# *Dynamic Effects of Corruption on General Government Final Consumption Expenditure: Evidence from OECD Countries*

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Summary

The relationship of corruption with macroeconomic indicators and its widespread negative impact over the years has been the subject of many empirical studies. Public expenditures, which are among these macroeconomic indicators, are one of the fiscal policy tools and their size and amount can be alternated by policymakers who gain an advantage from corruption. In this respect, the effect of corruption on the government final consumption expenditure is interrogated by System Generalized Methods of Moment panel data analysis in this study. Using four different corruption indexes in terms of robustness check, and forecasting covering the 2002–2018 period for 37 OECD countries proclaim that the corruption indexes in 3 models are significantly and positively related to public expenditures, while the other corruption index is positively but insignificantly correlated.

Keywords: corruption, expenditure, System Generalized Methods of Moment

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Corruption is a subject that many disciplines are interested in, evaluate its causes and consequences, and attach significance to since corruption is a social casus. In this respect, the concept of corruption is perused by many disciplines, from public administration to politics, from sociology to anthropology, from law to economics. Each discipline defines corruption within the framework of its area of interest. Based on the existence of interest, a common definition is generally found a foothold as people using the power of their position to ensure this benefit to themselves. There are many definitions of corruption in the literature, and the definition of the World Bank is generally accepted in terms of economics. According to World Bank's diorism, corruption is explained as '*the malicious use of public power and resources for personal benefit and purposes*'. While the initial knowledge of economics on corruption is limited and inadequate, as a result of the empirical studies conducted in the following period, with the increase in analyses, the economic assay of corruption has been handled more comprehensively, and the fields of study increased. It can be said that the first theoretical debates upon corruption in the economic sense started in the 1960s. The first empirical study on the economic causes and effects of corruption has realized by *Mauro* (1995). In this framework, other economists have also carried out different empirical studies on the economic analysis of corruption. In the early studies, there are different opinions about whether corruption affects the economy positively or negatively. However, due to the increase in cognizance and studies on corruption in the following process, there is a consensus that corruption reduces public revenues, enhances public expenditures, has a negative effect on growth and development, decreases investments, increases the informal economy, and is one of the causes of income inequality.

Rather than the corruption perception indexes used in empirical estimations, it is useful to specify what is understood (how it is perceived) from corruption in economic and/or social terms. Corruption has many negative effects on individuals and societies that are heavy and extremely forceful to compensate. Corruption negatively affects both the amount and composition of public expenditures in an economy. The corruption phenomenon is an activity to gain a certain benefit. In this context, especially in the public resource's utilization, public officials may turn to behaviors that lead to corruption such as populism, nepotism, and unfair gain in order to maximize their interests (Faure, 2011, p. 5). Because corruption is based on the unfair transfer of public resources. Such implementations can stir up both the formation of a rentier economy and the realization of public expenditures at a higher level than they should be (Del Monte & Papagni, 2001, 3–4). Hence, corruption causes rent-seeking activities by distorting the expenditure structure and size, and an increase in public expenditures, especially in low-income economies due to low wages (Dzhumashev, 2014, p. 403–416). In the light of these explanations, it is aimed to determine the effect of corruption on general government final consumption expenditure in OECD countries with dynamic panel data analysis for the 2002–2018 period. It is anticipated that this study will contribute to the literature with the empirical estimation of the nexus between corruption and the general final public expenditure which includes the public's education, health, defense, public order, public services, transfers, and many expenditure items.

## DEFINITION OF CORRUPTION

There are many different definitions of corruption. Although the research analyzes the effect of corruption on general public

expenditures based on the definitions and content of four different corruption perception indexes discussed in detail in the data and methodology part, it is appropriate to examine what corruption means and its place in public finance literature. Since the study is about public expenditures, which is one of the economic variants of corruption, economic definitions are included here. Corruption is defined as a public official's attempt to explain with a reasonable cause that he/she does not use this authority or violates his/her duty without a valid reason, and as a result, accepts money or gifts of monetary value. (McMullan, 1961, 183–184). According to *Bailey* (1966), corruption refers to the abuse of power as a result of the effort to gain personal benefit, especially in close relation to the act of bribery (Bailey, 1966, 720). According to another definition, corruption is the alienation of the public sector from its main duty due to private interests such as wealth and office (Nye, 1967, 418). Another definition of corruption is the misuse or failure of public officials to use their powers for personal gain (Huntington, 1968, 60–61). According to *Shleifer and Vishny* (1993), it is the sale or misuse of state property by state officials for personal gain (Shleifer & Vishny, 1998, 599). *Klitgaard* (1998) modeled the dynamics that lead to corruption (Klitgaard, 1998, 4):

*Corruption (C) = Monopoly Power (M) + Discretion (D) – Accountability (A)*

Accordingly, the fact that officials who have monopoly authority in the resource utilization, abuse their power to take decisions on their own in matters related to their duties and do not have an accountability mechanism, take care of their interests in this process causes corruption.

*Tanzi* (1998) defines corruption as the intentional disobedience of a person in order to benefit himself or others, and the deliberate abuse of public power for himself or his close friends, family, party, or social class (Tanzi, 1998, 564). The United Nations Development Program (UNDP) has reinterpreted the formalization of Klitgaard (1998) regarding corruption (UNDP, 2004, 2):

*C (Corruption) = M (Monopoly Power) + D (Discretion) – A (Accountability) – T (Transparency) – I (Integrity)*

## CAUSES AND INDICATIVES OF CORRUPTION

To say that corruption has only one cause would be inaccurate and incomplete. Because corruption involves a difficult and complex process to detect. There are many social, political, and economic factors that cause corruption. Unfair income distribution, the role of the state in the economy, public policies, poverty, multiple exchange rate mechanisms, trade restrictions, scarce resources, low wages, subsidies and support systems, incomplete control, pricing constraints, mismanagement are some of them. The high general level of prices, the scarcity of the variety of goods, and the inadequacy of state controls and inspections also cause corruption to be perceived as an additional source of income for individuals in the society (Jancsis, 2019, 528). Corruption arises from the economic activities of the state in general, especially from the monopoly power of the state. In order for an act of corruption to occur, there must be rent. The state takes advantage of the monopoly structure of the resource facility and intervenes heavily in economic life to ensure public services. As a result of the state providing public services and individuals demanding these services, the corruption mechanism becomes a part of economic activity (Jancsis, 2019, 528–529). On the other hand, it is stated that with the globalization process, corruption has evolved into an international dimension (Dzhumashev,

2016, 1171; Jancsis, 2019, 533). Many studies have been conducted to measure the causes and determinants of corruption. Many economic and non-economic variables have been adopted in these studies. In the literature review section, these studies and their contents are included.

## MEASUREMENT OF CORRUPTION

The phenomenon of corruption, which is a social, political, and economic reflection seen in different degrees in all countries, is not a directly measurable variable. The indexes presented in the study do not actually measure corruption itself, but the perception of corruption, which contains many subjective elements. *Németh et al.* (2019) point out the problems in the objectivity of corruption measurement methods. It is stated that data sharing organizations are not independent, the methodology is difficult to be verified by researchers, and they accept donations. In addition, it is stated that several indicators and types are used for the indexes of countries, it is not known whether scientifically verifiable statistical methods are conducted, the corrupt party is private institutions, not the state, and the representative sample affects the perception of corruption and does not peruse the institutional environment that will be based on corruption reduction. In this respect, it is emphasized that the necessity of measurement systems that allow the detection of corruption activities on sectoral and institutional – rather than on a national – scale , identify the dangers of corruption, and encourage and/or determine corruption reduction (Németh et al., 2019, 332–333). Notwithstanding, the number of indexes focusing on the measurement of corruption perception has increased greatly in recent years. Four of these measurement methods have been used in the empirical analysis, and these measurement methods are included in the data section.

## EMPIRICAL LITERATURE REVIEW

Previous literature mostly and mainly focus on the sub-components of public expenditure or types. This section procures a short-cut view upon the literature samples about the effect of corruption on government spending types or/and sub-components. *Tanzi and Davoodi* (1997) state that corruption, which disrupts the efficiency of public administration and the healthy functioning of the public revenue-expenditure mechanism, primarily increases public expenditures. In this respect, in their study on data from 1980–1995 for 63 countries, it is confirmed that corruption is positively related to public expenditures and augments spending (Tanzi & Davoodi, 1997, 20–21). Mauro (1998) re-analyzed the Mauro (1995) with public expenditures data. It is remarked in the study that the composition of the public expenditure of countries affects their economic performance. In corrupt countries, government officials may tend to spend more in areas where the opportunity for corruption is high. Mauro (1998) carried out the study in which these assessments have been tested in this direction, using data from about 100 countries between 1970–1985. In this study, an inverse relationship has been determined between corruption and education expenditures. (Mauro, 1998, 274–279). *Del Monte and Papagni* (2001) specify that the efficiency of government expenditures decreases if the corruption is high, and bureaucrats' and entrepreneurs' profit from corruption in Italy. *Gupta, De Mello, and Sharan* (2001) have examined the empirical relationship between corruption and military expenditures. According to the results of the study conducted with the data of 120

countries between 1985–1998, countries that are perceived as corrupt tend to spend more on military expenditures (Gupta et al., 2001, 773–775). *Toatu* (2004) inquiries about the impact of corruption on government spending for Pacific Island countries. It is determined that corruption has a demolitionist effect on public spending (Toatu, 2004, 2–3). *Bağdigen and Dökmen* (2006) have tested whether there is a relationship between consolidated budget expenditures, education, health, investment, and defense expenditures with corruption for Turkey from 1982 to 2003. According to the findings, corruption increases consolidated budget expenditures. A one-unit increase in the corruption perception index is accompanied by a 0.24% increase in investment expenditures proportioned to GDP. With a one-unit increase in the corruption perception index, the ratio of education expenditures to GDP increases by 0.33%, while the ratio of health expenditures to GDP increases by 0.06%. There is also a positive but insignificant relationship between corruption and defense expenditures (Bağdigen & Dökmen, 2006, 27–34).

*Delavallade* (2006) has concluded that corruption harms the public expenditure structure by decreasing the health, education, and social protection expenditure for the period 1996–2001 and 51 developing–13 developed countries. On the other hand, it is detected that the defense, fuel and energy, culture, public services spending enhance due to the corruption (Delavallade, 2006, 222). *Karagöz and Karagöz* (2010) could not find a causal relationship between public expenditures and corruption for Turkey. *Timofeyev* (2011) has highlighted that it is unclear to what extent corruption reduces the effectiveness of social expenditures in Russia. *Cordis* (2014) searches the relationship between corruption and the composition of state spending for US states. Ordinary least squares and three-stage least squares method estimation findings show that corruption decreases social and higher education expenditures and increases housing, health, natural resources, and community development expenditures in the USA (Cordis, 2014, 745). *Hashem* (2014) explores the relationship between government spending and corruption for 13 Arab countries and the period 1998–2008. The findings of the study reveal that as the level of corruption perception (CPI) increases, defense, health, and education expenditures enhance (Hashem, 2014, 125). *D'Agostino et al.* (2016) has remarked that corruption affects the allocation of public expenditures and corrupts its composition and causes budget distortions for 106 countries. *Sakanko and Yelwa* (2017) have tested the impact of corruption on household final consumption spending for Nigeria and the period 1980–2015. The time-series estimation results present that a one-unit rise in corruption causes an average of 0.3-unit raise in household final consumption spending (Sakanko & Yelwa, 2017, 148–149). *Malyniak et al.* (2019) quest the relationship between public expenditures and corruption by dividing 166 countries into 4 groups according to their level of democratic development for the period 2004–2017. There is a strong and significant correlation between public spending efficiency and corruption. In addition, corruption in less democratic countries increases public expenditures more than in more democratic countries (Malyniak et al., 2019, 290). *Ryu* (2020) finds a positive relationship between the general government consumption expenditure and corruption perception index (CPI) for the period 1996–2017 with the data of 36 highly indebted countries. *Victor and Leyira* (2021) share a statistically weak and positive correlation between the general government final consumption expenditures and corruption for 10 sub-Saharan African countries and the period 2009–2020.

## DATA AND METHODOLOGY

The effect of corruption on general government final consumption expenditures is researched through dynamic panel analysis for 37 OECD countries[1] and the 2002–2018 period. In this respect, four different models have been generated with four corruption perception indexes. Corruption data originate from Transparency International's Corruption Perceptions Index, World Bank Governance Indicators' control of corruption control indicator, International Country Risk Guide's corruption indicator, and the Bayesian Corruption Index developed by *Samuel Standaert* (2015). Four corruption indicators have been selected among the most frequently used data in the literature and have been conducted for a robustness check of estimates. The Corruption Perception Index is interpreted with scores between 0–10 from 1995 to 2011, and closer to zero means increased corruption, while closer to 10 means reduced corruption. Since 2012, Transparency International has changed this scoring range and started to use a scoring range between 0–100. For this reason, 2012–2018 data of CPI have been composed between 0–10 and used in the analysis. The index, called The International Country Risk Guide (ICRG), shares data in three risk categories: political, financial, and economic. The corruption indicator is evaluated over 6 points within the political risk component. 6 represents the highest level of corruption, 0 represents the lowest level of corruption.

The World Governance Indicator's control of corruption indicator, which captures the perceptions of the extent to which public power is used for personal gain, takes a marginal value between 2.5 and –2.5. 2.5 represents strong governance level, –2.5 weak governance level. The Bayesian Corruption Index, which represents the first difference between the CPI and WGI indexes, states that an increase in the level of difference means a decrease in the level of corruption. The index, which is scored between 0 and 100, explains that a one-unit increase in the index means that corruption will increase. The general government spending (formally general government final consumption expenditure) indicator, which summarizes the size of the government between countries with the sum of expenditures such as general public services, defense, public order and safety, economic affairs, environmental protection, housing, and community amenities, health, education, recreation, culture, religion, social protection, is included as the dependent variable in all models (World Bank, 2021). General government spending is measured in terms of thousands of USD. The size of expenditures between countries diverges in terms of countries with different public sector sizes. For this reason, the study also allows the analysis of economic problems that cannot be solved with both cross-section data and time-series data with a dynamic panel regression. The data of countries with different spending levels interpolate unit variability and unobservable heterogeneity to the model with panel data analysis. Some control variables are also included in the estimations. *Table 1* provides detailed information on all data. *Appendix 1* and *Appendix 2* contain the descriptive statistics of the variables and the correlation matrix. *Appendix 3* includes 37-panel countries. As can be seen from Appendix 1, the minimum and maximum values of the 4 corruption perception indexes vary greatly between the countries that are the subject to the research[2]. In addition, the dependent variable *(ggs)* is positively correlated with all corruption indexes.

The impact of corruption on general government spending is estimated by dynamic panel data analysis. These effects are explored with one of the extensions of the *Arellano Bond*

*estimator*, a linear dynamic panel data method in which panel-level effects are correlated with the lags of the dependent variable. The estimator, which is known as the *Arellano-Bover/Blundell-Bond Panel Data Estimator*, is designed for relatively short-term periods and datasets with a large number of observations and includes the ratio of the panel effects' variance to the variance of the specific error. The method, which presumes that there is no autocorrelation in idiosyncratic errors, necessitates that panel effects are not related to the first difference of the dependent variable's first observation. The models of corruption effect (4 corruption indexes) on general government spending are as follows.

*Arellano and Bond* (1991) generated the Generalized Method of Moments (GMM) estimator because lagged dependent variables make standard estimators inconsistent.

*Table 1*

**SALIENT FEATURES OF DATA**

| Variable | Indicator | Source |
|---|---|---|
| *ggs* | General Government Final Consumption Expenditure (current US$) | World Bank Open Data |
| *icrg* | International Country Risk Guide's Corruption Indicator (scored between 0 and 6) | ICRG Political Risk Guide Index |
| *bci* | Bayesian Corruption Index (scored between 0 and 100) | Samuel Standaert's Bayesian Corruption Index - 2018 update (2002–2017) |
| *wgi* | Control of Corruption (–2.5 means weak governance performance, 2.5 means powerful governance performance) | The World Bank World Governance Indicators |
| *cpi* | Corruption Perceptions Index (CPI) (0 is lowest corruption level, 10 is highest corruption level) | Transparency International |
| *inf* | Inflation, Consumer Prices Index (2010 = 100) | World Bank Open Data |
| *gdp* | Gross Domestic Product (current US$) | World Bank Open Data |
| *tr* | Social Transfers (expenses such as the direct in-kind provision of goods and services, cash benefits, and tax cuts with social objectives) | OECD Database |
| *gini_net* | Income Inequality (after taxes and transfers, equalized with household disposable income) | Frederick Solt's Standardized World Income Inequality Database (SWIID) |
| *tra* | Sum of Exports and Imports of Goods and Services (measured as a share of gross domestic product) | World Bank Open Data |

*Source:* own edited

However, the lag effect in this definition weakens as the variance ratio increases or the autoregressive process becomes permanent. This is called the usage of a '*weak instrument*'. *Blundell and Bond* (1998), and *Arellano and Bover* (1995) suggest using the method of '*orthogonal deviations*' instead of '*first difference*' transformation in order to overcome the use of the weak instrument of Generalized Method of Moments (GMM). This method is based on combining the difference equation and level equations, and unlike the first difference method, the difference from the previous period is not taken from the current period. Instead, the difference of the average of all possible future values of a variable is taken. Thus, even if the variables are subject to random walk, more effective estimates can be obtained with the System GMM.

In brief, the effect of corruption on general government spending is analyzed with the System GMM, which is one of the dynamic panel methods. Since the models in which the lagged values of the dependent variable take place as independent variables are denominated dynamic models, a dynamic model can enlighten the corruption effects more comprehensibly. The dynamic models used in the study are shown as follows.

$$y_{it} = y_{i,t-1} + \beta_1 x_{it} + \eta_i + \lambda_i + \varepsilon_{it} \rightarrow i = 1, \ldots \ldots \ldots,$$
$$N \text{ ve } t = 1, \ldots \ldots \ldots, T$$

$x_{it}$ shows the independent variable vector in size $k \times 1$;

$y_{i,t-1}$ is the lagged value of the dependent variable and is considered as an independent variable;

$\beta_1$ is the coefficient matrix in size $k \times 1$;

$\eta_i$ is the unobservable individual effects;

$\lambda_i$ is the unobservable time-specific effects;

$\varepsilon_{it}$ is the error term that presents the effect of unobservable variables varying between cross-sections and time. The model(s) established from equation (1) are as follows.

$$ggs_{it} = \beta_0 + \beta_1 ggs_{i(t-1)} + \beta_2 icrg_{i,t} + \beta_3 gdp_{i,t} + \beta_4 tr_{i,t} + \\ + \beta_5 inf_{i,t} + \beta_6 tra_{i,t} + \beta_7 gini\_net_{i,t} + \eta_i + \lambda_i + \varepsilon_{it} \quad (2)$$

$$ggs_{it} = \beta_0 + \beta_1 ggs_{i(t-1)} + \beta_2 bci_{i,t} + \beta_3 gdp_{i,t} + \beta_4 tr_{i,t} + \\ + \beta_5 inf_{i,t} + \beta_6 tra_{i,t} + \beta_7 gini\_net_{i,t} + \eta_i + \lambda_i + \varepsilon_{it} \quad (3)$$

$$ggs_{it} = \beta_0 + \beta_1 ggs_{i(t-1)} + \beta_2 cpi_{i,t} + \beta_3 gdp_{i,t} + \beta_4 tr_{i,t} + \\ + \beta_5 inf_{i,t} + \beta_6 tra_{i,t} + \beta_7 gini\_net_{i,t} + \eta_i + \lambda_i + \varepsilon_{it} \quad (4)$$

$$ggs_{it} = \beta_0 + \beta_1 ggs_{i(t-1)} + \beta_2 wgi_{i,t} + \beta_3 gdp_{i,t} + \beta_4 tr_{i,t} + \\ + \beta_5 inf_{i,t} + \beta_6 tra_{i,t} + \beta_7 gini\_net_{i,t} + \eta_i + \lambda_i + \varepsilon_{it} \quad (5)$$

## ESTIMATION FINDINGS

*Table 2* and *Table 3* show the System GMM estimation results. In all models, general government expenditure is included as the dependent variable. In the first column of the tables, where the numerical data regarding the estimations are included, the coefficients are placed before the parenthesis, and the standard error values are included in the parenthesis. The second column contains probability values. Diagnostic test results are also included under the tables, and comments on the results are added to the notes of each table.

*Model 1*, *Model 3*, and *Model 4* findings indicate that *P-Values* of *(icrg)*, *(cpi),* and *(wgi)* corruption indexes are highly significant (at 1% level) and positively correlated with the government final consumption expenditure *(ggs)*. A one-unit increase in (icrg), (cpi), (wgi) results in a completely different relative growth in (ggs) for each country. Because the expenditure composition and level of panel countries differ mainly due to the size of the government in OECD countries. But, a positive relationship indicates a specific rise in public spending in OECD countries for the

estimation period. According to the *Model 2* results, *(bci)* is positively connected with the *ggs* but not significant. The lagged value of government spending ggs(–1) is also positively related to public expenditures and means that general government spendings are progressive. Social transfers *(tr)* and economic growth *(gdp)* control variables are also positively related to general government spending *(ggs)* and have significant *P-Values* (at 1% and

*Table 2*

**DYNAMIC PANEL DATA ESTIMATION RESULTS – 1**

| Variables | Model 1 | | Variables | Model 2 | |
|---|---|---|---|---|---|
| | *Dependent Variable: ggs* | | | *Dependent Variable: ggs* | |
| | Coeff. (sta. err.) | *P-Values* | | Coeff. (sta. err.) | *P-Values* |
| *ggs(–1)* | 0.5428 (0.0381) *** | (0.002) | *ggs(–1)* | 0.1838 (0.0284) *** | (0.004) |
| *icrg* | 3.3819 (4.6173) *** | (0.009) | *bci* | 0.2719 (0.2381) | (0.469) |
| *gini_net* | –1.9264 (0.5285) *** | (0.005) | *gini_net* | –1.2824 (2.5128) *** | (0.000) |
| *tr* | 4.8294 (0.4186) *** | (0.001) | *tr* | 2.7318 (0.5183) *** | (0.000) |
| *inf* | –2.5284 (0.5290) ** | (0.025) | *inf* | –1.6325 (2.7382) | (0.163) |
| *gdp* | 3.5284 (0.2718) *** | (0.000) | *gdp* | 1.4032 (0.0042) ** | (0.012) |
| *tra* | –0.7129 (0.0493) *** | (0.001) | *tra* | –0.2518 (0.0004) *** | (0.005) |
| *cons* | 163.5719 (32.5729) *** | (0.000) | | 246.3179 (40.0381) *** | (0.002) |
| Obs | 592 | | Obs | 495 | |
| **Diagnostic Tests** | | | | | |
| Sargan | 34.050 (0.4274) | | | 26.2801 (0.5731) | |
| AR(1) | (0.0618) | | | (0.0024) | |
| AR(2) | (0.3610) | | | (0.2517) | |

*Note:* All results present the one-step GMM system dynamic panel data estimation. ggs(-1) is considered as a lag variable. AR(1) reports the first-order Arellano-Bond test for serial correlation in the first-differenced errors under the null hypothesis of no serial correlation. In addition, according to the AR(2) test, there is no autocorrelation problem as expected in the model. The instrumental variables used in the model are valid according to Sargan Test results. ***, **, and * represent significance at the 1, 5, and 10 percent levels.

*Source:* own edited

*Table 3*

**DYNAMIC PANEL DATA ESTIMATION RESULTS – 2**

| Variables | Model 3 | | Variables | Model 4 | |
|---|---|---|---|---|---|
| | *Dependent Variable: ggs* | | | *Dependent Variable: ggs* | |
| | Coeff. (sta. err.) | *P-Values* | | Coeff. (sta. err.) | *P-Values* |
| *ggs(–1)* | 0.4273 (0.0047) *** | (0.000) | *ggs(–1)* | 0.0925 (0.04103) *** | (0.000) |
| *wgi* | 0.0427 (0.0143) *** | (0.000) | *cpi* | 4.4523 (0.08937) *** | (0.000) |
| *gini_net* | –0.3026 (0.0417) ** | (0.026) | *gini_net* | –0.5249 (0.05168) *** | (0.000) |
| *tr* | 0.02746 (0.4456) *** | (0.000) | *tr* | 0.5284 (0.7248) *** | (0.001) |
| *inf* | –0.1730 (0.2014) * | (0.080) | *inf* | –1.3164 (0.3728) | (0.265) |
| *gdp* | 0.3619 (0.0271) *** | (0.001) | *gdp* | 1.4829 (0.0925) *** | (0.000) |
| *tra* | –0.1827 (0.0618) *** | (0.000) | *tra* | –0.0274 (0.0052) *** | (0.001) |
| *cons* | 43.164 (25.427) ** | (0.024) | | 49.0462 (33.8253) *** | (0.000) |
| Obs | 592 | | Obs | 592 | |
| **Diagnostic Tests** | | | | | |
| Sargan | 12.938 (0.2326) | | | 17.212 (0.3627) | |
| AR(1) | (0.0316) | | | (0.0047) | |
| AR(2) | (0.5621) | | | (0.2316) | |

*Note:* All results present the one-step GMM system dynamic panel data estimation. ggs(-1) is considered as a lag variable. AR(1) reports the first-order Arellano-Bond test for serial correlation in the first-differenced errors under the null hypothesis of no serial correlation. In addition, according to the AR(2) test, there is no autocorrelation problem as expected in the model. The instrument variables used in the model are valid according to Sargan Test results. ***, **, and * represent significance at the 1, 5, and 10 percent levels.

*Source:* own edited

5% level*)*, as expected. On the other hand, income inequality *(gini_net)*, and trade *(tra)* indicators are negatively correlated with the *(ggs)*. All estimation findings of these variables have significant values at 1% level; *(gini_net)* variable of *Model 3* is significant at 5% level. The inflation (inf) indicator is negatively related to general government spending (ggs). While *Model 1*, and *Model 3* have significant *(inf)* values at 5% and 10% levels, *Model 2*,

and *Model 4* results present that *(inf)* variable has no significant value. In summary, increases in the level of corruption boost the final consumption expenditure of the government, as proven by previous empirical studies.

The results illustrate that under the assumption that corruption generally increases public expenditures in the literature, the change in corruption perception indexes (an increase or decrease) causes a change in the amount of the government's general final consumption expenditures in the same direction. However, each country needs to be more prudent in terms of spending level and public size, especially with regard to the data limitations mentioned in the paper. The greater levels of corruption can lead to a higher degree of public expenditure and public revenue. Through the reduction of corruption in the process of obtaining public revenues and the augmentation in these revenues can ameliorate the public expenditure opportunities. Hence, the regulations, practices, and measures to be carried out to reduce corruption in OECD countries may generate an increase in public resources. In this way, it is considered that the increase in public revenues and public expenditures can expand the scope of action of countries and pave the way for their growth and development if resources are used effectively. A richer, larger, more prosperous country will both distribute resources effectively and control their spending and be less corrupt.

## CONCLUSION AND DISCUSSION

Corruption, which is a wicked matter of fact in any society in terms of morality, has been a motivational subject of theoretical and empirical studies. Corruption, which is a customary method used by policymakers especially in underdeveloped countries, is perceived as acquiring influence (penetration) in the society, let alone providing financial benefits. However, this method, which is morally and politically incorrect, is carried out in secrecy and it is not possible to detect corruption unless it is revealed. In recent years, it has become possible to measure corruption with the help of some qualitative and quantitative research methods and mathematical calculations. However, the measurement of corruption does not directly reflect the corruption index, it demonstrates the perception of corruption. This situation is criticized in the literature and constitutes one of the limitations of this study. For this reason, this limitation is tried to be eliminated by making use of different corruption perception indexes, and corruption perception indexes compiled from four of these measurement methods are operated in the estimations. Public expenditures, on the other hand, stand out as a tool that states use in line with their public needs and conjunctional policies financed with resources such as taxes and public debt. Public expenditures are performed by public officials and vary in direct proportion to the needs. The way in which public expenditures are administered is subject to many laws, regulations, communiqués, etc. and the discretionary powers of public officials have been trying to be limited as much as possible. Transparency and accountability have been also tried to be paved with the legal regulations. Although corruption is tried to be prevented in public expenditures in this way, the existence of the human factor makes it necessary to dredge up how the phenomenon of corruption provokes an alteration in public expenditures. On the other hand, the second limitation of the study arises in regard to expenditure data, as some countries calculate output growth according to the production method. To solve this problem, a dynamic panel data method is used, which eliminates

heterogeneity. Based on these explanations, a panel data set has been set up for 37 OECD member countries and the period 2002–2018 in the analysis. The effect of corruption on general government final consumption expenditures has been examined obtaining corruption indexes by 4 separate dynamic panel models. Income inequality, inflation, trade, social expenditures, and economic growth indicators are also included as control variables in the estimations made with the System GMM method. The analysis findings reveal that the corruption indexes of the 3 models are significantly and positively related to public expenditures. The other corruption index has an insignificant but positive coefficient. These results are in line with the literature and confirm the common view that corruption increases public spending.

The fact that most of the public resources are covered by taxes and that most of the taxes are taken from indirect taxes, which cannot be considered very fair makes the issue of using public expenditures too notable to be left to the conscientious decisions of the officials in charge of whether or not to commit corruption. In this context, the increase of public expenditures by the authorities for personal benefit may cause waste, unfair distribution of resources, and even corruption. Undoubtedly, leaving aside the moral structures and traditionalist attitudes of societies, it is considered that controlling the processes that are favorable to corruption or and taking precautions, accountability, transparency, informing the public, and legal regulations can reduce corruption. On the other hand, corruption control also means narrowing the possibilities of using the spending preferences and composition of the officials who are primarily responsible for the management of public policies in favor of their own interests. In addition, in a widely discussed atmosphere where rationality and efficiency cannot be achieved in the public sector, extravagancy cannot be prevented and the cumbersome structure of the state cannot be corrected, especially considering that a significant portion of the scarce public resources is transferred to debt interest payments in terms of some OECD countries. Public resources allocated to primary (non-interest) public expenditures being affected by corruption causes the economies of countries to carry a significant burden on their back. Alleviating this burden is to produce transparent policies in the goods and services offered by the public and to implement these policies as soon as possible. Therefore, it is thought that the more transparency is ensured in the goods and services offered by the public, the more successful the fight against corruption will be. ■

## Appendix

*Appendix 1*

### DESCRIPTIVE STATISTICS OF VARIABLES

| Variable | Observation | Mean | Standard Deviation | Minimum | Maximum |
|---|---|---|---|---|---|
| *ggs* | 629 | 310.817 | 176.427 | 17.529 | 62.730 |
| *icrg* | 629 | 3.874 | 1.149 | 1.500 | 6.000 |
| *bci* | 528 | 29.921 | 15.751 | 6.450 | 60.664 |
| *wgi* | 629 | 1.206 | 0.827 | –0.930 | 2.470 |
| *cpi* | 629 | 6.766 | 1.817 | 2.800 | 9.700 |
| *inf* | 629 | 2.479 | 2.896 | –4.478 | 44.964 |
| *gdp* | 629 | 1.863 | 3.256 | –14.268 | 23.985 |
| *tr* | 629 | 19.467 | 5.835 | 4.654 | 32.027 |
| *gini_net* | 629 | 31.684 | 6.297 | 23.000 | 54.300 |
| *tra* | 629 | 94.417 | 57.642 | 20.685 | 408.362 |

*Source:* own edited

*Appendix 2*

### CORRELATION MATRIX

| | *cpi* | *gdp* | *inf* | *tra* | *gini_net* | *tr* | *ggs* |
|---|---|---|---|---|---|---|---|
| *cpi* | 1 | | | | | | |
| *gdp* | 0.340417 | 1 | | | | | |
| *inf* | 0.592739 | 0.166415 | 1 | | | | |
| *tra* | –0.209150 | –0.437500 | –0.09295 | 1 | | | |
| *gini_net* | –0.394770 | –0.655780 | –0.11926 | 0.64015 | 1 | | |
| *tr* | –0.262840 | –0.140610 | –0.30422 | –0.09988 | 0.024997 | 1 | |
| *ggs* | 0.415976 | –0.226790 | –0.06492 | –0.12738 | –0.066870 | 0.324493 | 1 |
| | *wgi* | *gdp* | *inf* | *tra* | *gini_net* | *tr* | *ggs* |
| *wgi* | 1 | | | | | | |
| *gdp* | 0.058945 | 1 | | | | | |
| *inf* | 0.347858 | 0.166415 | 1 | | | | |
| *tra* | 0.084698 | –0.437500 | –0.09295 | 1 | | | |
| *gini_net* | 0.057896 | –0.655780 | –0.11926 | 0.64015 | 1 | | |
| *tr* | –0.279800 | –0.140610 | –0.30422 | –0.09988 | 0.024997 | 1 | |
| *ggs* | 0.434968 | –0.226790 | –0.06492 | –0.12738 | –0.066870 | 0.324493 | 1 |

| | icrg | gdp | inf | tra | gini_net | tr | ggs |
|---|---|---|---|---|---|---|---|
| *icrg* | 1 | | | | | | |
| *gdp* | –0.052850 | 1 | | | | | |
| *inf* | 0.296902 | 0.166415 | 1 | | | | |
| *tra* | –0.282420 | –0.437500 | –0.09295 | 1 | | | |
| *gini_net* | –0.025710 | –0.655780 | –0.11926 | 0.64015 | 1 | | |
| *tr* | –0.226820 | –0.140610 | –0.30422 | –0.09988 | 0.024997 | 1 | |
| *ggs* | 0.158508 | –0.226790 | –0.06492 | –0.12738 | –0.066870 | 0.324493 | 1 |
| | **bci** | **gdp** | **inf** | **tra** | **gini_net** | **tr** | **ggs** |
| *bci* | 1 | | | | | | |
| *gdp* | –0.041770 | 1 | | | | | |
| *inf* | 0.126030 | 0.166415 | 1 | | | | |
| *tra* | –0.194680 | –0.437500 | –0.09295 | 1 | | | |
| *gini_net* | 0.006704 | –0.655780 | –0.11926 | 0.64015 | 1 | | |
| *tr* | 0.326353 | –0.140610 | –0.30422 | –0.09988 | 0.024997 | 1 | |
| *ggs* | 0.454154 | –0.226790 | –0.06492 | –0.12738 | –0.066870 | 0.324493 | 1 |

*Source:* own edited

*Appendix 3*

## LIST OF PANEL COUNTRIES

| | | |
|---|---|---|
| Australia | Hungary | Norway |
| Austria | Iceland | Poland |
| Belgium | Ireland | Portugal |
| Canada | Israel | Slovak Republic |
| Chile | Italy | Slovenia |
| Colombia | Japan | Spain |
| Czechia | Korea, South | Sweden |
| Denmark | Latvia | Switzerland |
| Estonia | Lithuania | Turkey |
| Finland | Luxembourg | United Kingdom |
| France | Mexico | United States |
| Germany | Netherlands | |
| Greece | New Zealand | |

*Source:* own edited

## Notes

[1] For the sample countries, please see *Appendix 3*.

[2] The logarithmic transformations of the data have been used for the estimations.

[3] Note that Bayesian Corruption Index (bci) data is available for 2002–2017, and South Korea, Latvia, Lithuania, and the Netherlands have missing values of bci. Whole indicators except bci have not missing values. For details and statistics, please see A*ppendix* 1.

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