

“Ensuring transparency of key public finance authorities”

Alina Bukhtiarova  <https://orcid.org/0000-0003-2631-3323>

 <https://publons.com/researcher/1947284/alina-bukhtiarova/>

Yuliia Dukhno

Ganna Kulish  <https://orcid.org/0000-0001-5439-121X>

Iryna Kurochkina  <https://orcid.org/0000-0003-0765-9150>

Volodymyr Lypchanskyi  <https://orcid.org/0000-0002-8525-512X>

AUTHORS

ARTICLE INFO

Alina Bukhtiarova, Yuliia Dukhno, Ganna Kulish, Iryna Kurochkina and Volodymyr Lypchanskyi (2019). Ensuring transparency of key public finance authorities. *Investment Management and Financial Innovations*, 16(2), 128-139. doi:10.21511/imfi.16(2).2019.11

DOI

[http://dx.doi.org/10.21511/imfi.16\(2\).2019.11](http://dx.doi.org/10.21511/imfi.16(2).2019.11)

RELEASED ON

Friday, 24 May 2019

RECEIVED ON

Monday, 29 April 2019

ACCEPTED ON

Thursday, 16 May 2019

LICENSE



This work is licensed under a [Creative Commons Attribution 4.0 International License](https://creativecommons.org/licenses/by/4.0/)

JOURNAL

"Investment Management and Financial Innovations"

ISSN PRINT

1810-4967

ISSN ONLINE

1812-9358

PUBLISHER

LLC “Consulting Publishing Company “Business Perspectives”

FOUNDER

LLC “Consulting Publishing Company “Business Perspectives”



NUMBER OF REFERENCES

32



NUMBER OF FIGURES

0



NUMBER OF TABLES

8

© The author(s) 2025. This publication is an open access article.



BUSINESS PERSPECTIVES



LLC "CPC "Business Perspectives"
Hryhorii Skovoroda lane, 10,
Sumy, 40022, Ukraine

www.businessperspectives.org

Received on: 29th of April, 2019

Accepted on: 16th of May, 2019

© Alina Bukhtiarova, Yuliia Dukhno,
Ganna Kulish, Iryna Kurochkina,
Volodymyr Lypchanskyi, 2019

Alina Bukhtiarova, Ph.D. in
Economics, Senior Instructor,
Department of Finance, Banking and
Insurance, Sumy State University,
Ukraine.

Yuliia Dukhno, graduate student,
Sumy State University, Ukraine.

Ganna Kulish, Ph.D., Department of
Corporate Finance and Controlling,
Kyiv National Economic University
named after Vadym Hetman,
Ukraine.

Iryna Kurochkina, Ph.D., Department
of International Marketing, Alfred
Nobel University, Ukraine.

Volodymyr Lypchanskyi, Ph.D.,
Associate Professor, Department
of Economy, Management and
Commercial Activity, Central
Ukrainian National Technical
University, Ukraine.



This is an Open Access article,
distributed under the terms of the
[Creative Commons Attribution 4.0
International license](https://creativecommons.org/licenses/by/4.0/), which permits
unrestricted re-use, distribution,
and reproduction in any medium,
provided the original work is properly
cited.

Alina Bukhtiarova (Ukraine), Yuliia Dukhno (Ukraine), Ganna Kulish (Ukraine),
Iryna Kurochkina (Ukraine), Volodymyr Lypchanskyi (Ukraine)

ENSURING TRANSPARENCY OF KEY PUBLIC FINANCE AUTHORITIES

Abstract

Nowadays, there is a constant need for managing large amounts of information in public finances to identify existing and prevent future cases of illegal use of financial resources of citizens. The openness of information of key public finance authorities has a powerful anti-corruption effect and has a beneficial effect on economic development, while transparency of public finances is a factor in the successful implementation of the reform of all spheres of the economy.

The purpose of the article is to develop a methodology for assessing the institutional and political transparency of the leading public finance authorities in Ukraine and its practical application on the example of the Ministry of Finance and the State Fiscal Service of Ukraine. The methodology includes six main stages, based on which the transparency index of public finance authorities was calculated. Constant calculations of the index will motivate the interaction of stakeholders and non-governmental organizations to increase the openness of public finance authorities in public finances, and the digital data settlements themselves can be used to develop recommendations to increase the level of transparency of the activities of key public finance authorities. Approbation of the developed transparency index of public finance authorities on the example of the Ministry of Finance and the State Fiscal Service of Ukraine made it possible to calculate the percentage of openness of data published by the indicated institutions. Based on quantitative calculations, practical recommendations were made for improving the completeness, reliability, availability and timeliness of published information.

Keywords

transparency, public finances, open data, public procurement, Ministry of Finance of Ukraine, State Fiscal Service of Ukraine, transparency index, information openness, public administration

JEL Classification E63, P43, H83, M31

INTRODUCTION

Information openness of the key public finance authorities provides through publication of reliable and objective data about the state of public funds at the national level, as well as openness of officials in making any decisions in public finances.

Ensuring the transparency of the system of public finances provides an opportunity to objectively assess the actions of representatives of public finance authorities and public participation in issues of disposal of public funds. Ukraine's noticeable progress in public disclosure of public finances still requires further improvement of the transparency system of public finance authorities. Since obtaining objective, relevant, accessible information on the activities of the main public finance authorities increases the level of public confidence in the basis of the modern reforms.

1. LITERATURE REVIEW

Despite the constant change in the direction of increasing transparency of the public sector in Ukraine, it is not always possible to achieve maximum results. This provokes the need for an additional study of existing problems in ensuring transparency of key public finance authorities. Therefore, today, the study of transparency in the area of public finance focuses in the work of many scientists.

Some authors emphasize the need to monitor compliance with data transparency requirements by public finance authorities, the need to expand information on public procurement and appeal to IMF experts to assess the state of transparency of finances in the public sector (Hasanov, 2017).

Other researchers substantiate the need to increase the level of information openness of public finance authorities of Ukraine as a guarantee of key principles of a democratic country. The openness of information meets interests of not only society, but also country, since in obtaining reliable data on public administration, the confidence of citizens increases in the actions of the authorities (Kruk, 2017).

Some authors study the external and internal factors influencing the transparency of public finance authorities in Ukraine (the availability of appropriate information dissemination infrastructure, the general information culture of society, the difference in regulatory transparency requirements, etc.), as well as substantiate measures aimed at increasing the transparency of the activities of such authorities (Stetsenko, 2017).

Among the scientists there are those who also studied the experience of implementing the principle of transparency in individual states (Tikhomirova & Stolyarok, 2017). Based on the study of foreign experience, the main causes of opacity and new ways of ensuring the transparency of public finance authorities were identified. In general, in democratic countries, public finance authorities should implement clear procedures for informing citizens about their activities and involving citizens in public administration processes.

Some authors investigated the transparency of the country in terms of budget policy (Vasilyeva, Shkolnyk, Mershchii, & Melnyk, 2018) and identified main ways to improve fiscal policy in the areas of openness of budget information, the effectiveness of budget supervision and citizen participation in the budget process. Also, the essence of the main problems that need to be solved in order to create budget transparency in Ukraine is disclosed (Vynnychenko, 2017).

The level of transparency of public finance authorities is significantly influenced by the ability of the population to observe how the distribution of taxpayers' funds takes place. For this purpose, there is a system of electronic public procurement in Ukraine, the analysis of which has become the subject of research for scholars (Shkolnyk, Bukhtiarova, & Horobets, 2018). E-procurement is dedicated to works by other authors who argue that disclosure in public procurement can be a prerequisite for minimizing fraud and corruption and will provide a more efficient and fair business environment (L. Naidoo, V. Naidoo, & Ambe, 2017). Using the electronic procurement system allows you to monitor the flow of bids, prevent any attempt to abuse budget funds and create a level playing field in the public procurement market (Martin-Ortega, 2018).

Transparency and openness of public finances are one of the tools of combating corruption, since it provides users with reliable and timely information, contributes to the formation of a responsible government and prevents abuse by public finance authorities (Bukhtiarova & Kybenko, 2018).

Researchers such as Park and Blenkinsopp (2011), Alt and Lowry (2010), Hood and Heald (2006) and others have made a significant contribution to the study of the theory and practice of transparency. However, despite many public finance transparency studies, the issue of quantitative evaluation of the transparency of key public finance authorities remains open and requires further study.

Aims. Development of a methodology for assessing the institutional and political transparency of key public finance authorities in Ukraine and its practical application on the example of the Ministry of Finance and the State Fiscal Service of Ukraine.

2. METHODS

In today's environment, the need for a high level of transparency of public finance authorities and transparent government is indisputable. The difficulty lies in the lack of disclosure of information by public finance authorities and the plurality of information flows, among which a large number are unreliable, unclear to ordinary citizens or irrelevant.

In order to ensure maximum public sector openness in Ukraine, there is a USAID/UKAID Agency for Transparency and Accountability in Public Administration and Services aimed at providing financial support to the public and government to combat corruption in leading public services and services provided by these services. The project is aimed to build public confidence in the government by improving the quality of public administration services, demonstrating accountability and transparency in the activities of key public services. The result of the project is constant and favorable changes in the public administration and services sector the elimination of corruption abuses in three main areas: electronic services, open data and electronic public procurement system. Ukrainian experts are implementing the best world practices in these areas, working together with state and local authorities and citizens.

During the time of the project's existence in Ukraine there have been notable and successful changes in the public administration sector:

- 1) in the area of public procurement: all suppliers in the procurement system can receive contracts online, the government's procurement management process is constantly increasing, paper work is reduced, the process of monitoring dubious purchases is improved, and compliance with the law is improved due to competition in the small and medium economic growth in the open market, etc.;
- 2) in the area of open data: the authorities increase the amount of open information about their activities and services rendered, and citizens use such information to support the accountability of public finance authorities and their officials;
- 3) in the area of electronic services: a large number of public services can be provided by citizens online 24 hours a day; the essence of providing services is changed due to the reduction of the need for interaction of the population with employees of public finance authorities; positive changes are made in the process of combating corruption by reducing certain employees' public finance authorities.

The USAID/UKAID Transparency and Accountability Project in Public Administration and Services also serves as the main investor in the ProZorro electronic public procurement system. Electronic purchases are becoming more and more popular in the world. In turn, increasing transparency of public procurement procedures, according to some researchers, is the only way to reduce the level of corruption in this area, which is important for all countries without exception.

With the financial support of USAID/UKAID, the ProZorro system in 2018 successfully migrated all IT landscapes from Amazon Web Services (the largest public cloud in the world) to the De Novo G-Cloud data center in Ukraine and is currently continuing to function well. Such an event is exclusive in the IT industry, since Amazon has moved a record amount of information (50 terabytes and more than 30 million files) and modules that are necessary for the stable and efficient operation of the public procurement system. The need to migrate data from Amazon hosting came after ProZorro system became mandatory for all government customers. According to the Law of Ukraine "On the Protection of Information in Information and Telecommunication Systems" dated July 5, 1994, No. 80/94-VR, all data of the public procurement system should be placed in a data center in the territory of Ukraine.

With the launch of the electronic procurement system, there has been a significant increase in the transparency of the public finance sector, reflected in international rewards:

- 1) international Award to the Ministry of Economic Development and Trade of Ukraine for the development and implementation of an electronic system with a unique structure (London, May 18, 2016);

- 2) the ProZorro system became the winner of the Open Government Awards annual prize at the Open Government Partnership Summit (Paris, December 08, 2016);
- 3) the European Bank for Reconstruction and Development marked the ProZorro system as the recommended model for public procurement reform.

Therefore, today the ProZorro system is an open web portal that provides access to information on all electronic trading (from July 31, 2016) from the central database. The electronic procurement system plays an important role in the public administration process, since it contains data on the use of taxpayers' money by the state that are openly accessible to all citizens. Due to the openness of data and the transparency of the bids, confidence about the authorities of public procurement is growing, as well as the interaction between citizens, business representatives and public administration.

Besides the donation of the electronic public procurement system, the project "Transparency and accountability in public administration and services" has other notable achievements in the spheres of state and regional governance. One of such achievements is the implementation in Ukraine in 2017 of a program of training and exchange of ideas for representatives of central executive authorities – the Open Data Leaders Network. The purpose of the program is to disseminate the idea of open source data globally through the exchange of participants' experiences, as well as support their development and workflow (Kolodiziev, 2013).

In total, 34 leaders (representatives of central executive authorities and local government) who have completed a three-day training course have been prepared for three program cycles (2017–2019) and now can use the experience gained to develop open data in their public bodies. Representatives of the authorities shared their views on how open data could be used to improve the efficiency of the activities of state and local government bodies and institutions. Instead, the participants received communication and expert support for their own projects and plans, as well as new knowledge and experience of the best international practices in the area of open data.

One more significant achievement of the "Transparency and Accountability in public administration and services" project was developing of indicators for assessing the progress of central and local authorities in the area of open source data in order to increase transparency in the public sector.

The methodology and indicators for assessing the state of disclosure and updating of open data by information managers have been developed jointly with the Open North International Organization, taking into account all principles of the Open Data Charter: disclosure "by default", quantity and quality, maximum coverage of users, publication of data for the development of innovation and improve management efficiency. Following the editing in April 2019 of the Resolution "On Approval of the Regulation on Data Sets to be Released in the Form of Open Data" dated November 10, 2015, No. 835, a new methodology allows monitoring progress in disclosure of data of central executive authorities and local governments of Ukraine, which contributes to the increase the level of their transparency.

It is worth noting that at the state level, the term transparency includes three main components:

- 1) informative (availability and openness of data on the activities of public finance authorities and their officials);
- 2) participatory (the ability of the population, directly or through representatives, to participate in government decision-making processes and exercise public control);
- 3) accountability (observance of the norms of the current legislation and consideration of public opinion in the activities of public finance authorities).

In Ukraine, the transparency of state authorities is determined by such elements as: the existence of an adequate level of legislative framework for ensuring the transparent functioning of public finance authorities; the level of bureaucracy and corruption in the state apparatus; the state of development of information interaction of the state with the institutes of the public, etc. The imper-

fection of these elements is the cause of opacity, therefore, there is a need to increase the level of information openness of the activities of state authorities.

In order to determine the level of transparency in the evaluation of the activities of key public finance authorities, a specific list of indicators should be used (Table 1).

Table 1. The system of indicators for ensuring the level of transparency in the evaluation of the activities of key public finance authorities

1. General information	
1.1	Availability of information about the public finance authority
1.2	Presence of E-declarations management on the website of the public finance authority
1.3	Information about the structure and authority of the public finance authority
1.4	Publication of normative legal acts and other documentation
1.5	Official publication of the public finance authority
1.6	Publication of information on vacancies available to a public finance authority
1.7	Results of the selection for civil service positions
2. Information interaction with financial sector entities	
2.1	Ensuring public participation (availability of public council)
2.2	Placing on the site of the plans of consultations with the citizens
2.3	Publication of reports on the results of public discussion
2.4	Mutual information exchange with other public finance authorities
2.5	Exchange of information with relevant authorities of foreign countries (international cooperation)
3. Primary activity data	
3.1	Publication of annual reports on the activities of a public finance authority
3.2	Publication of semi-annual reports on the activities of the public finance authority
3.3	Publication of quarterly reports on the activities of the public finance authority
3.4	Publication of monthly reports on the activities of the public finance authority
3.5	Placement of the organization's strategy or plan for the next year
3.6	Disclosure of current information on government procurement
3.7	Open access to public information on the web-site of public finance authority
3.8	Regular reports on requests for public information
3.9	Publication of information on the unified state web portal of open data
3.10	Openness of aggregated performance indicators
3.11	List of projects initiated by the public finance authority and decisions on their implementation
3.12	Status of project financing initiated by a public finance authority
3.13	Information on the state of financing of the public finance authority's activities

4. Availability of additional information

4.1	Open access to contacts (address, phone, e-mail)
4.2	The presence of a public finance authority page in social networks
4.3	Additional e-services on the website of the public finance authority
4.4	Online tools for counseling site users
4.5	Availability of administrative services

5. Quality and security of published data

5.1	Quality of submission of statistical data
5.2	Visualization of data using graphic elements, infographics
5.3	Presentation of data in a format that can be verified using an automated information processing system
5.4	The level of information and software and technical security of the authority

The most effective and accessible tool for displaying the activities of any public finance authority is its official website. Therefore, the indicated system of indicators was developed based on monitoring of information of sites of leading public finance authorities of Ukraine and data of the unified state web portal of open data.

Calculation of the transparency index of public finance authorities should be carried out in stages by the following methodology.

Stage I. Definition for each of the five blocks indicated in Table 1, the system of indicators for assessing the level of transparency of the public finance authority and the introduction of their symbols (Table 2).

Table 2. Conditional indication of transparency indicators of the key public finance authorities

No.	Name	Indicator
1	General information	$X1_i$
2	Information interaction with financial sector entities	$X2_i$
3	Primary activity data	$X3_i$
4	Availability of additional information	$X4_i$
5	Quality and security of published data	$X5_i$

Stage II. Distribution of the number of points by the level of availability and completeness of information by such differentiation: the information is complete – 1 point; partial information – 0.5 points; no information available – 0 points.

Stage III. Definition for each indicator in the unit of gravity and symbols (Table 3).

Table 3. Conditional indication of the specific weight of indicators of transparency of the public finance authority

No.	Name	Weight of the indicator
1	General information	$J1_i$
2	Information interaction with financial sector entities	$J2_i$
3	Primary activity data	$J3_i$
4	Availability of additional information	$J4_i$
5	Quality and security of published data	$J5_i$

Stage IV. Providing for the calculation of the transparency index for each of the 5 blocks according to formulae 1-5:

$$Ind_1 = \sum_{i=1}^n \frac{X1_i \cdot J1_i}{100}, \quad (1)$$

$$Ind_2 = \sum_{i=1}^n \frac{X2_i \cdot J2_i}{100}, \quad (2)$$

$$Ind_3 = \sum_{i=1}^n \frac{X3_i \cdot J3_i}{100}, \quad (3)$$

$$Ind_4 = \sum_{i=1}^n \frac{X4_i \cdot J4_i}{100}, \quad (4)$$

$$Ind_5 = \sum_{i=1}^n \frac{X5_i \cdot J5_i}{100}. \quad (5)$$

Stage V. Determination of the specific gravity of each block in the overall definition of the level of transparency with the symbols indicated in Table 4.

Table 4. Conditional indication of the specific weight of the block in the overall assessment of the transparency of the public finance authority

No.	Name	Weight of the block
1	General information	q_1
2	Information interaction with financial sector entities	q_2
3	Primary activity data	q_3
4	Availability of additional information	q_4
5	Quality and security of published data	q_5

Stage VI. Formation of the transparency index of a public authority (formula 6):

$$Index_t = \sum_{i=1}^n \frac{1}{100} \cdot (Ind_1 \cdot q_1 + Ind_2 \cdot q_2 + Ind_3 \cdot q_3 + Ind_4 \cdot q_4 + Ind_5 \cdot q_5). \quad (6)$$

The developed transparency index of government bodies will have a significant practical value, as it will enable:

- 1) any subjects on a regular basis to evaluate and compare the openness of the activities of key public finance authorities;
- 2) to prevent corruption abuses and violations of the rights of the population to free access to information;
- 3) disseminate and develop the institution of openness among public finance authorities (and their officials), as well as increase the level of public awareness of their rights and opportunities in using public data;
- 4) regular calculations of the transparency index can become a prerequisite for bringing together the efforts of stakeholders and non-governmental organizations in increasing the openness of public bodies in public finance;
- 5) the digital data obtained as a result of index measurement can be used to develop recommendations for increasing the level of transparency of the activities of key state level bodies.

Transparency of public finance authorities should become one of the priority directions of state policy in Ukraine. Some steps have already been taken in this direction: the Law of Ukraine "On Access to Public Information" was adopted, and the formation of public councils whose representatives could participate in the work of ministries and other public finance authorities. The high level of information openness increases public confidence in the actions of the state apparatus, prevents the occurrence of corruption schemes and improves the image of any public finance authority.

Applying the results of the calculations of the proposed methodology for assessing transparency will enable the development of recommendations for the public activities of public finance authorities, which will increase the efficiency of the use of public resources.

3. RESULTS

For a quantitative assessment of the level of transparency of key public finance authorities, consideration should be given to the practical application of the model for determining the institutional and political transparency of the public finance area in terms of non-monetary component, as exemplified by the Ministry of Finance and the State Fiscal Service of Ukraine. The distribution of the number of points in the system of indicators (Table 5) was made using the information provided by the official bodies on the official sites of the state and the data of the unified state web portal of open data.

Table 5. Distribution of points in the system of indicators of transparency by the level of availability and completeness of information disclosed by the Ministry of Finance of Ukraine (MFU) and the State Fiscal Service of Ukraine (SFSU)

No.	Evaluation criteria	MFU	SFSU
1. General information			
1.1	Availability of information about the public finance authority	1	1
1.2	Presence of E-declarations management on the website of the public finance authority	1	0
1.3	Information about the structure and authority of the public finance authority	0	1
1.4	Publication of normative legal acts and other documentation	1	1
1.5	Official publication of the public finance authority	0	1
1.6	Publication of information on vacancies available to a public finance authority	1	1
1.7	Results of the selection for civil service positions	1	1
2. Information interaction with financial sector entities			
2.1	Ensuring public participation (availability of public council)	1	1
2.2	Placing on the site of the plans of consultations with the citizens	1	1
2.3	Publication of reports on the results of public discussion	0	1
2.4	Mutual information exchange with other public finance authorities	1	0.5
2.5	Exchange of information with relevant authorities of foreign countries (international cooperation)	1	1
3. Primary activity data			
3.1	Publication of annual reports on the activities of a public finance authority	0	0.5
3.2	Publication of semi-annual reports on the activities of the public finance authority	0	0.5
3.3	Publication of quarterly reports on the activities of the public finance authority	0	0
3.4	Publication of monthly reports on the activities of the public finance authority	0	0

3.5	Placement of the organization's strategy or plan for the next year	1	0.5
3.6	Disclosure of current information on government procurement	0.5	1
3.7	Open access to public information on the web-site of public finance authority	0	1
3.8	Regular reports on requests for public information	0.5	1
3.9	Publication of information on the unified state web portal of open data	0	1
3.10	Openness of aggregated performance indicators	0	0.5
3.11	List of projects initiated by the public finance authority and decisions on their implementation	1	0
3.12	Status of project financing initiated by a public finance authority	0	0
3.13	Information on the state of financing of the public finance authority's activities	0	0.5

4. Availability of additional information

4.1	Open access to contacts (address, phone, e-mail)	1	1
4.2	The presence of a public finance authority page in social networks	1	1
4.3	Additional e-services on the website of the public finance authority	0	1
4.4	Online tools for counseling site users	0.5	0
4.5	Availability of administrative services	0	1

5. Quality and security of published data

5.1	Quality of submission of statistical data	0.5	0.5
5.2	Visualization of data using graphic elements, infographics	0.5	0.5
5.3	Presentation of data in a format that can be verified using an automated information processing system	0	0
5.4	The level of information and software and technical security of the authority	0.5	0.5

Initially, using the Microsoft Excel spreadsheet process, interim calculations are performed (the number of points for each transparency indicator is entered and we find their relative weight in the corresponding block). For convenience, it is advisable to use the symbols proposed in Tables 2-4. The result of calculations is shown in Table 6.

Table 6. Output data for the calculation of the transparency index

No.	Ministry of Finance of Ukraine		State Fiscal Service of Ukraine	
	Scores (X)	Weight (J)	Scores (X)	Weight (J)
1. General information				
1.1	1	14.29	1	14.29
1.2	1	14.29	0	0.00
1.3	0	0.00	1	14.29
1.4	1	14.29	1	14.29
1.5	0	0.00	1	14.29
1.6	1	14.29	1	14.29
1.7	1	14.29	1	14.29

Table 6 (cont.). Output data for the calculation of the transparency index

No.	Ministry of Finance of Ukraine		State Fiscal Service of Ukraine	
	Scores (X)	Weight (J)	Scores (X)	Weight (J)
2. Information interaction with financial sector entities				
2.1	1	20.00	1	20.00
2.2	1	20.00	1	20.00
2.3	0	0.00	1	20.00
2.4	1	20.00	0.5	10.00
2.5	1	20.00	1	20.00
3. Primary activity data				
3.1	0	0.00	0.5	3.85
3.2	0	0.00	0.5	3.85
3.3	0	0.00	0	0.00
3.4	0	0.00	0	0.00
3.5	1	7.69	0.5	3.85
3.6	0.5	3.85	1	7.69
3.7	0	0.00	1	7.69
3.8	0.5	3.85	1	7.69
3.9	0	0.00	1	7.69
3.10	0	0.00	0.5	3.85
3.11	1	7.69	0	0.00
3.12	0	0.00	0	0.00
3.13	0	0.00	0.5	3.85
4. Availability of additional information				
4.1	1	20.00	1	20.00
4.2	1	20.00	1	20.00
4.3	0	0.00	1	20.00
4.4	0.5	10.00	0	0.00
4.5	0	0.00	1	20.00
5. Quality and security of published data				
5.1	0.5	12.50	0.5	12.50
5.2	0.5	12.50	0.5	12.50
5.3	0	0.00	0	0.00
5.4	0.5	12.50	0.5	12.50
Σ	16	X	22.5	X

The next step involves calculating the transparency index for each of the 5 blocks, using formulae 1-5. The calculated index values are given in Table 7.

Table 7. Indicators of transparency of the Ministry of Finance of Ukraine and the State Fiscal Service of Ukraine

Transparency index	Ind ₁	Ind ₂	Ind ₃	Ind ₄	Ind ₅
Ministry of Finance of Ukraine	0.7143	0.8000	0.1923	0.4500	0.1875
State Fiscal Service of Ukraine	0.8571	0.8500	0.4038	0.8000	0.1875

Next, there is a need to find the specific weight of each block in the overall definition of the level of transparency (Table 8).

Table 8. Specific weight of each block in the overall definition of the level of transparency of the Ministry of Finance of Ukraine and the State Fiscal Service of Ukraine

Weight of the block (q)	1	2	3	4	5	Σ
Ministry of Finance of Ukraine	31.25	25.00	18.75	15.63	9.38	100
State Fiscal Service of Ukraine	26.67	20.00	28.89	17.78	6.67	100

After obtaining all necessary data for calculation, in MS Excel, it is possible to calculate the general transparency index (by the formula 6), the value of which for the Ministry of Finance of Ukraine (MFU) is 0.5472, and for the State Fiscal Service of Ukraine (SFSU) – 0.67. That is, the calculated indices indicate that 54.72% of the Ministry of Finance information and 67% of the State Fiscal Service data are freely available and open to the public.

In order to identify shortcomings and develop recommendations for improving the transparency of the reviewed public finance authorities, more detailed data should be analyzed. The transparency index of the Ministry of Finance shows that this authority only publishes a little more than half of the required information, while the rest is unavailable. The most closed is the information on the “Data on the main activity” block and the “Quality and safety of the published data” block. This is because the site does not publish activity reports, and all budget statistics in recent years filed in an awkward format. It would be advisable to submit it on a monthly, quarterly and yearly basis (at least for the last 5 years). Information on government procurement is also posted on the site, but it does not contain data for the last 3 years (the latest MFU procurement plan for 2015 is available). There is no information on the state of financing of the public finance authority activity at all.

Another negative aspect in disclosing MFU information is the complete lack of data on the unified state public data portal, and on the site itself, there is an inactive hyperlink “Searching for Public Information”. All this is a violation of the Law “On Access to Public Information”.

About the quality of data submission, budget statistics are fed into an inappropriate for analysis PDF format. Visually the information displayed is available using tables, charts, histograms, but it's best to place it in XLS format.

The level of information and software and technical security of the IFI is also imperfect. During December 6-7, 2016, a professional hacker attack continued the site's website. As a result, the work of departmental accounting and payment systems – e-administration systems of VAT and excise tax notes, and the system of customs payments was stopped. There were suspended financial settlements with the state, taxpayers suffered losses and could receive a fine and fines for late payment. Therefore, measures to restore and improve the reliability of the functioning of the information and telecommunication system of the IFI should be carried out more often.

The high level of transparency was shown by the "General Information" and "Information Interaction with Financial Sectors" blocks of 71.43% and 80%, respectively. In these blocks, among the shortcomings, there was revealed the lack of an official publication of the MFU's and published reports with the results of public discussion.

The transparency index of the State Fiscal Service of Ukraine is comparatively better, where 67% of the information is publicly available. The values of the transparency indicators of the General Information, "Information Interaction with Financial Sector Entities" and "Accessibility of Additional Information" blocks from 80 to 85% are positive. Instead, most of the miscalculations were detected in the "Data on main activity" and "Quality and safety of published data" blocks.

SFSU publishes only annual and semi-annual reports. They have a fragmentary nature, focusing only on positive aspects of the authority's activi-

ty, that is, objectively assessing the activities of the authority based on the data placed on the site is impossible. In addition, the reports do not include the dynamics of indicators over the last few years (actual figures are compared with the plans), and digital data is not presented in tabular form. On the site of the SFSU there are plans for the service, but only for the next six months.

There are some aggregated indicators in the closed access: taxes and fees by type of economic activity and regions, the dynamics of the number of taxpayers, the amount of losses from overpayments of taxes, tax privileges, tax debts, the balance of non-recoverable amounts of VAT, etc. (Kolodiziev, 2013).

Data on the financing of SFSU units are posted on the site's website on a monthly basis, but they do not allow a realistic assessment of fiscal policy at either the local or national level.

Most statistics of the SFSU are presented in a text format, while it would be more convenient to place them in the form of Microsoft Excel tables. In addition, graphics and infographic elements are hardly used, which complicates the perception of posted information. Therefore, it is worth working on its visual design.

There are shortcomings and safety of published data. From 6 to 11 December, due to a failure in the work of the automated information management system "Document Management", approximately 531,000 electronic documents and resolutions, 26,000 data in registration cards, 4,100 registration cards, 3,100 control cards, etc. The reasons for such a failure are the obsolete and inability to provide proper conditions for the location of equipment and servers and the inadequate level of information security. Therefore, SFSU needs to implement measures aimed at improving information security systems, software and hardware setup, increasing the number of new servers and streamlining structured data.

CONCLUSION

Thus, the methodology determined by the transparency index of public finance authorities is important from a practical point of view, since it enables them to evaluate their activities based on the availability of complete, reliable, relevant and understandable information on the management, structure, func-

tions of public finance authorities, information interaction with other actors, about realization of the main activity, availability of additional data, etc. In addition, regular index calculations will make it possible to compare openness of key public finance authorities, observe the dynamics of changes in the level of transparency, identify weaknesses in disclosure of information by key public finance authorities and develop ways to address them.

With the help of the developed methodology, the transparency index of the leading public finance authorities in Ukraine was calculated. For the Ministry of Finance of Ukraine, the index value is 54.72%, that is, the given state structure publishes only a little more than half of the required information. The information on the “Data on the main activity” block and the “Quality and safety of the published data” block is the least accessible. According to these same blocks, the information of the State Fiscal Service of Ukraine is the least open, although the transparency index itself is higher and makes up 67%. That is, there are shortcomings in the disclosure of information about the main activity and in its presentation, as well as some miscalculations in ensuring the proper level of information and software and technical security of key public finance authorities in Ukraine.

It should be noted that the proposed methodology is not exhaustive and may be modified and supplemented considering the specifics of the activity of the investigated public finance authority. Therefore, further scientific research and testing of the methodology in practice are necessary.

ACKNOWLEDGEMENT

The investigation performed under the state budget research of Sumy State University 0118U003585 “Formation of the system of transparency of public finances as a prerequisite for combating corruption in Ukraine”.

REFERENCES

- Alt, J., & Lowry, R. (2010). Transparency and Accountability: Empirical Results for Us States. *Journal of Theoretical Politics*, 22(4), 379-406. <https://doi.org/10.1177/0951629810375641>
- Balkin, J. M. (1999). *How Mass Simulate Political Transparency*. Retrieved from https://digitalcommons.law.yale.edu/fss_papers/259/
- Bukhtiarova, A. H., & Kibenko, E. O. (2018). Інноваційні програми забезпечення прозорості публічних фінансів [Innovatsiini prohramy zabezpechennia prozorosti publichnykh finansiv]. *Economics and society*, 16, 694-699. Retrieved from <http://economyandsociety.in.ua/journal-16/23-stati-16/2059-bukhtiarova-a-g-kibenko-e-o>
- Buriak, A. V., Tsiavuk, A. O., & Yemtseva, K. Yu. (2017). Теоретичні аспекти прозорості банків України [Teoretychni aspekty transparentnosti bankiv Ukrainy]. *Bulletin of the Odessa National University*, 22(4), 97-101. Retrieved from http://nbuv.gov.ua/UJRN/Vonu_econ_2017_22_4_22
- East Europe Fondation (2019). ФСЕ шукає інноваційних лідерів серед міст України для участі в Open Data Leaders Network [FSE shukaye innovatsiinykh lideriv sered mist Ukrainy dlia uchasti v Open Data Leaders Network]. Retrieved from <http://eef.org.ua/fsye-shukaye-innovatsiinykh-lideriv-sered-mist-ukrayiny-dlya-uchasti-v-open-data-leaders-network/>
- Financial club (n.d.). Система ProZorro оценили в ЕБРР [Sistemu Prozorro otsenili v EBRR]. Retrieved from <https://finclub.net/news/sistemu-prozorro-otsenili-v-ebr.html>
- Gasanov, S. S. (2017). Підвищення рівня прозорості та функціональності державних фінансів в умовах структурних реформ [Pidvyshchennia rivnia transparentnosti ta funktsionalnosti derzhavnykh finansiv v strukturnykh reformakh]. *Finance of Ukraine*, 8, 7-32. Retrieved from http://nbuv.gov.ua/UJRN/Fu_2017_8_3
- Government portal (2016). ProZorro отримала престижну міжнародну премію Open Government Awards 2016 [ProZorro otrymala prestyzhnu mizhnarodnu premiiu Open Government Awards 2016]. Retrieved from <https://www.kmu.gov.ua/ua/news/249566015>
- Gricuk, I. Ju. (2013). Финансовая отчетность консолидированных групп как фактор прозрачности бизнеса [Finansovaya otchetnost kon-

- solidirovanykh grupp kak faktor transparentnosti biznesa]. *Poles State University*, 86-88. Retrieved from <http://rep.polesu.by/bitstream/112/2075/1/38.pdf>
10. Hood, Ch., & Heald, D. (2006). Transparency in historical perspective. In *Transparency: The Key to Better Governance* (pp. 3-23). Oxford: Oxford University Press. <http://dx.doi.org/10.5871/bacad/9780197263839.003.0001>
 11. Interfax-Ukraine news agency (2018). *ProZorro завершила міграцію всіх IT-ландшафтів із США до України, та анонсує істотне розширення* [ProZorro zavershyla mihratsiuiu vsikh IT-landshaftiv iz SSHA do Ukrainy, ta anonsue istotne rozshyrenia]. Retrieved from <https://ua.interfax.com.ua/news/economic/507845.html>
 12. Ivasiv, I. V. (2011). Місце і роль відкритості та прозорості у банківській діяльності [Mistse i rol vidkrytosti ta prozorosti u bankivskii diialnosti]. *Economic Sciences*, 8, 174-186. Retrieved from http://nbuv.gov.ua/UJRN/ecnof_2011_8_26
 13. Kolodiziev, O. M. (2013). Формування багаторівневої системи показників фінансування інноваційної діяльності [Formuvannia bahatorivnevoi systemy pokaznykiv finansuvannia innovatsiinoi diialnosti]. *Aktualni problemy ekonomiky*, 8(146), 32-44. Retrieved from http://nbuv.gov.ua/UJRN/ape_2013_8_5
 14. Kruk, N. V. (2017). Інформаційна відкритість державної влади як інституційна гарантія основних принципів демократичної держави [Informatsiina vidkrytist derzhavnoi vlady yak instytutsiina harantiia osnovnykh pryntsyviv demokratychnoi derzhavy]. *Politykus*, 2, 91-94. Retrieved from http://nbuv.gov.ua/UJRN/polit_2017_2_22
 15. Martin-Ortega, O. (2018). Public Procurement as a Tool for the Protection and Promotion of Human Rights: A Study of Collaboration, Due Diligence and Leverage in the Electronics Industry. *Business and Human Rights Journal*, 3(1), 75-95. <https://doi.org/10.1017/bhj.2017.35>
 16. Naidoo, L., Naidoo, V., & Ambe, M. (2017). Open Contracting: a new frontier for information disclosure in public procurement. *Public and Municipal Finance*, 6(1), 24-36. [http://dx.doi.org/10.21511/pmf.06\(1\).2017.03](http://dx.doi.org/10.21511/pmf.06(1).2017.03)
 17. National Institute for Strategic Studies (2017). *Basic principles of using and accessing of public information in the form of open data: foreign experience for Ukraine* (Analytical note, 32). Retrieved from <http://www.euroosvita.net/index.php/?category=1&id=4889>
 18. Park, H., & Blenkinsopp, J. (2011). The roles of transparency and trust in the relationship between corruption and citizen satisfaction. *International Review of Administrative Sciences*, 77(2), 254-274. <https://doi.org/10.1177/0020852311399230>
 19. Press service of the State Fiscal Service of Ukraine (2016). *Інформаційні системи ДФС працюють у штатному режимі* [Informatsiini systemy DFS pratsiuiut u shtatnomu rezhymi]. Retrieved from <http://sfs.gov.ua/media-tsentr/novini/245619.html>
 20. Shkolnyk, I., Bukhtiarova, A., & Horobets, L. (2018). The efficiency of electronic public procurement system in Ukraine. *Public and Municipal Finance*, 7(3), 43-55. [http://dx.doi.org/10.21511/pmf.07\(3\).2018.05](http://dx.doi.org/10.21511/pmf.07(3).2018.05)
 21. Shkolnyk, I., Melnyk, T., & Merzhchii, B. (2018). Transparency of the budget process as a prerequisite for financial decentralization in Ukraine. *Public and Municipal Finance*, 7(1), 12-20. [http://dx.doi.org/10.21511/pmf.07\(1\).2018.02](http://dx.doi.org/10.21511/pmf.07(1).2018.02)
 22. Stetsenko, B. S. (2017). Транспарентність як ключовий фактор розвитку інституційної фінансової інфраструктури в Україні [Transparentnist yak klyuchoviy faktor rozvytku instytutsiinoi finansovoi infrastruktury v Ukraini]. *Business-Navigator*, 4(2), 129-133. Retrieved from http://nbuv.gov.ua/UJRN/bnav_2017_4_2_28
 23. The official site of National Bank of Ukraine (n.d.). *Transparency*. Retrieved from https://bank.gov.ua/control/uk/publish/article?art_id=123690
 24. The official site of TAPAS Project (n. d.). *Transparency and accountability in public administration and services*. Retrieved from <http://tapas.org.ua/>
 25. The official site of World Bank (2015). *Transparency in Public Finance*. Retrieved from <http://www.worldbank.org/en/topic/governance/brief/transparency-in-public-finance>
 26. The only public web portal for open data (2019). *Представники влади 9-ти міст України приєдналися до Національної мережі лідерів з розвитку відкритих даних* [Predstavnyky vlady 9-ty mist Ukrayiny pryednalsia do Natsionalnoi merezhi lideriv z rozvytku vidkrytykh danykh]. Retrieved from <https://data.gov.ua/blog/predstavnyky-vlady>
 27. Tikhomirova, E. (2002). Transparency and openness of the authorities' activities and ways of ensuring them. *Proceedings. NaUKMA. Politology*, 20, 39-43. Retrieved from <http://ekmair.ukma.edu.ua/handle/123456789/9038>
 28. Tikhomirova, E., & Stoliaruk, A. (2017). Технології забезпечення транспарентності державної влади України [Tekhnolohii zabezpechennia transparentnosti derzhavnoi vlady Ukrainy]. *International relations, public communications and regional studios*, 1, 125-136. Retrieved from http://nbuv.gov.ua/UJRN/mvckrc_2017_1_15
 29. Ukrinform (2017). *The ProZorro system hit the World Procurement Awards 2017 for the second time*. Retrieved from <https://www.ukrinform.ua/rubric-economy/2178409-prozorro-vdruge-potrapila-do-sortlista-world-procurement-awards-2017.html>
 30. UNIAN news agency (2016). *Мінфін повідомив про проблеми з платежами Держказначейства після хакерської атаки* [Minfin povidomyv pro problemy z platezhamy Derzhkaznacheistva

- pislia khakerskoi ataky*]. Retrieved from <https://economics.unian.ua/other/1666452-minfin-povidomiv-pro-problemi-z-platejami-derjkaznacheystva-pislya-hakerskoji-ataki.html>
31. Vasilyeva, T., Shkolnyk, I., & Mershchii, B. (2018). Transparency of Ukrainian budgetary policy, modern problems. *Financial research*, 1(4). Retrieved from <http://ir.stu.cn.ua/bitstream/handle/123456789/17084/%D0%92%D0%B0%D1%81%D0%B8%D0%BB%D1%8C%D1%94%D0%B2%D0%B0%20%D0%A2.%20%D0%90..pdf?sequence=1&isAllowed=y>
32. Вуннученко, Н. В. (2017). Проблеми забезпечення транспарентності бюджетного процесу в Україні [Problemy zabezpechennia transparentnosti biudzhethnoho protsesu v Ukraini]. *Business-Navigator*, 3, 127-133. Retrieved from http://nbuv.gov.ua/UJRN/bnav_2017_3_29