What Do Corruption Indices Measure?[*]

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May 23, 2008

Abstract

This paper presents empirical evidence that the most widely used indices to measure corruption might be biased in systematic ways. Evidence from the International Crime Victimization Survey and the World Business Environment Survey suggests that actual corruption experience may be a weak predictor of reported corruption perception, and that some of the factors commonly found to "reduce" corruption, such as economic development, democratic institutions or Protestant traditions, systematically bias corruption perception downward from corruption experience. In addition, perception indices are influenced by absolute (as opposed to relative) levels of corruption, which tends to penalize large countries, and they exhibit diminishing sensitivity to both absolute and relative corruption, indicating that they may better capture differences among countries with low levels of corruption than among highly corrupt ones. Individual characteristics, such as education, age, income, and employment status are also found to influence corruption perceptions holding experience constant.

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"Of almost equal concern as the danger of actual quid pro quo arrangements is the impact of the appearance of corruption..." (US Supreme Court, 1976, p27)

1 Introduction

Country-level corruption indices, based on firm and household surveys and expert assessments, have received much attention from researchers, commentators, and policy-makers alike. These corruption *perception* indices, such as the World Bank's Control of Corruption index (*WB*), the Transparency International's *CPI*, or the index of the International Country Risk Group (*ICRG*), are routinely interpreted as measures of corruption *experience*. To our knowledge, no one has undertaken a careful analysis of whether this interpretation is warranted. This is the goal of the present paper.

We ask two questions: (1) How well do measures of corruption experience predict measures of corruption perception? (2) Are there individual or country characteristics which affect corruption perceptions holding corruption experience constant? To answer them, we use a unique cross-country micro dataset compiled from the United Nations' Interregional Crime and Victimization Survey (ICVS) that includes information on individuals' experience with, and perceptions of corruption. The data is obtained through standardized surveys administered in a total of 58 countries in the periods 1996-97 and 2000-01. It allows us to perform both aggregate country-level analysis, as is common in the literature,[1] and micro-level comparisons across individuals. We supplement the ICVS with information from the World Business Environment Survey (WBES) on firms' experience with corruption. At the country level, our dependent variable is one of the three corruption perception indices commonly used. At the individual level, it is a perception measure obtained directly from the ICVS survey. The independent variables are various measures of corruption *experience* as well as individual and country characteristics.

Our country-level regressions suggest that some of the factors commonly found to "cause" corruption in fact explain corruption perception holding experience constant. In particular, factors such as religion, economic development, and democratic institutions systematically bias

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[1] Cross-country studies seeking to explain the consequences and / or causes of corruption abound. Mauro (1995) and Treisman (2000) are classic papers. See Jain (2001) and Svensson (2005) for surveys.

corruption perception away from corruption experience. Controlling for economic development as well as cultural and institutional variables, corruption experience is found to be a weak and statistically insignificant determinant of all three corruption perception indices. Our largest point estimate implies that a one standard deviation (11 percentage points) increase in corruption experience increases the perception indices by less than a half standard deviation (or the difference between Finland and Austria). These results hold with measures capturing different "types" of corruption experience.

We also find some evidence that corruption perception indices may be sensitive to absolute levels of corruption (number of occurrences) rather than just relative corruption levels (percentage of population affected). This is problematic for cross-country comparisons because it implies that perceptions will tend to be biased upwards for larger countries. Furthermore, perception indices exhibit diminishing sensitivity to both absolute and relative corruption levels, implying that they may be a better proxy for actual corruption in low-corruption countries than in high-corruption ones.

Results at the individual level reinforce our country-level findings. Controlling for individual characteristics, personal experience with corruption adds only 1 point on a 12 point scale to the perceived likelihood of corruption. The data shows that several individual characteristics, including education, age, income, and employment status affect corruption perceptions over and above experience. We also confirm the importance of country-level factors in influencing individual perceptions.

We wish to emphasize upfront two assumptions on which our analysis and results rest. First, for the sake of this exercise, we assume that a country's level of corruption can be captured by single number. This assumption is central to each of the corruption indices. It validates the aggregation of surveys and assessments that are often quite different from each-other. For example, the CPI and the WB both contain information from the Economist Intelligence Unit, which "*asks its panel of expert to assess the incidence of corruption and defines corruption as the misuse of public office for personal (or party political) financial gain.*" (Lambsdorff, 2007, p4) Several surveys included ask businessmen question such as "*In your industry, how commonly would you estimate that firms make undocumented extra payments or bribes connected with public utilities?*" (Lambsdorff, 2007, p4) Other surveys focus on households: The WB index

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includes a household survey of Latin American countries which asks "*Have you heard of acts of corruption?*" (Kaufmann et al., 2007, p75).

The assumption that the perception indices capture a wide variety of corrupt acts is also reflected in the academic literature using these indices. Mauro (1998) argues that higher ICRG scores lead to less education because corrupt governments redistribute resources to sectors from which rents are easily collected, such as the defense industry. Wei (2000) argues that higher ICRG and CPI scores increase the cost of doing business for foreign firms and finds that higher scores are associated with less foreign direct investment. Fredriksson and Svensson (2003) use the ICRG index to capture the weight that government puts on transfers from industrial and environmental lobbies relative to social welfare in determining environmental policy. Fisman and Miguel (2007) interpret the WB index as reflecting a general "culture of corruption" and find that it increases UN diplomats' likelihood of committing (un-enforced) parking violations. The implications of the assumption that corruption is captured by a single number are spelled out in more detail in Section 2, and Section 4.3 explores the empirical relationship between perception indices and different types of corruption experience.

Our second assumption is that the data measures what it intends to measure. In particular, we assume that each survey results in representative samples of carefully collected, truthful responses *to the question being asked*, and therefore that questions on perceptions measure perceptions, and questions on experience measure experience. We also assume that perception indices compiled on a yearly basis reflect corruption perceptions for a given year, and not perceptions for previous years.[2] These are minimal requirements that perception indices should satisfy to be meaningful. We assume that they hold in order to focus on more subtle issues.

Our paper is related to a growing literature emphasizing the need for objective, experience-based measures of corruption experience. Seligson (2002) uses survey responses on corruption experience in the general population of four Latin American countries. Svensson (2003) surveys firms in Uganda, and Clarke and Xu (2004) use surveys of firm executives on the bribes paid to utilities in 21 Eastern European and Central Asian countries. Glaeser and Saks (2006) study US corruption using a dataset of federal corruption convictions. Olken (2006) constructs a measure

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[2] As we briefly discuss in Section 5, it is unlikely that past experiences would fully account for the low correlation between current experience and perceptions observed at the individual level.

of corruption in road-building projects in rural Indonesia by using the difference between a village's expenditure and engineers' estimates of actual costs.[3] A common characteristic of these measures is that they cover a specific geographical area, activity, or industry. Thus, while these papers do suggest that there might be differences between perceptions and experience, and illustrate the progress that can be achieved using objective measures, their analyses are not directly relevant for the use of the most widespread corruption indices, and for the interpretation of the large number of empirical studies building on them. By contrast, the ICVS allows us to create an experience-based measure for 58 countries, and directly compare the results with the perception indices.[4]

More broadly, our paper is related to the voluminous literature using the aggregate corruption indices, and suggests that some of those results may have to be re-interpreted as being about the causes or consequences of corruption *perceptions*, but not necessarily corruption *experience.*

The rest of the paper is organized as follows. Section 2 discusses the potential sources of bias in the perception indices. Section 3 presents the data, focusing on the ICVS survey used in this paper. Section 4 describes our country-level, and Section 5 our individual-level results. Section 6 concludes and discusses some of the implications of our findings.

2 Corruption perceptions and corruption experience

We first discuss how perceptions may differ from experience when Bayesian individuals' responses are aggregated, and then review potential psychological biases. Since most of our empirical work is at the country level, we won't directly test the theories outlined below. Rather, our goal is to illustrate some of the mechanisms behind individual perceptions which may cause perception indices to be biased measures of experience.

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[3] This paper is perhaps the closest to ours in its explicit focus on the distinction between perceptions and experience. The fact that this distinction appears in the micro context of Indonesian villages is an interesting complement to our cross-country results.

[4] Mocan (2005) uses the ICVS data to study the determinants of corruption experience. Because our focus is on the difference between perceptions and experience, our work is complementary to his. In the context of surveys on corruption research, both Svensson (2005) and Treisman (2007) highlight the usefulness of the ICVS data and briefly explore its relation to the perception indices. Our work extends some of their ideas and introduces new ones.

2.1 Bayesian respondents

Suppose that the level of corruption in a country is represented by a scalar C. Assume that $C = \alpha X + \mu$ where X is a vector of observable country characteristics that includes historical circumstances, economic development, institutions, etc., and μ is a normally distributed error term with mean 0 and variance σ^2. An individual i's experience E_i with corruption is given by

$$E_i = C + \beta Y_i + \varepsilon_i, \tag{1}$$

where Y_i is a vector of individual characteristics such as place of residence and employment status, and ε_i is drawn from a normal distribution with mean 0 and variance σ_ε^2 i.i.d. across individuals. The experience E_i can represent, for example, the number of times an individual or firm is exposed to corruption, or the dollar amount paid in bribes in a given year. Assume that the individual characteristics in Y_i are normalized to have mean 0 in the population.[5]

To form an estimate of the level of corruption, $\hat{C}_i$, a Bayesian individual takes the weighted average of his prior αX and his signal E_i. By standard arguments,

$$\hat{C}_i = s(E_i - \beta Y_i) + (1-s)\alpha X, \tag{2}$$

where $s = \sigma^2 / (\sigma^2 + \sigma_\varepsilon^2)$. The posterior $\hat{C}_i$ is an individual's "perception" of corruption.

Suppose we have data on individuals' experience with corruption, E_i. Under equation (1), the sample mean of this data, $\overline{E}$, is an unbiased estimator of the actual level of corruption C. By contrast, consider the sample mean $\overline{C}$ of data on individual perceptions $\hat{C}_i$. Under (1) and (2), the population mean of perceptions is

$$\hat{C} = sC + (1-s)\alpha X, \tag{3}$$

implying that $\overline{C}$ is a biased estimator for C. Since the prior enters each individual's perceptions, the perception index will be influenced by country characteristics affecting the prior.

Based on (2), we run the regression

$$\overline{C} = s\overline{E} + (1-s)\alpha X + u \tag{4}$$

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[5] Since the mean of Y_i in the population can be included in the vector X, this is without loss of generality.

at the country level, where u is an error term. The smaller the coefficient on $\overline{E}$ and the larger the coefficient on X, the more average perceptions should be biased away from the underlying level of corruption, based on (3).

A potential concern that we address extensively below comes from the fact that the perception data $\overline{C}$ and the experience data $\overline{E}$ we use at the aggregate level comes from different surveys. For now, we note that this is less problematic than it might seem under the assumption that corruption is captured by a scalar C. As argued in the Introduction, this assumption is supported both by the methodology of creating the perception indices and by the literature using them. To see this, imagine that the population is made up of two groups, $k = 1, 2$, such as firms and individuals. Assume that the respective experiences are given by

$$E_i^k = C + \beta Y_i + \varepsilon_i^k , \tag{5}$$

where ε_i^k is Normal with mean 0 and variance $\sigma_{\varepsilon k}^2$ and i.i.d. In this setting, (2) becomes

$$\hat{C}_i^k = s^k (E_i^k - \beta Y_i) + (1 - s^k)\alpha X ,$$

where $s^k = \sigma^2 /(\sigma^2 + \sigma_{\varepsilon k}^2)$, and the predictions for a regression of the form $\overline{C}^k = s^k \overline{E}^l + (1 - s^k)\alpha X + u$ for $l \neq k$ are the same as above. Proxying $\overline{E}^k$ with $\overline{E}^l$ introduces measurement error that may bias the estimated coefficients. However, aggregating large samples will mean that this error is small, since under (5) both $\overline{E}^k$ and $\overline{E}^l$ proxy for C.[6]

2.2 Other biases

Above, we have described survey respondents as Bayesian individuals and showed why perceptions could be a biased (in the econometric sense) measure of experience. However, not all survey respondents may be Bayesian.

First, experience E_i may not be used optimally in the formation of perceptions. For example, an individual may not use the lack of personal experience ($E_i = 0$) as information about C. If these individuals rely instead on their prior, the coefficient on country characteristics will be larger in (4). Perceptions may also exhibit diminishing sensitivity to experience, with low levels

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[6] If the aggregation is based on samples of size N_1 and N_2, respectively, then the variance of this measurement error is simply $\sigma_{\varepsilon 1}^2 / N_1 + \sigma_{\varepsilon 2}^2 / N_2$.

of corruption experience being especially salient and having a disproportionate impact on perceptions.[7] Conversely, low levels of corruption experience may go unnoticed and not affect perceptions as much as high levels, resulting in increasing sensitivity.[8] When comparing countries, as experts are often asked to do, a respondent might focus on the absolute level of corruption (number of corrupt acts) or the relative level of corruption (likelihood of encountering a corrupt official). In the former case, larger countries could be perceived as more corrupt ceteris paribus.

Second, survey responses might be affected by attitudes (Bradburn, 1983; Bertrand and Mullainathan, 2001), which in turn will depend on individual and country characteristics. For example, younger, more educated respondents living in an urban area might be better informed and more critical of certain behaviors, making them more likely to report a higher corruption perception. At the same time, a respondent who benefits from a corrupt climate (e.g., an entrepreneur with political ties) may be reluctant to call these practices "corruption". Attitudes will also be influenced by country characteristics, including the norms about the behavior of political leaders or officials, and the political culture more generally. Respondents from rich and stable democracies might be more satisfied with their leaders and the functioning of their bureaucracies. On the other hand, these individuals could also be more sensitive to corruption scandals, and specific well-publicized events might have a larger impact on their perceptions. Some people might form their attitudes based on the "theory" that countries with certain characteristics "should" be more corrupt than others.[9] Rich democracies may be perceived as less corrupt simply for this reason. Countries may also differ in more subtle cultural dimensions, e.g., regarding whether it is acceptable to criticize one's government, by calling it corrupt, to a (possibly foreign) interviewer.[10] If attitudes matter, individual and country characteristics may

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[7] Diminishing sensitivity at the aggregate level will also result if at low levels of corruption (in stable democracies), specific instances of corruption become widely known, and people form their perceptions based on these news rather than their own experience, while at high levels of corruption information is less readily available and people rely more on their own experience.

[8] Ferraz and Finan (2008) find evidence of such threshold effects in the electorate's response to corruption scandals in Brazil.

[9] In related work, psychologists note that people's "theories" regarding their mental processes often determine how memories are remembered and what reasons an individual gives for her past actions (Nisbett and Wilson, 1977; Ross, 1989).

[10] In a different context, Alesina and Fuchs-Schundeln (2007) provide empirical evidence on how individual and political system characteristics affect people's beliefs and attitudes towards state intervention.

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have a significant impact on perceptions even if they do not affect corruption experience, contrary to the Bayesian model.

Clearly, it is important to know how close perceptions are to actual experience both to guide the future use of the perception measures, and for the interpretation of past results in the literature. For example, the finding that corruption hinders economic development might have very different policy implications if it turns out that, in fact, it is *perceived* corruption and diminished political trust that is detrimental to growth. In the remainder of the paper, we use the experience-based measures of the International Crime Victims Survey to investigate the relationship between corruption perceptions and corruption experience.

3 Data

3.1 International Crime Victims Survey

The International Crime Victims Survey (ICVS) provides information on crime and victimization through a standard questionnaire, the results of which are internationally comparable. The ICVS is conducted by the United Nations Inter-regional Crime and Justice Research Institute (UNICRI).[11] For the purposes of this paper we use the 1996 and 2000 rounds of the survey, giving us 57,386 and 66.763 individual observations, respectively. Table A.1 in the Appendix lists the countries included and their proportion in the sample.

The measure of corruption experience we use throughout is based on the responses to the following question in the questionnaire:

> *"During [the past year] has any government official, for instance a customs*
> *officer, police officer or inspector in your own country, asked you or expected you*
> *to pay a bribe for his services?"*

Not only does this question directly ask about personal experience with corruption, it should be noted that it is asked in the context of a survey dealing with crime experiences. In previous and subsequent questions, the same respondents were asked about instances of bicycle theft,

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[11] More information on the surveys, including sampling methodology and datasets, can be found at http://www.unodc.org/unodc/en/research_icvs.html and http://www.unicri.it/wwd/analysis/icvs/index.php.

armed robbery, sexual assault, and the like. Therefore – in contrast to perception surveys – both the wording and the context of the question warrant interpreting the answers as measures of corruption experience.

Our measure of corruption experience for the country-level exercises, *ICVS*, is the weighted means of the answers to the above question.[12] Table A.1 in the Appendix presents this index of corruption experience for 1996 and 2000, and indicates the resulting ranking of countries. Summary statistics are in Table 1. In 2000, on average 11% of respondents had personal experience with corruption, with countries ranging between 0% (Switzerland) and 36% (Uganda). Figure 1 plots the corruption perception measures against the *ICVS* index.[13] As noted in the literature, the corruption perception indices *WB*, *CPI* and *ICRG* are almost perfectly correlated with each other.[14] Their correlation with *ICVS*, while high, is clearly lower: 0.69 (*WB*), 0.76 (*CPI*), 0.61 (*ICRG*). Figure 1 also suggests a non-linearity in the relationship between perceptions and experience. These differences are reflected in some striking discrepancies in the rankings of the countries with respect to perceptions or experience. For example, in 2000, Argentina and Colombia had neighboring ranks in the *WB* index, while the *ICVS* index ranks them 20 places apart ("ARG" and "COL" on the first panel of Figure 1). Conversely, Swaziland (SWZ) and the Ukraine (UKR) are ranked consecutively in the *ICVS*, but the *WB* perception index puts Swaziland 13 places ahead of the Ukraine. Our empirical work below explores the sources of such discrepancies.

In several countries those individuals who answered affirmatively to the corruption experience question were further prompted to specify the type of official that was involved. In the 1996 version of the survey, the available options were government official, customs officer, police officer, inspector, and other.[15] The distribution of the answers is shown in Table A.2 in the Appendix. As the last column shows, almost everyone who indicated having been a victim of corruption also specified the type of corruption experience. We again take weighted averages to

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[12] The survey weights are provided by the ICVS to ensure that the samples are representative within each country.

[13] All perception indices are re-scaled to have zero mean and unit standard deviation, with higher values corresponding to higher corruption.

[14] In our sample, the correlations are 0.98 (*WB-CPI*), 0.87 (*WB-ICRG*), 0.87 (*CPI-ICRG*).

[15] The 2000 survey included six more categories, resulting in many zeros at the country level, which makes that data hard to interpret.

obtain country scores. The summary statistics for these scores are also in Table A.2.[16] The last two columns present the rankings of the countries based on these scores for the categories "government officials" and "police officers".

For 21 countries, the 2000 surveys also included questions on individual *perceptions* of corruption. The question asked (for 12 different categories) was:

> *"Imagine a person who needs something that is entitled to him/her by law. Is it likely or not likely that this person would have to offer money, a present or a favor (i.e., more than official charge), to get help from parliament / ministerial officials / elected municipal councilors / municipal officials / customs officers / police officers / tax-revenue officials / doctors-nurses / inspectors / teachers-professors / officials in courts / private sector/other."*

Answers are coded 1 and 0 for 'likely' and 'not likely' and we create a simple measure of individual corruption perception, *LIKELY*, by summing up all answers. We interpret this as measuring the respondent's perception of how widespread corruption is in her society. Summary statistics for this sample are in Table 2. The mean of *LIKELY* is 6.95 on a scale from 0 to 12, with a standard deviation of 4.8.[17] Table A.3 in the Appendix presents a detailed breakdown of the respondents' perceptions. We also create two supplementary perception variables, which attempt to capture perception of what have been called in the literature "grand" and "bureaucratic" corruption (i.e. political corruption vs. petty bribery). *LIKELY_GRAND* is the sum of perceived corruption indicators by parliament, ministers, and municipal councilors, while *LIKELY_BUREAUCRATIC* sums municipal officers, police, customs officer, tax-revenue officials, inspectors, and court officials. We use these variables to investigate the determinants of individual corruption perceptions, in particular their relation to individual corruption experience.

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[16] The correlation between these measures is always positive and tends to be moderately high, in the 0.2-0.5 range.
[17] To guard against the possibility of non-linearities in the effect of different types of corruption perceptions we also use a dummy for whether the respondent indicated that corruption was likely for at least one category (*LIKELY0/1*).

3.2 Other data

For the country characteristics in Equation (4), we turn to Treisman's (2000) extensive study on the causes of corruption. Relevant characteristics include economic variables (GDP and the share of fuel, ores and metals in exports - to measure resource endowments), and proxies for culture and institutions (share of Protestant population, British legal origins, ethno-linguistic fractionalization, federal states, democratic past).[18] The reader is referred to Treisman's paper for extensive discussions on the literature and theories behind each of these. For some of the countries not included in Treisman's sample we were able to fill in the missing observations going back to the original sources. For ethno-linguistic fractionalization, we take the average of the ethnic and linguistic fractionalization index of Alesina et al. (2003). Summary statistics and sources for our country-level variables are displayed in Table 1. Table 3 displays the correlations between our explanatory variables and the *ICVS* index for the 2000 sample.

For the individual-level regressions, individual characteristics of the respondents come directly from the ICVS survey, which recorded information on the gender, age, marital status, place of residence, employment status, schooling, etc. of those interviewed (see Table 2).

4 Country-level results

We focus our analysis on the 2000 round of the ICVS because this yields the largest sample sizes, and use the 1996 data to discuss the robustness of our findings.

4.1 Economic, institutional and cultural influences on perceptions

In column (1) of Table 4, the *ICVS* measure of corruption experience has a large and significant effect on the *WB* perception index. Following Treisman's (2000) logic, Columns (2)-(4) sequentially add the controls, starting with those that are most likely to be exogenous. As

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[18] Another variable of potential interest in explaining perceptions given experience is education. Unfortunately, no country-level measure with appropriate coverage is available for our sample. We are able to confirm the role of education in the individual level regressions.

expected based on the discussion in Section 2, several country characteristics are significant determinants of corruption perceptions for given level of corruption experience: the perception index is systematically biased away from experience. In Column (4), a legal system based on common law reduces perceived corruption (measured in standard deviation units) by 0.3. A standard deviation increase in Protestantism or log GDP per capita reduces the perception index by 0.1 and 0.5, respectively, while a standard deviation increase in natural resource endowments has a partial effect of 0.1. Democratic past is associated with a 0.6 lower perception index, holding experience and everything else constant.

Once controls are added, the point estimate of the effect of experience drops dramatically. In particular, adding GDP reduces the coefficient of corruption experience by a factor of 20, making it highly insignificant in explaining corruption perception. The insignificance of experience in explaining perceptions is not merely due to a large standard error. The upper end of the 95% confidence interval implies that a one standard deviation increase in experience increases perceptions by less than one fifth of a standard deviation. This is smaller than, e.g., the point estimate on legal origins: it would mean that a common law country is perceived as having less corruption than a civil law country with 16 percentage point higher corruption experience, holding everything else constant.

We checked if the insignificance of experience in explaining perceptions may have been due to a few influential outliers. Figure 2 plots the estimated residuals from column (3). The plot suggests four countries (Mongolia, Mozambique, Argentina and Russia) which may be especially influential. Dropping any subset of these from the sample does not affect our results, in particular the insignificance of *ICVS*.

Columns (5-7) and (8-10) show the same regressions when one of the other two perception indices is the dependent variable. Results on the controls are similar for *CPI*, both in terms of sign and magnitude (all corruption perception indices have unit standard deviation). In Column (10), only Protestantism is significant in explaining *ICRG*. Corruption experience shows a similar picture to the *WB* regressions with both measures. A small initial point estimate drops dramatically once GDP is included; Controlling for economic development, political system

characteristics, and cultural variables, corruption experience does not seem to be a significant determinant of any of the commonly used corruption indices.[19]

The results for the 1996 sample are in Table A.4 of the Appendix. For *WB*, the economic, institutional and cultural factors show a similar picture as in the 2000 regressions: GDP, Protestantism, legal origins and democracy influence perceptions holding experience constant. The estimated coefficients on experience are small, and although they remain significant when *GDP* is included, excluding a single outlier makes them insignificant. For *CPI* and *ICRG*, GDP, democracy, and Protestantism have robust effects holding experience constant. The *ICVS* coefficient is again small, although significant, and the effect does not seem to depend on the most obvious outliers. Note however that the 1996 *CPI* and *ICRG* samples are especially small.

These results may help explain some of the discrepancies between countries' perception and experience scores in Figure 1. In 2000, Finland and Belgium scored almost identically on the *ICVS*, while the *WB* perception index was more than one standard deviation higher in Belgium. Based on column (4) in Table 4, around half of this difference in perceptions can be explained by the fact that 93.1% of Finland's population is Protestant, compared to only 0.4% in Belgium. Similarly, according to these estimates, almost the entire 1.6 standard deviation difference in the *WB* score of Canada and Poland can be explained by the fact that Canada has a democratic past (0.6 std. dev.), a standard deviation higher GDP per capita (0.5 std. dev.), a common law system (0.3 std. dev.), and 29.5% higher share of Protestant population (0.1 std. dev.). Indeed, the experience score of the two countries differs only slightly: 0.4 % for Canada compared to 1.8 % for Poland. Finally, consider Colombia and Argentina, which are similar in terms of most explanatory variables considered here. Their *WB* index is virtually identical, even though the *ICVS* measure puts Argentina two standard deviations ahead of Colombia.

4.2 Experience with different types of corruption

To check the robustness of our findings we turn to measures of different types of corruption experience. This is important because the perception indices and the experience measures come from surveys of different populations. As argued in Section 2, under the assumption that the

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[19] The *CPI* and *ICRG* results are also robust to excluding influential outliers (results available upon request).

level of corruption is meaningfully represented by a scalar C, we expect the different experience measures to give us similar results.

4.2.1 Type-measures in ICVS

As a first exercise, we use the information on different types of corruption experiences contained in the ICVS (Table A.2). The five categories are government officials, police officers, customs officials, inspectors, and "other". The first four of these categories may all correspond to experiences that businessmen and country experts encounter in their professional lives.[20] The interpretation of the "other" category is less clear – it may contain experiences that are more relevant for the general population (such as doctors, nurses, or teachers), but it may also be a way for a respondent to avoid specifying the type of official involved.

Table 5 replicates column (4) from Table 4 replacing the *ICVS* measure with its decomposition to the different experience-types. As the results immediately show, it does not appear to be the case that the *WB* perception index is an unbiased measure of some specific type of corruption experience. The significance and magnitudes of the controls are similar to our previous results.

Turning to the type measures, *POLICE*, *CUSTOMS OFFICIALS*, and the *OTHER* category are positive and significant. However, the point estimates on all type coefficients are very small. The largest estimated effect, that of *OTHER*, implies that a one standard deviation increase in this category raises the *WB* index by less than one sixth of a standard deviation. Column (6) includes all type measures simultaneously, in which case only *OTHER* remains significant. This may suggest that this index is actually driven by experiences less relevant for firms (such as with doctors or teachers), although the above caveats in interpreting the *OTHER* measure must be kept in mind. As the last row shows, the hypothesis that the coefficients of the different type-measures are equal (which is the implicit assumption behind Table 4) is never rejected.

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[20] Although it might be that a businessman regularly comes into contact with government officials at a different level of the hierarchy than the general public, this is less likely to be so for police or customs officers. Moreover, the extent of corruption on different levels of a given bureaucratic sector (e.g., a ministry) is likely to be highly correlated.

Using *CPI* and *ICRG* as the dependent variable results in much smaller samples (24 and 31, respectively, regression output not shown). Country characteristics yield similar coefficient estimates in terms of magnitude and significance. The coefficient estimates on the type measures are always small, but the estimates tend to be imprecise. *POLICE* is significant in the *CPI* regression and yields a marginal effect of 0.15 per standard deviation. *GOVERNMENT OFFICIAL* and *POLICE* are significant in the *ICRG* regression with marginal effects of 0.3 and 0.2 std. dev., respectively. This may reflect the interpretation of corruption that the experts creating the *ICRG* index have in mind. The hypothesis of equal coefficients on all type measures is never rejected.

4.2.2 Experience measures from the business sector

Finding a measure of corruption experience for the business sector is a challenge as surveys typically ask for business executives' and investors' perceptions rather than experience. The measure that, in our opinion, is most likely to reflect experience comes from World Business Environment Survey carried out by the World Bank in 1999-2000. The question asks senior firm executives

> *"On average, what percent of revenues do firms like yours typically pay per annum in unofficial payments to public officials?"*

and gives seven possible categories from 0% to Over 25% (as well as Don't know). Although this question also asks about "firms like yours" rather than "your firm", it seems specific enough that a senior executive would base her answer on her own experience or say that she doesn't know, rather than venture a general guess.[21] Svensson (2003) uses similar wording to measure corruption experience in Uganda.

We take the midpoint of each category and average across firms to obtain *BRIBES%*, the average ratio of bribes to sales revenues for each country. We are able to obtain this measure for 56 countries with data on the relevant controls; 26 of these are in the 2000 ICVS sample. The

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[21] By contrast, another question in the WBES reads „*It is common for firms in my line of business to have to pay some irregular 'additional payments' to get things done. This is true always / mostly / frequently /sometimes / seldom / never.*" Here, we found the vagueness of the wording and the absence of a „Don't know" category troubling.

range of *BRIBES%* is 0 % (Sweden) to 7.9 % (Georgia), with a mean of 2.8 % and a standard deviation of 2.1 %. Its correlation with the perception indices is 0.69 (*WB*), 0.74 (*CPI*), and 0.53 (*ICRG*). The correlation between *BRIBES%* and *ICVS* is 0.55.

Table 6 reproduces the *WB* regressions from Table 4 with *BRIBES%* replacing *ICVS*. The results are remarkably similar, despite the different samples. Including the first set of controls reduces the estimated coefficient of the experience measure by a third. Adding *GDP* further reduces the point estimate by a factor of 5, rendering it highly insignificant. In column (4), the 95 % confidence interval around the point estimate rules out effects larger than 0.122. This implies that a 2 percentage points (1 std. deviation) increase in the average ratio of bribes to sales revenue increases the *WB* corruption perception index by less than a fourth standard deviation. Meanwhile, Protestant traditions, GDP and British legal origins are all associated with significantly lower perceived corruption holding experience constant. Federal government and larger resource endowments lead to higher perceived corruption.

In sum, it does not seem to be the case that our findings on the various sources of bias in the corruption perception indices and the weak relation between perceptions and experience change if we consider other types of corruption experience.

4.3 Other biases

We have provided evidence suggesting that factors commonly cited as determinants of corruption, such as Protestantism, GDP, colonial origin, democratic past and federalism, may in fact systematically bias perceived corruption levels away from corruption experience. As argued in Section 2, while such biases are consistent with Bayesian survey respondents, there are several potential sources of psychological bias. We investigate some of them below.

4.3.1 Absolute vs. relative level of corruption and diminishing sensitivity

A given level of relative corruption (percentage of population exposed to corruption) implies a higher level of absolute corruption (occurrences of corruption) in a larger country. Since the purpose of the perception indices is to enable cross-country comparisons, they presumably try to

focus on relative corruption. But it may not be obvious whether a respondent (especially a non-expert) does in fact control for the size of the country when forming his perception. Figure 3 graphs the *WB* perception index as a function of the absolute level of corruption in a country, which is simply *ICVS × POP*. The figure suggests that perceptions might be positively influenced by absolute levels of corruption, and we test for this effect below.

A closely related issue is how sensitive perceptions are to changes in the level of experience. Across countries (or when comparing countries, as experts are often asked to do), respondents' perception might display increasing or decreasing sensitivity to experience. Under increasing sensitivity, perceptions would respond less to differences between low levels of corruption experience than to differences between high levels. Conversely, decreasing sensitivity would result if opinions are affected more by the first few occurrences of corruption than by one more instance of corruption in a highly corrupt environment. Figure 1 and Figure 3 suggest that the latter may be the case for both relative and absolute levels of corruption, as the perception indices seem to be a concave function of the experience measures.

The first column of Table 7 confirms the diminishing sensitivity of perceptions to relative corruption suggested by Figure 1: the coefficient on $ICVS^2$ is negative and highly significant.[22] Column (2) tests for the effect of absolute corruption and shows that it does have a positive effect on corruption perceptions for given relative corruption. The significant negative coefficient on $(ICVS \times POP)^2$ provides evidence for a diminishing sensitivity to absolute corruption. Because of the large variation in population across countries, care must be taken in dealing with outliers (see Figure 3). Column (3) checks that these effects are not due to Nigeria and Russia, whose absolute corruption level is very high.

Columns (4) and (5) ask whether diminishing sensitivity and the effect of absolute corruption remains robust when the economic and cultural biases identified earlier are controlled for. Although the coefficient estimates are considerably reduced, the effects remain significant.[23] Note that our previous sources of bias also retain their sign and significance in these regressions.

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[22] This finding forms an interesting contrast to Ferraz and Finan (2008), who find increasing sensitivity in the electoral response to corruption events in Brazil.

[23] The F-test for the joint significance of the main and squared effects of relative corruption has *p*-values of 0.074 (Column (4)) and 0.012 (Column (5)). The effects of absolute corruption are also jointly significant.

Diminishing sensitivity means that the *WB* perception index is more responsive to (and hence a better proxy for) experience among countries with low levels of corruption than among highly corrupt countries. This is illustrated in Figure 4, which shows the estimated marginal effect of *ICVS* on the *WB* perception index based on column (4) in Table 7, for different levels of corruption experience. The estimated marginal effect on *WB* of a one std. dev. (0.11) increase in *ICVS* is never higher than two thirds of a std. dev., and this effect quickly becomes smaller. At the mean of *ICVS*, the estimated marginal effect is less than a third standard deviation, and a zero marginal effect cannot be ruled out at the 95% confidence level.

We also checked the presence of diminishing sensitivity of the perception indices to the *BRIBES%* experience measure. The quadratic term is highly significant, and brings the marginal effect of experience down from 0.28 at a bribes-to-revenue ratio of zero to 0.18 at the mean of *BRIBES%* (regressions available upon request).

The last four columns of Table 7 look at the *CPI* and *ICRG* indices. Both are found to exhibit diminishing sensitivity to relative corruption, and they are also significantly affected by absolute corruption. However, once our economic, cultural, and institutional variables are controlled for, only the effect of absolute corruption remains, and these indices are not significantly affected by relative corruption experience. Results for 1996 are in Table A.5 in the Appendix. In this sample, *WB* exhibits significant diminishing sensitivity to relative corruption experience which is robust to controlling for other sources of bias. The other two indices are not significantly affected by either type of corruption experience once controls are included in the regression. Note however that this sample size is very small.

4.3.2 Explaining corruption experience and corruption perceptions

In the simple Bayesian framework of Section 2.1, individuals use experience as a signal of the underlying level of corruption *C* and only country characteristics that explain corruption experience can affect perceptions. As argued in Section 2.2, this may not be the case if attitudes also matter in forming perceptions. The following question therefore seems warranted: Do the above country characteristics explain corruption *experience*, rather than merely perceptions?

The results in Table 8 suggest that this might not be the case. As the first three columns of the table show, when the dependent variable is corruption experience (*ICVS* or *BRIBES%*) rather than perceptions, only GDP per capita remains robustly significant with the right sign. (In addition, Protestantism is significant at 10% in the 2000 ICVS sample.) Colonial past, resource endowments, federal structure, ethno-linguistic fractionalization and democracy are all insignificant determinants of corruption experience, with fractionalization and democracy sometimes changing signs compared to the perception regressions.

As a comparison, the last three columns show the corresponding regressions for perceptions. We see that the explanatory power of this specification is considerably higher for perceptions than it is for experience. Collectively, our general measures of culture, economic development, and political institutions explain 15-30% more of the variation in corruption perceptions than of the variation in corruption experience.

5 Individual-level results

Because the ICVS is a micro-level survey and asks about individual perceptions (how "likely" corruption is) as well as experience, we can use the data to shed some light on the relationship between *individual* perceptions and experience. As Equation (2) suggests, both individual and country characteristics may create discrepancies between the two at the individual level.

The sample for this exercise contains mostly developing countries and new democracies (see Table A.3 in the Appendix). As described in Section 3, the *LIKELY* measure of individual corruption perception is constructed by adding up the number of categories for which a respondent finds corruption "likely". The first feature of the data to note is that people overwhelmingly tend to think that corruption is likely for at least some types of officials. On average, 60 % of respondents think that corruption is likely for at least one of the categories mentioned. At the same time, the average victimization rate is only 23 %. As a consequence, the correlation between the *LIKELY* measure of individual corruption perceptions and corruption experience is extremely low (0.09).[24]

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[24] The correlation between *VICTIM* and a simple dummy (1 if *LIKELY* > 0, 0 otherwise) is similarly low (0.14).

Although a wide literature in psychology shows that recent experiences tend to have the strongest effect in forming perceptions, it is of course possible that corruption perceptions reported here are shaped by earlier experiences, not captured in this survey. At the same time, the correlation between experience and perceptions seems too low to be driven by this effect. For example, even if no-one in the sample experienced corruption twice in her life, assuming a constant victimization rate over time, past experience can fully account for perceptions only if some people's perceptions are influenced by 8-year old experiences in Croatia, 9-year old experiences in the Czech Republic, 10-year old experiences in Hungary, and 22 year-old experiences in South Korea.[25] If corruption experience is i.i.d. across individuals and years, a 90% probability that those with a positive *LIKELY* score have all experienced corruption at least once in the past would require a time horizon of at least 16 years.[26] To the extent that past experience does influence current perceptions, this is a problem for the corruption perception indices published on a yearly basis.

To explore the determinants of individual corruption perceptions, the first column of Table 9 regresses *LIKELY* on individual victimization (or corruption experience) and individual characteristics.[27] As the results show, more educated respondents report more widespread corruption for given experience. Each additional level of education adds about 1 point to the *LIKELY* measure on the 12 point scale. Students also report corruption to be significantly more widespread, by 2.5 points. Age has a non-linear impact on perceptions, with a positive effect for younger people that steadily declines and becomes negative around the age of 50. Without controlling for country characteristics, individual corruption experience from the previous year is not a significant determinant of individual corruption perceptions.

Column (2) includes country fixed-effects. The magnitudes of the coefficient estimates are now smaller, but the previous effects tend to hold. In addition, being in the top 25% income bracket and being employed both have a significant positive impact on the perceived likelihood

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[25] For example, in Hungary 55 out of the 815 respondents reported victimization, but 620 thought corruption was likely for at least one category. Holding the victimization rate constant and assuming that no-one can be victimized twice, it would take (620-55)/55 = 10.27 years for all those with *VICTIM* = 0 and *LIKELY0/1* = 1 to be victimized.

[26] Under these assumptions the probability that each of L individuals was victimized at least once in x years is $[1 - (1 - v)^x]^L$, where v is the victimization rate. For Hungary, where v = 55/815 and L = 55, a 90% probability requires a time horizon of x = 122 years.

[27] Even though the sample sizes differ somewhat across countries, no single country is likely to dominate these regressions, as the last column of Table A.3 shows.

of corruption. Interestingly, respondents from large cities report significantly lower corruption perceptions.

Although the standard error of the coefficient estimate on experience is reduced by introducing country-level controls in Column 2, the estimated effect remains very small. Having had personal experience with corruption during the previous year increases the *LIKELY* measure by around 1 point on the 12-point scale. Column 3 shows that the small estimated effect is not due to the refined 12-point scale by having a dummy as the dependent variable. According to Column 3, the lack of personal corruption experience reduces the probability of reporting that corruption is likely for at least one category by only 6%.[28] Columns 4 and 5 show that restricting attention to the perceived likelihood of particular types of corruption does not increase the estimated effect of *VICTIM*. Corruption experience adds an estimated ½ point on a 6-point scale to the perception of bureaucratic corruption, and an estimated 1/5 point on a 3-point scale to the perception of grand corruption.

Finally, Column 4 replaces the country fixed effects with our country-level variables.[29] While some of these are imprecisely estimated, the sign of the marginal effects tends to be consistent with our earlier results, confirming the role of country characteristics in shaping individual perceptions.[30]

It is interesting to note that if aggregated to the country-level, the *LIKELY* measures of representative corruption perceptions in a country bear practically no relation to the *WB*, *CPI*, and *ICRG* perception indices. In fact, the correlation between the perception indices and this aggregate perception measure from ICVS tends to be negative (and below 0.1 in absolute value) for the 21 countries in Table A.3.[31] This indicates that the commonly used corruption perception indices may capture perceptions of a different kind than the representative corruption perceptions of a country's citizens obtained from the ICVS survey. Exploring the differences between

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[28] Estimating this specification with Probit shows a similar picture (results available upon request).
[29] *FEDERAL* is not included because it is not identified if *NEVERCOLONY* is included, and *DEMOCRATIC* is not included because it is 0 for all countries in this sample.
[30] The one striking difference compared to the country-level results is the significant *positive* effect of GDP on perceptions. This could be due to the fact that GDP also proxies for individual income, since the included household income variables only measure relative income within each country.
[31] This is true whether one looks at *LIKELY*, *LIKELY0/1*, either likelihood-type measure, or the respective rankings induced by these measures (results available upon request).

various *perception* indices, rather than between perception and experience measures, may be a useful area for future research.

6 Conclusion

We have presented evidence of systematic biases in the most commonly used measures of corruption. A number of factors commonly thought to cause corruption seem to bias perceptions away from experience, perceptions exhibit diminishing sensitivity to experience, and they are influenced by absolute levels of corruption. This implies that using corruption *perception* indices as a measure of corruption *experience* may be more problematic than suggested by the existing literature.

We believe these results have three main implications. First, in order to understand the causes and determinants of actual corruption, and to test theories about actual corruption, better measures of actual corruption might be needed. The appearance of micro-level studies, such as the ones mentioned in the introduction and the ICVS study used here, is a welcome development.

Second, corruption perception indices might have to be reevaluated as measuring corruption perceptions, but not necessarily corruption experience. This does not necessarily diminish their importance or usefulness. Corruption perceptions are an important part of people's attitude towards political systems and leaders, and affect the level of political trust in a society. It is well known that, in turn, this trust can be an important determinant of investment decisions, political participation such as voting, and other behaviors with real economic consequences. This seems to be recognized by the US Supreme Court, who views anti-corruption legislation as a means of reducing *both* the "reality and appearance of corruption" (US Supreme Court, 1976, p58; see also the opening quote). Viewed in this light, many of the previous studies using corruption perception indices might be usefully rethought as telling us something about the determinants and implications of *corruption perceptions*, and political trust more generally.

Finally, distinguishing perceptions from experience may yield interesting areas for further inquiry. Which policies are most effective at changing perceptions of a country's level of corruption and what is their impact on real variables? To what extent is the persistence of

measured institutions due to the persistence of perceptions? These are interesting questions for future research.

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Table 1 Summary statistics and sources for country-level variables

1996 sample

Variable	Obs	Mean	Std. Dev.	Min	Max	Description	Source
ICVS	41	0.11	0.09	0	0.31	index of corruption experience	UNICRI: Crime Victimization Survey[a]
CPI	24	0.00	1.00	-1.41	1.16	index of corruption perceptions	Transparency International[b]
WB	41	0.00	1.00	-1.89	1.30	index of corruption perceptions	World Bank Governance Database[c]
ICRG	31	0.00	1.00	-1.62	1.63	index of corruption perceptions	Political Risk Services[d]
LEGOR_UK	41	0.17	0.38	0	1	1 if British legal origins	Treisman (2000), La Porta et al (1999)
NEVERCOLONY	41	0.17	0.38	0	1	1 if never been colonized	Treisman (2000), Alvarez et al (1995)
PROTESTANT	41	13.65	22.19	0	93.10	% of protestant population	Treisman (2000), CIA (2006)
ETHLINGFRAC	41	36.04	21.53	6.61	92.65	index of ethno-linguistic fractionalization	Alesina et al (2003)
FUEL/OM	41	13.72	13.85	0.12	59.92	% of fuel, ore, and metal exports	World Development Indicators[e]
LGDPPC	41	7.98	1.41	5.42	10.36	log GDP per capita	World Development Indicators[e]
DEMOCRATIC	41	0.27	0.45	0	1	1 if democratic government in all years 1950-95	Treisman (2000), Alvarez et al (1995)
FEDERAL	41	0.22	0.42	0	1	1 if federal structure	Treisman (2000), Forum of Federations[f]
POP	41	5.69	15.4	0.04	94.88	population (10 million)	World Development Indicators[e]

Notes. Year 1996 for all time-dependent variables except as follows. *CPI*: 1997 for Costa Rica and Romania; *FUEL/OM*: 1997 for Estonia and Indonesia;
PROTESTANT is for different years from the 80s and 90s.
[a] http://www.unicri.it/wwd/analysis/icvs, [b] http://www.transparency.org, [c] http://www.worldbank.org, [d] http://www.prsgroup.com,
[e] http://publications.worldbank.org/WDI, [f] http://www.forumfed.org

2000 sample

Variable	Obs	Mean	Std. Dev.	Min	Max
ICVS	44	0.11	0.11	0.00	0.36
CPI	41	0.00	1.00	-1.95	1.53
WB	44	0.00	1.00	-1.76	1.40
ICRG	40	0.00	1.00	-1.78	1.81
LEGOR_UK	44	0.27	0.45	0	1
NEVERCOLONY	44	0.20	0.41	0	1
PROTESTANT	44	19.30	25.65	0	95.20
ETHLINGFRAC	44	36.47	23.97	0.20	92.65
FUEL/OM	44	19.12	22.21	0.07	99.64
LGDPPC	44	8.15	1.57	5.34	10.45
DEMOCRATIC	44	0.25	0.44	0	1
FEDERAL	44	0.23	0.42	0	1
POP	44	3.01	4.99	0.1	28.22

Notes. Year 2000 for all time-dependent variables except as follows. *CPI:* 1999 for Romania;
FUEL/OM: 2001 for Lesotho (from ITC, www.intracen.org), 1999 for Mozambique.

Table 2 Summary statistics for individual-level regressions

Variable	Definition	Obs	Mean	Std. Dev.	Min	Max
LIKELY	Measure of individual corruption perception (see text)	11265	6.95	4.79	0	12
LIKELY 0/1	1 if *LIKELY* > 0	11265	0.84	0.37	0	1
LIKELYGRAND	Measure of perceived "grand corruption" (see text)	11265	1.76	1.35	0	3
LIKELYBUREAU	Measure of perceived "bureaucratic corruption" (see text)	11265	3.60	2.55	0	6
INCOME	Relative income quartile in country	11265	2.46	1.14	1	4
EDUC	Highest level of education completed: none (1), primary (2), secondary (3), higher (4)	11265	3.25	0.81	1	4
AGE	Age	11265	41.65	17.59	14	100
MALE	1 if male	11265	0.45	0.50	0	1
MARRIED	1 if married	11265	0.55	0.50	0	1
WORKING	1 if employed	11265	0.49	0.50	0	1
STUDENT	1 if student	11265	0.08	0.28	0	1
CITY: URBAN	1 if lives in city (> 100,000 residents)	11265	0.95	0.21	0	1

Source: UNICRI – Crime Victimization Survey

Table 3 Correlation matrix (N =44, year = 2000)

	ICVS	LEGOR_UK	NEVER-COLONY	PROTESTANT	ETHLINGFRAC	FUEL/OM	LGDPPC	DEMOCRATIC	FEDERAL	POP
ICVS	1.00									
LEGOR_UK	-0.05	1.00								
NEVERCOLONY	-0.39	-0.18	1.00							
PROTESTANT	-0.44	0.25	0.32	1.00						
ETHLINGFRAC	0.30	0.39	-0.35	-0.02	1.00					
FUEL/OM	0.49	0.14	-0.15	-0.20	0.31	1.00				
LGDPPC	-0.82	-0.10	0.51	0.40	-0.44	-0.45	1.00			
DEMOCRATIC	-0.56	0.12	0.49	0.51	-0.18	-0.21	0.74	1.00		
FEDERAL	-0.25	0.28	0.13	0.01	0.26	0.22	0.32	0.31	1.00	
POP	-0.05	0.25	0.08	-0.04	0.07	0.19	0.12	0.18	0.49	1.00

Table 4 Determinants of corruption perceptions (2000 sample)

Dep. Var:	WB (1)	WB (2)	WB (3)	WB (4)	CPI (5)	CPI (6)	CPI (7)	ICRG (8)	ICRG (9)	ICRG (10)
ICVS	7.011	4.288	0.218	0.800	2.837	0.018	0.723	2.104	0.130	0.776
	(0.804)***	(1.116)***	(0.741)	(0.910)	(1.085)**	(0.614)	(0.725)	(1.009)**	(1.078)	(1.107)
LEGOR_UK		-0.202	-0.288	-0.258	-0.460	-0.359	-0.294	-0.058	-0.001	0.053
		(0.212)	(0.155)*	(0.138)*	(0.226)**	(0.140)**	(0.124)**	(0.302)	(0.271)	(0.250)
NEVERCOLONY		-0.566	-0.302	-0.235	-0.568	-0.343	-0.271	-0.097	0.055	0.101
		(0.228)**	(0.206)	(0.217)	(0.215)**	(0.182)*	(0.196)	(0.309)	(0.331)	(0.358)
PROTESTANT		-0.010	-0.009	-0.006	-0.014	-0.012	-0.008	-0.017	-0.016	-0.013
		(0.003)***	(0.002)***	(0.002)**	(0.003)***	(0.002)***	(0.002)***	(0.004)***	(0.004)***	(0.005)**
ETHLINGFRAC		0.002	-0.002	-0.003	0.007	-0.001	-0.001	0.009	0.004	0.002
		(0.004)	(0.003)	(0.004)	(0.004)	(0.003)	(0.005)	(0.005)*	(0.005)	(0.008)
FUEL/OM		0.007	0.007	0.006	0.009	0.004	0.003	0.010	0.007	0.005
		(0.004)	(0.003)**	(0.003)**	(0.003)**	(0.003)	(0.003)	(0.004)**	(0.005)	(0.005)
LGDPPC			-0.426	-0.333		-0.404	-0.292		-0.280	-0.226
			(0.068)***	(0.097)***		(0.088)***	(0.160)*		(0.142)*	(0.185)
DEMOCRATIC				-0.558			-0.627			-0.472
				(0.252)**			(0.295)**			(0.438)
FEDERAL				0.229			0.233			0.300
				(0.211)			(0.200)			(0.352)
Observations	44	44	44	44	41	41	41	40	40	40
R-squared	0.61	0.76	0.87	0.90	0.79	0.88	0.91	0.67	0.71	0.73

Notes. Robust standard errors in parentheses. All regressions include a constant.
* significant at 10%; ** significant at 5%; *** significant at 1%

Table 5 Determinants of corruption perceptions: different types of experience (1996)

Dep. var.:	WB (1)	WB (2)	WB (3)	WB (4)	WB (5)	WB (6)
GOVT OFFICIAL	2.619					-0.114
	(3.433)					(2.660)
POLICE		3.697				2.129
		(1.850)*				(1.487)
CUSTOMS OFFICIAL			9.943			7.957
			(3.936)**			(4.827)
INSPECTOR				6.108		3.368
				(3.973)		(4.074)
OTHER					12.431	12.345
					(5.962)**	(5.126)**
LEGOR_UK	-0.377	-0.315	-0.331	-0.313	-0.432	-0.295
	(0.164)**	(0.165)*	(0.161)**	(0.159)*	(0.188)**	(0.201)
NEVERCOLONY	0.044	0.055	0.046	0.136	-0.013	0.037
	(0.206)	(0.208)	(0.223)	(0.227)	(0.203)	(0.222)
PROTESTANT	-0.007	-0.007	-0.007	-0.008	-0.007	-0.005
	(0.003)**	(0.003)**	(0.003)**	(0.003)**	(0.003)**	(0.003)
ETHLINGFRAC	0.001	0.002	0.002	0.004	0.001	0.001
	(0.004)	(0.004)	(0.004)	(0.004)	(0.005)	(0.005)
FUEL/OM	-0.006	-0.009	-0.005	-0.006	-0.009	-0.009
	(0.008)	(0.008)	(0.009)	(0.008)	(0.007)	(0.006)
LGDPPC	-0.370	-0.404	-0.367	-0.365	-0.371	-0.317
	(0.097)***	(0.072)***	(0.082)***	(0.090)***	(0.075)***	(0.084)***
DEMOCRATIC	-0.839	-0.678	-0.734	-0.832	-0.717	-0.636
	(0.231)***	(0.179)***	(0.215)***	(0.216)***	(0.168)***	(0.184)***
FEDERAL	0.267	0.123	0.242	0.163	0.315	0.160
	(0.150)*	(0.164)	(0.164)	(0.162)	(0.164)*	(0.175)
Observations	41	41	41	41	41	41
R-squared	0.87	0.89	0.88	0.88	0.89	0.91
F-test: equal type-coefficients [p-value]						1.7 [0.18]

Notes. Robust standard errors in parentheses. All regressions include a constant.

* significant at 10%; ** significant at 5%; *** significant at 1%

Table 6 Firm experience and corruption perceptions

Dep. Var:	WB	WB	WB	WB
	(1)	(2)	(3)	(4)
BRIBES%	0.339	0.228	0.045	0.042
	(0.048)***	(0.053)***	(0.042)	(0.040)
LEGOR_UK		-0.591	-0.360	-0.389
		(0.297)*	(0.160)**	(0.180)**
NEVERCOLONY		-0.397	-0.011	0.034
		(0.239)	(0.200)	(0.217)
PROTESTANT		-0.023	-0.011	-0.009
		(0.005)***	(0.004)***	(0.003)**
ETHLINGFRAC		0.006	0.003	0.001
		(0.005)	(0.003)	(0.003)
FUEL/OM		0.004	0.006	0.005
		(0.004)	(0.003)**	(0.003)*
LGDPPC			-0.523	-0.552
			(0.084)***	(0.078)***
DEMOCRATIC				-0.256
				(0.265)
FEDERAL				0.395
				(0.178)**
Observations	56	56	56	56
R-squared	0.47	0.69	0.83	0.85

Notes. Robust standard errors in parentheses. All regressions include a constant.
* significant at 10%; ** significant at 5%; *** significant at 1%

Table 7 Absolute vs. relative corruption and diminishing sensitivity (2000 sample)

Dep. Var:	WB (1)	WB (2)	WB (3)[a]	WB (4)	WB (5)	CPI (6)	CPI (7)	ICRG (8)	ICRG (9)
$ICVS$	17.868	17.651	17.140	6.057	6.431	17.211	3.163	11.435	2.132
	(2.328)***	(2.260)***	(2.320)***	(2.572)**	(2.120)***	(2.423)***	(2.151)	(3.185)***	(3.880)
$ICVS^2$	-37.205	-42.680	-45.215	-15.269	-20.588	-40.698	-11.168	-26.318	-9.191
	(7.682)***	(8.230)***	(9.155)***	(7.494)**	(6.438)***	(7.896)***	(5.547)*	(9.196)***	(10.098)
$ICVS \times POP$		1.183	3.506		0.973	0.948	0.768	1.139	0.994
		(0.463)**	(1.005)***		(0.250)***	(0.506)*	(0.377)*	(0.374)***	(0.375)**
$(ICVS \times POP)^2$		-0.263	-2.049		-0.222	-0.205	-0.141	-0.203	-0.180
		(0.118)**	(0.625)***		(0.065)***	(0.127)	(0.094)	(0.095)**	(0.098)*
$LEGOR\_UK$				-0.191	-0.122		-0.245		0.085
				(0.141)	(0.134)		(0.135)*		(0.281)
$NEVERCOLONY$				-0.148	-0.246		-0.357		-0.040
				(0.187)	(0.156)		(0.166)**		(0.323)
$PROTESTANT$				-0.007	-0.006		-0.009		-0.014
				(0.002)***	(0.002)***		(0.002)***		(0.005)**
$ETHLINGFRAC$				-0.000	0.001		0.002		0.006
				(0.003)	(0.003)		(0.005)		(0.008)
$FUEL/OM$				0.005	0.005		0.002		0.004
				(0.003)*	(0.003)		(0.006)		(0.007)
$LGDPPC$				-0.275	-0.245		-0.206		-0.119
				(0.101)**	(0.077)***		(0.152)		(0.172)
$DEMOCRATIC$				-0.447	-0.380		-0.518		-0.382
				(0.239)*	(0.200)*		(0.254)*		(0.416)
$FEDERAL$				0.186	0.032		-0.025		-0.036
				(0.193)	(0.202)		(0.248)		(0.360)
Observations	44	44	42	44	44	41	41	40	40
R-squared	0.74	0.79	0.82	0.91	0.93	0.74	0.94	0.58	0.78

Notes. [a] Excludes Nigeria and Russia. Robust standard errors in parentheses. All regressions include a constant.
* significant at 10%; ** significant at 5%; *** significant at 1%

Table 8 Determinants of corruption experience

Dependent variable:	ICVS 1996	ICVS 2000	BRIBES%	WB 1996	WB 2000	WB 2000
	(1)	(2)	(3)	(4)	(5)	(6)
LEGOR_UK	-0.045	-0.033	-0.165	-0.393	-0.284	-0.396
	(0.028)	(0.024)	(0.506)	(0.159)**	(0.135)**	(0.178)**
NEVER COLONY	-0.009	-0.005	0.307	0.048	-0.239	0.047
	(0.029)	(0.019)	(0.533)	(0.212)	(0.220)	(0.230)
PROTESTANT	-0.001	-0.001	0.009	-0.008	-0.006	-0.008
	(0.000)	(0.000)*	(0.009)	(0.003)**	(0.002)***	(0.003)**
ETHLINGFRAC	0.001	-0.000	0.014	0.002	-0.003	0.001
	(0.001)	(0.001)	(0.012)	(0.004)	(0.004)	(0.003)
FUEL/OM	0.001	0.001	0.012	-0.006	0.006	0.006
	(0.001)	(0.001)	(0.009)	(0.009)	(0.002)**	(0.003)**
LGDPPC	-0.028	-0.062	-1.256	-0.406	-0.383	-0.605
	(0.011)**	(0.011)***	(0.212)***	(0.080)***	(0.081)***	(0.076)***
FEDERAL	0.051	-0.004	0.284	0.264	0.226	0.407
	(0.040)	(0.030)	(0.424)	(0.157)	(0.207)	(0.183)**
DEMOCRATIC	-0.013	0.052	0.522	-0.786	-0.517	-0.235
	(0.032)	(0.024)**	(0.603)	(0.206)***	(0.248)**	(0.276)
Observations	41	44	56	41	44	56
R-squared	0.56	0.73	0.57	0.87	0.89	0.85

Notes. Robust standard errors in parentheses. All regressions include a constant.
* significant at 10%; ** significant at 5%; *** significant at 1%

Table 9 Determinants of individual corruption perceptions (2000)

Dependent var.:	LIKELY	LIKELY	LIKELY 0/1[a]	LIKELY BUREAUCRAT[b]	LIKELY GRAND[c]	LIKELY
	(1)	(2)	(3)	(4)	(5)	(6)
VICTIM	0.906	0.933	0.061	0.521	0.208	1.143
	(0.659)	(0.094)***	(0.007)***	(0.049)***	(0.029)***	(0.290)***
INCOME TOP75%	1.632	0.194	0.017	0.159	0.028	1.331
	(1.201)	(0.123)	(0.010)*	(0.065)**	(0.036)	(0.594)**
INCOME TOP50%	1.347	0.135	0.017	0.151	-0.006	0.875
	(1.169)	(0.124)	(0.010)*	(0.066)**	(0.037)	(0.592)
INCOME TOP25%	1.100	0.256	0.003	0.222	0.049	0.846
	(1.093)	(0.128)**	(0.011)	(0.068)***	(0.038)	(0.655)
EDUC PRIMARY	1.169	0.315	0.009	0.178	0.105	0.795
	(0.392)***	(0.228)	(0.023)	(0.126)	(0.070)	(0.332)**
EDUC SECOND	2.265	0.577	0.029	0.322	0.191	1.280
	(0.542)***	(0.212)***	(0.022)	(0.118)***	(0.065)***	(0.487)**
EDUC HIGHER	3.141	0.603	0.040	0.328	0.237	1.458
	(0.556)***	(0.220)***	(0.022)*	(0.122)***	(0.068)***	(0.507)***
$AGE \times 10^{-1}$	1.192	0.430	0.005	0.262	0.061	0.467
	(0.574)*	(0.151)***	(0.013)	(0.080)***	(0.045)	(0.192)**
$AGE^2 \times 10^{-2}$	-0.116	-0.067	-0.003	-0.038	-0.013	-0.053
	(0.047)**	(0.016)***	(0.001)*	(0.009)***	(0.005)***	(0.025)**
MALE	0.088	-0.055	0.003	-0.032	-0.002	-0.037
	(0.209)	(0.080)	(0.006)	(0.042)	(0.024)	(0.136)
MARRIED	0.056	0.043	0.009	-0.017	0.030	-0.077
	(0.397)	(0.092)	(0.008)	(0.048)	(0.028)	(0.247)
WORKING	0.369	0.223	0.018	0.120	0.070	0.463
	(0.307)	(0.093)**	(0.008)**	(0.049)**	(0.028)**	(0.210)**
STUDENT	2.489	0.777	0.054	0.394	0.196	1.311
	(1.035)**	(0.158)***	(0.013)***	(0.084)***	(0.048)***	(0.414)***
CITY: URBAN	2.281	-0.530	-0.087	-0.370	-0.073	0.431
	(1.827)	(0.231)**	(0.028)***	(0.119)***	(0.068)	(1.459)
LEGOR_UK						-2.780
						(1.855)
NEVER COLONY						-3.231
						(1.912)
PROTESTANT						-0.094
						(0.042)**
ETHLINGFRAC						0.384
						(2.614)
FUEL/OM						0.113
						(0.047)**
LGDPPC						1.230
						(0.432)***
Country FE	No	Yes	Yes	Yes	Yes	No
Observations	11265	11265	11265	11265	11265	11265
No. of countries	21	21	21	21	21	21
R-squared	0.10	0.39	0.32	0.40	0.31	0.28

Notes. [a] Dummy: 1 if *LIKELY* > 0, 0 o/w. [b] Contains municipal officers, police officers, customs officers, tax-revenue officials, inspectors, and court officials. [c] Contains parliament, ministers and municipal councilors. Standard errors clustered by country in (1) and (6). Countries in the sample are Azerbaijan, Belarus, Bulgaria, Cambodia, Colombia, Croatia, Czech Republic, Georgia, Hungary, Latvia, Lithuania, Mongolia, Mozambique, Panama, Philippines, Poland, Romania, Russia, South Korea, Uganda, Ukraine. Robust standard errors reported in parentheses. All regressions include a constant.
* significant at 10%; ** significant at 5%; *** significant at 1%
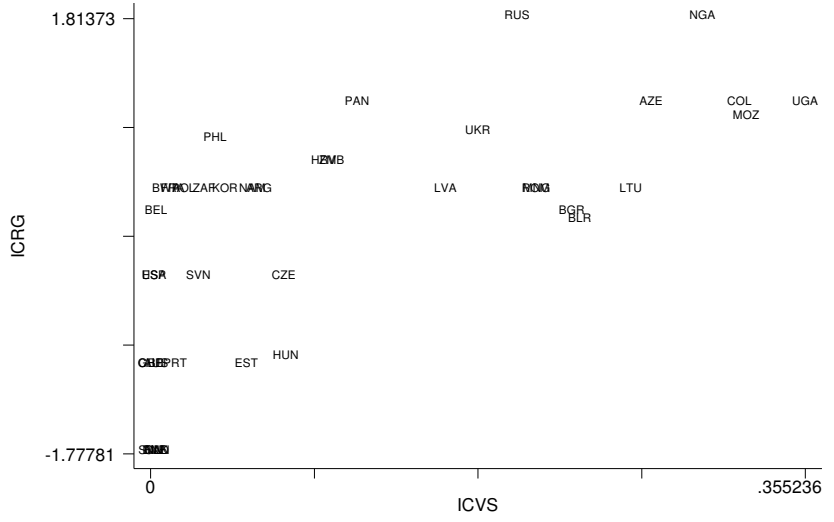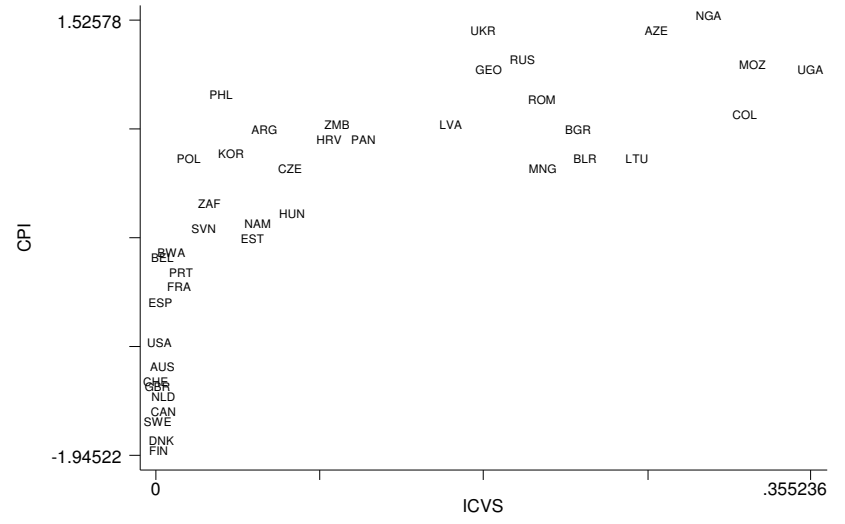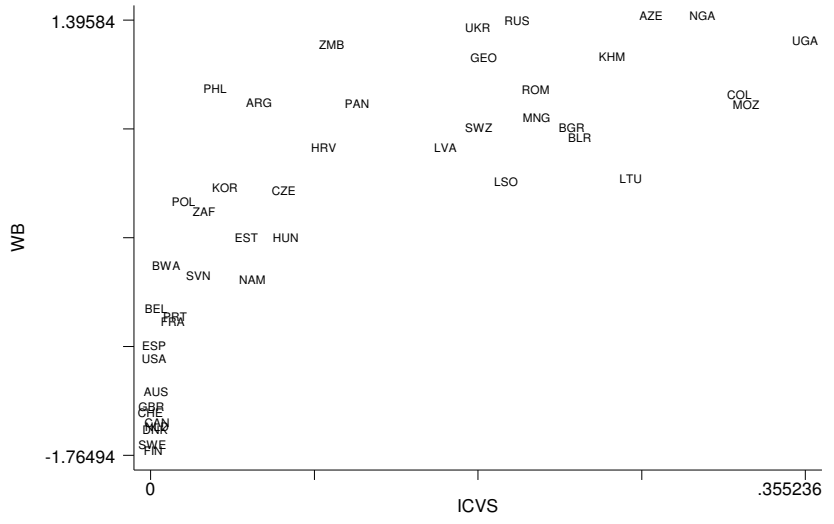
Figure 1 Perception indices and *ICVS* (year = 2000).

Figure 2 Estimated residuals from regression (3) in Table 4

Figure 3 Perceptions and absolute level of corruption (year = 2000)

Figure 4 Estimated marginal effect of *ICVS* on *WB* from regression (4) in Table 7.
95% confidence interval based on 97.5% confidence level for individual coefficients.

Appendix

Table A.1 ICVS sample and index of corruption experience

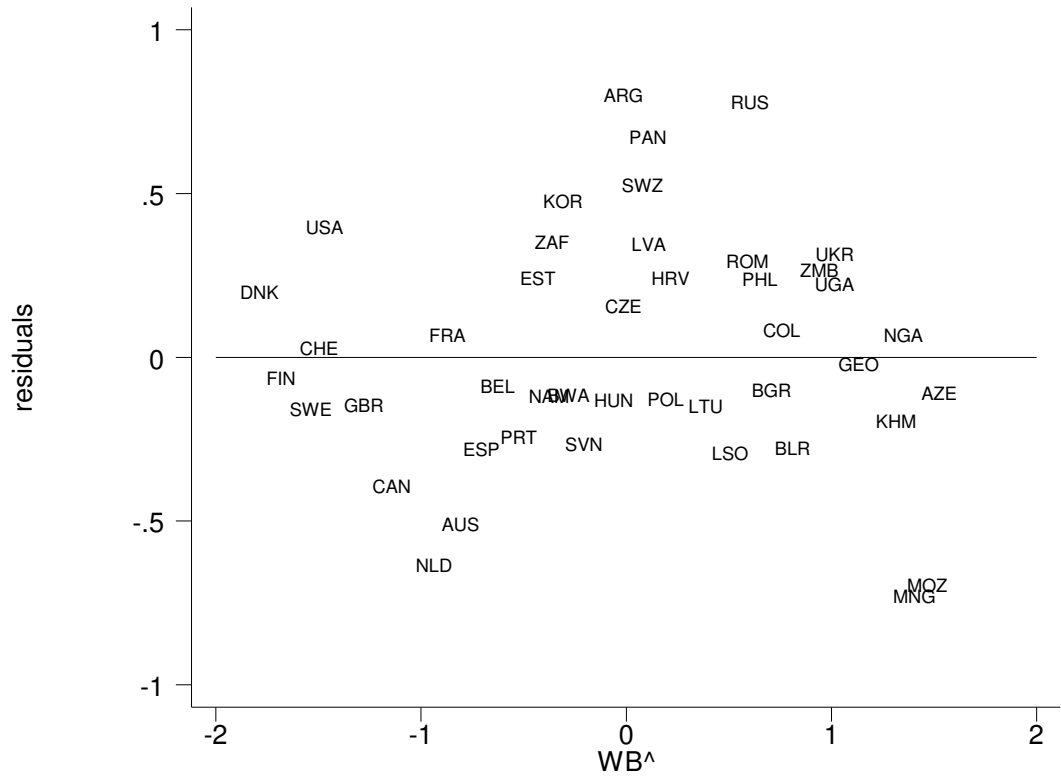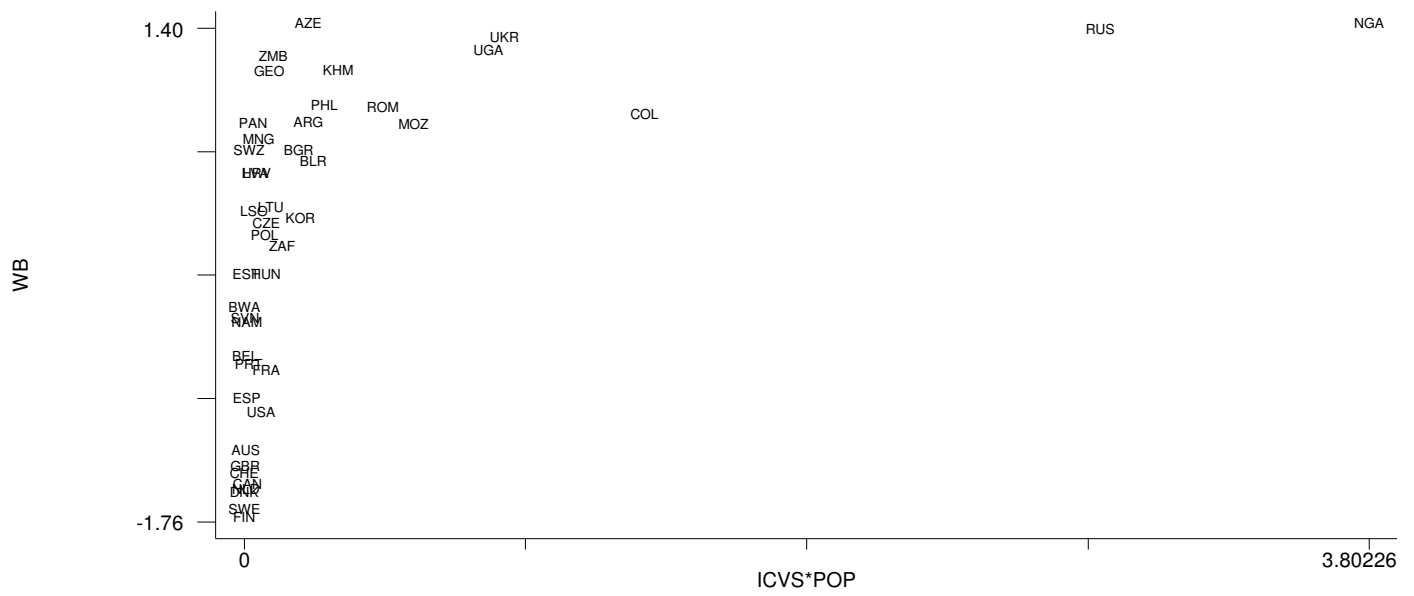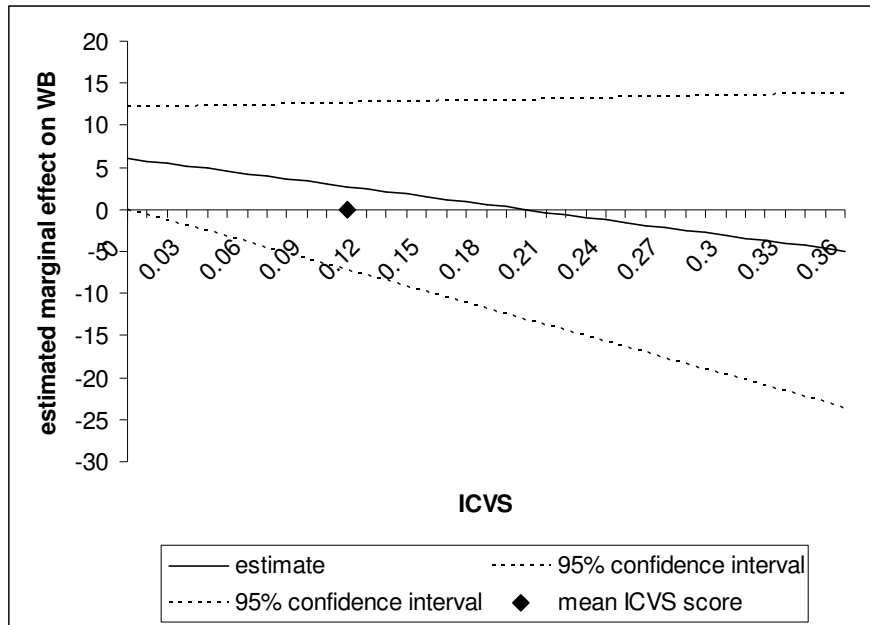| Country	1996				2000			
	N. obs.	ICVS score	ICVS rank	WB rank	N. obs.	ICVS score	ICVS rank	WB rank
Albania	1,187	0.130	26	20				
Argentina	996	0.293	40	23	5,245	0.059	22	33
Australia					2,003	0.003	8	8
Austria	1,507	0.007	9	8				
Azerbaijan					90	0.272	40	44
Belarus	957	0.125	24	39	550	0.233	37	27
Belgium					2,499	0.003	9	13
Bolivia	992	0.260	39	38				
Botswana					1,197	0.008	12	16
Brazil	1,000	0.179	31	21				
Bulgaria	1,066	0.193	33	34	574	0.229	36	28
Cambodia					873	0.250	38	38
Canada	2,132	0.004	6	3	2,075	0.004	10	5
Colombia	984	0.195	34	28	241	0.320	42	34
Costa Rica	997	0.100	21	11				
Croatia	974	0.162	30	30	739	0.094	25	25
Czech Republic	1,752	0.081	20	14	642	0.073	23	21
Denmark					3,006	0.003	7	3
Estonia	1,145	0.039	11	19	1,679	0.052	20	17
Finland	3,829	0.001	1	1	1,780	0.002	4	1
France	1,002	0.007	8	9	997	0.013	13	11
Georgia	1,110	0.223	37	41	697	0.181	31	37
Hungary	748	0.039	12	12	815	0.073	24	18
India	1,193	0.212	36	26				
Indonesia	1,345	0.311	41	29				
Kyrgyzstan	1,701	0.209	35	37				
Latvia	1,378	0.138	27	33	435	0.160	28	26
Lesotho					1,006	0.193	32	23
Lithuania	1,169	0.111	22	24	631	0.261	39	24
Macedonia	697	0.077	19	40				
Malta	993	0.041	13	18				
Mongolia	1,189	0.047	15	17	474	0.210	35	30
Mozambique					340	0.324	43	31
Namibia					1,052	0.055	21	14
Netherlands	2,007	0.005	7	4	1,998	0.004	11	4
Nigeria					1,008	0.300	41	43
Panama					551	0.113	27	32
Paraguay	584	0.139	28	31				
Philippines	1,497	0.044	14	27	875	0.035	18	36
Poland	3,460	0.048	16	16	5,031	0.018	15	20
Portugal					1,998	0.014	14	12
Romania	1,083	0.115	23	25	817	0.209	34	35
Russia	1,006	0.190	32	36	463	0.199	33	42
Slovakia	1,091	0.141	29	15				
Slovenia	2,044	0.012	10	10	2,407	0.026	16	15
South Africa	996	0.076	18	13	1,336	0.029	17	19
South Korea					861	0.041	19	22
Spain					2,908	0.002	6	10
Swaziland					975	0.178	30	29
Sweden	1,000	0.002	3	2	2,001	0.001	3	2
Switzerland	1,000	0.002	2	5	4,234	0.000	1	6

Country								
USA	1,000	0.003	5	7	999	0.002	5	9
Uganda	1,191	0.237	38	32	974	0.355	44	40
Ukraine	977	0.129	25	35	800	0.178	29	41
United Kingdom	5,404	0.003	4	6	5,513	0.001	2	7
Zambia					1,047	0.098	26	39
Zimbabwe	1,003	0.072	17	22				
Total	57,386 (N = 41)				66,763 (N = 44)			

Notes. ICVS score is the weighted fraction of individuals reporting corruption victimization in each country, where the weights are provided by ICVS to ensure the representativeness of the sample. Albania was dropped from ICVS 2000 because its victimization score (0.72) was an unrealistic outlier. Botswana and Serbia/Montenegro were dropped from ICVS 1996 due to lack of data on important explanatory variables.

Table A.2 Corruption types in ICVS 1996

Country	Govt. official	Customs official	Police officer (% of victimized)	Inspector	Other	Total	Rank Govt. official	Rank Police officer
Albania	34.9	12.5	7.9	18.4	26.3	100.0	33	15
Argentina	3.6	7.9	70.5	17.2	0.7	100.0	15	38
Austria	0.0	20.0	30.0	0.0	50.0	100.0	1	10
Bolivia	21.9	5.0	43.8	16.5	12.8	100.0	34	36
Brazil	7.6	20.5	46.2	25.7	0.0	100.0	16	33
Bulgaria	4.7	14.7	51.8	7.9	20.9	100.0	14	35
Canada	12.5	25.0	37.5	0.0	25.0	100.0	6	8
Colombia	18.5	14.9	33.8	3.1	29.7	100.0	32	29
Costa Rica	11.0	4.4	25.3	50.5	8.8	100.0	17	21
Croatia	22.3	10.8	46.0	3.6	17.3	100.0	28	32
Czech Republic	35.9	3.9	27.5	22.2	10.5	100.0	30	20
Estonia	5.9	11.8	23.5	14.7	44.1	100.0	9	13
Finland	0.0	0.0	0.0	20.0	80.0	100.0	1	1
France	66.7	0.0	16.7	0.0	16.7	100.0	10	3
Georgia	14.1	25.7	28.6	28.2	3.3	100.0	27	30
Hungary	12.0	16.0	32.0	0.0	40.0	100.0	12	17
India	57.5	4.7	18.9	9.8	9.1	100.0	38	25
Indonesia	38.5	2.1	53.0	0.0	6.2	99.8	37	37
Lithuania	23.5	23.5	32.6	5.3	15.2	100.0	24	26
Macedonia	21.6	29.4	9.8	7.8	31.4	100.0	21	12
Malta	30.6	47.2	8.3	2.8	11.1	100.0	19	11
Mongolia	21.8	36.4	21.8	10.9	9.1	100.0	18	14
Netherlands	77.8	11.1	0.0	0.0	11.1	100.0	11	1
Paraguay	26.0	11.7	28.6	29.9	3.9	100.0	29	27
Philippines	45.3	7.8	29.7	7.8	9.4	100.0	23	16
Poland	29.1	11.5	33.8	15.5	8.8	98.6	20	18
Romania	54.0	5.6	12.9	8.1	19.4	100.0	35	19
Russia	15.8	6.0	49.7	9.8	18.6	100.0	26	34
Slovakia	24.8	6.0	31.5	27.5	9.4	99.3	31	28
Slovenia	11.5	42.3	11.5	3.8	30.8	100.0	8	5
South Africa	8.7	2.9	53.6	17.4	17.4	100.0	13	24
Sweden	0.0	0.0	50.0	0.0	50.0	100.0	1	7
Switzerland	0.0	40.0	40.0	0.0	20.0	100.0	1	6
USA	0.0	0.0	100.0	0.0	0.0	100.0	1	9
Uganda	33.3	14.5	29.5	3.0	19.7	100.0	36	31
Ukraine	22.7	12.7	27.3	9.1	28.2	100.0	25	23
United Kingdom	15.4	0.0	46.2	15.4	23.1	100.0	7	4
Zimbabwe	27.9	16.2	23.5	17.6	14.7	100.0	22	22
Overall	22.6	13.8	32.5	11.3	19.8	99.9		
ICVS type-score:								
Mean	0.024	0.012	0.038	0.014	0.014			
Std. dev.	0.029	0.013	0.049	0.018	0.015			
Min	0	0	0	0	0			
Max	0.12	0.061	0.209	0.061	0.055			

Table A.3 Proportion of respondents who indicate bribery is likely (2000)

Country	police officer	court official	customs officer	doctor /nurse	inspector	ministerial official	elected municipal councilor	municipal official	parliament	private sector	tax official	teacher /professor	N
							Type of official						
Azerbaijan	0.73	0.78	0.73	0.80	0.60	0.61	0.53	0.70	0.54	0.50	0.63	0.67	90
Belarus	0.75	0.65	0.71	0.76	0.58	0.63	0.60	0.61	0.57	0.56	0.72	0.71	470
Bulgaria	0.84	0.82	0.91	0.85	0.82	0.83	0.80	0.84	0.81	0.72	0.84	0.71	536
Cambodia	0.13	0.05	0.04	0.32	0.04	0.05	0.15	0.13	0.03	0.36	0.13	0.31	556
Colombia	0.85	0.77	0.82	0.41	0.73	0.82	0.84	0.84	0.89	0.59	0.74	0.44	211
Croatia	0.81	0.78	0.79	0.82	0.80	0.83	0.82	0.82	0.79	0.79	0.80	0.75	714
Czech Republic	0.63	0.52	0.60	0.52	0.62	0.59	0.55	0.61	0.53	0.54	0.58	0.34	519
Georgia	0.85	0.84	0.84	0.71	0.89	0.78	0.74	0.75	0.76	0.59	0.83	0.59	672
Hungary	0.46	0.26	0.40	0.69	0.39	0.39	0.39	0.39	0.39	0.54	0.33	0.21	659
Latvia	0.65	0.62	0.65	0.69	0.63	0.59	0.61	0.62	0.57	0.59	0.60	0.48	411
Lithuania	0.82	0.83	0.87	0.84	0.81	0.78	0.75	0.80	0.77	0.66	0.82	0.72	586
Mongolia	0.68	0.67	0.71	0.68	0.66	0.69	0.66	0.67	0.69	0.59	0.69	0.67	453
Mozambique	0.72	0.79	0.78	0.69	0.73	0.61	0.46	0.69	0.39	0.53	0.65	0.41	304
Panama	0.59	0.39	0.60	0.28	0.45	0.57	0.52	0.55	0.59	0.33	0.65	0.28	533
Philippines	0.13	0.11	0.12	0.10	0.11	0.13	0.12	0.12	0.13	0.10	0.13	0.10	800
Poland	0.95	0.88	0.94	0.98	0.82	0.90	0.95	0.96	0.87	0.73	0.74	0.71	82
Romania	0.79	0.76	0.78	0.86	0.76	0.73	0.73	0.77	0.71	0.55	0.77	0.65	755
Russia	0.89	0.84	0.85	0.82	0.69	0.86	0.86	0.88	0.82	0.71	0.83	0.85	434
South Korea	0.70	0.68	0.77	0.27	0.71	0.79	0.75	0.64	0.89	0.51	0.80	0.52	779
Uganda	0.20	0.01	0.54	0.17	0.04	0.27	0.31	0.26	0.25	0.07	0.18	0.01	952
Ukraine	0.83	0.78	0.83	0.86	0.81	0.76	0.77	0.79	0.76	0.78	0.83	0.79	749
Overall	0.62	0.56	0.65	0.58	0.57	0.60	0.59	0.60	0.58	0.51	0.61	0.49	11265

Table A.4 Determinants of corruption perceptions (1996 sample)

Dep. Var:	WB (1)	WB (2)	WB (3)[a]	WB (4)	WB (5)[a]	CPI (6)	CPI (7)	CPI (8)	ICRG (9)	ICRG (10)	ICRG (11)
ICVS	4.652	3.206	1.608	2.899	1.644	4.834	2.451	1.873	5.413	4.365	3.977
	(1.498)***	(1.175)**	(1.102)	(1.107)**	(1.013)	(1.877)**	(1.373)*	(1.031)*	(1.462)***	(1.111)***	(1.181)***
LEGOR_UK	-0.548	-0.461	-0.479	-0.264	-0.320	-0.277	-0.193	-0.156	0.046	0.027	0.154
	(0.298)*	(0.190)**	(0.173)***	(0.170)	(0.159)*	(0.317)	(0.196)	(0.160)	(0.324)	(0.262)	(0.233)
NEVERCOLONY	-0.549	-0.239	-0.295	0.075	-0.017	-0.282	-0.136	-0.008	0.179	0.400	0.608
	(0.299)*	(0.230)	(0.188)	(0.200)	(0.175)	(0.260)	(0.180)	(0.167)	(0.247)	(0.247)	(0.263)**
PROTESTANT	-0.014	-0.007	-0.007	-0.006	-0.006	-0.015	-0.008	-0.006	-0.021	-0.016	-0.014
	(0.005)**	(0.004)*	(0.003)**	(0.003)*	(0.003)*	(0.005)**	(0.002)***	(0.003)**	(0.005)***	(0.003)***	(0.004)***
ETHLINGFRAC	0.009	0.001	0.000	0.001	0.000	0.004	-0.003	-0.005	0.001	-0.003	-0.003
	(0.005)*	(0.004)	(0.004)	(0.004)	(0.004)	(0.007)	(0.004)	(0.003)	(0.006)	(0.005)	(0.005)
FUEL/OM	0.002	-0.005	0.006	-0.008	0.000	0.002	0.003	-0.002	-0.001	-0.006	-0.009
	(0.006)	(0.007)	(0.006)	(0.006)	(0.005)	(0.009)	(0.006)	(0.005)	(0.007)	(0.007)	(0.007)
LGDPPC		-0.388	-0.445	-0.324	-0.385		-0.393	-0.405		-0.288	-0.226
		(0.076)***	(0.077)***	(0.075)***	(0.078)***		(0.089)***	(0.071)***		(0.092)***	(0.086)**
DEMOCRATIC				-0.749	-0.649			-0.510			-0.602
				(0.155)***	(0.155)***			(0.179)**			(0.268)**
FEDERAL				0.116	0.142			0.338			0.083
				(0.151)	(0.126)			(0.108)***			(0.181)
Observations	41	41	40	41	40	24	24	24	31	31	31
R-squared	0.75	0.86	0.88	0.90	0.91	0.81	0.91	0.95	0.71	0.78	0.81

Notes. [a] Excludes Mongolia. All regressions include a constant.
Robust standard errors in parentheses. * significant at 10%; ** significant at 5%; *** significant at 1%

Table A.5 Other biases (1996 sample)

Dep. Var:	WB	WB	CPI	CPI	ICRG	ICRG
	(1)	(2)	(6)	(7)	(8)	(9)
ICVS	23.486	9.015	19.606	1.678	19.190	8.567
	(2.409)***	(2.921)***	(2.547)***	(6.140)	(3.605)***	(6.647)
$ICVS^2$	-57.343	-19.740	-46.676	-0.950	-44.683	-15.704
	(9.069)***	(8.507)**	(9.046)***	(15.223)	(11.340)***	(18.033)
$ICVS \times POP$	0.017	-0.028	0.127	0.075	0.094	0.056
	(0.100)	(0.058)	(0.049)**	(0.044)	(0.081)	(0.087)
$(ICVS \times POP)^2$	-0.002	0.002	-0.006	-0.003	-0.005	-0.003
	(0.005)	(0.003)	(0.002)**	(0.003)	(0.004)	(0.005)
LEGOR_UK		-0.247		-0.129		0.184
		(0.183)		(0.179)		(0.268)
NEVERCOLONY		0.155		-0.008		0.621
		(0.197)		(0.199)		(0.329)*
PROTESTANT		-0.005		-0.006		-0.014
		(0.003)		(0.003)*		(0.004)***
ETHLINGFRAC		0.004		-0.005		-0.001
		(0.004)		(0.005)		(0.007)
FUEL/OM		-0.004		-0.003		-0.007
		(0.005)		(0.004)		(0.007)
LGDPPC		-0.199		-0.340		-0.157
		(0.103)*		(0.194)		(0.174)
DEMOCRATIC		-0.753		-0.633		-0.523
		(0.199)***		(0.277)**		(0.575)
FEDERAL		-0.002		0.245		-0.013
		(0.145)		(0.218)		(0.250)
Observations	41	41	24	24	31	31
R-squared	0.78	0.92	0.83	0.96	0.68	0.82

Notes. Robust standard errors in parentheses. All regressions include a constant.

* significant at 10%; ** significant at 5%; *** significant at 1%