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Problems of financing the state budget deficit

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Abstract. In the context of russia's full-scale invasion, the agricultural sector remains one of the main sources of budget financing in Ukraine, and therefore requires a more detailed study in this context in the context of war. Thus, the purpose of the study was to assess the current possibilities of financing the Ukrainian budget, with a focus on the role of the agricultural sector in its revenue and expenditure parts. The main research methods used were analysis, forecasting, abstraction, historical, statistical and graphical methods. The study analysed the dynamics of the Ukrainian budget and described the general negative trend observed over time. The study analysed possible areas of raising funds for financing, in particular through bonds, both domestic and foreign, and concluded that such methods are undesirable. The paper also shows that the agricultural sector in Ukraine has become a significant source of replenishment of the country's budget during the war. The information being in the available sources indicates that the share of revenues received from the agricultural sector in the budget of Ukraine is quite high, and the sector itself is in surplus (revenues exceed expenditures). Given the benefits for the budget from the development of the agricultural sector, it is important to support it with both financial and non-financial methods. The results of the work can be used

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by government officials in their management activities within the country or regions, as well as by business leaders in building long-term development strategies

Keywords: economic and mathematical models; water transport; economy of Ukraine; management; macroeconomics

Introduction

The state budget as a whole is a fundamental tool for the functioning of any country and plays an important role in social and economic life (Hashemizadeh *et al*., 2021). It determines how financial resources are collected and allocated to meet the needs of society and achieve government goals. The state budget also makes it possible to change financial flows in the country and direct them to other areas, which ensures the functioning of the state apparatus and allows the population (especially the poor) to have a decent standard of living (Sadik-Zada & Gatto, 2019). In addition, this instrument can also be a source of economic development, as it, as noted above, determines investments in infrastructure, research and development, which helps to stimulate economic growth and create jobs. Its role is especially important in times of crisis, as government officials, by investing in various sectors of the economy, stop its stagnation and “revive” it (by releasing funds into the economy through increased spending).

A significant number of scholars have been working on assessing the problems that have arisen in Ukraine in connection with the recent crises, and in particular the full-scale invasion of russia. Thus, H. Shumska (2023) developed methods to ensure effective socio-economic development of Ukraine. She conducted a telephone survey of government officials and, based on this data, drew conclusions about how to improve the efficiency of public administration systems in the country. The prospects and benchmarks for the country’s development in the period from 2023 to 2024 were assessed in D. Vasylkivskyi *et al.* (2023). The authors described the main directions of the country’s development and pointed out the existing potential for its development, given the war and all the difficulties it brings to its development. Nevertheless, the scientists’ assessments do not describe clear scenarios for future developments, and therefore do not allow for the formulation of high-quality recommendations for government officials. Yu. Verheliuk (2022), in turn, studied the possibilities of financing the country’s budget, in particular, through market sources. The scientist noted both the advantages and dangers that may arise in the case of financing the state budget with the help of such instruments, and noted their already significant role in terms of the debt structure. M. Hantsiak (2022) conducted a similar study on the possibilities of raising funds to finance the budget deficit from the securities market. The researcher assessed the state of the domestic debt securities market in Ukraine and described the negative and positive components of such a debt policy by the state. However, he did not provide clear alternatives that could replace such methods of financing. I. Chugunov *et al.* (2022) assessed the revenues of the State Budget of Ukraine under martial law. The authors described the main priorities in the formation of the country’s budget and its revenues, and provided some recommendations on how to optimize their receipt and further distribution. However, little attention was paid to the expenditure component of the budget, which is no less important in budget management. Yu. Dziurakh (2019), in turn, analysed the state regulation of investment in agriculture based on international experience. The scientist described a surge in regulatory measures in developed countries aimed at supporting investment in technology, genetic engineering and agriculture. He also described the processes and importance of market liberalization to improve the efficiency of its functioning. V. Dmytriieva & Y. Sviatets (2021) discussed the use of data cleaning methods to improve the analysis of time series data and used them to study agriculture in Ukraine. Thus, the scientists identified two periods (from 1996 to 2008 and from 2009 to 2018), which were initially defined by decline and stagnation, and later by growth. However, the researchers did not provide advice either to representatives of the public sector or to entrepreneurs to improve their performance. The peculiarities of budgetary financing of agriculture in the country were assessed by K. Zakhozhay & I. Kravchenko (2019). They describe the role of state support for this sector and talk about the insufficient amount of it at present. It is worth noting that in times of war, this information is also relevant, given that local enterprises need support to be able to continue their operations. However, the state is also unable to provide it in such circumstances. L. Sulimenko, & S. Viter, (2019) also studied support for the agricultural sector from the state budget and showed that the level of such support decreased from 3.7% to 0.22% in 2004 and 2020, respectively. This may indicate either that the sector is in a relatively better position compared to previous years, when it does not need support, or that the state cannot provide it, given the problems in the country. Thus, this indicates the state of development of the industry and its interaction with the budget. The purpose of this study was to assess the existing problems associated with the state budget deficit in Ukraine and to propose methods of financing it in the short and long term. This will help to improve the efficiency of public policy in the country as a whole, in particular in the context of the agricultural sector.

Materials and Methods

The study used some data that characterize the state budget of Ukraine from different angles. Statistical information for their assessment was used from various freely available Internet resources. For instance, information was used from the MinFin website (State debt of Ukraine, 2023), which contains information on the level of public debt in the country, its dynamics and changes in comparison with the gross domestic product (GDP). The information provided by the Ministry of Finance of Ukraine (Statistical collection, 2022) was also used, which describes in detail the state of the country's budget. Information on state budget revenues and expenditures from the agricultural sector was obtained from the website "Price of the State" (Expenditure by function, n.d.), and data from the State Statistics Service of Ukraine was used to assess the state of agricultural enterprises in Ukraine.

Some indicators were also used to assess the state of the Ukrainian budget. In particular, the indicators of budget expenditures and revenues, as well as the budget deficit, were analysed. Its value was determined using the formula below:

$$D = I - E, \tag{1}$$

where D – budget deficit; I – budget revenues; E – budget expenditures.

In addition, the percentage of the deficit to the total budget of the country was estimated. In general, this can be done either as a percentage of expenditures or revenues. However, in the case of Ukraine, the results could vary greatly depending on which value is used in the denominator. Thus, a compromise was chosen, whereby the relative budget deficit is averaged. The formula for its calculation is given below:

$$D_{\%} = \frac{D}{(\frac{I+E}{2})} = \frac{2D}{(I+E)}. \tag{2}$$

As can be seen from the formula above, the denominator uses the average of budget expenditures and revenues, which averages the relative value of the budget deficit. This allowed for a better assessment of the value of the budget deficit in Ukraine in the period from 1992 to 2022. All data was evaluated, and graphical elements were created using Microsoft Excel. The approach used in this study was a systematic one. It allowed representing the factors that affect the possibilities of financing the budget deficit in Ukraine in the form of separate, interconnected parts that interact with each other within a single system. In turn, one of the main methods used in the study was analysis. It allowed assessing various indicators of the state budget and the state of development of the agricultural sector in Ukraine based on the available quantitative and qualitative information about them found in various open sources. In addition, the historical method was used to assess the impact of various historical events on the current state of the state budget and the agricultural sector. It also made it possible to conduct research on individual indicators based on past data, in retrospect, and to see their impact on the current state of the country's economy. Abstraction was also used, which made it possible to assess phenomena without including the influence of individual factors that had a minor impact on the change in a given phenomenon. Forecasting was used to formulate assumptions about future changes in the structure and size of the state budget of Ukraine, the role of the agricultural sector in it, and methods of its financing. The statistical method was used to evaluate quantitative data. The construction of graphs and tables in the paper was carried out using the graphical method.

Results

Before assessing the problems of financing the state budget deficit in Ukraine, it is worth reviewing some of the main metrics that characterize it. One of them is the public debt, the dynamics of which and its ratio to GDP are shown in Figure 1 below:

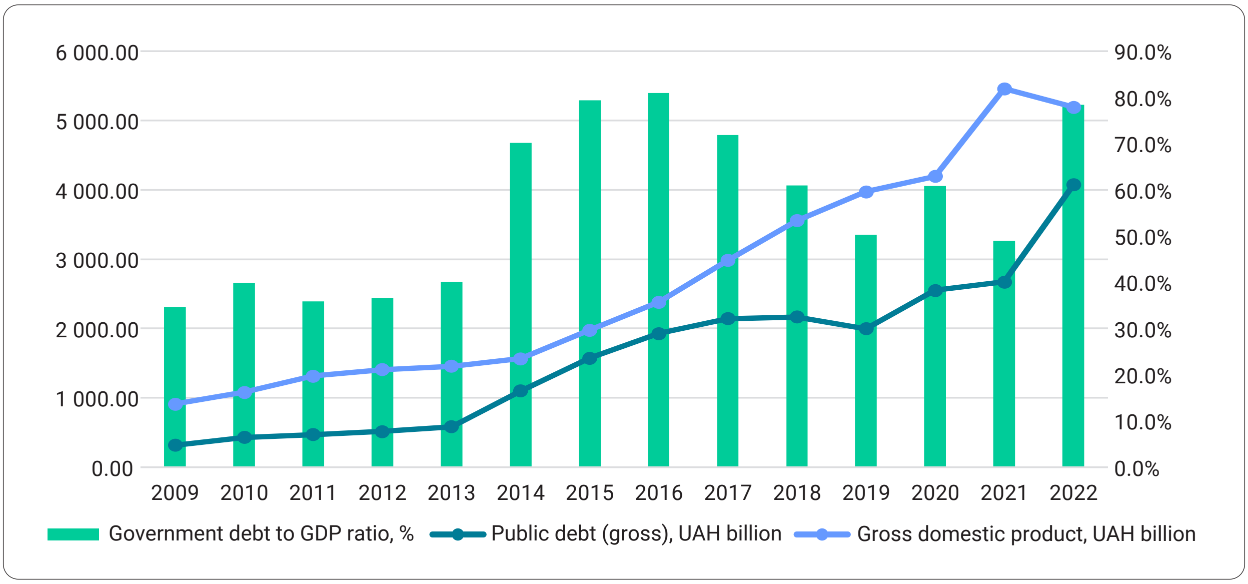

Figure 1. Indicators characterizing the level of public debt and gross domestic product in the period from 2009 to 2022
Source: compiled by the author based on the data from State debt of Ukraine (2023)

As shown in Figure 1, public debt, like GDP, has been gradually increasing, which is normal for any country. The public debt indicator in Ukraine has varied quite a bit over the years and could reach both higher and lower values depending on the period. For example, before 2014, the level did not exceed 40%, while after the outbreak of the war with russia, it reached 70% and 80%. After relative stabilization, it rose again to 78.4% as of 2022, which is associated with the full-scale russian invasion. During the assessment, it was noticed that there is a certain correlation between the selected indicators (GDP and public debt): it was observed that it is negative and is at the level of -0.33. This suggests that when the level of public debt increased, GDP growth decreased and vice versa; and although the correlation is not significant and can generally be explained by other reasons (the decline in GDP growth was caused by external factors that forced the state to increase its debt to overcome), this influence cannot be dismissed. Thus, the current level of public debt in the country is too high to ensure its welfare, especially given that even if the war ends soon, it is expected to grow further, given the country's need for funds for recovery. Public debt is one of the main public debt financing challenges for the country, but its impact will be particularly noticeable in the long run. For the time being, Ukraine's ability to incur debt allows it to finance essential expenditures and ensure a decent level of economic development and living standards.

At this point, it is worth looking at how Ukraine's overall expenditures, revenues, and budget deficit have changed in recent years. This is shown in Figure 2 and Figure 3 below:

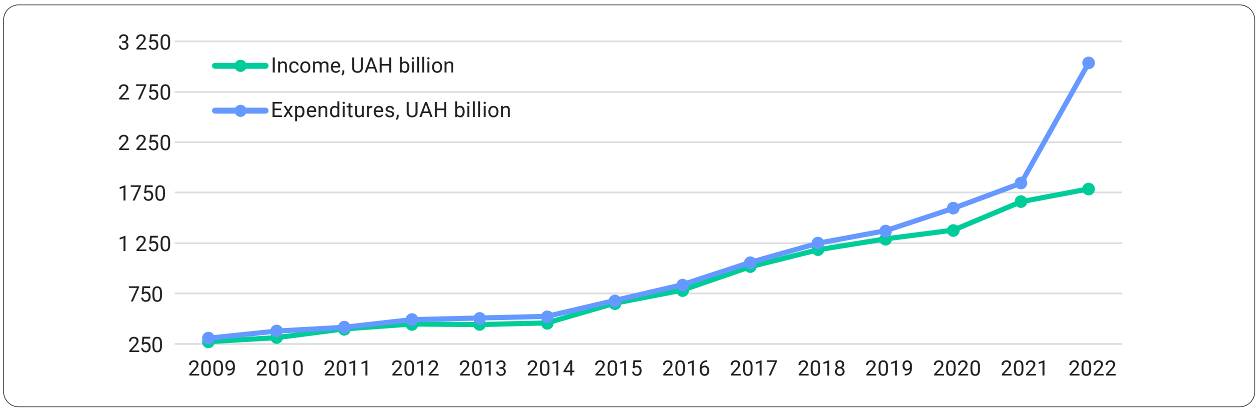

Figure 2. Revenue and expenditure parts of the budget of Ukraine in the period from 2009 to 2022, UAH billion
Source: compiled by the author based on the data from Statistical collection (2022)

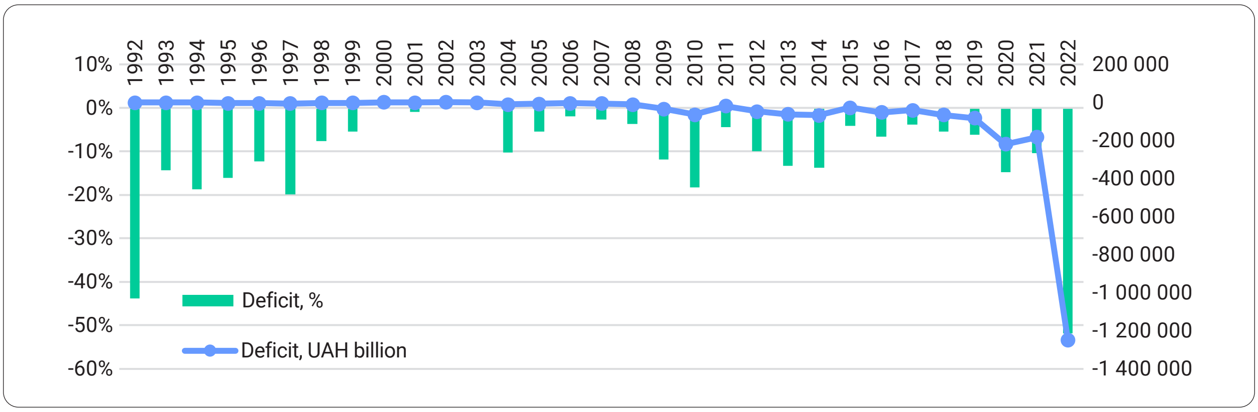

Figure 3. The level of the budget deficit in Ukraine in absolute and relative values in the period from 1992 to 2022
Source: compiled by the author based on the data from Statistical collection (2022)

As can be seen from Figure 2, budget revenues and expenditures in Ukraine have been gradually increasing, primarily due to the depreciation of the hryvnia and the growth of the country's economy. More revealing is Figure 3, which shows the budget deficit in absolute and relative terms. As can be seen, the level of budget deficit in Ukraine could take different values depending on the year: from positive values (surplus) to more than -40% in the early years of the country's formation. Such data indicate frequent cases of difficulties in financing the Ukrainian budget deficit. The data for 2022 are also indicative, where the level of budget expenditures was cut in half compared to the previous year (due to the beginning of russia's full-scale invasion), but revenues could not grow by a similar amount due to the lack of ways to obtain them. A more detailed assessment can be made by looking at the structure of expenditures, which is shown in Tables 1 and 2:

Table 1. Absolute indicators of budget revenues in Ukraine in the period from 2017 to 2021, UAH million

Year	2017	2018	2019	2020	2021
Income	1 016 969.50	1 184 290.80	1 289 849.20	1 376 673.80	1 662 333.60
VAT	313 980.60	374 508.20	378 690.20	400 600.10	536 489.10
Personal income tax and levy	185 686.10	229 900.60	275 458.50	295 107.30	349 785.50
Other	218 665.50	225 078.20	265 606.20	269 330.20	235 289.60
Excise tax – total	121 449.40	132 649.80	137 076.40	153 850.30	180 300.40
Corporate income tax	73 396.80	106 182.30	117 316.80	118 471.80	163 844.50
Own revenues of budgetary institutions	52 658.80	65 884.80	63 676.20	82 201.50	107 306.00
Rent and fees for the use of other natural resources	51 132.30	50 086.90	52 024.90	57 112.60	89 318.50

Source: compiled by the author based on the data from Statistical collection (2022)

Table 2. Relative indicators of budget revenues in Ukraine in the period from 2017 to 2021, %

Year	2017	2018	2019	2020	2021
Income	100	100	100	100	100
VAT	30.9	31.6	29.4	29.1	32.3
Personal income tax and levy	18.3	19.4	21.4	21.4	21.0
Other	21.5	19.0	20.6	19.6	14.2
Excise tax – total	11.9	11.2	10.6	11.2	10.8
Corporate income tax	7.2	9.0	9.1	8.6	9.9
Own revenues of budgetary institutions	5.2	5.6	4.9	6.0	6.5
Rent and fees for the use of other natural resources	5.0	4.2	4.0	4.1	5.4

Source: compiled by the author based on the data from Statistical collection (2022)

As can be seen from Tables 1 and 2, the bulk of Ukraine's budget revenues came from value added tax, which was largely distributed to other enterprises. At the same time, personal income tax, excise tax, and corporate income tax play a significant role. However, this breakdown is expected to change in 2022, when tax collection in the country has fallen sharply due to weakening economic activity, while dependence on international aid has increased. The data is not yet available and may not be until the war is over, but it is certain that the foreign aid component plays a significant role. Revenues from the agricultural sector have also played an important role in the Ukrainian budget since 2014. The reason for this is that other important sectors of the country's economy have experienced significant difficulties, both after the outbreak of the war in Ukraine (in 2014) and during the full-scale invasion. Given the country's significant competitive advantages in this sector compared to its competitors, companies are able to make excessive profits on the foreign market, and domestic suppliers have access to cheap food. As for budget revenues, they come primarily both directly, through taxes paid by farmers, and indirectly, through the creation of jobs and other benefits for the country. Official data on budget revenues and expenditures disaggregated by enterprises are not available in open sources. Nevertheless, some information can be used for analysis. For example, Figure 4 below shows the amount of expenditures on the agricultural sector from the Ukrainian budget.

As can be seen from Figure 4, state budget expenditures in Ukraine are gradually increasing, although in real terms (adjusted for inflation) they are gradually decreasing. This suggests that real support for the agricultural sector in Ukraine is declining, which may be due to both the development of the sector itself and the reduced capacity of the state to finance it. As for the revenues that were transferred to the budget from the agricultural sector, such data is not available in official sources. Nevertheless, they can be calculated from the net financial result of companies in the sector, as shown in Figure 5.

As shown in Figure 5, the profits of agricultural enterprises have indeed been growing over time, including after adjusting for inflation. This generally indicates a real development of the sector over time, which partially justifies the reduction of state support. The calculation of the amount of taxes paid by enterprises compared to their expenditures is shown in Figure 6.

As can be seen from Figure 6, in 2010 the agricultural sector was still in need of external assistance from the state. However, since 2015, the sector has become surplus, i.e. it has started to generate revenues for the state budget. This can also be seen in Figure 7.

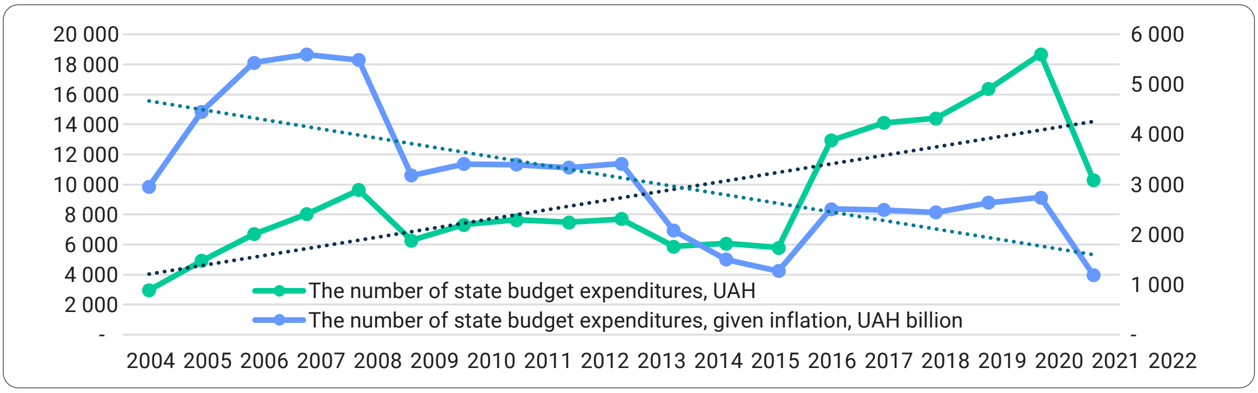

Figure 4. Volumes of state budget expenditures on the agricultural sector in Ukraine in the period from 2004 to 2022, taking into account inflation, UAH billion

Source: compiled by author based on the data from Expenditure by function (n.d.)

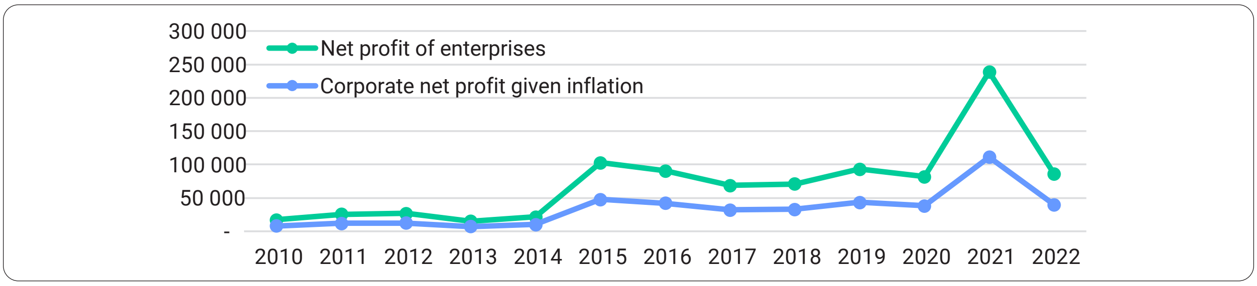

Figure 5. Net profit of agricultural sector enterprises with (in 2004 prices) and without taking into account inflation in the period from 2010 to 2022, UAH billion

Source: compiled by the author based on the data from the State statistics service of Ukraine (n.d.)

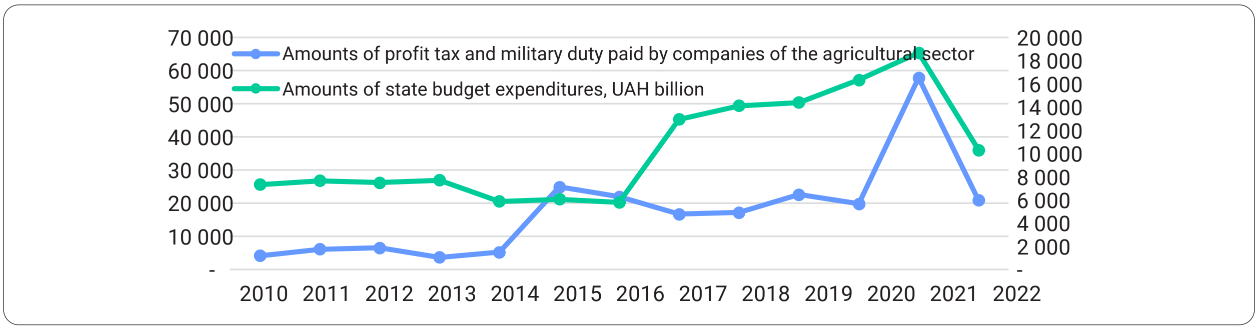

Figure 6. Amounts of taxes paid by agricultural sector enterprises and budget expenditures for this sector in the period from 2010 to 2022

Source: compiled by the author based on the data from the State statistics service of Ukraine (n.d.) and Expenditure by function (n.d.)

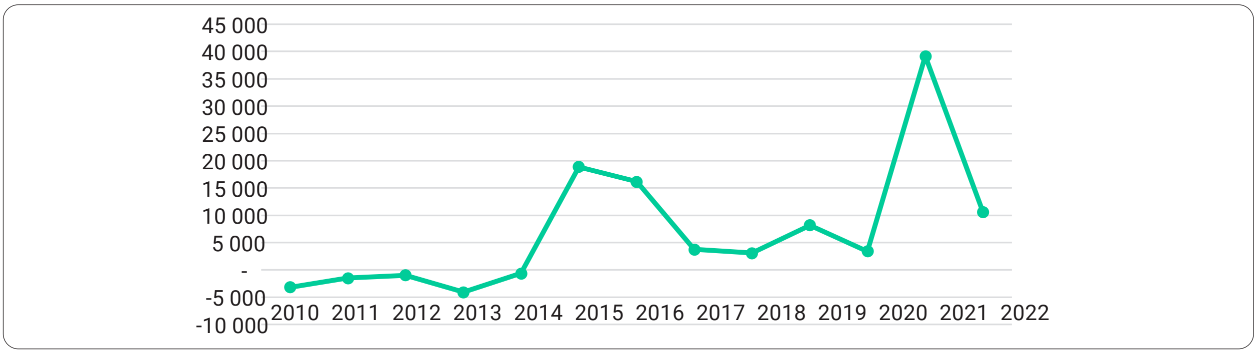

Figure 7. Volumes of net revenues to the budget of Ukraine from agricultural enterprises in the period from 2010 to 2022, million UAH

Source: compiled by the author based on the data from the State statistics service of Ukraine (n.d.) and Expenditure by function (n.d.)

Figure 7 shows that the amount of net income to the Ukrainian budget from agricultural enterprises of Ukraine really increases over time. It is also important to consider the percentage share of revenues and expenses in the Ukrainian budget, which can be seen in Figure 8:

As can be seen from Figure 8, the share of the agricultural sector in total budget revenues has increased and remains high, while the share of expenditures has decreased. It is also worth noting that the share of tax revenues from agricultural enterprises is generally significant, as even a small percentage of these revenues is important for the budget, given its size and the level of diversification of revenue sources. All of this indicates the important role of the agricultural sector for the state budget; it also suggests that in the future this sector should be supported by the state, if not financially, then by other means, such as creating favourable conditions for its financing. Given the gradual recovery of Ukraine during the war and the existing opportunities in the post-war period, it is reasonable to assume that this industry will be the main source of budget revenues in the future.

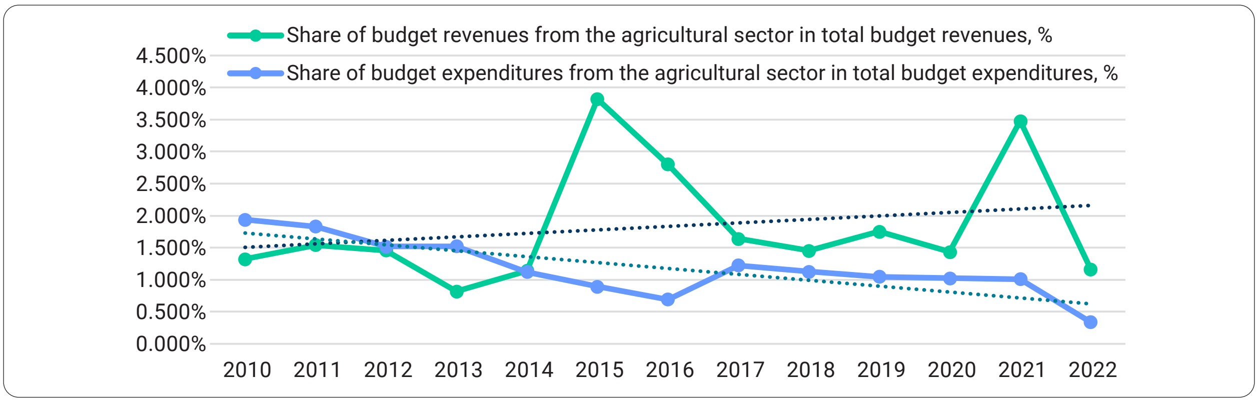

Figure 8. The ratio of budget revenues from agricultural enterprises to total budget revenues and expenditures on the agrarian sector to total in the period from 2010 to 2022

Source: compiled by the author based on the data from the State statistics service of Ukraine (n.d.) and Expenditure by function (n.d.)

Thus, it is possible to identify several problems associated with financing the budget deficit during the war. Firstly, it is a decrease in budget revenues due to a decline in economic activity, a drop in production and foreign trade. Companies, as well as individuals, start to receive lower incomes and therefore pay lower taxes, which negatively affects the country's ability to finance all expenditure items. Secondly, during a war, expenditures to finance the war, support the main economic sectors and the social component of the country (local residents) increase significantly. This increases the amount of money that the state needs to raise, and thus makes it much more difficult to do so in general. In particular, as can be seen from Figure 3 above, expenditures in Ukraine almost doubled in 2022: it is impossible to increase budget revenues in such a period and in such volumes. Thirdly, as mentioned above, during the war, the debt burden increases, which is absolutely necessary to finance current expenditures, but, if prolonged, may make it more difficult to repay the debts incurred, and thus further complicate the situation in the country. Another complication is that the country is generally becoming much less attractive to foreign investors and companies in the context of war, which is why they are not as active in raising their own capital to build certain enterprises in its territory or investing in existing Ukrainian companies.

Nevertheless, even in such circumstances, countries have opportunities to raise additional funds to finance the expenditure side of the budget. It is of great importance for financing the budget deficit in times of war: it helps to maintain the country's financial stability and fulfil financial obligations to creditors, as well as to meet the social needs of the population and protect vulnerable groups, maintain economic stability, carry out necessary reforms and modernize the economy. In addition, it generally helps to strengthen international partnership in the fight against the military conflict. This type of financing is the most acceptable, as international organizations and countries often provide funds at a lower interest rate, on a grant basis, or without any requirement for repayment. Any other type of financing is inferior in such circumstances. For example, raising taxes will lead to an even more rapid deterioration of the economy, which may eventually lead to an impossible business environment and complete shadowing of business. It could also lead to increased discontent among the population, which is also dangerous in times of war.

One of the possibilities for financing the state budget is also the use of market instruments, namely bonds (both those denominated in the national currency and foreign currencies (Eurobonds). In recent years, external financing (which includes loans from international financial institutions and the sale of budget assets) has accounted for a significant share of total debt. Its growth in the long run would lead to a debt danger for the country, which would require significant attention from the government.

Nevertheless, in times of war, such negative components become less important, as the urgent need to find funds to cover certain immediate expenses becomes more important than the long-term well-being and the ability to repay debts to investors in the future. However, it is also impossible to recommend using this instrument too actively. It should be used by the Ministry of Finance regularly at auctions to cover urgent expenditures, or on a planned basis, but it really should not be overused, at least because the assistance provided by international partners (organizations or countries) often has much better terms than those that would be obtained in the case of a bond issue. Therefore, the primary goal of both the Ministry of Finance and the country as a whole should be to fulfil all the necessary conditions for receiving assistance from them.

The role of the agricultural sector in the war also remains significant. As shown above, in the context of conflict and the economic problems it brings, the sector becomes an instrument for ensuring financial stability and resilience, at least in Ukraine. It is the payment of taxes by companies in the sector that makes it possible to fulfil obligations to creditors, preventing the country from falling into a debt trap. In addition, these funds are key to meeting social needs and protecting vulnerable groups of the population. All of this makes it possible to attract foreign investment in the sector, thereby strengthening international relations with other countries and ensuring the development of the sector as a whole. Such a policy will ensure sustainable growth of the industry, which in turn will generate revenues for the budget, reducing its debt burden and maintaining long-term sustainability.

Discussion

As part of their work, S.H. Law *et al.* (2021) studied the impact of public debt on economic growth in seventy-one developing countries over the period 1984-2015. The researchers identified a threshold level of debt of 51.65% of GDP, below which public debt has little impact on economic growth, and above which it has a negative and statistically significant impact. The findings suggest that policymakers should consider introducing a debt ceiling to prevent excessive debt levels that could harm economic growth. This suggests that it is important to understand the dynamics of public debt in a country for its more effective management, as well as its impact on economic growth for the development of effective fiscal policy. It is worth noting that the above study also found a negative correlation between the level of public debt and gross domestic product, which may indicate its overall negative impact on economic growth. A similar study was conducted by S.T. Onifade *et al.* (2020) on the impact of government spending on economic growth in Nigeria from 1981 to 2017. The findings showed that there is a long-term relationship between economic growth and public spending. It was shown that current government spending and public debt have a significant negative impact on economic growth, while capital government spending has a positive but insignificant impact. This means that economic growth cannot be sustained solely by current expenditures and debt financing without fiscal discipline and sufficient investment in capital projects. Thus, they recommended controlling current expenditures, fighting financial corruption and diversion of funds, and ensuring transparency of capital expenditures to maximize profits. All these recommendations are generally relevant for Ukraine, but rather in the long term: after the end of hostilities and the first stages of recovery (which will require a completely different policy related to tax liberalization and increased economic activity).

N.A. Desdiani *et al.* (2022) studied the impact of the COVID-19 crisis on local government budgets in different provinces of Indonesia (based on a survey among them). It was shown that the responses of local governments differed depending on factors such as the number of COVID-19 cases, fiscal capacity, budget efficiency, and revenue generation opportunities. To ensure the sustainability of local authorities, the researchers recommended preparing for emergency expenditures, diversifying revenue sources, increasing capital expenditures, and investing more in soft infrastructure. Although local budgeting has some common features with state budgeting, they are still different, and therefore the recommendations and principles outlined above cannot be fully applied in Ukraine, especially in the short term. S. Park & C.S. Maher (2020) assessed the peculiarities of state governance during a crisis, in particular, during COVID-19. The authors pointed out that the pandemic challenged the conventional concept of fiscal federalism, which argued that policy is effective when it is implemented in a decentralized manner. However, in the case of COVID-19, a more centralized and single, consistent message from the national government has led to significant differences in the number of confirmed cases and deaths. It is worth noting that such shortcomings are not the same for all types of crises. For example, the crisis that arose in Ukraine because of the war demonstrates completely different performance indicators: due to the decentralization of power among the military, the effectiveness of actions to counter the enemy was more efficient, as it allowed not to wait for confirmation of the correctness of certain actions in certain areas of the front. As for the economic component, it is difficult to draw any conclusions on this issue: although the country's economic development is quite centralized, local authorities have a high level of autonomy. This independence in their own actions has made it possible to minimize the negative consequences of the war for Ukraine.

An interesting study on the dependence of elected ministers of finance on the budget deficit in Germany was conducted by B. Jochimsen & S. Thomasius (2014). The study showed that professional experience does matter in terms of how effectively budget funds were managed: ministers of finance with experience in the financial sector achieved lower deficit indicators than those without such experience. At the same time, education or speciality, or certain characteristics acquired at birth (gender, country of origin, and age) did not play a significant role. At the same time, the length of time in office played an important role: for example, ministers of finance who served longer achieved lower deficit levels; this effect was particularly noticeable when the minister of finance and the prime minister belonged to the same party. Nevertheless, party affiliation alone did not make a significant difference in how well the budget was managed. All of these factors suggest that, in general, for more effective financial management in a country, it is better to elect a person with practical experience in this area rather than candidates with a good education. It can be assumed that this logic will be relevant for all other ministry employees (in less important positions). It is worth noting that this logic may not work in Ukraine, or may be different, since the empirical study was conducted for Germany. Nevertheless, given the geographical proximity of the countries and the lower quality of education in Ukraine in comparison, it is likely that its role in governance efficiency will be even lower than in Germany. Therefore, when selecting candidates, it is important for government agencies to pay attention to the experience of employees and their level of qualification.

A. Orji *et al.* (2020) assessed agricultural financing and agricultural production growth in developing countries in their study. They showed that public funding of agriculture does not directly affect production growth in this sector. According to the statistics, the growth of agricultural production does not correlate with changes in the level of public funding. In this regard, the researchers made several recommendations, namely to improve access to credit for farmers who often have problems with collateral. In addition, it is important to increase the transparency and effectiveness of major local programmes, which can also benefit small farmers and relevant stakeholders. In other words, the researchers believe that it is more important to create favourable conditions for farmers than to provide them with funds. The interaction between the state budget and agriculture has also been studied by S. Pandit & S.C. Dhakal (2022). The research showed that only up to 3 per cent of the total budget has been allocated to the agricultural sector in recent years in Nepal. They note that such support is insufficient, despite the fact that the contribution of agriculture to GDP is declining. The opposite situation is observed in Ukraine, where the contribution of agriculture to gross domestic product is gradually increasing. Nevertheless, government support for the sector remains low. Trends in the distribution and use of the budget for the agricultural sector were also studied by O. Adeyemi *et al.* (2023). They pointed out the changing role of agriculture, as well as the changes observed in terms of budget revenues. It is worth noting that similar changes were observed in Ukraine: it was noted that in the year of the COVID-19 crisis, the income of agricultural enterprises increased, which was caused by both high yields and rising prices for these products in the world. Thus, during the war in Ukraine, increasing budget revenues is a big responsibility for the state authorities. Moreover, it is a difficult task, as armed conflicts generally have the worst impact on economic development and the state of the country as a whole, preventing businesses from developing, creating added value and collecting taxes. The main sources for this are international support, as the country cannot provide for itself on its own, or only by issuing national currency, which also has a negative impact on the welfare of citizens and economic development. The agricultural sector also remains an important component of budget revenues, but it should be understood that in a time of war, corporate tax revenues will not be able to fill the budget sufficiently, and therefore, the focus should be on obtaining international financing. That is why the high-quality work of diplomats and the ability to enter into new alliances with international partners during the war is one of the most important components of the country's effective recovery from the difficult economic situation during such conflicts.

Conclusions

The aim of the paper was to assess the existing problems related to the financing of the Ukrainian budget and to propose methods to improve the current situation, in particular, at the expense of the public sector. The paper shows that the main problems of the sector are a significant increase in expenditures due to the war, as well as a gradual increase in its debt, which may lead to significant negative consequences in the long run. This is due to the growing role of foreign aid, which is often in the form of loans. While international support and market instruments, such as bonds, are important for mitigating the economic consequences of the war, they will also play a significant role in the long run, which should also be taken into account when formulating public budget management policies.

The structure of budget revenues analysed in this paper highlights the importance of value added tax, personal income tax, excise tax, and corporate income tax in the budget. In this context, the agricultural sector has become critically important in supporting Ukraine's budget, especially during the period of conflict and economic difficulties. The sector's competitiveness allows companies to earn excessive profits on foreign markets and Ukrainian suppliers to have access to affordable food. The sector's contributions to the budget are twofold: direct tax payments by farmers and indirect benefits, including job creation and economic stimulus. Over time, the share of agricultural revenues in the budget has grown significantly, as has its role in the country's welfare. This suggests that support for the agricultural sector, both financial and otherwise, is crucial for the stability of Ukraine's budget, especially given the needs of post-war reconstruction.

An assessment of foreign experience in terms of ensuring state budget financing in crisis conditions, including military ones, is relevant for future research. In addition, it remains important to find other opportunities to improve the efficiency of public authorities in Ukraine.

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Conflict of Interest

None.

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Проблеми фінансування дефіциту державного бюджету

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Анотація. В умовах повномасштабного вторгнення росії, аграрний сектор залишається одним із основних джерел фінансування бюджету в Україні, а отже й потребує більш детального вивчення в умовах війни в даному контексті. Таким чином, метою роботи стало оцінити актуальні можливості фінансування українського бюджету з акцентом на ролі аграрного сектору в дохідній та видаткових його частинах. Основними методами дослідження стали аналіз, прогнозування, абстрагування, історичний, статистичні методи, а також графічний. Під час дослідження була проаналізов ана динаміка українського бюджету та описаний загальний негативний тренд, що спостерігається з часом. Було проаналізовано можливі сфери залучення коштів для фінансування, зокрема за рахунок облігацій як внутрішніх, так і зовнішніх; було сформовано висновок про небажаність використання подібних методів. Також в рамках роботи було показано, що аграрний сектор в Україні став суттєвим джерелом поповнення бюджету країни в умовах війни. Наявна у доступних джерелах інформація вказала на те, що частка доходів, що отримуються з аграрного сектору, в бюджету України є досить високою, а сама сфера є профіцитною (доходи від неї перевищують видатки). Зважаючи на вигоду для бюджету від розвитку аграрного сектору, актуальною залишається його підтримка з боку держави як фінансовими, так і нефінансовими методами. Результати роботи можуть використовуватися державними діячами під час ведення управлінської діяльності в рамках країни чи регіонів, а також керівниками підприємств при побудові довгострокових стратегій розвитку

Ключові слова: борг; міжнародні відносини; макроекономіка; менеджмент; аграрний сектор; підприємництво