

## **CORRUPTION IN BULGARIA: CONTEXT, FACTORS AND INTERNATIONAL COMPARISON**

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Как да се цитира тази статия / How to cite this article:

Ganchev, G., Tsenkov, V. & Paskaleva, M. (2023). Corruption in Bulgaria: Context, Factors and International Comparison. *Economic Thought Journal*, 68 (6), 587-620. <https://doi.org/10.56497/etj2368601>

To link to this article / Връзка към статията:

<https://etj.iki.bas.bg/microeconomics/2024/03/13/corruption-in-bulgaria-context-factors-and-international-comparison>



Published online / Публикувана онлайн: 14 March 2024



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# CORRUPTION IN BULGARIA: CONTEXT, FACTORS AND INTERNATIONAL COMPARISON

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*Abstract:* This study is focused on defining the reasons, factors, and consequences of corruption in Bulgaria in a comparative context. A strong non-linear interplay is demonstrated between political stability and corruption perceptions. Analysing the complex interaction between the dynamics of the Corruption Index and the three indicators of quality of public governance, we admit that the indicators are directly related to the effectiveness of government policy in terms of suppressing the potential for corruption, on the one hand, and to the public perception of government effectiveness, on the other. In countries demonstrating high anti-corruption scores, the Political Stability and Control of Corruption indicators have a direct impact on the Corruption Index. In low-rated countries, including Bulgaria, no direct influence on corruption is observed for any of the three indicators of quality of government.

*Keywords:* corruption; inequality; economic development; political stability

*JEL codes:* C58; D63; E44

*DOI:* <https://doi.org/10.56497/etj2368601>

*Received* 16 October 2023

*Revised* 6 January 2024

*Accepted* 29 January 2024

## **Introduction**

There is a growing global concern about the fight against corruption. Several factors are responsible for this. First, it is generally accepted that corruption is universal. It exists in all countries, both developed and developing, in the public and private sectors, as well as in non-profit and charitable organizations. Second, the main issue – and the one addressed in this study – is that corruption can be a major obstacle to the economic development and modernization of a country. Many believe that it should be given priority attention when studying a country's economic development.

The current research combines two sections: first, an estimation of the influence of corruption on political stability, economic development and inequality in Bulgaria and, second, a description of the main characteristics of the corruption climate in the

European Union which entails exploring the dynamics of the Corruption Index across the EU alongside its determination by state governance factors.

It reveals a close link between political stability and corruption. This relationship is non-linear. When political stability is high, we generally have high corruption, indicating a pro-corruption arrangement among political forces. With growing instability, corruption decreases, but very high political uncertainty leads to further increased corruption.

The empirical research demonstrates that corruption is part of the general socio-economic climate in a given country. The fight against corruption requires coordination with social policy and a strengthened justice system. The fight against corruption in Member States of the European Union such as Bulgaria inherently involves the introduction and application of mechanisms and measures to fight it at both the EU and national levels.

## **Literature Review**

In societies where the goal of individuals is the accumulation of wealth, those who control economic resources have an interest in interacting with political power brokers to circumvent the enforcement of rules adopted by society for the management of public resources (Jain, 2001).

Does corruption affect economic inequality, or is poverty the factor that provokes increased perceptions of corruption among members of society? This is a question that has been the subject of much theoretical and empirical research. The prevailing argument in most studies is that higher levels of corruption lead to increasing income inequality. However, other studies argue that the reverse is true: high levels of inequality create favourable conditions for rising corruption. Several studies have shown that corruption is positively correlated with inequality (Gupta et al., 2002; Brempong, 2002; Brempong & Camacho (2006) and negatively correlated with economic growth (Mauro, 1995; Mauro, 1997; Tanzi, 1998; Wei, 2000).

Corruption should be explored contextually with an emphasis on its historical and ethno-cultural genesis. According to Seleim and Bontis (2009), uncertainty avoidance values increase levels of corruption. They suggest that policymakers should establish an institutional system to rationalize and systemize mechanisms such as flexible incentive and promotion systems. It is also strongly recommended that policymakers build and strengthen a culture of teamwork. They prove that effective approaches to fighting corruption depend on societal culture and a deeper analysis of its underlying causes and infrastructure. The findings of their study provide a diagnostic framework for the cultural determinants of corruption. Therefore, policymakers can use these results to guide them in adopting a strategic perspective to fight corruption through implementing institutional reforms that concern the dominant national culture in more corrupted countries.

Uberti (2018) explores data from 64 countries in Eastern Europe and MENA to study the

long-term effects of Ottoman and socialist rule on the incidence of corruption. To proxy Ottoman legacies, the author estimates the length of Ottoman rule across all Ottoman successor states. Contingent on income per capita, he finds a convincingly adverse effect of both socialist and Ottoman legacies on present-day corruption, a finding that reconciles two rival accounts of post-socialist corruption from the transition literature. The results are robust, controlling for potential confounding variables for both per-capita income and the length of Ottoman rule. However, the explanatory power of long-term historical determinants of corruption is lower than the contribution of short-term factors. While present-day income explains about half of the total variation in corruption across post-socialist countries, Ottoman and socialist legacies jointly account for about one-third. Although history does matter, these findings suggest that most of the corruption observed in Eastern Europe, Central Asia, and the Balkans today may not be inherently 'Eastern' or socialist. Rather, the data are consistent with an interpretation of corruption predominantly as a manifestation of persistent economic under-development.

Matti (2015) examines the relationship between corruption and income inequality with subsequent economic growth. He uses a standard least squares method to test the hypothesis that, after controlling for corruption, income inequality will be a less significant factor in explaining subsequent growth rates. He observes that it is not income equality that promotes economic growth, but rather a reduction in corruption causes both economic growth and greater equality. This study provides some expected findings in support of well-established theories and concludes that inequality harms growth even after controlling for corruption.

These results corroborate those of Li et al. (2000), who show that corruption increases income inequality and conclude that income inequality is another channel through which corruption harms growth.

Dincer and Gunalp (2008) analyse the effects of corruption on income inequality and poverty in the United States. The main contribution of the study is its use, rather than of indices, of an objective measure of corruption: the number of public officials convicted in a country for corruption-related offenses. Various indices – Atkinson, Gini, and poverty-level – have been included as measures of inequality and poverty. Strong evidence is found that increasing corruption increases income inequality and poverty.

Mendonça and Fonseca (2012) present an empirical analysis based on cross-country data examining corruption from two perspectives: its effects on income and how to reduce its negative effects. The study confirms the idea that corruption is inextricably linked to income and also reinforces the traditional argument that strengthening the rule of law is a good strategy in the fight against corruption which applies to developing countries. A further contribution of this study is the revelation that increases in the human development index are a key factor in securing high levels

of income and controlling corruption.

Economic factors are often considered the main causes of corruption. Economic development (per-capita income), a high level of education, the establishment of a middle class, etc. are the best determinants of reduced corruption in many studies (Treisman, 2000; Paldam, 2002).

In contrast, Kaufmann and Kraay (2002) argue that the causal link is between lower corruption and economic development, not higher incomes and lower levels of corruption. Trade openness, while promoting increased economic competition and economic growth, is significantly negatively correlated to corruption (Ades & Di Tella, 1999; Treisman, 2000).

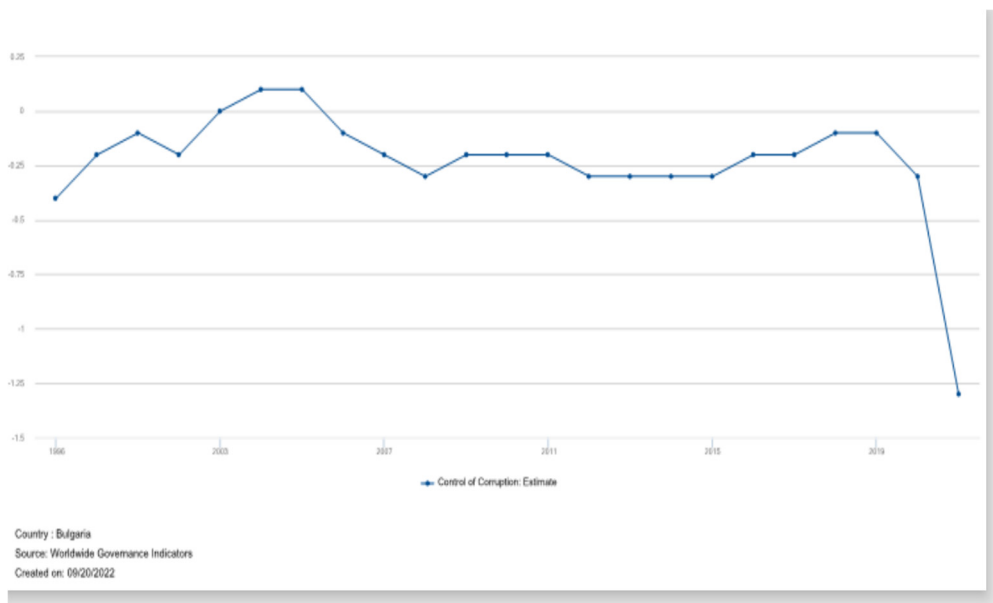
A corruption tax can also affect public debt financing. As IMF research (Kemoe & Zhan, 2018) shows, fiscal transparency and openness reduce fiscal risk and interest payments on public debt.

The wide range of manifestations of corruption activity determines the need to search for an anti-corruption state governance toolkit with a sufficiently complex impact to reflect this diversity of manifestations. Linking the effectiveness of anti-corruption policies must also consider the specific corruption environment in which they need to be implemented (Corman, 2021). While each national environment exhibits specific manifestations, the presence of external pressures in the form of supranational corruption monitoring and EU impact measures yield a positive impact (Di Tella & Schargrodsky, 2003; Olken, 2005; Armantier & Boly, 2011). This form of supranational anti-corruption influence, however, needs to specify its approach to each country, namely by: (a) introducing specific policies reflecting national conditions, (b) distinguishing between different forms of corruption, and (c) avoiding 'one-size-fits-all' solutions applied in a uniform manner to all countries (Jancsics, 2019). The existence of differentiation between EU regions can also be seen in terms of their capacity to influence anti-corruption, expressed as the level of institutional capacity and resources in organizing anti-corruption (Applica et al., 2017). In addition to the different starting points in organizing the fight against corruption, we should also take into account the interconnectedness of its varied forms, as is often the case with unofficial transactions and the abuse of the public interest for private gain (Mungiu-Pippidi et al., 2013; Mungiu-Pippidi et al., 2015; Volintiru et al., 2016; Rothstein & Varraich, 2017). Such co-occurrence of different forms of corruption can be seen in the presence of phenomena such as clientelism, political patronage, and the 'captured state' (Volintiru, 2016; Gherghina & Volintiru, 2017; Innes, 2014; Kopecky et al., 2012; Volintiru, 2015; Kopecky et al., 2016). This multivariate nature of the conditions and manifestations of corruption challenges the effectiveness of the EU's unified anti-corruption approach and its overall impact.

The direct implementation of 'common models' for all Member States has been limited compared to the expected results, including for the union's newcomers (Grabbe, 2003; Goetz, 2005; Borzel & Risse, 2007; Hughes et al., 2004; Freyburg & Richter, 2010). The need for the general anti-corruption framework to reflect the specificities of the national environment and corruption potential first requires the main approaches of interaction between state governance and its impact on corruption levels to be outlined. It is in this vein that the present study attempts to identify the main channels influencing state governance over the corruption environment as determined by the specific grouping of countries in corruption rankings.

**Overview and characteristics of Bulgarian corruption**

Figure 1 shows the dynamics of the World Bank's Control of Corruption Index. This is an alternative composite index that considers the propensity for corruption among government officials, public trust in politicians, the prevalence of corrupt practices, retail corruption, corruption in local businesses, corruption affecting foreign investors, etc. As can be seen, control over corruption in Bulgaria dropped sharply in 2021, probably reflecting the political crisis in the country.



Source: World Bank.

Figure 1. Control of Corruption in Bulgaria

In addition to the above, an index of countries that use corruption to promote their business in international markets, the so-called Bribe Payers Index, is published

periodically. The most recent edition of the index is from 2011. Russia ranks first among countries using corruption, followed by China, Mexico, Indonesia, and others. Japan, the Netherlands, Belgium, and Germany were ranked as the most honest.

Corruption is a complex phenomenon arising in the interaction between the state and the private sector. Corruption payments (bribes) are used by private economic agents either to obtain certain benefits from the state or to avoid certain costs (Rose-Ackerman, 1996).

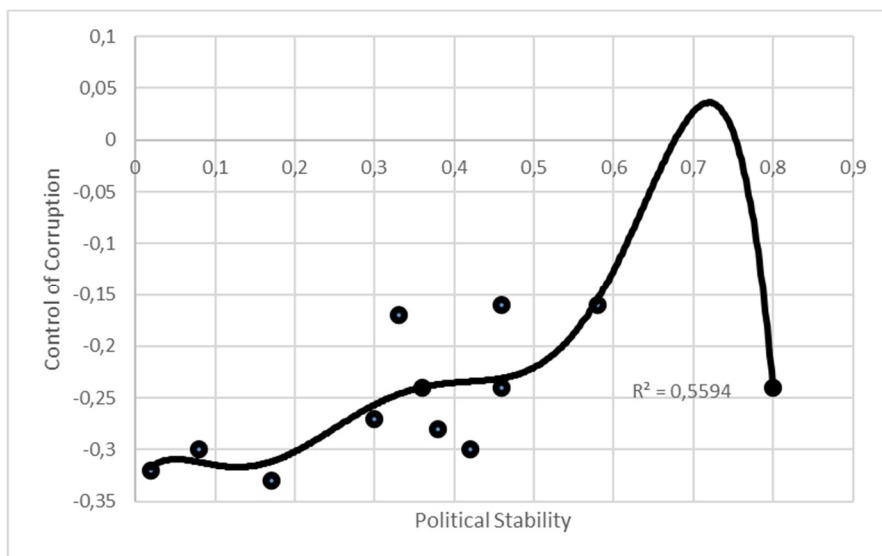
Corrupt practices, in turn, depend strongly on the political system implemented in the country concerned. From a theoretical point of view, electoral systems based on proportional representation with electoral lists controlled by political parties, in contrast to systems oriented towards individual candidates, are thought to allow for a better supply of public goods by the state. At the same time, however, these systems are not as effective in fighting corruption, giving way to majority-based mechanisms based on regional representation (Rose-Ackerman, 2001).

The Bulgarian electoral system is precisely proportional, with party lists and negligible importance of individual preferences. This implies a certain built-in propensity for corruption. In addition to the institutional peculiarities of the Bulgarian political system, the Bulgarian political culture formed in the process of the country's historical development also deserves consideration.

According to Todorov (2011), Bulgaria's political culture is characterized by the following features: egalitarianism, weak civil society, personalization of politics, political violence, personal regimes, special attitude towards Russia, and emphasis on national unification. In terms of corruption problems, its weak civil society, tendency towards personalisation and personal regimes, and the influence of Russia, which is the world's leading country in the use of corrupt practices in international economic relations, are significant. Weak civil society contributes to the relatively high public tolerance of corruption, while personal regimes make corruption in our country a problem related to personal relations with the executive leadership.

In particular, the combination of weak civil society and political instability was the main reason for the sharp deterioration of the corruption problem in 2021. The proportional electoral system with party lists furthermore contributed to this.

Figure 2 shows the relationship between political stability and control over corruption in Bulgaria. As can be seen from the graph, the relationship between political stability and corruption is rather non-linear. When political stability is high, corruption as a rule is also high. However, when instability is very high, corruption increases again. These correlations suggest that in stable governing coalitions there is likely to be a pro-corruption arrangement among the political parties involved.



Source: Authors' estimations based on data from the World Bank.

Figure 2. Relationship between Political Stability and Control of Corruption in Bulgaria

With some instability, the corruption consensus is broken, and control over corruption increases. However, when instability is very high, control over corrupt practices declines again. Therefore, mutual control between political forces in the fight against corruption is crucial.

Finally, ties with Russia's political and economic elite are a factor in the emergence of corruption schemes. As noted by several international observers, many of the corruption scandals in Bulgaria have involved oligarchs and ruling political parties linked to Russia (GLOBSEC, 2021).

The cultural aspects of corruption are closely linked to the formation of political-economic regimes that reproduce corruption. One of the classic questions in political economy is why voters support corrupt politicians (Kurer, 2001). It is believed that voters may support corruption for two reasons. First, corrupt practices may respond to the desire of voters, i.e., demand for corruption, or the absence of political parties offering anti-corruption policies, i.e., lack of anti-corruption alternatives. On the demand side, problems arise due to the paucity of information on the negative consequences of corruption and the complexity of coordinating anti-corruption actions. On the supply side, the problem boils down to barriers against anti-corruption parties and the fragmentation of political space between parties not offering anti-corruption alternatives. Both problems are typical for Bulgaria, and this was especially true after the



parliamentary elections of October 2022. Regarding corruption demand problems, circumstances related to the difficulty of forming collective action are particularly relevant. Suppose, for example, that a voter must form their preference between two parties – a corruption party and an anti-corruption party. If they vote for the corrupt one, they can hope to gain benefits from future corruption. If they vote against it, they will be left out of the future corruption scheme. It is generally best for voters to all vote for the anti-corruption party, but since they are uncertain about the behaviour of other voters, it may be optimal to support the corrupt party to avoid the worst-case scenario: supporting the anti-corruption party if the corrupt party wins (Kurer, 2001). Such dilemmas were certainly relevant to the outcome of the October 2022 parliamentary elections in Bulgaria.

The latter situation explains the stable support for political parties known for their corrupt practices in Bulgaria. That is to say, the problem in our country is largely related to the existence of a demand for corruption. Of course, there are also supply-side problems, given the difficulties faced by new parties in the Bulgarian political space, the capture of the press by incumbent parties, and the instability of the party system leading to the emergence of politicians whose sole purpose is short-term participation in corrupt schemes.

The modern approach to corruption is characterized by a revision of previous views that emphasized the supposed positive aspects of corrupt practices: corruption is not an effective means of overcoming bureaucracy; bribes are not paid by efficient producers but by parasitic rent-seekers; curbing corruption, not simply raising wages, is the best means of carrying out administrative reforms; corruption generates increasing revenues that reproduce it; and finally, corruption in Bulgaria is clearly at a stage in its development where a reduction in corruption pressure is a *sine qua non* for political stabilisation of the country.

Studies across many countries over long periods show a negative relationship between per-capita income and levels of corruption as measured by the Corruption Perceptions Index (Tanzi & Davoodi, 2001). In addition, not only does corruption reduce public spending on health and education, it also leads to an increase in defence spending (Gupta et al., 2001). Corruption increases income inequality and limits investment in human capital. Interestingly, in the Bulgarian case, high levels of corruption by international standards are associated with relatively high (above the EU average) spending on domestic security and the administration of justice.

Global trends are associated with a deterioration in the corruption control index and a decline in the quality of governance (Taylor et al., 2022). Nonetheless, analyses suggest that the trend can be reversed through investments in institutions responsible for controlling corruption. In doing so, relevant actions should be country specific. The

factors which affect corruption related to the political system are the following: political stability, rule of law, combatting organized crime, freedom of speech, the efficiency of administration, and quality of regulatory mechanisms. In terms of the economy and economic policy, what matters are government spending, income inequality, anti-inflation policy, per-capita income, and economic growth rates.

Both in its political and economic spheres, Bulgaria finds itself in an unenviable situation – political instability, problems with freedom of speech and the rule of law, inefficient administration, and unstable regulations. From an economic point of view, the problems are insufficient spending on education and healthcare, the highest income inequality in the EU, the lowest per-capita income in the EU, and slow economic growth. According to IMF experts (Hallaert & Primus, 2022), with Bulgaria's limited public resources, the efficiency of government spending is crucial. In their view, the role of public investment in social protection, education, and healthcare is particularly important. In the field of education, particular attention should be paid to increasing spending on higher education and research.

Regarding media freedom, it is necessary to note the international community's concern about the Bulgarian press being controlled by certain economic and political circles (IPI, 2022). The fight against corruption is a global problem where progress will depend on both internal and external factors. The external factors contributing to curbing corruption are EU membership, OECD measures, and bilateral coordination, mainly through relations with the United States.

The problems with the rule of law and the fight against corruption are being monitored by the EU under the Cooperation and Verification Mechanism (CVM). The latest CVM report makes the following recommendations in the area of anti-corruption: improving the work of the police and the judiciary, reforming the Anti-Corruption Commission, and enhancing transparency in the handling of public resources channeled to advertising through media agencies. It also underlines that Bulgaria should strictly implement its anti-corruption commitments under the Recovery and Sustainability Plan.

Bulgaria's forthcoming membership in the Organisation for Economic Co-operation and Development (OECD) also implies scrutiny over anti-corruption measures in the country. In line with the OECD Anti-Bribery Convention, a special report has been developed on Bulgaria (OECD, 2021).

The OECD controls are aimed mainly at so-called foreign corruption, i.e., corruption affecting foreign individuals and legal entities. The recommendations of the OECD experts concern specific measures in the following risk areas: measures to prevent and detect foreign corruption, recommendations for law enforcement in the field of international corruption offenses, recommendations related to international obligations

of foreign persons, and other measures related to the Anti-Corruption Convention. The implementation of the recommendations is monitored by a special working group. It should be noted that these OECD anti-corruption measures are particularly important for Bulgaria because they affect the international aspects of corruption, especially the confidence of foreign investors.

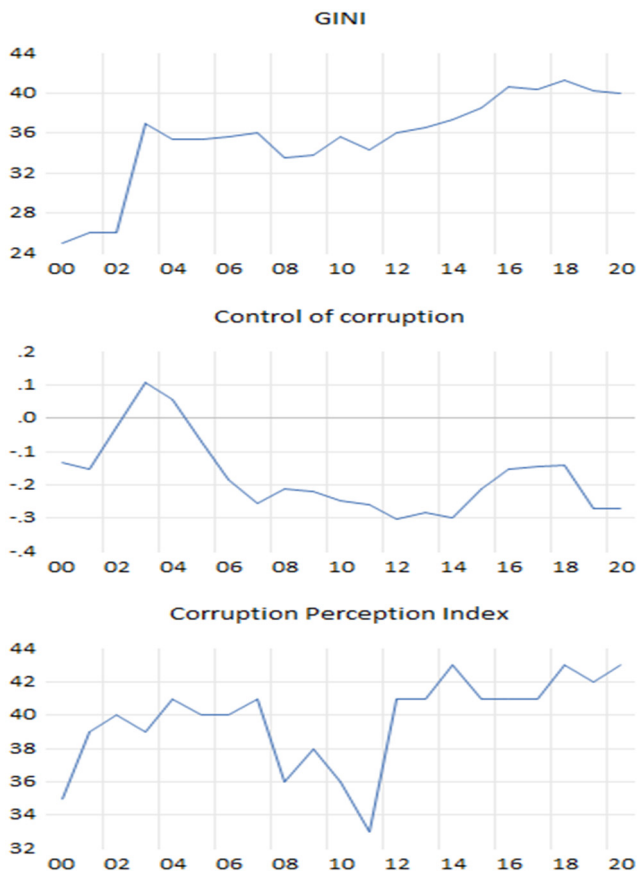
This strategy includes seven priorities – strengthening the capacity and improving the transparency of Bulgaria’s anti-corruption institutions; countering corruption crimes; strengthening the capacity and improving the work of the administrative structures in charge of oversight; strengthening the transparency and accountability of local authorities; liberating citizens from petty corruption; creating a public environment of intolerance towards corruption; and measures for a timely response to the above problems. The National Strategy thus formulated is too general, lacking specific actors or deadlines, and is unlikely to have an impact on the resolution of these problems in the country. Corruption issues also affect bilateral relations between Bulgaria and the US. These problems are identified in the US Integrated Country Strategy for Bulgaria (Integrated Country Strategy, Bulgaria, 2022). International pressure to fight corruption was one of the main reasons for the adoption of the National Strategy to Prevent and Combat Corruption 2021 – 2027 (NSCCRB, 2021).

To sum up, the fight against corruption, which is a phenomenon at the border between the public and private sectors, implies a complex system of measures affecting the political sphere, the economy, the efficiency of public administration, citizens’ behaviour, and relations with Bulgaria’s external partners. The historical experience of countries that have succeeded in the process of their socio-economic and political development to reduce corruption to an acceptable level shows that progress cannot be achieved without a certain political consensus among the leading political forces interested in fighting corruption, nor without a certain level of public intolerance for this negative phenomenon (for a detailed analysis of the fight against corruption in Britain in the 18<sup>th</sup> – 19<sup>th</sup> centuries, see Popa, 2013).

### ***Determinants of the economic impact of Bulgarian corruption***

Corruption negatively affects economic welfare through many channels: firstly, loss of revenue by the state; secondly, an inefficient expenditure structure; thirdly, the need to raise taxes; fourthly, deterioration in the quality of infrastructure, restriction, and general deterioration in the supply of public goods; and, fifthly, increasing political and economic uncertainty. All this, which can be called a corruption tax, leads to a slowdown in economic development. To one extent or another, all the negative phenomena noted are typical for Bulgaria. Figure 3 shows the dynamics of three variables (Gini; Control of Corruption; and Corruption Perception Index) for 2000–2020 in Bulgaria. The average value of the Corruption Perception Index in Bulgaria was 39.71 points in that period,

reaching its highest level of 44 points in 2020. Corruption perception moved inversely to the Control of Corruption Index, which reached a negative value, -0.27, in 2019. The analysis of Gini dynamics reveals that the highest observed income differentiation in Bulgaria over the studied period was in 2018, when the index value was equivalent to 41.3 points. This trend persisted in 2019 and 2020: the values were 40.3 and 40.0 points, respectively, indicating a sharp divide between rich and poor in society.



Source: Authors' visualization.

Figure 3. Trends in Corruption Perception, Gini, and Control of Corruption, 2000 – 2020

Correlation analysis was applied to estimate the direct relationship between corruption levels and inequality (Appendix 1, Table 1). There is a moderate inverse relationship (-0.2268) between Control of Corruption and stratification in society (Gini). Strong inequality corresponds to increased Corruption Perception Index values. This is indicated by a positive correlation coefficient between both variables: 0.5478. Lack of

control enhances perceptions of the abuse of public power, as revealed by the negative coefficient between these two variables.

The results of the regression models constructed are presented in Tables 2 and 3, where the validity of the null hypothesis is tested, namely whether the selected independent variables affect the Gini coefficient and Control of Corruption values (dependent variables).

In Table 2 we report three statistically significant variables that have an impact on inequality in Bulgaria. Using R-squared, we reveal that the above variables determine a 56.96% variation in the Gini coefficient over the evaluated years as well as high statistical significance of the regression equation (F-statistic = 10.00789). Statistical significance was found for the variable chosen as a measure of the rule of law with a coefficient of -1.270947. High efficiency of institutions, increased trust in them, and respect for law and order corresponded with a decrease in social stratification.

The next statistically significant variable is the Human Development Index, which has a positive sign and statistical significance at 1%. As expected, improving living conditions is critical to promoting income growth. Control of Corruption (CC) is a statistically significant variable that has a negative impact on the Gini coefficient with a coefficient value equivalent to -1.409731. These results reveal that an increase in the value of this ratio corresponds with a reduction in inequality of income distribution.

Table 3 reports the results of the regression equation with the dependent variable Control of Corruption. Using R-squared, we reveal that the above variables determine 68.17% variation of the dependent variable over the time under study and the statistical significance of the underlying regression equation (F-statistic = 6.426851).

The regression results indicate that the rule of law is an important variable for controlling corruption in Bulgaria. Hence, increasing the rule of law represents a strong instrument to curb corruption. Comparing the results from Table 2 and Table 3, it is revealed as a variable that helps in establishing law and order as well as reducing inequality. A strong rule of law ensures that no one is higher than the law itself and corruption may thus decrease. The application of the Gini coefficient in this regression with the dependent variable Control of Corruption is based on the argument that high inequality can discourage certain basic norms of behaviour among economic agents such as trust and commitment. Statistical significance was found for the variable chosen as the measure of inequality: the Gini coefficient with a -0.022320-coefficient weight.

The resulting sign of the regression is negative, suggesting that low levels of stratification, correlating with the rule of law and high levels of human development, help in fighting corruption.

## Methodology

This study aims to identify the impact of corruption on development and economic inequality levels as well as the determination of corruption by state governance factors in Bulgaria and other EU countries, in addition to testing the degree of association between corruption and the rule of law. To reach these objectives, we consider the dynamics of the following variables:

- The Corruption Perception Index (CPI) ranks countries and territories according to how corrupt their public sector is perceived to be, based on expert assessments and public opinion surveys<sup>1</sup>.
- The Gini coefficient index is the most common indicator of income inequality. The variable's application in this study is based on the argument that high inequality may discourage certain basic norms of behaviour among economic agents such as trust and commitment.
- GDP per capita has been used as a control variable in much of the literature on corruption. It is theorized that the initial level of GDP per capita has a negative correlation with subsequent economic growth.
- The Primary Completion Rate (PCR) refers to the total % of graduates in a relevant age group as a measure of human capital. Although this variable considers the quantity of formal graduates, it cannot control for the quality of education. However, in the regression models carried out by Levine and Renelt (1992), the variables applied to measure quality of education, such as literacy rates, yield similar results as the formal statistical models.
- Rule of law captures perceptions of the extent to which agents trust and respect the rules of society, particularly the quality of contract enforcement, property rights, police and courts, and the likelihood of crime and violence.
- Control of Corruption (CC) captures perceptions of the extent to which public power is exercised for private gain, including petty and significant forms of corruption, as well as the "capture" of the state by elites and private interests. Control of corruption means that public power or bureaucratic regulation is exercised for private gain, which creates corruption in the country and may deter foreign investors. Mass corruption leads to ineffective plans for foreign investments due to the uncertainty and ambiguity that is created in return.
- The Human Development Index (HDI) is a statistical indicator that combines life expectancy, education level, and GDP per capita. It is a measure of a

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<sup>1</sup> <http://www.transparency.org/research/cpi/>

country's development. According to the United Nations Human Settlements Programme, higher levels of human development correspond with lower levels of corruption.

- Trade openness is an indicator that combines the sum of exports and imports divided by GDP; this variable reflects the idea that an economy with a high degree of openness has the advantage of increasing the volume of trade, which in turn can promote an increase in a country's income.
- Inflation (Consumer Price Index) – countries with very high levels of inflation are usually characterized by weak institutions. As a result, there is an inadequate environment for effective governance. The purpose of using this variable is that inflation erodes the purchasing power of economic agents who cannot be protected from the effects caused by the inflationary burden. Moreover, the use of high interest rates to reduce inflation implies a credit constraint, which in turn can lead to a reduction in economic activity.

All the examined variables are calculated on an annual basis. To determine the presence of stationarity for the period, we have applied the Augmented Dickey-Fuller (ADF) test (Dickey & Fuller, 1981). The first differences in the observed quantities are stationary.

After defining the variables, we proceeded to construct a regression model:

$$\text{GINI}_t = f(\text{Inflation}_t; \text{Trade Openness}_t; \text{HDI}_t; \text{CPI}_t; \text{Rule of Law}_t; \text{Control of Corruption}_t; \text{PCR}_t; \text{GDP}_t) \quad (1)$$

$$\text{Control of Corruption}_t = f(\text{Rule of law}_t; \text{GINI}_t; \text{HDI}_t; \text{Inflation}_t; \text{PCR}_t) \quad (2)$$

In the second part of our research concerning the dynamics of corruption in the European Union and its determination by state governance factors, the Granger Causality Test was applied. We aimed to estimate the existence of bidirectional determinacy between the CPI and a set of three indices characterizing relevant indicators of state governance both concerning the corruption climate and reflecting state-level efforts to control corruption. The Granger Causality Test is a useful tool in the study of corruption because it can give insight not only into the presence of corruption dependencies but also show us the direction of interdeterminism in the manifestation of corruption and other factors. In this way, one can analyse not only the immediate influences on corruption but also the factors provoking its manifestation – that is, whether the level of corruption influences the formation of adverse socio-economic effects in society or it derives from the deterioration of social and economic conditions in a country. For example, Rahayu and Widodo (2012), using the Granger Causality Test on data from the Association of Southeast Asian Nations

(ASEAN) countries in the period 2005–2009, found that there is a link between corruption and poverty; however, this causal interdependency is only from corruption to poverty and not the other way around. The use of the Granger Causality Test as a statistical approach to investigate corruption was applied by Elbahnasawy (2014) when examining the relationship between e-government and corruption and between internet adoption and corruption. Results of the test application show the significance of e-government in lowering corruption levels but also reveal that the influence is only from e-government towards corruption, not in the opposite direction. As variables for his study and application of the Granger Causality Test, Elbahnasawy used the UN e-government readiness index (EGDI) and the Corruption Perceptions Index (CPI) by Transparency International. The use of these and similar summary indices in the analysis of determinants and levels of corruption can be seen in other studies. The most common is the use of the CPI as a measure of the level of corruption (Seo, 2016; Wang et al., 2018). Ximei et al. (2021) used balanced panel data for 33 Asian countries from 2000 to 2015 and the Pairwise Panel Causality Tests (DU) (Dumitrescu and Hurlin, 2012), finding the presence of a one-way causal relationship from corruption (CPI) towards the level of environmental pollution. Some studies have linked the level of corruption with non-economic variables such as the rule of law, quality of institutions, democracy, and the centralization of administration (Iwasaki and Suzuki, 2012; Elbahnasawy and Revier, 2012; Goel et al., 2012; World Bank, 2012).

The applied governance indicators are at annually basis<sup>2</sup> and can be presented in the following sequence:

- Government Effectiveness (GE) – the index covers perceptions of the quality of public services, the quality of the civil service and its degree of independence from political pressures, the quality of policy formulation and implementation, and the credibility of government commitments to such policies.
- Political Stability and Absence of Violence/Terrorism (PS) – the index measures perceptions of the likelihood of political instability and/or politically motivated violence, including terrorism.

The explored period has been divided into two sub-periods: a) 2000 to 2011 and b) 2013 to 2021. This temporal division reflects the fact that Transparency International changed the methodology for calculating its CPI after 2011, which necessitated a break in the period studied to achieve greater objectivity and accuracy of the results obtained. The indices were organized into a panel of data for the following set of European Union (EU) and European Economic Area (EEA) countries: Bulgaria, Cyprus, Denmark, Estonia, Finland, Greece, Hungary, Italy, Latvia, Norway, Poland, Romania,

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<sup>2</sup> <https://databank.worldbank.org/>



and Sweden. The selection of the surveyed countries was made to reflect the highest- and lowest-ranked EU and EEA countries in Transparency International's rankings according to their CPI scores for 2021, as well as countries demonstrating the best improvement in their position in the rankings and those with strongly deteriorated positions compared to the previous period.

## Empirical Results and Discussion

### *Corruption manifestation in Bulgaria: the European context*

The analysis of the data including all the surveyed countries – Bulgaria, Cyprus, Denmark, Estonia, Finland, Greece, Hungary, Italy, Latvia, Norway, Poland, Romania, and Sweden from 2000 to 2011 (Table 4) – shows that the governance indicators have a significant impact on the Corruption Index (CORR). Of the 11 statistically significant Granger causalities, only one shows a deterministic impact from the CORR – against the Control of Corruption (CC) indicator at lag 1, having a 10% probable margin of error. To the extent that this causality expresses the existence of a direct relationship between public perceptions of the level of corruption (CPI) and the opportunities for its manifestation as expressed by CC, we can assume relevance at such an early stage, lag 1. Besides its immediate appearance, we must consider that it shows a more persistent presence in the later stages – lags 4, 5, and 6 – with the direction of impact reversed from the conditions for manifestation (CC) to the assessment of presence (CORR). This highlights the importance of efforts to mitigate the manifested conditions of corruption; while they have an immediate effect on the perception of corruption potential as expressed by the corresponding CPI value, the impact of these measures has a sustained effect over a relatively longer time period. This relatively long-term impact can also be observed in the case of the Political Stability (PS) factor. We have registered two statistically significant Granger causalities to the Corruption Index (CORR) at lags 5 and 6.

In this first period of analysis, the Government Effectiveness (GE) factor has the most significant impact on dynamics in the Corruption Perception Index (CPI), reflecting the quality of public services as well as the level of independence from political pressure. The leading role of the GE factor as a major determinant of corruption is determined not only by the categorical nature of its manifestation but also by the persistence thereof. Of the realized 5 statistically significant causalities with CPI, not only are they most numerous in this period, but their manifestation is also continuous from lags 2 to 6. It should be noted that in this steady performance, the direction of Granger causality is always from GE to the CORR. Aggregating the data for all the countries studied in the 2000–2011 period, we can summarize that of the three considered determinants of public governance, the Government Effectiveness

(GE) factor – directly related to the quality of public services and the impact of political pressure on them – has the strongest and most persistent impact on public perceptions of corruption, as expressed by the CPI.

The influence of this factor is so persistent that its action can be considered both in the relatively short term and in the long term. The significance of the Government Effectiveness factor is underlined by the more limited manifestation of another factor directly related to the perception of corruption in society, namely the Control of Corruption (CC) indicator. The causal impact of CC is limited and most persistent in the relatively longer term (lags 5 and 6), appearing at the same time as the impact of the Political Stability (PS) factor. One can speculate whether the factors of PS and CC are equivalent to public perceptions of corruption as expressed by the CPI, but their impact is clearly more persistent in the relatively longer term; no immediate effects can be expected in the short term on public perceptions of corruption. Considering the sustainable impact of Government Effectiveness, we can conclude that the completeness and unity of the effect of the three factors of public governance concerning corruption in the period 2000 – 2011 can be spoken of mainly in the longer term.

The latter demonstrates the need for sustained efforts to influence corruption through state interventions, which will lead to subsequent impact and change in public perceptions of corruption, but these perceptions are very persistent and require a longer period for the anti-corruption actions taken by the state to influence them.

In the subsequent 2013 – 2021 period, there was a change from what had been recorded in the previous period. Firstly, the change is related to the establishment of the leading role of the Control of Corruption (CC) indicator as a determinant of Corruption Index (CORR) dynamics (Table 5). There are four significant Granger causalities between CC and the CORR at lags 1, 2, 3, and 5.

For the first two lags mentioned, the direction of determinacy is from the CC to the CORR; we find bidirectional influence for the third lag, while the direction for the 5th lag only goes from the CORR to the CC. In contrast to the previous 2000–2011 period when the leading determinant of public perception of corruption was Government Effectiveness (GE), understood as the quality of public services and independence of political influence, the factor reflecting the extent to which the opportunity to benefit from public power is perceived – Control of Corruption (CC) – comes to the fore in the subsequent decade.

That is, we can assume that in shaping public attitudes towards and perceptions of corruption, the effectiveness of state governance gives way to the state's capacity to both generate and contain corruption potential. It should be noted that the impact of CC in this period is not equivalent to that of GE in the previous one. There are fewer statistically significant causalities of CC than those of GE in the earlier period, and only

two have a unidirectional impact on the CORR, at the first lag and also in the second one but at a 10% probability of error.

In lags 3 and 4 Granger causality from the corruption index toward CC and GE factors is observed, but in lag 5 the Government Effectiveness (GE) factor reverses the causality and again becomes a determinant of the corruption index (CORR). This 5th lag also registers a Granger causality of the Corruption Index toward CC, even within a 10% margin of error. Based on the above, we can assume that in the relatively longer term, as in the previous period, the leading determinant of the Corruption Index is the Government Effectiveness (GE) factor, while Control of Corruption becomes causally dependent on public perception of corruption as expressed by the CPI. The reversal of the direction of causality in the sequence of lags considered takes place for CC and GE. In the first lags, CC determines the CORR, and in the subsequent lags 3 to 5, causality is reversed.

While the direction of causality for GE in the first lags is from the CORR, it is reversed in the upper lags. This can be seen as evidence that the CC effect is quickly absorbed into public perceptions of corruption and, in the relatively long-term, the effect of anti-corruption measures is fully consumed to the extent that public perceptions of corruption (CPI) now determine the perceptions of its possibilities reflected by the CC factor. In the case of GE, this causal impact of the CORR in lags 2 and 4 expresses the presence of a perception of corruption that transfers to or determines public perceptions of government effectiveness. This perception does not cover the actual state of the quality of public services and governance but rather reflects the corruption expectations reflected in the CPI. It takes a somewhat longer time (lag 5) to reverse and rationalize this causality, with GE taking the lead on public perceptions of corruption represented by the CPI.

An analysis of the impact of Government Effectiveness (GE) must also consider its causality with the Political Stability (PS) factor. Five of the lags have Granger causality between them, but only the first has unidirectional causality (from GE to PS), while all other lags have bidirectional causality. This persistent and bidirectional causality between these two factors can also be seen as an indirect pathway for PS to impact the CPI, with GE in a mediating role. Accepting this assumption, we can put an equating in the public perceptions of the corruption environment between political stability and the effectiveness of state governance in their considering as factors of the political system directly related to both the fight and the presence of corruption potential. In this context, the lack of the same sustainable and direct causality between GE and CC is striking. There are only two Granger causalities at lags 4 and 5, and the direction of influence is always from GE to CC. This subordinated role of the corruption control factor to the GE, and perhaps also to the political stability factor, clearly shows that the

public perceptions of corruption potential and the effectiveness of the fight against it are not functions of the direct results from the anti-corruption actions, but rather from the predisposal of the political environment and state governance toward creating the conditions for corruption to grow and take actions to restrain it.

Considering the general trends formed by the overall panel of data for the surveyed countries, we can clearly distinguish their manifestations against the contrasting behaviour among countries showing the highest and lowest scores in the fight against corruption, given their ranking according to their CPI values. The group of best-performing countries includes Denmark, Finland, Norway, and Sweden. At the other extreme are Bulgaria, Hungary, and Romania.

From 2000 to 2011, the group of Northern European countries with high scores show very distinct Granger causality scores (Table 6). The Corruption Index (CORR) is directly influenced by only two factors, Political Stability (PS) and Control of Corruption (CC). The relatively medium-term manifestation in the 3rd lag is notable; while it is also present at the 1st and 2nd lags, these results are less definite given that they were recorded within a 10% margin of error. It should be noted that there is no direct influence of the GE factor on the CORR, but its interaction with other government factors is obvious. The most persistent influence of political stability on GE can be seen in the causality at lags 1, 2, 4, and 6 in the direction of PS versus GE. In turn, GE has a direct influence on CC corruption control at lags 1 and 2. The above allows us to conclude that Government Effectiveness influences the Corruption Index indirectly through the mediating role of PS and CC, with this occurring most rapidly with respect to CC and more persistently with respect to PS over relatively longer time periods.

In contrast to the high-ranking countries on the Corruption Index, Bulgaria, Hungary, and Romania show some clear differences (Table 7). The main one is the presence of a strong Granger causality between governance factors and the CORR results. Such is registered only in the 2nd lag, but at a 10% margin of probable error and in the direction from CC and GE to corruption. The impact here of the GE factor is more significant relative to the CORR compared to the previous group of countries.

These differences are not only due to the consideration of direct causality with the Corruption Index (CORR) but also the causalities that arise in relation to other factors of state governance. The impact of GE versus Control of Corruption (CC) is twice as frequent among low-ranking countries as in high-ranking ones (four versus two causalities) with a unidirectionality of impact from GE versus CC. Another characteristic manifestation for Bulgaria, Hungary, and Romania in comparison with the other countries studied is the influence of the Political Stability (PS) factor. It appears in causal relationships with the other factors of state governance in all lags of the study; out of nine causal relationships recorded, six of them show PS with a unidirectional

impact, it is bidirectional in two, and PS in one of the cases appears to be determined by GE. In contrast to the high-ranking countries, here PS does not mainly impact GE but also CC to a large extent. Out of nine recorded causalities of PS, five of them are relative to the CC factor. This is what determines the difference between the two groups of countries: political stability in the high-rated countries influences control over corruption through GE, while PS directly influences CC in the low-rated countries.

Over the period 2013 – 2021, the characteristic causalities for the two groups of countries are relatively unchanged in terms of their manifestation, but they also underwent some development through the differences thus established.

For the high-ranking countries (Table 8):

The impact of the Political Stability (PS) and Control of Corruption (CC) factors on the Corruption Perception Index (CPI) was maintained. For PS, it is most persistent (manifestations in lags 2, 3, and 4) and always unidirectional, from PS to the Corruption Index (CORR). The impact of CC on the CORR is unidirectional only in lag 2, bidirectional in lags 3 and 4, and reverses direction in lag 5.

Unlike in the previous period, in the current period, the GE factor appears as a determinant of the CORR, albeit with a relatively later manifestation in the 4<sup>th</sup> lag.

For the low-ranked countries, the direct impact of governance factors on the CORR was not observed in either the previous period or 2013 – 2021 (Table 9). Only one direct Granger causality on the part of the Government Effectiveness factor to the CORR is registered, but this causality has a relatively late manifestation at lag 5.

Bearing in mind that causalities are registered on the CORR side concerning GE at lags 2 and 3, we can assume that in low-ranked countries the dynamics of corruption have an impact on the efficiency of state governance, but this "pressure" takes relatively longer to manifest itself (lags 2 and 3) and only has an effect at a much later stage (lag 5).

By comparison, in the high-ranking countries, the GE factor also has a relatively delayed impact on the Corruption Index (4<sup>th</sup> lag), but the political stability and Control of Corruption factors have an impact on the CORR already in the 2<sup>nd</sup> and 3<sup>rd</sup> lag. The direct impact of these factors on the CORR in the period 2013 – 2021 is completely absent for low-ranking countries.

## **Conclusion**

In the present study, it has been demonstrated that the rule of law is a factor that reduces perceptions of corruption among the public; therefore, we can point to functioning oversight bodies, strengthened police, and more effective courts as integral to effective anti-corruption enforcement measures. This factor cannot be

addressed without reforms to reduce institutional weaknesses. Corruption will not disappear by reforming systems, but this process will optimise control and minimise adverse effects so that Bulgaria can continue in its efforts to become a modern, developed country with good living conditions for the population. This is an argument supported by the results obtained from the regression applied, which proves that an increase in the human development index can constitute a basic rule for high income levels and for optimal control over corruption.

Analysing the complex interaction between the dynamics of the CPI and the three indicators of quality of public governance, we must consider that the indicators in question are directly related both to the effectiveness of this governance in terms of suppressing the potential for corruption and to public perceptions of the effectiveness of the actions taken. We find the latter important, especially given that the CPI Corruption Index covers and focuses specifically on examining public perceptions of the level of the corruption environment. Thus, on the one hand, the analysed indicators of state governance can be seen as objective measures of effectiveness, but on the other hand, equally important is the question of how this quality assessment of state governance has been absorbed and assimilated into the public consciousness. When anti-corruption actions are taken, apart from the concrete results, what is the sustainability of their public perception over time? It is the public's subjective assessment of corruption potential, a mixture between perceptions of concrete results and persistent opinions that have formed over time that will underpin the final product and measure called the Corruption Index.

This calls into question not only ensuring the effectiveness of the anti-corruption actions of the state apparatus but also protecting their sustainability over time. The results of the present study have shown the increased importance of the Government Effectiveness indicator, precisely because its influence shows a long-lasting impact over time, both on the dynamics of the Corruption Index and in relation to other indicators of state governance. Wherever this factor moves into a "secondary role", it will simultaneously retain its significant interaction with the other two indicators of governance, thus continuing to influence the Corruption Index indirectly through them. This relatively long-term manifestation of Government Effectiveness can also be observed in that of Political Stability. The Control of Corruption indicator, especially in the 2013 – 2021 period, demonstrates a more significant impact compared to Government Effectiveness, albeit for a relatively shorter duration. It also shows that during the period under consideration, when it comes to shaping public attitudes and perceptions of corruption, the effectiveness of state governance gave way to the government's capacity to both generate corruption potential and limit it.

The manifestation of these determinacies takes its characteristic form in the context

of the performance of high- and low-ranked countries against their corruption indices. Countries demonstrating high anti-corruption scores register a direct influence on the Corruption Index from the indicators Political Stability and Control of Corruption, with the factor Government Effectiveness having an indirect impact through these indicators. For low-rated countries, including Bulgaria, no direct influence on the Corruption Index is recorded from any of the three indicators of quality of government. The influence of Government Effectiveness can be defined as relative to the dynamics of the Corruption Index, and the influence of this factor is mainly directed towards the Control of Corruption indicator. The influence of Political Stability as a factor is yet another difference between the two groups of countries.

In the high-ranking group, Political Stability influences Control of Corruption through Government Effectiveness, and thus its direct impact on the Corruption Index is amplified by the impact of the Control of Corruption indicator. While the influence of Political Stability in the low-ranking group is directed only towards Control of Corruption, no significant influence on the Corruption Index is registered from either of these two indicators. For low-ranked countries, this leaves only the option of impact through the Government Effectiveness indicator, especially given its possible effect on the Corruption Index. However, this requires additional time to manifest and therefore impacts government effectiveness only at a much later point.

In the case of Bulgaria, we must state that there are signs of problems with both the supply and demand of corruption. A climate of intolerance is not enough. Consensus among the main political players on anti-corruption issues remains elusive. At the same time, the negative impact of corrupt practices on economic growth, efficiency of public spending, and foreign investment is evident. The elections of October 2022 showed that there are problems both with the demand for corruption (voting for parties that the public accuses of corruption) and with a lack of anti-corruption alternatives, due to the fragmentation of the political space.

In the search for corruption, two particularly negative aspects are controlling and buying votes, on the one hand, and low voter turnout, on the other. It is this second feature of the political situation in Bulgaria that worsens the situation involving the demand for corruption even more. With higher turnout, the importance of the controlled vote would drop sharply. Political stability plays a special role in offering anti-corruption alternatives. Unfortunately, high stability in our country is generally based on pro-corruption arrangements within the ruling coalitions. The formation of anti-corruption coalitions is possible under conditions of lower political stability, implying mutual control between the actors in government. Bulgaria is an example of how the corruption problem destabilises the political system and adversely affects welfare and economic growth.

If the fight against corruption does not become the main task of the leading political forces in Bulgaria, progress will be slow and mainly along the lines of external pressure. This will reproduce the trend towards relatively slow economic growth and Bulgaria falling further behind other post-communist EU Member States.

### **Conflict of interests**

The authors have no conflict of interests to declare.

### **References**

- Ades, A. & Di Tella, R. (1999). Rents, Competition and Corruption. *American Economic Review* 89(4), 982-994.
- Applica sprl, Cambridge Econometrics (2017). *Final Report, Economic Challenges of Lagging Regions*. Brussels: European Commission. Available at [http://ec.europa.eu/regional\\_policy/en/information/publications/reports/2017/economic-challenges-of-lagging-regions](http://ec.europa.eu/regional_policy/en/information/publications/reports/2017/economic-challenges-of-lagging-regions) (accessed 03/03/2018).
- Armantier, O. & Boly, A. (2011). A Controlled Field Experiment on Corruption. *European Economic Review*, 55(8), 1072-82.
- Bachtler, J. & Mendez, C. (2007). Who governs EU cohesion policy? Deconstructing the reforms of the structural funds. *JCMS: Journal of Common Market Studies*, 45(3), 535-564.
- Börzel, T. & Risse, T. (2007). *Europeanization: The domestic impact of European Union politics*. Handbook of European Union Politics, 483-504.
- Brempong, K. (2002). Corruption, economic growth, and income inequality in Africa. *Economics of Governance*, 3, 183-209.
- Brempong, K. & Camacho, S. (2006). Corruption, growth, and income distribution: Are there regional differences? *Economics of Governance*, 7, 245-269.
- Corman, M. R. (2021). *A Critical appraisal of the EU's anti-corruption legal capacity – Emerging stronger from the Covid-19 crisis? Geopolitics & Values: what is the real power of the EU?* Brussels: Institute of European Democrats, February.
- Di Tella, R. & Schargrodsky, E. (2003). The Role of Wages and Auditing during a Crackdown on Corruption in the City of Buenos Aires. *Journal of Law and Economics*, 46(1), 269-292.



- Dincer, O. C. & Gunalp, B. (2008). Corruption, Income Inequality, and Poverty in the United States. *FEEM Working Paper No. 54.2008*. Available at SSRN: <https://ssrn.com/abstract=1158446> or <http://dx.doi.org/10.2139/ssrn.1158446>
- Dumitrescu, E. I., Hurlin, C. (2012). Testing for Granger non-causality in heterogeneous panels. *Economic Modelling*, 29(4), 1450-1460. <https://doi.org/10.1016/j.econmod.2012.02.014>.
- EC, SWD. (2022). 502 final. *Commission Staff Working Document 2022 Rule of Law Report*. Country Chapter on the rule of law situation in Bulgaria.
- Elbahnasawy, N. G. (2014). E-Government, Internet Adoption, and Corruption: An Empirical Investigation. *World Development*, Vol. 57, Issue C, 114-126. <https://doi.org/10.1016/j.worlddev.2013.12.005>.
- Elbahnasawy, N. G., & Revier, C. F. (2012). The determinants of corruption: Cross-country-panel-data analysis. *The Developing Economies*, 50(4), 311-333.
- Freyburg, T. & Richter, S. (2010). National identity matters: the limited impact of EU political conditionality in the Western Balkans. *Journal of European Public Policy*, 17(2), 263-281.
- Gherghina, S. & Volintiru, C. (2017). A new model of clientelism: political parties, public resources, and private contributors. *European Political Science Review*, 9(1), 115-137.
- GLOBSEC. (2021). Vulnerability Index 2021.
- Goel, R. K., Nelson, M. A., & Naretta, M. A. (2012). The internet as an indicator of corruption awareness. *European Journal of Political Economy*, 28(1), 64-75.
- Goetz, K. H. (2005). The New Member States and the EU: Responding to Europe. In: Bulmer, S., Lequesne, Ch. (eds.). *The Member States of the European Union*. Oxford, 254-280.
- Grabbe, H. (2003). Europeanization goes east: power and uncertainty in the EU accession process. *The Politics of Europeanization*, 27(303), 29.
- Gupta, S., Davoodi, H. & Tiongson, E. (2001). Corruption and the Provision of Health Care and Education Services. In: Jain, A. K. (ed.). *The Political Economy of Corruption*. Routledge contemporary economic policy issues series.
- Gupta, S., Davoodi, H. & Alonso-Terme, R. (2002). Does corruption affect income inequality and poverty? *Economics of Governance*, 3(1), 23-45.
- Hallaert, J.-J. & Primus, K. (2022). Strengthening Public Expenditure Efficiency Investment and Social Spending in Bulgaria. *IMF WORKING PAPERS, WP/22/XX*.
- Hughes, J., Sasse, G. & Gordon, C. (2004). Conditionality and Compliance in the EU's

- Eastward Enlargement: Regional Policy and the Reform of Sub-national Government. *JCMS: Journal of Common Market Studies*, 42(3), 523-551.
- Innes, A. (2014). The political economy of state capture in Central Europe. *JCMS: Journal of Common Market Studies*, 52(1), 88-104.
- Integrated Country Strategy, Bulgaria. (2022). April 7, 2022.
- IPI. (2022). *Media Capture in Bulgaria: Hidden Alliances and Vested Interest*.
- Iwasaki, I., Suzuki, T. (2012). The determinants of corruption in transition economies. *Economics Letters*, Vol. 114, Issue 1, January, 54-60.
- Jain, A. K. (2001). Power, politics, and corruption. In: Jain, A. K. (ed.). *The Political Economy of Corruption*. Routledge contemporary economic policy issues series.
- Jancsics, D. (2019). Corruption as resource transfer: An interdisciplinary synthesis. *Public Administration Review*, 79(4), 523-537.
- Kaufmann, D., Kraay, A. & Mastruzzi, M. (2003). Governance Matters III: Governance Indicators for 1996 – 2002. *World Bank Policy Research Working Paper 3106*. Washington DC: World Bank.
- Kemoe, L. & Zhan, Z. (2018). Fiscal Transparency, Borrowing Costs, and Foreign Holdings of Sovereign Debt. *IMF Working Paper, WP/18/189*.
- Kopecký, P., Mair, P. & Spirova, M. (eds.). (2012). *Party patronage and party government in European democracies*. Oxford University Press.
- Kopecký, P., Meyer Sahling, J. H., Panizza, F., Scherlis, G., Schuster, C. & Spirova, M. (2016). Party patronage in contemporary democracies: Results from an expert survey in 22 countries from five regions. *European Journal of Political Research*, 55(2), 416-431.
- Kurer, O. (2001). Why do Voters Support Corrupt Politicians? In: Jain, A. K. (ed.). *The Political Economy of Corruption*. Routledge contemporary economic policy issues series.
- Li, H., Xu, L. C. & Zou, H. (2000). Corruption, income distribution, and growth. *Economics and Politics*, 12(2), 155-181.
- Matti, J. (2015). Corruption, Income Inequality, and Subsequent Economic Growth. *Undergraduate Economic Review*, Vol. 11, Issue 1, Article 3. Available at <https://digitalcommons.iwu.edu/uer/vol11/iss1/3>
- Mauro, P. (1995). Corruption and growth. *The Quarterly Journal of Economics*, 110(3), 681-712.
- Mauro, P. (1997). *The effects of corruption on growth, investment and government expenditure: A cross country analysis*. Washington DC: Institute for International

Economics.

- de Mendonça, H. F. & da Fonseca, A. (2012). Corruption, Income and Rule of Law: Empirical Evidence from Developing and Developed Countries. *Brazilian Journal of Political Economy* 32 (2), 305-14. Available at <https://centrodeeeconomia.politica.org/repojs/index.php/journal/article/view/355>.
- Mungiu-Pippidi, A., Acar, M., Dávid-Barrett, E., Dimulescu, V., Doroftei, M., Emek, U., Fazekas, M., Karaboev, S., Lukács, P. A., Kukutschka, R. M., Mungiu-Pippidi, A. & Podumljak, M. (2015). *Government Favouritism in Europe*. Barbara Budrich Publishing.
- Mungiu-Pippidi, A., Bratu, R., Charron, N., Dimulescu, V., Doroftei, M., Fazekas, M., Kasemets, A., King, L. P., Martinez Barranco Kukutschka, R., Pop, R. & Tóth, I. J. (2013). *Controlling corruption in Europe*. Barbara Budrich Publishing.
- NSCCRB. (2021). *National strategy for preventing and combatting corruption in the republic of Bulgaria (2021 - 2027)*.
- OECD. (2021). *Implementing the OECD Anti-Bribery Convention Phase 4 Report: Bulgaria, Phase 4 Report: Bulgaria*.
- Popa, M. (2013). *Essays on the Political Economy of Corruption and Rent-Seeking* (Doctoral dissertation). Harvard University. Available at <http://nrs.harvard.edu/urn-3:HUL.InstRepos:11107810>.
- Olken, B. (2005). Monitoring Corruption: Evidence from a Field Experiment in Indonesia. *National Bureau of Economic Research. Working Paper 11753*. Available at <https://www.nber.org/papers/w11753> [Accessed 26th January 2021].
- Paldam, M. (2001). *Corruption and Religion: Adding to the Economic Model*. Working Paper. Available at <http://www.martin.paldam.dk>.
- Rahayu, I. P., & Widodo, T. (2012). The causal relationship between corruption and poverty in ASEAN: A general method of moments/dynamic panel data analysis. *Journal of Economics, Business, & Accountancy Ventura*, 15(3), 527-536. doi:10.14414/JEBAV.V15I3.119
- Rose-Ackerman, S. (1996). *The Political Economy of Corruption*. Institute for International Economics. Available at <https://openknowledge.worldbank.org/handle/10986/11629>.
- Rose-Ackerman, S. (2001). Political Corruption and Democratic Structure. In Jain, A. K. (ed.). *The Political Economy of Corruption*. Routledge contemporary economic policy issues series.
- Rothstein, B. & Varraich, A. (2017). *Making sense of corruption*. Cambridge University Press.
- Seleim, A. & Bontis, N. (2009). The relationship between culture and corruption: A cross-national study. *Journal of Intellectual Capital*, 10(1), 165-184.

- Seo, J. W. (2016). E-government Efforts against Corruption in Bangladesh: What We Have Done and what We Have to Do. *Society & Change*, Vol. X, No. 1, 38-49.
- Tanzi, V. (1998). Corruption around the world: Causes, consequences, scope, and cures. *IMF Staff Papers*, 45(4), 559-594.
- Tanzi, V. & Davoodi, H. (2001). Corruption, Growth, and Public Finances. In: Jain, A. K. (ed.). *The Political Economy of Corruption*. Routledge contemporary economic policy issues series.
- Taylor, I. W., Ullah M. A., Koul, S. & Ulloa, M. S. (2022). Evaluating the Impact of Institutional Improvement on Control of Corruption – A System Dynamics Approach. *Systems*, 10(3), 1-26. <https://doi.org/10.3390/systems10030064>.
- Todorov, A. (2011). *Bulgarian Political Culture and Civic Participation*. Friedrich Ebert Foundation, Bulgaria Office.
- Torrez, J. (2002). The Effect of Openness on Corruption. *Journal of International Trade and Economic Development*, 11(4), 387-403.
- Treisman, D. (2000). The Causes of Corruption: A Cross National Study. *Journal of Public Economics*, 76, 399-457.
- Uberti, L. J. (2018). Corruption in transition economies: Socialist, Ottoman or structural? *Economic Systems*, 42(4), 533-555.
- Volintiru, C. (2015). The exploitative function of party patronage: does it serve the party's interest? *East European Politics*, 31(1), 39-55.
- Volintiru, C. (2016). *Clientelism and cartelization in post-communist Europe: the case of Romania* (Doctoral dissertation). The London School of Economics and Political Science (LSE).
- Wang, Z., Danish Zhang, B. & Wang, B. (2018). The moderating role of corruption between economic growth and CO2 emissions: evidence from BRICS economies. *Energy*, 148, 506-513. <https://doi.org/10.1016/j.energy.2018.01.167>.
- Wei, S. (2000). How taxing is corruption on international investors? *Review of Economics and Statistics*, 52(1), 1-11.
- World Bank (2012). *Worldwide governance indicators*. Available from <http://info.worldbank.org/governance/wgi/index.asp> (Retrieved June 30, 2012).
- Ximei, L., Zahid, L., Danish, Shahid, L. & Mahmood, N. (2021), The corruption-emissions nexus: Do information and communication technologies make a difference? *Utilities Policy*, 72 October, 101244, <https://doi.org/10.1016/j.jup.2021.101244>.

## Appendix 1

Table 1. Correlation matrix

	GINI	CONTROL OF CORRUPTION	CORRUPTION PERCEPTION INDEX
GINI	1		
CONTROL_OF_CORRUPTION	-0.22	1	
CORRUPTION_PERCEPTION_INDEX	0.54	-0.03	1

Source: Authors' estimation.

Table 2. OLS Regression Results with the Gini coefficient as a dependent variable

Dependent Variable: GINI

Sample: 2000–2020

Included observations: 21

<i>Variable</i>	<i>Coefficient</i>	<i>Std. Error</i>	<i>t-Statistic</i>	<i>Prob.</i>
C	-13.10072	65.81808	-2.870416	0.0060
RULE_OF_LAW	-1.270947	0.308294	-3.404976	0.0026
TRADE_OPENESS	-2766311.	5834148.	-0.474158	0.6439
PCR	0.103617	0.173376	0.597643	0.5612
INFLATION	0.078752	0.333867	0.235880	0.8175
HDI	-8.460158	6.608953	-2.676069	0.0002
GDP	2.189582	1.501099	0.067349	0.9474
CORRUPTION_PERCEPTION_INDEX	0.327909	0.351242	0.933569	0.3689
CONTROL_OF_CORRUPTION	-1.409731	0.056399	-2.621352	0.0223
R-squared	0.569655	Mean dependent var		35.48571
Adjusted R-squared	0.482758	S.D. dependent var		4.706515
S.E. of regression	2.193671	Akaike info criterion		4.706557
Sum squared resid	57.74632	Schwarz criterion		5.154210
Log likelihood	-40.41885	Hannan-Quinn criter.		4.803709
F-statistic	10.00789	Durbin-Watson stat		1.850000
Prob(F-statistic)	0.000089			

Source: Authors' estimations.

Table 3. OLS Regression Results with the Control of corruption as a dependent variable

Dependent Variable: CONTROL\_OF\_CORRUPTION

Sample: 2000–2020

Included observations: 21

<i>Variable</i>	<i>Coefficient</i>	<i>Std. Error</i>	<i>t-Statistic</i>	<i>Prob.</i>
C	3.599815	0.745682	4.827546	0.0002
GINI	-0.022320	0.007083	-3.151325	0.0066
HDI	5.563987	1.128409	4.930823	0.0002
INFLATION	-0.001360	0.006344	-0.214343	0.8332
PCR	-0.002727	0.002917	-0.934699	0.3647
RULE_OF_LAW	0.468736	0.639010	2.733536	0.0045
R-squared	0.681760	Mean dependent var		-0.175441
Adjusted R-squared	0.575680	S.D. dependent var		0.113509
S.E. of regression	0.073939	Akaike info criterion		-2.136184
Sum squared resid	0.082006	Schwarz criterion		-1.837749
Log likelihood	28.42993	Hannan-Quinn criter.		-2.071416
F-statistic	6.426851	Durbin-Watson stat		2.194922
Prob(F-statistic)	0.002214			

Source: Authors' estimations.

Table 4. Results from the applied Granger Causality test, 2000–2011

<i>Period</i>	<i>Hypothesis</i>	<i>Lag</i>	<i>F-stat.</i>	<i>Prob.</i>	<i>Conclusion</i>
2000-2011	CPI1 does not Granger Cause CC1	1	3.32292	0.0710	CPI1 Granger Cause CC1
2000-2011	CC1 does not Granger Cause CPI1	4	2.09071	0.0917	CC1 Granger Cause CPI1
2000-2011	CC1 does not Granger Cause CPI1	5	3.04544	0.0174	CC1 Granger Cause CPI1
2000-2011	CC1 does not Granger Cause CPI1	6	3.15924	0.0133	CC1 Granger Cause CPI1
2000-2011	PS1 does not Granger Cause CPI1	5	4.14064	0.0031	PS1 Granger Cause CPI1
2000-2011	PS1 does not Granger Cause CPI1	6	2.87256	0.0212	PS1 Granger Cause CPI1

<i>Period</i>	<i>Hypothesis</i>	<i>Lag</i>	<i>F-stat.</i>	<i>Prob.</i>	<i>Conclusion</i>
2000-2011	GE1 does not Granger Cause CPI1	2	4.27058	0.0167	GE1 Granger Cause CPI1
2000-2011	GE1 does not Granger Cause CPI1	3	3.28428	0.0249	GE1 Granger Cause CPI1
2000-2011	GE1 does not Granger Cause CPI1	4	2.24852	0.0730	GE1 Granger Cause CPI1
2000-2011	GE1 does not Granger Cause CPI1	5	3.82326	0.0050	GE1 Granger Cause CPI1
2000-2011	GE1 does not Granger Cause CPI1	6	2.23254	0.0614	GE1 Granger Cause CPI1

Source: Authors' calculations.

Table 5. Results from the applied Granger Causality test, 2013–2021

<i>Period</i>	<i>Hypothesis</i>	<i>Lag</i>	<i>F-stat.</i>	<i>Prob.</i>	<i>Conclusion</i>
2013-2021	CPI2 does not Granger Cause PS2	1	2.73680	0.1012	CPI2 Granger Cause PS2
2013-2021	CC2 does not Granger Cause CPI2	1	3.65903	0.0586	CC2 Granger Cause CPI2
2013-2021	GE2 does not Granger Cause PS2	1	5.55772	0.0203	GE2 Granger Cause PS2
2013-2021	CC2 does not Granger Cause CPI2	2	2.56116	0.0831	CC2 Granger Cause CPI2
2013-2021	CPI2 does not Granger Cause GE2	2	5.37111	0.0063	CPI2 Granger Cause GE2
2013-2021	GE2 does not Granger Cause PS2	2	4.84671	0.0101	GE2 Granger Cause PS2
2013-2021	PS2 does not Granger Cause GE2	2	3.89536	0.0240	PS2 Granger Cause GE2
2013-2021	CC2 does not Granger Cause CPI2	3	2.73030	0.0502	CC2 Granger Cause CPI2
2013-2021	CPI2 does not Granger Cause CC2	3	2.69309	0.0525	CPI2 Granger Cause CC2
2013-2021	GE2 does not Granger Cause PS2	3	8.22395	9.E-05	GE2 Granger Cause PS2
2013-2021	PS2 does not Granger Cause GE2	3	5.03217	0.0032	PS2 Granger Cause GE2
2013-2021	CPI2 does not Granger Cause GE2	4	2.09833	0.0931	CPI2 Granger Cause GE2

<b>Period</b>	<b>Hypothesis</b>	<b>Lag</b>	<b>F-stat.</b>	<b>Prob.</b>	<b>Conclusion</b>
2013-2021	GE2 does not Granger Cause PS2	4	15.5027	1.E-08	GE2 Granger Cause PS2
2013-2021	PS2 does not Granger Cause GE2	4	4.14040	0.0052	PS2 Granger Cause GE2
2013-2021	GE2 does not Granger Cause CC2	4	2.80729	0.0340	GE2 Granger Cause CC2
2013-2021	CPI2 does not Granger Cause CC2	5	2.32527	0.0600	CPI2 Granger Cause CC2
2013-2021	GE2 does not Granger Cause CPI2	5	3.03513	0.0202	GE2 Granger Cause CPI2
2013-2021	GE2 does not Granger Cause PS2	5	7.85375	3.E-05	GE2 Granger Cause PS2
2013-2021	PS2 does not Granger Cause GE2	5	13.1745	1.E-07	PS2 Granger Cause GE2
2013-2021	GE2 does not Granger Cause CC2	5	2.14458	0.0792	GE2 Granger Cause CC2

Source: Authors' calculations.

Table 6. Results of the Granger causality test for high-ranking countries, 2000–2011

<b>Period</b>	<b>Hypothesis</b>	<b>Lag</b>	<b>F-stat.</b>	<b>Prob.</b>	<b>Conclusion</b>
2000 - 2011	GE1_H does not Granger Cause CC1_H	1	7.36256	0.0105	GE1_H Granger Cause CC1_H
2000 - 2011	PS1_H does not Granger Cause CPI1_H	1	3.58786	0.0670	PS1_H Granger Cause CPI1_H
2000 - 2011	PS1_H does not Granger Cause GE1_H	1	3.55547	0.0682	PS1_H Granger Cause GE1_H
2000 - 2011	CC1_H does not Granger Cause CPI1_H	2	2.84026	0.0759	CC1_H Granger Cause CPI1_H
2000 - 2011	GE1_H does not Granger Cause CC1_H	2	3.32873	0.0510	GE1_H Granger Cause CC1_H
2000 - 2011	PS1_H does not Granger Cause GE1_H	2	4.85884	0.0158	PS1_H Granger Cause GE1_H
2000 - 2011	CC1_H does not Granger Cause CPI1_H	3	3.73733	0.0269	CC1_H Granger Cause CPI1_H
2000 - 2011	PS1_H does not Granger Cause CPI1_H	3	3.36011	0.0381	PS1_H Granger Cause CPI1_H
2000 - 2011	PS1_H does not Granger Cause GE1_H	4	3.78518	0.0254	PS1_H Granger Cause GE1_H



<i>Period</i>	<i>Hypothesis</i>	<i>Lag</i>	<i>F-stat.</i>	<i>Prob.</i>	<i>Conclusion</i>
2000 - 2011	CC1_H does not Granger Cause CPI1_H	6	5.62675	0.0923	CC1_H Granger Cause CPI1_H
2000 - 2011	GE1_H does not Granger Cause PS1_H	6	54.5499	0.0037	GE1_H Granger Cause PS1_H

Source: Authors' calculations.

Table 7. Results of the Granger causality test for low-ranking countries, 2000–2011

<i>Period</i>	<i>Hypothesis</i>	<i>Lag</i>	<i>F-stat.</i>	<i>Prob.</i>	<i>Conclusion</i>
2000 - 2011	PS1_LOW does not Granger Cause CC1_LOW	1	162.535	4.E-12	PS1_LOW Granger Cause CC1_LOW
2000 - 2011	PS1_LOW does not Granger Cause GE1_LOW	1	8.09485	0.0089	PS1_LOW Granger Cause GE1_LOW
2000 - 2011	CC1_LOW does not Granger Cause CPI1_LOW	2	2.68418	0.0940	CC1_LOW Granger Cause CPI1_LOW
2000 - 2011	GE1_LOW does not Granger Cause CC1_LOW	2	6.27173	0.0081	GE1_LOW Granger Cause CC1_LOW
2000 - 2011	PS1_LOW does not Granger Cause CC1_LOW	2	113.009	3.E-11	PS1_LOW Granger Cause CC1_LOW
2000 - 2011	CC1_LOW does not Granger Cause PS1_LOW	2	20.1257	2.E-05	CC1_LOW Granger Cause PS1_LOW
2000 - 2011	GE1_LOW does not Granger Cause CPI1_LOW	2	2.92576	0.0780	GE1_LOW Granger Cause CPI1_LOW
2000 - 2011	PS1_LOW does not Granger Cause GE1_LOW	2	4.57523	0.0239	PS1_LOW Granger Cause GE1_LOW
2000 - 2011	GE1_LOW does not Granger Cause PS1_LOW	2	3.26934	0.0602	GE1_LOW Granger Cause PS1_LOW
2000 - 2011	GE1_LOW does not Granger Cause CC1_LOW	3	3.52242	0.0433	GE1_LOW Granger Cause CC1_LOW
2000 - 2011	PS1_LOW does not Granger Cause CC1_LOW	3	216.907	6.E-12	PS1_LOW Granger Cause CC1_LOW
2000 - 2011	CC1_LOW does not Granger Cause PS1_LOW	3	17.9382	5.E-05	CC1_LOW Granger Cause PS1_LOW
2000 - 2011	GE1_LOW does not Granger Cause PS1_LOW	3	11.9323	0.0004	GE1_LOW Granger Cause PS1_LOW

<b>Period</b>	<b>Hypothesis</b>	<b>Lag</b>	<b>F-stat.</b>	<b>Prob.</b>	<b>Conclusion</b>
2000 - 2011	GE1_LOW does not Granger Cause CC1_LOW	4	9.65628	0.0026	GE1_LOW Granger Cause CC1_LOW
2000 - 2011	PS1_LOW does not Granger Cause CC1_LOW	4	126.393	7.E-08	PS1_LOW Granger Cause CC1_LOW
2000 - 2011	PS1_LOW does not Granger Cause GE1_LOW	4	24.0054	8.E-05	PS1_LOW Granger Cause GE1_LOW
2000 - 2011	PS1_LOW does not Granger Cause GE1_LOW	5	5.72170	0.0579	PS1_LOW Granger Cause GE1_LOW

Source: Authors' calculations.

Table 8. Granger causality test results for high-ranking countries, 2013–2021

<b>Period</b>	<b>Hypothesis</b>	<b>Lag</b>	<b>F-stat.</b>	<b>Prob.</b>	<b>Conclusion</b>
2013-2021	CPI2_H does not Granger Cause CC2_H	2	2.79449	0.0820	CPI2_H Granger Cause CC2_H
2013-2021	PS2_H does not Granger Cause CPI2_H	2	4.53550	0.0219	PS2_H Granger Cause CPI2_H
2013-2021	CPI2_H does not Granger Cause CC2_H	3	4.05871	0.0240	CORR2_H Granger Cause CC2_H
2013-2021	CC2_H does not Granger Cause CPI2_H	3	3.98292	0.0256	CC2_H Granger Cause CPI2_H
2013-2021	PS2_H does not Granger Cause CPI2_H	3	4.92661	0.0121	PS2_H does not Granger Cause CPI2_H
2013-2021	CPI2_H does not Granger Cause CC2_H	4	4.76345	0.0178	CPI2_H Granger Cause CC2_H
2013-2021	CC2_H does not Granger Cause CPI2_H	4	2.66319	0.0894	CC2_H Granger Cause CPI2_H
2013-2021	GE2_H does not Granger Cause CORR2_H	4	5.89283	0.0087	GE2_H Granger Cause CPI2_H
2013-2021	PS2_H does not Granger Cause CPI2_H	4	2.96013	0.0692	PS2_H Granger Cause CPI2_H
2013-2021	GE2_H does not Granger Cause PS2_H	4	3.41198	0.0478	GE2_H Granger Cause PS2_H
2013-2021	CPI2_H does not Granger Cause CC2_H	5	4.77951	0.0555	CPI2_H Granger Cause CC2_H

Source: Authors' calculations.

Table 9. Granger causality test results for low-ranking countries, 2013–2021

<i>Period</i>	<i>Hypothesis</i>	<i>Lag</i>	<i>F-stat.</i>	<i>Prob.</i>	<i>Conclusion</i>
2013-2021	CC2_LOW does not Granger Cause PS2_LOW	1	2.91385	0.1026	CC2_LOW Granger Cause PS2_LOW
2013-2021	CPI2_LOW does not Granger Cause GE2_LOW	2	5.87432	0.0122	CPI2_LOW Granger Cause GE2_LOW
2013-2021	PS2_LOW does not Granger Cause CC2_LOW	3	4.26999	0.0315	PS2_LOW Granger Cause CC2_LOW
2013-2021	CPI2_LOW does not Granger Cause GE2_LOW	3	2.95086	0.0798	CPI2_LOW does not Granger Cause GE2_LOW
2013-2021	PS2_LOW does not Granger Cause CC2_LOW	4	3.80883	0.0711	PS2_LOW Granger Cause CC2_LOW
2013-2021	GE2_LOW does not Granger Cause PS2_LOW	4	43.9214	0.0001	GE2_LOW Granger Cause PS2_LOW
2013-2021	GE2_LOW does not Granger Cause CPI2_LOW	5	299.797	0.0438	GE2_LOW Granger Cause CPI2_LOW
2013-2021	GE2_LOW does not Granger Cause PS2_LOW	5	53.6317	0.1033	GE2_LOW Granger Cause PS2_LOW

Source: Authors' calculations.

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How to cite this article:

Ganchev, G., Tsenkov, V. & Paskaleva, M. (2023). Corruption in Bulgaria: Context, Factors and International Comparison. *Economic Thought Journal*, 68 (6), 587-620. <https://doi.org/10.56497/etj2368601>.