

# **Socioeconomic development and corruption: A global panel regression analysis, 2005–2019**

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**Keywords:**  
economic growth,  
social inequalities,  
world development,  
institutional environment,  
reform

The institutional weakness of political systems may represent a constraint to social development, being in principle more frequent in disadvantaged countries than in advanced economies. The present study illustrates the results of a panel analysis run on a global sample of affluent and emerging economies and aimed at demonstrating that the relationship between corruption – a serious institutional deficiency – and per capita income is asymmetric. The empirical results of the statistical analysis suggest that the increase in income in high-income countries was associated with a decline in perceived levels of corruption, while it was related to an increase in structural corruption in low-income countries. Based on these findings, the authors argue that the effective control of corruption cannot be interpreted as a ‘quasi luxury good’, the demand of which increases once the level of income rises to a certain level. The adoption and effective implementation of appropriate long-run policies and institutional reforms seem to be the only way to contain corruption.

## **Introduction**

Corruption is a global phenomenon observed, more or less frequently, in all countries (Myint 2000) and is associated with several forms of human organization (Bardhan 1997). While historical studies show that efforts to combat corruption date back to its existence (Riley 1998), the notion of ‘corruption’ has been applied to a wide variety of beliefs and practices (United Nations Development Program 2008). As a result, there is no consensus on a specific definition of corruption (Hassan et al. 2020), apart from a widely accepted, general definition, namely, ‘the abuse of public office for private gain’ (World Bank 1997), with other definitions being a variant of this prevailing notion. Organisation for Economic Co-operation and Development

([OECD] 1996) defines public sector corruption as the misuse of public office, roles or resources for private benefit, either material or immaterial. Lambsdorff (2007) generalizes corruption to the misuse of public power for private benefit. A similar definition provided by Transparency International (2011) focuses on the misuse of trusted power for own profit. While accepting the importance of the individualistic dimension, corruption remains a social phenomenon grounded in the cultural, institutional, and political context and the level of economic development in a given country (Sung 2002).

Based on these premises, corruption is regarded as a multidimensional issue with several underlying causes (Lalountas et al. 2011). Earlier studies have identified economic development as the most relevant force of corruption. In underdeveloped contexts, corruption has been demonstrated to be a cause and consequence of poverty at the same time (Goel–Nelson 2010). The relationship between corruption and wealth accumulation (i.e., per capita income, taken as a proxy of the level of economic development), has been empirically investigated in earlier studies. Paldam (2002) defines corruption as a byproduct of poverty that becomes restricted as economies develop, reflecting the inherent transition from poverty to increased levels of regional development. However, controlling corruption in a given socioeconomic environment is not an automatic process that occurs when a certain income threshold is surpassed and is instead achieved through the adoption and effective implementation of appropriate long-run policies (Frolova et al. 2019).

Despite the global diffusion of corruption, the process is indubitably more extensive (and possibly impactful) in low-income countries and emerging economies than in advanced economic systems due to structural weaknesses that stably act as constraints to regional development (Rontos et al. 2019). In such conditions, corruption often proves to be a sort of ‘survival strategy’ (Rose–Ackerman 1999). In these countries, improving personal wealth through, e.g., bribes – in other words, by increasing personal income – is a strong reason at the base of high levels of corruption, possibly associated with generalized conditions of poverty. Moreover, many people live below the subsistence level and try to satisfy the means for their survival with illegitimate (or at least informal) means (Shen–Williamson 2005). The improvement of material conditions is especially a motivation leading to corruption under conditions of utter deprivation and low public sector salaries (Gray–Kaufmann 1998). However, corruption is assumed to be less detrimental in countries with inefficient institutional frameworks, acting as the grease for the wheels of the economic system to overcome bureaucratic rigidities and administrative delays (Méon–Weill 2010).

When approaching the intrinsic functioning of economic systems, Lambsdorff (2007) argues that a high level of corruption is closely related to the lack of competitiveness and prevents structural changes ensuring sustainable and inclusive growth. Ades–Di Tella (1999) assume that corruption is greater in countries where

domestic enterprises are protected from international competition and are characterized by inherent market restrictions. Bliss–Di Tella (1997) argue that corruption may affect the overall level of competition of a given country, region or economic system. Emerson (2006) proves that competition and corruption are interrelated and that policies aimed at mitigating corruption may strengthen industrial competition as a development goal. Moreover, it has been proven that in economic environments characterized by open competition, bribe payments are positively linked to long-standing norms in the business social context, whereas in closed-competition contexts, bribery is a function of rents that stem from uncertainty in the policy field (Malesky et al. 2020).

Concerning economic governance, Klitgaard (1998) argues that multiple and complex regulations may increase corruption levels. Government regulations that raise barriers to entry give public officials the power to demand and collect bribes (Svensson 2005). Countries with heavier entry regulations have higher corruption levels and larger unofficial economies but not better quality of public or private goods (Djankov et al. 2002). Treisman (2000) assumes that corruption is higher in countries with more rigid state regulation of the economic system.

The relationship between corruption and the level of political freedoms was also documented. On the one hand, corruption affects the overall quality of democracy, and on the other hand, the quality of democratic institutions affects the level of corruption, intended as a symptom and a cause of the malfunctioning of governance processes (Warren 2004). Shleifer–Vishny (1993) argue that the structure of political processes, and especially democracy, prove restrictive for the proliferation of corruption, mainly because of the competition they set as a precondition for the acquisition of political office, which in turn presupposes widespread democratic participation and increased levels of transparency. Moreover, democratic accountability raises the costs of illegal behaviors and, as a result, limits opportunities for corruption (Bohara et al. 2004). Kunicová (2006) supports the view that opportunities for developing rent-seeking behaviors, which are closely linked to corruption, are theoretically more frequent in less democratic countries. Goel–Nelson (2010) conclude that corruption is less intense in politically free countries, as defined by the level of political rights and the extent of civil liberties.

Based on these premises, the present study investigates the role of the abovementioned factors underlying corruption (i.e., economic development, quality of regulatory framework, and the extent of political freedoms), assuming structural competitiveness as an additional predictor of the level of corruption in the world. A global analysis based on simplified econometric models was adopted here using official statistics and other relevant indicators provided by international surveys as input variables. Based on the empirical results of this analysis, an additional objective of the study was a refined investigation of the relationship between income and corruption in all countries examined, irrespective of their level of economic

development. Ignoring the intrinsic variability of the income-corruption relation, as far as the effective control of corruption is concerned, may lead to a biased inference regarding public policy, especially in the context of emerging economies. Our paper is organized as follows: the available data and the empirical methodology adopted here, the results of the empirical analysis, discussion of the main findings of this study and conclusions with policy guidelines stemming from extensive scrutiny of the relevant literature.

## Methodology and econometric modeling

Methodologies estimating competitiveness at the country scale underwent significant changes, making long-term intertemporal comparisons extremely problematic (Zambon et al. 2018). All the variables adopted in this analysis were therefore calculated for a global sample of 139 world countries (Table A1 in the Appendix) covering the time window between 2005 and 2019. Input variables were extracted from official statistics and other well-known international data sources. A complete definition of the variables used in the econometric models see Table A2 in the Appendix. Taken as a proxy of corruption levels at the national scale, the Corruption Perceptions Index (CPI) provided by Transparency International (2011) was regarded as the dependent variable in econometric models. Values of the indicator range between 0 and 10, where 0 denotes a country perceived as highly corrupt, and 10 means a country valued as totally clean. CPI was first released in 1995 and subsequently published every year [1].

Structural competitiveness was evaluated considering the Global Competitiveness Index (GCI) released by the World Economic Forum (WEF). Values of the indicator range between 0 and 100, with higher scores corresponding to increased levels of competitiveness [2]. To facilitate the interpretation of regression results (see below), CPI and GCI indices have been transformed into a 0–10 scale. In this study, ‘competition’ and ‘competitiveness’ terms are not used interchangeably (Shen–Williamson, 2005). However, there is a strong interconnection between these two terms, assuming competition between firms as strictly associated with the level of a country’s competitiveness (Uslaner 2011). This level also defines the ability of enterprises to compete in the domestic or international market (Warren 2004).

To estimate the level of economic development in each country, a log-transformed gross domestic product (per capita average values standardized to purchasing power parity, hereafter gross domestic product [GDP]) was considered an additional predictor of corruption (Table 1). This input variable was derived from the World Economic Outlook (WEO) database of the International Monetary Fund [3]. The World Bank classification was adopted [4] to group countries by income level. The exploratory nature of our study, the wide sample of world countries considered here ( $n = 139$ ), and the satisfactory goodness-of-fit of all models may justify the use of such an input variable.

The political factors underlying corruption were summarized using indices of Political Rights (PR) and Civil Liberties (CL), both derived from regular estimations released by the Freedom House organization ([www.freedomhouse.org](http://www.freedomhouse.org)). Both indices range between 1 and 7, with lower values representing improved freedom standards. Countries with a combined average score ranging between 1 and 2.5 were considered ‘exempt’ from corruption; 3 to 5 scores mean ‘partly free’ from corruption, and 5.5 to 7 scores classified countries as basically ‘not free’. To measure the degree to which policies and institutions are supportive of economic freedom, a composite index compiled by the Fraser Institute [5] and referring to regulations on credit, labor, and business (hereafter REG) was finally included in the analysis. REG ranges between 0 and 10, with higher values corresponding to greater economic freedom.

Building econometric models on these input variables – assumed to be the main determinants of corruption, in line with the literature presented above in this article – we first specified corruption levels (CPI) as a linear function of the candidate predictors:

$$\text{CPI} = b_0 + b_1\text{GCI} + b_2\text{GDP} + b_3\text{CL} + b_4\text{REG} + e \quad (\text{Equation 1})$$

An augmented specification with PR index, a variable assessing the political/institutional dimension together with CL, was also tested as follows:

$$\text{CPI} = b_0 + b_1\text{GCI} + b_2\text{GDP} + b_3\text{PR} + b_4\text{CL} + b_5\text{REG} + e \quad (\text{Equation 2})$$

An alternative specification, in addition to the linear specification in Equation 1, was formulated to test the nonlinear impact of economic development:

$$\text{CPI} = b_0 + b_1\text{GCI} + b_2\text{GDP} + b_3\text{PR} + b_4\text{CL} + b_5\text{REG} + b_6(\text{GDP})^2 + e \quad (\text{Equation 3})$$

Short-term economic dynamics were examined over 15 observation years (2005–2019) implementing a panel analysis of 139 countries (Yaffee 2003). The combination of time series with cross-sections may enhance the quality and quantity of data in ways that would be impossible using only one of these empirical dimensions (Gujarati 2003, Carlucci et al. 2018, Ciommi et al. 2018). Panel data were estimated with Fixed Effects (FE) by applying the White diagonal correction of standard errors for heteroscedasticity and autocorrelation (Ciommi et al. 2019). To test the appropriateness of the estimation method, a Hausman test was run (Baltagi 2005), indicating the superiority of FE against random effects (RE). FE methods can be used with panel data to estimate the effect of time-varying independent variables with time-constant omitted variables (Wooldridge 2013). Unobserved heterogeneity can be treated assuming that omitted variables do not change over time and, as a result, eliminating their effect through FE (Lamonica et al. 2020). We assume that omitted variables remained constant over time due to the relatively small time coverage of the sample (Salvati–Serra 2016). The ‘fixed effects’ term refers to the fact that even though the model’s intercept might differ between countries, it is assumed to be time invariant within the same country (Vinci et al. 2022). To test the validity of the models’ outputs (Salvati et al. 2019), a panel least squares estimation strategy (without fixed or random effects either for cross-section or time-series data) was performed as a control methodology (Salvati et al. 2013).

To evaluate the results' robustness (e.g., Duvernoy et al. 2018), static cross-section estimates (based on ordinary least squares (OLS) regressions) were finally carried out on the most recent data referring to 2019. The stability of regression coefficients (both sign and significance level) across models was taken as an indirect confirmation of the appropriateness of the econometric specifications formulated in this study.

## Results

Table 1 reports summary statistics of the input variables in the econometric models explaining the level of corruption in a sample of 139 countries in the world. A huge gap between the minimum and the maximum value of per-capita income (GDP) was observed, ranging between 389,312 and 102,724.238 US dollars. The CPI ranged between 0.9 (indicating the highest corruption level observed in the sample) and 8.7 (the lowest corruption level in the sample). No country in the sample was totally free from corruption, as the maximum theoretical value of CPI (10) was never observed.

Table 1

**Summary statistics of the dependent variable (CPI) and selected predictors in a sample of world countries, 2005–2019 (n = 139)**

Variable	Average	St. Dev.	Min	Max
CPI	4.363	2.147	0.900	8.700
GCI	4.173	0.684	3.510	8.480
GDP	9.028	1.198	5.965	11.541
PR	3.189	2.011	1.000	7.000
CL	3.019	1.637	1.000	7.000
REG	6.985	0.882	3.895	9.075

The results of both panel analysis and cross-section estimation for 2019 are illustrated in Table 2 and Table 3, respectively. Coefficient estimations were provided with standard errors, and the *p* value of a *t*-statistic testing for coefficient significance against a null hypothesis ( $H_0$ ) of no impact (i.e., coefficient value = 0). The results of the Hausman test verifying the appropriateness of the FE estimation were also provided. Model outputs comparing estimation strategies (FE *vs.* panel least squares [PLS]) did not differ significantly; in all specifications tested, explanatory variables retained the same sign and comparable level of statistical significance.

Fixed Effects (FE) estimates provided a satisfactory goodness-of-fit (adjusted  $R^2 > 0.98$ ) for all specifications. The model's goodness-of-fit decreased moderately with PLS estimates (adjusted  $R^2 = 0.86$ ). The sign and intensity of the predictor's coefficients were similar across the model's specifications. The most parsimonious, linear model (Equation 1) delineates corruption levels as a function of GCI, REG, and CL. The negative impact of country competitiveness on corruption levels was evident and significant. In other words, a higher competitiveness was observed for

countries with a high CPI, which indicates a lower corruption level. The same pattern was observed for REG, documenting how countries with high economic freedom in terms of market regulations (i.e., with higher values of REG) also showed a higher value of CPI (i.e., a lower level of corruption).

CL was the only predictor negatively associated with CPI. This finding is in line with the literature examined in the introduction chapter and the working assumption of this study, since a lower value of CL indicates a higher level of civil liberties and a lower level of CPI indicates a higher level of corruption. The negative (regression) coefficient of CL thus demonstrates the direct relationship between civil liberties and less corrupted economic systems. A less parsimonious, linear model (Equation 2) estimated similar regression coefficients; PR, the additional predictor considered in Equation 2, proved to have a non-significant impact on corruption levels.

Quadratic models (Equation 3 with FE or PLS estimates) provided similar results, confirming the significance of a quadratic relationship between CPI and GDP. However, the quadratic term allowed for a negligible increase in the adjusted R<sup>2</sup> compared with the corresponding linear model (Equation 2). PR was the only insignificant predictor in both models. CL was negatively associated with corruption, in line with earlier results. REG and GCI maintained positive and significant regression coefficients in line with earlier results.

Table 2

**Fixed effects (FE) and panel least squares (PLS) estimates of econometric specifications (1–3) with the Corruption Perception Index (CPI) as the dependent variable in a sample of world countries (n = 139), 2005–2019**

Predictor	FE(1)	FE(2)	FE(3)	PLS(3)
Intercept	−2.01(0.47)***	−2.12(0.38)***	18.68(1.73)***	21.65(1.87)***
GCI	1.16(0.08)***	1.17(0.08)***	1.23(0.08)***	1.62(0.09)***
GDP	0.07(0.04)*	0.08(0.04)*	−0.91(0.35)**	−5.52(0.41)***
REG	0.08(0.03)**	0.05(0.03)*	0.08(0.05)*	0.26(0.04)***
PR		0.01(0.36)	0.01(0.06)	0.03(0.02)
CL	−0.26(0.04)***	−0.10(0.04)***	−0.09(0.03)***	−0.40(0.06)***
GDP <sup>2</sup>			0.06(0.02)***	0.37(0.03)***
Adjusted R <sup>2</sup>	0.985	0.986	0.986	0.859
F-statistic	358.7***	360.4***	358.5***	709.4***
Hausman test	136.8***	120.7***	196.8***	196.8***

\*\*\*, \*\*, \* denote statistical significance at the 1%, 5% and 10% levels, respectively; (1), (2), and (3) refer to the equation reported in the methodological chapter.

Regression coefficients indicate that the relationship between GDP and CPI was U-shaped in the world sample of countries considered in this study. The partial effect of income on corruption was computed to estimate the turning point for GDP, being stable at approximately 2,000 USD (per capita) for both panel models (FE and PLS). In all countries above this threshold, an increase in the level of income was associated with an increase in CPI, i.e., a decrease in the level of corruption. Countries below the

income threshold experienced a decreasing CPI (namely, an increasing level of corruption) with increasing income levels. With the exception of Kenya, Côte d'Ivoire, and Nigeria, these countries were classified as 'least developed' (Burundi, Malawi, Madagascar, United Republic of Tanzania, Mali, Mozambique, Rwanda, Zambia, Burkina Faso, Benin, Haiti, Yemen, Bangladesh, Senegal, Gambia) or as 'landlocked developing' (Ethiopia, Zimbabwe, Lesotho, Chad, Tajikistan), following the United Nations nomenclature [6]. In other words, an increase in GDP may be considered beneficial (or, at least, neutral) in the fight against corruption only for advanced economies (i.e., above the income threshold derived from econometric estimation). Below the threshold, an increase in GDP was associated with a (more or less) intense increase in the corruption level. A cross-section estimation restricted to 2019 data (Table 3) provided similar results with the panel analysis illustrated above. The quadratic specification showed the highest goodness-of-fit (adjusted  $R^2 = 0.86$ ), a significant U-shaped pattern between GDP and CPI, a positive, linear impact of GCI and REG, and a negative impact of CL on CPI.

Table 3

**Ordinary least squares (OLS) estimates of equations (1–3) for the 2019 cross-section of a sample of world countries with CPI as the dependent variable**

Predictor	Equation 1	Equation 2	Equation 3
Intercept	−6.34(0.45)**	−5.14(0.40)***	19.57(2.10)***
GCI	2.03(0.10)***	2.02(0.10)***	1.71(0.10)***
GDP	0.13(0.06)**	0.12(0.06)**	−6.12(0.41)***
REG	0.35(0.05)***	0.25(0.04)***	0.28(0.05)***
PR		−0.08(0.05)*	0.08(0.05)*
CL	−0.43(0.04)***	−0.49(0.07)***	−0.44(0.07)***
GDP <sup>2</sup>			0.37(0.03)***
Adjusted R <sup>2</sup>	0.811	0.811	0.859
F-statistic	752.4***	603.7***	709.4***

\*\*\*, \*\*, \* Denote statistical significance at the 1%, 5% and 10% levels, respectively; (1), (2), and (3) refer to the equation reported in the methodological chapter.

## Discussion

A dominant regime with endemic corruption characteristic of the system's functioning largely unveils conditions of socioeconomic underdevelopment, institutional rigidities, and political incapacity (e.g., Sheng et al. 2019). As a result, policies implemented to tackle corruption are meaningless without identification of the underlying determinants (Saha–Yap 2015). Infrastructures, institutions, macroeconomic performance, and social conditions act as drivers of both competitiveness and corruption (Uslaner 2011). These dimensions also constitute the main transmission channels through which competitiveness affects corruption (Mohamadi et al. 2017). Our study contributes to



this field of knowledge by investigating the role of candidate drivers of corruption at the country scale (e.g. Lengyel–Szakálné Kanó 2012, 2013) and testing the significance of both linear and quadratic relationships between corruption and income (World Economic Forum 2014).

Analysis of a global sample of developed and developing countries suggests that the relationship between corruption and income is basically asymmetric and, as a result, not universal. Our analysis, therefore, reveals that the level of economic development is an important factor shaping corruption levels. In high-income countries, economic development was associated with an inherent decline in perceived corruption levels (Lv–Xu 2017). Conversely, an increase in the level of per-capita income in low-income economies was associated with an increase in the level of corruption (Frolova et al. 2019). This result is not surprising since, in those countries, corruption has penetrated into the value system of societies at large and is often considered by socially excluded people as an essential mechanism for their survival (Demir–Gozgor 2017). Improving personal wealth is a strong motivator for leveraging corruption under conditions of deprivation and low public sector salaries (Dang 2016). To survive and support their families, low-paid public sector employees may take small bribes, especially when their jobs are associated with a high degree of uncertainty, mainly due to political instability (Ali–Mdhilat 2015). With this perspective in mind, corruption can be seen as a ‘disease’ caused by poverty or a byproduct of poverty that only diminishes when economies develop (Alola et al. 2021).

However, the effective control of corruption should not be considered an automatic process activated when countries reach a certain income threshold (Locatelli et al. 2017). In contrast, it may be achieved through the adoption and effective implementation of appropriate long-run policies and institutional reforms (Beesley 2015). However, the empirical results of our analysis suggest that anti-corruption strategies should not be applied uniformly to countries because the aforementioned socioeconomic gaps may lead to biased inferences regarding the fight against corruption (Zeneli 2016). In underdeveloped countries, corruption has a systemic character and deep roots in society (Amundsen 1999), making controls partly ineffective (Bardhan 1997). Therefore, the broader social and political context should be taken into account to effectively mitigate the negative impact of corruption (Bliss–Di Tella 1997).

The empirical results of our study indicate the extent of political freedoms and civil liberties as additional factors affecting the level of corruption globally (Lalountas et al. 2011). The higher the index of civil liberties, corresponding to reduced levels of political freedom, is, the higher the risks for politically motivated violence and destabilization (Hassan et al. 2020). The smooth functioning of democratic political institutions and civil liberties clearly facilitates the fight against corruption (Mohamadi et al. 2017). Notions such as freedom of expression and belief, the protection of associational and organizational rights, the promotion of the rule of law and the defense of personal autonomy and individual rights constitute basic elements for a politically free state (Myint 2000). The more open the democracy is, that is, the more free the electoral process, the higher the political pluralism and participation, the more

effective the functioning of government, the higher the freedom of expression, and the greater the phenomenon of corruption is perceived as limited (e.g. Chelleri et al. 2015). Nevertheless, the long-run health of the political system often requires internal checks and balances, while openness and transparency are the best ways of ensuring that such structural mechanisms develop (Goel–Nelson 2010).

Implementing universal policy recommendations to all countries indiscriminately, regardless of their economic, social, and political background, proves to be ineffective and unresponsive (Djankov et al. 2002). Corruption finds fertile ground for growth in countries that are staggered in economic, political and social underdevelopment. Consequently, the more developed, democratic, unitary, concrete and stable the country is, the harder it becomes for phenomena such as corruption, which can paralyze state structures. Moreover, if corruption is endemic and deeply embedded in the political and social dynamics of a country, the corresponding initiatives taken to reduce corruption should adapt to the individual sociopolitical traits of each country, whereas they should also be supported by a deliberate policy mix, targeted reforms and structural adjustments (Dang 2016). The inefficiency of anticorruption policies in low-income countries may be explained by their short-run horizon, as they do not take into account the social, economic, and political transformations propaedeutic to any anticorruption measure.

## Conclusions

Based on empirical estimates, the relationship between corruption and income proved to be non-uniform over space. An increasing income in high-income countries seems to be associated with a reduction in the level of perceived corruption, which is in turn linked to an increase in corruption levels in low-income countries. The results of the empirical analysis presented in this study have highlighted that achieving and maintaining anti-corruption reforms is a challenging task associated with a wide variety of economic and noneconomic factors of social and political nature. These requirements are achieved through the establishment of deep social and political transformations. Corruption finds fertile ground to infiltrate and materialize in countries with low levels of economic development, reduced social capital, modest territorial cohesion, and fluid environments in the allocation of political power in addition to low levels of structural competitiveness – as expressed by regulatory inefficiency and weak productive infrastructure, among others. Concerns of improved social capabilities along with intensified efforts targeting economic development should be incorporated into future policy strategies as effective guides for remedying the root causes of institutional failures, such as corruption.

## Appendix

Table A1

### Countries included in the sample\*

Country			
Albania	Dominican Republic	Lebanon	Rwanda
Algeria	Ecuador	Lesotho	Saudi Arabia
Angola	Egypt	Lithuania	Senegal
Argentina	El Salvador	Luxembourg	Serbia
Armenia	Estonia	Madagascar	Singapore
Australia	Ethiopia	Malawi	Slovakia
Austria	Finland	Malaysia	Slovenia
Azerbaijan	France	Mali	South Africa
Bahrain	Gambia	Malta	Spain
Bangladesh	Georgia	Mauritania	Sri Lanka
Barbados	Germany	Mauritius	Suriname
Belgium	Ghana	Mexico	Swaziland
Benin	Greece	Moldova	Sweden
Bolivia	Guatemala	Mongolia	Switzerland
Bosnia and Herzegovina	Guyana	Montenegro	Syria
Botswana	Haiti	Morocco	Tajikistan
Brazil	Honduras	Mozambique	Tanzania
Brunei	Hong Kong	Namibia	Thailand
Bulgaria	Hungary	Nepal	Republic Macedonia
Burkina Faso	Iceland	Netherlands	Timor-Leste
Burundi	India	New Zealand	Trinidad and Tobago
Cambodia	Indonesia	Nicaragua	Tunisia
Cameroon	Iran (Islamic Republic)	Nigeria	Turkey
Canada	Ireland	Norway	Uganda
Cape Verde	Israel	Oman	Ukraine
Chad	Italy	Pakistan	United Arab Emirates
Chile	Jamaica	Panama	United Kingdom
China	Japan	Paraguay	United States
Colombia	Jordan	Peru	Uruguay
Costa Rica	Kazakhstan	Philippines	Venezuela
Côte d'Ivoire	Kenya	Poland	Vietnam
Croatia	Korea (South)	Portugal	Yemen
Cyprus	Kuwait	Qatar	Zambia
Czech Republic	Kyrgyzstan	Romania	Zimbabwe
Denmark	Latvia	Russia	

\* The countries included in this study see on a [world map](#).

Table A2

**A complete definition of the variables used in the econometric models**

Acronym	Full Form	Definition
CPI	Corruption Perceptions Index	Corruption is the „Abuse of entrusted power for private gain” (Transparency International 2011)
GCI	Global Competitiveness Index	Competitiveness is the „set of institutions, policies, and factors that determine the level of productivity of a country” (World Economic Forum 2014)
CL	Civil Liberties	<ul style="list-style-type: none"> <li>• Freedom of expression and belief – media, religious, and academic freedoms, and free private discussion</li> <li>• Associational and organizational rights – free assembly, civic groups, and labor union rights</li> <li>• Rule of law – independent judges and prosecutors, due process, crime and disorder, and legal equality for minority and other groups</li> <li>• Personal autonomy and individual rights –freedom of movement, business and property rights, women’s and family rights, and freedom from economic exploitation (Freedom House 2014)</li> </ul>
PR	Political Rights	<ul style="list-style-type: none"> <li>• Electoral process – executive elections legislative elections, and electoral framework</li> <li>• Political pluralism and participation – party systems, political opposition and competition, political choices dominated by powerful groups, and minority voting rights</li> <li>• Functioning of government – corruption, transparency, and ability of elected officials to govern in practice (Freedom House 2014)</li> </ul>
REG	Regulations	Regulations on credit, labor and business (REG) [7]

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