Online Appendix to "What Do Corruption Indices Measure?"

Dilyan Donchev

International Finance Corporation

E-mail: donchev@post.harvard.edu

Gergely Ujhelyi

Economics Department, University of Houston

E-mail: gujhelyi@uh.edu

September 25, 2013

Abstract

This Appendix, not intended for publication, contains the additional material we refer to in our paper.

4 Data

4.1 Corruption perception indices

Table 1 lists the component-measures of the *WB* and *CPI* indices. Most component-measures ask either country experts or firms / businessmen about their perceptions of corruption in a given country. Some of the included surveys explicitly target forms of corruption experienced by businesses,[1] while others ask about attitudes or policies regarding corruption in general.[2] Most questions do not distinguish between high-level political corruption and low-level bureaucratic corruption.

Although both the *WB* and the *CPI* explicitly measure corruption perceptions, they both include one component related to experience. The *WB* includes a question from the World Business Environment Survey which asks firms the percent of revenues paid to public officials in the form of unofficial payments,[3] while the *CPI* includes the frequency of bribery from the ICVS household survey (we will use these as our measures of corruption experience below). However, neither of these is likely to have much impact on the scores. The *WB* uses the experience measure for only 18 countries, first aggregating the answers to this question with another 4 questions from the same survey before this component is aggregated with the other 14 component-measures. The *CPI* uses the ICVS data for only 11 countries, aggregated with its other 15 component-measures.[4]

As mentioned in Section 2 of the paper, a source of concern highlighted by previous literature is the large variance between the individual measures entering into the *WB* and *CPI* aggregates. For example, the pairwise correlation between the components of the 2000 *CPI* ranges between 0.41 and 0.98 (see Table 2 below). Both the World Bank and Transparency

---

[1] For example, the Global Competitiveness Survey (GCS) asks ratings on a 7-point scale on whether it is "Frequent for firms to make extra payments connected to: public utilities, tax payments, loan applications, awarding of public contracts, influencing laws, policies regulations, decrees, getting favorable judicial decisions."

[2] For example, the African Development Bank (ADB) asks its team of experts to rate on a 6 point scale each country's "Anti-corruption policies" as well as their "Transparency / corruption."

[3] While the *CPI* also uses the World Business Environment Survey, it does not appear to include this particular question (see Lambsdorff, 2000a).

[4] Details on the methodology of aggregation can be found in Kaufmann et al. (2004) and Lambsdorff (2000a).

International use the variation between individual components to compute an estimate of the variance of each country's score. As described in the paper, we use least squares regressions weighted by the inverse of these variances to get a sense on how important such uncertainty might be for our results.[5]

---

[5] Treisman (2000) follows a similar strategy.

Table 1 Components of the 2000 *WB* and *CPI* indices

WB

Component[a]	N[b]	Type[c]	Question
ADB	51	E	Score on a 6-point scale for (i) Anti-corruption policies (ii) Transparency and corruption
ASD	25	E	Score on a 6-point scale Anticorruption and accounting institutions
BRI	50	E	Score for category "Internal causes of political risk: Mentality (including xenophobia, nationalism, corruption, nepotism, willingness to compromise)"
DRI	111	E	Likelihood of "risk event" Losses and Costs from Corruption increases by 1 point on 10-point scale during any 12-month period in next five years
EIU	120	E	Assessment of corruption among public officials
FRH	28	E	Assessment of corruption.
GCS	76	F	Score on 7-point scale: (i) Frequent for firms to make extra payments connected to: public utilities, tax payments, loan applications, awarding of public contracts, influencing laws, policies regulations, decrees, getting favorable judicial decisions. (ii) Extent to which firms' illegal payments to influence government policies impose costs on other firms.
ICRG	140	E	Measures corruption within the political system, which distorts the economic and financial environment, reduces the efficiency of government and business by enabling people to assume positions of power through patronage rather than ability, and introduces and inherent instability in the political system.
LBO	17	H	Have you heard of acts of corruption?
PIA	136	E	Score on a 6-point scale Transparency, accountability and corruption in public sector
PRC	12	F	To what extent does corruption exist in a way that detracts from the business environment for foreign companies? (10 point scale)
QLM	115	E	Score on 100-point scale the extent to which "Indirect diversion of funds" is a risk factor in foreign lending
WBES	18	F	Aggregate of following questions (i) How common is it for firms to have to pay irregular additional payments to get things done? (ii) What percentage of total annual sales do firms pay in unofficial payments to public officials? (iii) How often do firms make extra payments to influence the content of new legislation? (iv) Extent to which firms' payments to public officials impose costs on other firms (v) How problematic is corruption for the growth of your business?
WCY	49	F	Assesses the extent to which bribing and corruption exist in the economy
WMO	181	E	An assessment of the intrusiveness of the country's bureaucracy. The amount of red tape likely to countered [sic] is assessed, as is the likelihood of encountering corrupt officials and other groups.

CPI

Component	N	Type	Question
ACR 1998	20	F	How problematic is corruption? Irregular, additional payments are required and large in amount
ACR 2000	26	F	How problematic is corruption? Irregular, additional payments are required and large in amount
EIU	115	E	as above
FRH	28	E	as above.
GCS 1998	53	F	Are irregular, additional payments connected with import and export permits, business licenses, exchange controls, tax assessments, police protection or loan application common?
GCS 1999	59	F	Are irregular, additional payments connected with import and export permits, business licenses, exchange controls, tax assessments, police protection or loan application common?
GCS 2000	59	F	Are irregular, additional payments connected with import and export permits, business licenses, exchange controls, tax assessments, police protection or loan application common?
ICRG	140	E	as above
ICVS	11	H	Has any government official in your own country asked you to pay a bribe for his service?
PRC 1998	12	F	as above
PRC 1999	12	F	as above
PRC 2000	14	F	as above
WBES	20	F	(i) State capture score; (ii) It is common for firms in my line of business to have to pay some irregular "additional payments" to get things done.
WCY 1998	46	F	as above
WCY 1999	47	F	as above
WCY 2000	47	F	as above

Notes: Compiled from Kaufmann et al. (2007, pages 27, 38-69, 75) and Lambsdorff (2000a, pages 4, 12-13), see these papers for further details on each component as well as the aggregation methodology. The 2000 *WB* index covers a total of 196 countries, while the *CPI* covers 90 countries.
[a] Components are ACR = World Economic Forum Africa Competitiveness Report, ADB = African Development Bank Country Policy and Institutional Assessments, ASD = Asian Development Bank Country Policy and Institutional Assessments, BRI = Business Environment Risk Intelligence Political and Operational Risk Index, QLM = Business Environment Risk Intelligence Quantitative Risk Measure in Foreign Lending, DRI = Global Insight Global Risk Service, EIU = Economist Intelligence Unit, FRH = Freedom House, GCS = World Economic Forum Global Competitiveness Survey, ICVS = International Crime Victims Survey, LBO = Latinobarometro, PIA = World Bank Country Policy and Institutional Assessments, PRC = Political Economic Risk Consultancy, ICRG = International Country Risk Guide, WBES = World Business Environment Survey, WCY = Institute for Management Development World Competitiveness Yearbook, WMO = Global Insight Business Conditions and Risk Indicators; [b] Number of countries covered; [c] E = expert assessments, F = survey of firms or businesspeople, H = household survey

Table 2 Correlation matrix of the *CPI* 2000 component measures

	ACR 1998	ACR 2000	EIU	FH	GCS 1998	GCS 1999	GCS 2000	ICVS	WCY 1998	WCY 1999	WCY 2000	PRC 1998	PRC 1999	PRC 2000	ICRG	WBES
ACR 1998	1															
ACR 2000	0.87	1														
EIU	0.73	0.74	1													
FH			0.85	1												
GCS 1998			0.9	0.86	1											
GCS 1999			0.85	0.87	0.96	1										
GCS 2000			0.87	0.86	0.96	0.98	1									
ICVS			0.45		0.78	0.64	0.76	1								
WCY 1998			0.86		0.87	0.83	0.84	0.64	1							
WCY 1999			0.87		0.92	0.9	0.91	0.65	0.97	1						
WCY 2000			0.88		0.93	0.9	0.91	0.72	0.96	0.98	1					
PRC 1998			0.91		0.9	0.93	0.91		0.95	0.97	0.96	1				
PRC 1999			0.89		0.86	0.84	0.83		0.83	0.91	0.94	0.9	1			
PRC 2000			0.88		0.92	0.91	0.91		0.85	0.93	0.93	0.95	0.95	1		
ICRG	0.69	0.65	0.77	0.74	0.7	0.64	0.67	0.41	0.72	0.72	0.74	0.67	0.66	0.68	1	
WBES			0.7	0.64	0.95	0.9	0.82								0.69	1

Source: Lambsdorff (2000b, p3). Correlations between sources with less than 6 overlapping countries are not reported.

4.2 International Crime Victims Survey

Detailed information on the ICVS survey, including sampling methodology and datasets, can be found at http://www.unicri.it/services/library_documentation/publications/icvs/data/. Table 3 lists the countries included in the survey, gives the number of observations for each, and reports the index of corruption experience for 1996 and 2000 with the resulting ranking of countries.

Table 3 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	1188	0.13	26	20				
Argentina	996	0.293	40	23	8905	0.048	18	32
Australia					2003	0.003	7	7
Austria	1507	0.007	9	8				
Azerbaijan					907	0.212	37	43
Belarus	960	0.125	24	39	1489	0.21	36	26
Belgium					2499	0.003	8	12
Bolivia	994	0.26	39	38				
Botswana					1197	0.008	11	15
Brazil	1000	0.179	31	21				
Bulgaria	1066	0.193	33	34	1413	0.174	31	27
Cambodia					2955	0.231	39	37
Canada	2132	0.004	6	3	2075	0.004	9	5
Colombia	984	0.195	34	28	996	0.176	32	33
Costa Rica	998	0.1	21	11				
Croatia	981	0.162	30	30	1521	0.096	23	24
Czech Republic	1752	0.081	20	14	1497	0.057	22	20
Denmark					3006	0.003	6	3
Estonia	1153	0.039	11	19	1679	0.052	20	16
Finland	3829	0.001	1	1	1780	0.002	3	1
France	1003	0.007	8	9	997	0.013	12	10
Georgia	1110	0.223	37	41	977	0.172	30	36
Hungary	746	0.039	12	12	1508	0.099	25	17
India	1193	0.212	36	26				
Indonesia	1338	0.311	41	29				
Kyrgyzstan	1714	0.209	35	37				
Latvia	1380	0.138	27	33	1190	0.147	27	25
Lesotho					1006	0.193	34	22
Lithuania	1165	0.111	22	24	1439	0.24	40	23
Macedonia	698	0.077	19	40				
Malta	993	0.041	13	18				
Mongolia	1188	0.047	15	17	921	0.218	38	29
Mozambique					989	0.306	42	30
Namibia					1052	0.055	21	13
Netherlands	2007	0.005	7	4	1998	0.004	10	4
Nigeria					1008	0.3	41	42
Panama					898	0.106	26	31
Paraguay	585	0.139	28	31				
Philippines	1497	0.044	14	27	1480	0.036	17	35
Poland	3438	0.048	16	16	5194	0.052	19	19

Country								
Portugal					1998	0.014	13	11
Romania	1083	0.115	23	25	1457	0.199	35	34
Russia	1006	0.19	32	36	1484	0.168	29	41
Slovakia	1091	0.141	29	15				
Slovenia	2046	0.012	10	10	3879	0.021	14	14
South Africa	996	0.076	18	13	1336	0.029	15	18
South Korea					2024	0.034	16	21
Spain					2908	0.002	5	9
Swaziland					975	0.178	33	28
Sweden	1000	0.002	3	2	2001	0.001	2	2
Switzerland	1000	0.002	2	5				
USA	1000	0.003	5	7	999	0.002	4	8
Uganda	1191	0.237	38	32	974	0.355	43	39
Ukraine	979	0.129	25	35	1488	0.165	28	40
United Kingdom	5404	0.003	4	6	5513	0.001	1	6
Zambia					1047	0.098	24	38
Zimbabwe	1003	0.072	17	22				
Total	57,394 (N = 41)				82,662 (N = 43)			

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 (0.75) was an unrealistic outlier. Botswana and Serbia/Montenegro were dropped from ICVS 1996 due to lack of data on important explanatory variables. Rankings are based on the absence of corruption (rank = 1 means lowest corruption).

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. We create a country index by taking weighted averages, like for the overall *ICVS* measure. The resulting data is shown in Table 4.

As described in the paper, we also use information on individual corruption perceptions. In the 2000 survey, individuals answered the following question: *"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."* Table 5 presents a detailed breakdown of the respondents' perceptions.

Table 4 Corruption types in ICVS 1996

Country	Govt. official	Customs officer	Police officer	Inspector	Other
Albania	0.045	0.016	0.01	0.023	0.034
Argentina	0.01	0.023	0.209	0.049	0.001
Austria	0	0.001	0.003	0	0.003
Belarus	0.041	0.02	0.025	0.011	0.023
Bolivia	0.05	0.011	0.113	0.045	0.04
Brazil	0.011	0.032	0.089	0.047	0
Bulgaria	0.009	0.029	0.105	0.012	0.037
Canada	0	0.001	0.002	0	0.001
Colombia	0.043	0.026	0.063	0.008	0.055
Costa Rica	0.011	0.004	0.022	0.053	0.008
Croatia	0.033	0.016	0.073	0.007	0.026
Czech Republic	0.034	0.003	0.018	0.019	0.007
Estonia	0.002	0.004	0.008	0.005	0.013
Finland	0	0	0	0	0.001
France	0.004	0	0.001	0	0.001
Georgia	0.032	0.061	0.064	0.061	0.006
Hungary	0.005	0.008	0.014	0	0.012
India	0.12	0.011	0.037	0.023	0.022
Indonesia	0.114	0.006	0.167	0	0.024
Kyrgyzstan	0.078	0.04	0.052	0.026	0.007
Latvia	0.047	0.039	0.015	0.023	0.013
Lithuania	0.025	0.027	0.038	0.007	0.014
Macedonia	0.015	0.025	0.007	0.005	0.024
Malta	0.012	0.019	0.005	0.003	0.002
Mongolia	0.012	0.017	0.008	0.006	0.004
Netherlands	0.004	0.001	0	0	0
Paraguay	0.034	0.018	0.039	0.042	0.004
Philippines	0.02	0.004	0.013	0.003	0.004
Poland	0.013	0.006	0.015	0.008	0.004
Romania	0.064	0.008	0.016	0.008	0.019
Russia	0.03	0.011	0.099	0.016	0.034
Slovakia	0.036	0.008	0.046	0.039	0.013
Slovenia	0.001	0.005	0.001	0	0.004
South Africa	0.007	0.002	0.035	0.014	0.018
Sweden	0	0	0.001	0	0.001
Switzerland	0	0.001	0.001	0	0
USA	0	0	0.003	0	0
Uganda	0.083	0.037	0.067	0.008	0.042
Ukraine	0.03	0.016	0.033	0.011	0.037
United Kingdom	0.001	0	0.001	0	0.001
Zimbabwe	0.019	0.011	0.022	0.01	0.01
Mean	0.027	0.014	0.038	0.014	0.014
Std. dev.	0.030	0.014	0.047	0.017	0.014

Table 5 Individual corruption perceptions by country

Country	*LIKELY*	*LIKELY0/1*	*LIKELYGRAND*	*LIKELYBUREAU*	N	Fraction of sample used for cross-country analysis
Azerbaijan	7.833	0.889	1.689	4.178	90	0.099
Belarus	7.851	0.862	1.802	4.023	470	0.316
Bulgaria	9.796	0.964	2.446	5.071	534	0.378
Cambodia	1.723	0.698	0.224	0.517	553	0.187
Colombia	8.744	0.972	2.550	4.754	211	0.212
Croatia	9.603	0.878	2.440	4.805	713	0.469
Czech Republic	6.633	0.892	1.668	3.562	518	0.346
Georgia	9.180	0.936	2.286	5.012	672	0.688
Hungary	4.815	0.784	1.164	2.217	658	0.436
Latvia	7.299	0.820	1.766	3.771	411	0.345
Lithuania	9.478	0.915	2.309	4.952	586	0.407
Mongolia	8.064	0.819	2.042	4.077	453	0.492
Mozambique	7.461	0.901	1.464	4.355	304	0.308
Panama	5.807	0.777	1.674	3.233	533	0.594
Philippines	1.404	0.161	0.384	0.715	799	0.54
Poland	10.427	1.000	2.720	5.293	82	0.016
Romania	8.857	0.914	2.167	4.626	754	0.518
Russia	9.908	0.938	2.541	4.982	434	0.292
South Korea	8.019	0.954	2.421	4.307	779	0.385
Uganda	2.304	0.994	0.830	1.229	945	0.97
Ukraine	9.575	0.900	2.282	4.866	749	0.503
Total	6.949	0.837	1.766	3.603	11248	0.405

Notes: The table contains averages of the individual perception scores by country for the sample used in the individual-level analysis. The 5th column gives the number of valid observations in this sample, and the last column indicates the attrition rate relative to the cross-country sample in these countries.

4.3 World Business Environment Survey

Table 6 presents average responses to the bribery experience of firms from the WBES and lists the number of firm-level observations from each country.

Table 6 Firms' corruption experience and perceptions

Country	BRIBES%	N. obs	CORRPROBLEM	Fraction of sample used for cross country analysis
Albania	4.252	123	0.829	0.947
Argentina	2.507	68		
Armenia	6.875	64	0.379	0.813
Azerbaijan	6.870	92	0.678	0.946
Bangladesh	3.795	39		
Belarus	2.989	45	0.325	0.867
Bolivia	4.253	73		
Bosnia			0.674	n/a
Brazil	1.082	140		
Bulgaria	3.169	59	0.702	0.847
Cambodia	4.421	267		
Canada	0.197	99		
Chile	0.619	97		
Colombia	0.401	91		
Costa Rica	1.309	89		
Croatia	1.713	47	0.696	0.915
Czech Republic	4.182	55	0.463	0.945
Dominican Republic	1.828	99		
Ecuador	4.237	78		
El Salvador	0.609	92		
Estonia	2.398	54	0.296	0.981
France	0.331	77		
Georgia	7.915	53	0.774	0.943
Germany	1.572	69		
Guatemala	1.700	85		
Honduras	1.347	88		
Hungary	2.686	51	0.429	0.902
Indonesia	6.225	80		
Italy	0.558	77		
Kazakhstan	4.365	78	0.667	0.692
Kyrgyzstan	5.408	76	0.831	0.816
Latvia	2.132	68	0.541	0.882
Lithuania	3.843	51	0.673	0.882
Macedonia	3.213	54	0.653	0.907
Malaysia	1.590	61		
Mexico	2.629	85		
Moldova	5.938	72	0.727	0.889
Nicaragua	2.839	90		
Pakistan	5.404	89		
Panama	1.202	89		
Peru	2.738	86		
Philippines	1.857	91		

Poland	2.179	106	0.515	0.906
Portugal	0.109	96		
Romania	3.734	79	0.566	0.962
Russia	3.906	276	0.574	0.87
Serbia			0.583	n/a
Singapore	0.025	100		
Slovakia	3.415	53	0.692	0.943
Slovenia	3.220	41	0.244	0.976
Spain	0.052	97		
Sweden	0.015	97		
Thailand	5.083	276		
Trinidad and Tobago	0.511	94		
Turkey	3.182	77	0.74	0.935
USA	2.634	82		
Ukraine	6.545	145	0.574	0.876
United Kingdom	0.133	83		
Uzbekistan			0.492	n/a
Uruguay	0.227	75		
Venezuela	2.920	75		
Total	2.777	5193	0.600	0.892

Notes: The first two column contain the country scores (average of *BRIBES%*) and the number of firms in the sample. The third column gives the fraction of firms with *CORRPROBLEM* = 1. This is based on firms with no missing values (including the firm characteristics used in the micro-level analysis), and the last column gives the number of such firms in each country, as a fraction of the total number of firms in the sample (column 2).

4.4 Other data

Tables 7 and 8 present the summary statistics for the various samples (country, individual and firm level). Table 9 gives the correlation matrix for the country level data.

Table 7 Summary statistics and sources for country-level variables

A. 1996 sample

Variable	Obs	Mean	Std. Dev.	Min	Max	Description	Source
ICVS	41	0.107	0.089	0.001	0.311	index of corruption experience: fraction of population exposed to corruption	UNICRI: Crime Victimization Survey[a]
CPI	24	0	1	-1.409	1.16	index of corruption perceptions	Transparency International[b]
WB	41	0	1	-1.89	1.297	index of corruption perceptions	World Bank Governance Database[c]
ICRG	31	0	1	-1.625	1.634	index of corruption perceptions	Political Risk Services[d]
LEGOR_UK	41	0.171	0.381	0	1	1 if British legal origins	Treisman (2000), La Porta et al (1999)
NEVERCOLONY	41	0.171	0.381	0	1	1 if never been colonized	Treisman (2000), et al (1995)
PROTESTANT	41	13.651	22.189	0	93.1	% of protestant population	Treisman (2000), CIA (2006)
ETHLINGFRAC	41	36.039	21.532	6.605	92.645	index of ethno-linguistic fractionalization	Alesina et al (2003)
FUEL/OM	41	13.721	13.846	0.119	59.92	% of fuel, ore, and metal exports	World Development Indicators[e]
LGDPPC	41	7.979	1.411	5.42	10.362	log GDP per capita	World Development Indicators[e]
DEMOCRATIC	41	0.268	0.449	0	1	1 if democratic government in all years 1950-95	Treisman (2000), Alvarez et al (1995)
FEDERAL	41	0.22	0.419	0	1	1 if federal structure	Treisman (2000), Forum of Federations[f]
POP	41	5.694	15.404	0.038	94.876	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

B. 2000 sample

Variable	Obs	Mean	Std. Dev.	Min	Max
ICVS	43	0.104	0.100	0.001	0.355
CPI	40	0.000	1.000	-2.006	1.51
WB	43	0.000	1.000	-1.827	1.382
ICRG	39	0.000	1.000	-1.809	1.79
LEGOR_UK	43	0.279	0.454	0	1
NEVERCOLONY	43	0.186	0.394	0	1
PROTESTANT	43	18.74	25.679	0	95.2
ETHLINGFRAC	43	36.064	24.106	0.205	92.645
FUEL/OM	43	19.419	22.381	0.069	99.643
LGDPPC	43	8.096	1.547	5.339	10.452
DEMOCRATIC	43	0.233	0.427	0	1
FEDERAL	43	0.209	0.412	0	1
POP	43	3.060	5.033	0.105	28.222
BRIBES%	58	2.777	2.021	0.016	7.915

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

Table 8 Summary statistics for micro-level regressions

A. Households

Variable	Definition	Obs	Mean	Std. Dev.	Min	Max
LIKELY	Measure of individual corruption perception (see text)	11248	6.949	4.790	0	12
LIKELY 0/1	1 if *LIKELY* > 0	11248	0.837	0.369	0	1
LIKELYGRAND	Measure of perceived "grand corruption" (see text)	11248	1.766	1.354	0	3
LIKELYBUREAU	Measure of perceived "bureaucratic corruption" (see text)	11248	3.603	2.548	0	6
INCOME	Relative income quartile in country	11248	2.461	1.141	1	4
EDUC	Highest level of education completed: none (1), primary (2), secondary (3), higher (4)	11248	3.253	0.808	1	4
AGE	Age	11248	4.063	1.634	17.5	72
MALE	1 if male	11248	0.452	0.498	0	1
MARRIED	1 if married	11248	0.555	0.497	0	1
WORKING	1 if employed	11248	0.494	0.500	0	1
STUDENT	1 if student	11248	0.084	0.278	0	1
CITY	1 if lives in city (> 100,000 residents)	11248	0.200	0.400	0	1

Source: UNICRI: Crime Victimization Survey 1999-2000, http://www.unicri.it/wwd/analysis/icvs

B. Firms

Variable	Definition	Obs	Mean	St. Dev.	Min	Max
CORRPROBLEM	1 if corruption identified as a major or moderate obstacle to the growth of respondent's business	1734	0.604	0.489	0	1
BRIBES%	percent of yearly revenues paid in unofficial payments to public officials	1734	4.355	5.897	0	30
SALES	log of reported yearly sales revenue in million USD	1734	-0.778	1.820	-2.079	5.416
STATE	1 if majority state ownership	1734	0.097	0.296	0	1
EXPORTER	1 if exports goods directly	1734	0.231	0.422	0	1
IMPORTER	1 if imports goods directly	1734	0.361	0.480	0	1
COMPETITOR	Number of competitors of firm's major product line in the domestic market: zero (1), one-three (2), more than three (3)	1734	2.749	0.551	1	3
PLANTS_INC	1 if new plant opened in past three years	1734	0.221	0.415	0	1
PLANTS_RED	1 if at least one existing plant closed in past three years	1734	0.085	0.279	0	1
WORK_RED	1 if company workforce reduced by more than 10% in past three years	1734	0.311	0.463	0	1
WORK_INC	1 if company workforce increased by more than 10% in past three years	1734	0.298	0.458	0	1

Source: European Bank of Reconstruction and Development: Business Environment and Economic Performance Survey 1999-2000 (administered as part of the World Business Environment Survey), available at http://www.ebrd.com/country/sector/econo/surveys/beeps.htm.

Table 9 Correlation matrix (N =43, year = 2000)

	ICVS	LEGOR_UK	NEVERCOLONY	PROTESTANT	ETHLINGFRAC	FUEL/OM	LGDPPC	DEMOCRATIC	FEDERAL	POP
ICVS	1									
LEGOR_UK	-0.013	1								
NEVERCOLONY	-0.381	-0.1642	1							
PROTESTANT	-0.4128	0.2681	0.2978	1						
ETHLINGFRAC	0.3618	0.4023	-0.4092	-0.0352	1					
FUEL/OM	0.444	0.1323	-0.1318	-0.1912	0.3242	1				
LGDPPC	-0.8507	-0.0862	0.4759	0.3773	-0.4837	-0.44	1			
DEMOCRATIC	-0.5592	0.1484	0.4441	0.493	-0.222	-0.1972	0.7272	1		
FEDERAL	-0.2186	0.3171	0.0478	-0.0314	0.2425	0.2593	0.2754	0.258	1	
POP	-0.0712	0.2441	0.1065	-0.0296	0.0736	0.182	0.1409	0.2097	0.5295	1

5 Country-level results

5.1 Economic, institutional and cultural influences on perceptions

Table 10 displays the results for all 3 corruption perception indices. Results for *WB* are discussed in the paper. Results on the controls are similar for *CPI*, both in terms of sign and magnitude (recall that 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 is not an important determinant of any of the commonly used corruption indices.

Table 10 also lists the variance inflation factors associated with each independent variable in the most comprehensive specifications. GDP is the only variable that reaches the threshold of 10 commonly regarded as problematic in the CPI and ICRG regressions. In particular, the variance inflation factor of the experience measure is at most 4.21, indicating that the low explanatory power of this variable is not the result of severe multicollinearity.

We also checked if the small and insignificant role of experience in explaining perceptions may have been due to a few influential outliers. Figure 1 plots the estimated residuals from Column 3 in Table 10 and suggests that four countries (Mongolia, Mozambique, Argentina and Russia) may be especially influential. As Column 1 of Table 11 below shows, dropping these from the sample does not affect our results, in particular the effect of *ICVS* remains small and statistically insignificant while the effects of the other variables remain robust. Columns 2 and 3 present the corresponding exercise for *CPI* and *ICRG*.

Table 10 Determinants of corruption perceptions (2000 sample, unweighted)

Dep. Var:	WB (1)	WB (2)	WB (3)	WB (4)	CPI (5)	CPI (6)	CPI (7)	ICRG (8)	ICRG (9)	ICRG (10)
ICVS	7.731***	4.854***	-0.071	0.669	3.241**	-0.205	0.718	1.989	-0.527	0.184
	(0.986)	(1.229)	(0.880)	(1.118)	(1.238)	(0.685)	(0.837)	(1.202)	(1.193)	(1.114)
LEGOR_UK		-0.271	-0.299*	-0.275*	-0.523**	-0.369**	-0.310**	-0.138	-0.037	0.001
		(0.217)	(0.161)	(0.146)	(0.227)	(0.148)	(0.133)	(0.306)	(0.275)	(0.259)
NEVERCOLONY		-0.523**	-0.308	-0.241	-0.502**	-0.348*	-0.277	-0.039	0.072	0.114
		(0.236)	(0.221)	(0.240)	(0.219)	(0.192)	(0.219)	(0.330)	(0.349)	(0.382)
PROTESTANT		-0.010***	-0.009***	-0.006***	-0.013***	-0.012***	-0.008***	-0.018***	-0.017***	-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	0.011*	0.005	0.003
		(0.005)	(0.004)	(0.004)	(0.005)	(0.004)	(0.005)	(0.005)	(0.006)	(0.008)
FUEL/OM		0.008*	0.007**	0.006**	0.009***	0.004	0.004	0.011***	0.008	0.006
		(0.004)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.004)	(0.005)	(0.005)
LGDPPC			-0.449***	-0.346***		-0.421***	-0.289		-0.305*	-0.253
			(0.071)	(0.106)		(0.095)	(0.173)		(0.159)	(0.192)
DEMOCRATIC				-0.559**			-0.640**			-0.439
				(0.255)			(0.302)			(0.445)
FEDERAL				0.227			0.221			0.295
				(0.227)			(0.210)			(0.354)
R-squared	0.60	0.76	0.86	0.89	0.79	0.87	0.90	0.66	0.70	0.72
Observations	43	43	43	43	40	40	40	39	39	39

Notes. OLS estimates. Robust standard errors in parentheses. All regressions include a constant. The variance inflation factors for specification (4) are, respectively, 4.21, 1.58, 1.53, 1.71, 2.01, 1.66, 8.52, 1.98, 2.95. For specification (7), they are 4.07, 1.84, 1.52, 1.81, 3.92, 2.78, 12.73, 2.54, 3.37. For specification (10), they are 4.09, 1.85, 1.51, 1.8, 3.9, 2.75, 12.54, 2.52, 3.41.
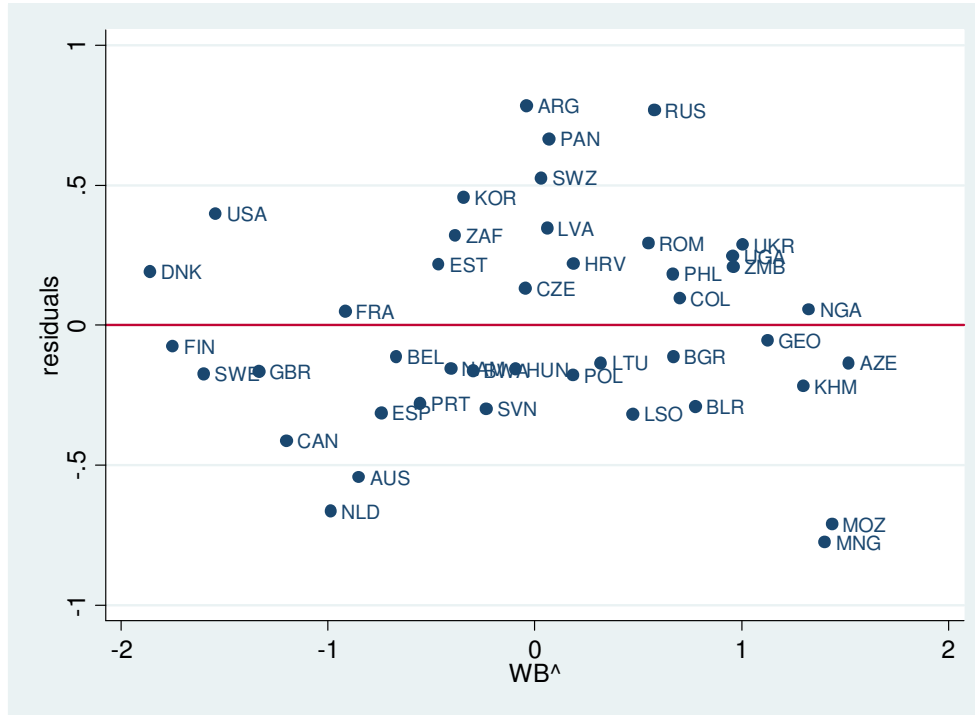* significant at 10%; ** significant at 5%; *** significant at 1%

Figure 1 Estimated residuals from regression (3) in Table 9 above

Table 11 Robustness to outliers

Dep. var.:	WB	CPI	ICRG
ICVS	0.475	-0.324	-0.281
	(0.649)	(0.754)	(1.150)
LEGOR_UK	-0.368**	-0.378**	0.024
	(0.139)	(0.147)	(0.281)
NEVERCOLONY	-0.367**	-0.356*	0.001
	(0.162)	(0.177)	(0.364)
PROTESTANT	-0.007***	-0.012***	-0.018***
	(0.002)	(0.002)	(0.004)
ETHLINGFRAC	0.000	-0.002	0.009
	(0.003)	(0.003)	(0.005)
FUEL/OM	0.004**	0.004	0.009*
	(0.002)	(0.003)	(0.005)
LGDPPC	-0.470***	-0.475***	-0.192
	(0.067)	(0.078)	(0.133)
R-squared	0.92	0.91	0.73
Observations	39	39	38

Notes. Column 1 excludes Mongolia, Mozambique, Argentina, and Russia, Column 2 excludes Mongolia, and Column 3 excludes Canada. Robust standard errors in parentheses. All regressions include a constant. * significant at 10%; ** significant at 5%; *** significant at 1%

Could some form of reverse causation explain the significance of GDP and other controls and the small point estimate on experience? Suppose one believed that (i) perceptions were determined *only* by experience, and (ii) GDP was determined by corruption perceptions. This could in principle create the patterns observed here. To address this, we instrumented GDP with distance from the equator, a strategy sometimes used in the literature (see Treisman, 2000).[6] The results are in Table 12. The estimated effect of GDP is now even larger, while the coefficient of experience is *negative* for all three perception indices. These results support the view that GDP causes corruption perceptions holding experience constant.

Table 12 Instrumenting GDP with distance from the Equator

Dep. var.:	*WB*	*CPI*	*ICRG*
ICVS	-2.437	-2.534	-7.453
	(2.869)	(2.795)	(6.079)
LEGOR_UK	-0.312**	-0.264	0.242
	(0.157)	(0.212)	(0.424)
NEVERCOLONY	-0.204	-0.243	0.377
	(0.204)	(0.179)	(0.430)
PROTESTANT	-0.009***	-0.011***	-0.013***
	(0.002)	(0.002)	(0.005)
ETHLINGFRAC	-0.004	-0.006	-0.010
	(0.004)	(0.007)	(0.014)
FUEL/OM	0.006*	0.001	-0.002
	(0.003)	(0.005)	(0.010)
LGDPPC	-0.664***	-0.705**	-1.146*
	(0.245)	(0.296)	(0.648)
R-squared	0.84	0.83	0.37
Observations	43	40	39

Notes. Two-Stage Least Squares estimates with *LGDPPC* instrumented with distance from the Equator. Robust standard errors in parentheses. All regressions include a constant.
* significant at 10%; ** significant at 5%; *** significant at 1%

Next, we check whether the *WB* and *CPI* results might be affected by uncertainty in these aggregate perception measures. To address this, Table 13 repeats the *WB* and *CPI* regressions, weighting each observation by the inverse of the variance of the perception measure for that country. In this way, observations for which the various component-measures give similar scores receive more weight in the regressions. The results are even stronger than our findings from the unweighted regressions. The same factors as above have large and significant effects on

---

[6] Note that, per (i), corruption experience is exogenous in the regression under the null hypothesis.

perceptions for given experience, and the estimated effect of experience is small and, in several specifications, negative.

Table 13 Determinants of corruption perceptions (2000 sample, weighted)

Dep. Var:	WB	WB	WB	WB	CPI	CPI	CPI
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
ICVS	8.031***	3.985***	-0.238	0.395	2.073	-1.004	-0.224
	(1.104)	(1.368)	(0.755)	(0.901)	(1.506)	(0.606)	(0.773)
LEGOR_UK		-0.548**	-0.401**	-0.363**	-0.497**	-0.165	-0.087
		(0.217)	(0.148)	(0.136)	(0.228)	(0.219)	(0.140)
NEVERCOLONY		-0.414	-0.219	-0.183	-0.555**	-0.533***	-0.368*
		(0.257)	(0.242)	(0.235)	(0.264)	(0.190)	(0.215)
PROTESTANT		-0.011***	-0.009***	-0.006***	-0.016***	-0.013***	-0.007***
		(0.003)	(0.002)	(0.002)	(0.003)	(0.002)	(0.002)
ETHLINGFRAC		0.007	-0.000	-0.002	0.007	-0.006	-0.005
		(0.005)	(0.003)	(0.004)	(0.006)	(0.005)	(0.006)
FUEL/OM		0.011***	0.007**	0.005**	0.010***	0.006	0.004
		(0.004)	(0.003)	(0.002)	(0.003)	(0.004)	(0.003)
LGDPPC			-0.467***	-0.420***		-0.449***	-0.343***
			(0.067)	(0.105)		(0.099)	(0.114)
DEMOCRATIC				-0.467*			-0.807***
				(0.247)			(0.237)
FEDERAL				0.324			0.168
				(0.218)			(0.195)
R-squared	0.59	0.77	0.87	0.90	0.84	0.91	0.94
Observations	43	43	43	43	40	40	40

Notes. OLS estimates, regressions weighted by the inverse variance of the corresponding perception index. Robust standard errors in parentheses. All regressions include a constant.
* significant at 10%; ** significant at 5%; *** significant at 1%

Table 14 present the results for the 1996 sample. 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.

19

Table 14 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. OLS estimates. All regressions include a constant. Robust standard errors in parentheses.
[a] Excludes Mongolia.
* significant at 10%; ** significant at 5%; *** significant at 1%

Table 15 Determinants of corruption perceptions: different types of experience (*CPI*, 1996)

Dep. var.:	*CPI* (1)	*CPI* (2)	*CPI* (3)	*CPI* (4)	*CPI* (5)	*CPI* (6)
GOVT OFFICIAL	5.294					2.391
	(3.022)					(4.844)
POLICE		2.545**				2.417
		(1.025)				(1.709)
CUSTOMS OFFICIAL			9.783			6.994
			(7.828)			(10.555)
INSPECTOR				-1.834		-5.377
				(5.244)		(5.827)
OTHER					4.590	0.999
					(9.094)	(11.941)
LEGOR_UK	-0.194	-0.157	-0.241	-0.248	-0.252	-0.207
	(0.146)	(0.141)	(0.167)	(0.151)	(0.175)	(0.171)
NEVERCOLONY	-0.049	-0.028	-0.054	-0.085	-0.069	-0.122
	(0.148)	(0.171)	(0.181)	(0.197)	(0.179)	(0.201)
PROTESTANT	-0.006*	-0.006**	-0.006**	-0.007**	-0.006*	-0.006
	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)
ETHLINGFRAC	-0.007*	-0.005*	-0.004	-0.006	-0.005	-0.007*
	(0.004)	(0.003)	(0.004)	(0.004)	(0.004)	(0.004)
FUEL/OM	0.000	-0.002	0.003	0.002	-0.001	-0.001
	(0.004)	(0.005)	(0.005)	(0.005)	(0.006)	(0.009)
LGDPPC	-0.374***	-0.470***	-0.452***	-0.496***	-0.457***	-0.424**
	(0.092)	(0.060)	(0.074)	(0.063)	(0.086)	(0.175)
DEMOCRATIC	-0.647***	-0.436**	-0.418*	-0.482**	-0.506**	-0.410*
	(0.167)	(0.199)	(0.207)	(0.192)	(0.204)	(0.191)
FEDERAL	0.441***	0.332***	0.363**	0.441***	0.441**	0.404**
	(0.127)	(0.108)	(0.132)	(0.142)	(0.160)	(0.159)
R-squared	0.95	0.95	0.94	0.94	0.94	0.96
Observations	24	24	24	24	24	24
F-test: equal type-coefficients [p-value]						1.26 [0.35]

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

5.2 Experience with different types of corruption

5.2.1 Households' experience with different types of corruption

Tables 15 and 16 show the results of regressing *CPI* and *ICRG* on the different types of experience. Country characteristics yield similar coefficient estimates in terms of magnitude and significance. The coefficient estimates on the type measures are always small, although the estimates tend to be imprecise (the sample size for these regressions is very small: 24 for *CPI* and 31 for *ICRG*). *POLICE* is significant

in the *CPI* regression and yields a marginal effect of 0.12 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. However, the hypothesis of equal coefficients on all type measures is never rejected.

Table 16 Determinants of corruption perceptions: different types of experience (*ICRG*, 1996)

Dep. var.:	ICRG (1)	ICRG (2)	ICRG (3)	ICRG (4)	ICRG (5)	ICRG (6)
GOVT OFFICIAL	10.558***					12.143*
	(3.650)					(6.292)
POLICE		4.414**				-0.719
		(1.783)				(2.592)
CUSTOMS OFFICIAL			15.916			18.324
			(14.794)			(16.892)
INSPECTOR				11.596		11.956
				(8.004)		(8.991)
OTHER					11.477	0.194
					(10.186)	(9.156)
LEGOR_UK	0.057	0.077	-0.049	0.074	-0.076	0.207
	(0.230)	(0.209)	(0.233)	(0.231)	(0.251)	(0.308)
NEVERCOLONY	0.553**	0.576**	0.587*	0.746**	0.513*	0.738*
	(0.248)	(0.274)	(0.296)	(0.340)	(0.291)	(0.360)
PROTESTANT	-0.015***	-0.016***	-0.017***	-0.017***	-0.017***	-0.013**
	(0.005)	(0.004)	(0.005)	(0.005)	(0.005)	(0.005)
ETHLINGFRAC	-0.004	-0.002	0.001	0.003	-0.001	-0.001
	(0.006)	(0.005)	(0.006)	(0.006)	(0.006)	(0.007)
FUEL/OM	-0.005	-0.010	-0.006	-0.006	-0.011	-0.001
	(0.008)	(0.008)	(0.010)	(0.008)	(0.007)	(0.010)
LGDPPC	-0.172	-0.336***	-0.287**	-0.273**	-0.290***	-0.029
	(0.115)	(0.089)	(0.109)	(0.104)	(0.102)	(0.205)
DEMOCRATIC	-0.905***	-0.533*	-0.568*	-0.731*	-0.658**	-0.861**
	(0.239)	(0.304)	(0.329)	(0.379)	(0.308)	(0.322)
FEDERAL	0.291	0.121	0.199	0.086	0.320	0.050
	(0.212)	(0.196)	(0.232)	(0.227)	(0.228)	(0.236)
R-squared	0.79	0.78	0.76	0.77	0.76	0.84
Observations	31	31	31	31	31	31
F-test: equal type-coefficients [p-value]						0.63 [0.65]

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

5.2.2 Firms' corruption experience

Table 17 gives the results for all 3 corruption perception indices. The biggest difference relative to the *ICVS* results is that in the *CPI* regressions, the effect of experience remains relatively large and significant throughout. Although adding *GDP* halves this coefficient, the point estimate remains significant, and effects as large as 0.46 standard deviation cannot be ruled out at the five percent level. This may lend some support to the view that this particular measure better captures corruption experiences in the business sector than experiences of the general population. The sign and significance of the other explanatory variables continue to remain robust.

Table 17 Firm experience and corruption perceptions

Dep. Var:	WB (1)	WB (2)	WB (3)	WB (4)	CPI (5)	CPI (6)	CPI (7)	ICRG (8)	ICRG (9)	ICRG (10)
BRIBES%	0.340***	0.228***	0.045	0.041	0.228***	0.126**	0.121**	0.203***	0.094	0.085
	(0.048)	(0.052)	(0.042)	(0.040)	(0.051)	(0.052)	(0.048)	(0.059)	(0.076)	(0.075)
LEGOR_UK		-0.601**	-0.378**	-0.411**	-1.046***	-0.689***	-0.682**	-0.015	0.110	0.066
		(0.291)	(0.156)	(0.178)	(0.269)	(0.254)	(0.262)	(0.290)	(0.243)	(0.234)
NEVERCOLONY		-0.404*	-0.019	0.026	-0.163	-0.027	0.001	0.233	0.456	0.479
		(0.237)	(0.200)	(0.218)	(0.225)	(0.196)	(0.198)	(0.297)	(0.310)	(0.337)
PROTESTANT		-0.022***	-0.011***	-0.009***	-0.022***	-0.016***	-0.014***	-0.032***	-0.025***	-0.024***
		(0.004)	(0.004)	(0.003)	(0.004)	(0.004)	(0.005)	(0.005)	(0.005)	(0.006)
ETHLINGFRAC		0.007	0.004	0.002	0.008*	0.003	0.001	0.005	0.003	0.001
		(0.005)	(0.003)	(0.003)	(0.004)	(0.004)	(0.004)	(0.006)	(0.006)	(0.006)
FUEL/OM		0.004	0.006*	0.005*	0.001	0.001	-0.001	0.005	0.006	0.005
		(0.004)	(0.003)	(0.003)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)
LGDPPC			-0.520***	-0.545***		-0.345***	-0.414***		-0.315**	-0.358**
			(0.084)	(0.079)		(0.117)	(0.117)		(0.138)	(0.137)
DEMOCRATIC				-0.264			-0.115			-0.162
				(0.265)			(0.276)			(0.537)
FEDERAL				0.378**			0.374**			0.403*
				(0.178)			(0.176)			(0.206)
Observations	0.47	0.69	0.83	0.85	0.79	0.83	0.85	0.53	0.58	0.60
R-squared	58	58	58	58	47	47	47	54	54	54

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

5.3 Other biases

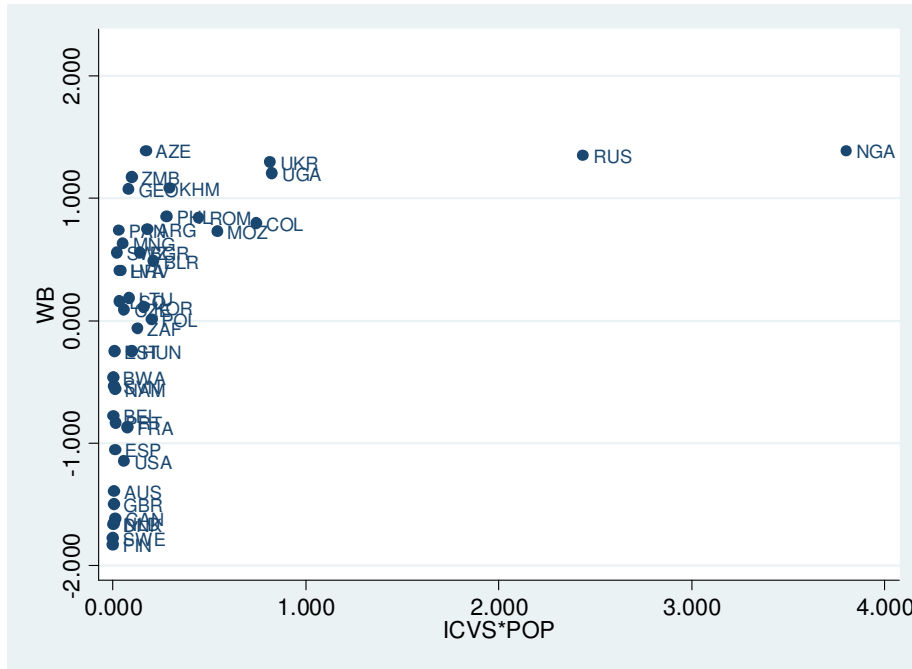### 5.3.1 Absolute vs. relative level of corruption and diminishing sensitivity

Figure 2 Perceptions and absolute level of corruption (year = 2000)

Table 18 presents the tests for diminishing sensitivity and absolute corruption experience using all 3 corruption perception indices and checks for outliers based on Figure 2. The last four columns 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.

Diminishing sensitivity implies that these indices are 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 3, which shows the estimated marginal effect of *ICVS* on the *WB* perception index based on Column 4 in Table 18, for different levels of corruption experience. The estimated marginal effect on *WB* of a one std. dev. (0.10) increase in *ICVS* is never higher than 0.6 standard deviation, and this effect quickly becomes small. At the mean of *ICVS*, the estimated marginal effect is less than a third standard deviation, and a zero marginal effect can never be ruled out at the 95% confidence level.

Table 18 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	17.943***	16.897***	15.792***	5.786*	5.328*	16.573***	2.429	11.172***	2.648
	(2.383)	(2.328)	(2.573)	(3.064)	(2.813)	(2.420)	(2.774)	(3.282)	(4.806)
$ICVS^2$	-37.131***	-39.378***	-39.127***	-15.507	-17.106*	-37.859***	-8.970	-25.627***	-11.921
	(8.504)	(8.316)	(10.254)	(9.663)	(8.794)	(7.374)	(7.505)	(9.171)	(12.882)
$ICVS \times POP$		1.122**	3.886***		0.880***	0.913*	0.821*	1.284***	1.066**
		(0.433)	(1.415)		(0.282)	(0.493)	(0.424)	(0.346)	(0.392)
$(ICVS \times POP)^2$		-0.242**	-3.277*		-0.189**	-0.189	-0.146	-0.237***	-0.194*
		(0.107)	(1.698)		(0.075)	(0.117)	(0.108)	(0.086)	(0.105)
LEGOR_UK				-0.202	-0.128		-0.245		0.103
				(0.150)	(0.149)		(0.149)		(0.301)
NEVERCOLONY				-0.121	-0.278		-0.399**		-0.033
				(0.222)	(0.189)		(0.192)		(0.342)
PROTESTANT				-0.007***	-0.006**		-0.009***		-0.014**
				(0.002)	(0.002)		(0.002)		(0.005)
ETHLINGFRAC				0.000	0.000		0.002		0.007
				(0.004)	(0.004)		(0.005)		(0.009)
FUEL/OM				0.005*	0.004		0.002		0.003
				(0.003)	(0.003)		(0.006)		(0.008)
LGDPPC				-0.302***	-0.258***		-0.200		-0.122
				(0.108)	(0.090)		(0.171)		(0.191)
DEMOCRATIC				-0.440*	-0.416*		-0.556**		-0.355
				(0.253)	(0.221)		(0.268)		(0.446)
FEDERAL				0.223	0.039		-0.051		-0.048
				(0.218)	(0.241)		(0.284)		(0.356)
R-squared	0.73	0.78	0.79	0.90	0.92	0.74	0.93	0.58	0.77
Observations	43	43	41	43	43	40	40	39	39

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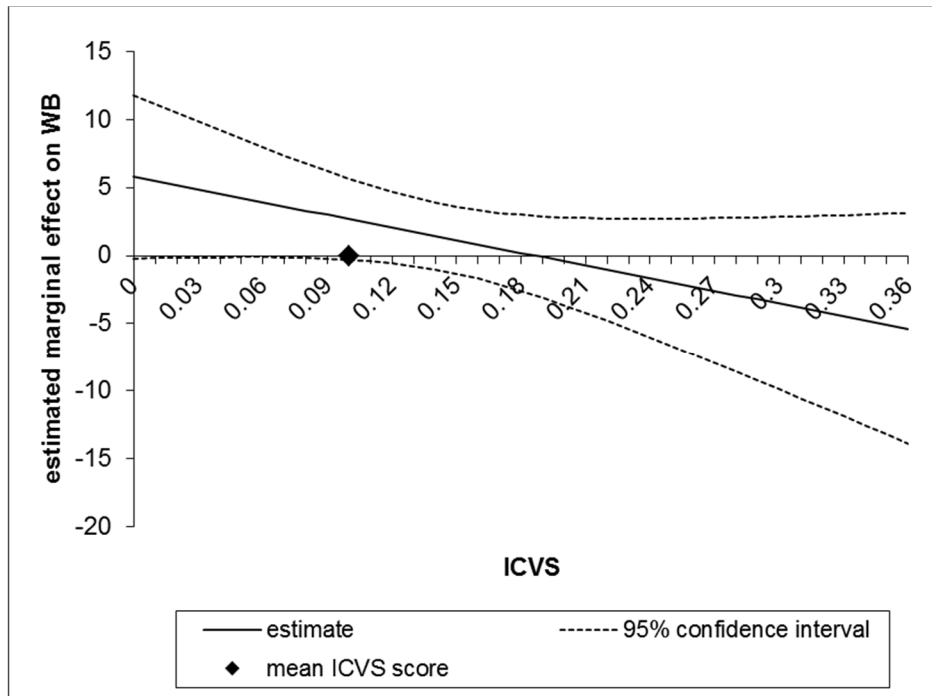* significant at 10%; ** significant at 5%; *** significant at 1%

Figure 3 Estimated marginal effect of *ICVS* on *WB* from regression (4) in Table 17.

Results for the 1996 sample are in Table 19. *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 these samples are very small.)

Table 19 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. OLS estimates. Robust standard errors in parentheses. All regressions include a constant.
* significant at 10%; ** significant at 5%; *** significant at 1%

Table 20 checks for diminishing sensitivity to relative corruption experience when *BRIBES%*, our measure of firm experience, is used instead of *ICVS*. We find evidence of diminishing sensitivity for the *WB* and *CPI* indexes, but not the *ICRG*, which remains unresponsive to relative corruption experience. As before, we estimate the largest effect of firms' experience in the *CPI* regression. There, the effect of *BRIBES%* starts at 0.36 standard deviations at *BRIBES%* = 0, and declines to 0.16 standard deviation at the mean of *BRIBES%*. Firm experience is also significant in the *WB* regression, but the magnitude of the effect is smaller (0.09 standard deviation at the mean of *BRIBES%*).

Table 20 Diminishing sensitivity to firms' experience

Dep. Var:	WB	CPI	ICRG
	(1)	(2)	(3)
BRIBES%	0.282***	0.357***	0.102
	(0.096)	(0.103)	(0.178)
(BRIBES%)^2	-0.035***	-0.035***	-0.003
	(0.011)	(0.011)	(0.021)
LEGOR_UK	-0.358**	-0.593***	0.071
	(0.156)	(0.210)	(0.238)
NEVERCOLONY	0.102	0.084	0.485
	(0.158)	(0.147)	(0.327)
PROTESTANT	-0.010***	-0.015***	-0.024***
	(0.003)	(0.004)	(0.006)
ETHLINGFRAC	0.002	0.001	0.001
	(0.003)	(0.004)	(0.006)
FUEL/OM	0.006**	0.000	0.005
	(0.003)	(0.003)	(0.004)
LGDPPC	-0.534***	-0.436***	-0.358**
	(0.077)	(0.115)	(0.139)
DEMOCRATIC	-0.147	0.020	-0.154
	(0.246)	(0.257)	(0.558)
FEDERAL	0.292*	0.302*	0.398*
	(0.156)	(0.154)	(0.209)
R-squared	0.87	0.87	0.60
Observations	58	47	54

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

6 Micro-level results

6.1 Households

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 9-year old experiences in Croatia and the Czech Republic, 11-year old experiences in Hungary, and 21 year-old experiences in South Korea. For example, in Hungary 43 out of the 658 respondents reported victimization, but 516 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 (516-43)/43 = 11 years for all those with *VICTIM* = 0 and *LIKELY* > 0 to be victimized.

If corruption experience was 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 in every country. 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 $v = 43/658$ and $L = 43$, a 90% probability requires a time horizon of $x = 124$ years.

We view it as unlikely that corruption experiences far in the past would explain the low correlation between current corruption and perceptions. Nevertheless, a careful analysis of this issue would be important for the corruption perception indices published on a yearly basis.

In Table 21, Column (1) shows the Probit specification with *LIKELY0/1* as the dependent variable. Income, education, age, and being a student raise the probability of reporting that corruption is likely. Victims of corruption are only 0.7% more likely to report this. Column (2) presents an Ordered Probit specification for *LIKELY* (which takes on values 1-12). To help interpret the coefficients, the cutoff values for the latent variable $Y = \mathbf{X\beta} + \varepsilon$ are listed in the

notes. Holding everything else constant, *VICTIM* can raise likely by 1-2 points. For example, if $Y|_{VICTIM = 0}$ = -0.5, the *LIKELY* score is equal to 1. Fixing everything else, victimization would yield $Y|_{VICTIM = 1}$ = -0.5 + 0.262 = -0.238, or a *LIKELY* score of 3.

Table 21 Determinants of households' corruption perceptions (2000)

Dependent var.:	*LIKELY 0/1*[a]	*LIKELY*
	(1)	(2)
VICTIM	0.074***	0.262***
	(0.008)	(0.029)
INCOME TOP75%	0.017*	0.030
	(0.009)	(0.035)
INCOME TOP50%	0.013	-0.001
	(0.010)	(0.036)
INCOME TOP25%	-0.004	0.016
	(0.011)	(0.038)
EDUC PRIMARY	0.007	0.083
	(0.018)	(0.060)
EDUC SECOND	0.022	0.132**
	(0.017)	(0.057)
EDUC HIGHER	0.034*	0.130**
	(0.018)	(0.059)
$AGE \times 10^{-1}$	0.008	0.208***
	(0.014)	(0.050)
$AGE^2 \times 10^{-2}$	-0.003**	-0.031***
	(0.002)	(0.006)
MALE	0.002	-0.027
	(0.007)	(0.023)
MARRIED	0.012	0.040
	(0.008)	(0.027)
WORKING	0.009	0.021
	(0.008)	(0.028)
STUDENT	0.036***	0.164***
	(0.012)	(0.045)
CITY: URBAN	0.011	0.079
	(0.013)	(0.059)
Country FE	Yes	Yes
Observations	11,166	11,248
No. of countries	20	21

Notes. 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. Column (1): Probit estimates, marginal effects shown. Poland excluded because LIKELY0/1 = 1 for all observations. Column (2): Ordered Probit esitmates. The estimated cutoffs for values of *LIKELY* 1-12 are, respectively, -0.81, -0.39, -0.25, -0.15, 0.08, 0.16, 0.27, 0.43, 0.56, 0.72, 0.89, 1.13. * significant at 10%; ** significant at 5%; *** significant at 1%

6.2 Firms

Table 22 repeats the regressions in the paper using Probit instead of OLS.

Table 22 Determinants of firms' corruption perceptions (2000)

Dependent var.:	*CORRPROBLEM* (1)	*CORRPROBLEM* (2)	*CORRPROBLEM* (3)	*CORRPROBLEM* (4)
BRIBES%	0.012***	0.011***	0.012***	0.049***
	(0.003)	(0.003)	(0.003)	(0.006)
$(BRIBES\%)^2$				-0.002***
				(0.000)
SALES	-0.020***	-0.011	-0.015*	-0.012
	(0.007)	(0.009)	(0.009)	(0.009)
STATE	0.013	-0.020	-0.035	-0.030
	(0.040)	(0.044)	(0.045)	(0.045)
EXPORTER	-0.033	-0.048	-0.058	-0.053
	(0.033)	(0.035)	(0.035)	(0.036)
IMPORTER	0.007	-0.011	-0.010	-0.015
	(0.029)	(0.031)	(0.031)	(0.032)
COMPETITOR 1-3	0.042	0.044	0.050	0.055
	(0.057)	(0.059)	(0.059)	(0.059)
COMPETITOR >3	0.156***	0.160***	0.161***	0.154***
	(0.054)	(0.056)	(0.056)	(0.056)
PLANT_INC			0.067**	0.075**
			(0.032)	(0.032)
PLANT_RED			0.040	0.019
			(0.057)	(0.060)
PLANT_INC × *PLANT_RED*			0.099	0.095
			(0.083)	(0.085)
WORK_RED			0.054*	0.052*
			(0.031)	(0.032)
WORK_INC			0.005	0.009
			(0.031)	(0.032)
WORK_RED × *WORK_INC*			-0.164*	-0.179**
			(0.091)	(0.090)
Country FE	No	Yes	Yes	Yes
Observations	1734	1734	1734	1734
No. of countries	26	26	26	26

Notes. Probit estimates. Marginal effects reported. Countries in the sample are Albania, Armenia, Azerbaijan, Belarus, Bosnia, Bulgaria, Croatia, Czech Republic, Estonia, Macedonia, Georgia, Hungary, Kazakhstan, Kyrgyzstan, Latvia, Lithuania, Moldova, Poland, Romania, Russia, Serbia, Slovakia, Slovenia, Turkey, Ukraine, Uzbekistan. Robust standard errors reported in parentheses. All regressions include a constant.
* significant at 10%; ** significant at 5%; *** significant at 1%

References

Alesina, A., A. Devleeschauwer, W. Easterly, S. Kurlat, and R. Wacziarg (2003): "Fractionalization," *Journal of Economic Growth* 8, 155-194.

Alvarez, M., J.A. Cheibub, F. Limongi, and A. Przeworksi (1996): "Classifying political regimes," *Studies in Comparative International Development* 31(2), 3-36.

Kaufmann, D., A. Kray, and M. Mastruzzi (2004): "Governance Matters III: Governance Indicators for 1996, 1998, 2000, and 2002," *World Bank Economic Review* 18(2), 253-287.

Kaufmann, D., A. Kray, and M. Mastruzzi (2007): "Governance Matters VI: Aggregate and Individual Governance Indicators 1996-2006," World Bank Policy Research Working Paper 4280.

La Porta, R., Lopez-de-Silanes, F., Shleifer, A., and Vishny, R.W. (1999): "The quality of government," *Journal of Law, Economics and Organization* 15(1), 222–279.

Lambsdorff, J.G. (2000a): *Framework Document. Background Paper to the 2000 Corruption Perceptions Index*, Transparency International.

Lambsdorff, J.G. (2000b): *The Precision and Regional Comparison of Perceived Levels of Corruption - Interpreting the Results. Background Paper to the 2000 Corruption Perceptions Index*, Transparency International.

Treisman, D. (2000): "The causes of corruption: a cross-national study," *Journal of Public Economics* 76, 399-457.