

A note on What causes change in governance and How to measure public integrity

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Introduction

As many studies in the field suggest, establishing effective control of corruption requires much more than adoption of specific institutions which neglect the peculiarities of the local environment. It is rather an outcome of a complex mechanism which includes many economic, social, and political factors. The bottom line is that control of corruption, as well as rule of law, on which it greatly overlaps (the correlation between the two World Bank governance indicators measuring each is around 90%) reflects a certain balance of power in society. Governance thus can be described as a sustainable equilibrium where public constraints are sufficient to prevent any given group of individuals to spoil public resources for private benefit. Such constraints do not mean only effective law enforcement: in corrupt countries, law enforcement, the judges and anyone with some power is actually profiting from such power by receiving more than their due share, through privilege or bribes. They mean, more broadly, that power is sufficiently dispersed; rules are clear and taxpayers capable of punishing undue advantage.

More specifically, in our previous work (Mungiu-Pippidi et al. 2011, Mungiu-Pippidi 2015a,b) we have proposed a model that explains corruption at national level as an equilibrium between resources and constraints imposed both by the state and society, based on a long tradition of approaching corruption as an equilibrium (Becker 1968; Klitgaard 1988; Rose-Ackermann 1999). According to this model, control of corruption can be formalized as:

$$\text{Control of Corruption} = \text{Constraints (Legal + Normative)} - \text{Resources (Power discretion + Material resources)}$$

Factors can be described as follows:

Under opportunities or *resources*:

- Discretionary power resources, which include abuse of authority from both elected officials and bureaucrats, are due not only to monopoly, but also to privileged access under power arrangements other than monopoly or oligopoly (e.g. cartels), poor quality of regulation or over-regulation or any factors which enhance administrative and political discretion.
- Material resources easily available and fit for discretionary use, such as foreign aid, EU structural funds, natural resources ('resource curse', as it is known in literature), public sector employment, preferential legislation to influence markets (Johnston 2006), unaccountable extra-budgetary funds and any other resources that can be turned into spoils or generate rents.

Under deterrents or *constraints*:

- Legal constraints, supposing an autonomous, accountable, and effective judiciary able to enforce sound legislation and the audit capacity able to monitor soundness of economic activity and its integrity independently from political power.
- Normative constraints, which implies that existing societal norms endorse public integrity and permanently as well as effectively monitor deviations from that norm (through public opinion, media, civil society, critical citizens/voters, etc.). For effective sanctions we need a population of autonomous and critical citizens capable of collective action, not a mass of dependent subjects merely conforming to the corrupt rules of the game.

This equilibrium formula was tested empirically on a large number of countries using different measures of corruption (Mungiu-Pippidi 2014, Mungiu-Pippidi 2015). A basic model and its components are shown here to illustrate the main significant determinants of control of corruption for a sample of nearly 90 countries. These determinants are then built into one single composite indicator that can be used to assess the overall level of public integrity in the respective country. In addition to a sound theoretical foundation, this indicator has other advantages compared with other existing measurements on governance. Firstly, instead of using perception based data, it mostly relies on objective and tractable components, and thus offers clear policy guidance. Secondly, it can be used for comparisons across countries and over time. Finally its construction follows a relative simple and transparent methodology.

Table 1 presents simple OLS regression results which test the relationship between the World Governance Indicators' (WGI) measure on control of corruption and different indicators which capture various dimensions of constraints and resources in the above equilibrium formula also controlling also for the level of socio-economic development proxied by the Human Development Index (HDI).¹ The results show that each of the variables is significantly associated with control of corruption.

Accordingly, the factors that influence public integrity enforcement are:

1. *A non-corrupt and independent judiciary.* Impartiality and independence of the overall judiciary system constitute legal constraints and thus are key elements of an effective control of corruption. The indicator on **judicial independence** from the Global Competitiveness Database developed by the World Economic Forum strongly and positively correlates with control of corruption (Model 1).
2. *Red tape.* Excessive administrative burden and regulations open doors for discretion and red tape thereby resulting in a high risk of corruption. Captured by the number of procedures and time needed to start a business and pay corporate taxes from the Doing Business dataset, our measure of **administrative simplicity** therefore refers to the extent of bureaucratic regulations of *domestic* entrepreneurial activities, and is indeed significantly and strongly associated with control of corruption (Model 2).
3. *Trade barriers.* Although being strongly correlated, the extent of regulations covering a country's *external* economic activities does not necessarily overlap with the extent of

¹ We also tested these relationships using alternative measures on corruption such as, for example, CPI from Transparency International or the ICRG corruption scores. The results are consistent and highly significant.

bureaucratic regulations of *domestic* entrepreneurial activities. However, we obtain the same relationship between control of corruption and *de jure* **trade openness** (Model 3). Open countries control corruption better, eliminating room for discretion at the level of administrative trade barriers and thus allowing free competition. The measure is constructed by using the data from the World Development Indicators and Doing Business datasets and combining trade weighted average tariff rate with the average number of procedures and time for exporting and importing.

4. **Budget Transparency** measures the overall extent and the quality of public accessibility of a central government's budget at its different stages of implementation - from a draft proposal to audit reports - in order to provide control mechanism for discretionary public spending. This indicator is based on the Open Budget Index developed by the International Budget Partnership and its significant association with control of corruption is shown in Model 4.
5. *Transparency and e-government*. **E-Transparency** is a key instrument for reducing administrative discretion and thus significantly affects control of corruption (Model 5). This indicator measures the scope of public online service deliveries that include the use of e-government to provide information and services to citizens, 'open government data', e-procurement and mobile government. The measure is based on the Online Services Index from the UN E-Government Survey.
6. **Digital citizens**. Transparency tools work best if they are implemented in a society with a strong capacity for collective action. In other words and along the logic of normative constraints, social accountability exercised by the general population of autonomous and critical citizens can amplify the transparency effects in combating corruption. The concept **Digital Citizens** captures therefore citizens' engagement in society, politics and government participation via internet and is measured by two indicators: i) *e-participation index* from the UN E-Government Survey, which addresses citizens' usage of e-government services and is supposed to complement the E-Transparency measure as it captures the actual *demand* for e-government and transparency by the general population; and ii) with the share of *Facebook users* in population (from the Internet World Stats) that indicates the role of social networks in this concept.

Methodology and Evidence

Combining all six measures, we obtain one **single aggregate index** that can be used to assess a country's overall **level of public integrity (index of public integrity or IPI)**. In particular, we proceeded as follows. To obtain the indicators used in Table 1, we first standardized the raw data to equalize the mean values and standard variations of the respective variables thereby making their units comparable. That is, the so-called z-scores for every variable were constructed to avoid that the composite index (**IPI**) strongly depends on the component with greatest dispersion. In case that a component consists of sub-components, the same procedure was applied at the disaggregated level and then a simple mean of the z-scores of the sub-components was built to obtain the values of the respective component. For example, the measure of administrative simplicity is a simple mean of z-scores of number of procedures and time to start business and pay corporate taxes. In

the next step, the standardized values of each component are normalized to be in range between 1 and 10 using the common min-max-transformation. The overall **IPI** is finally derived by taking the total value of the six components.

We also used a principal component analysis to build the aggregate index. The first principal component of our six indexes explained around 56 % of the variation in the data that consisted of 88 countries and was the only one with an eigenvalue of larger than one. This variable correlated with the **IPI** at the value of 99%. For the sake of simplicity, transparency and, especially, better intuitive explanation, we decided to use the simple aggregation to build the IPI.

The **IPI** shows the capacity of a country to control corruption and enforce the norm of integrity at both the state and the society level. This index is not only highly correlated with the World Bank's measure on control of corruption (which is not surprising given the selection process of the components) but also with several other corruption indicators (Table 2). Note that each of them is scaled in a way that higher values imply less corruption. Therefore the correlation between **IPI** and these indicators is expected to be positive. In contrast to the perception-based measures of governance, the **IPI**, however, allows to trace back a country's performance to specific actionable components what can help policy makers to identify reform areas for improvement.

Table 1. Control of Corruption and Its Determinants

	(1)	(2)	(3)	(4)	(5)	(6)
HDI 2013	2.256*** (5.93)	3.395*** (6.70)	2.389*** (3.57)	3.311*** (6.34)	3.069*** (4.42)	1.984* (2.55)
Judicial Independence	0.309*** (10.76)					
Administrative Simplicity		0.148*** (3.47)				
Trade Openness			0.168*** (4.20)			
Budget Transparency				0.0893* (2.44)		
E-Transparency					0.0892* (2.31)	
Digital Citizens						0.159*** (3.43)
Constant	-3.281*** (-12.63)	-3.649*** (-9.11)	-3.006*** (-8.38)	-2.949*** (-8.48)	-2.749*** (-7.28)	-2.329*** (-5.98)
Countries	87	87	87	87	87	87
Adj. R-squared	0.769	0.502	0.509	0.480	0.468	0.498

OLS regressions. The dependent variable is WGI control of corruption 2013. t statistics in parentheses * p < 0.05; ** p < 0.01; *** p < 0.001. Robust std. err. are used. Note for one country in our sample (Slovakia), HDI data was not available.

Table 2. Correlations between the Index of Public Integrity (IPI) and other Corruption Indicators

	WGI Control of Corruption 2013	ICRG Corruption 2011	TI Corruption Perception Index 2013	WEF Diversion of public funds 2013
Correlation coefficients	0.824*	0.760*	0.811*	0.675*
Countries	88	77	88	87

* significant at 1 % level or better.

Figure 1 illustrates the strong and positive relationship between the **IPI** and control of corruption revealing that about two-thirds of the variation in control of corruption across 88 countries can be explained by the **IPI**.

Figure 1. Relationship between the Index of Public Integrity and Control of Corruption

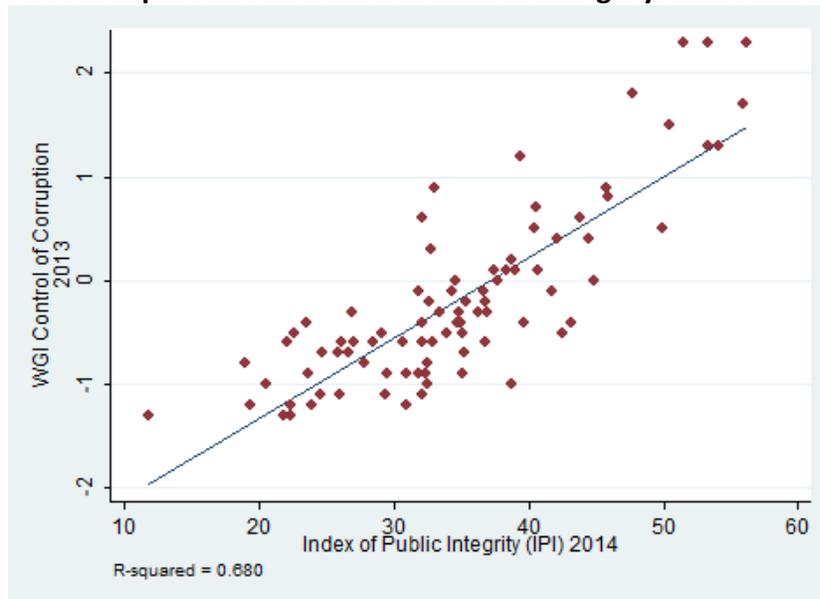
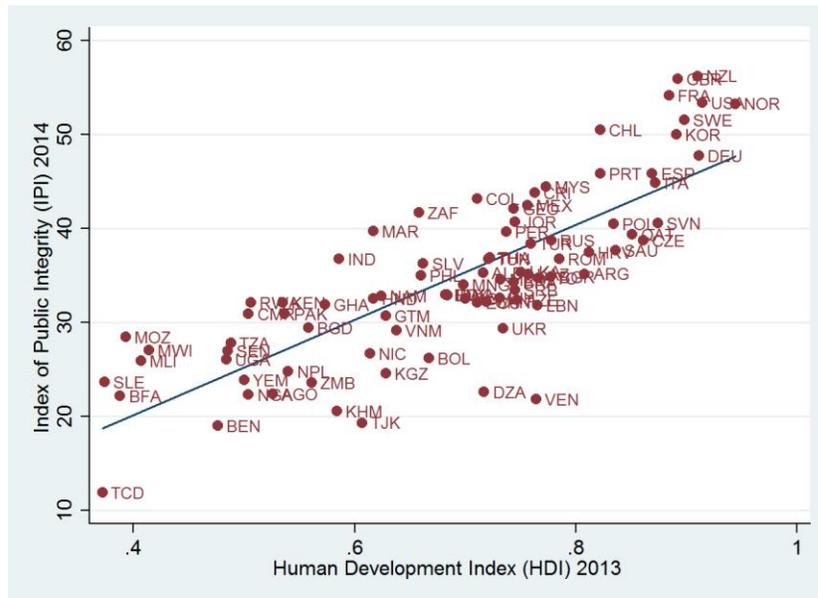


Figure 2 illustrates the strong correlation between the **IPI** and the level of socio-economic development (HDI). It also shows that some countries perform better on the public integrity capacity relative to their development level (e.g. Chile or Mozambique), and some others have a lot room for improvement (e.g. Algeria or Venezuela).

Figure 2. Relationship between the Index of Public Integrity and Human Development Index



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Variables and Sources

Variable	Measurement	Sources for raw data and year
Administrative Simplicity	Simple mean of standardized values of: <ul style="list-style-type: none"> • number of procedures required to start up a business • time needed to start up a business • number of tax payments per year • time to pay taxes 	Doing Business Data; 2014
Trade Openness	Simple mean of standardized values of: <ul style="list-style-type: none"> • total number of documents required to export and import • time for exporting and importing • weighted mean applied tariff 	First two sub-components: Doing Business Data; 2014 Third sub-component: World Development Indicators; 2013.
Judicial Independence	Standardized value of the “judicial independence” indicator from the Executive Opinion Survey that asks the question “To what extent is the judiciary in your country independent from influences of members of government, citizens, or firms? [1 = heavily influenced; 7 = entirely independent].	Global Competitiveness Dataset, World Economic Forum; 2014
Budget Transparency	Standardized value of the Open Budget Index.	Open Budget Survey, International Budget Partnership; 2012
E-Transparency	Standardized value of the Online Service Index.	United Nations E-Government Survey; 2014
Digital Citizens	Simple mean of standardized values of: <ul style="list-style-type: none"> • E-participation index • Share of Facebook users in population 	First sub-component: United Nations E-Government Survey; 2014 Second sub-component: Word Internet Stats, 2012