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Transparency and trust in the public sector: Target and benchmarks to ensure macroeconomic stability

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Abstract. The article is devoted to the study of the relationship between a country's macroeconomic stability and the level of transparency and public trust in the financial sector and public authorities. Canonical analysis and structural modeling served as methodological tools of the research. The study examined the data from eight EU countries (Austria, Latvia, Lithuania, Poland, Romania, Slovakia, Slovenia, Hungary, Czech Republic, and Italy) over the 2011-2021period. Eight indicators of public sector transparency and one indicator of the degree of public trust (Consumer Sentiment Index) were chosen to establish the relationship between the components. The results of structural modeling proved that public trust has a much greater impact on macroeconomic stability than indicators of public sector transparency. A 1-point increase in public trust leads the GDP to

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increase by 0.018% and the stability of the currency exchange rate – by 0.352%. Meanwhile the same effect from a 1-point increase in the level of public sector transparency amounts to 0.061% and 0.021% increases, respectively.

Keywords: public sector, public trust, transparency, macroeconomic stability, financial sector.

JEL Classification: D01, E6, E71, F63

1. INTRODUCTION

The public sector is the component of the economy related to the development and implementation of state policy, modern measures to counter crises and imbalances in the economy, stabilization of key indicators of the country's development, and provision of services to the population. The stability and efficiency of the public sector are the key to the economy's ability to withstand shocks, return to an equilibrium state, and develop effectively, while a weak and underdeveloped public sector leads to the decline of the economy and its stagnation (Fertö et al., 2022; He et al., 2021; Janovac et al., 2023; Kuzmenko et al., 2023; Moskalenko et al., 2022; Tkacova et al., 2023).

Trends in the development of the world economy in recent years indicate a significant level of its uncertainty and variability (the crises of 2008-2009, 2014-2015, 2022). The economic recession in most countries of the world was triggered by the COVID-19 pandemic, which was accompanied by a decrease in GDP (more than 4%), bankruptcy and liquidation of many companies, rise in prices for certain groups of goods and services, deterioration of the development indicators of the world stock market (the lowest since financial crisis of 2007-2008), withdrawal of a significant share of funds from the economy and its reallocation to combating the consequences of the pandemic, etc. (Hejduková & Černá, 2022; Pramesti et al., 2022).

These processes were only intensified by the full-scale war in Ukraine that began in 2022, accompanied by mass migration of the population, significant destruction of architecture, and closure of businesses. Thus, 2022 saw one of the largest reductions in the volume of real GDP in the history of Ukraine (over 29%), and the losses of financial market participants from disruptions in their operational activities threatened most of them with bankruptcy (Niftiyev, 2023; Tkacova & Gavurova, 2023).

On the one hand, this is due to the low efficiency of the work of individual world and state institutions, and on the other hand, the presence of structural disproportions in the economy, a high level of inflation and corruption. The crisis in the economy is deepened by the lack of close and stable ties between state institutions and society, the consequence of which is a constant decrease in public trust. Thus, according to the United Nations (2021), in recent years, there has been a noticeable decrease in institutional trust in developed countries. In the United States, trust in government has fallen from 73% in 1958 to 24% in 2021. In Western Europe, since the 1970s, there has been a steady decline in the level of public trust. The level of trust in financial institutions has decreased by an average of nine percentage points (from 55% to 46%), and trust in political parties in the countries of the European Union ranges from 15 to 20% on average. This problem is especially relevant in countries with low and medium levels of economic development, in which constant corruption scandals and low efficiency of democracy have been undermining public trust in government institutions for years.

In these conditions, one of the components of the stabilization of the country's economic development indicators is an increase in the level of public trust in the government and financial institutions, which is associated with an increase in the amount of international support for the country, foreign investments, and the amount of population deposits.

2. LITERATURE REVIEW

Despite significant scientific progress, the issues of the influence of public trust on indicators of the macroeconomic stability of the country, the determination of strategic priorities for the development of the economy in the conditions of a crisis of public trust, and the improvement of mechanisms for increasing the level of public trust in certain state institutions are still unresolved.

The concept of macroeconomic stability is a complex, multifaceted category, characterized by a multi-level structure, the presence of complex multilateral relationships, complexity and certain uncertainty of functioning conditions. A significant list of objects and subjects of management significantly complicates the procedures for managing macroeconomic stability, ensuring the coherence of the functioning of its individual components, delimiting functions and powers between its institutions and, in general, reduce the effectiveness of its functioning (Kot & Paradowski, 2022; Litovseva et al., 2022; Kharazishvili & Kwilinski, 2022; Lyeonov et al., 2021a; Mendoza et al., 2022; Piecha et al., 2022; Tahat, 2023; Tkacova, 2023; Valaskova & Nagy, 2023; Van de Walle & Bouckaert, 2007).

The analysis of the structure of macroeconomic stability proves the complexity of the study of this category, which is due to the presence of close explicit and latent relationships between its individual elements, the influence of a number of exogenous and endogenous factors, and the complexity of reform procedures.

Numerous studies have identified public trust in state institutions and other people as a key factor of social and economic progress in the country and ensuring its stability (Aliyev, 2022; Aliyev & Gasimov 2023; Houston, 2013; Kuráth et al, 2023; Zimaitis et al, 2022; Gentsoudi, 2023). Aliyev & Gasimov (2023) argue that any development is possible only in the presence of public trust, while mistrust has clear negative consequences for the well-being of the population.

Sangnier (2013) used illustrative modeling to investigate the relationship between trust and macroeconomic volatility. Based on the results of the analysis, it was concluded that public trust weakens credit restrictions and reduces the pro-cyclicality of investments. In addition, the author proves that higher public trust is associated with lower macroeconomic volatility in the country. At the same time, the author does not find clear evidence that an increase in confidence is associated with a decrease in macroeconomic instability.

Brychko et al. (2020) using the method of structural equation modeling empirically confirmed that the aggravation of the crisis of confidence in the financial sector without the application of regulatory measures harms the macroeconomic stability of the country. The authors proved that the transmission channels of the monetary policy mechanism and the developed financial sector mitigate the harmful effects of deepening the crisis of confidence in the financial sector and lead to an increase in indicators of macroeconomic stability.

According to some scientists (Bok, 2001; Le Grand, 2007), the catalyst for reforming the public sector is often the lack of public trust in public institutions. Most public services are inefficient, wasteful and do not consider the needs and wishes of citizens. This, in turn, leads to a loss of public trust in the state and dissatisfaction with the government's actions.

Van de Walle (2013) believes that the reason for the low trust in the public sector is the growing gap between the services that the government provides to the population and the demands that the communities make for them. This can be caused by two factors: the government does not offer the services that citizens want; the government offers poor quality services.

At the same time, a separate group of scientists (Van de Walle & Van Ryzin, 2011; Cowell et al., 2012) believes that the level of public trust in individual institutions is different. Individual public services are among the most trusted institutions (schools, the health care system or the fire service), and their employees

enjoy the most trust in society. At the same time, citizens tend to have low trust in institutions such as public administration, civil servants or bureaucrats.

Van Ryzin (2011) emphasizes that trust in public services largely depends on the process of service delivery, and not only on the results of society's interaction with public institutions. According to Houston & Howard Harding (2013), Marlowe (2004), the determining factors in the formation of public trust in the public sector are the previous experience of interaction with it and the general attitude towards other institutions and the government.

Kim (2005) singled out 16 components of the formation of trust in the public sector, in particular: credible commitment, ability, competence, benevolence, cooperation, concern for others, responsiveness, communication, openness, promise fulfillment, not taking advantage of another (limited opportunism), ethical behavior, equal treatment, predictability, accountability, reliability.

An important factor in the formation of public trust in the public sector is the transparency of the authorities (Park and Blenkinsopp, 2011; Bozhenko et al., 2023; Zakharkin et al., 2022; Burlaka et al., 2019; Daubaraite-Radikiene & Startine, 2022; Halicka & Surel, 2022; Krajčík et al., 2023; Kuzior, 2022; Kwilinski et al., 2020).

Alessandro et al. (2021) claim that the provision of information to citizens is of great importance for the formation of their favorable perception of the transparency of public authorities, and the content of this information is a determining factor in the formation of society's assessment of government activity. The population for providing services to which the government has over-delivered on its promises has much more trust in the government.

Grimmelikhuijsen et al. (2013), based on the results of a comparative analysis of the impact of transparency on trust in the government in the Netherlands and South Korea, found similar patterns in both countries: transparency has a weak and sometimes negative effect on trust in the government. At the same time, the negative impact is much stronger in South Korea than in the Netherlands. Thus, the authors concluded about the decisive role of national cultural values in the perception and evaluation of government transparency by the population.

The active use of e-government tools in all areas of public administration contributed to faster provision of information by the government about its activities (Zimaitis et al, 2022; Zechmeister & Lupu, 2019; Midor at al., 2021; Maile & Vyas-Doorgapersad, 2023; Lyeonov et al., 2020; Lyeonov et al, 2021b). According to Cassese et. al. (2007) government transparency, which includes the publication through websites as service points of information on the provision of communal services, the involvement of citizens in the preparation of the budget and the formation of the most priority items for spending funds, informing about the distribution and spending of budget funds through electronic procurement are formed in society's perception of state institutions as competent structures. This, in turn, contributes to increasing the level of trust in the government.

A separate group of scientists consider the intensification of the use of technological innovations in the context of increasing the level of public trust in the authorities as a result of improving the financial and institutional component of state policy (Kliuchnikava, 2022; Kuzior et al., 2022; Wang et al., 2022; Aden Dirir, 2023).

German-Soto et al. (2021), based on the construction of an interregional dynamic panel model, proved that the impact of technological innovations on a country's economic growth and the level of public trust in its government differs depending on the region to which the country belongs and the sector of the economy. In addition, the authors substantiated the presence of different effects from the introduction of state support for innovations in regions with different degrees of economic development. In less economically developed regions, dependence is significantly higher compared to regions with a high level of development.

Wang et al. (2022) based on the data of 30 Chinese provinces for 2011-2019, based on the improved super-efficient SBM-DEA model, determined the driving factors of technological innovation efficiency. Based on the results of the study, the authors concluded that significant differences in the effectiveness of the use of technological innovations in different regions are due to differences in the implementation of the government's strategy for the revival of science and the stimulation of innovations in these regions. The most influential drivers of the growth of the effectiveness of technological innovations include: the degree of regional openness, the level of public trust, the intensity of market competition, state support, and the level of entrepreneurship of enterprises.

Thus, the results of the analysis of publications on the impact of public trust on the macroeconomic stability of the country and the role of transparency in ancient processes proved the ambiguity of the understanding of the relationship between them.

This paper aims to investigate the relationship between transparency and trust in the public sector as benchmarks to ensure macroeconomic stability.

3. METHODOLOGY

The results of the analysis of the structure and economic content of the macroeconomic stability of the country indicate that the issue of public trust formation should be considered at three levels: state, corporate, and household level and in relation to the components of ensuring the effectiveness of public sector functioning.

The data of the World Bank, the European Commission and the Organization for Economic Cooperation and Development are the information base of the research. The object of the study is data from eight EU countries (Austria, Latvia, Lithuania, Poland, Romania, Slovakia, Slovenia, Hungary, Czech Republic, Italy), the study period is 2011-2021.

Eight indicators were used as indicators determining the transparency of the public sector: Digital Economy and Society Index (DESI), Digital Evolution Index. (DEI), Digital Technology Adoption Index (DAI), Information and Communication Technology Development Index (IDI), Global Innovation Index (GII); Network Readiness Index (NRI), Economy Digitalization Index (eInt), World Digital Competitiveness Index (WDCI).

Indicators characterizing the level of public trust in the public sector include Consumer Sentiment Index (CSI), which is determined monthly by the monitoring company Trading Economics through a sample survey of households. This indicator characterizes trust in the financial sector and the public sector based on the analysis of consumer attitudes of the population. Index values range from 0 to 200.

Macroeconomic stability will be characterized by the following indicators: GDP, COR - level of corruption, OER - stability of the national currency, TR - stability of tax revenues (Gajdosova, 2023; AL-Mutairi et al., 2023; Bartkute et al., 2023; Ben Amor, 2023; Bozhenko, 2022; Dankiewicz et al., 2022; Linhartová & Halásková, 2022).

The formalization of the relationship between indicators will be carried out using the structural modeling method. The study of the influence of the levels of transparency and public trust in the financial sector and public authorities on indicators of the country's macroeconomic stability will be carried out using canonical analysis. The use of this method is due to the need to consider the variability of the analyzed indicators and comply with the condition of multi-criteria review.

To increase the reliability of the obtained results and to ensure comparability of the data array, the leveling of the absence of data in individual years will be carried out using the extrapolation method.

Bringing the array of data to a comparable form (a single unit of measurement) will be carried out using the Z-normalization method. The basis of this method is the weighting of the deviation of the actual value

of the indicator from its average value (the average value of all values is 0, and the standard deviation is 1) according to the following formula:

$$a_i = \frac{a_{in} - \overline{a_i}}{\sigma_{a_i}} \quad (1)$$

where a_i is the standardized value of the i-th indicator in country n; a_{in} is the actual value of the i-th indicator in the section of country n; $\overline{a_i}$ is the average arithmetic value of the i-th indicator for the entire set of countries; σ_{a_i} is an average squared deviation of the i-th indicator for the entire population of countries..

The formalization of the dependence between the levels of transparency and public trust in the financial sector and public authorities and indicators of the country's macroeconomic stability will be carried out using the canonical analysis model:

$$a_1x_1 + a_2x_2 + \cdots + a_ix_i = b_1y_1 + b_2y_2 + \ldots + b_my_m \quad (2)$$

where x_i are sets of variables corresponding to indicators of macroeconomic stability of the country; y_m are sets of variables corresponding to the levels of transparency and public trust in the financial sector and public authorities, a_i, b_m are weighting factors.

The number of roots of the canonical model will be equal to the minimum number of variables from the left and right sides of the equation (4 canonical roots – the minimum value among 9 variables corresponding to the levels of transparency and public trust in the financial sector and public authorities and 4 variables characterizing the country's macroeconomic stability). The number of roots will be determined by maximizing the correlation value for the matrix:

$$A = (\mathrm{A}_{11}\mathrm{A}_{12}\mathrm{A}_{21}\mathrm{A}_{22}) \quad (3)$$

$$B = {A_{11}}^{-1}A_{12}{A_{22}}^{-1}A_{21} \quad (4)$$

where A_{11} is the correlation matrix of 4 variables (4 rows and 4 columns) characterizing the country's macroeconomic stability; A_{22} is the correlation matrix of 9 variables (9 rows and 4 columns) characterizing the levels of transparency and public trust in the financial sector and public authorities;; $\mathrm{A}_{21,}\ \mathrm{A}_{12}$ are the correlation matrices of mutual correlation of indicators of macroeconomic stability of the country and levels of transparency and public trust in the financial sector and public authorities, ${\mathrm{A}_{11}}^{-1}$, ${\mathrm{A}_{22}}^{-1}$ are inverse matrices for $\mathrm{A}_{11}, \mathrm{A}_{22}$ respectively.

At the last stage of the research, structural modeling will be used to determine the relationship between the levels of transparency and public trust in the financial sector and public authorities and indicators of macroeconomic stability. The advantages of using this model are the possibility of testing several parallel hypotheses simultaneously and taking into account the entire set of relationships between them.

$$\begin{cases} GDP = a_1 MES + \delta_1, \\ COR = a_2 MES + \delta_2, \\ OER = a_3 MES + \delta_3, \\ TR = a_4 MES + \delta_4, \\ CSI = a_5 Trust + \varepsilon_1, \\ DESI = a_6 Trans + \varepsilon_2, \\ DEI = a_7 Trans + \varepsilon_3, \\ DAI = a_8 Trans + \varepsilon_4, \\ IDI = a_9 Trans + \varepsilon_5, \\ GII = a_{10} Trans + \varepsilon_6, \\ NRI = a_{11} Trans + \varepsilon_7, \\ eInt = a_{12} Trast + \varepsilon_8, \\ WDCI = a_{13} Trast + \varepsilon_9, \\ GDP = a_{13} Trust + a_{14} Trans + z_1, \\ COR = a_{15} Trust + a_{16} Trans + z_2, \\ OER = a_{17} Trust + a_{18} Trans + z_3, \\ TR = a_{19} Trust + a_{20} Trans + z_3, \end{cases} \quad (5)$$

where $a_i, i = 1…14$ are unknown coefficient, $\delta_i,\ z_i, \varepsilon_i$ are free coefficients of the equations of the system of structural equations.

4. EMPIRICAL RESULTS AND DISCUSSION

Canonical analysis serves as a prerequisite for formalizing the relationship between the macroeconomic stability of the country and the level of transparency and public trust in the financial sector and public authorities. The canonical results shown in Table 1 indicate the presence of a strong statistically significant relationship between the data series. Thus, the value of the canonical correlation coefficient and the value of the Pearson test are sufficiently high (0.8654 and 865.45, respectively) at the level of statistical significance p=0.0000 (less than the critical level of 0.05). The variability of indicators in the set of values of indicators of macroeconomic stability is 78.52%. Thus, macroeconomic stability indicators (GDP, COR, OER, TR) explain almost 79% of the dispersion of transparency indicators and public trust in the financial sector and public authorities. At the same time, the instability of the levels of transparency and public trust in the financial sector and public authorities is only 17.36% caused by the variability of indicators of macroeconomic stability of the country. Thus, the results of the canonical analysis indicate a strong dependence of indicators of macroeconomic stability on the level of transparency and public trust in the financial sector and public authorities, and a weak influence of transparency and public trust in the financial sector and public authorities on indicators of the macroeconomic stability of the country. Moreover, the results of the canonical analysis show that the indicators of the levels of transparency and public trust in the financial sector and public authorities are the cause, and the set of macroeconomic stability indicators are the result of these changes.

Table 1

The results of the canonical analysis of the causal relationships between indicators of macroeconomic stability of the country and levels of transparency and public trust in the financial sector and public authorities

	Canonical Analysis Summary (Spreadsheet1) Canonical R: .8654 Chi?(32)=865.45 p=0.0000	
	Left Set	**Right Set**
No. of variables	4	9
Variance extracted	100.000%	69.2641%
Total redundancy	78.5214%	17.365%
Variables: 1	GDP	DESI
2	COR	DEI
3	OER	DAI
4	TR	IDI
5		GII
6		NRI
7		ICE
8		BR
9		CSI

Source: Authors' results

At the same time, the value of variance extracted indicates that the share of variability of indicators of macroeconomic stability of the country is 100% explained by the set of indicators of transparency and public trust in the financial sector and public authorities, and the share of variation in indicators of transparency and public trust in the financial sector and public authorities of public power, which is explained by the variability of indicators of macroeconomic stability of the country, is 58.81%.

The piecewise linear graph of the decreasing eigenvalues of the canonical roots (Figure 1) and the results of the Chi-square tests for the statistical significance of the canonical roots (Table 2) indicate that the first three canonical roots are statistically significant (p-values do not exceed the maximum permissible level of 0 ,05).

Table 2

Chi-square tests for statistical significance of canonical roots

Root Removed	**Chi-Square Tests with Successive Roots Removed (Spreadsheet1)**					
	Canonicl R	**Canonicl R-sqr.**	**Chi-sqr.**	**df**	**p**	**Lambda Prime**
0	0.720	0.563	874.935	31	0.000	0.206
1	0.568	0.390	415.877	20	0.000	0.464
2	0.398	0.191	142.249	11	0.000	0.751
3	0.198	0.042	25.261	5	0.000074	0.924
4	0.141	0,012	0,325	2	0.541	0,984

Source: Authors' results

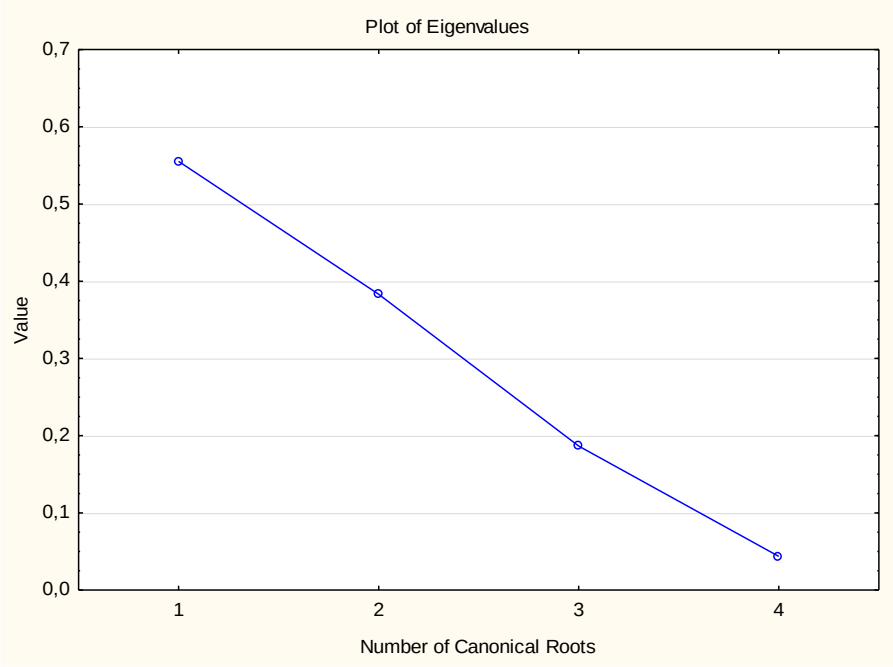

Figure 1. Piecewise linear graph of decreasing eigenvalues of canonical roots

Source: Authors' results

The results of building a correlation matrix for a set of indicators characterizing the macroeconomic stability of the country (Table 3) indicate a low level of correlation dependence in the middle of this group. In general, for all correlation pairs, the value of the correlation coefficient does not exceed 0.1. The highest correlation coefficient (-0.298) is observed for the level of corruption and the official exchange rate and also indicates a low dependence between them.

Table 3

Correlation matrix of a set of indicators characterizing the macroeconomic stability of the country

	Correlations, left set (Spreadsheet1)			
Variable	**GDP**	**COR**	**OER**	**TR**
GDP	1	-0.069	0.127	0.057
COR	-0.069	1	-0.298	-0.073
OER	0.127	-0.298	1	0.038
TR	0.057	-0.073	0.038	1

Source: Authors' results

Analysis of the factor structure of all statistically significant canonical roots serves as a prerequisite for determining the expediency of reducing a set of indicators of the country's macroeconomic stability. The factor structure of loadings on the first canonical roots for a set of indicators characterizing the levels of transparency and public trust in the financial sector and public authorities shown in Table 4 shows the level of correlation of each indicator with the canonical one. The level of corruption has a more significant influence (0.291; 0.129; 0.0.167; 0.185), the smallest – the amount of tax revenues (0.217; 0.107; 0.118; 0.191). At the same time, a comparative analysis of the values of the loads on the first canonical roots proves that their values are approximately the same, which allows us to conclude that it is appropriate to take into account all indicators of macroeconomic stability in further research.

Table 4

The factor structure of indicators characterizing the country's macroeconomic stability

Variable	Factor Structure, left set (Spreadsheet1)			
	Root 1	**Root 2**	**Root 3**	**Root 4**
GDP	0.253	0.109	0.127	0.196
COR	0.291	0.129	0.167	0.195
OER	0.232	0.104	0.148	0.204
TR	0.217	0.104	0.118	0.191

Source: Authors' results

The results of the analysis of the right set of indicators (levels of transparency and public trust in the financial sector and public authorities) indicate a significantly higher level of correlation between them. So, for example, the correlation coefficient between the Digital Economy and Society Index and the Digital Technology Adoption Index is 0.467, between the Digital Economy and Society Index and the Global Digital Competitiveness Index - 0.476. This indicates a high correlation between individual components of transparency (Table 5). At the same time, the values of the correlation coefficients for the indices of transparency and public trust in the financial sector and public authorities are quite low.

Table 5

Correlation matrix of a set of indicators of the level of transparency and the level of public trust in the financial sector and public authorities

	Correlations, right set (Spreadsheet1)								
	DESI	**DEI**	**DAI**	**IDI**	**GII**	**NRI**	**eInt**	**WDCI**	**CSI**
DESI	1	0.295	0.467	0.299	0.484	0.140	1.421	0.476	0.265
DEI	0.295	1	0.730	0.508	0.229	0.496	0.017	0.378	0.212
DAI	0.467	0.730	1	0.433	0.062	0.576	0.035	0.108	0.062
IDI	0.299	0.508	0.433	1	0.117	0.516	0.010	0.331	0.185
GII	0.484	0.229	0.062	0.117	1	0.097	0.060	0.519	0.291
NRI	0.140	0.496	0.576	0.516	0.097	1	0.063	0.049	0.028
eInt	1.421	0.017	0.035	0.010	0.060	0.063	1	0.149	0.083
WDCI	0.476	0.378	0.108	0.331	0.519	0.049	0.149	1	0.149
CSI	0.265	0.212	0.062	0.185	0.291	0.028	0.083	0.149	1

Source: Authors' results

The factor structure of the set of indicators of transparency and public trust in the financial sector and public authorities according to each of the four canonical roots shown in Table 5 shows that the greatest influence is exerted by the Network Readiness Index (0.556 by the first canonical root) and the Digital Technology Implementation Index (0.904 by the first canonical root).

Table 6

The factor structure of the right set is a set of indicators of transparency and public trust in the financial sector and public authorities

Variable	Factor Structure, right set (Spreadsheet1)			
	Root 1	**Root 2**	**Root 3**	**Root 4**
DESI	0.295	0.088	0.755	0.263
DEI	0.904	0.012	0.096	0.006
DAI	0.702	0.355	0.308	0.162
IDI	0.251	0.158	0.227	0.289
GII	0.050	0.134	0.450	0.168
NRI	0.556	0.421	0.406	0.224
ICE	0.224	0.069	0.719	0.309
BR	0.039	0.167	0.423	0.190
CSI	0.022	0.094	0.237	0.107

Source: Authors' results

The obtained results form the basis for structural modeling of the interdependence between indicators of the country's macroeconomic stability and levels of transparency and public trust in the financial sector and public authorities.

The results of determining the parameters of the model of the relationship between indicators of the country's macroeconomic stability with the level of transparency and public trust in the financial sector and public authorities (Table 7) will allow building a system of structural equations of the following form:

$$\begin{cases} GDP = 2.461 \cdot MES + 2.162 \\ COR = -0.119 \cdot MES + 10.872 \\ OER = 0.640 \cdot MES + 0.321 \\ TR = 0.148 \cdot MES + 0.464 \\ CSI = Trust + 4.648 \\ DESI = Trans + 0.437 \\ DEI = 2.193 \cdot Trans + 0.535 \\ DAI = 0.552 \cdot Trans + 0.229 \\ IDI = 0.857 \cdot Trans + 1.111 \\ GII = 1.012 \cdot Trans + 0.243 \\ NRI = 0.654 \cdot Trans + 5.270 \\ eInt = 0.8 \cdot Trast + 1.118 \\ WDCI = 4.065 \cdot Trast + 0.541 \\ GDP = 0.018 \cdot Trust + 0.061 \cdot Trans + 0.025 \\ COR = -0.014 \cdot Trust - 0.035 \cdot Trans \\ OER = 0.352 \cdot Trust + 0.021 \cdot Trans + 0.013 \\ TR = 0.132 \cdot Trust + 0.024 \cdot Trans + 0.062 \end{cases} \quad (6)$$

Thus, the results of structural modeling allow us to draw the following conclusions:

the level of public trust in the financial sector and public authorities has the greatest impact on the country's macroeconomic stability. Thus, with an increase in public trust by 1 point, the volume of GDP will increase by 0.018%, the level of corruption will decrease by 0.014%, the stability of the exchange rate will increase by 0.352%, and the volume of tax revenues will increase by 0.132;

an increase in the level of transparency of the public sector by 1 point will contribute to the growth of the GDP volume by 0.061%, the stability of the currency exchange rate by 0.021%, and the volume of tax revenues by 0.024%. At the same time, it will help reduce the level of corruption by 0.035%.

Table 7

The results of the calculated parameters of the model of interdependence of the country's macroeconomic stability with the level of transparency and public trust in the financial sector and public authorities (fragment)

	Model Estimates (Spreadsheet1)			
	Parameter Estimate	**Standard Error**	**T Statistic**	**Prob. Level**
(MES)-1->[GDP]	2.461			
(MES)-2->[COR]	-0.119	0.170	0.793	0.548
(MES)-3->[OER]	0.640	0.018	-39.002	0.000
(MES)-4->[TR]	0.148	0.061	-2.732	0.018
(DELTA1)-->[GDP]				
(DELTA2)-->[COR]				
(DELTA3)-->[OER]				
(DELTA4)-->[TR]				
(DELTA1)-5-(DELTA1)	2.162	0.436	5.619	0.000
(DELTA2)-6-(DELTA2)	10.872	0.632	19.492	0.000
(DELTA3)-7-(DELTA3)	0.321	0.000		
(DELTA4)-8-(DELTA4)	0.464	0.031	17.317	0.000
(Trast)-->[CSI]				
(Trans)-->[DESI]				
(Trans)-9->[DEI]	2.193	0.669	3.711	0.001
(Trans)-10->[DAI]	0.552	0.182	3.429	0.002
(Trans)-11->[IDI]	0.857	0.307	3.167	0.006
(Trans)-12->[GII]	1.012	0.314	3.651	0.001
(Trans)-13->[NRI]	0.654	0.321	2.658	0.004
(Trast)-14->[eInt]	0.800	0.292	3.094	0.007
(Trast)-15->[WDCI]	4.065	1.230	3.744	0.001
(EPSILON1)-->[CSI]				
(EPSILON2)-->[DESI]				
(EPSILON3)-->[DEI]				
(EPSILON4)-->[DAI]				
(EPSILON5)-->[IDI]				
(EPSILON6)-->[GII]				
(EPSILON7)-->[NRI]				
(EPSILON8)-->[eInt]				
(EPSILON9)-->[WDCI]				
(EPSILON1)-16-(EPSILON1)	4.648	0.271	19.424	0.000
(EPSILON2)-17-(EPSILON2)	0.437	0.061	8.120	0.000
(EPSILON3)-18-(EPSILON3)	0.535	0.036	16.700	0.000
(EPSILON4)-19-(EPSILON4)	0.229	0.014	19.124	0.000
(EPSILON5)-20-(EPSILON5)	1.111	0.066	19.314	0.000
(EPSILON6)-21-(EPSILON6)	0.243	0.015	18.260	0.000
(EPSILON7)-22-(EPSILON7)	5.270	0.326	18.304	0.000
(EPSILON8)-23-(EPSILON8)	1.118	0.080	15.647	0.000
(EPSILON9)-24-(EPSILON9)	0.541	0.025	11.965	0.000
(ZETA1)-->(GDP)				
(ZETA2)-->(COR)				
(ZETA1)-->(OER)				
(ZETA2)-->(TR)				
(ZETA1)-25-(ZETA1)	0.025	0.022	1.325	0.274
(ZETA2)-26-(ZETA2)	0.000	0.000		
ZETA3)-27-(ZETA3)	0.013	0.012	0.958	0.065
ZETA4)-28-(ZETA4)	0.062	0.002	0.547	0.021

Source: Authors' results

To verify the reliability of the obtained results, the built model was checked for adequacy and accuracy using the calculation of basic summary statistics (table 8), the construction of a reflector matrix for checking the stability of the structural model of the connection between the country's macroeconomic stability and the level of transparency and public trust in the financial sector and authorities of public authorities (table 9), and a graph of normalized residuals (figure 2).

Table 8

Indicators of the adequacy and accuracy of the model of formalization of the connection between the country's macroeconomic stability and the level of transparency and public trust in the financial sector and public authorities

	Basic Summary Statistics (Spreadsheet1)
	Value
Discrepancy Function	8.125
Maximum Residual Cosine	0.101
Maximum Absolute Gradient	1.367
ICSF Criterion	0.172
ICS Criterion	0.112
ML Chi-Square	554.687
Degrees of Freedom	40.000
p-value	0.000
RMS Standardized Residual	0.165

Source: Authors' results

The indicators of adequacy and accuracy of the model of formalization of the connection between the country's macroeconomic stability and the level of transparency and public trust in the financial sector and public authorities, given in Table 8, confirm the adequacy of the constructed model. Thus, the value of Maximum Residual Cosine (0.101) indicates the success of the iterative process; the ICSF Criterion and ICS Criterion values are less than the critical value (0.2), which confirms the model's resistance to internal and external changes; the p-level value is less than the critical one (0.05) allows to reject the null hypothesis that there is no connection between the analyzed indicators.

Table 9

Matrix-reflector for verification of the stability of the structural model of the connection between the country's macroeconomic stability and the level of transparency and public trust in the financial sector and public authorities

	Reflector Matrix (Spreadsheet1)												
	GDP	**COR**	**OER**	**TR**	**DESI**	**DEI**	**DAI**	**IDI**	**GII**	**NRI**	**ICE**	**BR**	**CSI**
GDP	0.164	-0.060	-0.024	-0.012	-0.175	-0.058	-0.003	0.010	-0.029	0.003	-0.178	-0.025	-0.022
COR	-0.033	0.012	-0.053	-0.014	-0.131	-0.146	-0.068	-0.005	-0.005	-0.024	-0.051	-0.001	-0.001
OER	-0.618	-0.609	0.125	-0.014	-0.892	0.148	0.082	0.061	0.176	0.069	-1.220	0.190	0.169
TR	-0.174	-0.228	-0.016	0.006	-0.158	-0.072	0.249	0.069	-0.017	-0.248	-0.122	-0.049	-0.044
DESI	-0.395	-0.247	-0.016	-0.016	0.007	-0.002	0.156	-0.021	-0.101	0.041	-0.714	-0.103	-0.091
DEI	-0.184	-0.758	-0.065	-0.045	-0.242	-0.175	-0.198	0.054	-0.209	0.036	0.516	-0.141	-0.126
DAI	0.469	-0.103	-0.081	0.244	1.238	-0.233	-0.020	0.006	0.340	-0.176	0.314	0.337	0.301
IDI	0.453	0.524	0.037	0.145	-0.479	0.145	0.058	-0.009	-0.114	-0.364	0.057	-0.249	-0.222
GII	-0.482	0.174	0.090	-0.028	-0.414	0.008	0.220	-0.013	-0.003	0.124	-0.085	-0.989	-0.882
NRI	0.560	0.233	0.004	-0.473	0.685	0.035	-0.366	-0.359	0.455	-0.013	-0.137	0.295	0.263
ICE	-0.277	-0.081	-0.035	-0.002	-0.591	0.058	0.032	0.004	0.010	-0.003	0.011	0.001	0.001
BR	-0.149	0.096	0.014	-0.022	-0.320	-0.094	0.111	-0.060	-0.913	0.051	-0.013	0.008	0.007
CSI	0.499	0.208	0.003	-0.421	0.610	0.032	-0.326	-0.320	0.406	-0.012	-0.122	0.263	0.085

Source: Authors' results

Table 9 shows the values of the matrix-reflector for checking the stability of the structural model of the connection between the country's macroeconomic stability and the level of transparency and public trust in the financial sector and public authorities, indicating the proximity of the elements to each other. Thus, all the values of the matrix parameters are in the range from -1 to +1, which allows us to draw a conclusion about the stability of the built system of structural equations to a change in scale.

The normal probability plot of the normalized residuals (Figure 2) shows that the parameters of the model correspond to the normal distribution law, and therefore confirm its adequacy.

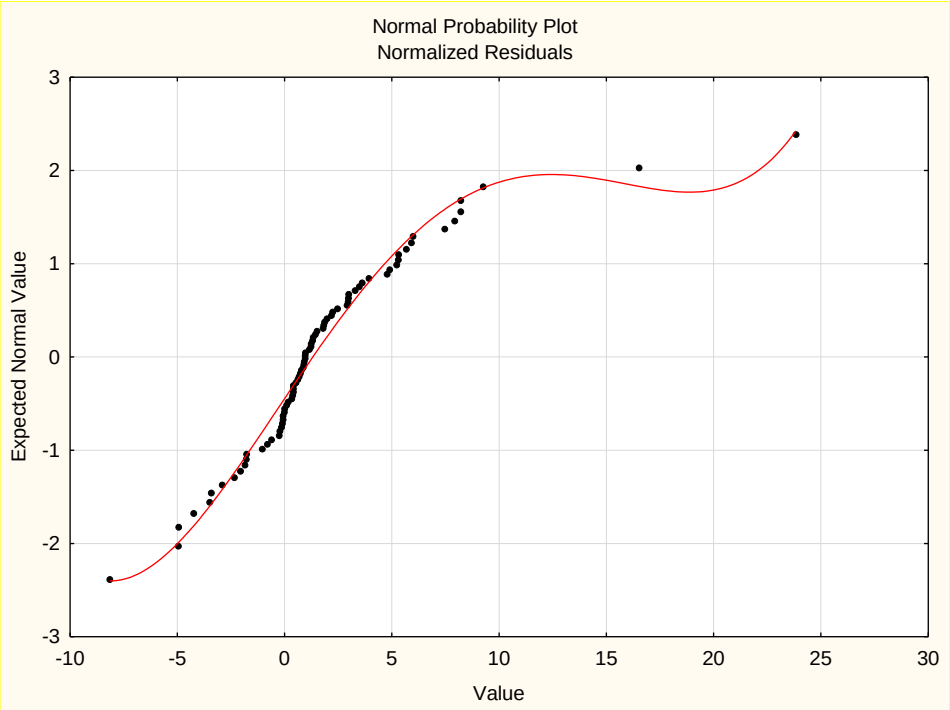

Figure 2. Normal probability plot of normalized residuals
Source: Authors' results

5. CONCLUSION

This article is devoted to the study of the relationship between transparency and trust in the public sector as benchmarks to ensure macroeconomic stability. The main hypothesis of this study was that the level of government transparency and public trust form prerequisites for the inflow of investments into the country, greater public trust in financial institutions (banks, investment funds, the stock market, etc.), which in turn has a positive effect on the amount of tax revenues to budget, GDP, exchange rate of the national currency (Aliyev, 2022; Beha, 2023; Bhandari, 2023; Demirel, 2022; Halásková et al., 2023; He & Wang, 2023). At the same time, the increase in government transparency leads to a decrease in the level of corruption in the country. This hypothesis was tested using the data of eight EU countries (Austria, Latvia, Lithuania, Poland, Romania, Slovakia, Slovenia, Hungary, Czech Republic, Italy) for the period 2011-2021.

The results of the structural modeling of the connection between the country's macroeconomic stability and the level of transparency and public trust in the financial sector and public authorities confirmed the statistically significant factor indicators for individual indicators of macroeconomic stability in these countries. At the same time, it has been proven that the level of public trust in the financial sector and public authorities has a much greater influence on the level of macroeconomic stability of the country than

indicators of the level of transparency of the public sector. Thus, an increase in public trust by 1 point will lead to an increase in the volume of GDP by 0.018%, the stability of the currency exchange rate by 0.352%, and tax revenues by 0.132.

While an increase in the level of transparency of the public sector by 1 point will contribute to an increase in the volume of GDP by 0.061%, the stability of the currency exchange rate by 0.021%, tax revenues by 0.024%, and a decrease in the level of corruption by 0.035%. Thus, the established dependencies confirm the conclusions of previous studies about the presence of a significant influence of public trust on the country's economic development indicators (Alessandro et al, 2021; Aliyev & & Gasimov, 2022; Brychko et al., 2020; El Fallahi et al., 2023) and form the basis for the implementation of measures to increase the level of public trust in certain state institutions and the financial sector in the context of stabilizing the economy and ensuring its sustainable development.

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