspect – monitoring of tax revenues to the state budget of Ukraine from foreign trade activity [27, p. 62–66]. The results of estimating budget risks in forming the state budget revenue base are outlined in the work of V. Babichenko, V. Glukhova, and Y. Kolotiy [28, c. 19–25]. L. Zakharkina built her study of tax revenues to the consolidated budget of Ukraine on determining the indicator of ‘elasticity of the budget revenue system’ [29, p. 125], which allowed us to show the high level of the “shadow” economy in Ukraine. In particular, it defines periods of significant tax evasion by type of tax: VAT, excise duty, corporate income tax [29, p. 128]. Based on the objectives of our study, we can state that there is a significant field of activity for the accrual of unpaid taxes.

Special attention should be paid to the works of Ukrainian scientists, which deal with the problems of tax administration and tax regulation along with the problems of monitoring tax revenues. O. Zolotareva and I. Kostenko devoted their research to the study of the optimality of the structure of revenues to the state budget. In particular, the indicator of the development of the income system, the authors chose the relationship between tax and non-tax revenues [30, p. 534]. Based on the results of the calculations, they concluded that “the critically poor accuracy of these tax returns” [30, p. 541]. It also confirms that there are good reasons for additional checks and tax payments. Although the authors do not emphasize such a possible conclusion from the results of their research. Instead, the authors provide information on TADAT's International Tax Administration Assessment Diagnostic Tool (citing [31]), which encompasses nine key performance areas (QFs). One of these areas, namely “COR 5: Timely Payment of Tax Liabilities,” contains “P5-15. The volume and dynamics of tax debt”. That is, we can conclude that international practice involves the impossibility of both inaccuracy in tax information and the need to collect debt.

The problems of tax regulation are devoted to the publications of A. Nikitishina. At work [32, p. 300–307] the author presents the results of the study of adaptive and coherent institutional architecture of tax regulation. Interesting from the point of view of tax debt is the author's conclusion about its impact on the “launch of a negative chain reaction across the institutional architecture of the country, even beyond its borders [32, p. 303]. In another article [33], A. Nikitishin, in studying the directions of improving the mechanism of tax regulation, draws attention to the reforms of international tax systems, which envisaged “counteracting the erosion of the tax base and the removal of profits from taxation”. The statistics on the amounts of taxes received are $ 100–240 billion. USA. Among the measures taken by the governments of foreign countries are named, in particular, “combating fraud and tax evasion” [33].
A. Mykolayets devoted his research to the problems of tax control. In particular, the author points out the “additional charges for various payments” in connection with the implementation of tax control functions and the classification of this issue as one of the types of tax control. He writes: “Based on the main function of tax control, the purpose of which is to maximize the amount of extra charges to the budgets of all levels, that is, the fiscal function, until recently, the main type of tax control has been consistent”.

Regarding local budgets, we should mention the publications of A. Nikitishin and Y. Sayenko – on the formation of local budgets on the example of Vinnytsia region [35]; V. Glukhova and L. Skrypnyk on financial support for health care at the level of local budgets [36]. From the positions of the largest taxpayers on the sectoral and regional characteristics investigated tax revenues T. Goloborodko and S. Shmagaylo [37].

Combating tax evasion and tax arrears to replenish state and local budgets is an important aspect of the activities of the State Fiscal Service of Ukraine, the new State Tax Service. Head of the State Tax Service S. Verlanov, speaking about the prospects of implementation of the plan of tax revenues to the budget in the first quarter of 2020, noted that reducing the budget losses due to effective fight against tax fraud and increase tax revenues should lead to a decrease in additional charges revenues of tax revenues, and volumes of tax administration work (FINBALANCE, Finance and Economy, 02/21/2020, 5:00 pm).

Summarizing the scientific literature review of publications on monitoring budget revenues, we present the Table 1.

**Typologization of scientific researches of Ukrainian scientists in the field of monitoring of budget revenues**

<table>
<thead>
<tr>
<th>An area where budget revenue monitoring issues were investigated</th>
<th>Issues related to the monitoring of budget arrears and charges are investigated</th>
<th>Researchers in the specified area of monitoring</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consolidated Budget of Ukraine</td>
<td>Khomutenko V. and Lutsenko I.</td>
<td></td>
</tr>
<tr>
<td>Tax revenues from foreign economic activity</td>
<td>Lutsenko I.</td>
<td></td>
</tr>
<tr>
<td>Budget risks in forming the state budget revenue base</td>
<td>Babichenko V., Glukhova V. and Kolotiy Y.</td>
<td></td>
</tr>
<tr>
<td>The indicator of “elasticity of the budget revenue system”</td>
<td>The periods of significant tax evasion by individual types of taxes have been determined</td>
<td>Zakharkina L.</td>
</tr>
<tr>
<td>Implementation of the fiscal revenue plan for the first quarter of 2020</td>
<td>Reducing budget losses and reducing tax payments</td>
<td>Verlanov S.</td>
</tr>
<tr>
<td>Tax administration and tax regulation</td>
<td>TADAT’s International Diagnostic Assessment Tool, including “the FRA 5: Timely Payment of Tax Liabilities” and “the P5-15 Indicator. Volume and dynamics of tax debt”.</td>
<td>Zolotareva O. and Kostenko I.</td>
</tr>
<tr>
<td>Research on adaptive and coherent institutional architecture of tax regulation.</td>
<td>Nikitishin A.</td>
<td></td>
</tr>
<tr>
<td>Budgeting at all levels is a fiscal function</td>
<td>Mikolayets A.</td>
<td></td>
</tr>
<tr>
<td>Problems with local budget revenues</td>
<td></td>
<td></td>
</tr>
<tr>
<td>On the example of Vinnytsia region</td>
<td>Nikitishin A. and Sayenko Y.</td>
<td></td>
</tr>
<tr>
<td>Health care budgeting</td>
<td>Glukhova V. and Skripnik L.</td>
<td></td>
</tr>
<tr>
<td>Tax revenues from the largest taxpayers by sectoral and regional basis</td>
<td>Goloborodko T. and Shmagaylo S.</td>
<td></td>
</tr>
</tbody>
</table>
Monitoring of tax and non-tax flows

Typologization, grouping of the studied problems of monitoring tax revenues allows to conclude that monitoring in the field of taxation is carried out for all levels of the budget system. Scientists and practitioners identify the most significant problems, develop tools to overcome identified weaknesses. Although the problems of debt are reflected in these studies, the focus is instead on monitoring the additional charges of tax revenues.

**Purpose of the work** is to study the dynamics of payment of taxes, levies, payments, which is an important result of all tax activities, including the SFS measures to monitor the status of tax and non-tax (financial) flows as a prerequisite for monitoring the additional charges of tax revenues.

**Methodological approach**

Tax and non-tax flows, as evidenced by research publications in this field, are incomplete due to tax evasion, tax optimization and so on. For this reason, monitoring of tax and non-tax payments is an important aspect for the full implementation of the budget revenue plan. This is the first – the statistical stage of monitoring the additional charges of tax revenues. The second step is to determine the amount of additional charges of taxes for a particular enterprise. Research methods should be: statistical, analysis and synthesis, generalization.

**The main materials**

Presented data (Table 2) shows that in the structure of tax revenues of the consolidated budget of Ukraine during 2014–2018 the largest shares had the following taxes: value added (VAT), which increased from 37.8% in 2014 to 37.9% in 2018; personal income tax (PIT), which also increased from 20.5% in 2014 to 23.3% in 2018; excise tax (ET) increased from 12.3% in 2014 to 13.4% in 2018; corporate income tax (CIT) was 10.9% in 2014 and decreased by 0.1% to 10.8% in 2018. Thus, these four types of tax payments account for 81.5% (37.8% + 20.5% + 12.3% + 10.9%) in 2014 and 85.4% (37.9% + 23.3% + 5.1% + 10.8%) in 2018. During the four years, share of these taxes increased by 3.9%. Instead, share of the rent in the consolidated budget of Ukraine has decreased from 10.8% in 2014 to 5.1% in 2018. Weight of customs duties also significantly reduced: it amounted to 3.4% in 2014, increased to 7.9% in 2015, and then decreased to 2.7% in 2018. The same trend for decrease of the weight was observed for other taxes and levies, which in 2014 amounted to 2.1%, and during 2015–2018 was gradually decreasing and reached the minimum value of 0.5%.

**Table 2**

<table>
<thead>
<tr>
<th>No.</th>
<th>Indicators</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
<th>2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>PIT</td>
<td>75202945.3</td>
<td>99983173.9</td>
<td>138781786.5</td>
<td>185686131.6</td>
<td>229900604.4</td>
</tr>
<tr>
<td>2</td>
<td>CIT</td>
<td>40201485.7</td>
<td>39053168.6</td>
<td>60223321.5</td>
<td>73396802.8</td>
<td>106182347.5</td>
</tr>
<tr>
<td>3</td>
<td>Rent payment, RP</td>
<td>39584203.6</td>
<td>49203618.8</td>
<td>46608398.3</td>
<td>71132931.9</td>
<td>50868888.8</td>
</tr>
<tr>
<td>4</td>
<td>Excise tax, ET</td>
<td>45009574.7</td>
<td>64795226.3</td>
<td>101750661.7</td>
<td>121494356.6</td>
<td>132649809.5</td>
</tr>
<tr>
<td>5</td>
<td>VAT</td>
<td>139024258.8</td>
<td>178452385.2</td>
<td>235506029.9</td>
<td>313980594.1</td>
<td>374508186.5</td>
</tr>
<tr>
<td>6</td>
<td>Customs duties</td>
<td>12608696.0</td>
<td>40300805.6</td>
<td>20370979.9</td>
<td>24541812.4</td>
<td>270766209.9</td>
</tr>
<tr>
<td>7</td>
<td>Local taxes</td>
<td>8055639.5</td>
<td>27041345.0</td>
<td>42261496.7</td>
<td>53270112.5</td>
<td>61019496.7</td>
</tr>
<tr>
<td>8</td>
<td>Other taxes and levies</td>
<td>7735127.2</td>
<td>8806176.3</td>
<td>5279094.1</td>
<td>4701595.5</td>
<td>4924569.2</td>
</tr>
<tr>
<td>9</td>
<td>Tax revenues</td>
<td>367511931.1</td>
<td>507635899.7</td>
<td>650781678.6</td>
<td>828158813.9</td>
<td>986348523.5</td>
</tr>
<tr>
<td>10</td>
<td>Non-tax revenues</td>
<td>80612762.6</td>
<td>140154438.7</td>
<td>125502878.2</td>
<td>154552067.1</td>
<td>192716015.4</td>
</tr>
<tr>
<td>11</td>
<td>Other revenues</td>
<td>7942629.7</td>
<td>4240655.9</td>
<td>6574928.2</td>
<td>101696958.1</td>
<td>118429076.5</td>
</tr>
<tr>
<td>12</td>
<td>Total revenues (excluding intergovernmental transfers)</td>
<td>456067323.5</td>
<td>652030994.4</td>
<td>782859484.9</td>
<td>101696958.1</td>
<td>118429076.5</td>
</tr>
</tbody>
</table>

Source: compiled by authors using the data of the Ministry of Revenues of Ukraine: [web-site]. – Available at: http://www.minfin.gov.ua/control/uk/publish/archive/main?cat_id=77440
An undulating nature of shares of tax flows in the total amount of consolidated budget revenues should also be noted. If absolute values of VAT, personal income tax, excise tax, local taxes were constantly increasing, their specific weights fluctuated. Corporate income tax (CIP) in absolute terms decreased in 2015 compared to the previous year, and during 2015–2018 we have a significant increase in tax revenues amounting to 271.9 % (106,182,347.5 thousand UAH/ 39,053,168.6 thousand UAH). It should also be noted, that its weight in the total amount of tax revenues during 2015–2017 decreased, and in 2018 it almost reached the level of 2014.

To compare the importance of tax and non-tax flows in the consolidated budget of Ukraine for the studies period, we should consider the data given in Table 3. The figures show that tax and non-tax revenues make up the bulk of the consolidated budget's revenue. The highest tax and non-tax revenues were received in 2017–2018, which is respectively 96.6 % (81.4 % + 15.2 %) and 99.6 % (83.3 % + 16.3 %) in the total the volume of revenues of the consolidated budget of Ukraine, i.e. the share of revenues (excluding intergovernmental transfers) increased by 3 % (99.6–96.6 %) [18, p. 5–10].

At the same time, the share of tax revenues increased from 77.8 % in 2015 to 83.3 % in 2018, while the non-tax revenues decreased from 21.5 % in 2015 to 16.3 % in 2018.

Direction of improvement of the state budget policy in 2014–2018 was the introduction of innovations for the main types of taxes, which make up the major part of revenues of the Consolidated Budget of Ukraine revenues. For example, reforming of the tax system of Ukraine, namely, value added tax, personal income tax, corporate income tax, excise tax, which are the main budget-forming taxes of the Consolidated Budget of Ukraine, resulted in increase of the total share thereof to 82.3 % in 2016, 83.4 % in 2017 and 85.4 % in 2018. This is due to the improvement of the taxation system: reduction of tax rates, abolition of unreasonable tax benefits, introduction of financial result, improvement of depreciation of fixed production assets, tax exemption, introduction of zero tax rate, provision of tax benefits for the payers, control of correctness of calculations, completeness and timeliness of payment of taxes, duties, payments by taxpayers, etc.
Receipt of additional charges received in connection with violation of tax legislation of Ukraine (underpayment of taxes, levies, payments, payment of penalties and fines) is also important to the Consolidated Budget of Ukraine. The largest revenues (monetary liabilities) from additional charges (Table 4) were received in 2017 in the amount of 16,300,557.0 thousand UAH, in 2018 in the amount of 13,232,296.0 thousand UAH, in 2014 year in the amount of 7,963,822.0 thousand UAH, and in 2016 in the amount of 6,103,433.0 thousand UAH. The smallest amount of additional charges was received in 2015, in the amount of 4,611,007.0 thousand UAH, which is less than in 2017 by 11,689,550.0 thousand UAH, or 71.7% (11,689,550.0/16,300,557.0) less; respectively, less than in 2018 by 8,621,289.0 thousand UAH, which is 65.1% (8,621,289.0/13,232,296.0). At this, the largest share of additional accruals of monetary liabilities in tax revenues of the Consolidated Budget of Ukraine is 2.17% in 2014, 1.97% in 2017 and 1.34% in 2018; the lowest is 0.94% in 2016 and 0.91% in 2015. The undulating nature of tax revenues to the consolidated budget of Ukraine is obvious.

Taxation system in Ukraine is constantly influenced by reform initiatives. Changes in the composition of governments lead to transformations of the taxation system. Tax rates are changed most often and it reflects the interests of those financial and industrial groups that control the government. In addition, from time to time there are requests from the public for introduction or cancellation of certain taxes, changes in preferential taxation regimes, control of accrual correctness, completeness and timeliness of payment by taxes, levies or payments [3; 19, pp. 133–137].

The conclusions and recommendations for further research

In Ukraine, it is urgent to reduce the tax pressure on businesses, especially small and medium ones; this will increase the number of business entities that will voluntarily pay taxes, and this, respectively, will reduce the forced collection due to minor violations of tax legislation. Therefore, supervisory authorities (SFS of Ukraine) should systematically improve the quality of control and inspection activities. For example, in 2014, the Government of Ukraine launched a real reform of the controlling authorities, the main tasks of which were the following: to reduce the number of controlling bodies due to their “liquidation” or “merger”; introduction of administrative responsibility for controlling bodies inspectors for violation of tax control procedures; good planning of audit work (priority should be given to addressed audits that will not affect a business with no objective risk factors); change of deadlines for administrative appeals against decisions made by the SFS bodies (from 10 calendar days – up to 10 business days), deadlines for filing objections to the inspection report by the taxpayer (from 5 business days – up to 10 business days) and deadlines for issuing tax notifying decisions (from 10 business days – up to 15 business days). Of course, when reforming the SFS bodies, the need to ensure the quality of work of its employees in the future should not be forgotten as well; and the quality depends on the validity of the planned tasks and their compliance with timing of certain types of inspections. There is no need to save funds on maintenance of the SFS bodies reducing the quality of their work, which ultimately consists in filling the revenue part of the state and local budgets. Attention should be paid to the sound standardization of work of SFS inspectors. It is the right determination of time limit to carry out certain operations to verify the tax statements of business entities that guarantees elimination of risk of misjudgments and subsequent disputes between entrepreneurs and the SFS. At the same time, achievements of the Industrial Revolution (Industry 4.0) should be taken into account, which should lead to serious changes in the activities of fiscal authorities when inspectors will be replaced by “robots” [20].

Thus, efficient functioning of the budgetary system, for which the taxation system organizes filling of the revenue part using tax and non-tax flows, depends on proper organization of the tax work of SFS bodies and taxpayers. Therefore, organization of the effective work of SFS bodies and taxpayers provides for effective monitoring of tax and non-tax flows, digitization of work,
introduction of electronic inspections and of integrated automated system of state supervision (control).
Monitoring of tax and non-tax flows


40. Vishnevsky V. P., Chekina V. D. Robot vs. tax inspector or how the fourth industrial revolution will change the tax system: a review of problems and solutions. Journal of Tax Reform, 2018, vol. 4, no. 1, pp. 6–26. DOI: 10.15826/jtr.2018.4.1.042