

THE IMPACT OF CORRUPTION ON ECONOMIC GROWTH IN OECD COUNTRIES

Veronika Linhartová, Eva Židová

Abstract: *The question if and how corruption can influence economic growth of countries is not answered by literature without controversies. One may thus encounter the view that corruption is "sand in the wheels" of the economy, which impedes economic transactions, as it reduces the security of property rights and contributes to inefficient allocation of resources. On the other hand, there are authors who believe that corruption is precisely what "greases the wheels" of the economy, because it allows individuals to avoid administrative and bureaucratic delays. Based on the searches results of the theoretical literature and empirical studies, this contribution verifies the validity of hypotheses about the negative impact of corruption on economic growth on a sample member states of the OECD in the period 1999 - 2014. Through information from the professional literature is for this purpose derived econometric model that provides a comprehensive overview of how corruption function in a selected sample of countries on economic growth. Econometric model proved that corruption negatively influences the economic growth, not only directly but also indirectly in selected group of countries. As the transmission channels through which corruption affects economic growth were confirmed household expenditures and net exports.*

Keywords: *Corruption, Economic growth, Econometric analysis, Transmission channel, Organization for Economic Cooperation and Development.*

JEL Classification: *D73, H11.*

Introduction

Corruption is a substantial problem that has been encountered by society since time immemorial. It is a problem that is persistent and very widespread; despite this, it cannot be solved either very easily or successfully. Professional literature states that corruption influences a country's economic situation, primarily its economic growth. For decades, the problem of corruption's influence on economic growth has been the subject of many theoretical and empirical studies. Some authors consider corruption to be a driver of the economy, but others support the opinion that it "sands the wheels" of the economy. It is necessary to emphasize that the second opinion predominates in most of the studies.

The goal of this paper is to verify the validity the hypothesis that corruption negatively influences economic growth in the OECD member countries. The content of the paper also includes a description of the current state of corruption for the given group of countries.

1 Statement of a problem

One of the most significant arguments in favor of corruption's positive influence on economic growth was put forth by Leff [6] and Huntington [4] in the 1970s. According to them, corruption has the ability to hasten lengthy and ineffective administrative processes. For this reason, they said that it necessarily "greases the wheels" of the public administration's performance. On the other hand, Myrdal [12] stated that it could lead

to even greater delay and further inefficiency on account of trying to attract a greater number of bribes or increase their costs.

In relation to this, Tanzi [17] argued that bribes increase companies' start-up costs; moreover, these companies could have been able to use these funds in a more effective way. Other authors determined that corruption blocks innovation as well as the development of these companies; in consequence, it dampens economic growth. Besides this, it impedes the development of market economies and disrupts the free market system, because it increases levels of uncertainty. In certain areas, it threatens the fundamental role of the state or impedes government intervention. It also leads to poor distribution of resources, because the structure of public expenses often changes in favor of specific sectors, mainly those that have more apparent opportunities for corruption. [2], [8]

On the basis of his empirical study, Mauro [9] determined that countries that typically have low productivity and large public sectors have a greater likelihood of low economic growth and widespread corruption. More recent empirical studies warn that it is not possible to explain corruption's influence on economic growth without taking into account the institutional framework of individual countries. For example, the authors Meon and Weill [10] presented evidence that corruption has a detrimental effect on economies with effective institutions, while countries with ineffective institutional infrastructure can benefit from corruption.

1.1 Transmission channels

In investigating the relationship between corruption and economic growth, a number of authors have come to the conclusion that corruption's significant influence on economic growth tends to disappear when other important determinants of economic growth are integrated. This indicates that a significant part of the effect that damages economic growth is transferred indirectly through the main determinants of economic growth, which are also designated transformation or transmission channels.

One of the first studies devoted to modes of transmission was conducted by Mo [11]. Even though he found a significant negative relationship between corruption and economic growth, the resulting size of this effect actually decreased and became a statistically insignificant after integrating other determinants of economic growth, i.e., investment, human capital, and political instability. On the basis of these findings, these were designated transmission channels. The authors Pellegrini and Gerlagh [15] built on his work, but they defined trade openness as another transmission channel. On the basis of their study, they proved that the most important channel impeding economic growth is investment. Dridi [2] also dealt with this problem; he considered the transmission channels to be investment, human capital, political instability, inflation, and government expenses. With the help of a study, he determined that negative effects are primarily transmitted via human capital and political instability, while the investment channel's effect appeared to be smaller than that of previous empirical studies.

In conclusion, it is possible to state that there are various academic studies with differing results, but studies concerning corruption's negative influence on economic growth predominate. Certain studies have proved corruption's significant negative influence on economic growth; others have discovered that this effect is statistically insignificant and prioritize other factors such as variables influencing economic growth. Empirical studies also illustrate that corruption acts directly on economic growth in a negative way, as well

as indirectly via transmission channels. Investment, human capital, and political instability have been indicated as the most important transmission channels.

2 Methods

The validity of the hypothesis of corruption's negative influence was verified on a panel data sample in the program Gretl³.

Due to the attributes of panel data, the estimation of the model's parameters was conducted using a fixed effects model. This choice was supported by rejecting the null hypothesis of Hausman test, which recommended the use of fixed effects model as an appropriate method for estimations.

A fixed effects model uses dummy variables to model individual effects. This regression has a great many explanatory variables, but it is still a regression model. For this reason, all the truths relating to regression models and equations are also valid here (1):

$$Y_{it} = \alpha_N D_{it}^{(N)} + \beta X_{it} + \epsilon_{it} \quad (1)$$

This model assumes the heterogeneity of the cross-sectional units in total members; therefore, it is necessary for the fixed effects model to create N various dummy variables, which are shown as $D^{(j)}$, where $j = 1, \dots, N$. [7], [13]

It is necessary to verify and evaluate the estimated econometric model before applying it. The traditional set of preconditions that econometrics considers in the context of regression error, i.e., error terms (ϵ_i), are used here and are expressed in the following way:

$E(\epsilon_i) = 0$. A zero mean value of the error term.

$var(\epsilon_i) = E(\epsilon_i^2) = \sigma^2$. Constant variance of error (homoscedasticity).

$cov(\epsilon_i; \epsilon_j) = 0$ for $i \neq j$. The error terms are not correlated.

ϵ_i has normal distribution.

X_i is fixed; therefore, it is not a random value.

The significance level set for the analysis is the standard, thus 0.05.

3 Problem Solving

As was mentioned in the introduction, the goal of this paper is to verify the validity of the theory of corruption's negative influence on economic growth. The analysis was conducted on the group of OECD member countries. For this reason, a description of the current state of corruption in the selected group of countries is included in the content of this paper.

3.1 The current state of corruption in the OECD countries

On the basis of its own analysis, the OECD emphasizes that corruption is a serious barrier to economic growth. According to this organization, not only is there a direct relationship between corruption and economic growth but also an indirect one, where corruption has significant negative impact on a whole range of key transmission channels. Even though the economies of the individual member states are different, the OECD tries

³ This is a freely available program that is used to estimate econometric models. It is available at WWW: <<http://gretl.sourceforge.net/>>.

to achieve the highest, consistently sustainable economic growth for them; it does this in part by using anti-corruption agreements and other measures. [14]

Both countries with lesser standards of living and economic strength as well as very economically advanced countries are concerned with the problem of corruption. These conclusions are derived from surveys by the organization Transparency International, which annually publishes the Corruption Perceptions Index (CPI). CPI is annually published by Transparency International and takes values in the interval from 0 to 100, where 0 is a highly corrupt country and a value of 100 indicates a country without corruption. The results of this index for the OECD member countries in 2015 are listed in Table 1. For each country, their ranking in the index is presented; that year, the index included 168 of the world's countries. [19]

Tab. 1: List of the OECD Member Countries According to the Corruption Perceptions Index for 2015

	CPI	Ranking		CPI	Ranking		CP	Rankin
Denmark	91	1	Australia	79	13	Slovenia	60	35
Finland	90	2	Belgium	77	15	Spain	58	36
Sweden	89	3	USA	76	16	South	56	37
New	88	4	Austria	76	16	Czech	56	37
Norway	87	5	Ireland	75	18	Slovakia	51	50
Netherland	87	5	Japan	75	18	Hungar	51	50
Switzerland	86	7	France	70	23	Greece	46	58
Canada	83	9	Chile	70	23	Italy	44	61
GB	81	10	Estonia	70	23	Turkey	42	66
Luxembour	81	10	Portugal	63	28	Mexico	35	95
Germany	81	10	Poland	62	30			
Iceland	79	13	Israel	61	32			

Source: [19]

New Zealand and the Northern European countries have long been considered to be the OECD countries with the lowest levels of corruption. The reason for their high ranking could be that the judiciary, monitoring bodies, and other institutions that thoroughly and effectively uphold anti-corruption laws are strongly situated in these countries. The Western European countries are considered to have a somewhat higher risk of corruption; they typically have a transparent and effective public administration with high ethical standards. In contrast to these countries, the countries located in Central Europe ranked lower on the list. Although these states do have anti-corruption legislation, they show marked shortcomings. A high risk of corruption is perceived in the countries of Southern Europe, where prevention is neglected in the fight against corruption. Overall, Mexico is distinguished by the highest risk of corruption among the OECD member countries. In this country, the courts, police, and other institutions are perceived as being very corrupt, incompetent, and unreliable. [18]

3.2 Model formulation and variable specification

The validity of the theory of corruption's negative influence was tested on the group of 34 OECD member countries for the years 1999–2014. The model's specifications were derived from the empirical work of authors dealing with the identification of the transmission channels via which corruption influences economic growth. On the basis of these studies, the author of this paper assumed that corruption influences economic growth directly as well as indirectly via transmission channels. These transmission channels

are considered to be investment, human capital, political instability, government expenses, and trade openness. Household expenditure, one of the basic components determining gross domestic product, was included in the model along with these transmission channels, which are also determinants of economic growth.

After testing the variables' stationarity, the model was constructed as follows (2):

$$GDP_Growth_{it} = \beta_0 + \beta_1 CPI_Growth_{it} + \beta_2 HOUExp_Growth_{it} + \beta_3 INV_Growth_{it} + \beta_4 GOVexp_Growth_{it} + \beta_5 d_NX_{it} + \beta_6 HC_Growth_{it} + \beta_7 d_PS_{it} \quad (2)$$

A description of the individual variables is presented in Table 2.

Tab. 2: Description of the Variables Used

Variable	Description of the Variable	Units	Positive/Negative
<i>i</i>	Respective country		
<i>t</i>	Respective year		
GDP Growth	Gross domestic product ⁴	Growth in %	
CPI Growth	Corruption Perceptions Index	Growth in %	Positive
HOUExp Growth	Household consumption	Growth in %	Positive
INV Growth	Investment ⁵	Growth in %	Positive
GOVexp Growth	Government expenditure	Growth in %	Positive
d NX	Balance of international trade	Total change	Positive
HC Growth	Human capital ⁶	Growth in %	Positive
d PS	Political Stability Index	Total change	Positive

Source: Author's own work acc. to [19],[20],[21]

3.3 Testing the hypothesis of corruption's direct influence on economic growth

The first part of the analysis verifies the validity of the hypothesis of corruption's direct negative influence on economic growth. If the analysis also helps prove the positive influence of certain determinants (with the exception of *CPI*) on economic growth, the next section will verify the hypothesis that corruption has an indirect negative influence on economic growth.

Estimation of the model parameters

The estimation of the parameters according to the model constructed above is presented in Table 3.

Tab. 3: Estimation of the Parameters of All the Explanatory Variables

	Coefficient	Std. Error	t-ratio	p-value	
const	-1.59284	0.307671	-5.1771	<0.0001	***
CPI Growth	-0.0103355	0.0333384	-0.3100	0.7568	
HOUExp Growth	0.734814	0.0543707	13.5149	<0.0001	***
INV Growth	0.0790306	0.0243012	3.2521	0.0013	***
GOVexp Growth	-0.101885	0.0293375	-3.4729	0.0006	***
d NX	1.66184e-05	9.63153e-06	1.7254	0.0855	*
HC Growth	-0.00151059	0.00317462	-0.4758	0.6345	
d PS	1.2073	0.719827	1.6772	0.0945	

Source: Author's own work, Gretl

⁴ Nominal gross domestic product.

⁵ Expressed using gross fixed capital formation as an indicator.

⁶ Expressed using the number of students enrolled in secondary education as an indicator.

The model explains 71% of the variability of the *GDP* response variable ($R^2 = 0.71$). For the variable of *CPI*, it was not possible to demonstrate statistical significance; also, the opposite effect than that which was assumed when specifying the variables was demonstrated. The coefficient for the variable *GOVexp*, which appeared as statistically significant, was shown to be negative. It was not possible to prove statistical significance for either the *HC* or *PS* variables. Because of marked differences between the assumptions and results of this analysis, the model was tested after removing the statistically insignificant variables (with the exception of the *CPI* variable). The results of the testing are presented in Table 4.

Tab. 4: Estimation of the Parameters of Selected Explanatory Variables

	Coefficient	Std. Error	t-ratio	p-value	
const	-1.82541	0.266414	-6.852	<0.0001	***
CPI Growth	0.0589403	0.0253376	2.326	0.0204	**
HOUSexp Growth	0.706239	0.0493138	14.32	<0.0001	***
INV Growth	0.0956146	0.0185622	5.151	<0.0001	***
GOVexp Growth	-0.0982657	0.0245518	-4.002	<0.0001	***
d NX	1.38665e-05	6.94496e-06	1.997	0.0464	**

Source: Author's own work, Gretl

This model explains 60% of the variability of the *GDP* response variable ($R^2 = 0.60$). After subsequent removal of the statistically insignificant variables *PS* and *HC*, the *CPI* variable's trajectory of influence on economic growth changed direction. After more detailed investigation, it was determined that the *CPI* variable is negative only when the *PS* variable is included in the model. Moreover, after eliminating these variables, the *CPI* variable's statistical significance increased and became statistically significant. No significant changes occurred for the other variables' coefficients.

Regarding the fact that the *CPI* variable showed low statistical significance in the previous models and had an ambiguous effect on the response variable, the possibility of it having a delayed effect on the response variable was thus verified. It is important to remark that the time delay was added only for the *CPI* variable and not for the other basic components determining *GDP*, because the paper's author did not assume that these determinants would influence the response variable with a time delay. Variables that did not show statistical significance in the previous models (*PS* and *HC*) were not included in the model. Length of the time delay is one year. The model's results are presented in Table 5.

Tab. 5: Estimation of the Model Parameters with Time Delay

	Coefficient	Std. Error	t-ratio	p-value	
const	-1.97784	0.246638	-8.019	<0.0001	***
CPI Growth 1	0.0479353	0.0231518	2.070	0.0390	*
HOUSexp Growth	0.784001	0.0483374	16.22	<0.0001	***
INV Growth	0.0984342	0.0172087	5.720	<0.0001	***
GOVexp Growth	-0.115576	0.0236606	-4.885	<0.0001	***
d NX	1.37049e-05	6.53950e-06	2.096	0.0367	*

Source: Author's own work, Gretl

The model explains 64% of the variability of the *GDP* response variable ($R^2 = 0.64$). In this model, the variable of *CPI* came out positive and statistically significant. This indicates that corruption not only has a negative effect on economic growth immediately but also with a time delay.

3.4 Testing the hypothesis of corruption's indirect influence on economic growth

In the previous models, it was demonstrated that the variables *HOUSexp*, *INV*, *NX*, and *PS* had a positive influence on economic growth. Here the question arises as to whether this could be related to the transmission channels via which corruption can also indirectly influence economic growth. For the purposes of verifying this hypothesis, three models were constructed using the response variables of *HOUSexp*, *INV*, and *NX*⁷. In order for these response variables to be designated transmission channels, the *CPI* variable must be positive. With regards to the variables' stationarity, the models were composed in the following way (3), (4), (5):

$$HOUSexp_Growth_{it} = \beta_0 + \beta_1 CPI_Growth_{it} + \beta_2 GDP_Growth_{it} + \beta_3 INV_Growth_{it} + \beta_4 GOVexp_Growth_{it} + \beta_5 d_NX_{it} + \beta_6 HC_Growth_{it} + \beta_7 d_PS_{it} \quad (3)$$

$$INV_Growth_{it} = \beta_0 + \beta_1 CPI_Growth_{it} + \beta_2 GDP_Growth_{it} + \beta_3 HOUSexp_Growth_{it} + \beta_4 GOVexp_Growth_{it} + \beta_5 d_NX_{it} + \beta_6 HC_Growth_{it} + \beta_7 d_PS_{it} \quad (4)$$

$$d_NX_{it} = \beta_0 + \beta_1 CPI_Growth_{it} + \beta_2 GDP_Growth_{it} + \beta_3 HOUSexp_Growth_{it} + \beta_4 INV_Growth_{it} + \beta_5 GOVexp_Growth_{it} + \beta_6 HC_Growth_{it} + \beta_7 d_PS_{it} \quad (5)$$

Estimation of the model parameters

The type of effect that the variable of *CPI* has on the variable of *HOUSexp* was tested first. The results of this model are presented in Table 6.

Tab. 6: Estimation of the Model Parameters for the HOUSexp Variable

	Coefficient	Std. Error	t-ratio	p-value	
const	3.13766	0.180984	17.3367	<0.0001	***
CPI Growth	0.0547152	0.0229164	2.3876	0.0176	**
GDP Growth	0.618408	0.0892517	6.9288	<0.0001	***
INV Growth	0.0448448	0.0256457	1.7486	0.0814	*
GOVexp Growth	0.0231396	0.0288934	0.8009	0.4238	
d NX	-1.44036e-05	5.38703e-06	-2.6737	0.0079	***
HC Growth	-0.00261428	0.0022945	-1.1394	0.2555	
d PS	0.191469	0.787346	0.2432	0.8080	

Source: Author's own work, Gretl

The model explains 73% of the variability of the *HOUSexp* response variable ($R^2 = 0.73$). In this model, the *CPI* variable was positive and statistically significant.

Investment was determined as the next possible transmission channel. The output of this model is presented in Table 7.

Tab. 7: Estimation of the Model Parameters for the INV Variable

	Coefficient	Std. Error	t-ratio	p-value	
const	-5.78367	1.29468	-4.4673	<0.0001	***
CPI Growth	-0.0531045	0.107718	-0.4930	0.6224	
GDP Growth	0.943176	0.332392	2.8375	0.0049	***
HOUSexp Growth	0.635935	0.369327	1.7219	0.0861	*
GOVexp Growth	1.08321	0.055328	19.5779	<0.0001	***
d NX	-2.7027e-05	1.23476e-05	-2.1889	0.0294	**
HC Growth	0.000480106	0.012249	0.0392	0.9688	
d PS	4.00897	2.03678	1.9683	0.0499	**

Source: Author's own work, Gretl

⁷ The previous models were unable to show statistical significance for the *PS* variable's effect on the response variable.

The model explains 78% of the variability of the *INV* response variable ($R^2 = 0.78$). In this case, it was not possible to demonstrate that the *CPI* variable was statistically significant, even though it showed negative influence on the *INV* response variable.

The last response variable was the variable of *NX*. The results of these models are presented in Table 8.

Tab. 8: Estimation of the Model Parameters for the *NX* Variable

	Coefficient	Std. Error	t-ratio	p-value	
const	8196.97	2157.19	3.7998	0.0002	***
CPI Growth	355.974	301.312	1.1814	0.2384	
GDP Growth	1722.58	779.661	2.2094	0.0279	**
HOUSexp Growt	-1774.04	678.631	-2.6141	0.0094	***
INV Growth	-234.742	176.417	-1.3306	0.1843	
GOVexp Growth	36.6948	271.086	0.1354	0.8924	
HC Growth	-13.0526	10.2876	-1.2688	0.2055	
d PS	3027.85	8211.63	0.3687	0.7126	

Source: Author's own work, Gretl

The model explains only 7% of the variability of the *NX* response variable ($R^2 = 0.07$). Not even in this case was it possible to demonstrate the *CPI* variable's statistical significance, even though it showed a positive influence on the *NX* response variable.

Statistical and economic verification

In all of the estimated models, the Gauss-Markov preconditions were fulfilled, with the exception of the precondition of identical distribution of the error term with a zero mean value. Thus, the hypothesis on the normal distribution of the error term was rejected. Thus, it is impossible to generalize the results of the model to the wider population (i.e., to other countries) or to other periods of time.

4 Discussion

The results of the analysis show that corruption affects economic growth in a truly negative way, because most of the models show the *CPI* variable as positive and, moreover, statistically significant. It even showed statistical significance when a time delay of one year was built in for this variable. This indicates that corruption can act on economic growth not only directly but also with a time delay. For example, the lower rankings of countries in the Corruption Perceptions Index are reflected in the investment activity of potential investors.

When the *PS* variable was included in the model, it was possible to observe the opposite effect and statistical insignificance for this variable. This is most likely caused by an existing dependence between the two variables, despite the fact that diagnostic checking of the model did not show the traditional preconditions to be violated. Many studies confirm that corruption is truly closely dependent on political instability. In countries with higher corruption, there is greater political instability – partly for the reason that a politically unstable country actually ranks lower in corruption perception indexes than a politically stable country. This is also partly on account of how international investors assess political stability, the degree of corruption, transparency, and government fairness. They do not want to invest in a country that is characterized by low political stability and a high level of corruption.

The *GOVexp* variable demonstrated the opposite effect than that which was assumed when specifying the variables. According to the analysis, this variable has a negative influence on the *GDP* response variable in the selected group of countries, although it is one of *GDP*'s basic components. However, government expenditure should be necessary for individual countries' economies, because it makes it possible to increase the levels of human and material capital, support technological advancement, and thus contribute to economic growth. Moreover, it also creates suitable conditions for private investment, e.g., in the form of investment incentives, etc. On the other hand, it depends on how effectively these funds are spent. The group of countries includes those characterized by a great degree of reallocation and generous social support systems. Naturally, this also means that the populations of these countries pay high taxes. Because of this, individuals have lower motivation to work as well as a lesser tendency to invest, which undermines economic growth.

In the paper, the hypothesis on corruption's indirect negative influence on economic growth was also tested. The variables of *HOUExp*, *INV*, and *NX* appeared as potential transmission channels, because it was possible to show their statistical significance and positive influence on the *GDP* response variable in the previous models. The analysis confirmed this assumption for *HOUExp* and *NX*. For this reason, it is possible to consider them transmission channels, through which corruption influences economic growth. This means that, as the CPI value decreases (i.e., the growth of perceived corruption), household expenditure and net exports also decrease, which acts adversely on gross domestic product. Here, the question arises of how corruption is able to influence economic growth using these transmission channels. For the *INV* variable, it was not possible to prove that the hypothesis was valid.

It is possible that the transmission channel of household expenditure could be related to ineffective management within certain OECD countries. As an example, it is possible to list the problem of distributing public commissions, which is one of the most frequent areas of worldwide corruption and results in ineffective country management and wasting taxpayers' money. Due to this problem, national budgets show losses and it becomes necessary for countries to raise taxes, which leads to limiting household expenditure and, hence, to lowering economic growth.

Although the influence of corruption on net exports was found to be statistically insignificant, it is also possible to designate it a transmission channel. The reputation of a corrupt country can discourage potential international importers. Exporters most likely will not be interested in trading either with countries that strictly enforce compliance with a multitude of regulations and unsubstantiated ordinances so as to acquire a specific bribe or favor or with countries whose government bodies are markedly corrupt and show little possibility of enforcing the law. For this group of countries, this is the reason that, as the perception of corruption increases, these countries' net exports decrease and their economic growth is also damaged as a consequence.

Investment also appeared in this analysis as a potential transmission channel. However, corruption's negative influence on investment was not proved and, for this reason, it was not possible to consider investment a transmission channel, via which corruption could negatively influence economic growth. Conversely, the analysis shows that corruption has a positive influence on investment in the selected sample of countries, even though very insignificant. However, most of the authors of empirical studies have arrived at the opinion that a negative relationship between corruption and investment does exist on account

of insecurity and increased danger of failure, because corrupt agreements are not enforceable. Supplemental costs for necessary expenditures to cover up corrupt activities also increase. However, it is also possible to find corruption's positive influence on investment. For example, the problem of public commissions can be mentioned once again. When a public commission is announced by the government, e.g., the construction of a new highway, a company can pay in order to be selected as the winning bidder. Once it becomes the winning bidder, it can invoice exorbitant prices or cut back on quality. In this case, the company profits from corruption and can further develop its investment activities.

Conclusion

In conclusion, it is possible to state that the validity of the hypothesis of corruption's negative influence on economic growth was confirmed for the OECD member countries. A greater degree of perceived corruption in these countries is accompanied by lower economic growth. At the same time, the analysis demonstrated that corruption affects economic growth not only directly but also with a delay in time.

Nonetheless, this analysis also confirmed the assertion of authors of empirical studies that corruption's influence on economic growth becomes statistically less significant after incorporating other economic growth determinants. This demonstrated that corruption influences economic growth directly but also indirectly by means of these determinants. After testing this hypothesis, it was determined that corruption affects economic growth negatively via household expenditure and net exports.

It is not possible to generalize the results of this paper to other groups of countries or other time periods, because the hypothesis of the error term's normal distribution was rejected. Consequently, it is only possible to apply the conclusions presented here to the OECD member countries during the time period of 1999–2014.

Acknowledgement

This contribution was supported by SGS_2016_023.

References

- [1] AHMAD et al. Does corruption affect economic growth?, *Latin American Journal of Economics*, 49 (2), 2012, pp. 277–305. ISSN 07190425
- [2] DRIDI, M. Corruption and Economic Growth: The Transmission Channels. *In Journal of Business Studies Quarterly* [online]. 2013 [cit. 2016-03-18]. ISSN 2152-1034. Available from WWW: <http://jbsq.org/wp-content/uploads/2013/06/June_2013_9.pdf>.
- [3] DZHUMASHEV, R. Corruption and growth: The role of governance, public spending, and economic development, *Economic Modelling*, 37, 2014, pp. 202–215. ISSN 02649993
- [4] HUNTINGTON, S. P. *Political Order in Changing Societies*. New Haven: Yale University Press, 1968, 500 p. ISBN 0-300-01171-7.
- [5] KEITA, K. LAURILA, H. Governance and Corruption-sand or grease in the wheels?. *Tampere Economic Working Papers* [online]. 2016. ISSN 1458-1191 [cit. 2016-06-14]. Available from WWW: <<https://uta32-kk.lib.helsinki.fi/handle/10024/98484>>.

- [6] LEFF, N. H. *Economic Development through Bureaucratic Corruption*. New Brunswick: Transaction Publisher, 1989, 1025 p. ISBN 0-88738-163-4.
- [7] LUKÁČIK, M., LUKÁČIKOVÁ, A., SZOMOLÁNYI, K. Panelová dáta v programe Gretl. In *Fakulta hospodárskej informatiky* [online]. 2011 [cit. 2016-04-18]. Available from WWW: <<http://www.fhi.sk/files/katedry/kove/veda-vyskum/prace/2011/Lukacik-Lukacikova-Szomolanyi2011.pdf>>.
- [8] MAURO, P. Corruption and the composition of government expenditure. In *IMF Working Paper* [online]. 1998. [cit. 2016-04-23]. Available from WWW: <<http://www1.worldbank.org/publicsector/anticorrupt/CoreCourse2005/Mauro.pdf>>.
- [9] MAURO, P. The Persistence of Corruption and Slow Economic Growth. In *IMF Working Paper 02/213* [online]. 2008 [cit. 2015-12-23]. Available from WWW: <<http://www.imf.org/external/pubs/ft/wp/2002/wp02213.pdf>>.
- [10] MEON, P. G., WEILL, L. Is corruption an efficient grease?. In *BOFIT Discussion Papers*, [online]. 2008. [cit. 2016-04-23]. Available from WWW: <<https://helda.helsinki.fi/bof/bitstream/handle/123456789/8105/160134.pdf?sequence=1>>.
- [11] MO, P.H. Corruption and Economic Growth. [online]. 2001. [cit. 2016-04-23]. Available from WWW: <<http://projects.iq.harvard.edu/files/gov2126/files/sdarticle-3.pdf>>.
- [12] MYRDAL, G. *Asian Drama: An Inquiry into the Poverty of Nations*, Pantheon, New York. [online]. 1968. [cit. 2016-04-23]. Available from WWW: <https://www.researchgate.net/publication/249663379_EconomicsGUNNAR_MYRDAL_Asian_Drama_An_Inquiry_into_the_Poverty_of_Nations_Vols_I_II_and_III_Pp_lxii_2284_New_York_Random_House_1968_850>.
- [13] NĚMEC, D. *Základy ekonometrie*. Brno: Masarykova Univerzita, Ekonomicko-správní fakulta, 2012.
- [14] OECD. *Consequences of corruption at the sector level and implications for economic growth and development*. Paris: OECD, 2015. ISBN 92-642-3076-9.
- [15] PELLEGRINI, L. AND GERLAGH, R., L., GERLAGH, R. Corruption's Effect on Growth and its Transmission Channels [online]. 2004. [cit. 2016-04-23]. Available from WWW: <<http://onlinelibrary.wiley.com/doi/10.1111/j.0023-5962.2004.00261.x/abstract>>.
- [16] ROSE-ACKERMAN, S. *Corruption: A Study in Political Economy*, Academic Press, 2013, p. 258. ISBN 9781483289069
- [17] TANZI, V. Corruption Around The World. In *IMF Working Paper* [online]. 1998 [cit. 2016-04-21]. Available from WWW: <<https://www.imf.org/external/Pubs/FT/staffp/1998/12-98/pdf/tanzi.pdf>>.
- [18] The Business Anti-Corruption Portal [online]. 2016 [cit. 2016-03-29]. Available from WWW: <<http://www.business-anti-corruption.com/>>.
- [19] TRANSPARENCY INTERNATIONAL [online]. 2015 [cit. 2016-04-21]. Available from WWW: <<http://www.transparency.org/cpi2015>>.
- [20] WORLD BANK. Indicators, [online]. 2016 [cit. 2016-03-15]. Available from WWW: <<http://data.worldbank.org/indicator>>.

[21] WORLD BANK. Worldwide Governance Indicators: Political stability [online]. 2016 [cit. 2016-03-15]. Available from WWW: <<http://info.worldbank.org/governance/wgi/index.aspx#home>>.

Contact Adress

Ing. et Ing. Veronika Linhartová, Ph.D.

University of Pardubice, Faculty of economic and administration
Institute of economic science
Studentská 84, 532 10 Pardubice, Czech Republic
Email: veronika.linhartova@upce.cz
Phone number: +420 466 03 6126

Bc. Eva Židová

University of Pardubice, Faculty of economic and administration
Institute of economic science
Studentská 84, 532 10 Pardubice, Czech Republic
Email: st36275@student.upce.cz

Received: 01. 05. 2016

Reviewed: 02. 06. 2016, 06. 06. 2016

Approved for publication: 08. 09. 2016