How Does Corruption in Central and Eastern Europe Hurt Economic Growth? Granger Test of Causality[1]

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Abstract

The paper explains theoretical framework of how corruption hurts economic growth and reveals its application difficulties. Comparing views on corruption in terms of the problem of agency and the problem of rent-seeking we argue that corruption in general is the problem of legal setting and its enforcement and, if badly established, it does not promote economic growth. To verify the theoretical argument we present empirical Granger causality test to demonstrate that corruption precedes economic growth in Central and Eastern Europe. This means that legal setting and its enforcement rather allow for rent-seeking than promote economic growth. As a consequence we emphasize the necessity to focus on institutional framework to fight corruption and support economic growth.

Keywords: *agency theory, corruption, economic growth, rent seeking, Granger causality*

JEL Classification: D72, D73, O17

Introduction

In Central and Eastern Europe (CEE) corruption is pervasive[2] and its negative effect on economic growth cannot be eliminated (Campos, Dimova and Saleh, 2010). Economists arguing that corruption hurts economic growth use theoretical

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concept referred as rent-seeking (Tullock, 1967; Krueger, 1974; Posner, 1975; Bhagwati, 1982; Buchanan, 1980; 1983; Murphy, Shleifer and Cishny, 1993; Grochová and Otáhal, 2010).[3] Nevertheless, the assumption that corruption employs real sources unproductively is not always persuasive.[4] There are economists who argue that corruption might promote economic growth (i.e. Leff, 1964) and there are also economists who think that corruption sometimes hurts economic growth while sometimes it works for economic growth (Soto, 1989).

Economists exploring the role of incentives determined by different institutional frameworks[2] often use the principal-agent analyses, but such economic analyses might imply that the best economic policy reducing social costs of corruption and promoting economic growth is its legalization (Becker and Stigler, 1974). This implication is highly criticized by advocates of the theory of rent-seeking (Tullock, 1996). The reasons for such a disagreement in solution of corruption problem are different assumptions of enforceable systems of property rights (Otáhal, 2007).

The paper explains theories which are applied to the problem of corruption and reveals their application difficulties. It attempts to show that the problem of formal institutional setting and its enforcement should be solved first when corruption is pervasive. The paper thus explains how corruption hurts economic growth from the perspective of two theories but focuses also on the causality issues. Reflecting the comparison of both theories it argues that organizations that solve corruption problem in the Central and Eastern European countries (further CEE countries) when aiming at the suppression of corruption that hurts economic growth, should be more concerned with functioning of formal institutional settings and their enforcement instead of solving corruption problem itself.

To support our argumentation we test whether the causality goes from economic growth to a resolution of corruption problem or vice versa. For this purpose we perform Granger causality test on the sample of European countries with the focus on the CEE countries that helps us to explain how corruption hurts economic growth. The CEE countries are a specific sample of corrupt countries because at the beginning of transition these countries had specific problems with corruption and then after deep transitional reforms these problems have not been successfully resolved. This situation puzzled institutional economists who addressed the issue of how corruption should be suppressed and questioned the impact of transition reforms on economic performance of the CEE countries. The empirical part then should demonstrate whether corruption in European and consequently in the CEE countries precedes economic growth

[2] See Banfield (1975), Treisman (2000), Kouba and Grochová (2012) or Kouba (2009).

and thus the corruption itself is the topic of interest that should be controllable or economic growth precedes corruption, which would mean that corruption is a mere symptom of weakly implemented formal institutions.

The paper is organized as follows: The basic theoretical concepts, starting from more general agency theory followed by rent-seeking theory, then implications for economic policy recommendations and their weaknesses are briefly described (Section 1 and 2). To support our theoretical argument from the Section 1 and 2 that corruption is a problem of legal setting and its enforcement we use Granger test of causality to illustrate how corruption hurts economic growth in the Central and Eastern Europe (Section 3). In conclusion we summarize and discuss our results.

1. Agency Theory and Corruption

In this section we explain corruption theory based on methodological individualism which understands corruption as the problem of agency which means the problem of coordination between principal and agent. The problem of agency theory arises in the moment when agent's activity influences not only his own welfare but also the welfare of principal who cooperates with the agent in an implicit or explicit contract relation (Jensen and Meckling, 1974, p. 5).[3]

This contract sets the rules for agents that say for what behaviour agent will be awarded or punished. However, each contract has two sides. As well as principal wants agent to fulfil principal's interests, also agent expects that principal decision making fulfils agent's interests. Agent gets into principal's position and principal gets into agent's position. It is then necessary to find out how rules are set and what limits of principal and agents are. In general, the solution depends on what the system of enforceable property rights for principal and agent is; on the way how the enforceable property rights are divided between principal and agent; on what concretely should be agent awarded or punished for. All this is set a priori in the contract.

From the property rights perspective (Coase, 1960; Alchian, 1965; Demsetz, 1967), contractual relationship between principal and agent determines the structure of enforceable property rights in organization or economy. When agent behaves so that he harms principal's interests, it means that agent uses principal's property rights in an undesirable way.

[3] Coase argues that externalities are products of reciprocal relations. Externalities could be internalized if transaction cost of such action are low enough (Coase, 1960). In this way agency theory extends transaction costs analysis assuming that actions of agents should be coordinated in favor of principal (society).

Within agency theory framework corruption is understood as a certain type of an exchange between two subjects from which at least one is in an implicit or explicit contractual relation with the third party.[4] From the agency theory point of view then agent's behaviour, who exchanges for the bribe price with another subject, is corrupt because such an exchange harms the third party's interests. The third party (principal) who is in a contractual relation with agent definitely does not wish agent to realize corrupt exchange.

In solving the problem of corruption in contract relation between principal and agent public policy recommendations mostly suppose that one of the principal's aims is to find the way how to make the agent act consistently with the principal's goals – because agent's interests do not have to correspond to the principal's ones and can even be in conflict. Among few principal's possibilities how to defend himself against the corruption from the agent's side are rewards and punishments that create positive and negative incentives to desirable agent's decision. Agent in a situation when he decides whether to take or not to take the bribe considers the costs of both opportunities. If corrupt opportunity and its costs are too high, agent chooses not to take the bribe. If corrupt opportunity and its costs are too low, agent chooses to take the bribe.

As soon as principal decides to create positive and negative incentives (not only monetary reward, but also some bonuses for example), another variable must be introduced into agent's utility function – the probability of detecting the "bad" agent and his enforcement (Becker, 1968). It is not much important how high the salary or fine (punishment) is if agent does not face some probability of detecting his corrupt behaviour followed by punishment. In other words, it is necessary to focus on and keep on controlling and monitoring in order to make the incentives work.[5]

The crucial problem of agency theories is then the definition of the optimal settings of concrete conditions within a contract. Optimal settings of reward and punishment parameters depend on principal's ability to control and monitor agents as well as principal's ability to enforce rules. These findings have serious implications for the economic growth topic. In case of badly set legal framework bureaucrats and the general population withholding private information restrain state's ability to protect property rights and support economic growth, while well elaborated contracts based on strong legal framework reduce bureaucracy in general and strengthen investor confidence over future property rights protection that in turn promotes economic growth.

[4] Benson (1981), Shleifer and Vishny (1993), Colombatto (2003) and Otáhal (2007) define corruption similarly as a particular exchange. Fisman and Miguel (2007) define corruption as one sided act like parking violation. This definition is not suitable for this paper.

[5] More economists agree, see Tullock (1996, p. 8) or Becker and Stigler (1974, p. 6).

To conclude, the possibility of influencing corruption and economic growth then necessarily depends on the legal framework determining the contract settings and its enforcement.

2. Rent-seeking Theory and Corruption

Rent-seeking (Tullock, 1967; Krueger, 1974) is a theoretical concept stemming from the long run equilibrium model. On the basis of this model the general logic of the problem of corruption and its implications for economic growth will be explained here.

In case of the presence of consumer surplus in a (monopoly) market, entrepreneurs look for the ways how to get this surplus for them. Supposing that the price can be augmented by a state intervention, possible ways allowing entrepreneurs to realize transfer of surplus are (i) participation on the state intervention or (ii) creating the privileged state intervention. Another potential rent--seekers can be people whose goal (iii) is to decide about the process of choosing the concrete receiver of a transfer of consumer surplus.

Costs connected to an effort to create, keep, join, stop[6] or decide about monopoly position of an entrepreneur (b-agent) are so called rent-seeking costs, which are supposed to be used in an unproductive way because they do not enter the utility functions of consumers and from the rent-seeking point of view because the use of resources to cover rent-seeking costs does not raise the social welfare in static explanation or does not promote economic growth in dynamic explanation (Buchanan, 1983).

From this point of view corruption can be every unproductive investment which aim is not raising social welfare but limitation of perfect competition. To sum up, according to Gordon Tullock (1996), corruption is rent-seeking. And since taking part in (administrative) monopoly is not possible without a state decision, it is clear that concept of rent-seeking considers corruption as a problem of governmental organization.

The sources which are used by entrepreneurs or officers in activities which lead to otherwise non-achievable gains are from the rent-seeking theory point of view wasted and so corrupt because they harm public interest (Tullock, 1996). The most certain way how to avoid corruption is thus to delete the possibility of officer discretionary power about such sources of gains. This possibility can be compensated by strongly set rules.

[6] This is the case that is according to Bhagwati (1982) classified as Directly Unproductive Activity (DUP activity). Nevertheless, according to Benson (1984) entrepreneurial effort to stop function or creation of state monopoly position in the market is not rent-seeking in its nature.

Nevertheless, Benson (1981) points out the other side of this topic. There is no guarantee that the rules that are set are proper rules or properly defined owner's rights. However, not respecting improper rules is also a certain source of corrupt rent-seeking activities. Leff (1964) then shows the social goodness of this type of corruption. It makes business market transactions faster and makes the barrier smaller. Shell we understand this that from the view of rent-seeking theory this is not corruption?

De Soto (1989) introduced the large study where he empirically demonstrates that similar type of corruption (which Benson talks about) was unnecessary for spontaneous informal economic growth in suburbs of the capitol of Peru, Lima. He makes conclusions: "The ILD research confirmed the role of law in determining the efficiency of economic activities it regulates. It is in this sense that we shell define 'good laws' and 'bad laws': a law is 'good' if it guarantees and promote economic efficiency and 'bad' if it impedes or disrupts it" (Soto, 1989, p. 132).

In compliance with Soto's results we can derive a unique conclusion that is common for both agency theory and rent-seeking: *In order to deter corruption and support economic growth, strong and good legal framework and its enforcement must be set.*

However, the rationale needs not to be unidirectional. In fact, many studies examine either theoretically or empirically whether the corruption promotes or deters economic growth, whether this results either from rent-seeking activities or bad settings of contracts between principal and agent, while less attention is paid to the causality issue. For example Egger and Winner (2005) or Levy (2007) show that under restrictive regulations conditions, corruption can contribute to economic growth, while Aidt (2009) concludes that economic growth is strongly negatively correlated with corruption. Aidt's findings are supported with results closely related to economic growth made by Reinikka and Svensson (2004; 2005) concluding that corruption negatively influences human capital accumulation, or by Rock and Bonnett (2004) finding that corruption reduces investments, both as contributors to economic growth.

From our point of view most of the studies lack the check of causality between corruption and economic growth before examining the direction and magnitude of the effects. It is necessary to stress that opposite to aforementioned studies, one might hardly found an argument why incentives promoting economic growth should not in turn prevent from corruption activities only because a higher standard of living implies reduced necessity to "improve" one's situation with a corrupt risky behaviour. We then suggest focusing on the direction of causality between economic growth and corruption before deriving conclusions related to promotion or deterrence of particular cause of corruption with

a special attention to appropriate legal framework and its enforcement. This is primarily efficient in case that corruption precedes economic growth. In the opposite case, recommendations regarding economic growth promotion should be of a higher priority when compared to corruption itself.

3. Empirical Evidence

In this section, we test the relation of corruption on the sample of European countries with a focus on the CEE countries with economic growth and use Granger test of non-causality to show whether corruption precedes economic growth or *vice versa*. Intuition behind the Granger test of non-causality is the following. If corruption precedes economic growth in corrupt countries it implies that legal settings and their enforcements allows for rent-seeking accompanied with a waste of resources or agency problem resulting in harming principals which in turn suppresses economic growth. From the perspective of rent-seeking theory weakly implemented formal institutions are the reason why corrupt economies do not perform well. In such countries restriction of corruption by implementing well established legal framework and its enforcement is recommended. On the other hand, if economic growth precedes corruption it implies that economic performance determines the level of corruption. Then reforms supporting economic performance like abolishing of barrier to entry in international trade, deregulation, privatization or reduction of tax burden are recommended.

3.1. Granger Test of Causality between Corruption and Economic Growth

In order to provide additional support for our suggestions we study the effect of corruption on economic efficiency and performance and *vice versa* at empirical level. We extend the current research on the effects of corruption on the economic growth done by Campos et al. (2010), Aidt (2009) or Bardhan (1997) with the causal link between economic growth and corruption. We supply so a necessary, complementary information to the studies dealing with the correlation and proportionality of effects of corruption on economic growth. In order to test the causality between these variables we run Engle-Granger test. A given variable Granger cause another variable if better predictions of the latter variable are obtained using passed and current information on the first variable (Granger, 1969, p. 428).

To test this causal relationship we use fourteen-year data for European countries with a special focus on eleven post-transition countries – Bulgaria, Cyprus, Czech Republic, Slovak Republic, Hungary, Latvia, Lithuania, Malta,

Poland, Romania and Slovenia to test a causal relationship between gross domestic product converted to constant 2005 international dollars using purchasing power parity rates (GDP) and corruption perceptions index (CPI)[7] as a proxy of corruption that arises either from rent-seeking activities or agency problem. The CPI index is composed of a number of perception-based sources, especially from rankings provided by business agencies and foreign business people.[8] Transparency International reporting the CPI defines corruption as the misuse of power by public officials (Lambsdorff, 2006, p. 84), that is – as abovementioned – in line with rent-seeking theory since the CPI assesses the degree to which public officials and politicians are believed to accept bribes, take illicit payment in public procurement, embezzle public funds, and commit similar offence (Andvig, Fjeldstad et al., 2000, p. 39). Moreover, as (Nye, 1967, p. 419) claims the CPI generally consider corruption to be: "Behaviour which deviates from the formal duties of a public role because of private-regarding (close family, personal, private clique) pecuniary or status gains; or violates rules against the exercise of certain types of private-regarding influence." As public official can be seen as an agent and state as a principal, an agent obtain benefits increasing his utility at expanses of principal. From this perspective the CPI can be understood as a proxy of corruption originated in principal-agent problem as well.

[7] When measuring corruption level two perception-based composite corruption indexes are mainly used: the CPI published by Transparency International (TI) and Control of Corruption (CC) published by the World Bank (WB). The reason for the use of these two indexes is that they cover the longest available time-period. Other perception-based composite corruption indexes such as the Opacity index provided by PricewaterhouseCoopers, Business Risk Service provided by Business Environments Risk Intelligence (BERI), Business Environment Ranking provided by Economist Intelligence Unit (EIU) do not cover a time period long enough or report rather on general business environments and political risks than on corruption of public officials.

Both CPI and CC are composed of a number of perception-based sources, especially from rankings provided by business agencies and foreign entrepreneurs. While TI defines corruption as the misuse of power by public officials (Lambsdorff, 2006, p. 84), the definition of the WB is broader, because the CC includes broader cross-country indicators reporting ratings of countries based on boarder aspects of corruption (Kaufmann, Kraay and Mastruzzi, 2009, p. 6). Even though Control of Corruption defines corruption broadly, both indicators are similarly constructed. The perception-based composite corruption indexes are, however, composed of a number of perception-based sources, which must be aggregated. The aggregation of different perception-based sources is accompanied by two measurement shortcomings. First, the changes in numbers of sources and methodology make the year-by-year comparison less valid. Second, the aggregation of different sources which is based on slightly different definitions of corruption, makes the country score comparison less valid as well (Körner, Kudrna and Vychodil, 2002). These are not, however, very important shortcomings for CPI, because the Transparency International provides the standard error of CPI aggregation therefore the size of "uncertainty" connected with the aggregation of a number of perception-based sources is estimated. This is the reason why we choose CPI index.

[8] For more detailed information on the CPI construction and determination see Grochová (2006) and Soreide (2003).

Further, the definition of corruption by particular countries legislations is close to this definition which is widely accepted. For these reasons we use CPI index as a measure of level of corruption in the countries analysed. The data are gathered from World Bank and Transparency International.

In this section we progress as follows. Performing the causality test we inspire us with Engle and Granger´s (1987) seminal paper. First, the panel data are tested for stationarity which is a necessary condition for eliminating spurious results (Enders, 1995). The null hypothesis of stationarity (i.e. I(0) process) is tested with the Im, Pesaran and Shin panel unit root test. Second, we can study the long-run relationship if there is a unit root, i.e. the variables can be considered to be co-integrated. Otherwise, if the variables are not co-integrated, they are tested for Granger causality.

In other words the aim of this section is to study these relationships:

$$CPI_{it} = \alpha_0 + \alpha_1 GDP_{it} + e_t \tag{1}$$

$$GDP_{it} = \beta_0 + \beta_1 CPI_{it} + u_t \tag{2}$$

where

CPI – stands for the CPI index,
GDP – represents real gross domestic product per capita in PPP,
α_0 and β_0 – intercepts,
e and *u* – uncorrelated *iid* processes,
i and *t* – distinguish particular country and time period, respectively.

In order to examine whether a unit root is present the Im, Pesaran and Shin test (2003) is performed having a null of non-stationarity. Optimal lag length order is chosen according to Akaike information criterion. This information criterion seems to be appropriate because the probability of under estimated true order is the lowest one among other information criterions for whatever size of sample (Liew, 2004).

T a b l e 1

Im, Pesaran and Shin Test of Non-stationarity

Variable	Levels		1st differences	
	W-t-bar statistic	p-value	W-t-bar statistic	p-value
CPI	–1.5605	0.0593	–2.3581	0.0092
GDP	3.9915	1.0000	–2.6596	0.0039

Source: Authors´ calculations using STATA 12 Software.

As shown in the Table 1 both variables are non stationary which is confirmed by the Im, Pesaran and Shin test. In order to exclude spurious results (see Enders, 1995) and to examine a possible long-run relationship between CPI and GDP we first continue with co-integration analysis.

For this purpose we employ Westerlund error-correction-based panel co-integration test which has good small-sample properties as in our case. It comprises the four panel co-integration tests (Westerlund, 2007) that are able to accommodate serially correlated error terms, country-specific intercept and trend terms, and country-specific slope parameters (Persyn and Westerlund, 2008). The null hypothesis is that of no co-integration.

T a b l e 2

Westerlund Test of No Co-integration

	Statistics			
	Gt	Ga	Pt	Pa
Cpi gdp, constant	–2.153	–7.325	–13.070	–6.180
	(0.011)	(0.427)	(0.000)	(0.008)
Cpi gdp, constant trend	–2.166	–6.694	–13.268	–6.774
	(0.912)	(1.000)	(0.026)	(0.973)
Gdp Cpi, constant	–1.499	–3.052	–5.525	–1.938
	(0.955)	(1.000)	(0.992)	(0.998)
Gdp Cpi, constant trend	–1.802	–4.280	–6.351	–3.464
	(1.000)	(1.000)	(1.000)	(1.000)

Note: P-value in parentheses.

Source: Authors´ calculations using STATA 12 Software.

Since the presence of co-integrating vector cannot be confirmed neither in at least one panel unit nor in the panel as a whole, no long-run common co-movement of the variables can be detected. As a consequence, we can focus only on short-run information continuing with simple Granger non-causality test. Because of the fact that this can be performed on I(0) series only we use the first differenced variables, i.e. ΔGDP and ΔCPI.

Hypothesis 1: *GDP does not Granger cause the level of corruption*.

To test this hypothesis we use the following function (7). After the estimation we test the null hypothesis that the parameters of lags of GDP are equal to zero, i.e. they do not Granger cause CPI. As only first four lags are statistically significant both in the CEE and European countries in the restricted version of regression (not reported in the table) we test the Granger non-causality until four lags in regression[9] ($L \leq 4$).

$$\Delta CPI_{it} = \alpha_0 + \sum_{j=1}^{L} \alpha_{1i} \Delta GDP_{it-j} + \sum_{j=1}^{L} \alpha_{2i} \Delta CPI_{it-j} + e_t, \quad i = 1, 2 \ldots 10; \; t = 1 \ldots L, L < t \quad (7)$$

[9] It is necessary to emphasize that in this contribution we are primarily focused with the causality issue opposite to correlation and proportionality, and hence we do not report the results of regressions as this is not our scope.

T a b l e 3

H_0 : $\alpha_{11} = \alpha_{12} \ldots = \alpha_{110} = 0$, i.e. ΔGDP Does not Granger Cause ΔCPI in European Countries

L = Number of Lags	F-statistics	P-value	R2 of the Regression
1	4.47	0.0352	0.0214
2	2.50	0.0837	0.0768
3	2.59	0.0527	0.1083
4	3.16	0.0145	0.2150

Source: Authors´ calculations using STATA 12 Software.

Since our attention is especially paid to the CEE, table 4 shows the results for the countries of our main interest.

T a b l e 4

H_0 : $\alpha_{11} = \alpha_{12} \ldots = \alpha_{110} = 0$, i.e. ΔGDP Does Not Granger Cause ΔCPI in the CEE Countries

L = Number of Lags	F-statistics	P-value	R^2 of the Regression
1	7.85	0.0063	0.0063
2	20.47	0.0000	0.3314
3	16.35	0.0000	0.4738
4	11.86	0.0000	0.5234

Source: Authors´ calculations using STATA 12 Software.

We perform the F-test to test the (joint) hypothesis of non-significance of the causality term, i.e. GDP. In this case as can be seen in the Table 3 and 4 the null hypothesis that GDP does not Granger cause CPI can be rejected. This implies that economic growth in European countries in general and even more strongly in the CEE countries determines the level of corruption.

Hypothesis 2: *Corruption does not Granger cause GDP growth.*

For testing of the reverse causality we start from the following equation (8) performing then the test that lagged CPI parameters equal zero. In this case only first four lags in the CEE and first three lags in the European countries are statistically significant so we perform Granger non-causality test for four and three lags, respectively ($L \leq 4$ and $L \leq 3$), as shown in Tables 5 and 6.

$$\Delta GDP_{it} = \beta_0 + \sum_{j=1}^{L} \beta_{1i} \Delta CPI_{it-j} + \sum_{j=1}^{L} \beta_{2i} \Delta GDP_{it-j} + u_t, \quad i = 1, 2 \ldots 10; \; t = 1 \ldots L, L < t \quad (8)$$

The opposite causality can be confirmed as well. This implies a very important conclusion that the evolution of the CPI precedes the evolution of the GDP growth. As a consequence, focusing on suppression of corruption by establishing well defined legal framework and its enforcement is an efficient tool

how to improve economic performance which, in turn, can suppress corrupt behaviour since when performing well motives for corrupt behaviour diminish. Empirical conclusions so support the theoretical ones.

T a b l e 5

$H_0 : \beta_{11} = \beta_{12} \ldots = \beta_{110} = 0$, i.e. ΔCPI Does Not Granger Cause ΔGDP in European Countries

L = Number of Lags	F-statistics	P-value	R^2 of the Regression
1	7.85	0.0063	0.0084
2	2.87	0.0579	0.0197
3	1.92	0.1260	0.0202
L = number of lags	F-statistics	P-value	R^2 of the regression

Source: Authors´ calculations using STATA 12 Software.

T a b l e 6

$H_0 : \beta_{11} = \beta_{12} \ldots = \beta_{110} = 0$, i.e. ΔCPI Does Not Granger Cause ΔGDP in the CEE Countries

L = Number of Lags	F-statistics	P-value	R^2 of the Regression
1	0.38	0.0902	0.1987
2	5.79	0.0046	0.3962
3	4.02	0.0111	0.4019
4	4.02	0.0054	0.3954

Source: Authors´ calculations using STATA 12 Software.

Conclusion

The paper explained the economic growth implications of theoretical concepts applied on the problem of corruption and suggested questions, which must be raised before the corruption problem is solved. It was shown that the system of enforceable property rights is crucial for agency theories, because it defines what agent's actions are undesirable for principal. In the context of corruption it defines agent's corrupt action. From the rent-seeking point of view, even though we apply strong rules binding discretionary power of governmental representatives, it does mean that such rules will be obeyed. Accordingly, the problem of corruption in the context of rent-seeking is not the problem of reduction of discretionary power but finding and strongly setting good (socially desirable) rules, which would minimize the corrupt behaviour and improve social welfare and economic growth.

Both theoretical issues tend to one conclusion that good (socially desirable) rules which prevent from corruption promote economic performance. In other words, corruption resulting from badly established and enforced rules impedes economic growth. Corruption is then the symptom of badly established and

enforced formal institutional environment, as demonstrated also with the empirical test. Problem of corruption could be solved by finding the way how to find, establish and enforce the incorrupt rules instead of how to reduce the corruption determined by badly established and enforced formal institutional environment. It is the legal setting and its enforcement that creates the space for corruption and rent-seeking which reduce economic growth in Central and Eastern European countries.

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